

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: Hollister TAP 115kV Reconductoring Project City/County: San Juan Bautista/San Benito Data Point: DP 1
 Applicant/Owner: PG&E State: CA Date: 6/27/2008
 Investigator(s): Chris Voigt, Cristian Singer Section, Township, Range: Unsectioned Area, T12S, R4E
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none) Concave Slope (%): 0
 Subregion (LRR): LRR C Lat: N 36.8716 Long: W 121.5318 Datum: NAD 83
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation N Soil N or Hydrology N significantly disturbed? Are "Normal Circumstances" present? YES NO
 Are Vegetation N Soil N or Hydrology N 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 <u>X</u>	No _____	Is the Sampled Area within a wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Remarks:			

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status	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. Populus fremontii	3	Y	FACW	
2.				
3.				
Total Cover: <u>3</u>				Prevalence index worksheet Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Total: _____ (A) <u>0</u> (B) Prevalence Index = B/A = #DIV/0!
Sapling/Shrub Stratum (woody plants <3" dbh)				
2. Salix laevigata	20	Y	≥FAC*	
2.				
3.				
Total Cover: <u>20</u>				Hydrophytic vegetation indicators <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤ 3.0 ¹ <input checked="" type="checkbox"/> Morphological adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present
Herb Stratum (non-woody plants, regardless of size)				
1. Typha angustifolia	65	Y	OBL	
3. Lepidium latifolium	10	N	FACW	
4. Scirpus americanus	<1	N	OBL	
5.				
6.				
7.				
Total Cover: <u>75</u>				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Woody Vine Stratum (regardless of size)				
1.				
2.				
Total Cover: _____				
% Bare ground in Herb Stratum <u>2</u> % Cover of Biotic Crust _____				
Remarks:				

*Although not assigned a status in Reed (1988), this species appears to be at least facultative based on its habitat as described in Hickman (1993): riverbanks, seepage areas, lake shores, canyons, and ditches.

SOIL

Data point: **DP 1**

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

Depth (inches)	Matrix		Redox Features					Texture	Comments
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Contrast ³		
0-6	2.5Y 5/2	100	none					sic	no oxidized channels present
6-20	2.5Y 5/2	90	7.5YR 4/4	10	Fe-C	All	p	sic	oxidized channels present

¹Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
²Location: PL=Pore Lining, RC=Root Channel, M=Matrix ³Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils: ⁴
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A 10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Depleted Dark Surface (A12)	<input type="checkbox"/> Listed on National/Local Hydric Soils List
<input type="checkbox"/> Thick Dark Surface (A12)	⁴ Indicators of hydrophytic vegetation and wetland hydrology must be present
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" 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)	
<input type="checkbox"/> Vernal Pool (F9)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2) (w/in 12")	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1) (w/in 12")
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soil (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Thin Muck Surface (C7)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? Yes No Depth (inches): _____
 (includes capillary fringe) (12 inch determination)

Wetland Hydrology Present? Yes No

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

Remarks:

Texture and Rock Fragment Content		Rock Fragments	
Texture			
cos - coarse sand	lcos - loamy coarse sand	sl - sandy loam	scl - sandy clay loam
s - sand	ls - loamy sand	fsl - fine sandy loam	cl - clay loam
fs - fine sand	lfs - loamy fine sand	vfsl - very fine sandy loam	sicl - silty clay loam
vfs - very fine sand	lvfs - loamy very fine sand	l - loam	sc - sandy clay
	cosl - coarse sandy loam	sil - silt loam	sic - silty clay
		si - silt	c - clay
			gr - gravelly
			vgr - very gravelly
			xgr - extremely gravelly
			cb - cobbly
			vcb - very cobbly
			xcb - extremely cobbly
			st - stony
			vst - very stony
			xst - extremely stony

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **Hollister TAP 115kV Reconductoring Project** City/County: **San Juan Bautista/San Benito** Data Point: **DP 2**

Applicant/Owner: **PG&E** State: **CA** Date: **6/27/2008**

Investigator(s): **Chris Voigt, Cristian Singer** Section, Township, Range: **Unsectioned Area, T12S, R4E**

Landform (hillslope, terrace, etc.): **levee/berm in river channel** Local relief (concave, convex, none): **none** Slope (%): **30**

Subregion (LRR): **LRR C** Lat: **N 36.8716** Long: **W 121.5318** Datum: **NAD 83**

Soil Map Unit Name: _____ NWI classification: _____

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 _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks:			

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>0</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>0%</u> (A/B)
1.				
2.				
3.				
Total Cover: _____				Prevalence index worksheet Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Total: _____ (A) <u>0</u> (B) Prevalence Index = B/A = #DIV/0!
Sapling/Shrub Stratum (woody plants <3" dbh)				
1.				
2.				
3.				
Total Cover: _____				
Herb Stratum (non-woody plants, regardless of size)				Hydrophytic vegetation indicators <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present
1. Bromus diandrus	30	Y	UPL	
2. Bromus hordeaceus [B. mollis]	30	Y	FACU	
3. Vulpia myuros	20	N	FACU	
4. Centaurea solstitialis	10	N	UPL	
5.				
6.				
7.				
8.				
Total Cover: <u>90</u>				
Woody Vine Stratum (regardless of size)				
1.				
2.				
Total Cover: _____				
% Bare ground in Herb Stratum <u>10</u>	% Cover of Biotic Crust _____			Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
Remarks:				

SOIL

Data point: **DP 2**

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

Depth (inches)	Matrix		Redox Features					Texture	Comments
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Contrast ³		
0-20	2.5Y 5/2	100	none					scl	

¹Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
²Location: PL=Pore Lining, RC=Root Channel, M=Matrix ³Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils:⁴

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A 10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Listed on National/Local Hydric Soils List
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	⁴ Indicators of hydrophytic vegetation and wetland hydrology must be present
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Vernal Pool (F9)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:
 Primary indicators (any one indicator is sufficient) Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2) (w/in 12")	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1) (w/in 12")	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soil (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/> X	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/> X	Depth (inches): _____	
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/> X	Depth (inches): _____	
(includes capillary fringe)			(12 inch determination)	

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

Remarks:

Texture and Rock Fragment Content

Texture

cos - coarse sand lcos - loamy coarse sand
 s - sand ls - loamy sand
 fs - fine sand lfs - loamy fine sand
 vfs - very fine sand lvfs - loamy very fine sand
 cosl - coarse sandy loam

sl - sandy loam fsl - fine sandy loam
 vsl - very fine sandy loam
 l - loam
 sil - silt loam
 si - silt

scl - sandy clay loam cl - clay loam
 sicl - silty clay loam
 sc - sandy clay
 sic - silty clay
 c - clay

Rock Fragments

gr - gravelly xcb - extremely cobbly
 vgr - very gravelly st - stony
 xgr - extremely gravelly vst - very stony
 cb - cobbly xst - extremely stony
 vcb - very cobbly

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: **Hollister TAP 115kV Reconductoring Project** City/County: **San Juan Bautista/San Benito** Data Point: **DP 3**

Applicant/Owner: **PG&E** State: **CA** Date: **6/27/2008**

Investigator(s): **Chris Voigt, Cristian Singer** Section, Township, Range: **Unsectioned Area, T12S, R4E**

Landform (hillslope, terrace, etc.): **Depression** Local relief (concave, convex, none) **Concave** Slope (%): **0**

Subregion (LRR): **LRR C** Lat: **N 36.8248** Long: **W 121.5624** Datum: **NAD 83**

Soil Map Unit Name: **Climera Clay, 9-15% slopes** NWI classification: _____

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:			

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status	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>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>0.5</u> (A/B)
1.				
2.				
3.				
Total Cover: _____				Prevalence index worksheet Total % Cover of: _____ Multiply by: _____ OBL species <u>55</u> x 1 = <u>55</u> FACW species _____ x 2 = <u>0</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>10</u> x 5 = <u>50</u> Column Total: <u>100</u> (A) <u>240.00</u> (B) Prevalence Index = B/A = <u>2.4</u>
Sapling/Shrub Stratum (woody plants <3" dbh)				
1.				
2.				
3.				
Total Cover: _____				
Herb Stratum (non-woody plants, regardless of size)				
1. Juncus effusus	50	Y	OBL	
2. Leontodon taraxacoides	30	Y	FACU	
3. Linum bienne	10	N	UPL	
4. Mentha pulegium	5	N	OBL	
5. Lolium multiflorum	5	N	FAC	
6.				
7.				
8.				
Total Cover: <u>100</u>				
Woody Vine Stratum (regardless of size)				
1.				
2.				
Total Cover: _____				
% Bare ground in Herb Stratum _____	% Cover of Biotic Crust _____			
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

Due to seasonal nature of feature it is assumed that during the wetter winter months that Lolium multiflorum and additional facultative and wetland plant species will occur in larger numbers and occupy a greater area of this feature.

WETLAND DETERMINATION FORM - Arid West Region

Project/Site:	Hollister TAP 115kV Reconductoring Project	City/County:	San Juan Bautista/San Benito	Data Point:	DP 4
Applicant/Owner:	PG&E	State:	CA	Date:	6/27/2008
Investigator(s):	Chris Voigt, Cristian Singer	Section, Township, Range:	Unsectioned Area, T12S, R4E		
Landform (hillslope, terrace, etc.):	levee/berm in river channel	Local relief (concave, convex, none):	none	Slope (%):	30
Subregion (LRR):	LRR C	Lat:	N 36.8248	Long:	W 121.5624
Soil Map Unit Name:	Climera Clay, 9-15% slopes	NWI classification:			
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	(If no, explain in Remarks)		
Are Vegetation <input type="checkbox"/> Soil <input type="checkbox"/> or Hydrology <input type="checkbox"/> significantly disturbed?	<input type="checkbox"/>	Are "Normal Circumstances" present?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
Are Vegetation <input type="checkbox"/> Soil <input type="checkbox"/> or Hydrology <input type="checkbox"/> naturally problematic?	<input type="checkbox"/>	(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 type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks:			

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.				Number of Dominant Species That are OBL, FACW, or FAC: <u>1</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>0.5</u> (A/B)
2.				
3.				
4.				
Total Cover: _____				Prevalence index worksheet Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Total: _____ (A) <u>0</u> (B) Prevalence Index = B/A = #DIV/0!
Sapling/Shrub Stratum (woody plants <3" dbh)				
1.				
2.				
3.				
4.				
5.				
Total Cover: _____				
Herb Stratum (non-woody plants, regardless of size)				Hydrophytic vegetation indicators <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present
1. Lolium multiflorum	50	Y	FAC	
2. Bromus hordeaceus [B. mollis]	25	Y	FACU	
3. Linum bienne	10	N	UPL	
4. Plantago lanceolata	5	N	FAC	
5. Lotus corniculatus	5	N	FAC	
6.				
7.				
8.				
Total Cover: <u>95</u>				
Woody Vine Stratum (regardless of size)				
1.				
2.				
Total Cover: _____				
% Bare ground in Herb Stratum <u>5</u>	% Cover of Biotic Crust _____			Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:				

SOIL

Data point: **DP 4**

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

Depth (inches)	Matrix		Redox Features					Texture	Comments
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Contrast ³		
0-20	10YR 2/1	85	7.5YR 4/4	15	Fe-C	All	Prominent	c	

¹Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
²Location: PL=Pore Lining, RC=Root Channel, M=Matrix ³Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils: ⁴
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A 10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> <input checked="" type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Vernal Pool (F9)
	<input type="checkbox"/> Listed on National/Local Hydric Soils List

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2) (w/in 12")	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1) (w/in 12")	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Plowed Soil (C6)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? Yes No Depth (inches): _____
 (includes capillary fringe) (12 inch determination)

Wetland Hydrology Present? Yes No

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

Remarks:

Texture and Rock Fragment Content		Rock Fragments	
cos - coarse sand	lcos - loamy coarse sand	gr - gravelly	xcb - extremely cobbly
s - sand	ls - loamy sand	vgr - very gravelly	st - stony
fs - fine sand	lfs - loamy fine sand	xgr - extremely gravelly	vst - very stony
vfs - very fine sand	lvfs - loamy very fine sand	cb - cobbly	xst - extremely stony
	cosl - coarse sandy loam	vcb - very cobbly	
	sl - sandy loam	c - clay	
	fsl - fine sandy loam		
	vfsl - very fine sandy loam		
	l - loam		
	sil - silt loam		
	si - silt		
	scl - sandy clay loam		
	cl - clay loam		
	sicl - silty clay loam		
	sc - sandy clay		
	sic - silty clay		
	c - clay		

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: Hollister TAP 115kV Reconductoring Project City/County: San Juan Bautista/San Benito Data Point: DP 5
 Applicant/Owner: PG&E State: CA Date: 6/27/2008
 Investigator(s): Chris Voigt, Cristian Singer Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): channel Local relief (concave, convex, none) Concave Slope (%): 0
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks)
 Are Vegetation N Soil N or Hydrology N significantly disturbed? Are "Normal Circumstances" present? YES NO
 Are Vegetation N Soil N or Hydrology N 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 <u>X</u>	No _____	Is the Sampled Area within a wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Remarks:			

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Salix lasiolepis	75	Y	FACW	
2.				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3.				
4.				Percent of Dominant Species that are OBL, FACW, or FAC <u>100%</u> (A/B)
Total Cover:	75			
Sapling/Shrub Stratum (woody plants <3" dbh)				Prevalence index worksheet
1. Rubus ursinus [R. vitifolius]	70	Y	FACW	Total % Cover of: _____ Multiply by:
2.				OBL species _____ x 1 = <u>0</u>
3.				FACW species _____ x 2 = <u>0</u>
4.				FAC species _____ x 3 = <u>0</u>
5.				FACU species _____ x 4 = <u>0</u>
Total Cover:	70			UPL species _____ x 5 = <u>0</u>
				Column Total: _____ (A) <u>0</u> (B)
Herb Stratum (non-woody plants, regardless of size)				Prevalence Index = B/A = <u>#DIV/0!</u>
1. Juncus spp.	10	N	≥FAC*	Hydrophytic vegetation indicators
2. Conium maculatum	5	N	FACW	
3. Scirpus sp.	5	N	≥FAC*	<input checked="" type="checkbox"/> Prevalence index is ≤ 3.0 ¹
				<input checked="" type="checkbox"/> Morphological adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
				<input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soils and wetland hydrology must be present
Total Cover:	15			Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Woody Vine Stratum (regardless of size)				
1.				% Bare ground in Herb Stratum _____ % Cover of Biotic Crust _____
2.				
Total Cover:				Remarks:
*All Juncus spp. and Scirpus spp. assigned an indicator status in Reed (1988) are FAC or wetter.				

SOIL

Data point: **DP 5**

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

Depth (inches)	Matrix		Redox Features					Texture	Comments
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Contrast ³		
0-20	10YR 2/1	95	7.5YR 4/4	5	Fe-C	All	p	sic	

¹Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
²Location: PL=Pore Lining, RC=Root Channel, M=Matrix ³Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils: ⁴
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A 10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> <input checked="" type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Vernal Pool (F9)
	<input type="checkbox"/> Listed on National/Local Hydric Soils List

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary indicators (any one indicator is sufficient)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2) (w/in 12")	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1) (w/in 12")
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soil (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Thin Muck Surface (C7)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>2</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>none</u>	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): <u>none</u> (12 inch determination)	

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

Remarks:

Texture and Rock Fragment Content		Rock Fragments	
cos - coarse sand	lcos - loamy coarse sand	gr - gravelly	xcb - extremely cobbly
s - sand	ls - loamy sand	vgr - very gravelly	st - stony
fs - fine sand	lfs - loamy fine sand	xgr - extremely gravelly	vst - very stony
vfs - very fine sand	lvfs - loamy very fine sand	cb - cobbly	xst - extremely stony
	cosl - coarse sandy loam	vcb - very cobbly	
	sl - sandy loam	c - clay	
	fsl - fine sandy loam		
	vfsl - very fine sandy loam		
	l - loam		
	sil - silt loam		
	si - silt		
	scl - sandy clay loam		
	cl - clay loam		
	sicl - silty clay loam		
	sc - sandy clay		
	sic - silty clay		
	c - clay		

WETLAND DETERMINATION FORM - Arid West Region

Project/Site: Hollister TAP 115kV Reconductoring Project City/County: San Juan Bautista/San Benito Data Point: DP 6
 Applicant/Owner: PG&E State: CA Date: 6/27/2008
 Investigator(s): Chris Voigt, Cristian Singer Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): plain Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR): LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks)
 Are Vegetation N Soil N or Hydrology N significantly disturbed? Are "Normal Circumstances" present? YES NO
 Are Vegetation N Soil N or Hydrology N 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 _____	No <u>X</u>	Is the Sampled Area within a wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks: _____			

VEGETATION

Tree Stratum (scientific names) woody plants >3" dbh	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>25%</u> (A/B)
4. _____	_____	_____	_____	Prevalence index worksheet
5. _____	_____	_____	_____	
Total Cover: _____				OBL species _____ x 1 = <u>0</u>
Sapling/Shrub Stratum (woody plants <3" dbh)				FACW species _____ x 2 = <u>0</u>
1. _____	_____	_____	_____	FAC species _____ x 3 = <u>0</u>
2. _____	_____	_____	_____	FACU species _____ x 4 = <u>0</u>
3. _____	_____	_____	_____	UPL species _____ x 5 = <u>0</u>
4. _____	_____	_____	_____	Column Total: _____ (A) <u>0</u> (B)
Total Cover: _____				Prevalence Index = B/A = #DIV/0!
Herb Stratum (non-woody plants, regardless of size)				Hydrophytic vegetation indicators
1. Carduus pycnocephalus	20	Y	UPL	
2. Bromus hordeaceus [B. mollis]	20	Y	FACU	_____ Prevalence index is ≤ 3.0 ¹
3. Hordeum marinum ssp. gussoneanum [H. hystrix]	20	Y	FAC	_____ Morphological adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. Bromus diandrus	20	Y	UPL	_____ Problematic Hydrophytic Vegetation ¹ (Explain)
5. Lolium multiflorum	10	N	FAC	_____ ¹ Indicators of hydric soils and wetland hydrology must be present
6. Leontodon taraxacoides	5	N	FACU	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
7. Juncus effusus	5	N	OBL	
Total Cover: <u>100</u>				
Woody Vine Stratum (regardless of size)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
Total Cover: _____				
% Bare ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks: _____				

SOIL

Data point: **DP 6**

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

Depth (inches)	Matrix		Redox Features					Texture	Comments
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Contrast ³		
0-20	10YR 2/1	100	none					sic	

¹Type: C-m=Concentration - soft mass; C-n=Concentration - nodule/concretion; D=Depletion; RM=Reduced Matrix
²Location: PL=Pore Lining, RC=Root Channel, M=Matrix ³Contrast: f=faint; d=distinct; p=prominent (see Table A1 for definitions)

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils: ⁴
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A 10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Depleted Dark Surface (A12)	<input type="checkbox"/> Listed on National/Local Hydric Soils List
<input type="checkbox"/> Thick Dark Surface (A12)	⁴ Indicators of hydrophytic vegetation and wetland hydrology must be present
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input 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)	
<input type="checkbox"/> Vernal Pool (F9)	

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No **X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary indicators (any one indicator is sufficient)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2) (w/in 12")	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1) (w/in 12")	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soil (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No **X** Depth (inches): none

Water Table Present? Yes No **X** Depth (inches): none

Saturation Present? Yes No **X** Depth (inches): none
 (includes capillary fringe) (12 inch determination)

Wetland Hydrology Present? Yes No **X**

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

Remarks:

Texture and Rock Fragment Content		Rock Fragments	
Texture			
cos - coarse sand	lcos - loamy coarse sand	scl - sandy clay loam	gr - gravelly
s - sand	ls - loamy sand	cl - clay loam	vgr - very gravelly
fs - fine sand	lfs - loamy fine sand	sicl - silty clay loam	xgr - extremely gravelly
vfs - very fine sand	lvfs - loamy very fine sand	sc - sandy clay	cb - cobbly
	cosl - coarse sandy loam	sic - silty clay	vcb - very cobbly
		si - silt	c - clay
			xcb - extremely cobbly
			st - stony
			vst - very stony
			xst - extremely stony