

Brunswick Industrial Site and East Bennett Road Right of Way (ROW)

Aquatic Resources Delineation of Waters of the United States and State of California

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INFORMATION SUMMARY

Report Date: October 2020

Report Preparer: Mr. Greg Matuzak
Greg Matuzak Environmental Consulting LLC

Project Site: Brunswick Industrial Site
East Bennett Rd Corridor

Project Site Location: SECTION 36, T.16N, R.8E & SECTION 31, T.16N, R.9E
SECTION 25, T.16N, R.8E

BRUNSWICK INDUSTRIAL SITE		
Assessor Parcel Number	Site Address	Lot Size (Acres)
009-630-037	12603 East Bennett Road	21.8 AC
009-630-039	12301 Millsite Road	15.07 AC
006-441-003	12503 Brunswick Road	15.19 AC
006-441-004	12625 Brunswick Road	0.85 AC
006-441-005	12791 Brunswick Road	50.01 AC
006-441-034	12381 Brunswick Road	16.01 AC
Brunswick Industrial Site - Land Total:		118.93 AC
East Bennett Road ROW:		10.3 AC
Brunswick Area - Land Total:		129.23 AC

Property Owner /
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Project Summary

This Aquatic Resources Delineation Report for the Brunswick Industrial Site and East Bennett Road Right of Way includes the results of delineation methods accepted by the Corps as detailed in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and more recently in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Regions* (Corps, 2010).

A total of 9.60 acres of “waters of the U.S.,” including wetlands, and “waters of the State of California” was identified and mapped within the Brunswick Industrial Site and East Bennett Road Right of Way. The 9.60 acres of wetland-waters includes 8.72 acres of mapped wetlands and 0.88 acres of mapped “other waters of the U.S.,” including South Fork Wolf Creek, as well as several intermittent and ephemeral streams. The table below summarizes the wetlands and streams identified within the Brunswick Industrial Site and East Bennett Road Right of Way potentially subject to regulation under the Clean Water Act.

Summary of Aquatic Resources Delineation Results

Wetland/Stream Type	No. of Features	Size (Acres)	Length (Linear Feet)
Wetlands			
Meadow Wetland	4	6.97	
Freshwater Emergent Marsh Wetland	6	0.50	
Riparian Wetland	3	1.16	
Roadside Wetland	1	0.09	
“Other Waters of the U.S.”			
Perennial Stream	2	0.75	3,264
Intermittent Stream	5	0.07	745
Ephemeral Stream	2	0.06	383
Total	23	9.60	4,392

1.0 INTRODUCTION AND SUMMARY

1.1 Introduction

At the request of Rise Grass Valley Inc. ("Rise Grass Valley" or "Rise"), Mr. Greg Matuzak was retained to prepare an Aquatic Resources Delineation Report ("Delineation Report") for the Brunswick Industrial Site and East Bennett Road Right of Way ("Brunswick Area") located in Grass Valley, Nevada County, California (see Appendix A for Project Location Figures). The East Bennett Road Right of Way ("East Bennett Road ROW") is an approximate 1.25-mile public right of way that connects the Brunswick Industrial Site with the Centennial Industrial Site. The Delineation Report includes a delineation of potential "waters of the United States", including wetlands and "waters of the State of California", as well as assessed California Department of Fish and Wildlife ("CDFW") jurisdiction, within the Brunswick Area. Preparation of the Delineation Report included background research, field delineation surveys, and reporting as detailed herein.

Mr. Greg Matuzak, Principal and owner of Greg Matuzak Environmental Consulting LLC is a wetlands ecologist with 20 years of experience conducting aquatic resources delineations in Northern California. Mr. Matuzak is 40-hour Wetland Delineation Certified (Wetland Training Institute) and has conducted aquatic resources delineations for 100's of linear miles of projects and 1000s of acres of site development projects. Mr. Matuzak has lived and worked in Nevada County for over 13 years and developed aquatic resources delineations and processed permit applications for several projects within Nevada County. Ms. Wendy Boes is a local Nevada County botanist and most recently worked for the Tahoe National Forest as a botanist. Ms. Boes is an independent consultant, GIS specialist, and conducts field data collection and GIS mapping for field related projects. Mr. Matuzak and Ms. Boes were responsible for the field data collection and mapping developed as part of the development of this Delineation Report.

1.2 Project Setting

The Biological Report includes a full coverage assessment of the 118.93-acre Brunswick Industrial Site and the 10.3-acre East Bennett Road ROW for a total Brunswick Area of 129.23 acres; see Appendix A for Brunswick Area Overview Figures. The recorded owner of the surface land which comprises the Brunswick Industrial Site is Rise Grass Valley while the East Bennett Road ROW is a public right of way.

The Brunswick Industrial Site is bordered by Brunswick Road along the eastern boundary and East Bennett Road along the northern boundary. The Brunswick Industrial Site is surrounded by private developed and undeveloped residential and industrial districts zoning and land uses. The East Bennett Road ROW study area is surrounded by private residential and industrial districts zoning and land uses, as well as public open space. The

East Bennett Road ROW study area includes an easement area from East Bennett Road to the Centennial Industrial Site. The easement area crosses private industrial property that is heavily disturbed by industrial operations.

The Brunswick Area includes a single perennial stream, South Fork Wolf Creek.

A 48" culvert runs ~1600 ft underneath the Brunswick Industrial Site from the western side of Brunswick Road within the Brunswick Industrial Site. This culvert collects runoff and groundwater (springs) from a portion of the watershed to the east and south of the Brunswick Industrial Site.

South Fork Wolf Creek originates from the outlet of this 48" diameter culvert on the western side of the Brunswick Industrial Site and flows in a north westerly direction approximately 2.7 miles. Within the City of Grass Valley, the creek enters into an underground culvert and concrete channel system which conveys the waters of South Fork Wolf Creek to the main stem of Wolf Creek.

Brunswick Area Overview Figures are included in Appendix A.

1.3 Previous Wetland Delineations of the Brunswick Area

Two previous delineations of "waters of the U.S.," including wetlands, have been conducted for the Brunswick Industrial Site. They include the following:

- *Idaho-Maryland Mine Project Wetland Delineation Report* developed by ESA Associates, dated December 2007. The ESA Associates report includes part of the Brunswick Industrial Site, including the areas located to the west of the large clay lined manmade pond.
- *Delineation of Section 404 Jurisdictional Areas Idaho-Maryland Mine, Nevada County, California* developed by WRA, Inc., dated April 2008 with follow up mapping submitted to the United States Army Corps of Engineers ("Corps") on June 5, 2008. The WRA, Inc. mapping and reporting of the Brunswick Industrial Site, includes the areas located to the west of the large clay lined manmade pond.

The WRA, Inc. June 5, 2008 mapping of potential "waters of the U.S.," including wetlands, subject to CWA Section 404 jurisdiction, formed the basis of this Delineation Report for the Brunswick Industrial Site. However, the WRA, Inc. 2008 mapping did not cover the man-made pond or area to the north, east or south of the pond within the Brunswick Industrial Site. The areas not previously delineated by ESA or WRA, Inc. were delineated for the first time as part of this Delineation Report. The June 5, 2008 mapping completed by WRA and submitted to the U.S. Army Corps of Engineers ("Corps") is attached in Appendix F along with the mapping of the "waters of the U.S.," including wetlands associated with this updated delineation for the Brunswick Area.

1.4 Purpose

The purpose of this Delineation Report is to determine the location and extent of areas that meet the Corps' criteria as "waters of the U.S.," including wetlands, pursuant to Section 404 of the Clean Water Act ("CWA") (1972).

This Delineation Report may be used to assist with future development plans within the Brunswick Area in order to avoid and minimize potential fill and/or dredge related impacts to such aquatic resources, including both "waters of the U.S.," including wetlands, and "waters of the State of California," if feasible within the Brunswick Area.

Given the previous jurisdictional delineation reporting and wetland-waters mapping, this Delineation Report evaluated any changes between the present conditions compared to the June 5, 2008 mapping of wetlands, "other waters of the U.S.," and "waters of the State of California" that were previously mapped by WRA, Inc. within the Brunswick Area. The previous delineation was used as an initial baseline of previously delineated wetland-waters features within the Brunswick Area. This Delineation Report includes the methodology and updated results of the wetland-waters features within the Brunswick Area that could be subject to current regulations. Areas not previously delineated within the Brunswick Area by ESA or WRA, Inc. were delineated for the first time and are included as part of this Delineation Report.

2.0 REGULATORY OVERVIEW

2.1 Section 404 of the Clean Water Act

The Corps and the Environmental Protection Agency (“EPA”) regulate the discharge of dredge or fill material into “waters of the U.S.” under Section 404 of the Clean Water Act. “Waters of the U.S.” include wetlands and lakes, rivers, streams, and their tributaries. Wetlands are defined for regulatory purposes as areas “...inundated or saturated by surface or ground water 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 solid conditions” as specified in 33 Code of Federal Regulations [CFR] 328.3, 40 CFR 230.3.

Generally, wetlands include swamps, marshes, bogs, and similar areas. Lakes, rivers, and streams are defined as “other waters of the U.S.” Jurisdictional limits of these features are typically noted by the Ordinary High Water Mark (“OHWM”). The OHWM is the line on the shore established by the fluctuations of water and indicated by physical characteristics such as mark a clear, natural line impressed on the bank, shelving, changes in the character of 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 328 and 33 CFR 329).

Isolated ponds or seasonal depressions had been previously regulated as waters of the U.S. However, in *Solid Waste Agency of Northwestern Cook County (SWANCC) v. USACE et al.* (January 8, 2001), the U.S. Supreme Court ruled that certain “isolated” wetlands (e.g., non-navigable, isolated, and intrastate) do not fall under the jurisdiction of the CWA and are no longer under the jurisdiction of the Corps. Some circuit courts (e.g., *U.S. v. Deaton*, 2003; *U.S. Rapanos*, 2003; *Northern California River Watch v. City of Healdsburg*, 2006), though, have ruled that SWANCC does not prevent CWA jurisdiction if a “significant nexus” such as a hydrologic connection exists, whether it be man-made (e.g., roadside ditch) or natural tributary to navigable waters, or direct seepage from the wetland to the navigable water, a surface or underground hydraulic connection, an ecological connection (e.g., the same bird, mammal, and fish populations are supported by both the wetland and the navigable water), and changes to chemical concentrations in the navigable water is present due to water from the wetland.

Areas considered to be non-jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially-irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions with no outlet for drainage (33 CFR, Part 328).

The *Clean Water Rule* is a 2015 regulation published by the EPA and Corps to clarify water resources management in the United States under a provision of the CWA. The regulation

defined the scope of federal water protection in a more consistent manner, particularly over streams and wetlands, which have a significant hydrological and ecological connection to traditional navigable waters, interstate waters, and territorial seas. It is also referred to as the *Waters of the United States* rule, which defines all bodies of water that fall under U.S. federal jurisdiction. The rule has been contested in litigation and in 2017 the Trump administration announced its intent to review and rescind or revise the rule. Following a Supreme Court ruling on January 22, 2018 that lifted a nationwide stay on the rule, the Trump administration formally suspended the rule until February 6, 2020, thereby giving the EPA time to issue a draft proposal of replacement water regulatory requirements.

On October 22, 2019, the EPA and the Corps published a final rule to repeal the 2015 Clean Water Rule: Definition of “Waters of the United States” (“2015 Rule”), which amended portions of the Code of Federal Regulations (CFR), and to restore the regulatory text that existed prior to the 2015 Rule. The final rule will become effective on December 23, 2019. The EPA and the Corps will implement the pre-2015 Rule regulations informed by applicable agency guidance documents and consistent with Supreme Court decisions and longstanding agency practice.

However, on April 21, 2020, the EPA and the Corps published the Navigable Waters Protection Rule to define “Waters of the United States” in the *Federal Register*. For the first time, the agencies have streamlined the definition so that it includes four simple categories of jurisdictional waters, provides clear exclusions for many water features that traditionally have not been regulated, and defines terms in the regulatory text that have never been defined before. Congress, in the CWA, explicitly directed the Agencies to protect “navigable waters.” The Navigable Waters Protection Rule regulates traditional navigable waters and the core tributary systems that provide perennial or intermittent flow into them.

Under the final rule, four clear categories of waters are federally regulated:

- The territorial seas and traditional navigable waters,
- Perennial and intermittent tributaries to those waters,
- Certain lakes, ponds, and impoundments, and
- Wetlands adjacent to jurisdictional waters

Therefore, as of June 22, 2020, the final rule details 12 categories of exclusions, features that are not “waters of the United States,” such as features that only contain water in direct response to rainfall (e.g., ephemeral features); groundwater; many ditches; prior converted cropland; and waste treatment systems. The final rule clarifies key elements related to the scope of federal CWA jurisdiction, including:

- Providing clarity and consistency by removing the proposed separate categories for jurisdictional ditches and impoundments.
- Refining the proposed definition of “typical year,” which provides important regional and temporal flexibility and ensures jurisdiction is being accurately determined in times that are not too wet and not too dry.
- Defining “adjacent wetlands” as wetlands that are meaningfully connected to other jurisdictional waters, for example, by directly abutting or having regular surface water communication with jurisdictional waters.

The Navigable Waters Protection Rule is the second step in a two-step process to review and revise the definition of “waters of the United States” consistent with the February 2017 Presidential Executive Order entitled “Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the ‘Waters of the United States.’” This final rule became effective on June 22, 2020 and will replace the Step One Rule published in October, 2019 as outlined above.

2.2 Section 401 of the Clean Water Act

Section 401 of the CWA requires an applicant, for any federal permit which may result in a discharge into waters of the U.S., to obtain a certification from the state that the discharge will comply with provisions of the CWA. The nine regions of the State Water Quality Control Board administer this program. Any condition of water quality certification would be incorporated into the Corps permit. California has a policy of no-net-loss of wetlands and typically requires mitigation for impacts to wetlands before it will issue a water quality certification. This Project is located under the jurisdiction of Region 5, the Central Valley Regional Water Quality Control Board (“RWQCB”).

2.3 Additional State Regulations Governing Wetlands and Streams

CDFW regulates the modifications of streams, rivers, and lakes under Sections 1601 to 1607 of the CDFW Code. Modification includes diverting, obstruction, or changing the natural flow or bed, channel, or bank of a regulated feature. The CDFW Code, Sections 1601 to 1607, require that CDFW be notified of any activity that could affect the band or bed of any stream that has value to fish and wildlife. In practice, CDFW authority is extended to any stream shown on a U.S. Geological Survey (USGS) topographic map, as well as unmapped channels with a definable bed and bank. Upon notification, CDFW has the discretion to execute a Streambed Alteration Agreement that stipulates restrictions on proposed project activities and mitigation requirements for proposed project impacts.

On April 2, 2019, the State Water Resources Control Board (State Water Board) adopted rules to protect wetlands and other environmentally sensitive waterways throughout the state. More than 90 percent of California’s historic wetlands have been lost to development and other human activity. Wetlands are a critical natural resource that

protect and improve water quality, provide habitat for fish and wildlife, and buffer developed areas from flooding and sea-level rise. The newly adopted rules provide a common, statewide definition of what constitutes a wetland. They also provide consistency in the way the State Water Board and nine regional water boards regulate activities to protect wetlands and other waterways, such as rivers and streams, and bays and estuaries. The State of California waters of the state are, by definition, broader than “waters of the United States” covered by federal regulation. The newly adopted rules do not change that and will ensure that waters of the state will continue to be protected even if protections for federal waters are narrowed by administrative actions or the courts. The new definition clarifies what is considered a wetland – and what is not – for the entire state, provides a common framework for monitoring and reporting the quality of California’s remaining wetlands, helps ensure no overall net loss, and promote an increase, in the quantity, quality, and sustainability of waters of the state, including wetlands, improves transparency and consistency across the State Water Board and the nine Regional Water Quality Control Boards in how discharges of dredged or fill material in sensitive waterways are monitored and regulated, and avoids duplicative work and streamline requirements to cover all waters of the state, so both state and federal environmental concerns are addressed at once.

2.4 Regulatory Process

Any proposed development with the placement of dredge and/or fill material within areas identified as jurisdictional “waters” is subject to the permit requirements of the Corps, under Section 404 of the CWA, and would also require a Section 401 water quality certification or waiver thereof by the Central Valley RWQCB. A Streambed Alteration Agreement from CDFW would also be required for impacts within the jurisdiction covering such an Agreement with CDFW.

Prior to the development of such permit applications for potential development within the Brunswick Area, this Delineation Report should be submitted along with a request for a Preliminary Jurisdictional Determination (PJD) as part of the Corps Section 404 permit process if any potential dredge or fill material is to be placed within any Corps jurisdictional wetlands-waters features. It is recommended that the PJD request be submitted along with this Delineation Report and a CWA Section 404 permit application. For projects where dredge and/or fill material may be placed within a CWA Section 404 regulated area less than 0.5 acres, a Pre-construction Notification (PCN) could be filed with the Corps for projects that meet the requirements for coverage under an existing Nationwide Permit. Alternatively, an Individual Permit would be required to be filed with the Corps for projects proposing to place fill and/or dredge material within an area greater than 0.5 acres.

3.0 METHODOLOGY

The delineation of potential Section 404 “waters of the United States” and wetlands (as a subcategory of waters), RWQCB “waters of the State”, and CDFW jurisdictional areas within the Brunswick Area was conducted on December 17th and 18th, 2018 with follow up site visits on July 10th, July 14th, August 16th, and August 29th, 2019 using the routine methodology as detailed in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratories, 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Regions* (Version 2.0) (Corps, 2010). Reconnaissance level site visits were conducted in late November and early December 2018 that aided the characterization of the extent of potential jurisdictional areas that were mapped in mid-December 2018 and in July and August 2019.

Additionally, Mr. Greg Matuzak conducted a follow up review of targeted areas within the central and eastern sections of the Brunswick Industrial Site on August 27, 2020 to reevaluate the potential presence of seasonal wetlands, riparian wetlands, and a perennial drainage that runs along Brunswick Road within the southeastern edge of the Brunswick Industrial Site not previously mapped as part of the December 2018 and July and August 2019 field surveys.

The entirety of the Brunswick Area was surveyed on foot by wetland's ecologist, Mr. Greg Matuzak, and GPS/GIS specialist and botanist, Ms. Wendy Boes, to identify and map the presence of “waters of the U.S.,” including wetlands, and “waters of the State of California.” The Brunswick Area surveyed includes the full 118.9-acre Brunswick Industrial Site. The Brunswick Area surveyed is outlined in Appendix A on both a recent aerial photo and on and a USGS Topographic Quadrangle background of the Brunswick Industrial Site.

The extent or boundary of wetland habitats was further defined using routine on-site wetland determination protocol currently in use by the Corps, published Corps regulatory guidance letters, and Sacramento District regulatory policy.

3.1 Wetlands Definition

Pursuant to the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987), herein referred to as the 1987 Manual, key criteria for determining the presence of wetlands are:

- (a) the presence of inundated or saturated soil conditions resulting from permanent or periodic inundation by ground water or surface water; and
- (b) a prevalence of vegetation typically adapted for life in saturated soil conditions (i.e., hydrophytic vegetation).

Explicit in the definition is the consideration of three environmental parameters: hydrology, soil, and vegetation. Positive wetland indicators of all three parameters are normally present in wetlands. The assessment of all three parameters enhances the technical accuracy, consistency, and credibility of wetland determination and is required per the 1987 Manual.

The 1987 Manual provides the framework for conducting delineations of aquatic resources and identifies the key criteria for determining the presence of wetlands regulated under the CWA. However, the more recent *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Regions (Version 2.0)* (Corps, 2010), herein referred to as the Corps Supplement (Version 2.0), provides updated clarification regarding hydrophytic vegetation indicators, hydric soils indicators, wetland hydrology indicators, growing season definition, and hydrology standards for highly disturbed and problematic wetland situations. The Corps Supplement (Version 2.0) replaces these sections of the 1987 Manual. The Project Site is located within the area covered by the Corps Supplement (Version 2.0).

3.2 Waters of the United States Definition

Aquatic habitats, other than wetlands, that are considered to be “waters of the U.S.” were also investigated as part of this study. Their landward extent was defined following the definitions provided in the Corps regulations (33 CFR §328.4(a) (b) and (c)):

- (a) *Territorial Seas*. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles.
- (b) *Tidal Waters of the U.S.* The landward limits of jurisdiction in tidal waters:
 - (1) Extends to the high tide line, or
 - (2) When adjacent non-tidal waters of the U.S. are present, the jurisdiction extends to the limits identified in (c) below.
- (a) *Non-Tidal Waters of the U.S.* The limits of jurisdiction in non-tidal waters:
 - (1) In the absence of adjacent wetlands, the jurisdiction extends to the OHWM, or
 - (2) When adjacent wetlands are present, the jurisdiction extends beyond the OHWM to the limit of the adjacent wetlands.
 - (3) When the water of the U.S. consists only of wetlands, the jurisdiction extends to the limit of the wetlands.

Tributary waters and their impoundments are under the regulatory jurisdiction of the Corps and RWQCB and extend to the OHWM on opposing channel banks. Tributary waters include rivers, streams and seasonal drainage channels.

3.3 Background Resources

The existing landforms, as well as associated vegetation, hydrology, and soil conditions were studied to identify areas that would likely contain wetlands, waters, and aquatic habitats in the Brunswick Area. Prior to conducting site surveys, site maps, topographic maps, and aerial photographs of the Brunswick Area were obtained and reviewed. This information was used in association with detailed delineation surveys to determine the extent and boundaries of wetland features. Materials used to study the Brunswick Area included the following resources:

- USGS Quadrangle Map for Grass Valley, California;
- U.S. Department of Agriculture Web Soil Survey (USDA 2019, see Appendix B);
- National Wetland Inventory (NWI) mapping of the Brunswick Area (USFWS 2019, see Appendix C);
- *Delineation of Section 404 Jurisdictional Areas Idaho-Maryland Mine, Nevada County, California* developed by WRA, Inc., dated April 2008 with follow up mapping submitted to the "Corps" on June 5, 2008; and
- *ESA Associates Idaho-Maryland Mine Project Wetland Delineation Report* (December 2007).

3.4 Field Data Collection Methods

Data was collected on vegetation, soils, and hydrology using wetland determination protocol as described in the 1987 Manual. Both upland and wetland data were collected to distinguish wetland boundaries from the adjacent upland; in some cases, single descriptive waypoints were taken to characterize the existing vegetation, soils, and hydrology of an area. For each sample area, a sample point was sited in an area exhibiting wetland characteristics, while a second sample point was sited adjacent to the first point in an upland position that defined the transitional break between wetland and upland boundary.

No soil test pits were taken within potential aquatic features that were confined to channels, thus conforming to the definition of "other waters of the U.S." (i.e., exhibits a distinct bed and bank with an OHWM). No soil test pits were taken within ponded areas with standing water as it was assumed that such ponded areas are potential jurisdictional wetland features since they exhibited a direct connection to mapped downstream stream and/or wetland features also considered jurisdictional.

Coordinates of each sample location were recorded in the field using ESRI Collector for ArcGIS. Soil pits were not taken at every wetland feature within the Brunswick Area if the boundaries in the field corresponded to the mapped boundaries by WRA, Inc. (WRA,

2008). At locations where the vegetation and/or surface hydrology appeared to differ from the previous WRA, Inc. delineation results, a soil data point and wetland data sheets were developed to identify whether the features differed from the WRA, Inc. results. When a difference in feature characterization was identified, the change in the wetland-waters feature was remapped. At locations where wetland-waters features were no longer present, the area was removed from the map. Areas that were not previously included as part of the ESA and WRA, Inc. delineations for the Brunswick Area were treated differently. Any area exhibiting potential indicators of wetland hydrology and/or hydric vegetation were evaluated with a soil pit and wetland datasheets were developed to determine whether the feature should be mapped as a potentially jurisdictional wetland. If the feature met the wetland delineation criteria, the feature was mapped using ESRI Collector for ArcGIS.

The June 2008 WRA, Inc. mapped wetlands-waters features were included as a background file within ESRI Collector for ArcGIS for comparison of the features identified in the field in December 2018, July 2019, and August 2019 for the Brunswick Area that was previously delineated by WRA, Inc.

3.5 Brunswick Area Characterization

The Brunswick Industrial Site has been disturbed by historic mining and lumber mill practices, public access, and ongoing management for many years which is now considered baseline condition for the Brunswick Industrial Site. Within the Brunswick Industrial Site, the dumping of soils, landscape materials, and other miscellaneous items has also occurred for many years and the current circumstances are now considered baseline conditions. A large section of the Brunswick Industrial Site located in the eastern areas along Brunswick Road would be characterized as disturbed and/or developed given the amount of pavement and impervious surfaces in those areas as well as the remaining infrastructure related to historic mining and mill operations. Areas not subject to this regular type of previous disturbance are dominated by native habitat and, therefore, are also the baseline condition within the Brunswick Industrial Site.

The portion of the Brunswick Area that includes the East Bennett Road ROW contains a developed and paved public road and ROW that has been used for decades. In addition, the shoulders of East Bennett Road that are included as part of the East Bennett Road ROW are also developed given the grading and fill material associated with the development of the road.

All vascular plant species identified at the time of the field surveys were recorded using keys and descriptions in *The Jepson Manual* (Baldwin et al., 2012). Vegetation types were classified by ESA Associates (2006) during the previous environmental review process (hereby incorporated by reference). ESA Associates mapped and classified wildlife

habitats/vegetation types using the California Department of Fish and Game's (CDFG) *A Guide to Wildlife Habitats* (Mayer and Laudenslayer, 1988). The classifications and mapping completed by ESA was found to be far more detailed than the existing CDFW California Wildlife Habitat Relationships (CWHR) layers that were evaluated for the Brunswick Area and therefore, the ESA Associates vegetation descriptions were used for a more detailed documentation of vegetation types and as a springboard for the descriptions within this Delineation Report. A list of plant species identified within the Brunswick Area as part of the development of this Delineation Report is located in Appendix D.

The approximate location and extent of jurisdictional wetlands/waters, as well as other relevant data, are presented on 1 inch = 200 foot scale Brunswick Area maps and are included in Appendix F. Information obtained at the sample point locations was recorded on Corps Wetland Determination Data Form – Western Mountains, Valleys, and Coast Region included in the appendices attached to this report (see Appendix G). Photographs were also taken for selected sample wetland points that represented the Brunswick Area (Appendix E).

Given the presence of South Fork Wolf Creek within the Brunswick Industrial Site, the stream was evaluated to determine if its OHWM and length differed from the previous delineation of the stream conducted by WRA, Inc. in 2008. In addition, the Brunswick Industrial Site contains additional stream features, intermittent and ephemeral streams, that connect to South Fork Wolf Creek. Some of these drainage features were mapped as likely jurisdictional “waters of the U.S.” given their connection to South Fork Wolf Creek, which connects to larger streams and rivers that connect with downstream navigable waterways (Bay Delta and Pacific Ocean). The entire length of each stream and drainage within the Brunswick Industrial Site was walked and the width of each stream and drainage was compared to the width previously recorded for each stream and drainage by WRA, Inc. in 2008. The field surveys in December 2018, July 2019, and August 2019 followed very little seasonal rain events and therefore, direct observation of hydrology in some areas of the Brunswick Area was not possible. The potential “waters of the U.S.,” including wetlands, were mapped based on the observable signs of wetland hydrology (i.e. presence of drainage patterns or other primary and secondary characteristics or an observable OHWM within the onsite stream and drainage features).

Areas containing a predominance of wetland vegetation within the Brunswick Area were evaluated further to identify whether the underlying soils of such vegetation met the Corps criteria as a hydric soil. Soil data points were analyzed as part of this Delineation Report to identify the border between wetland data points and upland data points. The border between the wetland and upland data points was used to map the wetland features in the field using ESRI Collector for ArcGIS.

4.0 ENVIRONMENTAL SETTING

The Brunswick Area is located in Nevada County, CA in the northern-central Sierra Nevada foothills. The Sierra Nevada foothills lie between the western edge of the Sierra Nevada and the eastern border of the Central Valley. The foothills form a belt 10 to 30 miles wide that ranges from 500 to 5,000 feet in elevation in a series of northwest to north-northwest aligned ridges that decline in elevation from northeast to southwest. Many rapidly flowing rivers and streams run westerly in deeply incised canyons with bedrock channels to the Central Valley and eventually to the Pacific Ocean. Alluvial fans, floodplains, and terraces are not extensive; and all but the largest streams are generally dry during the summer.

Dominant vegetation communities include annual grasslands, montane hardwoods, ponderosa pine, and woodlands dominated by mixed conifer and hardwood species. A large part of the eastern section of the Brunswick Area located along Brunswick Road is characterized as disturbed and/or developed given the area does not contain much vegetation and is dominated by a large amount of pavement. In addition, the northeastern section of the Brunswick Area contains infrastructure related to historic mining operations while the man-made pond was used as part of historic mill operations within the Brunswick Area.

The remaining undisturbed portion of the Brunswick Area contains terrain typical of the lower Sierra Nevada foothills, varying between flat ridges and valleys to gently and moderately sloping hillsides. The Brunswick Industrial Site elevation ranges from approximately 2,675 to 2,950 feet above mean sea level (MSL) and the East Bennett Road ROW elevation ranges from approximately 2,650 to 2,850 to feet above MSL. The Brunswick Area is located in an area containing South Fork Wolf Creek. Several intermittent and ephemeral streams connect directly to South Fork Wolf Creek within the Brunswick Industrial Site and the perennial stream also flows to the south of the East Bennett Road ROW within the Brunswick Area. South Fork Wolf Creek contains associated riparian woodland and scrub and large tracks of wet meadow wetlands dominant in the northwestern section of the Brunswick Industrial Site.

4.1 Site Drainage and Hydrology

Natural hydrological sources for the Brunswick Area include precipitation and surface run-off from adjacent lands. Mean annual rainfall in the area is 53.74 inches (NRCS, 2018). During rain events over the previous month prior to the field surveys, very little surface water and no snow was identified. However, evidence of surface moisture was still present in some areas. Water stained leaves and damp surface soil/leaf litter was observed and some mapped wetland features had surface ponding (see Appendix E for the Photo Log).

Brunswick Industrial Site

South Fork Wolf Creek, a perennial stream, surfaces within the Brunswick Industrial Site south of a large man-made clay lined pond (PD-1) and flows northwest across the Brunswick Area. South Fork Wolf Creek daylights from an existing 48" diameter culvert which is approximately 1,600 feet long (Regional Water Quality Control Board Order No. 88-185, December 18th, 1990). PD-1 may be regulated as a "Waters of the State of California." The 48" culvert appears to be fed by surface drainage and a potential perennial spring on the east side of Brunswick Road, which crosses Brunswick Road through a culvert and creates a perennial drainage (P-1) that flows north along the western side of Brunswick Road before entering the 48" culvert inlet that crosses the Brunswick Industrial Site and empties into the South Fork Wolf Creek. The 48" culvert was flowing water in December 2018 as well as during the July and August 2019 site surveys conducted as part of the development of this Delineation Report (see Photo Log in Appendix E).

Five additionally mapped intermittent streams and two ephemeral streams cross the Brunswick Area and flow into South Fork Wolf Creek. The mapped intermittent and ephemeral streams each contain a defined bed and bank and OHWM and connect either directly or indirectly to South Fork Wolf Creek; therefore, they are considered jurisdictional features. Surface and subsurface hydrologic inputs combine in the northwestern area of the Brunswick Area to support a large continuous wetland which is characterized as a large wet meadow complex (WM-4) and riparian wetlands (RI-2 and RI-3).

The following drainage features and patterns were identified within the Brunswick Industrial Site:

- Perennial drainage (P-1) runs along the western edge of Brunswick Road in a northerly direction before entering a culvert that crosses through the central section of the Brunswick Industrial Site before exiting the large culvert and creating South Fork Wolf Creek. The perennial drainage appears to cross Brunswick Road from the east and most likely is fed by perennial springs coming from the hillsides east of the property before entering the perennial drainage along the western side of Brunswick Road adjacent to the property.
- South Fork Wolf Creek, a perennial stream, runs along the western and northwestern sections of the Brunswick Area and originates from the outlet of a 48" diameter culvert.
- A historic man-made clay lined pond (PD-1) associated with historic saw milling operations does not have a direct outlet or connection to the South Fork Wolf Creek. PD-1 contains a 2-foot clay liner to limit any potential infiltration and

receives its water mainly from surface runoff and precipitation. PD-1 is a man-made pond used historically as a recycling pond for site runoff containment and log watering during mill operations. PD-1 is non-jurisdictional per federal CWA regulations given it receives water from sheet flow within the Brunswick Industrial Site and does not connect directly or indirectly with South Fork Wolf Creek or any other "waters of the U.S." and therefore, it does not receive water from or connect to a "waters of the U.S." However, upon regulatory agency review, PD-1 may be determined to be regulated as a "Waters of the State of California."

- A small, unnamed ephemeral drainage (E-1) flows into the Brunswick Industrial Site from the surrounding hills to the west of South Fork Wolf Creek. Another small, unnamed ephemeral drainage (E-2) connects to the culvert outlet of South Fork Wolf Creek.
- Four (4) small intermittent streams flow into the northeastern section of the Brunswick Industrial Site from offsite, while a single small intermittent stream enters South Fork Wolf Creek from the west just downstream from where the perennial stream daylight.
- Wet meadow wetland (WM-4) is located within a large area in the northwestern section of the Brunswick Industrial Site and dominates the non-woodland habitat within that area.
- Drainage patterns within the western section of the Brunswick Industrial Site run from the hills to the west and drain east and northeast, eventually ponding in the southern section of the Brunswick Industrial Site or connecting with the South Fork Wolf Creek.
- Within the eastern section of Brunswick Industrial Site, drainage originates from off the property to the east and northeast. Areas to the east and northeast drain west and southwest, mostly entering the Brunswick Industrial Site through 4 intermittent streams, sheet flow, and the 48" culvert that connects the western edge of Brunswick Road with South Fork Wolf Creek.
- The wetlands in the eastern portion of the Brunswick Industrial Site drain to the northwest through the existing intermittent streams or sheet flow. Most of the wetlands within the eastern and southern sections of the Brunswick Industrial Site are due to disturbance in those areas where ponding of sheet flow and drainage occurs.

Each of the mapped wetlands and stream features within the Brunswick Industrial Site have a connection to the South Fork Wolf Creek. See Appendix F for an overview of the location and extent of the wetlands, streams, and drainages within the Brunswick Industrial Site. Additionally, Appendix F includes the results of the previous wetland delineation implemented by WRA (June 2008) and reviewed by the Corps.

East Bennett Road ROW Section of Brunswick Area

In general, South Fork Wolf Creek runs parallel to and on the south side of East Bennett Road.

Drainage along the East Bennett Road ROW generally flows from the north to the south with several culverts and storm drains crossing the ROW. Roadside drainages have formed which convey some water along the edges of the ROW; however, the roadside drainages do not contain a defined bed and bank or OHWM. Several roadside drainages were observed, however these drainages do not connect to the South Fork Wolf Creek. Other drainage features were located outside of the ROW, including a large wet area located on the northern side of the ROW near the Brunswick Industrial Site. Therefore, along the ROW no jurisdictional drainages were mapped.

A roadside wetland was delineated along the south side of the East Bennett Road ROW near the Centennial Industrial Site and was mapped as a potentially regulated wetland (see Appendix F).

4.2 Brunswick Area Soil Types

Brunswick Industrial Site

The USDA Soil Survey Mapper (USDA, 2019) identifies several soil types within the Brunswick Industrial Site. USDA soil mapping for the Brunswick Industrial Site is included in Appendix B and indicates that the Brunswick Industrial Site includes 10 soil types: Aiken loam on 9 to 15 percent slopes (AfC), Aiken loam on 15 to 30 percent slopes (AfD), Aiken loam on 30 to 50 percent slopes (AfE), Alluvial land, clayey (Ao), Cohasset loam, summits, on 2 to 15 percent slopes (CmB), Cohasset loam, shoulders, on 3 to 20 percent slopes (CmC), Cohasset loam, backslopes, on 5 to 30 percent slopes (CmD), Cohasset cobbly loam on 5 to 30 percent slopes (CoD), Placer diggings (Pr), and Sites loam on 15 to 30 percent slopes (SID). These soil types are described in detail below and are shown in Appendix B:

- **Aiken loam on 9 to 15 percent slopes (AfC).** The Aiken series consists of deep, well-drained soils typically occurring on ridgetops and side slopes of andesitic flows. These soils form from the weathering of volcanic rock. Drainage is moderately slow with a medium rate of surface runoff. The Aiken series is not hydric. A typical profile for this series consists of dark to reddish brown (5YR 3/3) loam from 0 to 11 inches. This layer is underlain by a yellowish red (5YR 4/6) loam from 11 to 21 inches. A dark red (2.5 YR 3/6) loam is present from 21 to 29 inches followed by a clay loam layer of the same color from 29 to 42 inches. From 42 to 52 inches is yellowish red (5YR 4/6) clay loam which is underlain by a reddish brown (5YR 4/4) clay loam. This layer is underlain by bedrock.

- **Aiken loam on 15 to 30 percent slopes (AfD).** The description of this soil is the same as the AfC description, only it is found on steeper slopes.
- **Aiken loam on 30 to 50 percent slopes (AfE).** The description of this soil is the same as the AfC description, only it is found on steeper slopes than AfD soils.
- **Alluvial land, clayey (Ao).** This series consists of moderately well-drained soils in floodplains and drainages. These soils formed from alluvium derived from granitic or mixed metabasic rocks. Permeability and runoff are both slow. This is a hydric soil. A typical soil for alluvial soils consists of 3 to 10 inches of sandy loam or loam underlain by 30 to 45 inches of a clay loam.
- **Cohasset loam, summits, on 2 to 15 percent slopes (CmB).** The Cohasset series consists of well drained soils on ridgetops and side slopes. These soils formed from weathered volcanic rock. Drainage is moderate and runoff is slow to rapid. These soils are not hydric. A typical profile for the Cohasset series consists of pine and fir needles from 0 to 3 inches. This layer is underlain by a dark reddish brown (ranges from 5YR 3/2, 3/3, 3/4) cobbly loam from 0 to 24 inches. This layer is underlain by a dark reddish brown (5YR 3/4 or 4/4) cobbly clay loam from 24 to 96 inches. At 96 inches is a weathered andesitic conglomerate.
- **Cohasset loam, shoulders, on 3 to 20 percent slopes (CmC).** The description of this soil is the same as the CmB description, only it is found on steeper slopes and shoulders.
- **Cohasset loam, backslopes, on 5 to 30 percent slopes (CmD).** The description of this soil is the same as the CmB description above, only it is found on steeper slopes and backslopes.
- **Cohasset cobbly loam on 5 to 30 percent slopes (CoD).** The description of this soil is the same as the CmB description above, only it is found on steeper slopes and is a cobbly loam rather than a Cohasset loam like CmB, CmC, and CmD above, containing a mixture of cobbles within the loamy soil.
- **Placer diggings (Pr).** The soil series description for Placer diggings is above within the descriptions for the Idaho-Maryland Brunswick Area.
- **Sites loam on 15 to 30 percent slopes (SID).** The Sites series consists of well drained soils that occur in mountain uplands. The soils formed from weathered residuum of metabasic and metasedimentary rocks. Drainage is moderately soil and runoff is slow to very high. This soil is not hydric. A typical profile for this complex

consists of dark reddish brown loam (5YR 3/4) from 0 to 3 inches. This layer is underlain by yellowish red loam (5YR 4/6) from 3 to 12 inches. From 12 to 23 inches is a layer of red (2.5 YR 4/6) clay loam. This layer is underlain by red (10R 4/6) clay from 23 to 56 inches and red (10R 4/8) light clay from 53 to 69 inches. From 68 to 78 inches is a red (2Y 4/8) clay loam underlain at 78 inches by a layer of weathered metasedimentary rock.

East Bennett Road ROW Section of Brunswick Area

The USDA Soil Survey Mapper (USDA, 2019) indicates that the East Bennett Road ROW includes 11 soil types: Aiken loam on 9 to 15 percent slopes (AfC), Aiken loam on 30 to 50 percent slopes (AfE), Alluvial land, clayey (Ao), Boomer loam, hard bedrock, 7 to 28 percent slopes (BoD), Boomer-Rock outcrop complex on 5 to 30 percent slopes (BrD), Boomer-Rock outcrop complex on 30 to 50 percent slopes (BrE), Cohasset loam on 15 to 30 percent slopes (CmD), Cut and fill land (Ct), Placer diggings (Pr), Sierra sandy loam on 15 to 30 percent slopes (SfD), and Sites loam on 15 to 30 percent slopes (SID). These soil types are described in detail below and are shown in Appendix B:

- **Aiken loam on 9 to 15 percent slopes (AfC).** The soil series description for Aiken loam on 9 to 15 percent slopes is above within the descriptions for the Brunswick Industrial Site.
- **Aiken loam on 30 to 50 percent slopes (AfE).** The soil series description for Aiken loam on 30 to 50 percent slopes is above within the descriptions for the Brunswick Industrial Site.
- **Alluvial land, clayey (Ao).** The soil series description for Alluvial land, clayey is above within the descriptions for the Brunswick Industrial Site.
- **Boomer-Rock outcrop complex on 5 to 30 percent slopes (BrD).** The Boomer-Rock outcrop series consists of well-drained soils in upland areas. These soils formed from weathered metavolcanic rock. Drainage is moderately slow and runoff is slow to rapid. These soils are not hydric. A typical profile for this series consists of a brown (5YR 3/4) gravelly loam from 0 to 11 inches. This layer is underlain by a dark reddish brown (2.5YR 3/4) loam from 11 to 18 inches. From 18 to 29 inches is a dark red (2.5YR 3/6) clay loam layer which is underlain by a reddish yellow clay loam to 33 inches. This layer is underlain by a yellowish red (5YR 4/8) clay loam with dark red (2.5 YR 3/6) films from 29 to 37 inches followed by a hard fractured diabase at 47 inches.
- **Boomer-Rock outcrop complex on 30 to 50 percent slopes (BrE).** This soil description is the same as for BrD but is found on steeper slopes.

- **Boomer loam, hard bedrock, 7 to 28 percent slopes (BoD).** This soil description is similar to BrD described above. Runoff is medium to rapid on this soil.
- **Cohasset loam on 15 to 30 percent slopes (CmD).** The soil series description for Cohasset loam on 15 to 30 percent slopes is above within the descriptions for the Brunswick Industrial Site.
- **Cut and fill land (Ct).** This soil type consists of areas that have been altered by activities other than mining or milling such that there are no intact soil characteristics. This soil is not hydric.
- **Placer diggings (Pr).** The Placer diggings series consists of remnant tertiary river deposits associated with hydraulic mining and placer mining operations as well as natural deposits within stream channels. Areas with this soil type are 90 to 100 percent rock, cobble or gravel. 50 to 75 percent of these lands have a mixture of rock, cobbles, gravel and soil. This soil contains unnamed hydric inclusions in drainages and depressions.
- **Sierra sandy loam on 15 to 30 percent slopes (SfD).** The Sierra series consists of deep to very deep, well drained soils that formed in material weathered from intrusive igneous rocks. Sierra soils are on foothills and have slopes of 0 to 70 percent. The typical profile for this type of soil from 0 to 8 inches is brown (7.5YR 5/4) coarse sandy loam, dark reddish brown (5YR 3/4) moist; massive; slightly hard, friable; many very fine roots; many very fine and fine pores; moderately acid (pH 5.7); clear smooth boundary. From 8 to 20 inches it is known to be reddish brown (5YR 5/4) loam, yellowish red (5YR 3/6) moist; massive; hard, friable, slightly sticky, slightly plastic; many very fine roots; many very fine, common fine, few medium and coarse pores; few thin discontinuous clay films line pores, colloids mainly bridging mineral grains; moderately acid (pH 5.9); gradual smooth boundary.
- **Sites loam on 15 to 30 percent slopes (SID).** The soil series description for Sites loam is above within the descriptions for the Brunswick Industrial Site.

4.3 Brunswick Area Vegetation

Primary upland habitats within the Brunswick Area include the following habitats:

Sierran Mixed Conifer

The Sierran mixed conifer forest is generally a multi strata forest dominated by conifers with hardwood as a component of the understory. This vegetation type is found along the hillslope on the western and southern portions of the Brunswick Area. The forest within the Brunswick Area is more mesic, occurring on east facing slopes. It is dominated by Douglas fir, incense cedar, and black oak. It has high canopy closure. It often has a midstory strata of madrone, hazelnut (*Corylus cornuta ssp. californica*) and younger

black oak. The understory has high litter cover and Himalayan blackberry and honeysuckle area common in the understory.

Ponderosa Pine

Ponderosa pine (*Pinus ponderosa*) habitat is identified within the Brunswick Area, including along the East Bennett Road ROW where it is the dominant habitat type. The structure and composition of the ponderosa pine forest varies widely according to the amount of soil moisture available during the summer. The canopy closure tends to be low in the Brunswick Area ranging from 5-35%. In the Brunswick Area, California black oak (*Quercus kelloggii*), madrone (*Arbutus menziesii*), foothill pine (*Pinus sabieniana*), and incense cedar (*Calocedrus decurrens*) are common associates of ponderosa pine. A variety of understory shrub species occur throughout the ponderosa pine forest. In the Brunswick Area, the more common understory shrubs are white leaf manzanita (*Arctostaphylos viscida* ssp. *viscida*), poison oak (*Toxicodendron diversilobum*), and honeysuckle (*Lonicera hispidula*). These understory shrubs form often dense, impenetrable stands, especially on open rocky slopes, and in areas of recent disturbance.

Montane Hardwood

Montane hardwood habitat is identified within the Brunswick Area in small, localized stands. Montane hardwood is characterized here by stands of an overstory of California black oak and occasionally canyon live oak (*Quercus chrysolepis*). There is often homogeneity in the canopy structure, and canopy closure is variable between seasons as the dominant overstories species is deciduous, ranging from 5-45%. Due to the historic disturbance, there is abundant Himalayan blackberry (*Rubus armenicus*) in the understory along with other nonnatives including bristly dogtail (*Cynosurus echinatus*) and hedgenettle (*Torilis arvensis*).

Montane Hardwood-Conifer

Montane hardwood-conifer habitat in the Sierra Nevada occurs at elevations between 1,000 and 4,000 feet above MSL. It is comprised of a mosaic of hardwoods and conifers and within the Brunswick Area is likely a midpoint on the gradient between hardwood forest and conifer forest both hardwood and conifer tree species, often in a mosaic pattern with small pure stands of conifers interspersed with small stands of hardwoods. Species associated with montane hardwood-conifer include ponderosa pine, California black oak, canyon live oak, madrone and Douglas fir.

Annual Grassland

Annual grassland are open vegetation types that are dominated by annual plant species, often nonnative. These species will occur in the understory of other vegetation

types, but in annual grasslands there is little to no overstory or shrub cover. This vegetation type is located in the northwestern section of the Brunswick Area adjacent to the historic mill site where there has been historic disturbance and there is little to no water source other than rainfall. The fall rainfall will spark germination and plants will grow through the cool months and in spring will grow rapidly and flower, fruit and senesce. Common to the environmental setting of this habitat type are yellow star thistle (*Centaurea solstitialis*), garden burnett (*Poterium sanguisorba*), soft chess (*Bromus hordeaceus*), bisnaga (*Ammi visnaga*), and patches of Himalayan blackberry.

4.4 Brunswick Area Wetland Habitats

Wetland associated habitats within the Brunswick Industrial Site include the following wetland habitats:

Montane Riparian

A structural gradient generally happens from neighboring vegetation into montane riparian, resulting in oaks or pines grading in with the more riparian species. This vegetation type is characterized by two different ecological conditions, (1) placer diggings and (2) along the stretch of South Fork Wolf Creek.

The montane riparian in the placer diggings and areas created from earth movement where the mill was located within the Brunswick Area are characterized by black cottonwood (*Populus tremuloides*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), and occasionally ponderosa pine in the overstory. Dense thickets are often resultant with Himalayan blackberry and Baltic rush (*Juncus balticus* ssp. *atar*) in the herbaceous layer. The montane riparian vegetation along the South Fork Wolf Creek are dominated by white alder (*Alnus rhombifolia*) with other overstory species from adjacent vegetation types, including black oak, pine and Douglas fir. The understory of montane riparian along the creeks are dominated by Himalayan blackberry.

Wet Meadow

Wet meadows generally are dominated by forbs and graminoids. Shrub and trees are sometimes present but generally a small portion of this vegetation type. This is typically a diverse plant community driven by hydrologic influences. The wet meadows within the Brunswick Area are typically created where extreme disturbance has occurred in the past such as diggings and mill sites. These wet meadows are characterized by *Agrostis*, *Juncus* spp. and Baltic rush. There is a very large wet meadow (WM-4) within the Brunswick Area adjacent to South Fork Wolf Creek that is likely a natural meadow and is dominated by reed canarygrass (*Phalaris arundinacea*). The other wetland meadows are much smaller in size and are located in small depressional areas along disturbed roadways within the eastern and northern sections of the Brunswick Area.

Freshwater Emergent Marsh Wetlands

Freshwater emergent marsh wetlands are characterized by hydrophyllic plants and generally standing water. All emergent wetlands have soils that are saturated to the extent that the soils are always anaerobic. There are fresh emergent wetlands identified within the Brunswick Area. There are fresh emergent wetlands in the Brunswick Area. Within the Brunswick Area, these are not historic features but appear to have been created by historic disturbance coupled with the presence of some water source (spring, etc.). They are dominated at the Brunswick Area sites by cattails (*Typha* spp.), arroyo willow, and pacific rush (*Juncus effuses* ssp. *pacificus*).

5.0 RESULTS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Aquatic Resources Delineation Results

A total of 9.60 acres of "waters of the U.S.", including wetlands, and "waters of the State of California", were identified and mapped within the Brunswick Area. The 9.60 acres of wetland-waters include 8.72 acres of mapped wetlands and 0.88 acres of mapped "other waters of the U.S.," including South Fork Wolf Creek, as well as several intermittent and ephemeral streams.

The 8.72 acres of wetlands identified and mapped within the Brunswick Industrial Site includes:

- 6.97 acres of wet meadow wetlands (4 features mapped);
- 0.50 acres of freshwater emergent marsh wetlands (6 features mapped);
- 1.16 acres of riparian wetlands (3 features mapped); and
- 0.09 acres of roadside wetlands along the East Bennett Road ROW (1 feature mapped).

Table 2 includes the list of wetlands delineated and mapped within the Brunswick Area, including the wetland type, wetland identification number which corresponds to the delineation figures shown in Appendix F, and size of each feature.

**Table 2. Wetlands Delineated Within Brunswick Industrial Site
and Along the East Bennett Road ROW**

No.	Wetland Type	Wetland ID Number	Size (Acres)
1	Meadow wetland	WM-1	0.02
2	Meadow wetland	WM-2	0.01
3	Meadow wetland	WM-3	0.01
4	Meadow wetland	WM-4	6.93
5	Marsh	MA-1	0.1
6	Marsh	MA-2	0.3
7	Marsh	MA-3	0.02
8	Marsh	MA-4	0.007
9	Marsh	MA-5	0.05
10	Marsh	MA-6	0.02
11	Riparian	RI-1	0.03
12	Riparian	RI-2	0.76
13	Riparian	RI-3	0.37
14	Roadside Wetland	RW-1	0.09
14			8.72

The 0.88 acres (4,392 linear feet) of streams identified and mapped within the Brunswick Industrial Site includes:

- One (1) perennial stream, the South Fork Wolf Creek, totaling 0.59 acres over 2,563 linear feet;
- One (1) perennial drainage along the western edge of Brunswick Road, totaling 0.16 acres over 701 linear feet;
- Five (5) intermittent streams totaling 0.07 acres over 745 linear feet; and
- Two (2) ephemeral streams that only flow during and immediately after precipitation events totaling 0.06 acres over 383 linear feet.

Table 3 includes the list of streams delineated and mapped within the Brunswick Area, including the stream type, stream identification number which corresponds to the delineation figures shown in Appendix F, and size of each feature.

Table 3. Streams Delineated Within Brunswick Industrial Site

No.	Stream Type	Wetland ID Number	Size (Acres)
1	Perennial Stream	South Fork Wolf Creek – 1	0.59
2	Perennial Drainage	P – 1	0.16
3	Intermittent Stream	I – 1	0.05
4	Intermittent Stream	I – 2	0.002
5	Intermittent Stream	I – 3	0.006
6	Intermittent Stream	I – 4	0.003
7	Intermittent Stream	I – 5	0.004
8	Ephemeral Stream	E – 1	0.01
9	Ephemeral Stream	E – 2	0.05
9			0.88

The wetland types, number, and extent of wetlands delineated within the Brunswick Area in December 2018, July 2019, and August 2019 are generally comparable to the previously surveyed features delineation by WRA, Inc. in 2008. However, the riparian wetland mapped as RI-2 as part of this Delineation Report was mapped much smaller than the same feature mapped by WRA, Inc. in 2008. It appeared that WRA, Inc. mapped the riparian wetland feature at the very top of the bank of the deeply incised channel due to very little accessibility to the channel given the density of vegetation, mostly thick Himalayan blackberry. As part of this Delineation Report, we found pathways down into the deeply incised channel and conservatively mapped the RI-2 feature with a reduction of 15 ft on both sides of the channel as well as a 15 ft reduction on the northeastern end of the feature. The 15-foot reduction conservatively mapped the RI-2 feature given the incised nature of the channel would make it less likely that indicators

of wetland hydrology and hydric soils would be present within the upper areas of the banks of the channel.

A targeted review of site conditions within the central and eastern sections of the Brunswick Industrial Site was conducted on August 27, 2020. The purpose of this review was to reevaluate site conditions for the potential presence of wetlands within the site based on the July 2020 Madrone Ecological Consulting peer review and a perennial drainage along Brunswick Road that were not previously mapped as part of the December 2018 and July and August 2019 field surveys. Except for the perennial drainage that runs along Brunswick Road this survey did not identify any additional potential CWA regulated wetlands. These survey areas contained a lack of the required indicators of wetland hydrology and hydric soils required by the Corps to be regulated under the CWA. As identified above, a perennial drainage was mapped that runs along the western edge of Brunswick Road in a northerly direction before entering a culvert that crosses through the central section of the Brunswick Industrial Site before exiting the large culvert and creating the South Fork Wolf Creek. The perennial drainage appears to cross Brunswick Road from the east and most likely is fed by perennial springs coming from the eastern hillsides before entering the perennial drainage along the western side of Brunswick Road.

Given that the Brunswick Industrial Site has had no significant disturbance since 2008 and the hydrology of the site has remained similar to that identified in 2008, only a small change in the number and extent of wetlands within the Brunswick Area is to be expected. The changes that have occurred in terms of the number and extent of wetland features within the Brunswick Area could be partially explained by the change in weather patterns, including several years of drought condition, over the past decade followed by years of average to high rainfall the past 3 years. In addition, the change in extent to the riparian wetland RI-2 was due to more accurate mapping of the feature compared to the 2008 WRA delineation. It is noted that the RI-2 feature in this Delineation Report has been mapped conservatively; a greater reduction within both sides of the feature would be possible with additional access to the lower reaches of the incised channel where it is assumed that indicators of wetland hydrology, hydrophytic vegetation, and indicators of hydric soils are located.

The historic man-made clay lined pond (PD-1) associated with historic milling operations within the Brunswick Area does not have a direct outlet or connection to the South Fork Wolf Creek. PD-1 was man-made and used historically as a recycling pond for site runoff containment and log watering during mill operations. PD-1 is considered non-jurisdictional given it receives water from sheet flow from the surrounding impervious surfaces within the Brunswick Industrial Site and does not connect directly with South Fork Wolf Creek or any other "waters of the U.S." Additionally, PD-1 contains a 2-foot clay liner to limit any potential infiltration. Previous Waste Discharge Requirements (WDRs) have

prohibited direct discharge of wastes to surface waters or surface water drainage courses within the Brunswick Industrial Site (Regional Water Quality Control Board Order No. 88-185, December 18th, 1990). Based on consultation with the Central Valley Regional Water Quality Control Board, it may be determined that the PD-1 may be regulated as a "Waters of the State of California," which would be a total of 3.25 acres of mapped "Waters of the State of California."

5.2 Conclusions and Recommendations

Each of the mapped wetland features and stream features included as part of this Delineation Report are assumed to fall under Corps jurisdiction pursuant to Section 404 of the CWA. There are no additional features that would fall under the RWQCB jurisdiction pursuant to the CWA and/or Porter-Cologne Water Quality Control Act. However, given the EPA and the Corps published the Navigable Waters Protection Rule, which exempts ephemeral features as "Waters of the United States," the mapped ephemeral streams within the Brunswick Area will most likely not be regulated under the CWA.

The RWQCB pursuant to Section 401 of the CWA also has jurisdiction over areas subject to regulation by the Corps under Section 404 of the CWA. As detailed in the CWA, any proposed action that would place fill or dredge material within areas identified as Corps jurisdictional wetlands or waters would require a Department of the Army Section 404 permit and a RWQCB Section 401 Water Quality Certification, or waiver thereof, prior to the placement of fill or dredge material within such features. This investigation determined that the perennial, intermittent, and ephemeral streams within the Brunswick Area and associated riparian habitat associated with South Fork Wolf Creek would likely fall under CDFW jurisdiction as this area contains a bed and bank with associated riparian habitat. Any proposed alteration of the mapped streams and associated riparian habitat most likely would require a Streambed Alteration Agreement from the CDFW pursuant to Section 1600 *et. seq.* of the California Fish and Wildlife Code prior to any future construction within the Brunswick Area, as discussed previously.

Prior to the development of such permit applications for the potential placement of fill or dredged material within any mapped wetlands or below the OHWM of any of the streams mapped within the Brunswick Area, this Delineation Report should be submitted along with a request for a Preliminary Jurisdictional Determination ("PJD") as part of the Corps Section 404 permit process if any potential dredge or fill material is to be placed within any Corps jurisdictional wetlands-waters features. It is recommended that the PJD request be submitted along with this Delineation Report and a CWA Section 404 permit application concurrently, if feasible, given the Corps gives priority to PJD requests that include a permit application.

In addition, it is recommended that a functional or conditions assessment be conducted within the Brunswick Area given that the functional values of the mapped "waters of the

U.S.," including wetlands, within the site will assist with the determination of any required compensatory mitigation to offset fill and/or dredge impacts to such CWA regulated features. The results of the functional or conditions assessment would be included as part of any CWA Section 404 permit application and would be integrated into the identification of any proposed compensatory mitigation as part of the permit package.

6.0 REFERENCES

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Appendix A

Project Overview Area Figures



Grass Valley, CA
Grass Valley 7.5 minute USGS quadrangle
T16N, R8E Section 36 &
T16N, R9E Section 31

Coordinate System: NAD 83 Zone 10N
Projection: Transverse Mercator
Datum: D_North_American_1983

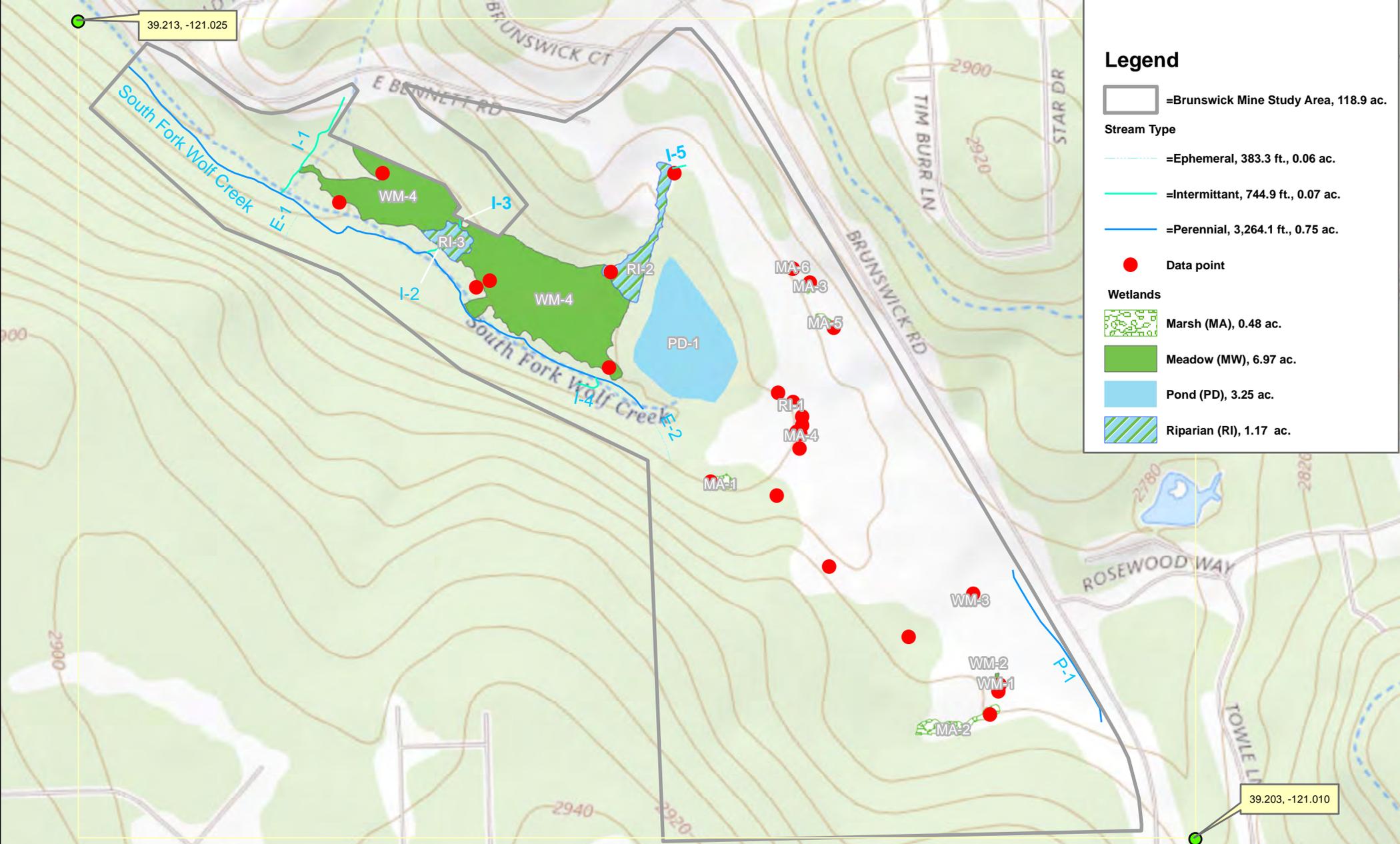
Figure. Brunswick Industrial Site



SCALE: 1 inch = 500 feet

Legend

 = Brunswick Industrial Site 118.93 ac.



Legend

- =Brunswick Mine Study Area, 118.9 ac.

Stream Type

- =Ephemeral, 383.3 ft., 0.06 ac.
- =Intermittant, 744.9 ft., 0.07 ac.
- =Perennial, 3,264.1 ft., 0.75 ac.

- Data point

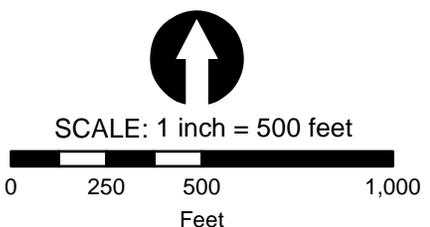
Wetlands

- Marsh (MA), 0.48 ac.
- Meadow (MW), 6.97 ac.
- Pond (PD), 3.25 ac.
- Riparian (RI), 1.17 ac.

Figure X. Brunswick Mine Study Area Aquatic Resources Overview, USGS basemap.

Grass Valley, CA (APNs 006-441-003, 006-441-004, 006-441-005, 006-441-034, 009-630-037 & 009-630-039)
 Grass Valley 7.5 minute USGS quadrangle
 T16N, R8E Section 36 &
 T16N, R9E Section 31

Coordinate System: NAD 83 Zone 10N
 Projection: Transverse Mercator
 Datum: D_North_American_1983



This delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the Western Mountains Regional Supplement (2010). The identification of ordinary high water mark (OHWM) was based on A Guide to Ordinary High Water Mark (OHWM) for Non-Perennial Streams in the Western Mountains (2014).

Created August 31, 2020.



Legend

 Project Area, 10.3 ac.

 = Data point

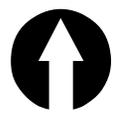
Wetlands

 = Roadside wetland, .09 ac.

Figure. East Bennett Road Right of Way

Grass Valley, CA
 Grass Valley 7.5 minute USGS quadrangle
 T16N, R8E Section 25

Coordinate System: NAD 83 Zone 10N
 Projection: Transverse Mercator
 Datum: D_North_American_1983



SCALE: 1 inch = 600 feet

This delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the Western Mountains Regional Supplement (2010). The identification of ordinary high water mark (OHWM) was based on A Guide to Ordinary High Water Mark (OHWM) for Non-Perennial Streams in the Western Mountains (2014).

Created January 1, 2019

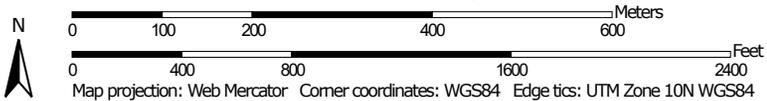
Appendix B

USDA Soils Maps

Soil Map—Nevada County Area, California



Map Scale: 1:8,350 if printed on A landscape (11" x 8.5") sheet.



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



Local Roads

Background



Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Nevada County Area, California

Survey Area Data: Version 11, Sep 12, 2018

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

Date(s) aerial images were photographed: Apr 20, 2017—Aug 8, 2017

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.

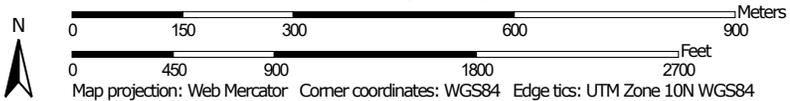
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AfC	Aiken loam, 9 to 15 percent slopes, high precip	12.91	10.9%
AfD	Aiken loam, 15 to 30 percent slopes, N Low Mid Montane	0.71	0.6%
AfE	Aiken loam, 30 to 50 percent slopes	17.7	14.9%
Ao	Alluvial land, clayey	13.8	11.7%
CmB	Cohasset loam, summits, 2 to 15 percent slopes	1.41	1.2%
CmC	Cohasset loam, shoulders, 3 to 20 percent slopes	24.7	20.9%
CmD	Cohasset loam, backslopes, 5 to 30 percent slopes	4.7	3.6%
CoD	Cohasset cobbly loam, 5 to 30 percent slopes	1.9	1.6%
Pr	Placer diggings	40.8	34.5%
SID	Sites silt loam, 15 to 30 percent slopes, N low montane	0.3	0.2%
Totals for Area of Interest		118.93	100.0%

Soil Map—Nevada County Area, California



Map Scale: 1:10,200 if printed on A landscape (11" x 8.5") sheet.



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



Local Roads

Background



Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Nevada County Area, California

Survey Area Data: Version 11, Sep 12, 2018

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

Date(s) aerial images were photographed: Apr 20, 2017—Aug 8, 2017

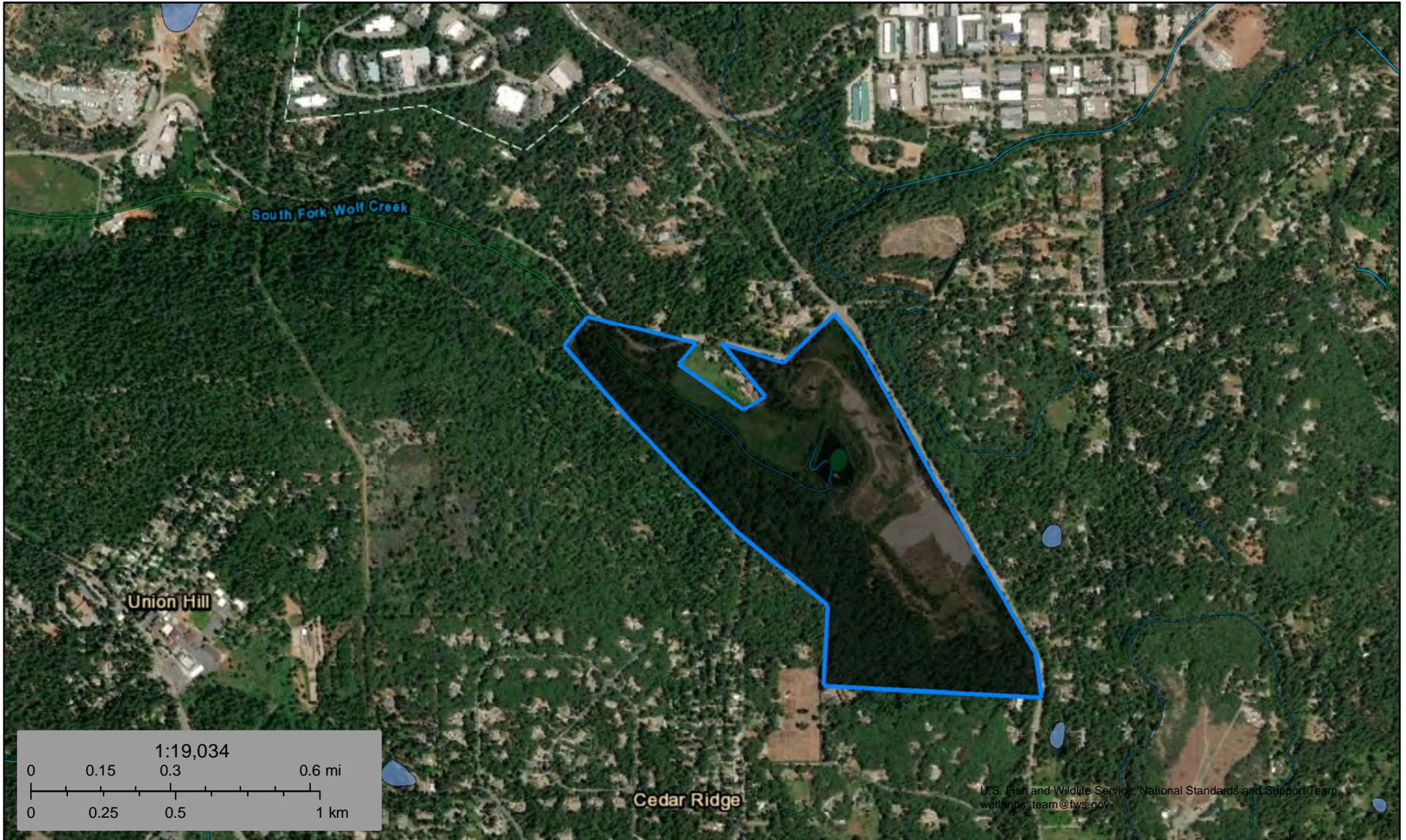
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AfC	Aiken loam, 9 to 15 percent slopes, high precip	0.3	3.8%
AfE	Aiken loam, 30 to 50 percent slopes	0.6	7.0%
BoD	Boomer loam, hard bedrock, 7 to 28 percent slopes	2.7	24.9%
BrD	Boomer, hard bedrock - Rock outcrop complex, 5 to 30 percent slopes	0.2	1.9%
BrE	Boomer, hard bedrock - Rock outcrop complex, 15 to 60 percent slopes	1.0	12.8%
CmD	Cohasset loam, backslopes, 5 to 30 percent slopes	1.1	10.3%
Ct	Cut and fill land	1.1	9.1%
Pr	Placer diggings	1.1	8.7%
SfD	Sierra sandy loam, 15 to 30 percent slopes	0.1	0.7%
SID	Sites silt loam, 15 to 30 percent slopes, N low montane	2.1	20.8%
Totals for Area of Interest		10.3	100.0%

Appendix C

National Wetland Inventory (NWI) Maps

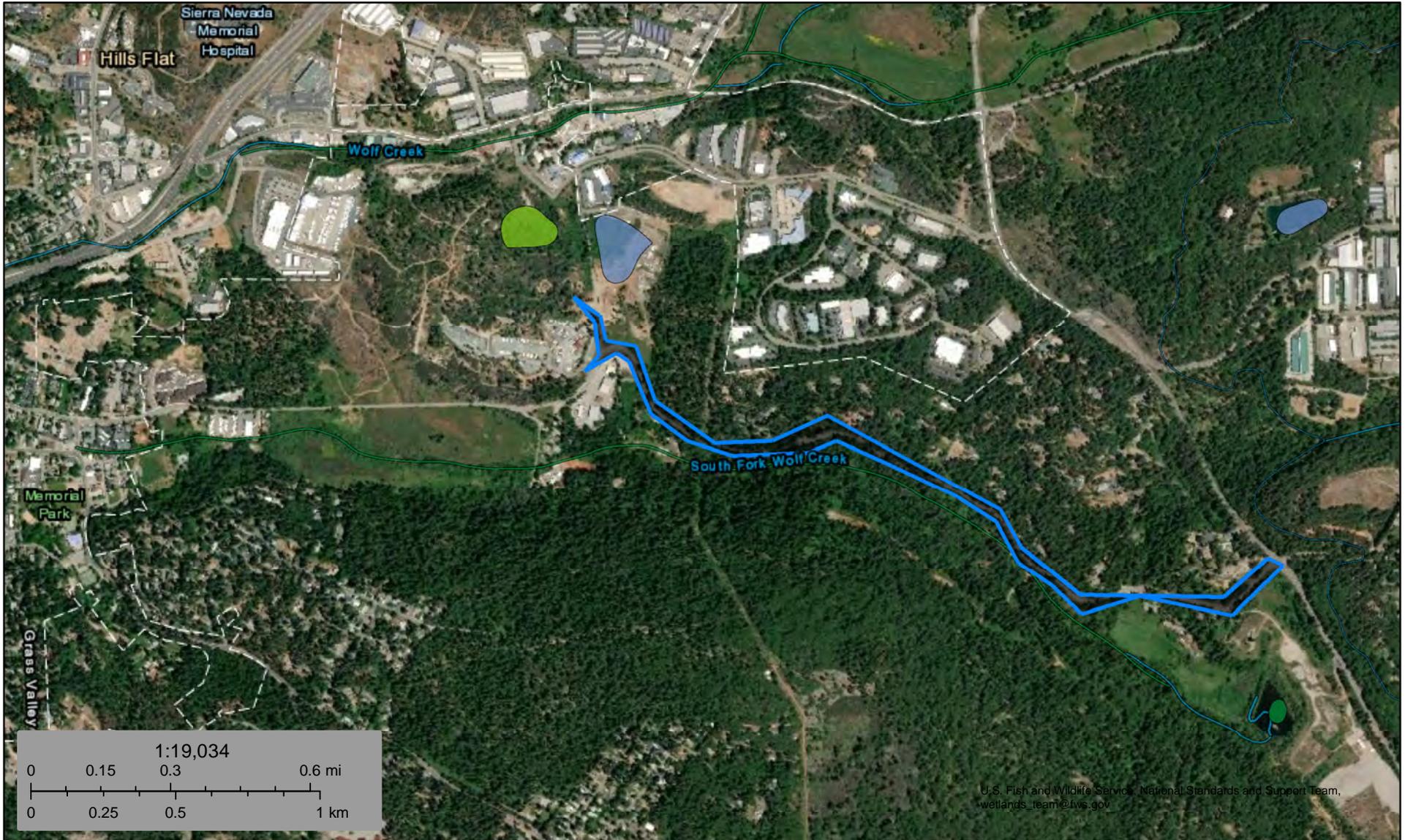


December 7, 2018

Wetlands

- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



December 7, 2018

Wetlands

- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
|  | Freshwater Pond |  | Riverine |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Appendix D

Plants Observed During Aquatic Resources Delineation

VASCULAR PLANTS OCCURRING IN STUDY AREA

Scientific Name	Common Name	Origin	Form	Rarity Status	Wetland Status (WMVC 2014)	CAL-IPC Status
<i>Acer macrophyllum</i>	Bigleaf maple	native	Tree	-	FACU	-
<i>Agoseris retrorsa</i>	Spear leaved agoseris	native	perennial herb	-	-	-
<i>Agrostis gigantea</i>	Creeping bentgrass	non-native	perennial grass	-	FAC	-
<i>Ailanthus altissima</i>	Tree of heaven	non-native (invasive)	Tree	-	FACU	Moderate
<i>Aira caryophyllea</i>	Silvery hairgrass	non-native (invasive)	annual grass	-	FACU	-
<i>Allium amplexens</i>	Narrow leaved onion	native	perennial herb (bulb)	-	-	-
<i>Alnus rhombifolia</i>	White alder	native	Tree	-	FACW	-
<i>Ammi visnaga</i>	Visnaga	non-native	annual, biennial herb	-	-	-
<i>Anaphalis margaritacea</i>	Pearly everlasting	native	perennial herb	-	FACU	-
<i>Andropogon virginicus</i> var. <i>virginicus</i>	Broomsedge bluestem	non-native	perennial grass	-	FAC	-
<i>Arbutus menziesii</i>	Madrone	native	Tree	-	-	-
<i>Arctostaphylos mewukka</i> ssp. <i>mewukka</i>	Indian manzanita	native	Shrub	-	-	-
<i>Arctostaphylos viscida</i> ssp. <i>viscida</i>	Smooth white leaf manzanita	native	tree, shrub	-	-	-
<i>Artemisia douglasiana</i>	California mugwort	native	perennial herb	-	FACW	-
<i>Asclepias speciosa</i>	Showy milkweed	native	perennial herb	-	FAC	-
<i>Avena</i> sp.	-	-	-	-	-	-
<i>Baccharis pilularis</i>	Coyote brush	native	Shrub	-	-	-
<i>Berberis aquifolium</i> var. <i>repens</i>	Creeping Oregon grape	native	Shrub	-	FACU	-
<i>Brodiaea minor</i>	Low brodiaea	native	perennial herb	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status	Wetland Status (WMVC 2014)	CAL-IPC Status
<i>Brodiaea sierrae</i>	Sierra foothills brodiaea	native	perennial herb	Rank 4.3	-	-
<i>Bromus hordeaceus</i>	Soft chess	non-native (invasive)	annual grass	-	FACU	Limited
<i>Bromus madritensis</i>	Foxtail chess, foxtail brome	non-native	annual grass	-	FACU	-
<i>Calocedrus decurrens</i>	Incense cedar	native	Tree	-	-	-
<i>Calycadenia multiglandulosa</i>	Rosin weed	native	annual herb	-	-	-
<i>Carex feta</i>	Green sheathed sedge	native	perennial grasslike herb	-	FACW	-
<i>Ceanothus cuneatus</i>	Buck brush	native	Shrub	-	-	-
<i>Ceanothus integerrimus</i>	Deer brush	native	Shrub	-	-	-
<i>Ceanothus lemmonii</i>	Lemmon's ceanothus	native	Shrub	-	-	-
<i>Centaurea solstitialis</i>	Yellow starthistle	non-native (invasive)	annual herb	-	-	High
<i>Centaureum tenuiflorum</i>	Slender centaury	non-native	annual herb	-	FACW	-
<i>Centranthus sp.</i>	-	-	-	-	-	-
<i>Centromadia fitchii</i>	Spikeweed	native	annual herb	-	FACU	-
<i>Chlorogalum pomeridianum</i>	Amole	native	perennial herb	-	-	-
<i>Chondrilla juncea</i>	Skeleton weed	non-native (invasive)	perennial herb	-	-	Moderate
<i>Cichorium intybus</i>	Chicory	non-native	perennial herb	-	FACU	-
<i>Cirsium vulgare</i>	Bullthistle	non-native (invasive)	perennial herb	-	FACU	Moderate
<i>Cornus nuttallii</i>	Mountain dogwood	native	Shrub	-	FACU	-
<i>Cornus sericea</i>	American dogwood	native	Shrub	-	FACW	-
<i>Cortaderia jubata</i>	Andean pampas grass	non-native (invasive)	perennial grass	-	FACU	High
<i>Crataegus monogyna</i>	Hawthorn	non-native (invasive)	Shrub	-	FAC	Limited
<i>Croton setiger</i>	Turkey-mullein	native	perennial herb	-	-	-
<i>Cynodon dactylon</i>	Bermuda grass	non-native (invasive)	perennial grass	-	FACU	Moderate
<i>Cynosurus echinatus</i>	Dogtail grass	non-native (invasive)	annual grass	-	-	Moderate
<i>Cyperus eragrostis</i>	Tall cyperus	native	perennial grasslike herb	-	FACW	-
<i>Dactylis glomerata</i>	Orchardgrass	non-native (invasive)	perennial grass	-	FACU	Limited

Scientific Name	Common Name	Origin	Form	Rarity Status	Wetland Status (WMVC 2014)	CAL-IPC Status
<i>Danthonia californica</i>	California oatgrass	native	perennial grass	-	FAC	-
<i>Deschampsia elongata</i>	Hairgrass	native	perennial grass	-	FACW	-
<i>Elymus caput-medusae</i>	Medusa head	non-native	annual grass	-	-	-
<i>Elymus elymoides</i>	Squirrel tail grass	native	perennial grass	-	FACU	-
<i>Elymus hispidus</i>	Intermediate wheatgrass	non-native	perennial grass	-	-	-
<i>Epilobium sp.</i>	-	-	-	-	-	-
<i>Epipactis gigantea</i>	Stream orchid	native	perennial herb	-	OBL	-
<i>Eriodictyon californicum</i>	Yerba santa	native	Shrub	-	-	-
<i>Eriophyllum lanatum</i>	Woolly sunflower	native	perennial herb	-	-	-
<i>Euthamia occidentalis</i>	Western goldenrod	native	perennial herb	-	FACW	-
<i>Festuca arundinacea</i>	Reed fescue	non-native (invasive)	perennial grass	-	FAC	Moderate
<i>Festuca idahoensis</i>	Blue fescue	native	perennial grass	-	FACU	-
<i>Festuca microstachys</i>	Small fescue	native	annual grass	-	-	-
<i>Ficus sp.</i>	-	-	-	-	-	-
<i>Frangula californica ssp. tomentella</i>	Hoary coffeeberry	native	Shrub	-	-	-
<i>Frangula rubra</i>	Red buckthorn	native	Shrub	-	-	-
<i>Galium porrigens</i>	Climbing bedstraw	native	vine, shrub	-	-	-
<i>Garrya fremontii</i>	Fremont's silk tassel	native	Shrub	-	-	-
<i>Grindelia camporum</i>	Gumweed	native	perennial herb	-	FACW	-
<i>Grindelia sp.</i>	-	-	-	-	-	-
<i>Hedera helix</i>	English ivy	non-native (invasive)	vine, shrub	-	FACU	-

Scientific Name	Common Name	Origin	Form	Rarity Status	Wetland Status (WMVC 2014)	CAL-IPC Status
<i>Hemizonella minima</i>	Opposite leaved tarweed	native	annual herb	-	-	-
<i>Hirschfeldia incana</i>	Mustard	non-native (invasive)	perennial herb	-	-	Moderate
<i>Holcus lanatus</i>	Common velvetgrass	non-native (invasive)	perennial grass	-	FAC	Moderate
<i>Hypericum perforatum ssp. perforatum</i>	Klamathweed	non-native	perennial herb	-	FACU	-
<i>Hypochaeris radicata</i>	Hairy cats ear	non-native (invasive)	perennial herb	-	FACU	Moderate
<i>Juncus articulatus ssp. articulatus</i>	Jointed rush	native	perennial grasslike herb	-	OBL	-
<i>Juncus balticus ssp. ater</i>	Baltic rush	native	perennial grasslike herb	-	FACW	-
<i>Juncus confusus</i>	Colorado rush	native	perennial grasslike herb	-	FAC	-
<i>Juncus effusus ssp. pacificus</i>	Pacific rush	native	perennial grasslike herb	-	FACW	-
<i>Juncus trilocularis</i>	-	native	annual grasslike herb	-	-	-
<i>Lactuca serriola</i>	Prickly lettuce	non-native (invasive)	annual herb	-	FACU	-
<i>Lathyrus latifolius</i>	Sweet pea	non-native	perennial herb	-	-	-
<i>Leontodon saxatilis</i>	Hawkbit	non-native	annual herb	-	FACU	-
<i>Leucanthemum vulgare</i>	Oxe eye daisy	non-native (invasive)	perennial herb	-	FACU	Moderate
<i>Lonicera hispidula</i>	Pink honeysuckle	native	vine, shrub	-	FACU	-
<i>Lonicera interrupta</i>	Chaparral honeysuckle	native	vine, shrub	-	-	-
<i>Lotus corniculatus</i>	Bird's foot trefoil	non-native (invasive)	perennial herb	-	FAC	-
<i>Lysimachia arvensis</i>	Scarlet pimpernel	non-native	annual herb	-	FAC	-
<i>Madia gracilis</i>	Gumweed	native	annual herb	-	-	-
<i>Melica californica</i>	California melic	native	perennial grass	-	-	-
<i>Melilotus albus</i>	White sweetclover	non-native (invasive)	annual, biennial herb	-	-	-
<i>Muhlenbergia rigens</i>	Deergrass	native	perennial grass	-	UPL	-

Scientific Name	Common Name	Origin	Form	Rarity Status	Wetland Status (WMVC 2014)	CAL-IPC Status
<i>Parthenocissus sp.</i>	-	-	-	-	-	-
<i>Penstemon heterophyllus</i>	Foothill penstemon	native	perennial herb	-	-	-
<i>Pickeringia montana</i>	Chaparral pea	native	Shrub	-	-	-
<i>Pinus ponderosa</i>	Yellow pine	native	Tree	-	FACU	-
<i>Plantago lanceolata</i>	Ribwort	non-native (invasive)	perennial herb	-	FACU	Limited
<i>Polygala cornuta</i>	Sierra milkwort	native	perennial herb	-	FACW	-
<i>Polypogon sp.</i>	-	-	-	-	-	-
<i>Populus fremontii ssp. fremontii</i>	Cottonwood	native	Tree	-	FAC	-
<i>Poterium sanguisorba</i>	Garden burnet	non-native	perennial herb	-	UPL	-
<i>Prunella vulgaris</i>	Self heal	native	perennial herb	-	FACU	-
<i>Prunus subcordata</i>	Sierra plum	native	tree, shrub	-	-	-
<i>Pyracantha sp.</i>	-	-	-	-	-	-
<i>Quercus garryana var. semota</i>	Oregon white oak	native	Tree	-	FACU	-
<i>Rhamnus crocea</i>	Redberry	native	Shrub	-	-	-
<i>Rosa canina</i>	Dog rose	non-native	Shrub	-	-	-
<i>Rubus armeniacus</i>	Himalayan blackberry	non-native (invasive)	Shrub	-	FAC	High
<i>Rubus leucodermis</i>	White bark raspberry	native	Shrub	-	FACU	-
<i>Rumex crispus</i>	Curly dock	non-native (invasive)	perennial herb	-	FAC	Limited
<i>Salix exigua</i>	Narrowleaf willow	native	tree, shrub	-	FACW	-
<i>Salix laevigata</i>	Polished willow	native	Tree	-	FACW	-
<i>Salix lasiolepis</i>	Arroyo willow	native	tree, shrub	-	FACW	-
<i>Salvia sonomensis</i>	Sonoma sage	native	perennial herb	-	-	-
<i>Schoenoplectus acutus var. occidentalis</i>	Tule	native	perennial grasslike herb	-	OBL	-
<i>Scutellaria tuberosa</i>	Dannie's scullcap	native	perennial herb	-	-	-

Scientific Name	Common Name	Origin	Form	Rarity Status	Wetland Status (WMVC 2014)	CAL-IPC Status
<i>Solidago sp.</i>	-	-	-	-	-	-
<i>Toxicodendron diversilobum</i>	Poison oak	native	vine, shrub	-	FAC	-
<i>Tragopogon dubius</i>	Goat's beard	non-native (invasive)	perennial herb	-	-	-
<i>Trichostema lanceolatum</i>	Vinegarweed	native	annual herb	-	FACU	-
<i>Trifolium hirtum</i>	Rose clover	non-native (invasive)	annual herb	-	-	Limited
<i>Trifolium sp.</i>	-	-	-	-	-	-
<i>Triteleia hyacinthina</i>	Wild hyacinth	native	perennial herb	-	FAC	-
<i>Typha domingensis</i>	Cattail	native	perennial herb	-	OBL	-
<i>Verbascum blattaria</i>	Moth mullein	non-native	perennial herb	-	UPL	-
<i>Verbascum thapsus</i>	Woolly mullein	non-native (invasive)	perennial herb	-	FACU	Limited
<i>Vitis californica</i>	California wild grape	native	vine, shrub	-	FACU	-
<i>Wyethia angustifolia</i>	Narrow leaved mule ears	native	perennial herb	-	FACU	-
<i>Wyethia bolanderi</i>	Bolander's wyethia	native	perennial herb	-	-	-

Appendix E

Aquatic Resources Delineation Photo Log

Photos of the December 2018 and July/August 2019 Surveys of the Project Area



Photo 1: Looking south and southeast within the Brunswick Industrial Site. Forested area.



Photo 2: Southern/southeastern section of the Brunswick Industrial Site. Forested area.



Photo 3: Eastern section of the Brunswick Industrial Site looking northeast from southern area of the site.



Photo 4: Mapped Wet Meadow Wetland (WM-1) within the Brunswick Industrial Site.



Photo 5: Mapped freshwater marsh wetland (MA-2). Soils were saturated and contained characteristics of hydric soils. Large area mapped as potentially jurisdictional.



Photo 6: Mapped freshwater marsh wetland (MA-1). Wetland area contains standing water and dominated by freshwater marsh wetland hydrophytic vegetation.



Photo 7: Mapped South Fork of Wolf Creek with origination from outside the Brunswick Industrial Site. Water present within the stream channel coming from existing culvert.



Photo 8: Existing culvert daylights within the Brunswick Industrial Site at the South Fork Wolf Creek just upstream from Photo 7.



Photo 9: Large mapped pond (3.25 acres) within Brunswick Industrial Site (PD-1). Historical pond used during operation of the mill. Non-jurisdictional feature.



Photo 10: Hydrants along eastern boundary of the Brunswick Industrial Site.



Photo 11: Mapped riparian wetland (RI-1) within central section of the Brunswick Industrial Site. Adjacent upland areas did not contain standing water or hydric soils.



Photo 12: Small freshwater marsh wetland (MA-3) within the eastern, disturbed section of the Brunswick Industrial Site. Water runs off of the adjacent Brunswick Road into the site.



Photo 13: Mapped wet meadow wetland (WM-4) approximately 6.93 acres in size along the northwestern open section of the Brunswick Industrial Site. South Fork Wolf Creek located to the right. Photo from December 2018.



Photo 14: Mapped wet meadow wetland (WM-4) approximately 6.93 acres in size along the northwestern open section of the Brunswick Industrial Site. Photo looking southeast from large wet meadow. Photo taken in August 2019.



Photo 15: Edge of previous WRA, Inc. mapped riparian wetland (RI-2). Edge of RI-2 was moved 15 feet to other side of ponderosa pine down within steep stream channel.



Photo 16: Edge of previous WRA, Inc. mapped riparian wetland (RI-2). Edge of RI-2 was moved 15 feet to edge of willows. Historic mining infrastructure in background.

Photos of East Bennett Road ROW



Photo 17: Mapped Roadside Wetland (RW-1, 0.09 acres) along East Bennett Road. Wetland area contained standing water and dominated by hydrophytic vegetation.



Photo 18. East Bennett Road ROW. No drainages or wetlands along this section of Project Area.



Photo 19. Manmade drainage along north side of East Bennett Rd. ROW. Drainage located outside of ROW and drains to the south side of East Bennett Rd. ROW.



Photo 20. Wet area outside of the East Bennett Rd. ROW on north side of road. Large culvert crosses under East Bennett Rd. at this location and connects outside of ROW.



Photo 21. Northern side of E. Bennett Rd. ROW



Photo 22. South side culvert/drainage along East Bennett Road ROW. No bed and bank or OHWM; therefore, drainage is non-jurisdictional. Located towards lower end of E. Bennett Road ROW.

Appendix F

Aquatic Resources Delineation Results Figures



Legend

- Brunswick Mine Study Area, 118.9 ac.
- Stream Type**
 - ⋯ Ephemeral, 383.3 ft., 0.06 ac.
 - Intermittant, 744.9 ft., 0.07 ac.
 - Perennial, 3,264.1 ft., 0.75 ac.
- Data point
- Wetlands**
 - Marsh (MA), 0.48 ac.
 - Meadow (MW), 6.97 ac.
 - Pond (PD), 3.25 ac.
 - Riparian (RI), 1.17 ac.
- Elevation Contour (20 ft. intervals)

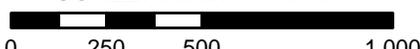
Figure X. Brunswick Mine Study Area Aquatic Resources.

Grass Valley, CA (APNs 006-441-003, 006-441-004, 006-441-005, 006-441-034, 009-630-037 & 009-630-039)
 Grass Valley 7.5 minute USGS quadrangle
 T16N, R8E Section 36 &
 T16N, R9E Section 31

Coordinate System: NAD 83 Zone 10N
 Projection: Transverse Mercator
 Datum: D_North_American_1983



SCALE: 1 inch = 500 feet



0 250 500 1,000
Feet

This delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the Western Mountains Regional Supplement (2010). The identification of ordinary high water mark (OHWM) was based on A Guide to Ordinary High Water Mark (OHWM) for Non-Perennial Streams in the Western Mountains (2014).

Map Created August 31, 2020.

Imagery Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Date taken: 6/22/2018

Figure X. Aquatic Resource Delineation Map. Brunswick Mine Study Area, Central.

Grass Valley, CA (APNs 006-441-003, 006-441-004, 006-441-005, 006-441-034, 009-630-037 & 009-630-039)
 Grass Valley 7.5 minute USGS quadrangle
 T16N, R8E Section 36 & T16N, R9E Section 31

Coordinate System: NAD 83 Zone 10N
 Projection: Transverse Mercator
 Datum: D_North_American_1983

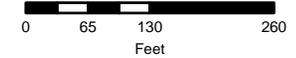
This delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the Western Mountains Regional Supplement (2010). The identification of ordinary high water mark (OHWM) was based on A Guide to Ordinary High Water Mark (OHWM) for Non-Perennial Streams in the Western Mountains (2014).

Map Created August 31, 2020.

Imagery Date taken: 6/22/2018



SCALE: 1 inch = 200 feet

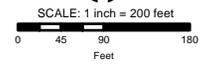


Legend

- Brunswick Mine Study Area
- Stream Type**
 - Ephemeral
 - Intermittant
 - Perennial
- Data point
- Wetlands**
 - Marsh (MA)
 - Meadow (MW)
 - Pond (PD)
 - Riparian (RI)
 - Elevation Contour (20 ft. intervals)



Figure X. Aquatic Resource Delineation, Brunswick Mine Study Area, East.



Grass Valley, CA (APNs 006-441-003, 006-441-004, 006-441-005, 006-441-034, 009-630-037 & 009-630-039)
 Grass Valley 7.5 minute USGS quadrangle T16N, R8E Section 36 & T16N, R9E Section 31

Coordinate System: NAD 83 Zone 10N
 Projection: Transverse Mercator
 Datum: D_North_American_1983
 This delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the Western Mountains Regional Supplement (2010). The identification of ordinary high water mark (OHWM) was based on A Guide to Ordinary High Water Mark (OHWM) for Non-Perennial Streams in the Western Mountains (2014).

Map Created August 31, 2020.

Imagery Date taken: 6/22/2018

Legend

- Brunswick Mine Study Area
- Stream Type**
- Ephemeral
- Intermittent
- Perennial
- Data point
- Wetlands**
- Marsh (MA)
- Meadow (MW)
- Elevation Contour (20 ft. intervals)



39.208, -121.018

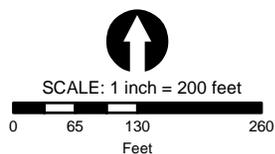
39.203, -121.010



Grass Valley, CA (APNs 006-441-003, 006-441-004, 006-441-005, 006-441-034, 009-630-037 & 009-630-039)
 Grass Valley 7.5 minute USGS quadrangle T16N, R8E Section 36

Coordinate System: NAD 83 Zone 10N
 Projection: Transverse Mercator
 Datum: D_North_American_1983

Figure X. Aquatic Resource Delineation Map. Brunswick Mine Study Area, West.



This delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the Western Mountains Regional Supplement (2010). The identification of ordinary high water mark (OHWM) was based on A Guide to Ordinary High Water Mark (OHWM) for Non-Perennial Streams in the Western Mountains (2014).

Map Created August 31, 2020.
 Imagery Date taken: 6/22/2018

Legend

- | | |
|---------------------------|--------------------------------------|
| Brunswick Mine Study Area | Wetlands |
| Ephemeral | Meadow (MW) |
| Intermittant | Pond (PD) |
| Perennial | Riparian (RI) |
| Data point | Elevation Contour (20 ft. intervals) |



Legend

-  Project Area, 10.3 ac.
-  = Data point
- Wetlands**
-  = Roadside wetland, .09 ac.

Grass Valley, CA
 Grass Valley 7.5 minute USGS quadrangle
 T16N, R8E Section 25

Coordinate System: NAD 83 Zone 10N
 Projection: Transverse Mercator
 Datum: D_North_American_1983

**Figure. Aquatic Resources Delineation Map
 East Bennett Road Right of Way**



SCALE: 1 inch = 100 feet

This delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the Western Mountains Regional Supplement (2010). The identification of ordinary high water mark (OHWM) was based on A Guide to Ordinary High Water Mark (OHWM) for Non-Perennial Streams in the Western Mountains (2014).

Created January 1, 2019

Appendix G

Aquatic Resources Delineation Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: WM – 1 Upland
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Upland soil test pit and survey point adjacent to wet meadow wetland (WM – 1). This upland point was not previously surveyed by ESA Associates (2007) or WRA (2008).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <input type="checkbox"/> 1 (A) Total Number of Dominant Species Across All Strata: <input type="checkbox"/> 1 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <input type="checkbox"/> 100% (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <input type="checkbox"/> 0 x 1 = <input type="checkbox"/> 0 FACW species <input type="checkbox"/> 0 x 2 = <input type="checkbox"/> 0 FAC species <input type="checkbox"/> 1 x 3 = <input type="checkbox"/> 3 FACU species <input type="checkbox"/> 0 x 4 = <input type="checkbox"/> 0 UPL species <input type="checkbox"/> 0 x 5 = <input type="checkbox"/> 0 Column Totals: <input type="checkbox"/> 1 (A) <input type="checkbox"/> 3 (B) Prevalence Index = B/A = <input type="checkbox"/> 3.0
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	15%	N	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	10%	N	FACW	
2. <u>Juncus balticus ssp. ater</u>	5%	N	FACW	
3. <u>Rubus armeniacus</u>	45%	Y	FAC	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>35%</u>				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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Remarks: Marginal hydrophytic vegetation dominant in this data point.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 17, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: WM 2 – Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Aiken Loam, 9 to 15 percent slopes, high precipitation (AfC) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? Yes No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Remarks: Wet meadow wetland (WM - 2) is located within the eastern section of the Brunswick Industrial Site. This wetland was not previously delineated by ESA Associates in 2007 or WRA in 2008. This feature appears to be partially fed by runoff coming into the wet meadow from the surrounding hillsides and impervious surfaces.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>2</u> x 2 = <u>4</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>3</u> (A) <u>7</u> (B) Prevalence Index = B/A = <u>2.33</u>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	20%	Y	FACW	
2. <u>Rubus armeniacus</u>	25%	Y	FAC	
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	10%	N	FACW	
2. <u>Juncus balticus ssp. ater</u>	20%	Y	FACW	
3. <u>Carex fet</u>	10%	N	FACW	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>15%</u>				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks: Hydrophytic vegetation dominant in this data point.

SOIL

Sampling Point: WM – 2 Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16"	10YR 3/1	95%	5YR 5/4	5%	RM	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: The soil type is Aiken Loam, 9 to 15 percent, high precipitation and is not an NRCS hydric soil on the Nevada County list. The soil did exhibit properties of a hydric soil given the presence of redox features within the matrix. Soil is clay loam.

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators	Secondary Indicators (2 required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Photograph (B7) <input type="checkbox"/> Surface Cracks (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Li Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____ | Wetland Hydrology Present? Yes No
 Saturation Present? (includes capillary fringe)

Describe Recorded Data

Remarks: This feature does show indicators of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 17, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: WM 3 – Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Alluvial Land, Clayey (Ao) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks: Wet meadow wetland (WM - 3) is located within the eastern section of the Brunswick Industrial Site within a narrow depressional area. This wetland was not previously delineated by ESA Associates in 2007 or WRA in 2008. This feature appears to be partially fed by runoff coming into the wet meadow from the surrounding impervious surfaces, including access to the site off of Brunswick Road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>2</u> x 2 = <u>4</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>4</u> (B) Prevalence Index = B/A = <u>2.00</u>
Sapling/Shrub Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	20%	Y	FACW	
2. <u>Rubus armeniacus</u>	10%	N	FAC	
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	10%	N	FACW	
2. <u>Juncus balticus ssp. ater</u>	20%	Y	FACW	
3. <u>Carex feta</u>	10%	N	FACW	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>15%</u>				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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Remarks: Hydrophytic vegetation dominant in this data point.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: WM – 3 Upland Point/West of WM - 3
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Upland soil test pit and survey point located west of wet meadow wetland (WM – 3). This upland point was not previously surveyed by ESA Associates (2007) or WRA (2008).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <input type="text" value="1"/> (A) Total Number of Dominant Species Across All Strata: <input type="text" value="1"/> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <input type="text" value="100%"/> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <input type="text" value="0"/> x 1 = <input type="text" value="0"/> FACW species <input type="text" value="0"/> x 2 = <input type="text" value="0"/> FAC species <input type="text" value="1"/> x 3 = <input type="text" value="3"/> FACU species <input type="text" value="0"/> x 4 = <input type="text" value="0"/> UPL species <input type="text" value="0"/> x 5 = <input type="text" value="0"/> Column Totals: <input type="text" value="1"/> (A) <input type="text" value="3"/> (B) Prevalence Index = B/A = <input type="text" value="3.0"/>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	5%	N	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	10%	N	FACW	
2. <u>Juncus balticus ssp. ater</u>	5%	N	FACW	
3. <u>Rubus armeniacus</u>	35%	Y	FAC	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>45%</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Marginal hydrophytic vegetation dominant in this data point.

SOIL

Sampling Point: WM – 3 Upland West

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16"	10YR 4/4	100					Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p>
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<p>Restrictive Layer (if present):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks: The soil type is an NRCS hydric soil on the Nevada County list. The soil did not exhibit properties of a hydric soil. Soil is a clay loam.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</p> <p><input type="checkbox"/> Salt Crust (B11)</p> <p><input type="checkbox"/> Aquatic Invertebrates (B13)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p>Secondary Indicators (2 or more required)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> Shallow Aquitard (D3)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p> <p><input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)</p> <p><input type="checkbox"/> Frost-Heave Hummocks (D7)</p>
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<p>Field Observations:</p> <p>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature does not contain the presence of wetland hydrology with a single secondary indicator of wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: WM – 4 Central Upland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Alluvial Land, Clayey (Ao) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Upland central section of WM – 4 in the northwestern section of Brunswick Industrial Site. This sampling site was just along the southern upland edge of the wet meadow wetland. Clear vegetation break at this location with upland annual grassland species. This wetland was previously mapped by both ESA Associates in 2007 as a riparian wetland and WRA in 2008.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>2</u> x 3 = <u>6</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>6</u> (B) Prevalence Index = B/A = <u>3.0</u>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Holcus lanatus</u>	25%	Y	FAC	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	5%	N	FACW	
2. <u>Juncus balticus ssp. ater</u>	5%	N	FACW	
3. <u>Rubus armeniacus</u>	40%	Y	FAC	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants¹
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
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Remarks: Marginal hydrophytic vegetation dominant in this data point due to dominance by a single FAC species.

SOIL

Sampling Point: WM – 4 Central Upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12"	10YR 4/3	100					Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p>
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<p>Restrictive Layer (if present):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks: The soil type is Alluvial land, clayey, an NRCS hydric soil on the Nevada County list. The soil did not exhibit properties of a hydric soil. Soil is clay loam.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</p> <p><input type="checkbox"/> Salt Crust (B11)</p> <p><input type="checkbox"/> Aquatic Invertebrates (B13)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p>Secondary Indicators (2 or more required)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> Shallow Aquitard (D3)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p> <p><input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)</p> <p><input type="checkbox"/> Frost-Heave Hummocks (D7)</p>
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<p>Field Observations:</p> <p>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature contains the presence of wetland hydrology.

Surface of ground did not exhibit primary indicators of wetland hydrology. Only a single secondary indicator of wetland hydrology was present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: WM – 4 Central Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Alluvial Land, Clayey (Ao) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks: Central section of WM – 4 in the northwestern section of Brunswick Industrial Site. This sampling site was just along the southern edge of the wet meadow wetland. Clear vegetation break at this location with upland annual grassland species. This wetland was previously mapped by both ESA Associates in 2007 as a riparian wetland and WRA in 2008.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>1</u> (A) <u>3</u> (B) Prevalence Index = B/A = <u>3.0</u>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Holcus lanatus</u>	85%	Y	FAC	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	5%	N	FACW	
2. <u>Juncus balticus ssp. ater</u>	5%	N	FACW	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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Remarks: Marginal hydrophytic vegetation dominant in this data point due to dominance by a single FAC species.

SOIL

Sampling Point: WM – 4 Central Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14"	10YR 3/1	95%	5YR 5/6	5%	RM	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input checked="" type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
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Remarks: The soil type is Alluvial land, clayey, an NRCS hydric soil on the Nevada County list. The soil did exhibit properties of a hydric soil given the presence of redox features within the matrix. Soil is clay loam.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:	Wetland Hydrology Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature contains the presence of wetland hydrology.
Surface of ground exhibited primary indicators of wetland hydrology as well as a single secondary indicator of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: WM – 4 NE Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Alluvial Land, Clayey (Ao) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks: Northeastern end of WM – 4 in the northwestern section of Brunswick Industrial Site. This sampling site was just along the edge of the wet meadow wetland. Clear vegetation break at this location with upland annual grassland species. This wetland was previously mapped by both ESA Associates in 2007 as a riparian wetland and WRA in 2008.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>1</u> (A) <u>3</u> (B) Prevalence Index = B/A = <u>3.0</u>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>) 1. <u>Holcus lanatus</u> 90% Y FAC 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>) 1. <u>Juncus effuses ssp. pacificus</u> 2% N FACW 2. <u>Juncus balticus ssp. ater</u> 5% N FACW 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>3%</u>				

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- 5 - Wetland Non-Vascular Plants¹
- Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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Remarks: Marginal hydrophytic vegetation dominant in this data point due to dominance by a single FAC species.

SOIL

Sampling Point: WM – 4 NE Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12"	10YR 2/1	90%	5YR 4/6	10%	RM	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input checked="" type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
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Remarks: The soil type is Alluvial land, clayey, an NRCS hydric soil on the Nevada County list. The soil did exhibit properties of a hydric soil given the presence of redox features within the matrix. Soil is clay loam.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:	Wetland Hydrology Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature contains the presence of wetland hydrology.
Surface of ground exhibited primary indicators of wetland hydrology as well as a single secondary indicator of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: WM – 4 NW Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Remarks: Northwestern corner of WM – 4 in the northwestern section of Brunswick Industrial Site. This sampling site was just along the edge of the wet meadow wetland. Clear vegetation break at this location with upland annual grassland species. This wetland was previously mapped by both ESA Associates in 2007 as a riparian wetland and WRA in 2008.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>1</u> (A) <u>3</u> (B) Prevalence Index = B/A = <u>3.0</u>
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>) 1. <u>Holcus lanatus</u> 85% Y FAC				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>) 1. <u>Juncus effuses ssp. pacificus</u> 3% N FACW 2. <u>Juncus balticus ssp. ater</u> 7% N FACW 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>) 1. _____ 2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				
_____ = Total Cover				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Marginal hydrophytic vegetation dominant in this data point due to dominance by a single FAC species.

SOIL

Sampling Point: WM – 4 NW Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16"	10YR 3/2	95%	5YR 5/6	5%	RM	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input checked="" type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
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Remarks: The soil type is Placer Diggings, an NRCS hydric soil on the Nevada County list. The soil did exhibit properties of a hydric soil given the presence of redox features within the matrix. Soil is clay loam.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:	Wetland Hydrology Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature contains the presence of wetland hydrology.

Surface of ground exhibited primary indicators of wetland hydrology as well as a single secondary indicator of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: WM – 4 SW Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Alluvial Land, Clayey (Ao) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Remarks: Southwest corner section of WM – 4 in the central section of Brunswick Industrial Site. This sampling site was just along the southern edge of the wet meadow wetland. Clear vegetation break at this location with upland annual grassland species. This wetland was previously mapped by both ESA Associates in 2007 as a riparian wetland and WRA in 2008.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
2. _____				Total Number of Dominant Species Across All Strata:	2	(B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC:	100%	(A/B)
4. _____						
_____ = Total Cover				Prevalence Index worksheet:		
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)				Total % Cover of:	Multiply by:	
1. <u>Holcus lanatus</u>	75%	Y	FAC	OBL species	0	x 1 = 0
2. _____				FACW species	1	x 2 = 2
3. _____				FAC species	1	x 3 = 3
4. _____				FACU species	0	x 4 = 0
5. _____				UPL species	0	x 5 = 0
_____ = Total Cover				Column Totals:	2	(A) 5 (B)
Herb Stratum (Plot size: <input type="checkbox"/>)				Prevalence Index = B/A = 2.5		
1. <u>Juncus effuses ssp. pacificus</u>	5%	N	FACW	Hydrophytic Vegetation Indicators:		
2. <u>Juncus balticus ssp. ater</u>	18%	Y	FACW	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation		
3. _____				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%		
4. _____				<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹		
5. _____				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
6. _____				<input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹		
7. _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)		
8. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
9. _____						
10. _____						
11. _____						
_____ = Total Cover				Hydrophytic Vegetation Present?		
Woody Vine Stratum (Plot size: <input type="checkbox"/>)				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
1. _____						
2. _____						
_____ = Total Cover						
% Bare Ground in Herb Stratum <u>2%</u>						

Remarks: Hydrophytic vegetation dominant in this data point due to dominance by both a FAC and FACW species.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 17, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: MA – 1 Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Aiken Loam, 30 to 50 percent slopes (AfE) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks: Marsh wetland associated with an area of perennial fresh water. Pondered area with some open water without vegetation. This marsh wetland is located in a depression and caused by a dam placed within the depression with some culverts connecting the depression and directing site runoff to the depressional area. This wetland was not previously delineated by both ESA Associates (2007) or WRA (2008).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiolepis</u>	30%	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>1</u> x 1 = <u>1</u> FACW species <u>1</u> x 2 = <u>2</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>3</u> (B) Prevalence Index = B/A = <u>1.5</u>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>) 1. <u>Typha latifolia</u> 15% N OBL 2. <u>Schoenoplectus acutus var. occidentalis</u> 25% Y OBL 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>60% water</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Hydrophytic vegetation dominant in this data point. The freshwater marsh vegetation dominated the pondered area and there was some surface water without any vegetation.

SOIL

Sampling Point: MA – 1 Wetland Pt.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16"	Gley 1 7/10Y	100					Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks: The soil type is Aiken Loam, 30 to 50 percent slopes and it is not an NRCS hydric soil on the Nevada County list. The soil exhibited properties of a hydric soil given the presence of gleyed soils 100% within the matrix. Soil is a clay loam.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>10"</u> Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>unknown</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature contains the presence of wetland hydrology and the data point is located along the edge of a ponded freshwater marsh wetland within the eastern section of the Brunswick Industrial Site.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: MA – 1 Upland Point/East of MA - 1
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Upland soil test pit and survey point east of marsh wetland (MA – 1). This upland point was not previously surveyed by ESA Associates (2007) or WRA (2008).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>1</u> x 2 = <u>2</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>5</u> (B) Prevalence Index = B/A = <u>2.5</u>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	20%	Y	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	5%	N	FACW	
2. <u>Juncus balticus ssp. ater</u>	5%	N	FACW	
3. <u>Rubus armeniacus</u>	30%	Y	FAC	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>35%</u>				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks: Hydrophytic vegetation dominant in this data point.

SOIL

Sampling Point: MA – 1 Upland East

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14"	10YR 4/3	100					Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p>
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<p>Restrictive Layer (if present):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks: The soil type is an NRCS hydric soil on the Nevada County list. The soil did not exhibit properties of a hydric soil. Soil is a clay loam.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</p> <p><input type="checkbox"/> Salt Crust (B11)</p> <p><input type="checkbox"/> Aquatic Invertebrates (B13)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p>Secondary Indicators (2 or more required)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> Shallow Aquitard (D3)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p> <p><input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)</p> <p><input type="checkbox"/> Frost-Heave Hummocks (D7)</p>
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<p>Field Observations:</p> <p>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature does not contain the presence of wetland hydrology with a single secondary indicator of wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: MA – 1 Upland Point/Southeast of MA - 1
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks: Upland soil test pit and survey point southeast of marsh wetland (MA – 1) and south of upland MA – 1 east survey point. This upland point was not previously surveyed by ESA Associates (2007) or WRA (2008).

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>1</u> x 2 = <u>2</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>5</u> (B) Prevalence Index = B/A = <u>2.5</u>
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	<u>25%</u>	<u>Y</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	<u>10%</u>	<u>N</u>	<u>FACW</u>	
2. <u>Juncus balticus ssp. ater</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>	
3. <u>Rubus armeniacus</u>	<u>55%</u>	<u>Y</u>	<u>FAC</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>15%</u>				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks: Hydrophytic vegetation dominant in this data point.

SOIL

Sampling Point: MA – 1 Upland Southeast

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16"	10YR 4/4	100					Clay loam	

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 17, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: MA 2 – Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Aiken Loam, 9 to 15 percent slopes, high precipitation (AfC) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks: Marsh wetland (MA - 2) is located within the eastern section of the Brunswick Industrial Site. This wetland was not previously delineated by ESA Associates in 2007 or WRA in 2008. This feature appears to be seasonally ponded given the large depressional shape of the feature, very little vegetation where ponding would occur, and due to saturation of the soils within the first 1 inch of the soils test pit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiolepis</u>	35%	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species Across All Strata: 1 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 1 x 2 = 2 FAC species 0 x 3 = 0 FACU species 0 x 4 = 0 UPL species 0 x 5 = 0 Column Totals: 1 (A) 2 (B) Prevalence Index = B/A = 2.0
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>) 1. <u>Salix lasiolepis</u> 25% N FACW 2. <u>Rubus armeniacus</u> 15% N FAC 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>65%</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Hydrophytic vegetation dominant in this data point where there is vegetation. No upland point taken given this point was taken near the edge of the large depression and abrupt topographical change at the edge of the depressional area contain upland vegetation. Upland point would have been dominated by annual grassland species and Himalayan blackberry.

SOIL

Sampling Point: MA – 2 Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14"	10YR 3/1	95%	5YR 5/6	5%	RM	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input checked="" type="checkbox"/> Redox Depressions (F8) |

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: The soil type is Aiken Loam, 9 to 15 percent, high precipitation and is not an NRCS hydric soil on the Nevada County list. The soil did exhibit properties of a hydric soil given the presence of redox features within the matrix. Soil is clay loam.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input checked="" type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 1"

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature is located within a depressional area that receives runoff from the surrounding impervious surfaces as well as the steep hillsides to the south and to the west of this feature. The clay loam soils are saturated within the first 1 inch of the soil test pit.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 17, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: MA – 3 Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks: Marsh wetland (MA – 3) associated with runoff from Brunswick Road in a small depressional area in the eastern section of the Brunswick Industrial Site. This wetland was not previously delineated by both ESA Associates (2007) or WRA (2008).

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
(Plot size: <input type="checkbox"/>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>3</u> x 2 = <u>6</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>3</u> (A) <u>6</u> (B) Prevalence Index = B/A = <u>2.0</u>
Sapling/Shrub Stratum				
(Plot size: <input type="checkbox"/>)				
1. <u>Salix lasiolepis</u>	30%	Y	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum				
(Plot size: <input type="checkbox"/>)				
1. <u>Juncus effuses ssp. pacificus</u>	20%	Y	FACW	
2. <u>Juncus balticus ssp. ater</u>	10%	N	FACW	
3. <u>Carex feta</u>	20%	Y	FACW	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum				
(Plot size: <input type="checkbox"/>)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum	<u>40%</u>			
				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Remarks: Hydrophytic vegetation dominant in this data point. The freshwater marsh vegetation dominated this small depressional area.

SOIL

Sampling Point: MA – 3 Wetland Pt.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16"	10YR 3/2	90	5YR 5/4	10	RM	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
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Remarks: The soil type is an NRCS hydric soil on the Nevada County list. The soil exhibited properties of a hydric soil. Soil is a clay loam. Soil was saturated at approximately 2 inches in depth.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 2"	Wetland Hydrology Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature contains the presence of wetland hydrology with a single primary indicator and single secondary indicator of wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: MA – 4 Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks: Marsh wetland (MA – 4) associated with runoff from Brunswick Road in a small depressional area in the eastern section of the Brunswick Industrial Site. This wetland was not previously delineated by both ESA Associates (2007) or WRA (2008).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>3</u> x 2 = <u>6</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>3</u> (A) <u>6</u> (B) Prevalence Index = B/A = <u>2.0</u>
Sapling/Shrub Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	<u>30%</u>	<u>Y</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	<u>20%</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Juncus balticus ssp. ater</u>	<u>10%</u>	<u>N</u>	<u>FACW</u>	
3. <u>Carex feta</u>	<u>25%</u>	<u>Y</u>	<u>FACW</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>35%</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Hydrophytic vegetation dominant in this data point. The freshwater marsh vegetation dominated this small depressional area.

SOIL

Sampling Point: MA – 4 Wetland Pt.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10"	10YR 3/2	95	5YR 4/6	5	RM	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
--	---

Remarks: The soil type is an NRCS hydric soil on the Nevada County list. The soil exhibited properties of a hydric soil. Soil is a clay loam. Soil was not saturated.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:	Wetland Hydrology Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature contains the presence of wetland hydrology with a single primary indicator and single secondary indicator of wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: MA – 4 Upland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Upland marsh wetland (MA – 4) soil test pit and survey point. This upland point was not previously surveyed by ESA Associates (2007) or WRA (2008).

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>1</u> x 2 = <u>2</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>5</u> (B) Prevalence Index = B/A = <u>2.5</u>
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	<u>20%</u>	<u>Y</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>	
2. <u>Juncus balticus ssp. ater</u>	<u>10%</u>	<u>N</u>	<u>FACW</u>	
3. <u>Rubus armeniacus</u>	<u>25%</u>	<u>Y</u>	<u>FAC</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>40%</u>				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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Remarks: Hydrophytic vegetation dominant in this data point.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: MA – 4 Upland Point/South of MA - 4
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks: Upland soil test pit and survey point south of marsh wetland (MA – 4). This upland point was not previously surveyed by ESA Associates (2007) or WRA (2008).

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
(Plot size: <input type="checkbox"/>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>1</u> x 2 = <u>2</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>5</u> (B) Prevalence Index = B/A = <u>2.5</u>
Sapling/Shrub Stratum				
(Plot size: <input type="checkbox"/>)				
1. <u>Salix lasiolepis</u>	25%	Y	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum				
(Plot size: <input type="checkbox"/>)				
1. <u>Juncus effuses ssp. pacificus</u>	5%	N	FACW	
2. <u>Juncus balticus ssp. ater</u>	10%	N	FACW	
3. <u>Rubus armeniacus</u>	35%	Y	FAC	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum				
(Plot size: <input type="checkbox"/>)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum	<u>25%</u>			
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Hydrophytic vegetation dominant in this data point.

SOIL

Sampling Point: MA – 4 Upland South

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14"	10YR 4/3	100					Clay loam	

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 17, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: MA – 5 Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Remarks: Marsh wetland (MA – 5) associated with runoff from Brunswick Road in a depressional area in the eastern section of the Brunswick Industrial Site. This wetland was not previously delineated by both ESA Associates (2007) or WRA (2008).

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
(Plot size: <input type="checkbox"/>)				Number of Dominant Species That Are OBL, FACW, or FAC: <input type="checkbox"/> 3 (A)		
1. _____				Total Number of Dominant Species Across All Strata: <input type="checkbox"/> 3 (B)		
2. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <input type="checkbox"/> 100% (A/B)		
3. _____						
4. _____						
_____ = Total Cover				Prevalence Index worksheet:		
Sapling/Shrub Stratum				Total % Cover of: Multiply by:		
(Plot size: <input type="checkbox"/>)				OBL species	<input type="checkbox"/> 0	x 1 = <input type="checkbox"/> 0
1. <u>Salix lasiolepis</u>	40%	Y	FACW	FACW species	<input type="checkbox"/> 3	x 2 = <input type="checkbox"/> 6
2. _____				FAC species	<input type="checkbox"/> 0	x 3 = <input type="checkbox"/> 0
3. _____				FACU species	<input type="checkbox"/> 0	x 4 = <input type="checkbox"/> 0
4. _____				UPL species	<input type="checkbox"/> 0	x 5 = <input type="checkbox"/> 0
5. _____				Column Totals:	<input type="checkbox"/> 3 (A)	<input type="checkbox"/> 6 (B)
_____ = Total Cover				Prevalence Index = B/A = <input type="checkbox"/> 2.0		
Herb Stratum				Hydrophytic Vegetation Indicators:		
(Plot size: <input type="checkbox"/>)				<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)		
1. <u>Juncus effuses ssp. pacificus</u>	30%	Y	FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
2. <u>Juncus balticus ssp. ater</u>	10%	N	FACW			
3. <u>Carex feta</u>	25%	Y	FACW			
4. _____						
5. _____						
6. _____						
7. _____						
8. _____						
9. _____						
10. _____						
11. _____						
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Woody Vine Stratum						
(Plot size: <input type="checkbox"/>)						
1. _____						
2. _____						
_____ = Total Cover						
% Bare Ground in Herb Stratum <u>30%</u>						

Remarks: Hydrophytic vegetation dominant in this data point. The freshwater marsh vegetation dominated this narrow depressional area where water drains off Brunswick Road.

SOIL

Sampling Point: MA – 5 Wetland Pt.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12"	10YR 3/1	85	5YR 5/6	15	RM	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
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Remarks: The soil type is an NRCS hydric soil on the Nevada County list. The soil exhibited properties of a hydric soil. Soil is a clay loam. Soil was saturated at approximately 4 inches in depth.

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): 4"	Wetland Hydrology Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature contains the presence of wetland hydrology with a single primary indicator and single secondary indicator of wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 17, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: MA – 6 Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depressional Local relief (concave, convex, none): None Slope (%): 0 - 2%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks: Marsh wetland (MA – 6) associated with runoff from Brunswick Road in a small depressional area in the eastern section of the Brunswick Industrial Site. This wetland was not previously delineated by both ESA Associates (2007) or WRA (2008).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <input type="text" value="3"/> (A) Total Number of Dominant Species Across All Strata: <input type="text" value="3"/> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <input type="text" value="100%"/> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <input type="text" value="0"/> x 1 = <input type="text" value="0"/> FACW species <input type="text" value="3"/> x 2 = <input type="text" value="6"/> FAC species <input type="text" value="0"/> x 3 = <input type="text" value="0"/> FACU species <input type="text" value="0"/> x 4 = <input type="text" value="0"/> UPL species <input type="text" value="0"/> x 5 = <input type="text" value="0"/> Column Totals: <input type="text" value="3"/> (A) <input type="text" value="6"/> (B) Prevalence Index = B/A = <input type="text" value="2.0"/>
Sapling/Shrub Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	20%	Y	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	25%	Y	FACW	
2. <u>Juncus balticus ssp. ater</u>	10%	N	FACW	
3. <u>Carex feta</u>	20%	Y	FACW	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>30%</u>				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

5 - Wetland Non-Vascular Plants¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
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Remarks: Hydrophytic vegetation dominant in this data point. The freshwater marsh vegetation dominated this small depressional area.

SOIL

Sampling Point: MA – 6 Wetland Pt.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16"	10YR 3/1	95	5YR 5/4	5	RM	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
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Remarks: The soil type is an NRCS hydric soil on the Nevada County list. The soil exhibited properties of a hydric soil. Soil is a clay loam. Soil was not saturated.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:	Wetland Hydrology Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature contains the presence of wetland hydrology with a single primary indicator and single secondary indicator of wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co Sampling Date: July 10, 2019
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: R1 – Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 2 - 6%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Remarks: Riparian wetland (RI-1) is located within the central section of the Brunswick Industrial Site. This riparian wetland was not previously delineated by either ESA Associates in 2007 or WRA in 2008. This feature is located within a depressional area with some standing water and dominated by willow trees and shrubs and at the outer edge by blackberry bushes.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiolepis</u>	35%	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>1</u> x 2 = <u>2</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>5</u> (B) Prevalence Index = B/A = <u>2.5</u>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	25%	N	FACW	
2. <u>Rubus armeniacus</u>	45%	Y	FAC	
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>35%</u>				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks: Hydrophytic vegetation dominant in this data point. No upland point taken given this point was taken at the edge of a vegetation and topographical change at the edge of a depressional area with standing water. Upland point would have been dominated by annual grassland species and Himalayan blackberry.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: July 10, 2019
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: R1 – Upland Point to the North
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 2 - 6%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks: Upland data point just north of riparian wetland (RI-1) located within the central section of the Brunswick Industrial Site. This upland data point was not previously delineated by either ESA Associates in 2007 or WRA in 2008.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiolepis</u>	25%	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>1</u> x 2 = <u>2</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>5</u> (B) Prevalence Index = B/A = <u>2.5</u>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	15%	N	FACW	
2. <u>Rubus armeniacus</u>	35%	Y	FAC	
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>35%</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Hydrophytic vegetation dominant in this data point.

SOIL

Sampling Point: RI – 1 North Upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12"	10YR 4/3	100					Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p> <p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p>
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<p>Restrictive Layer (if present):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Remarks: The soil type is Placer Diggings, typical of past mining activities and an NRCS hydric soil on the Nevada County list. The soil did not exhibit properties of a hydric soil. Soil is clay loam.

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one required; check all that apply)</p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)</p> <p><input type="checkbox"/> Salt Crust (B11)</p> <p><input type="checkbox"/> Aquatic Invertebrates (B13)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p>Secondary Indicators (2 or more required)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Geomorphic Position (D2)</p> <p><input type="checkbox"/> Shallow Aquitard (D3)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p> <p><input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)</p> <p><input type="checkbox"/> Frost-Heave Hummocks (D7)</p>
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<p>Field Observations:</p> <p>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature is located within a depressional area that receives minimal runoff from the surrounding impervious surfaces. The clay loam soils do not inhibit infiltration like RI-1 Wetland data point with standing water.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: July 10, 2019
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: R1 – Upland Point to the South
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 2 - 6%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Placer Diggings (Pr) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Remarks: Upland data point located to the south of riparian wetland (RI-1) within the central section of the Brunswick Industrial Site. This riparian wetland was not previously delineated by either ESA Associates in 2007 or WRA in 2008.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiolepis</u>	15%	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>1</u> x 2 = <u>2</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>5</u> (B) Prevalence Index = B/A = <u>2.5</u>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	15%	N	FACW	
2. <u>Rubus armeniacus</u>	25%	Y	FAC	
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>45%</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Hydrophytic vegetation dominant in this data point.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: July 14, 2019
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: R2 – NE Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5 - 8%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Alluvial Land, Clayey (Ao) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Remarks: Northeastern edge of RI-2 within the central section of the Brunswick Industrial Site. This riparian wetland was previously mapped by both ESA Associates in 2007 and WRA in 2008; however, the previous delineations mapped this feature at the very top of the outer edge of the blackberry bushes where we documented no indicators of hydric soils or wetland hydrology. We remapped this feature approximately 15 feet further downslope.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiolepis</u>	85%	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>1</u> x 2 = <u>2</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>5</u> (B) Prevalence Index = B/A = <u>2.5</u>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	15%	N	FACW	
2. <u>Rubus armeniacus</u>	65%	Y	FAC	
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Juncus effuses ssp. pacificus</u>	2%	N	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>15%</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Hydrophytic vegetation dominant in this data point. No upland point taken given this point was taken at the edge of a vegetation change. Upland point would have been dominated by annual grassland species and Himalayan blackberry.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: August 16 and 29, 2019
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: R2 – SW Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 36, T16N, R8E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5 - 8%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Alluvial Land, Clayey (Ao) NWI classification: Not Mapped
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks: Southwestern edge of RI-2 within the central section of the Brunswick Industrial Site. This riparian wetland was previously mapped by both ESA Associates in 2007 and WRA in 2008; however, the previous delineations mapped this feature at the very top of the outer edge of the blackberry bushes where we documented no indicators of hydric soils or wetland hydrology. We remapped this feature approximately 15 feet further downslope.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="checkbox"/>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiolepis</u>	45%	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>1</u> x 2 = <u>2</u> FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>2</u> (A) <u>5</u> (B) Prevalence Index = B/A = <u>2.5</u>
Sapling/Shrub Stratum (Plot size: <input type="checkbox"/>)				
1. <u>Salix lasiolepis</u>	35%	Y	FACW	
2. <u>Rubus armeniacus</u>	55%	Y	FAC	
3. _____				
4. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="checkbox"/>)				
1. <u>Juncus effuses ssp. pacificus</u>	10%	N	FACW	
2. <u>Lathyrus latifolius</u>	5%	N	NL	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="checkbox"/>)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>10%</u>				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks: Hydrophytic vegetation dominant in this data point. No upland point taken given this point was taken at the edge of a vegetation change. Upland point would have been dominated by ponderosa pine, pacific madrone, annual grassland species, and Himalayan blackberry.

SOIL

Sampling Point: RI – 2 SW Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10"	10YR 3/2	85%	7.5YR 5/6	15%	RM	M	Loamy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input checked="" type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> X No <input type="checkbox"/>
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Remarks: The soil type is Alluvial land, clayey, an NRCS hydric soil on the Nevada County list. The soil did exhibit some properties of a hydric soil given the presence of redox features within the matrix. Soil is mostly loam with some clay loam.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature is along a steep, incised channel dominated by willow shrubs and trees within the mapped wetland area.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Brunswick Industrial Site City/County: Grass Valley/Nevada Co. Sampling Date: December 18, 2018
 Applicant/Owner: Rise Grass Valley Inc. State: CA Sampling Point: RW – 1 Wetland Point
 Investigator(s): Greg Matuzak, Wendy Boes Section, Township, Range: Section 26, T16N, R8E
 Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): None Slope (%): 0 - 5%
 Subregion (LRR): MLRA22A Sierra Nevada Lat: 39 degrees Long: 121 degrees Datum: WGS 84
 Soil Map Unit Name: Cut and Fill Land (Ct) NWI classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Remarks: Roadside wetland (RW - 1) is located along the southern edge of East Bennet Road south of the Centennial Industrial Site. This wetland was not previously delineated by ESA Associates in 2007 or WRA in 2008. This feature appears to be seasonally ponded within the roadside ditch and there is little vegetation where standing water occurs.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiolepis</u>	45%	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>1</u> x 2 = <u>2</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>1</u> (A) <u>2</u> (B) Prevalence Index = B/A = <u>2.0</u>
Sapling/Shrub Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Salix lasiolepis</u>	15%	N	FACW	
2. <u>Rubus armeniacus</u>	15%	N	FAC	
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <input type="text"/>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>35% water</u>				

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks: Hydrophytic vegetation is dominant within this data point. No upland point taken given this point was taken near the edge of the roadside ditch and abrupt topographical change to an upland, sparsely vegetated area. Upland point would have been dominated by sparse annual grassland species and asphalt.

SOIL

Sampling Point: RW – 1 Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12"	7.5YR 3/2	90%	2.5YR 4/4	10%	RM	M	Clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input checked="" type="checkbox"/> Redox Depressions (F8)		Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic
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Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks: The soil type is cut and fill land (Ct) USDA mapped soil and is not an NRCS hydric soil on the Nevada County list. The soil did exhibit properties of a hydric soil given the presence of redox features within the matrix. Soil is clay loam.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (2 or more required)</u> <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)
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Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>3"</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This feature is located within a depressional roadside ditch along the southern side of East Bennett Road. Standing water was present in the roadside ditch and the clay loam soils are saturated within the first 1 inch of the soil test pit.