Jurisdictional Determinations

James Robb

Wetland Specialist

Sacramento District Regulatory Program Workshop

22 February 2016







- Definition of Waters of the U.S.
 regulation published 29 June 2015 (80 Fed. Reg. 37054-37127)
- Stayed



FEDERAL REGISTER

Vol. 80

Monday,

No. 124

June 29, 2015

Part II

Department of Defense

Department of the Army, Corps of Engineers

33 CFR Part 328

Environmental Protection Agency

40 CFR Parts 110, 112, 116, et al.

Clean Water Rule: Definition of "Waters of the United States"; Final Rule

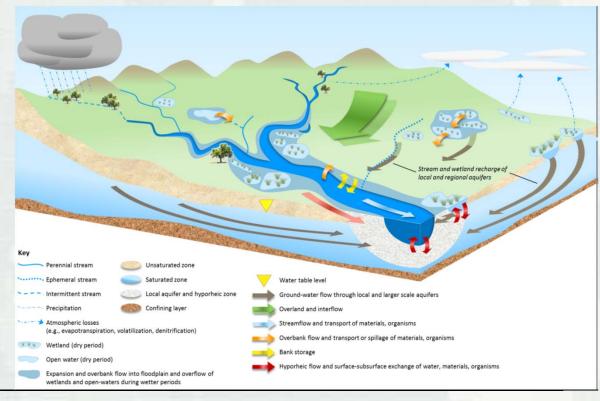


- Minimum Standards for the Acceptance of Aquatic Resources Delineation Reports, update effective January 2016
 - ► http://1.usa.gov/1V68IYa





 Connectivity literature review published January 2015





High-Flow

Channel

Floodplain

Terrace

 Guide to OHWM Delineation for Non-Perennial Streams in the Western Mountains Valleys and Coast



Low-Flow

 Proposed annual update to the National Wetland Plant List September 2015

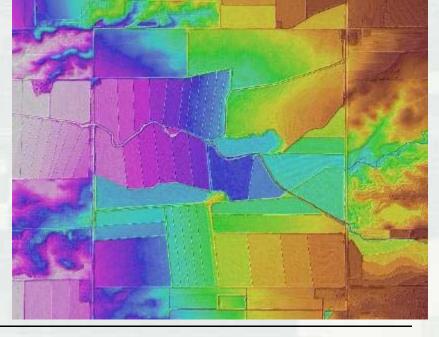




 SPD Irrigated Wetlands Delineation Procedures (12510-SPD)

Formerly irrigated lands hydrology study, in

progress





Common Pitfalls

- Vague or incomplete data sheets
- Sample point placement
- Antecedent precipitation and drought





epth	cription: (Describe to Matrix	o the web		x Feature					
opun nches)	Color (moist)	%	Color (molst)			Loc2	Toxture	Remarks	-27
1-5	1010 4/2	95	10 yR4/6	5	C		Strilly Clay		_ 1
	10/K 10	~~	-1						93
		AMAR	· · · · · · · · · · · · · · · · · · ·	·		-		the state of the s	-
					- 1		-		-
	33			359					- 1
									_
						100			90
				1		· ·			
						-			-32
									-65
ype: C≃C	oncentration, D=Depl	etion, RM	≅Reduced Matrix, €	S=Covere	d or Coat	ed Sand G	Brains. Loc	ation: PL=Pore Lining, M=Matrix.	
dric Soti	Indicators: (Applica	ible to al			ted.)			for Problematic Hydric Solls ³ :	
Histoso			Sandy Re					luck (A9) (LRR C)	- 1
	pipedon (A2)		Stripped N					fuck (A10) (LRR B) ed Vertic (F18)	- 1
	listic (A3)		Loamy Mu					arent Material (TF2)	
	en Sulfide (A4)		Loamy Gi Depleted i					Explain in Remarks)	8
	ed Layers (A5) (LRR C	-}	Redox Da	rk Surface	/F6)		Calor (- 1
	luck (A9) (LRR D) ad Below Dark Surface	(411)	Depleted						1
-	oark Surface (A12)	* (F11.1)	Redox De				² Indicators	of hydrophytic vegetation and	- 1
	Mucky Mineral (91)		Vernal Po					hydrology must be present,	
	Gleyeti Matrix (S4)						unless d	isturbed or problematic.	- 33
_ Sariuy									
	Layer (if present):	1000					1	14	-
Restrictive								· /	
Restrictive l'ype:	Layer (if present):				1		Hydric Soil	Present? Yos No X	
Restrictive l'ype: Depth (i		-			*		Hydric Soil	Present? Yos No X	
Restrictive l'ype: _ Depth (i Remarks:	Layer (if prasent):				14		Hydric Soil	Present? Yos No X	
Restrictive l'ype: Depth (i Remarks:	Layer (if present):				*		Hydric Soil	Present? Yos No X	
Restrictive Type: Depth (i Remarks: YDROL Wetland F	Layer (if present): nches): OGY lydrology indicators:								
YDROL	Layer (if present): nches): OGY tydrology indicators:				38		Seco	ndary Indicators (2 or more required)	
Restrictive lype: _ Depth (i Remarks: YDROL Wetland F Frimary In- Surface	Layer (if prasent): nches): OGY lydrology indicators: dicators (minimum of the base (A1))		Salt Cru	ist (B11)	12		Seco	ndary Indicators (2 or more required) Water Marks (B1) (Riverina)	
Vestrictive fype: Depth (i Remarks: YDROL Wetland F Surfac High V	Layer (if present): nches): OGY tydrology indicators: dicators (minimum of cators): by Water (A1) Vater Table (A2)		Salt Cru Biotic C	ist (B11) rust (B12)			Seco	ndary Indicators (2 or more required) Water Marks (B1) (Riverina) Sediment Deposits (B2) (Riverine)	
VDROL Netland F Surface High V Satura	Layer (if present): nches): OGY Oydrology indicators: ficators (minimum of r	one requi	Salt Cru Biotic C Aquello	ist (B11) rust (B12) Invortebra	ites (B13)		<u>Seco</u>	ndary Indicators (2 or more required) Water Marks (B1) (Riverina) Sedimont Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine)	
VDROL Wetland F Primary In Satura Water Water Water Water Water Water	OGY ydrology indicators: digators (minimum of other (A1) Water Table (A2) Marks (B1) (Nonrive	one requir	Salt Cru Biotic C Aquello Hydrogi	ist (B11) rust (B12) Invortebra en Sulfide	ites (B13) Odor (C1		Seco	ndary Indicators (2 or more required) Water Marks (81) (Riverlina) Sediment Deposits (82) (Riverline) Drift Deposits (83) (Riverline) Drainage Patterns (810)	
YDROL Wetland F Primary Ind Satura Water Water Satura Water Satura Water Sediny	OGY Vigirology Indicators: Elegators (minimum of the Water (A1) Vater (A2) Marks (B1) (Nonriverent Deposits (B2) (No	one requir rine) anriverine	Salt Cru Biotic C Aquallo Hydrog Oxidize	ist (B11) rust (B12) Invortebra an Sulfide d Rhizospi	ites (B13) Odor (C1 heres alor) ng Livin g R	Seco	ndary Indicators (2 or more required) Water Marks (B1) (Riverline) Sediment Deposits (B2) (Riverline) Orift Deposits (B3) (Riverline) Originage Patterns (B10) Ony-Season Weter Tablo (C2)	
YDROL YDROL Wetland F Frimary In Surfac High V Satura Waser Sedin Drift C	OGY lydrology Indicators: dicators (minimum of the Water (A1) Water Table (A2) Marks (B1) (Nonriverent Deposits (B2) (Nonriverent Deposits (B3) (Nonriverent	one requir rine) anriverine	Salt Cru Biotic C Aquallo Hyorogi Oxidize Preseni	ist (B11) rust (B12) Invortebra an Sulfide d Rhizospi ca of Redu	ites (B13) Odor (C1 heres alor iced Iron i) ng Livin g R C4)	Seco V	ndary Indicators (2 or more required). Water Marks (B1) (Riverine). Sadimont Deposits (B2) (Riverine). Drift Deposits (B3) (Riverine). Drainage Patterné (B10). Dry-Soason Water Table (C2). Crayfish Burrows (C8).	
YDROL YDROL Wetland F Primary In Surfac High V Satura Vector Vector Sedine Surfac	OGY lydrology indicators: by Water (A1) Water Table (A2) attion (A3) Warks (B1) (Nonrive ent Deposits (B2) (No	one requir rine) onriverine erine)	Salt Cru Biotic C Aquallo Hyeroge a) Oxidize Present Recent	ist (B11) rust (B12) Invortebra en Sulfide d Rhizospi ce of Redu Iron Redu	ites (B13) Odor (C1 heres alor iced Iron i ction In Ti) ng Livin g R C4)	Seco \\	ndary Indicators (2 or more required). Water Marks (B1) (Riverina). Sedimont Deposits (B2) (Riverine). Drift Deposits (B3) (Riverine). Dry-Scason Water Table (C2). Crayfish Burrows (C8). Saturation Visible on Acrial Imagery (
YDROL Wetland F Primary In Satura Waser Sedin Surfac Sedin Surfac	OGY (Vydrology Indicators: By Water (A1) (Vater Table (A2) (Vation (A3) (Vater Table (A2) (Vater Table (A2) (Vater (A3) (Vate	nne requir rine) anriverine erine)	Salt Cru Biotic C Aquallo Hyorogi Oxidize Preseni Recent (B7) Thin Me	ist (B11) rust (B12) Invortebra an Sulfide d Rhizospi ca of Redu lkon Redu uck Surfac	ates (B13) Odor (C1 heres alor riced Iron I ction In Ti e (C7)) ng Living R C4) Iled Soils (Seco	ndery Indicators (2 or more required) Nater Marks (B1) (Riverina) Sedimont Deposits (B2) (Riverine) Drainage Patterns (B10) Dry-Soason Water Tablo (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (
YDROL YDROL Wetland F Surfact Satura Water Sedin Drift G Surfact Water Surfact Water Sedin Drift G Surfact Water Water Surfact Water Sedin Water Water Water Water Surfact Water	OGY OGY OGY OGY OGY OGY OGY OGY	nne requir rine) anriverine erine)	Salt Cru Biotic C Aquallo Hyeroge a) Oxidize Present Recent	ist (B11) rust (B12) Invortebra an Sulfide d Rhizospi ca of Redu lkon Redu uck Surfac	ates (B13) Odor (C1 heres alor riced Iron I ction In Ti e (C7)) ng Living R C4) Iled Soils (Seco	ndary Indicators (2 or more required). Water Marks (B1) (Riverina). Sedimont Deposits (B2) (Riverine). Drift Deposits (B3) (Riverine). Dry-Scason Water Table (C2). Crayfish Burrows (C8). Saturation Visible on Acrial Imagery (
YDROL YDROL Wetland F Surfac High V Sedir Surfac High V Satura Waser Sedir Junad Water	OGY lydrology Indicators: digators (minimum of the Water (A1) Water Table (A2) Atlant (A3) Marks (B1) (Nonrive International (B2) (Nonrive International (B3) (Nonrive Int	nne requii rine) onriverine rine)	Salt Cru Biotic C Aquatic Hydrog Oxidize Presen Recent (B7) Thin M	ist (B11) rust (B12) Invortebra en Sulfide d Rhizospi ce of Redu ikon Redu uck Surfac Explain in	otes (B13) Odor (C1 heres alor iced Iron otion In Ti e (C7) Remarks) ng Living R C4) Iled Soils (Seco	ndery Indicators (2 or more required) Nater Marks (B1) (Riverina) Sedimont Deposits (B2) (Riverine) Drainage Patterns (B10) Dry-Soason Water Tablo (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (
YDROL Wetland F Surfac High V Sedim Surfac High V Surfac Water Water Field Obs Surface W	OGY Vydrology Indicators: by Water (A1) Water Table (A2) stion (A3) Marks (B1) (Nonrive berostis (B3) (Nonrive ce Soll Cracks (B6) ation Visible on Aerial Stained Leaves (B9) stort Present?	nne requir rine) onriverine) Imagery	Salt Cru Biotic C Aquatic Hyerog Oxidize Presen Recent (B7) Thin M Other (ist (B11) rust (B12) Invortebra an Sulfide d Rhizospi ce of Redu uck Surfac Explain in (Inches):	otes (B13) Odor (C1 heres alor reed Iron i ction In Ti e (C7) Remarks)) ng Living R C4) Iled Soils (Seco	ndery Indicators (2 or more required) Nater Marks (B1) (Riverina) Sedimont Deposits (B2) (Riverine) Drainage Patterns (B10) Dry-Soason Water Tablo (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (
YDROL Wetland F Surfac High V Sedim Surfac High V Surfac Water Water Field Obs Surface W	OGY Nydrology Indicators: dicators (minimum of rewards) Water Table (A2) Attion (A3) Marks (B1) (Nonrive Deposits (B3) (Nonrive Deposits (B3) (Nonrive Deposits (B4) (Nonrive Deposits (B5) (Nonrive Deposits (B6) (Nonrive Deposits	rine) onriverine rine) Imagery Yes	Salt Cru Biotic C Aquatic Hyerog Oxidize Presen Recent (B7) Thin M Other (ist (B11) rust (B12) Invortebra en Sulfide d Rhizospi co of Redu lron Redu uck Surfac Explain in (Inches): (inches):	ates (B13) Odor (C1 heres alor roed Iron I otion In Ti e (C7) Remarks)) ng Living R C4) Illed Soils (Seco	ndary Indicators (2 or more required) Mater Marks (B1) (Riverina) Sadimont Deposits (B2) (Riverine) Drainage Patterns (B10) Dry-Soason Water Tablo (C2) Crayfish Burrows (C8) Saturation Visible on Acrial Imagery (6 Shallow Aquitard (D3) FAC-Neutral Test (D5)	
YDROL Wetland F Primary In Surfac High V Satura Waser Surfac Inund Water Field Obs Surfac Water Tal Saturation	OGY Nydrology Indicators: Bydrology Indicators: State (A1) Water (A1) Water (A2) Attion (A3) Marks (B1) (Nonrive: Bert Deposits (B2) (Nonrive: Bert Deposits (B3) (Nonrive: Bert Deposits (B3) (Nonrive: Bert Deposits (B6) (Nonrive: Bert	rine) onriverine rine) Imagery Yes	Salt Cru Biotic C Aquatic Hyerog Oxidize Presen Recent (B7) Thin M Other (ist (B11) rust (B12) Invortebra an Sulfide d Rhizospi ce of Redu uck Surfac Explain in (Inches):	ates (B13) Odor (C1 heres alor roed Iron I otion In Ti e (C7) Remarks)) ng Living R C4) Illed Soils (Seco	ndery Indicators (2 or more required) Nater Marks (B1) (Riverina) Sedimont Deposits (B2) (Riverine) Drainage Patterns (B10) Dry-Soason Water Tablo (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (
YDROL Wetland F Primary In Surfac High V Satura Vacet Sediii Drift I Surfac Hound Water Surfac Hound Water Sediii Surfac Hound Water Surfac Hound Water Surfac Hound Water Surfac Hound Water Field Obs	OGY lydrology Indicators: digators (minimum of research) Water Table (A2) Altion (A3) Water Table (A2) Altion (A3) Water Table (B1) (Nonrive International Control (B2) Water (B1) (Nonrive International Control Stained Leaves (B6) International Leaves (B9) International Leaves	rine) nnrivedne rine) Imagary Yes Yes	Salt Cru Biotic Cl Aquatic Hyorog Oxidize Present Receint (B7) Thin M Other (No Depth No Depth No Depth	ist (B11) rust (B12) Invortebra an Sulfide d Rhizospi ce of Redu Iron Redu uck Surfac Explain in (Inches): (Inches):	oder (B13) Odor (C1 heres alor heres alor hed Iron i dion In Ti e (C7) Remarks)) ng Living R C4) Illed Soils (Seco V	ndary Indicators (2 or more required) Mater Marks (B1) (Riverina) Sadimont Deposits (B2) (Riverine) Drainage Patterns (B10) Dry-Soason Water Tablo (C2) Crayfish Burrows (C8) Saturation Visible on Acrial Imagery (6 Shallow Aquitard (D3) FAC-Neutral Test (D5)	
YDROL Wetland F Primary In Surfac High V Satura Vacet Sediii Drift I Surfac Hound Water Sediii Surfac Hound Water Surfac Vacet Vacet Surfac Vacet Va	OGY Nydrology Indicators: Bydrology Indicators: State (A1) Water (A1) Water (A2) Attion (A3) Marks (B1) (Nonrive: Bert Deposits (B2) (Nonrive: Bert Deposits (B3) (Nonrive: Bert Deposits (B3) (Nonrive: Bert Deposits (B6) (Nonrive: Bert	rine) nnrivedne rine) Imagary Yes Yes	Salt Cru Biotic Cl Aquatic Hyorog Oxidize Present Receint (B7) Thin M Other (No Depth No Depth No Depth	ist (B11) rust (B12) Invortebra an Sulfide d Rhizospi ce of Redu Iron Redu uck Surfac Explain in (Inches): (Inches):	oder (B13) Odor (C1 heres alor heres alor hed Iron i dion In Ti e (C7) Remarks)) ng Living R C4) Illed Soils (Seco V	ndary Indicators (2 or more required) Mater Marks (B1) (Riverina) Sadimont Deposits (B2) (Riverine) Drainage Patterns (B10) Dry-Soason Water Tablo (C2) Crayfish Burrows (C8) Saturation Visible on Acrial Imagery (6 Shallow Aquitard (D3) FAC-Neutral Test (D5)	
Permarks: IYDROL Wetland F Primary In Surfac High V Satura Drift I Surfac High V Satura U Satura V Water Sedin Drift I Surfac Water Surfac I nund Water Field Obs	OGY lydrology Indicators: figators (minimum of the Water (A1) Water Table (A2) Attion (A3) Marks (B1) (Nonriverent Deposits (B2) (Nonriverent Deposits (B2) (Nonriverent Deposits (B3)	rine) nnrivedne rine) Imagary Yes Yes	Salt Cru Biotic Cl Aquatic Hyorog Oxidize Present Receint (B7) Thin M Other (No Depth No Depth No Depth	ist (B11) rust (B12) Invortebra an Sulfide d Rhizospi ce of Redu Iron Redu uck Surfac Explain in (Inches): (Inches):	oder (B13) Odor (C1 heres alor heres alor hed Iron i dion In Ti e (C7) Remarks)) ng Living R C4) Illed Soils (Seco V	ndary Indicators (2 or more required) Mater Marks (B1) (Riverina) Sadimont Deposits (B2) (Riverine) Drainage Patterns (B10) Dry-Soason Water Tablo (C2) Crayfish Burrows (C8) Saturation Visible on Acrial Imagery (6 Shallow Aquitard (D3) FAC-Neutral Test (D5)	
Pastrictive Type: _ Depth (i Remarks: PPROL Wetland F Primary In Surfac High V Satura Vacet Sedin Drift C Surfac Inund Water Field Obes Surface W Water Tal Saturation	OGY lydrology Indicators: figators (minimum of the Water (A1) Water Table (A2) Attion (A3) Marks (B1) (Nonriverent Deposits (B2) (Nonriverent Deposits (B2) (Nonriverent Deposits (B3)	rine) nnrivedne rine) Imagary Yes Yes	Salt Cru Biotic Cl Aquatic Hyorog Oxidize Present Receint (B7) Thin M Other (No Depth No Depth No Depth	ist (B11) rust (B12) Invortebra an Sulfide d Rhizospi ce of Redu Iron Redu uck Surfac Explain in (Inches): (Inches):	oder (B13) Odor (C1 heres alor heres alor hed Iron i dion In Ti e (C7) Remarks)) ng Living R C4) Illed Soils (Seco V	ndary Indicators (2 or more required) Mater Marks (B1) (Riverina) Sadimont Deposits (B2) (Riverine) Drainage Patterns (B10) Dry-Soason Water Tablo (C2) Crayfish Burrows (C8) Saturation Visible on Acrial Imagery (6 Shallow Aquitard (D3) FAC-Neutral Test (D5)	



BUILDING STRONG®

ofile Description: (Describe to			x Features				
ches) Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²	Texture	Remarks
104R4/3	95	10 YR 4/6	<u> </u>	<u></u>		Silty Clay	
pe: C=Concentration, D=Deple	tion, RM	=Reduced Matrix, C LRRs, unless othe	S=Covered	d or Coate	ed Sand C	Indicators for	n: PL=Pore Lining, M=Matr Problematic Hydric Soils ³
iric Soil Indicators: (Application Histosol (A1)	tion, RM	LRRs, unless othe	erwise note lox (S5)	d or Coate	ed Sand G	Indicators for 1 cm Muck	Problematic Hydric Soils ³ (A9) (LRR C)
Iric Soil Indicators: (Applicat Histosol (A1) Histic Epipedon (A2)	tion, RM	LRRs, unless other Sandy Red Stripped M	erwise note lox (S5) atrix (S6)	ed.)	ed Sand G	Indicators for 1 cm Muck 2 cm Muck	Problematic Hydric Soils ³ (A9) (LRR C) (A10) (LRR B)
Iric Soil Indicators: (Applicat Histosol (A1) Histic Epipedon (A2) Black Histic (A3)	tion, RM	LRRs, unless other Sandy Red Stripped M Loamy Mu	rwise note lox (S5) atrix (S6) cky Minera	ed.) al (F1)	ed Sand G	Indicators for 1 cm Muck 2 cm Muck Reduced \	Problematic Hydric Soils ³ (A9) (LRR C) (A10) (LRR B) /ertic (F18)
Iric Soil Indicators: (Applicat Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4)	ble to all	LRRs, unless othe Sandy Red Stripped M Loamy Mu Loamy Gle	rwise note lox (S5) atrix (S6) cky Minera yed Matrix	ed.) al (F1) c (F2)	ed Sand G	Indicators for 1 cm Muck 2 cm Muck Reduced \ Red Paren	Problematic Hydric Soils ³ (A9) (LRR C) (A10) (LRR B)
ric Soil Indicators: (Application of the Control of	ble to all	LRRs, unless other Sandy Red Stripped M Loamy Mu	erwise note lox (S5) atrix (S6) cky Minera eyed Matrix Matrix (F3)	ed.) al (F1) c (F2)	ed Sand C	Indicators for 1 cm Muck 2 cm Muck Reduced \ Red Paren	Problematic Hydric Soils ³ (A9) (LRR C) (A10) (LRR B) /ertic (F18) t Material (TF2)
ric Soil Indicators: (Application of the Control of	ble to all	LRRs, unless othe Sandy Red Stripped M Loamy Mu Loamy Gle Depleted M	erwise note lox (S5) latrix (S6) locky Mineral loyed Matrix Matrix (F3) lok Surface	ed.) al (F1) c (F2) (F6)	ed Sand G	Indicators for 1 cm Muck 2 cm Muck Reduced \\ Red Paren Other (Exp	Problematic Hydric Soils ³ (A9) (LRR C) (A10) (LRR B) (ertic (F18) (t Material (TF2) (blain in Remarks)
Histosol (A1) Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR C) 1 cm Muck (A9) (LRR D)	ble to all	LRRs, unless othe Sandy Red Stripped M Loamy Mu Loamy Gle Depleted M Redox Dar	lox (S5) atrix (S6) cky Minera yed Matrix Matrix (F3) ck Surface Dark Surface oressions (ed.) al (F1) a (F2) (F6) ce (F7)	ed Sand G	Indicators for 1 cm Muck 2 cm Muck Reduced \\ Red Paren Other (Exp	Problematic Hydric Soils ³ (A9) (LRR C) (A10) (LRR B) /ertic (F18) t Material (TF2)

U.S.ARMY

Depth (inches): ___

Hydric Soil Present? Yes ____ No X

HYDROLOGY		
Wetland Hydrology Indicators:	2	
Primary Indicators (minimum of one required; ch	neck all that apply)	Secondary Indicators (2 or more required)
 Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) 	 Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled So Thin Muck Surface (C7) Other (Explain in Remarks) 	Crayfish Burrows (C8)
Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No Water Table Present? Yes No Saturation Present? Yes No	Depth (inches):	Wetland Hydrology Present? Yes No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitor)	oring well, aerial photos, previous inspec	ctions), if available:
Remarks:	7	Б
	*	•



rofile Description: (Describe to the o		x Features			
nches) Color (moist) %	Color (moist)	<u>%</u> 7	ype ¹ Loc	Texture	Remarks
)-5 10YR 4/3 95	10104/6	5	0	Silty Clay	•
1-8 101K 18 18	- 10 /K /V				
<u> </u>					Land Landson Control
		. 			
			N		
					p.
				2.	
ype: C=Concentration, D=Depletion,	RM=Reduced Matrix, CS	S=Covered o	r Coated Sar		ion: PL=Pore Lining, M=Matrix
ype: C=Concentration, D=Depletion, ydric Soil Indicators: (Applicable to	RM=Reduced Matrix, CS	S=Covered o	r Coated Sar	Indicators fo	or Problematic Hydric Soils ³ :
ype: C=Concentration, D=Depletion, ydric Soil Indicators: (Applicable to Histosol (A1)	RM=Reduced Matrix, Co all LRRs, unless othe Sandy Red	rwise noted	r Coated Sar	Indicators fo	or Problematic Hydric Soils ³ : ck (A9) (LRR C)
ydric Soil Indicators: (Applicable to _ Histosol (A1)	all LRRs, unless othe	rwise noted ox (S5)	r Coated Sar	Indicators fo 1 cm Mu 2 cm Mu	or Problematic Hydric Soils ³ : ck (A9) (LRR C) ck (A10) (LRR B)
ydric Soil Indicators: (Applicable to _ Histosol (A1) _ Histic Epipedon (A2)	all LRRs, unless othe Sandy Red Stripped Market	rwise noted ox (S5))	Indicators fo 1 cm Mu 2 cm Mu Reduced	or Problematic Hydric Soils ³ : ck (A9) (LRR C) ck (A10) (LRR B) I Vertic (F18)
ydric Soil Indicators: (Applicable to Histosol (A1) Histic Epipedon (A2) Black Histic (A3)	all LRRs, unless othe Sandy Red Stripped Mage Loamy Muc	rwise noted ox (S5) atrix (S6)	·) -1)	Indicators fo 1 cm Mu 2 cm Mu Reduced Red Pare	or Problematic Hydric Soils ³ : ck (A9) (LRR C) ck (A10) (LRR B) I Vertic (F18) ent Material (TF2)
ydric Soil Indicators: (Applicable to _ Histosol (A1) _ Histic Epipedon (A2) _ Black Histic (A3) _ Hydrogen Sulfide (A4)	all LRRs, unless othe Sandy Red Stripped Mage Loamy Muc	rwise noted ox (S5) atrix (S6) cky Mineral (I yed Matrix (F	·) -1)	Indicators fo 1 cm Mu 2 cm Mu Reduced Red Pare	or Problematic Hydric Soils ³ : ck (A9) (LRR C) ck (A10) (LRR B) I Vertic (F18)
ydric Soil Indicators: (Applicable to Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR C)	all LRRs, unless othe Sandy Red Stripped Ma Loamy Muc Loamy Gle Depleted M	rwise noted ox (S5) atrix (S6) cky Mineral (I yed Matrix (F) =1) 2)	Indicators fo 1 cm Mu 2 cm Mu Reduced Red Pare	or Problematic Hydric Soils ³ : ck (A9) (LRR C) ck (A10) (LRR B) I Vertic (F18) ent Material (TF2)
ydric Soil Indicators: (Applicable to Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR C) 1 cm Muck (A9) (LRR D)	all LRRs, unless othe Sandy Red Stripped Ma Loamy Muc Loamy Gle Depleted M Redox Dar	rwise noted ox (S5) atrix (S6) cky Mineral (I yed Matrix (F latrix (F3) k Surface (F6	-1) -2) -3)	Indicators fo 1 cm Mu 2 cm Mu Reduced Red Pare	or Problematic Hydric Soils ³ : ck (A9) (LRR C) ck (A10) (LRR B) I Vertic (F18) ent Material (TF2)
ydric Soil Indicators: (Applicable to Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR C) 1 cm Muck (A9) (LRR D) Depleted Below Dark Surface (A11	all LRRs, unless othe Sandy Red Stripped Ma Loamy Muc Loamy Gle Depleted M Redox Dar Depleted D	rwise noted ox (S5) atrix (S6) cky Mineral (I yed Matrix (F latrix (F3) k Surface (F6 park Surface) -1) 2) 5) (F7)	Indicators fo 1 cm Mu 2 cm Mu Reduced Red Pare Other (E	or Problematic Hydric Soils ³ : ck (A9) (LRR C) ck (A10) (LRR B) I Vertic (F18) ent Material (TF2) xplain in Remarks)
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR C) 1 cm Muck (A9) (LRR D) Depleted Below Dark Surface (A11 Thick Dark Surface (A12)	Sandy Red Stripped Management Loamy Muc Loamy Gle Depleted Management Redox Dar Redox Dep	rwise noted ox (S5) atrix (S6) cky Mineral (I yed Matrix (F latrix (F3) k Surface (F6) ark Surface pressions (F8) -1) 2) 5) (F7)	Indicators fo 1 cm Mu 2 cm Mu Reduced Red Pare Other (E	or Problematic Hydric Soils ³ : ck (A9) (LRR C) ck (A10) (LRR B) I Vertic (F18) ent Material (TF2) xplain in Remarks) I hydrophytic vegetation and
ydric Soil Indicators: (Applicable to Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR C) 1 cm Muck (A9) (LRR D) Depleted Below Dark Surface (A11	all LRRs, unless othe Sandy Red Stripped Ma Loamy Muc Loamy Gle Depleted M Redox Dar Depleted D	rwise noted ox (S5) atrix (S6) cky Mineral (I yed Matrix (F latrix (F3) k Surface (F6) ark Surface pressions (F8) -1) 2) 5) (F7)	Indicators fo 1 cm Mu 2 cm Mu Reduced Red Pare Other (E	or Problematic Hydric Soils ³ : ck (A9) (LRR C) ck (A10) (LRR B) I Vertic (F18) ent Material (TF2) xplain in Remarks)

U.S.ARMY

HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; cl	neck all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations:	Salt Crust (B11) Biotic Crust (B12) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Scale Thin Muck Surface (C7) Other (Explain in Remarks)	Crayfish Burrows (C8)
Surface Water Present? Yes No Water Table Present? Yes No Saturation Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monit	Depth (inches): Depth (inches):	Wetland Hydrology Present? Yes No
Booking (topolitical plans)		
Remarks:		
		e (4)
9		

BUILDING STRONG®

U.S.ARMY

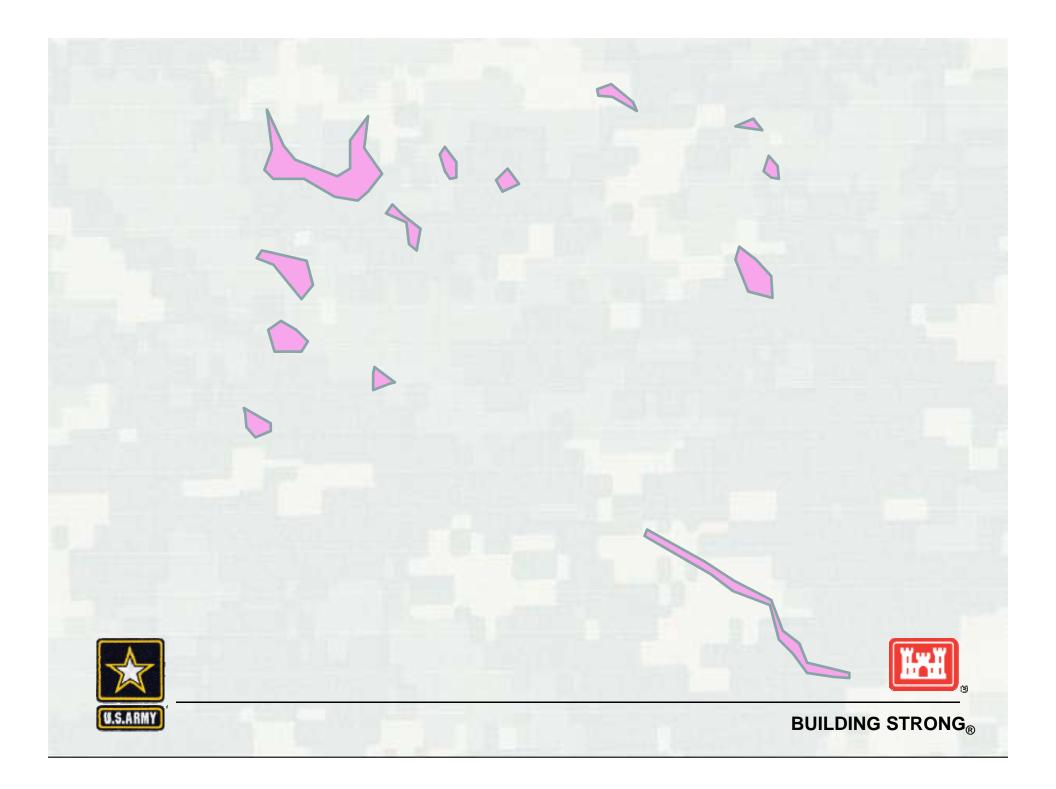
Profile Description: (Describe to the dept	needed to document the indi	cator or confire	n the absence of in	idicators.)
Depth Matrix Color (moist) % 10 YR 4/3 98	Redox Features	ype¹ Loc²	Selfy Clag	Remarks
Type: C=Concentration, D=Depletion, RM= Hydric Soil Indicators: (Applicable to all Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR C) 1 cm Muck (A9) (LRR D) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4)	Reduced Matrix, CS=Covered on LRRs, unless otherwise noted. Sandy Redox (S5) Stripped Matrix (S6) Loamy Mucky Mineral (Fill Loamy Gleyed Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (Redox Depressions (F8) Vernal Pools (F9)) -1) 2) () (F7)	Indicators for 1 cm Muck 2 cm Muck Reduced \ Red Paren Other (Exp	n: PL=Pore Lining, M=Matrix. Problematic Hydric Soils ³ : (A9) (LRR C) (A10) (LRR B) /ertic (F18) It Material (TF2) It Material (TF2)
Restrictive Layer (if present):				18
Type:		84	Hydric Soil Pre	esent? Yes No _

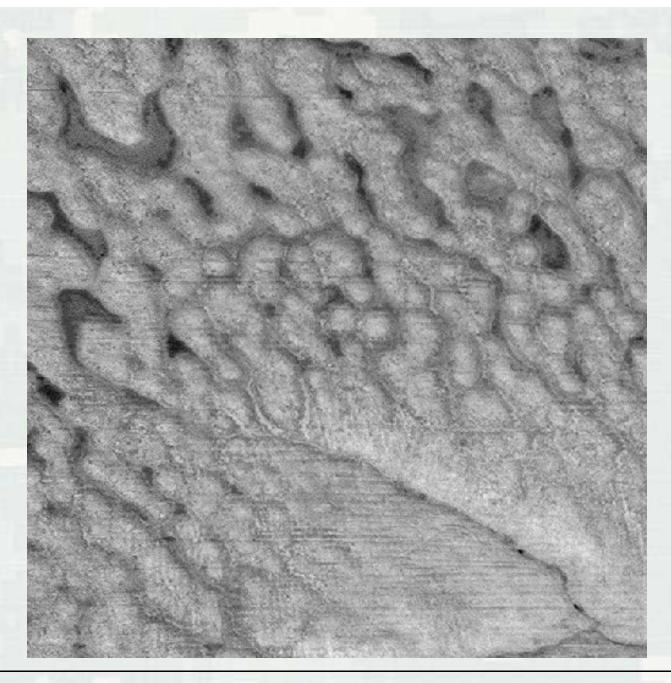
Depth (inches): _

oject/Site: <u>Gamma</u>	Rauch city	DATA FORM - Arid We	st Region Sampling Date:
plicant/Owner: Bruce	Banner	State:	CA Sampling Point: U33
restigator(s):	McGeo sec	ction, Township, Range:	
ndform (hillslope, terrace, etc.):	Lo	cal relief (concave, convex, none	e):Slope (%):
bregion (LRR):	Lat:	Long:	Datum:
bregion (LRR): il Map Unit Name:	Ceddin gravelly loan	ns	NWI classification:
	11 - 11	. /	50 50 70 50 50 50 50 50 50 50 50 50 50 50 50 50
- Cirriado / Hydrologic Condidons Off d	ne site typical for this time of year?	Yes No (If no.	explain in Remarks.)
\$40 \$40 \$10 \$10 \$10 \$10 \$10 \$10 \$10 \$10 \$10 \$1	ne site typical for this time of year? Hydrology significantly dist		explain in Remarks.)
e Vegetation, Soil, or	Hydrology significantly dist	turbed? Are "Normal Circu	umstances" present? Yes No
e Vegetation, Soil, or e Vegetation, Soil, or	Hydrology significantly dist Hydrology naturally proble	turbed? Are "Normal Circumatic? (If needed, explain	umstances" present? Yes No n any answers in Remarks.)
e Vegetation, Soil, or e Vegetation, Soil, or	Hydrology significantly dist Hydrology naturally proble	turbed? Are "Normal Circumatic? (If needed, explain	umstances" present? Yes No
e Vegetation, Soil, or e Vegetation, Soil, or JMMARY OF FINDINGS – A	Hydrology significantly dist Hydrology naturally proble ttach site map showing sa	matic? Are "Normal Circumatic? (If needed, explainmpling point locations,	umstances" present? Yes No n any answers in Remarks.)
e Vegetation, Soil, or e Vegetation, Soil, or	Hydrology significantly disf Hydrology naturally proble ttach site map showing sa Yes No	matic? (If needed, explainment of the sampling point locations, Is the Sampled Area	n any answers in Remarks.) transects, important features,
e Vegetation, Soil, or e Vegetation, Soil, or UMMARY OF FINDINGS — A Hydrophytic Vegetation Present?	Hydrology significantly dist Hydrology naturally proble ttach site map showing sa	matic? Are "Normal Circumatic? (If needed, explainmpling point locations,	umstances" present? Yes No n any answers in Remarks.)
e Vegetation, Soil, or e Vegetation, Soil, or UMMARY OF FINDINGS - A Hydrophytic Vegetation Present? Hydric Soil Present?	Hydrology significantly dist Hydrology naturally proble ttach site map showing sa Yes No Yes No	matic? (If needed, explainment of the sampling point locations, ls the Sampled Area	n any answers in Remarks.) transects, important features,
e Vegetation, Soil, or e Vegetation, Soil, or JMMARY OF FINDINGS - A Hydrophytic Vegetation Present? Hydric Soil Present? Vetland Hydrology Present?	Hydrology significantly dist Hydrology naturally proble ttach site map showing sa Yes No Yes No	matic? (If needed, explainment of the sampling point locations, ls the Sampled Area	n any answers in Remarks.) transects, important features,

BUILDING STRONG_®

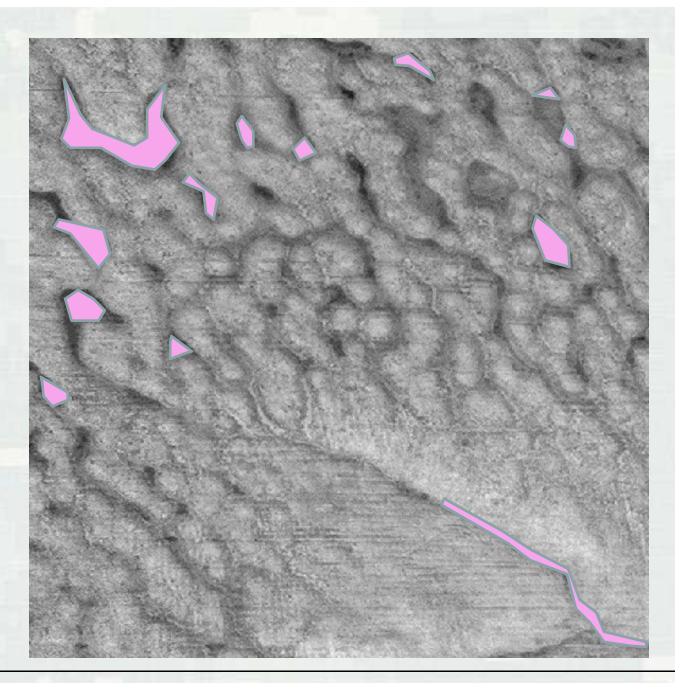
U.S.ARMY





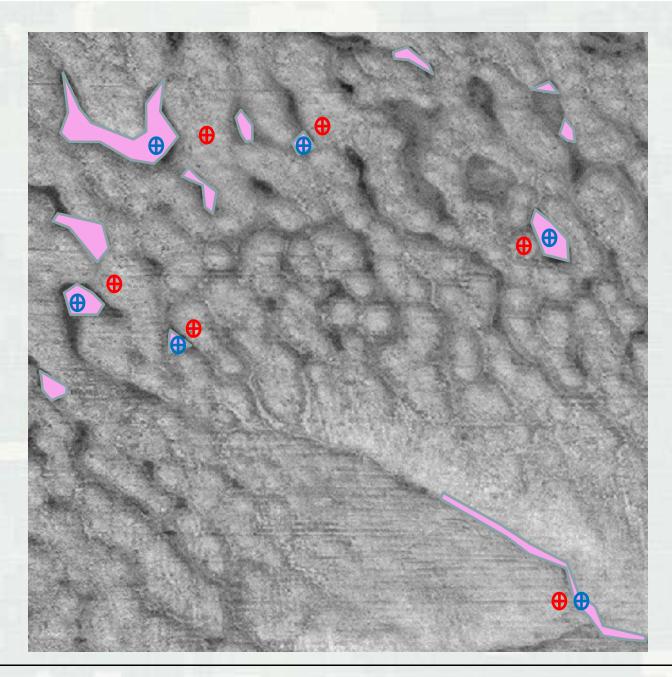






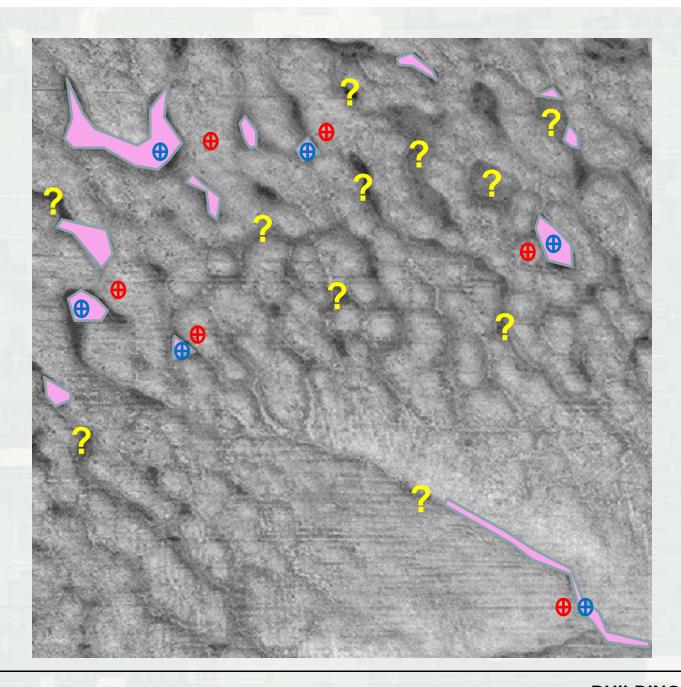






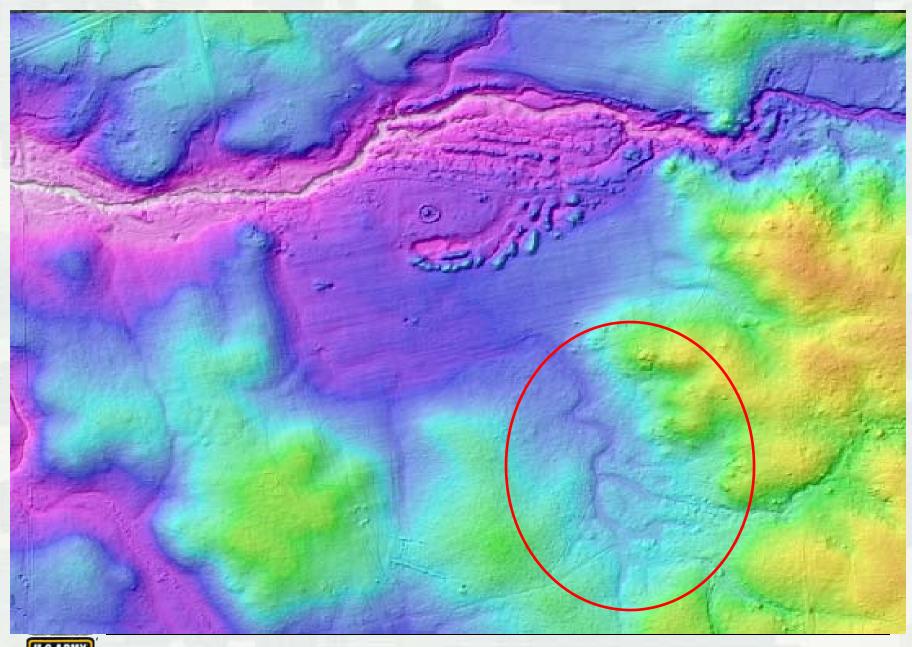












U.S.ARMY

Evaluating Normal Rain Fall

WETS tables

- USDA National Water and Climate Center (http://www.wcc.nrcs.usda.gov/climate/navigate_wets.html)
- Analyze monthly precipitation data from >8,000 National Weather Service stations
- Based on a standard 30 years of rainfall data
- Provide monthly and annual thresholds for:
 Below normal rainfall (lowest 3 years in 10)
 Above normal rainfall (highest 3 years in 10)







Engineer Research and Development Center

Wetlands Regulatory Assistance Program

Accessing and Using Meteorological Data to Evaluate Wetland Hydrology

Steven W. Sprecher and Andrew G. Warne

April 2000

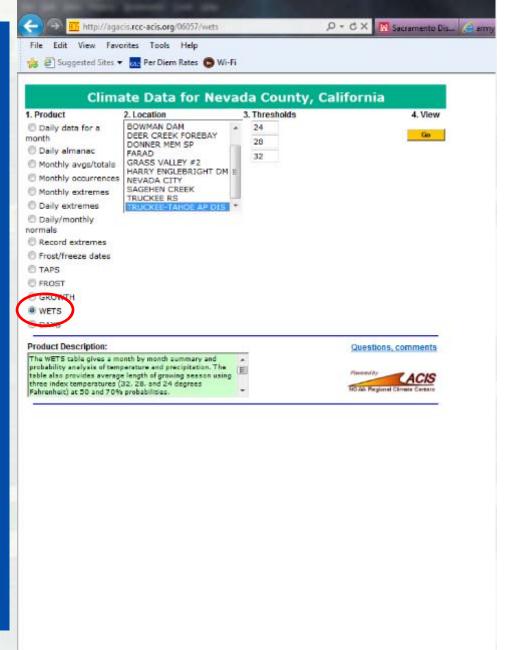




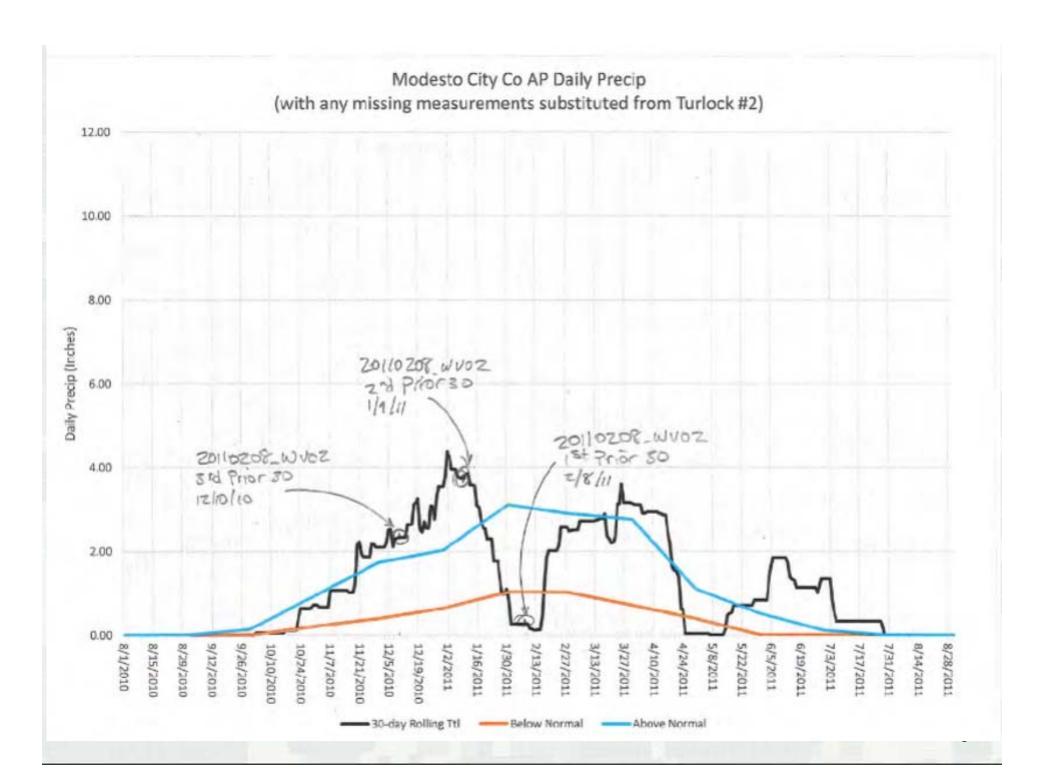
STRONG_®











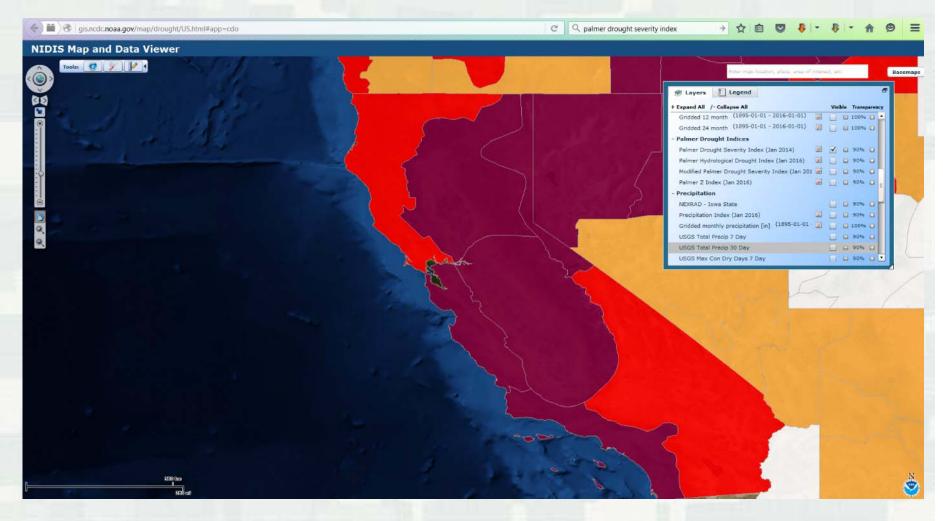
DRAFT SPKAntecedent Precip by Event Date

Weather Station: Modesto CITY CO AP

			2nd Prior 30	3rd Prior 30	Condition (1st Prior	Condition (2nd Prior	Condition (3rd Prior	Antecedent		
DATE	DESCRIPTION	EVENT	days	Days	30 Days)	30 Days)	30 Days)	Precip	Season	
12/11/1940	USGS Aerial Photo	19401211_USGS	11/11/1940	10/12/1940	Dry	Normal	Dry	Dry	Wet	
4/22/1982	USGS Aerial Photo	19820422_USGS	3/23/1982	2/21/1982	Wet	Wet	Normal	Wet	Wet	
8/15/1998	Digital Ortho Quad	19980815_DOQ	7/16/1998	6/16/1998	Normal	Normal	Wet	Normal	Dry	
2/24/2006	Quick Bird satellite image	20060224_QB02	1/25/2006	12/26/2005	Dry	Normal	Wet	Normal	Wet	
12/4/2006	Quick Bird satellite image	20061204_Q802	11/4/2006	10/5/2005	Normal	Dry	Normal	Normal	Wet	
3/26/2010	Orb View satellite image	20100326_OV05	2/24/2010	1/25/2010	Normal	Normal	Wet	Normal	Wet	
2/8/2011	World View satellite image	20110208_WV02	1/9/2011	12/10/2010	Dry	Wet	Wet	Normal	Wet	
		20131104_WV01	10/5/2013	9/5/2013	Dry	Normal	Normal	Dry	Dry	
6/18/2014	World View satellite image	20140618_WV02	5/19/2014	4/19/2014	Norma!	Normal	Normal	Normal	Dry	
3/15/2015	World View satellite image	20150315_WV01	2/13/2015	1/14/2015	Dry	Normal	Normal	Dry	Wet	
3/27/2015	World View satellite image	20150327_WV01	2/25/2015	1/26/2015	Dry	Normal	Dry	Dry	Wet	
6/16/2015	sample point range 6/15-	01	5/17/2015	4/17/2015	Normal	Normal	Dry	Normal	Dry	
6/17/2015	sample point range 6/16-	02	5/18/2015	4/18/2015	Normal	Normal	Dry	Normal	Dry	
6/18/2015	sample point range 6/15-	03	5/19/2015	4/19/2015	Normal	Normal	Dry	Normal	Dry	
6/19/2015	sample point range 6/15-	04	5/20/2015	4/20/2015	Normal	Normal	Dry	Normal	Dry	
6/20/2015	sample point range 6/15-	05	5/21/2015	4/21/2015	Normal	Normal	Dry	Normal	Dry	
7/3/2015	World View satellite image	20150703_WV02	6/3/2015	5/4/2015	Normal	Normal	Normal	Normal	Dry	
9/22/2015	World View satellite image	20150922_WV02	8/23/2015	7/24/2015	Normal	Normal	Normal	Normal	Dry	

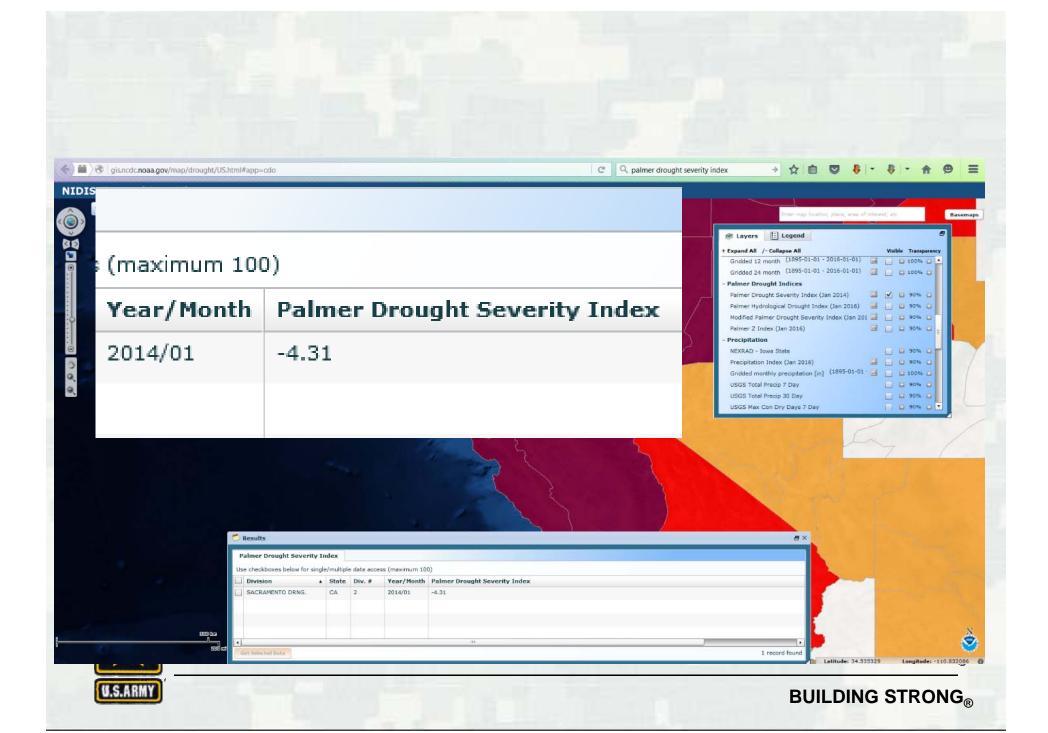












Project/Site: GUNAMA KCINC	City/County:	Tehama	Sampling Date:
Applicant/Owner: Bruce Bann	er	State: CA	Sampling Point: <u>U33</u>
nvestigator(s):	Section, Tov	vnship, Range:	, <u>production of the second of</u>
andform (hillslope, terrace, etc.):	Local relief	(concave, convex, none):	Slope (%):
Subregion (LRR):	Lat:	Long:	Datum:
Soil Map Unit Name: Co(ng - Redding 9	ravelly loages	NWI cla	ssification:
Are climatic / hydrologic conditions on the site typical fo	or this time of year? Yes	No (If no, explain	in Remarks.)
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumstance	es" present? Yes No _
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any ar	
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS – Attach site m	i.e	(If needed, explain any ar	nswers in Remarks.)
SUMMARY OF FINDINGS – Attach site m	ap showing sampling	(If needed, explain any ar	nswers in Remarks.)
BUMMARY OF FINDINGS – Attach site m Hydrophytic Vegetation Present? Yes	ap showing sampling	(If needed, explain any ar	nswers in Remarks.)
Hydric Soil Present? Yes	No Is the	(If needed, explain any arg point locations, transe	ects, important features,
Hydrophytic Vegetation Present? Hydrosoil Present? Wetland Hydrology Present? Yes Yes Yes	No Is the	(If needed, explain any arg point locations, transe Sampled Area	ects, important features,
Hydric Soil Present? Yes	No Is the	(If needed, explain any arg point locations, transe Sampled Area	ects, important features,

BUILDING STRONG®

U.S.ARMY

PJD vs. AJD

Preliminary Jurisdictional Determination	Approved Jurisdictional Determination
Not appealable (instead request an AJD)	Appealable
No set expiration date	Expires after 5 years
Cannot use to disclaim jurisdiction over an aquatic resource	Required to disclaim jurisdiction over an aquatic resource
Not posted on the web	Posted on the web
Sufficient for permitting	Sufficient for permitting





I have a non-tidal irrigation ditch excavated on dry land in my study area. Can I just leave it off the map and do a PJD?

No, if it's an aquatic resource it needs to be on the map. If it's a preamble excluded water then the Corps will need to do an AJD to disclaim jurisdiction.





Does the Corps have to coordinate all Approved JDs with EPA?

No, the Corps is only required to coordinate isolated & significant nexus calls with EPA. Other non-jurisdictional findings (i.e., preamble excluded waters) do not required EPA coordination but do require an AJD.





What about puddles? The stayed rule talks about these in the same context as the 1986 preamble excluded waters. Do I have to map those?

No, puddles are not aquatic resources since they do not have an OHWM nor are they wet long enough to meet the definition of wetland.





How long is EPA's review of an Approved JD?

15 days for a significant nexus determination, 21 days for isolated





Can the Corps issue an Approved JD when I asked for a Preliminary JD?

Yes, when jurisdiction is contested or when the Corps determines that it does not have jurisdiction over an aquatic resource (Regulatory Guidance Letter 08-02)





Where can I find jurisdictional determinations on the web?

The Sacramento District publishes all of its approved jurisdictional determinations at http://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction.aspx



