

LINDBERG GEOLOGIC CONSULTING

**David N. Lindberg, CEG
Post Office Box 306
Cuttan California 95534
(707) 442-6000**

July 15, 2022

Project No: 0467.00

Patient 2 Patient

Attention: Diane Sodosky and/or Young Jacobsen
1271 Evergreen Road, Suite 963
Redway, California 95560

Subject: Hydrologic Isolation of Existing Well from Surface Waters; Wood Ranch Road,
Garberville, APN: 214-142-012, WCR 1087858 (APN 214-042-008)

To Whom It May Concern:

As requested, Lindberg Geologic Consulting has assessed an existing permitted well on the above-referenced parcel to estimate its potential for hydrologic connectivity with any adjacent wetlands and or surface waters, and if pumping this well could affect surface waters in nearby surface waters or wetlands. Tributaries in the vicinity of this well drain to the South Fork Eel River (Figure 1). A California-Certified Engineering Geologist visited this site on June 3, 2022, to observe the subject well and local site conditions. Based on our research, observations, and our professional experience, it is our opinion the subject well has a low likelihood of being hydrologically connected to nearby surface waters in any manner that could affect adjacent surface waters or wetlands in the vicinity. We understand that the applicant hopes to use water from this well to irrigate cannabis. We are not aware of the volume of water to be extracted or what the pumping schedule might be but expect that that information is provided elsewhere in our client's application.

The driller reported this well was drilled on assessor's parcel 214-142-008, in May of 2016. Since 2016, parcels have been modified, or merged, or lot line adjusted, so that the parcel is now 214-142-012. Based on the Humboldt County Assessor's Parcel Map (Figure 2) parcel 214-142-012 (Figure 2) encompasses approximately 380 acres. Based on our on-site GPS measurements, the subject well is located approximately at latitude 40.16749° north, and longitude 123.80244° west ($\pm 9'$). As reported by the driller, this well is in Section 25, T3S, R3E, HB&M (Figure 2).

Based on the Humboldt County WebGIS mapping, this well is approximately 800 feet from the nearest mapped surface waters, an unnamed legacy pond of the historic Wood Ranch. An ephemeral tributary of South Fork Eel River to approximately 1,000 feet southwest from this well (Figure 1). Based on interpolation from the USGS Miranda (1970), topographic quadrangle map (Figure 1), and the Humboldt County WebGIS, the elevation of this well site is approximately 1,040 feet above sea level. At its nearest point, approximately 800 feet northeast of the well, the elevation of the unnamed legacy pond is approximately 910 feet, 130 feet lower than the well. The elevation at the bottom of the well is approximately 880 feet, so the nearest surface water is 30 feet higher than the deepest point of the well. At the nearest point to this well ($>850'$), southwest, the nearest ephemeral tributary of South Fork Eel River flows seasonally at an elevation of approximately 900 feet, or approximately 10 feet lower than the well bottom elevation.

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The well location is shown approximately on the attached figures. This well was drilled by Bushnell Enterprises, of Garberville, California, in May 2016, under Humboldt County well permit #15/16-0648. Bushnell Enterprises is a licensed well-drilling contractor (C-57 #403708). Bushnell Enterprises submitted the well completion report (DWR 188) on May 31, 2016 (attached). Bushnell Enterprises estimated the yield of this well at 25 gallons per minute on May 31, 2016. Based on an air lift pump test, the test length and the total drawdown was not reported.

The borehole diameter as reported by the driller is 5-inches. Total drilled depth is 160 feet. From grade to 160 feet, 5-inch F480 pipe was installed. Per County requirements, a bentonite surface sanitary seal was installed in the upper 20 feet to seal the annulus around the 5-inch pipe. From grade to 100 feet below the ground surface (bgs) blank casing was installed. From 100 feet to total depth of 160 feet, slotted well screen (0.30-inch slot size) was installed. From 20 to 160 feet the annulus was backfilled with 3/8-inch pea gravel. The well is cased and sealed through any potential shallow subsurface aquifers. Depth to first water was reported as 100 feet below grade, and depth to static water in the completed and developed well was reported to be 80 feet bgs when the driller conducted the pump test on May 31, 2016.

Three springs are mapped within 1,000 feet of the site well on the USGS Miranda (1970) topographic quadrangle map (Figure 1). From the well, the nearest mapped springs are north-northeast, and northwest (Figure 1). The northeastern springs are more than 700 feet away from the site well and lie at an elevation of approximately 950 feet. The northwestern spring is also more than 700 feet away and is higher than the well at almost 1,200 feet above sea level. We could locate no other springs within 1,000 feet of the site well. There is an existing legacy pond more than 600 feet east-northeast of the site well at an estimated elevation of approximately 900 feet.

This parcel is located within California's Coast Ranges Geomorphic Province, in landslide deposits derived from the underlying *mélange* of the Central Belt of the Franciscan complex. The Coast Ranges Geomorphic Province is a seismically active region in which large earthquakes are expected to occur during the economic life span (70 years) of any developments on the subject property. Geologic mapping by McLaughlin et al., (2000), shows that the site is underlain by *mélange* unit cm1 which is described as consisting of "a matrix of clayey, penetratively sheared argillite and fine-grained sandstone, locally with intercalated green tuff and hard elliptical carbonate concretions armored with scaly black argillite. Includes blocks up to several kilometers across, of diverse lithologies and ages. Age range of the Central belt is based on the paleontologic and isotopic age range of rocks in the *mélange* and on inferred range in age of penetrative shearing, boudinage, and related deformation that occurred during *mélange* formation. Components of the Central belt *mélange* include: (cm1) predominantly penetratively sheared, locally tuffaceous, scaly meta-argillite and less abundant blocks of metasandstone. Exhibits rounded, poorly incised, lumpy and irregular topography" (Figure 4).

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Soils, based on our observations, are interpreted to be uniformly distributed across the subject parcel. In the areas observed, the soil profile consisted of approximately 6-inches (maximum) of forest leaf litter and gravelly topsoil. Beneath the topsoil, soils become more rocky and clayey.

Materials reported on the geologic log of the driller's well completion report (attached) include in the upper 40-feet, "Brown Sandy Sandstone", underlain by 60 feet (40-feet to 100-feet) of "Brn Sandstone sand mix w/Rock". From the depth of 100 to 160 feet, the driller logged "Blu Frac Sandstone streaks of Cortz + Shale " which appears to be the water bearing unit in this well.

We interpret the brown sandstone sections of this profile to be a leaky aquitard; a material of limited permeability and transmissivity. Materials below 100 feet, the blue fractured sandstone, appears to be the water-bearing aquifer material in this well. Fractured sandstone can be inferred to have a having higher transmissivity and permeability than sandstone that is not fractured. At the location of the site well, the elevation of the water-bearing aquifer unit is thus between approximately 940 feet and 880 feet.

Below the surface soils, the earth materials encountered in the boring are landslide deposits composed of chaotically disrupted cm1 mélange material. Landslide deposits may be expected to have variable hydraulic conductivity and can include significant aquifers as well as aquitard materials. We interpret the underlying sequence of materials described by the driller as lithologies within the Central Belt Mélange of the Franciscan Complex. The blue fractured sandstone apparently has a significantly higher hydraulic conductivity than the brown sandstone section above, making the blue fractured sandstone the primary water bearing unit in this well.

A geologic cross section of the area after McLaughlin et al. (2000) shows the structural and stratigraphic relationships between the regional geologic units (Figure 5). The central belt terrane cm1 member is shown bounded by thrust fault plane contacts. On-site, no dip of the rock units could be observed because earth materials are mantled with soil and hillslope colluvium and obscured by vegetation. We interpret the landslide slip planes and the faults to be hydrologic boundaries of minimal permeability (due to grinding and shearing along the fault planes) which effectively separate Franciscan rock units from each other, and limit groundwater flow between these fault-bound units.

Based on our observations, review of pertinent and available information, and our experience, it is our professional opinion that this well has a low potential of having any direct connection to surface waters. First water was encountered at 100 feet. This well is sealed through the upper 20 feet of any potential unconfined, near-surface aquifers with which it might communicate hydraulically through the borehole, because the bentonite-sealed surface casing isolates the topsoil, and much of the upper brown sandstone materials from the deeper blue fractured sandstone aquifer. When considered with the stratigraphy and geologic structure, the distances (horizontal and vertically) from the nearest surface waters, and the depth of the producing zone of this well (~940 to 880 feet), as well as its position relative to the nearest adjacent surface waters, we conclude that

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the depth of the surface seal is sufficient to preclude the potential for hydraulic connectivity with surface waters, of which there are none closer than 700 feet. Thus, the water source from which this well draws appears to be a confined subsurface aquifer not connected to any unconfined, near-surface aquifer(s). This well appears, in our professional opinion, likely to be hydraulically isolated from nearby wells, surface waters, springs or wetlands.

In our professional opinion, it appears that the aquifer tapped by the subject well is recharged by water infiltrating from source areas upslope and west of the site well. As noted, the “Water Level and Yield of Completed Well” section of the Well Completion Report estimated the yield of this well at 25 gallons per minute (gpm) on May 31, 2016, with duration of the test, and the resultant drawdown not reported, after Bushnell’s pump test. At a rate of 25 gallons per minute, this well could potentially produce 36,000 gallons per day. As noted on the well completion report, this capacity may not be representative of this well’s long-term yield. Additional pump testing would be necessary to estimate the sustainable long-term yield of the site well.

As discussed, in our opinion the subject well does not appear to be hydrologically connected to, or capable of influencing surface water flows in the local springs, ponds, and tributaries of the South Fork Eel River. Nor does this well appear to be hydrologically connected to any local ephemeral wetlands. Given the horizontal distances involved, and the elevation differences between the water-producing zone in the subject well, and the surface waters of the nearest waters, the potential for hydrologic connectivity between surface waters and groundwater in the deep bedrock aquifer appears low. Further, given the apparently limiting condition of more than 100 feet of lower-transmissivity materials above the water-bearing blue fractured sandstone unit, the water-producing zone is considered hydrologically isolated from, and not demonstrably connected to any other aquifer(s) in the surrounding area.

As mentioned, on the Miranda USGS topographic quadrangle map, there are three springs mapped within 1,000 feet of this site well on parcel 214-142-012. There do not appear to be any other springs or wetlands of significance within 1,000 feet of the site well.

We researched the California Department of Water Resources (DWR) database to determine if there were other wells within 1,000 feet of the subject well on our client’s property. Based on the information available at the time, there are no other wells closer than 1,000 feet (0.2 miles)

The Natural Resources Conservation Service’s, online Web Soil Survey, shows the subject well to be located within the Coyoterock-Yorknorth soil complex, on slopes of 15 to 50 percent, (#647, Figure 7), which is described as moderately well-drained. The detailed Web Soil Survey Unit description is attached to this report. Mean annual precipitation in the area is listed as 60 to 100 inches per year. Capacity of the most limiting layer to transmit water (Ksat) is described as moderately low to moderately high (0.06 to 0.20 in/hr). If ten percent of the minimum 60 inches of precipitation is absorbed by the soils and does not flow across the surface and into local

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watercourses, then approximately 190 acre-feet, or nearly 62 million gallons of water per year, may be expected to recharge the local aquifer(s) below this 380-acre subject property.

On the 28th of March, 2022, our governor issued an executive order (N-7-22) relating to the ongoing drought California is experiencing. In his executive order, the governor outlined several measures the state will undertake to avoid and ameliorate the negative impacts of the current drought. Among these measures, it was ordered that counties, cities, and other public agencies have been prohibited from approving permits for new groundwater wells (or alteration of existing wells) in basins *“subject to the Sustainable Groundwater Management Act and classified as medium- or high-priority without first obtaining written verification from a Groundwater Sustainability Agency managing the basin or area of the basin where the well is proposed”*. This well on Wood Ranch Road is not within a basin subject to the Act, and there has been no Groundwater Sustainability Agency established with authority over the area where this permitted well is sited.

Further, the Order states that counties, cities, and other public agencies have been prohibited from issuing permits for new groundwater wells (or alteration of existing wells) *“without first determining that extraction of groundwater from the proposed well is (1) not likely to interfere with the production and functioning of existing nearby wells, and (2) not likely to cause subsidence that would adversely impact or damage nearby infrastructure”*. Note that this Order, and that cited in the preceding paragraph, are not applicable to *“wells that provide less than two acre-feet per year of groundwater for individual domestic users, or that will exclusively provide groundwater to public water supply systems.”*

Based on our observations, research, and professional experience, it is our opinion that the well on APN 214-142-012, on Wood Ranch Road, has a low likelihood of being hydrologically connected to nearby surface waters or wells in any manner that might significantly impact or affect adjacent wetlands, wells, and or surface waters in the vicinity.

Please contact us if you have questions or concerns regarding our findings and conclusions.

Sincerely,

David N. Lindberg, CEG
Lindberg Geologic Consulting

DNL:sll

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Attachments:

- Figure 1: Topographic Property Location Map
- Figure 2: Humboldt County Assessor's Parcel Map
- Figure 3: Satellite Image of Well Location
- Figure 4: Geologic Map of Well Location
- Figure 4a: Geologic Map Explanation
- Figure 5: Geologic Cross Section of Well Location
- Figure 6: Hydrogeologic Cross Section of Well Location
- Figure 7: USDA-NRCS Soil Map of Well Location

State of California Well Completion Report:

WCR2016-1087858

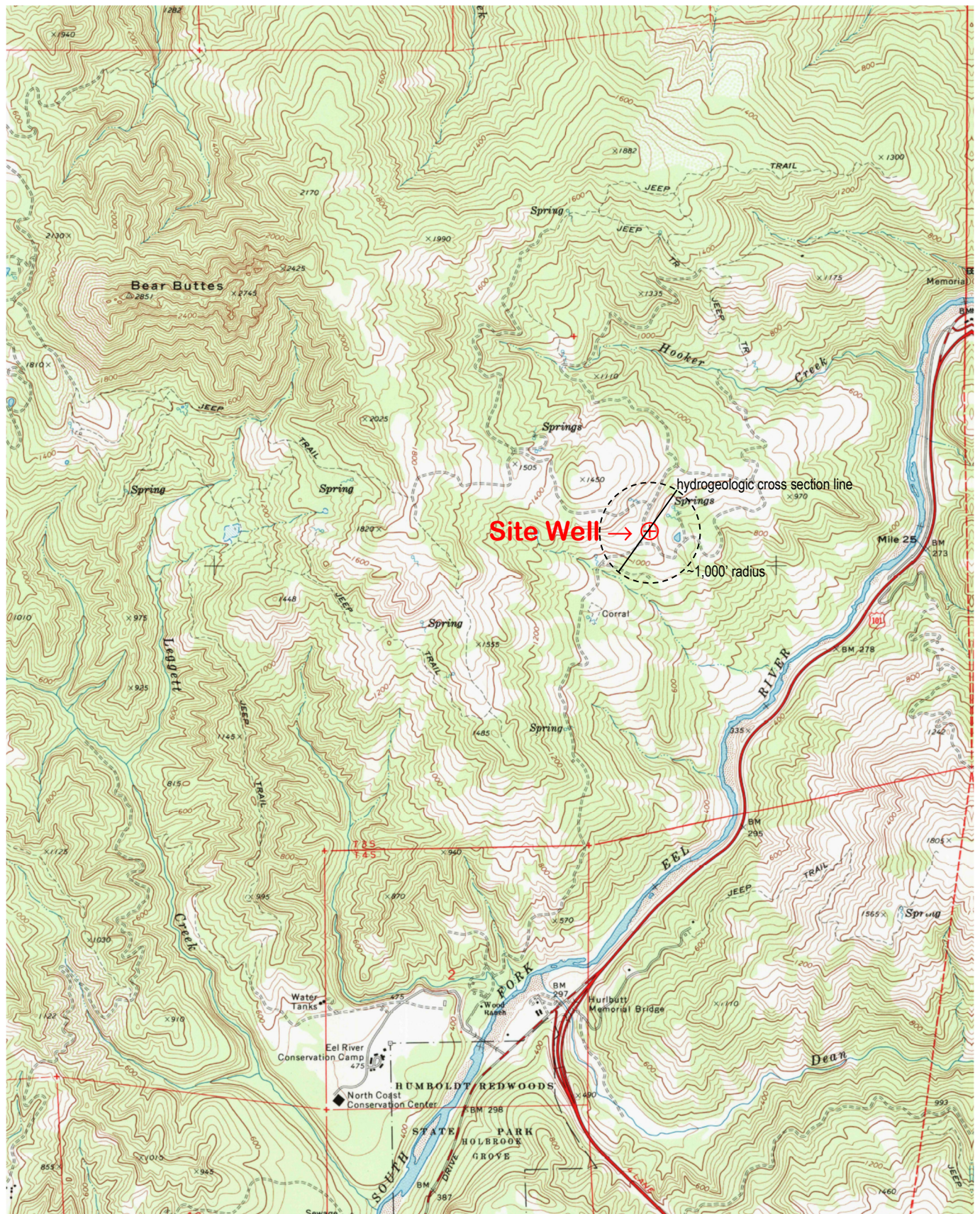
Web Soil Survey, NRCS Map Unit Description:

Coyoterock-Yorknorth complex, 15 to 50 percent slopes.

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Engineering-Geologic Well Connectivity Assessment Report
Wood Ranch Road, Garberville, California
APN 214-124-012, Patient to Patient LLC, Client
Topographic Project Location Map (locations approximate)

Figure 1
July 15, 2022
Project 0467.00
1" ≈ 2,700'

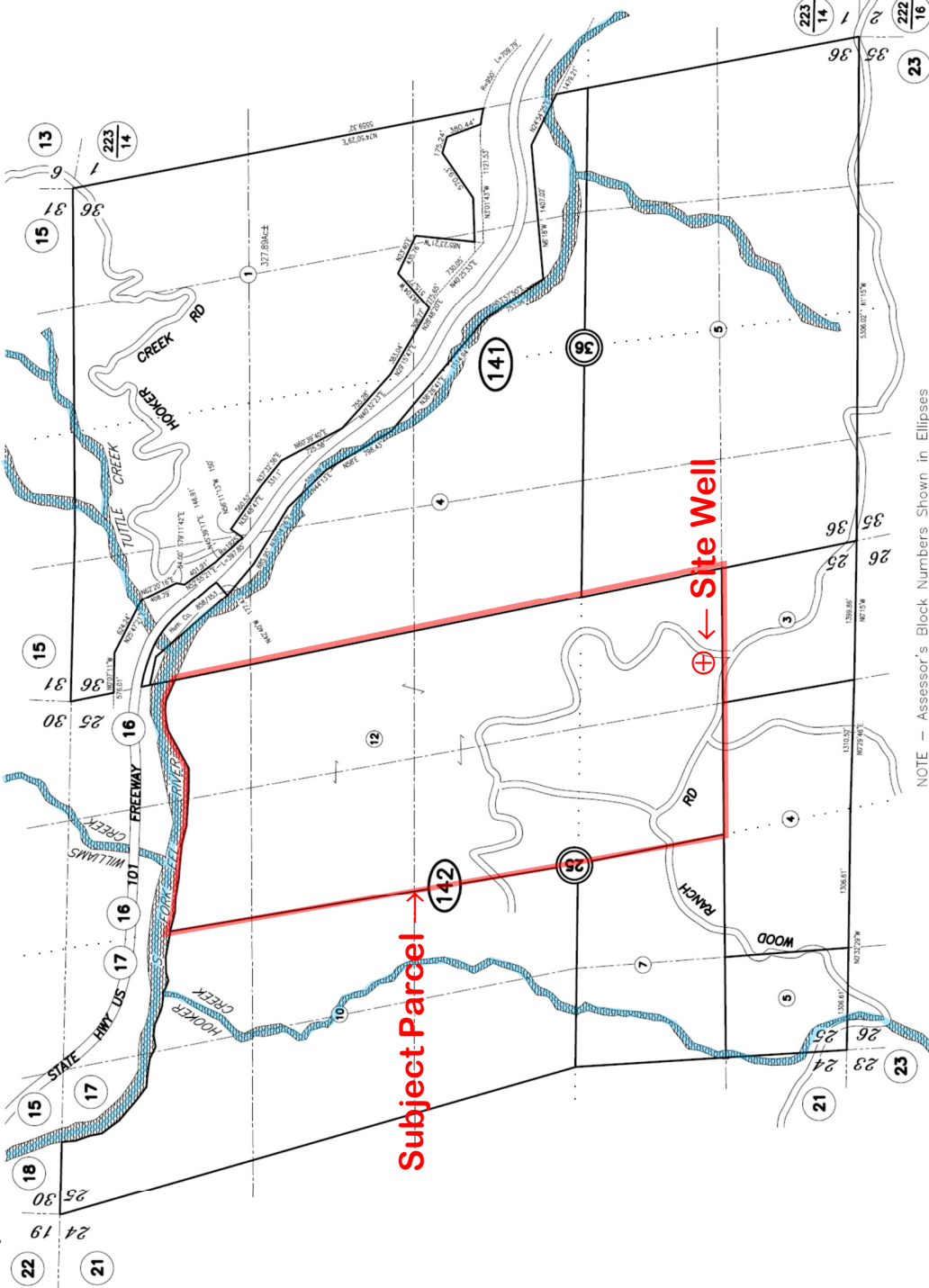


214-14



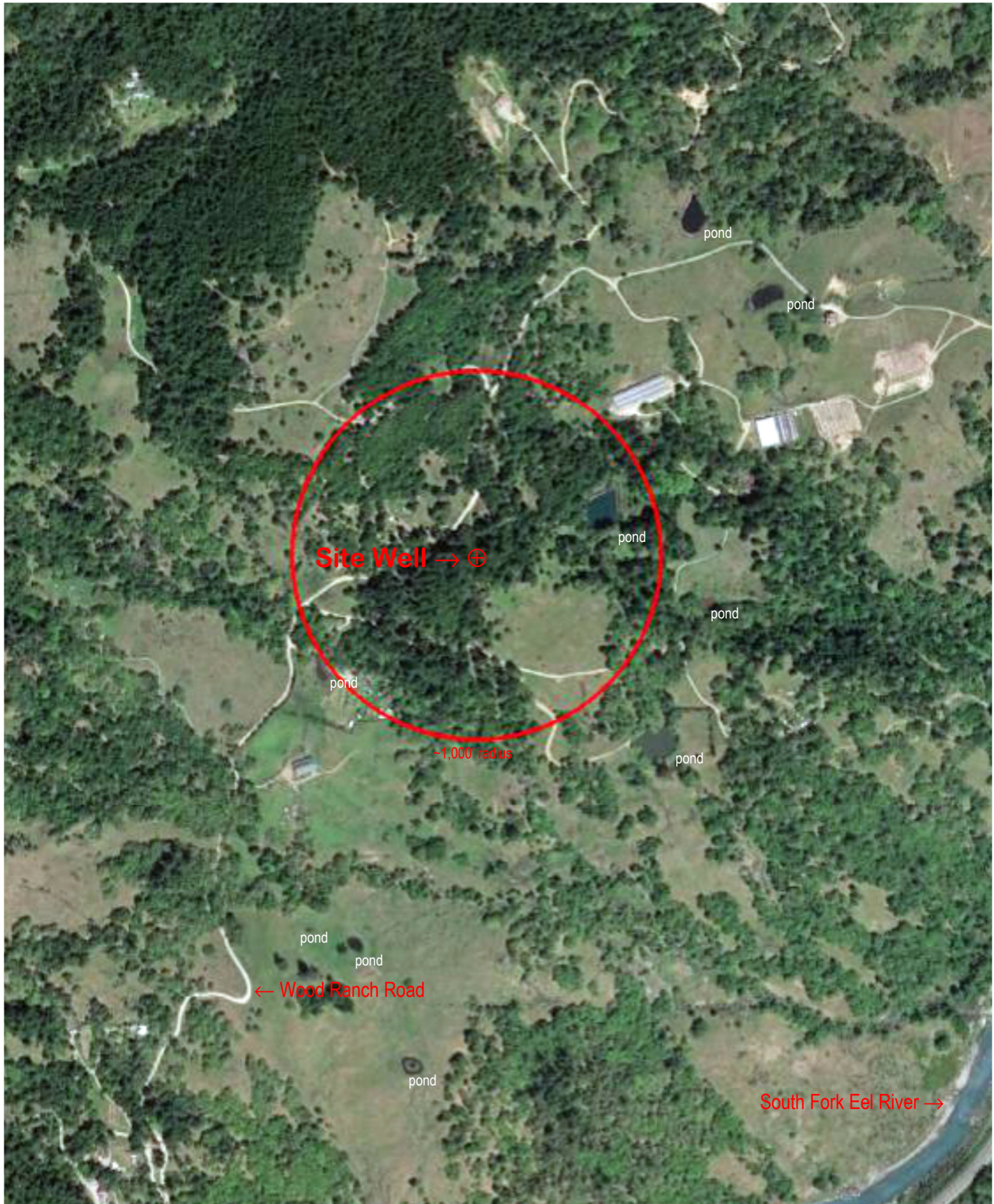
SEC 36 & PTN SEC 25, T3S R3E,

Assessor's Map Bk. 214, Pg. 14
County of Humboldt, CA.

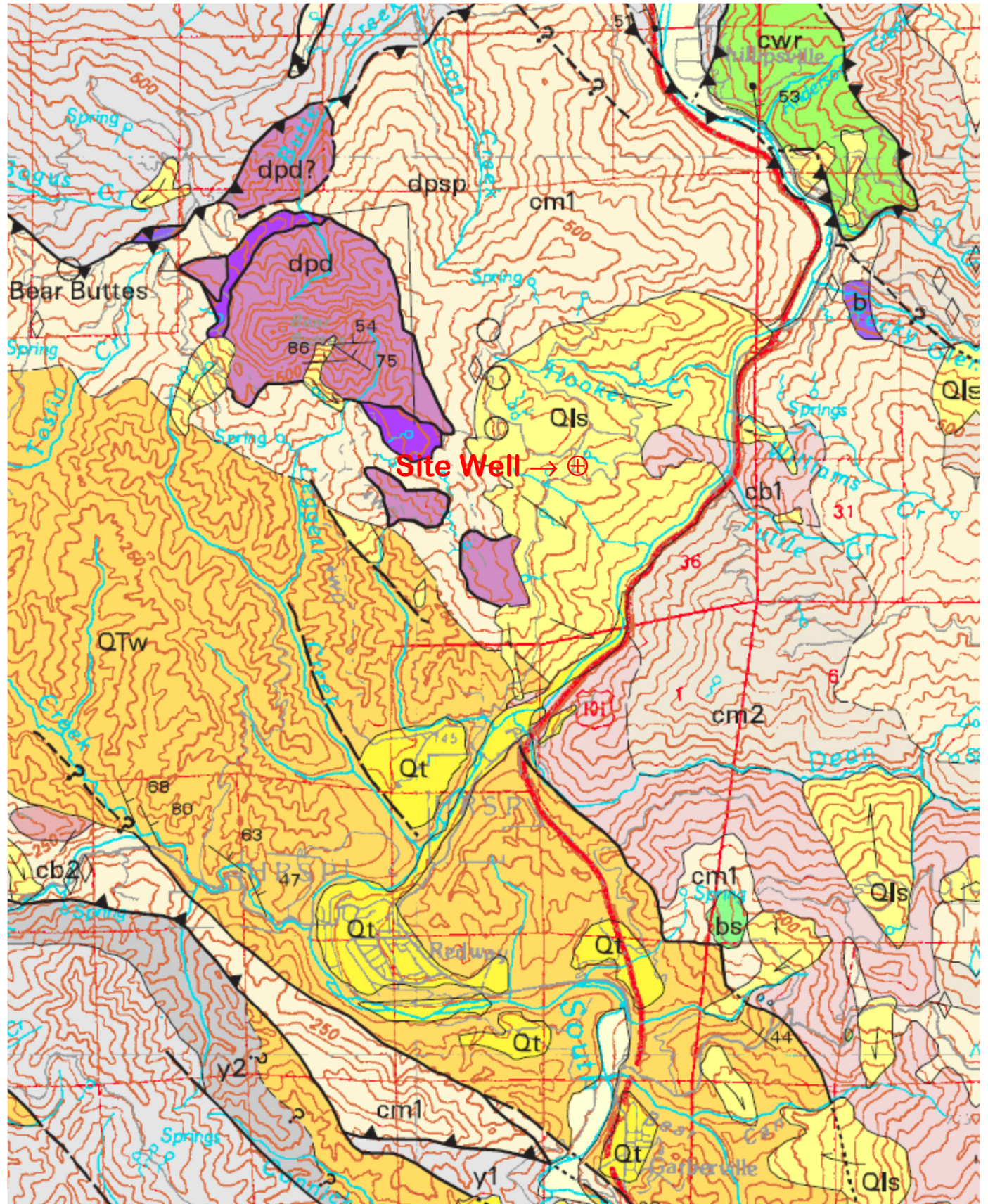


NOTE - Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles.

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 3
Post Office Box 306	Wood Ranch Road, Garberville, California	July 15, 2022
Cutten, CA 95534	APN 214-124-012, Patient to Patient LLC, Client	Project 0467.00
(707) 442-6000	Satellite Image of Well Location (locations approximate)	1" ≈ 750'



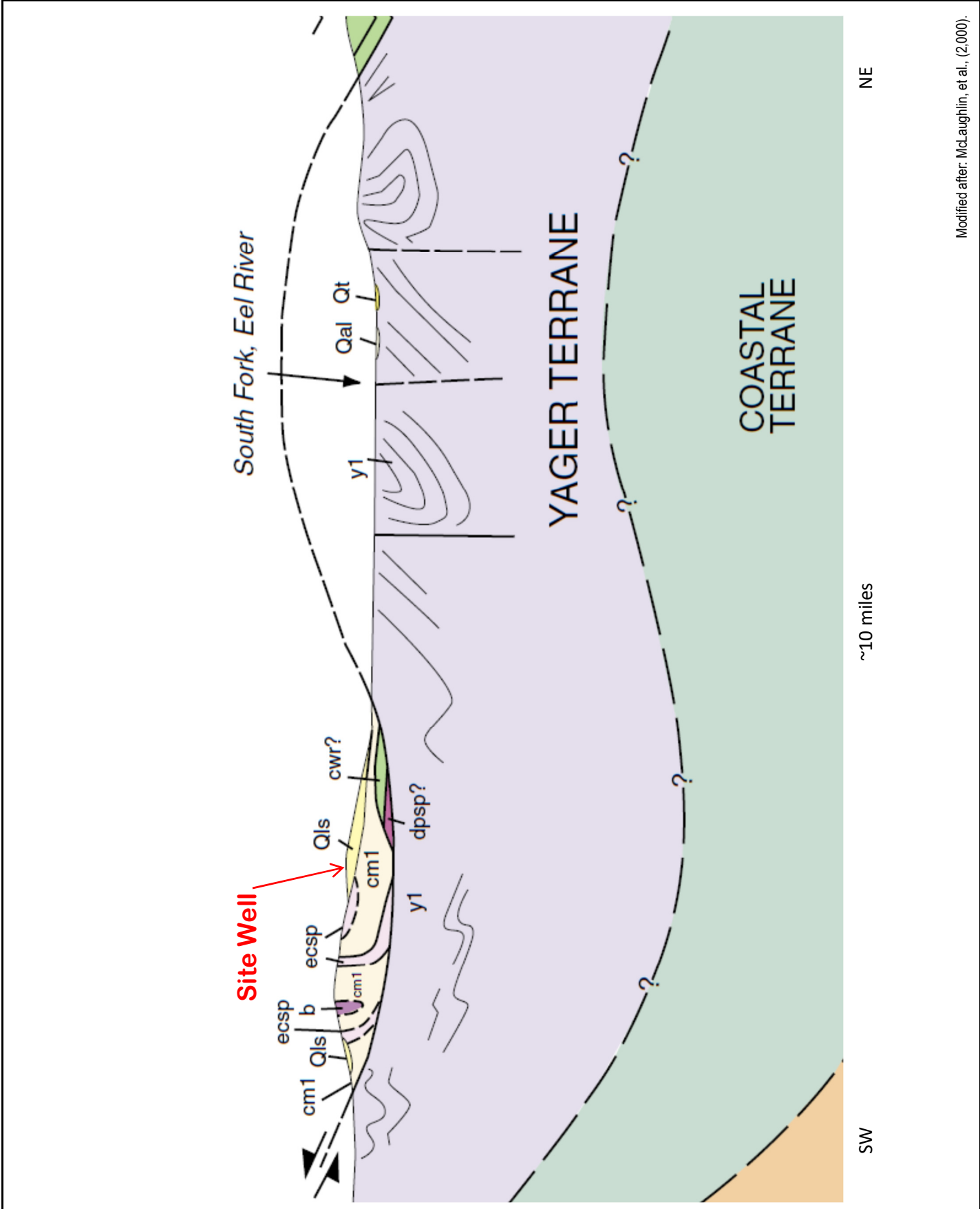
Modified from: Google Earth Imagery of April 21, 2019. N ≡ 



DESCRIPTION OF MAP UNITS

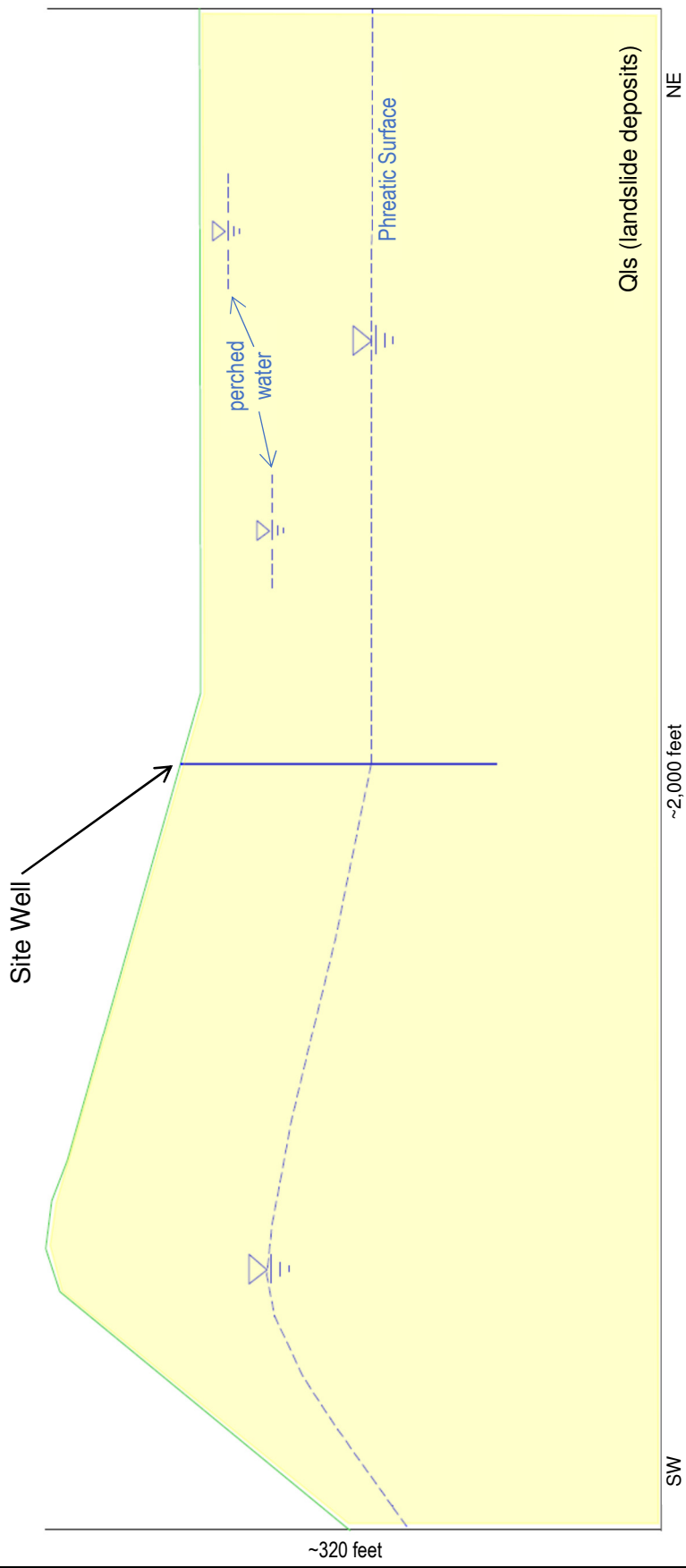
<p>QUATERNARY AND TERTIARY OVERLAP DEPOSITS</p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">Qal</td><td>Alluvial deposits (Holocene and late Pleistocene?)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">Qm</td><td>Undeformed marine shoreline and aolian deposits (Holocene and late Pleistocene)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">Qt</td><td>Undifferentiated nonmarine terrace deposits (Holocene and Pleistocene)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">Qls</td><td>Landslide deposits (Holocene and Pleistocene)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">QTog</td><td>Older alluvium (Pleistocene and [or] Pliocene)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">QTW</td><td>Marine and nonmarine overlap deposits (late Pleistocene to middle Miocene)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">TI</td><td>Volcanic rocks of Fickle Hill (Oligocene)</td></tr> </table> <p>COAST RANGES PROVINCE FRANCISCAN COMPLEX</p> <p style="text-align: center;">-- Coastal Belt --</p> <p style="text-align: center;"><i>Coastal terrane (Pliocene to Late Cretaceous)</i></p> <p>Sedimentary, igneous, and metamorphic rocks of the Coastal terrane (Pliocene to Late Cretaceous):</p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">co1</td><td>Melange</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">co2</td><td>Melange</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">co3</td><td>Broken sandstone and argillite</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">co4</td><td>Intact sandstone and argillite</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">cob</td><td>Basaltic Rocks (Late Cretaceous)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">col5</td><td>Limestone (Late Cretaceous)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">m</td><td>Undivided blueschist (Jurassic?)</td></tr> </table> <p style="text-align: center;"><i>King Range terrane (Miocene to Late Cretaceous)</i></p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">Krp</td><td>Igneous and sedimentary rocks of Point Delgada (Late Cretaceous)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">m</td><td>Undivided blueschist blocks (Jurassic?)</td></tr> </table> <p>Sandstone and argillite of King Peak (middle Miocene to Paleocene(?)):</p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">krk1</td><td>Melange and (or) folded argillite</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">krk2</td><td>Highly folded broken formation</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">krk3</td><td>Highly folded, largely unbroken rocks</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">krl</td><td>Limestone</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">krc</td><td>Chert</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">krb</td><td>Basalt</td></tr> </table> <p style="text-align: center;"><i>False Cape terrane (Miocene? to Oligocene?)</i></p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">fc</td><td>Sedimentary rocks of the False Cape terrane (Miocene? to Oligocene?)</td></tr> </table> <p style="text-align: center;"><i>Yager terrane (Eocene to Paleocene?)</i></p> <p>Sedimentary rocks of the Yager terrane (Eocene to Paleocene?):</p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">y1</td><td>Sheared and highly folded mudstone</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">y2</td><td>Highly folded broken mudstone, sandstone, and conglomeratic sandstone</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">y3</td><td>Highly folded, little-broken sandstone, conglomerate, and mudstone</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">Ycgl</td><td>Conglomerate</td></tr> </table> <p style="text-align: center;">-- Central belt --</p> <p>Melange of the Central belt (early Tertiary to Late Cretaceous):</p> <p>Unnamed Metasandstone and meta-argillite (Late Cretaceous to Late Jurassic):</p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">cm1</td><td>Melange</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">cm2</td><td>Melange</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">cb1</td><td>Broken formation</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">cb2</td><td>Broken formation</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">cwr</td><td>White Rock metasandstone of Jayko and others (1989) (Paleogene and [or] Late Cretaceous)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">chr</td><td>Haman Ridge graywacke of Jayko and others (1989) (Cretaceous?)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">cfs</td><td>Fort Seward metasandstone (age unknown)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">cls</td><td>Limestone (Late to Early Cretaceous)</td></tr> </table>	Qal	Alluvial deposits (Holocene and late Pleistocene?)	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padding: 2px;">mb</td><td>Chinquapin Metabasalt Member (Irwin and others, 1974)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">ppv</td><td>Valentine Springs Formation</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">mv</td><td>Metabasalt and minor metachert</td></tr> </table> <p style="text-align: center;"><i>Yolla Bolly terrane (Early Cretaceous to Middle Jurassic?)</i></p> <p>Metasedimentary and metavolcanic rocks of the Yolla Bolly terrane (Early Cretaceous to Middle Jurassic?):</p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">ybt</td><td>Tallaferro Metamorphic Complex of Suppe and Armstrong (1972)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">ybc</td><td>Chicago Rock melange of Blake and Jayko (1983) (Early Cretaceous to Middle Jurassic)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">gs</td><td>Greenstone</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">c</td><td>Metachert</td></tr> <tr><td style="border: 1px solid black; 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padding: 2px;">ecms</td><td>Mudstone (Early Cretaceous)</td></tr> </table> <p>Coast Range ophiolite (Middle and Late Jurassic):</p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">ecg</td><td>Layered gabbro</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">ecsp</td><td>Serpentine melange</td></tr> </table> <p style="text-align: center;"><i>Del Puerto(?) terrane</i></p> <p>Rocks of the Del Puerto(?) terrane:</p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">dpms</td><td>Mudstone (Late Jurassic)</td></tr> </table> <p>Coast Range ophiolite (Middle and Late Jurassic):</p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">dpt</td><td>Tuffaceous chert (Late Jurassic)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">dpb</td><td>Basaltic flows and keratophytic tuff (Jurassic?)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">dpd</td><td>Diabase (Jurassic?)</td></tr> <tr><td style="border: 1px solid black; 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Ks	Sedimentary rocks (Lower Cretaceous)	<p style="text-align: center;">GREAT VALLEY SEQUENCE OVERLAP ASSEMBLAGE</p> <p style="text-align: center;"><i>Hayfork terrane</i></p> <p>Eastern Hayfork subterrane:</p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">eh</td><td>Melange and broken formation (early? 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Jurassic)</td></tr> </table> <p style="text-align: center;"><i>Battlesnake Creek terrane</i></p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">rcm</td><td>Melange (Jurassic and older)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">rcfs</td><td>Limestone</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">rcc</td><td>Radiolarian chert</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">rcis</td><td>Volcanic Rocks (Jurassic or Triassic)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">rcic</td><td>Intrusive complex (Early Jurassic or Late Triassic)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">rcp</td><td>Plutonic rocks (Early Jurassic or Late Triassic)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">rcum</td><td>Ultramafic rocks (age uncertain)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">rcpd</td><td>Blocky peridotite</td></tr> </table> <p style="text-align: center;"><i>Western Klamath terrane</i></p> <p>Smith River subterrane:</p> <table border="0"> <tr><td style="border: 1px solid black; padding: 2px;">srs</td><td>Galice? formation (Late Jurassic)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">srv</td><td>Pyroclastic andesite</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">srgb</td><td>Glen Creek gabbro-ultramafic complex of Irwin and others (1974)</td></tr> <tr><td style="border: 1px solid black; padding: 2px;">srpd</td><td>Serpentinized peridotite</td></tr> </table> <p style="text-align: center;">MAP SYMBOLS</p> <table border="0"> <tr><td></td><td>Contact</td></tr> <tr><td></td><td>Fault</td></tr> <tr><td></td><td>Thrust fault</td></tr> <tr><td></td><td>Trace of the San Andreas fault associated with 1906 earthquake rupture</td></tr> <tr><td></td><td>Strike and dip of bedding:</td></tr> <tr><td></td><td>Inclined</td></tr> <tr><td></td><td>Vertical</td></tr> <tr><td></td><td>Horizontal</td></tr> <tr><td></td><td>Overturned</td></tr> <tr><td></td><td>Approximate</td></tr> <tr><td></td><td>Joint</td></tr> <tr><td></td><td>Strike and dip of cleavage</td></tr> <tr><td></td><td>Shear foliation:</td></tr> <tr><td></td><td>Inclined</td></tr> <tr><td></td><td>Vertical</td></tr> <tr><td></td><td>Horizontal</td></tr> <tr><td></td><td>Folds:</td></tr> <tr><td></td><td>Synclinal or synformal axis</td></tr> <tr><td></td><td>Anticlinal or antiformal axis</td></tr> <tr><td></td><td>Overturned syncline</td></tr> <tr><td></td><td>Landslide</td></tr> <tr><td></td><td>Melange Blocks:</td></tr> <tr><td></td><td>Serpentine</td></tr> <tr><td></td><td>Chert</td></tr> <tr><td></td><td>Blueschist</td></tr> <tr><td></td><td>Greenstone</td></tr> <tr><td></td><td>Fossil locality and number</td></tr> </table>	eh	Melange and broken formation (early? Middle Jurassic)	ehls	Limestone	ehsp	Serpentine	whu	Hayfork Bally Meta-andesite of Irwin (1985), undivided (Middle Jurassic)	whwg	Wildwood (Chancelulla Peak of Wright and Fahan, 1988) pluton (Middle Jurassic)	whwp	Clinopyroxenite	whji	Diorite and gabbro plutons (Middle? 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Qal	Alluvial deposits (Holocene and late Pleistocene?)																																																																																																																																																																																																																																					
Qm	Undeformed marine shoreline and aolian deposits (Holocene and late Pleistocene)																																																																																																																																																																																																																																					
Qt	Undifferentiated nonmarine terrace deposits (Holocene and Pleistocene)																																																																																																																																																																																																																																					
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QTog	Older alluvium (Pleistocene and [or] Pliocene)																																																																																																																																																																																																																																					
QTW	Marine and nonmarine overlap deposits (late Pleistocene to middle Miocene)																																																																																																																																																																																																																																					
TI	Volcanic rocks of Fickle Hill (Oligocene)																																																																																																																																																																																																																																					
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co2	Melange																																																																																																																																																																																																																																					
co3	Broken sandstone and argillite																																																																																																																																																																																																																																					
co4	Intact sandstone and argillite																																																																																																																																																																																																																																					
cob	Basaltic Rocks (Late Cretaceous)																																																																																																																																																																																																																																					
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m	Undivided blueschist (Jurassic?)																																																																																																																																																																																																																																					
Krp	Igneous and sedimentary rocks of Point Delgada (Late Cretaceous)																																																																																																																																																																																																																																					
m	Undivided blueschist blocks (Jurassic?)																																																																																																																																																																																																																																					
krk1	Melange and (or) folded argillite																																																																																																																																																																																																																																					
krk2	Highly folded broken formation																																																																																																																																																																																																																																					
krk3	Highly folded, largely unbroken rocks																																																																																																																																																																																																																																					
krl	Limestone																																																																																																																																																																																																																																					
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krb	Basalt																																																																																																																																																																																																																																					
fc	Sedimentary rocks of the False Cape terrane (Miocene? to Oligocene?)																																																																																																																																																																																																																																					
y1	Sheared and highly folded mudstone																																																																																																																																																																																																																																					
y2	Highly folded broken mudstone, sandstone, and conglomeratic sandstone																																																																																																																																																																																																																																					
y3	Highly folded, little-broken sandstone, conglomerate, and mudstone																																																																																																																																																																																																																																					
Ycgl	Conglomerate																																																																																																																																																																																																																																					
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cwr	White Rock metasandstone of Jayko and others (1989) (Paleogene and [or] Late Cretaceous)																																																																																																																																																																																																																																					
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cfs	Fort Seward metasandstone (age unknown)																																																																																																																																																																																																																																					
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Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 5
Post Office Box 306	Wood Ranch Road, Garberville, California	July 15, 2022
Cutten, CA 95534	APN 214-124-012, Patient to Patient LLC, Client	Project 0467.00
(707) 442-6000	Geologic Cross Section of Well Location (locations approximate)	Not to Scale



Modified after: McLaughlin, et al., (2,000).

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 6
Post Office Box 306	Wood Ranch Road, Garberville, California	July 15, 2022
Cutten, CA 95534	APN 214-124-012, Patient to Patient LLC, Client	Project 0467.00
(707) 442-6000	Hydrogeologic Cross Section of Well Location (locations approximate)	Scale Varies



In this vertically exaggerated (>6x) cross section, the view is looking to the northwest. Groundwater flow in the cross section is toward the reader, or out of the page. Groundwater is presumed to flow from recharge areas in the high ground of Bear Buttes in the northwest, to the southeast toward South Fork Eel River. Ancient landslide deposits (Q/s) compose the bedrock geologic subgrade. These landslide deposits are derived from the much older metasandstones and argillites of the cm1 mélange of the Central Belt Franciscan Complex. Perched groundwater, flowing through zones of permeable rock in chaotic landslide deposits are interpreted to be preferential flow paths supplying the springs in the vicinity of this section.

Lindberg Geologic Consulting	Engineering-Geologic Well Connectivity Assessment Report	Figure 7
Post Office Box 306	Wood Ranch Road, Garberville, California	July 15, 2022
Cutten, CA 95534	APN 214-124-012, Patient to Patient LLC, Client	Project 0467.00
(707) 442-6000	USDA-NRCS Soil Map of Well Location (locations approximate)	1" ≈ 250'



QUADRUPPLICATE
For Local Requirements

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Page of

Owner's Well No.

No. **1087858**

Date Work Began 5-31-16, Ended 5-31-16

Local Permit Agency Humboldt

Permit No. 1516-0648 Permit Date 4-20-16

DWR USE ONLY — DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION () VERTICAL HORIZONTAL ANGLE (SPECIFY)

DRILLING METHOD Rotary FLUID

DEPTH FROM SURFACE

Ft. to Ft.

DESCRIPTION

Describe material, grain size, color, etc.

DEPTH FROM SURFACE	DESCRIPTION
Ft. to Ft.	Describe material, grain size, color, etc.
0 40	Brn Sandy Sandstone
40 100	Brn Sandstone sand mix w/rock
100 160	Blu Trce. Sandstone streaks of cortz + shale

WELL OWNER

Name

Mailing Address

CITY STATE

WELL LOCATION

Address

City

County HUMBOLDT

APN Book Page Parcel 214-142-008

Township Range Section

Lat DEG. MIN. SEC. N Long DEG. MIN. SEC. W

LOCATION SKETCH

NORTH

WEST

EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.**

ACTIVITY ()

NEW WELL

MODIFICATION/REPAIR

Deepen

Other (Specify)

DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

USES ()

WATER SUPPLY

Domestic Public

Irrigation Industrial

MONITORING

TEST WELL

CATHODIC PROTECTION

HEAT EXCHANGE

DIRECT PUSH

INJECTION

VAPOR EXTRACTION

SPARGING

REMEDIATION

OTHER (SPECIFY)

RECEIVED

JUL 1 2016

HUMBOLDT CO. DIVISION
OF ENVIRONMENTAL HEALTH

ENTERED

Dm/7-1-16

TOTAL DEPTH OF BORING 160 (Feet)

TOTAL DEPTH OF COMPLETED WELL 160 (Feet)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 100 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 80 (Ft.) & DATE MEASURED 5-31-16

ESTIMATED YIELD 25 (GPM) & TEST TYPE AIR LIFT

TEST LENGTH 1 (Hrs.) TOTAL DRAWDOWN (Ft.)

* May not be representative of a well's long-term yield.

DEPTH FROM SURFACE	BORE-HOLE DIA. (Inches)	CASING (S)							
		TYPE ()				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
		BLANK	SCREEN	CONDUCTOR	FILL PIPE				
0 100	5"	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	F480	5"	sch160	1030
100 160		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

DEPTH FROM SURFACE	ANNULAR MATERIAL			
	TYPE			
	CE-MENT ()	BEN-TONITE ()	FILL ()	FILTER PACK (TYPE/SIZE)
0 20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20 160	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3/8 PEA

ATTACHMENTS ()

Geologic Log

Well Construction Diagram

Geophysical Log(s)

Soil/Water Chemical Analyses

Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Bushnell Ent
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 499 Bear Creek Rd CITY Garb STATE CA ZIP 95546

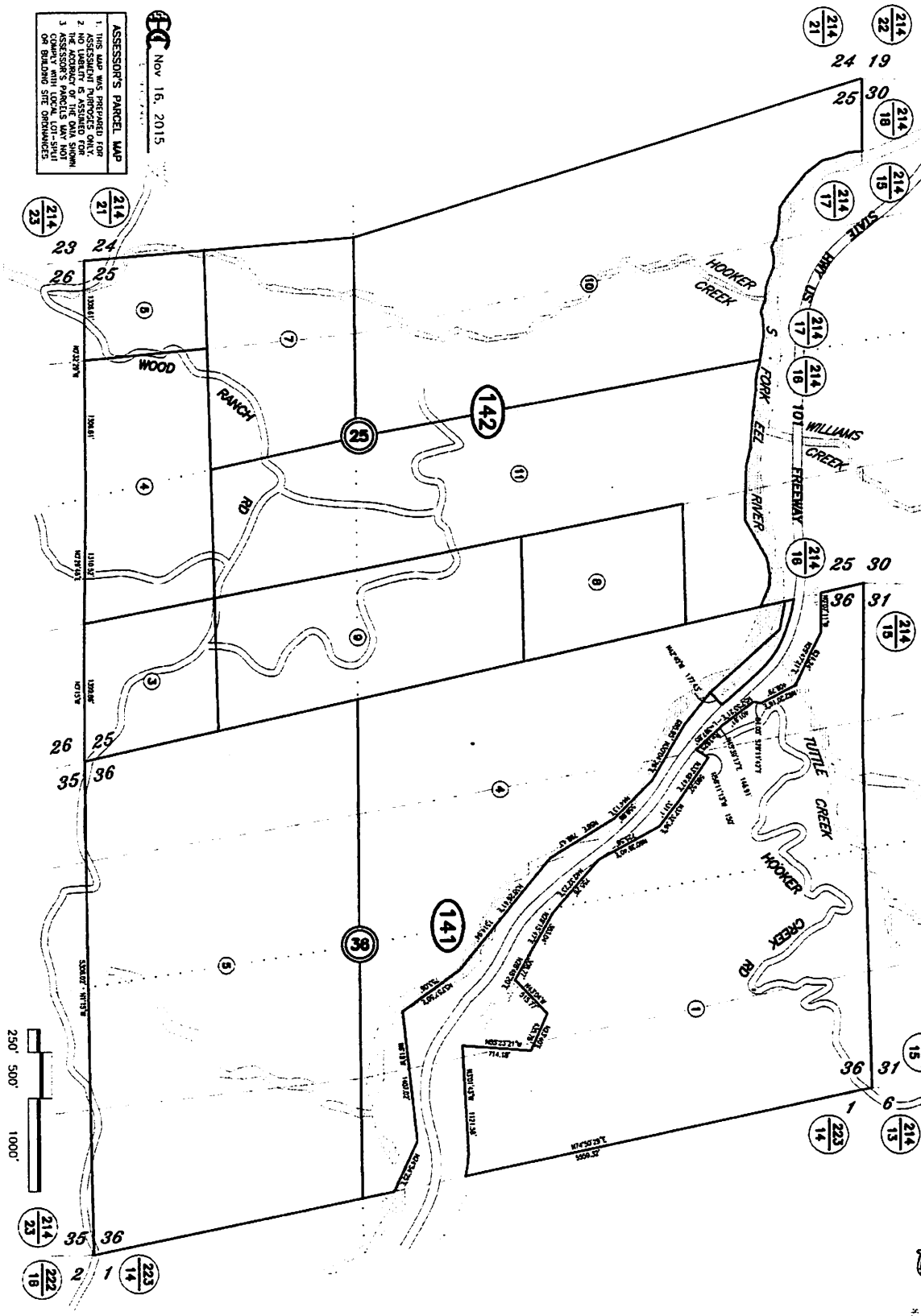
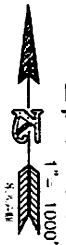
Signed [Signature] DATE SIGNED 6-4-16 C-57 LICENSE NUMBER 40370

C-57 LICENSED WATER WELL CONTRACTOR

SEC 36 & PTN SEC 25, T3S R3E, H.B.& M.

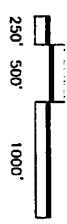
NOTE - Assessor's Block Numbers Shown in Ellipses
 Assessor's Parcel Numbers Shown in Small Circles

214-14



ASSESSOR'S PARCEL MAP
 1. THIS MAP WAS PREPARED FOR
 2. ASSESSMENT PURPOSES ONLY.
 3. THE ACCURACY OF THE DATA SHOWN
 HEREON IS NOT GUARANTEED BY THE
 COUNTY AND OPEN TO CHALLENGE
 OR BUILDING THE CHALLENGES.

EC Nov 16, 2015



Humboldt County, South Part, California

647—Coyoterock-Yorknorth complex, 15 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2qds3

Elevation: 200 to 3,280 feet

Mean annual precipitation: 60 to 100 inches

Mean annual air temperature: 48 to 57 degrees F

Frost-free period: 240 to 300 days

Farmland classification: Not prime farmland

Map Unit Composition

Coyoterock and similar soils: 45 percent

Yorknorth, moist, and similar soils: 40 percent

Minor components: 15 percent

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

Description of Coyoterock

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Center third of mountainflank

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Parent material: Colluvium derived from sandstone and/or mudstone and/or residuum weathered from schist

Typical profile

Oi - 0 to 0 inches: slightly decomposed plant material

A - 0 to 3 inches: loam

BAt - 3 to 11 inches: clay loam

Bt1 - 11 to 20 inches: clay

Bt2 - 20 to 56 inches: clay

C - 56 to 71 inches: gravelly clay

Properties and qualities

Slope: 15 to 50 percent

Surface area covered with cobbles, stones or boulders: 0.0 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 20 to 39 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: F004BI106CA - High precipitation mountain slopes

Hydric soil rating: No

Description of Yorknorth, Moist

Setting

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Mountainflank

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Parent material: Colluvium derived from sandstone and/or residuum weathered from schist and/or earthflow deposits derived from mudstone

Typical profile

A1 - 0 to 7 inches: silt loam

A2 - 7 to 11 inches: silt loam

Bt1 - 11 to 20 inches: silty clay loam

Bt2 - 20 to 39 inches: silty clay loam

C - 39 to 71 inches: clay

Properties and qualities

Slope: 15 to 50 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 20 to 39 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: R004BI201CA - Fine-loamy Uplands

Hydric soil rating: No

Minor Components

Crazycoyote

Percent of map unit: 10 percent

Landform: Mountain slopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Center third of mountainflank

Down-slope shape: Concave, convex, linear

Across-slope shape: Linear

Hydric soil rating: No

Devilshole

Percent of map unit: 5 percent

Landform: Mountain slopes

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Upper third of mountainflank

Down-slope shape: Convex, linear

Across-slope shape: Linear, convex

Hydric soil rating: No

Data Source Information

Soil Survey Area: Humboldt County, South Part, California

Survey Area Data: Version 10, Sep 6, 2021