

APPENDIX B. SOIL DATA

TABLE B-1
SOILS ENCOUNTERED ALONG PIPELINE ALIGNMENT

Unit	Shallow Excavation	Small Commercial Building	Depth (inches)	USCS	% Fines	LL	PI
San Joaquin County Soils:							
111	slight	Moderate shrink-swell	0-18	SC-SM,SM	35-50	20-30	NP-10
			18-31	SC	35-50	30-40	10-15
			31-67	SC,CL	35-60	30-40	10-20
240	severe: cemented pan	Severe: shrink-swell	0-12	CL-ML,ML	50-60	15-30	NP-10
			12-26	SC	35-50	30-40	10-20
			26-35	CL	55-70	40-50	25-35
112	slight	Moderate shrink-swell	0-8	SC-SM,SM	35-50	20-30	NP-10
			8-42	SC	35-40	30-40	10-15
				SC	35-50	35-50	15-25
101	moderate: cemented pan	slight	0-19	SM	35-50	20-30	NP-5
			19-47	SM	35-50	20-30	NP-5
			47-49	indurated			
			49-60	cemented			
157	severe: cemented pan, cutbank cave	Severe: flooding	0-26	SM,SC-SM	35-50	15-25	NP-10
			26-33	CL,SC	35-65	35-65	10-20
			33-60	indurated			
238	severe: cemented pan	Severe: shrink-swell	0-16	CL-ML,ML	50-60	15-30	NP-10
			16-26	CL	55-70	40-50	25-35
			26-60	indurated			
256	slight	slight	0-19	SM	35-50	20-30	NP-5
			19-45	SM	35-50	20-30	NP-5
			45-60	SM	25-50	20-30	NP-5
259	Severe: cutbank cave	Severe: flooding	0-22	SW-	5-25	ND	NP
			22-67	SM,SM,SP-	5-25	ND	NP

TABLE B-1 Continued

Unit	Shallow Excavation	Small Commercial Building	Depth (inches)	USCS	% Fines	LL	PI
				SM			
				SW-			
				SM,SM,SP-			
				SM			
189	moderate: wetness	slight	0-5	SM	35-50	20-30	NP-5
			5-14	SM	35-50	20-30	NP-5
			14-28	SM	35-50	20-30	NP-5
			28-42	SC-SM,CL-	40-60	25-30	5-10
			42-61	ML	25-50	20-25	NP-5
				SM			
182	moderate: cemented pan, too clayey	Moderate shrink-swell	0-5	ML	50-60	25-35	NP-10
			5-31	CL-ML,CL	50-70	25-40	5-15
			31-49	CH,CL	75-95	45-65	25-40
			49-53				
			53-60				
130	severe: cutbank cave	Severe: flooding	0-12	SM,SC-SM	30-50	20-30	NP-10
			12-60	SM	35-50	20-25	NP-5
265	moderate: cemented pan, wetness	Severe: flooding	0-19	SM	35-50	20-30	NP-5
			19-44	SM	35-50	20-30	NP-5
			44-60				
226	severe: cemented pan	Severe: flooding	0-16	CLCL-	70-85	30-	10-
			16-28	ML,CL	60-85	40	205-20
			28-39			25-35	
			39-80	SC-SM,SM,CL-ML,ML	35-60		5-10
				ML			
149	severe: cemented pan	Severe: flooding	0-13	SM	35-50	20-30	NP-5
			13-28	SM	35-50	20-30	NP-5
			28-80				

TABLE B-1 Continued

Unit	Shallow Excavation	Small Commercial Building	Depth (inches)	USCS	% Fines	LL	PI
169	moderate: wetness	Severe: flooding	0-15	CL	65-70	35-40	15-20
			15-72	SC,CL	35-60	30-40	10-20
225	severe: excess humus	Severe: flooding, low Strength, subsides	0-13	PT			
			13-60	PT			
Sacramento County Soils:							
224	severe: excess humus	Severe: flooding, low Strength, subsides	0-12	ML,OL	50-95	40-50	5-10
			12-60	PT			
200	severe: excess humus, wetness	severe: subsides, flooding, low strength	0-16	PT			
			16-60	PT			
206	moderate: wetness	Severe: flooding	0-16	CL-ML,ML	70-85	25-35	5-10
			16-28	CL-ML,CL	50-85	25-40	5-20
			28-34	CL	30-40	30-40	10-20
			34-62	CL-ML,ML	50-80	25-35	5-10
201	severe: excess humus, wetness	severe: subsides, flooding, low strength	0-13	OL-ML	75-95	40-50	5-18
			13-50	PT			
155	severe: excess humus, wetness	severe: subsides, flooding, low strength	0-30	OL-OH	85-95	40-60	10-25
			30-36	OL-OH	85-95	40-60	10-25
			36-60	PT			
222	moderate: wetness	Severe: ***subsides, Flooding	0-12	CL	70-85	30-45	10-20
			12-39	CL	70-85	30-45	10-20
			39-60	CL	50-90	30-45	10-20
139	severe: wetness	severe: subsides, flooding, wetness	0-20	CL, CH	75-95	40-60	20-35
			20-60	CL, CH	70-95	40-60	20-35
210	severe: excess humus, wetness	severe: subsides, flooding	0-23	ML	85-95	35-50	10-20
			23-33	OL, ML	85-95	40-50	5-10
			33-57	OL, ML	75-95	4-50	5-10
			57-64	PT			

TABLE B-1 Continued

Unit	Shallow Excavation	Small Commercial Building	Depth (inches)	USCS	% Fines	LL	PI
232	severe: cutbank cave, excess humus, wetness	severe: subsides, flooding, low strength	0-16	SM-SC, SM	35-50	20-30	NP-10
			16-25	SM-SC, SM, ML,	40-55	20-35	5-10
			25.60	CL-ML OL, ML	75-95	40-50	10-20
122	severe: cutbank cave, excess humus	severe: subsides, flooding	0-14	SM, SM-SC	30-50	20-30	NP-10
			14-42	SM	35-50	20-30	NP-5
			42-54	CL, CL-ML	70-95	25-40	5-15
			54-67	OL, ML	70-95	40-50	5-10

Notes: in - inches
mi - miles
LL- liquid limit
PI - plasticity index
NP - non-plastic
CL - low plasticity clay
CH - high plasticity clay
ML - low plasticity silt
MH - high plasticity silt
SM - silty sand
SC - clayey sand
OL - low plasticity organic soil
OH - high plasticity organic soil