

WATE	RSHED PIL	ım Cr	eek			SUB-WATERSHED							SITE NO	^{D.} 12		
LOCAT	rion Au	xiliary	/ Spill	way DATE 8/20	/2014	LAT/LONG -97	7.77	016	6 30.0	382	11 Арј	prox.	STATE	Tex	as	
LOGGI	ED BY Mo	ffatt				PROJECT: WP-07	2		WP-08 _	<u> </u>	FP-03	3	P.J	L46	*	=3
DRILL	ING EQUIPME	NT M	lobile	B-57		LOCTION OF HOLES	Fore	ebay	/							
	526-255 (20)	HO DEI	LE TH					U	<u> </u>			5	AMPLES			
HOLE NO.	STA. & SURFACE ELEVATION	FROM	то	DESCRIPTION OF	MATERIALS		N	S C S	TYPE BIT USED	84141E)	200000000000000000000000000000000000000	FROM	то	REC	DISP	AMT
	ELEVATION	FT	FT					.,	USED	NO	TYPE	FT	FT	%	FT	
207	612.778	0	0.5	Clay, silty, dry to slightly moist, highly pla	astic, stiff, sh	niny, black. Push 0-2.5,		СН	HS	.1	small	0	0.5			
	~5+40			refusal at 0.5 in gravel, sample fell out o	of tube.				ĺ	.2	3"P	5	7.5	100		
	CL AS	0.5	4	Gravel, fine to coarse grained, sand, fine	e to coarse g	rained, silty, slight clay,		GM	HS							
	94' Right			dry to slightly moist, medium dense to d	ense, brown	with multi color gravel.										
		4	7.5	Claystone, silty, weathered, thin bedded	l to laminate	d, soft rock, slightly		cs	HS							
				moist, breaks down to moderately to hig	ıhly plastic si	lty clay, fractured, light										
				brown mottled light gray												
1	j								2							
									2			5				
						<u>.</u>			ļ							
DATE:	8/21/14	7	тмг. 9	:06 water level. No wa	ater	CAVE IN: 4.9					SHI	FFT	1 01	, 1	SH.	PFTS

WATE	RSHED Plu	ım Cr	eek			SUB-WATERSHED							SITE NO	^{).} 12		
LOCAT	TION Au	xiliary	/ Spill	lway	DATE 8/19/2014	LAT/LONG -9	7.77	011	0 30.0	3750	61 Ap	prox.	STATE	Te	xas	
LOGGI	ED BY Mo	ffatt				PROJECT: WP-07	-2		WP-08_		FP-0.	3	P.J	J46	*	=3
DRILL	ING EQUIPME	NT N	lobile	B-57		LOCTION OF HOLES	Cre	st								
	320-388	HO DEI				-		U				;	SAMPLES			
HOLE NO.	STA. & SURFACE	FROM	то	-	DESCRIPTION OF MATERIALS		N	S C	TYPE BIT			FROM	ТО	REC	DISP	AMT
	ELEVATION	FT	FT					S	USED	NO	TYPE	FT	FT	%	FT	
208	615.058	0	1	Clay, silty, dry to slightly	moist, highly plastic, stiff, s	hiny, black (topsoil)		СН	HS	.1	3" P	0	1.5			
	~10+51	1	4	Clay, silty, fine to coarse	gravel stiff, dry to slightly n	noist, highly plastic,		GC	HS	.2	small	5	5.5			
	CL AS			black with multi color grav	vel (fill). Push 0' - 2.5', refu	sal at 1.5 in gravel, taco				.3	small	6	9			
	173' Right			tube, contact topsoil/GC i	n tube					.4	3" P	10	11.5			
		4	5.5	Clay, silty, slight fine grai	n gravel, dry to slightly moi	st, stiff, shiny, roots,		СН	HS	.5	3" P	15	17.5	100		
				highly plastic, black (old t	opsoil layer?). Push 5' - 7.	5', refusal in GC material										
				sample fell out of tube, re	covered 4"											
		5.5	9	Gravel, sandy, clay, dry t	o slightly moist, dense, cla	y moderately plastic,		GМ	HS							
				brown with multi color gra	avel (high terrace deposit).	Sample from 6' - 9' has		GC								
	2			mechanically broken grav	el pieces in it.	,										
		9	17.5	Claystone, weathered, th	in bedded to laminated, so	ft rock, slightly moist,		cs	HS							
				silty, breaks down to high	ly plastic silty clay, blocky,	vertical fractures,										
				grayish brown to gray. Pu	ush 10' - 12.5', refusal @11	.5' vertical fracture with										
				black fill at 10', less weath	hered below 13', Push 15'	- 17.5' almost sheared										
				head from tube.												
DATE:	8/21/14		_{IIME:} 9	:06 WATER	LEVEL: No water	CAVE IN:14.9					SH	EET	1 oı	, 1	SH	IEETS

WATE	RSHED Plu	ım Cr	eek		SUB-WATERSHED							SITE NO	^{).} 12		
LOCAT	rion Au	xiliary	/ Spill	Iway DATE 8/20/2014	LAT/LONG	-97.77	039	4 30.0	3707	71 Ap _l	orox.	STATE	Te	kas	
LOGGI	ED BY Mo	ffatt			PROJECT: WP-0	7		WP-08		FP-03	3	P.I	J46	y.	
DRILL	ING EQUIPME	NT M	lobile	B-57	LOCTION OF HOLE	s Exit	Slo	ре, ~	200	DS Cr	est				
555,545		HO DEI				2	U	MARK 1220-			s	AMPLES			
HOLE NO.	STA. & SURFACE ELEVATION	FROM	то	DESCRIPTION OF MATERIALS		N	S C S	TYPE BIT USED	NO	TO STATE OF	FROM	то	REC	DISP	AMT
		FT	FT				<u> </u>		NO	TYPE	FT	FT	%	FT	
209	610.436	0	1.5	Clay, silty, dry to slightly moist, highly plastic, stiff, s	hiny, black (topsoil fill)	СН	HS	.1	3" P	2.5	4			
	~12+25	1	4	Clay, silty, slight gravel, stiff, dry to slightly moist, his	ghly plastic, shiny,		СН	HS	.2	small	7.5	10			
	CL AS			black. Push 2.5' - 5', refusal at 4' in gravel					.3	3" P	10	12.5	100		
	170' Right	4	7	Gravel, fine to coarse grained, sand, fine to coarse	grained, dry to slightly	/	GМ	HS							
				moist, silty, dense, brown with multi color gravel (hig	gh terrace deposit).										
		7	12.5	Claystone, highly weathered, thin bedded to lamina	ted, soft rock, slightly	V	cs	HS							
				moist, silty, breaks down to highly plastic silty clay, l	olocky, light brown										
				mottled gray. Push 7.5' - 10' sample crumbled and f	ell out of tube, no										
				recovery,											
	2														
							T								
DATE:	8/21/14	<u> </u>	тмг. 9):16 WATER I EVEL. No water	CAVE IN: 9.4	,	Ļ			ÇIJI	FFT	1 01	. 1	ÇI.	 EFTS

WATE	RSHED PIL	ım Cr	eek			SUB-WATERSHED							SITE NO	^{).} 12		
LOCAT	rion Au	xiliary	/ Spill	lway DATE 8/20/2014		LAT/LONG -9	7.77	068	0 30.0	365	87 Ap _l	prox.	STATE	Te	as	
LOGG	ED BY Mo	ffatt				PROJECT: WP-07	- 32	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	WP-08	- 2- 2-3	FP-03	3	P.I	J46	-2-	
DRILL	ING EQUIPME	INT M	lobile	B-57		LOCTION OF HOLES	Exit	Slo	ре, ~	400	DS Cr	est				
		HO DEI	LE TH				3	U	2022			S	AMPLES			
HOLE NO.	STA. & SURFACE ELEVATION	FROM	то	DESCRIPTION OF MATERIA	LS		N	S C S	TYPE BIT USED	NO	ТУРЕ	FROM	то	REC %	DISP FT	AMT
		FT	FT						, e. e. e. e.	NO	2	FT	FT	70	T.I	
210	607.976	0	4	Clay, silty, dry to slightly moist, highly plastic, st	iff, sl	hiny, black (topsoil)		СН	HS	.1	3" P	2.5	5	100		
	~14+48			Push 2.5' - 5' contact with material below in tube	•					.2	3" P	10	12.5	100		
	CL AS	4	8	Gravel, fine to coarse grained, sand, fine to coa	rse (grained, dry to slightly		GC	HS							
1	170' Right			silty, clay, stiff, highly plastic brown with multi co	olor g	gravel (high terrace		GM	2							
				deposit).												
		8	12.5	Claystone, highly weathered, thin bedded to lan	ninat	ted, soft rock, slightly		cs	HS							
				moist, silty, breaks down to highly plastic silty cl	ay, k	olocky, light brown										
				mottled gray.												
									5							
							<u> </u>									
DATE	8/21/14	<u> </u>	тмг. 9	:23 water i evel. No water		CAVE IN: 9.8			,		ęu.	 FFT	1 01	. 1	ÇT.	FFTS

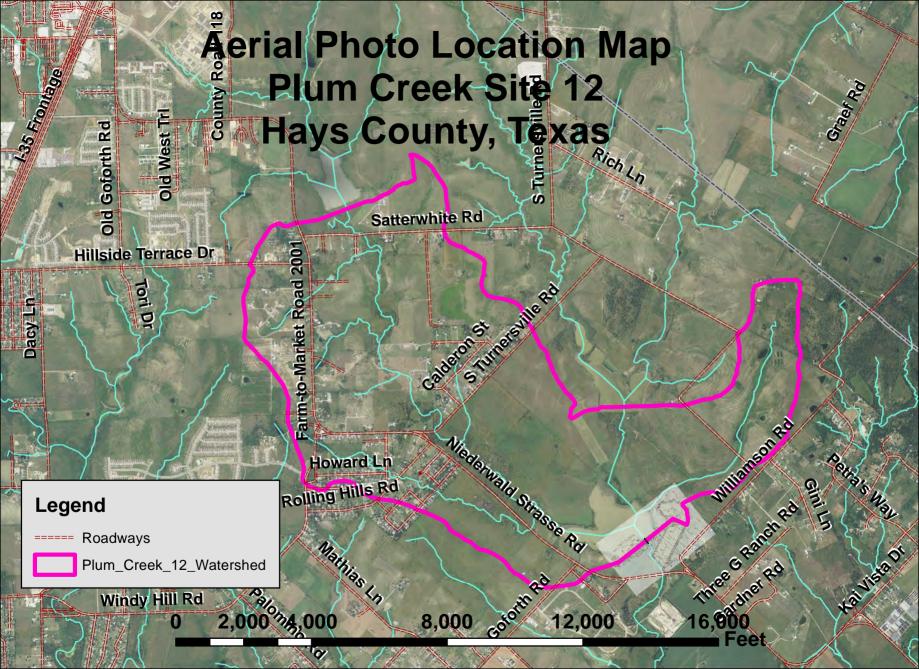
WATEI	SCHED					SUB-WATERSHE	'D						1	SITE NO)		
	PIL	ım Cr	eek												^{).} 12		
LOCAT	TON Au	xiliary	/ Spill	way DATE 8	/20/2014	LAT/LONG	-97	7.77	096	3 30.0	3609	96 App	orox.	STATE	Tex	as	
LOGGI	ED BY Mo	ffatt				PROJECT: W	P-07		74	WP-08 _		FP-03	3	P.I	J46	<i>y.</i>	=
DRILL	ING EQUIPME	INT N	lobile	B-57		LOCTION OF HO	LES E	Exit	Slo	ре, ~	600 I	DS Cr	est				
	270-200 120	HO DEI	LE PTH			; '			U				s	AMPLES			
HOLE NO.	STA. & SURFACE	FROM	то	DESCRIPTIO	N OF MATERIALS			N	S C	TYPE BIT			FROM	ТО	REC	DISP	AMT
	ELEVATION	FT	FT						S	USED	NO	TYPE	FT	FT	%	FT	
211	605.461	0	4	Clay, silty, dry to slightly moist, high	ly plastic, stiff, sl	hiny, slight fine gra	ain		СН	HS	.1	3" P	7.5	10	100		
	~16+49			gravel, black													
	CL AS	4	6	Gravel, fine to coarse grained, sand	l, fine to coarse લ	grained, dry to sligl	htly		GM	HS							
	170' Right			moist, silty, medium dense to dense	e, brown with mu	lti color gravel.	2.										
		6	10	Claystone, silty, weathered, thin bed	dded to laminate	d, soft rock, slightl	у		cs	HS							
	2			moist, breaks down to highly plastic	silty clay, vertica	al fractures (blocky	/),										
				light grayish brown													
												7					
-																	
DATE:	8/21/14	1	г _{ІМЕ:} 9	:31 WATER LEVEL: NO	o water	CAVE IN: 6.6	D.				•	SHI	EET	1 or	, 1	SH	IEETS

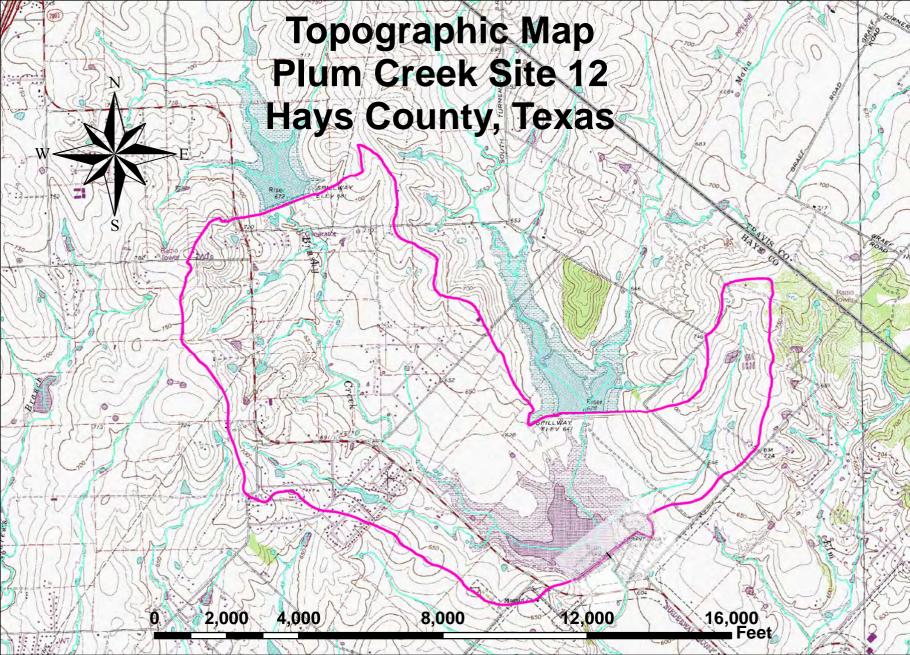
WATER	RSHED PIL	ım Cr	eek			SUB-WATERSHED								SITE NO	^{).} 12		
LOCAT	TON Au	xiliary	/ Spill	way	DATE 8/20/2014	LAT/LONG	-97.	.77′	124	6 30.0	3560)9 App	orox.	STATE	Tex	kas	
LOGGI	ED BY Mo	ffatt				PROJECT: WP-0	7			WP-08 _		FP-03	3	P.l	J46	- 12	=
DRILL	ING EQUIPME	ENT M	obile	B-57		LOCTION OF HOLE	s E	xit	Slo	ре, ~	800	DS Cr	est				
HOLE	STA. &	HO DEI							U S	ТҮРЕ			;	SAMPLES			
NO.	SURFACE ELEVATION	FROM	то	a y	DESCRIPTION OF MATERIALS			N	C S	BIT USED	NO	ТУРЕ	FROM	ТО	REC %	DISP FT	AMT
		FT	FT					_			NO	TYPE	FT	FT	90	rı	
212	602.732	0	2	Clay, silty, dry to slightly r	moist, highly plastic, stiff, sl	hiny, black		200000	СН	HS							
	~18+40	2	6	Gravel, fine to coarse gra	ined, sand, fine to coarse g	grained, silty, slight c	ау,		-								
	CL AS			dry to slightly moist, medi	um dense to dense very sl	ightly to non-plastic,		0.0	GМ	HS							
	164' Right			brown with multi color gra	vel.												
		6	7	Claystone, silty, weathere	ed, thin bedded to laminate	d, soft rock, slightly		100	cs	HS							
				moist, breaks down to mo	derately to highly plastic si	ilty clay, light grayish											
				brown													
							3			2							
	,																
			· · · · · · · · · · · · · · · · · · ·						16								
								\dashv				71					
								1)							
DATE:	8/21/14	 T	TIME: 9:	39 Water	LEVEL: No water	CAVE IN: 5.9				,		SHI	L EET	1 01	. 1	SH	EETS

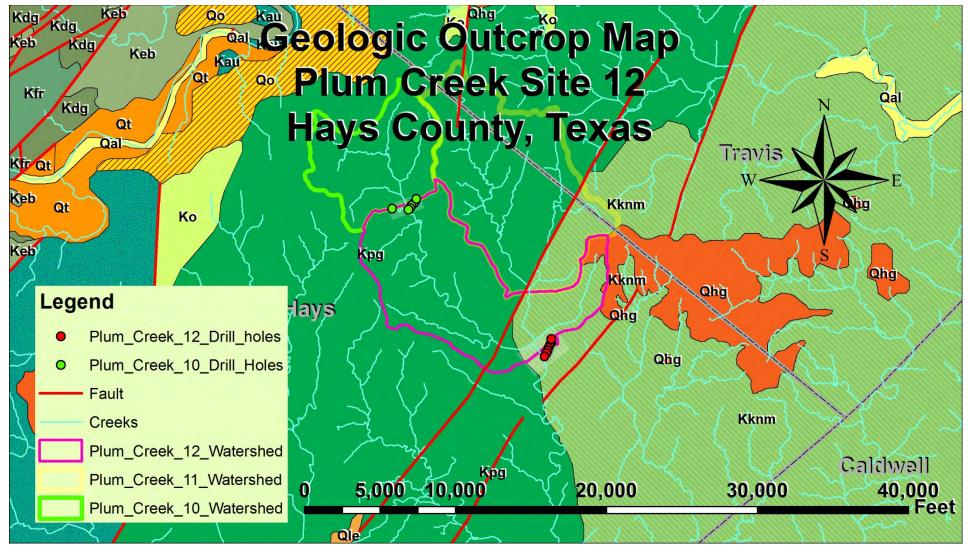
WATE	RSHED Plu	ım Cr	eek			SUB-WATERSHED							SITE NO	^{D.} 12		
LOCAT	Au	xiliary	/ Spill	lway	DATE 8/20/2014	LAT/LONG -9	7.77	159	4 30.0	3502	20 App	orox.	STATE	Te	kas	
LOGG	ED BY Mo	ffatt							WP-08	- 8 - 8 - 8	FP-03	<u></u>	P.I	L46	4	=3
DRILL	ING EQUIPME	NT M	lobile	B-57		LOCTION OF HOLES	Exit									
HOLE	STA. &	HO DEI	LE PTH				8	U S	TYPE			5	SAMPLES			
NO.	SURFACE ELEVATION	FROM	то	;	DESCRIPTION OF MATERIALS		N	C S	BIT USED	NO	ТУРЕ	FROM	то	REC %	DISP FT	AMT
	4 7 6 6 7 14 234 5 20 6 10 6 10 7 10 10 10 10 10 10 10 10 10 10 10 10 10	FT	FT							NO	1111	FT	FT	70		
213	599.608	0	1.5	Clay, silty, dry to slightly i	moist, highly plastic, stiff, s	hiny, black		СН	HS							
	~20+83	1.5	4	Gravel, fine to coarse gra	ined, sand, fine to coarse	grained, silty, dry to		GM	HS							
	CL AS			slightly moist, dense, brow	wn with multi color gravel.		5.0									
- 1	160' Right	4	5	Claystone, silty, weathere	ed, thin bedded to laminate	ed, soft rock, slightly		cs	HS							
				moist, breaks down to mo	oderately to highly plastic s	silty clay, light grayish										
				brown												
1																
	-						/-									
												2				
DATE:	8/21/14	1	I _{IME:} 9	:44WATER	LEVEL: No water	CAVE IN: 4.2					SHI	EET	1 oɪ	1	SH	EETS

	SAMP	LE LIST FOR SOIL MECHANICS LABORATO	DRY												
STATE:		COUNTY:													
SITE :	TX		Hay	<u>/S</u>											
PROJECT	Plum Creek Site1	2 (Flood Control Structure)													
TYPE:	SITES	PROGRAM (Source of Funds):													
CONTACT PERSON:	Bryan S. Moffatt														
PHONE/ FAX:	817.233.6268					Index 7	Tests = gr	radation	, water c	ontent, L	L, PI, Cı	rumb, Do	ouble Hy	dromete	er, Gs
								7.	ests Reque	ested					
Lab Sample No.	Field Sample No.	Description or Location	Depth (ft)	Sample Size/Type	Field Crumb	Index	MNA	Col-lapse	Con-sol.	Shear	Pinhole	Salt	Gypsum	Perm	Other Tests or Other Notes
	207.1	~5+00 CL AS 125 feet Right	0' - 0.5'	small	NR	X	Х?			X ?					Original Tag No. 7.1, Push 0-2.5, refusal in gravel at 0.5 sample fell out of tube
	207.2	~5+00 CL AS 125 feet Right	5' - 7.5'	3" Push	NR	X	X			Х					Original Tag No. 7.2
	208.1	~11+25 CL AS 175 feet Right	0' - 1.5'	3" Push	NR	X	X			Х					Original Tag No.1.1 Push 0-2.5, refusal in gravel at 1.5, Taco Tube, Fill Material
	208.2	~11+25 CL AS 175 feet Right	5' - 5.5'	small	NR	Х	Х?			Х?					Original Tag No. 1.2 Push 5-7.5 refusal in gravel at 5.5 original ground level
	208.3	~11+25 CL AS 175 feet Right	6' - 9'	small	NR	Х									Original Tag No. 1.3
	208.4	~11+25 CL AS 175 feet Right	10' - 11.5'	3" Push	NR	Х	Х			X					Original Tag No. 1.4, Push 10 - 12.5 refusal in carbonate concreations/gravel
	208.5	~11+25 CL AS 175 feet Right	15' - 17.5'	3" Push	NR	X	Х			X					Original Tag No.1.5, almost sheared head from tube
	209.1	~13+25 CL AS 175 feet Right	2.5' - 4'	3" Push	NR	Х	X			X					Original Tag No. 2.1 Push 2.5-5 refusal at 4' in gravel
	209.2	~13+25 CL AS 175 feet Right	7.5' - 10'	small	NR	Х									Original Tag No. 2.2 Push 7.5-10, sample fell out of tube, no recovery, grab sample
	209.3	~13+25 CL AS 175 feet Right	10' - 12.5'	3" Push	NR	Х	X			X					Original Tag No. 2.3, simular to sample 2.2 (209.2)
	210.1	~15+25 CL AS 175 feet Right	2.5'- 5'	3" Push	NR	Х	X			X					Original Tag No. 3.1 CH/Gravel contact in tube
	210.2	~15+25 CL AS 175 feet Right	10' - 12.5'	3" Push	NR	Х	X			X					Original Tag No. 3.2
	211.1	~17+25 CL AS 175 feet Right	7.5' - 10'	3" Push	NR	X	X			X					Original Tag No. 4.1
		NR Not Run													

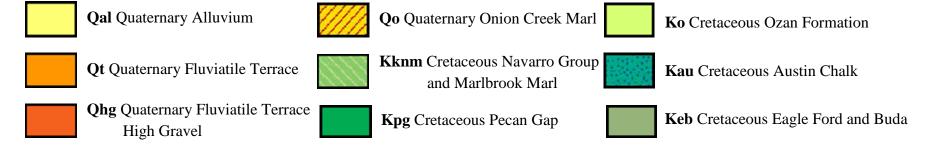


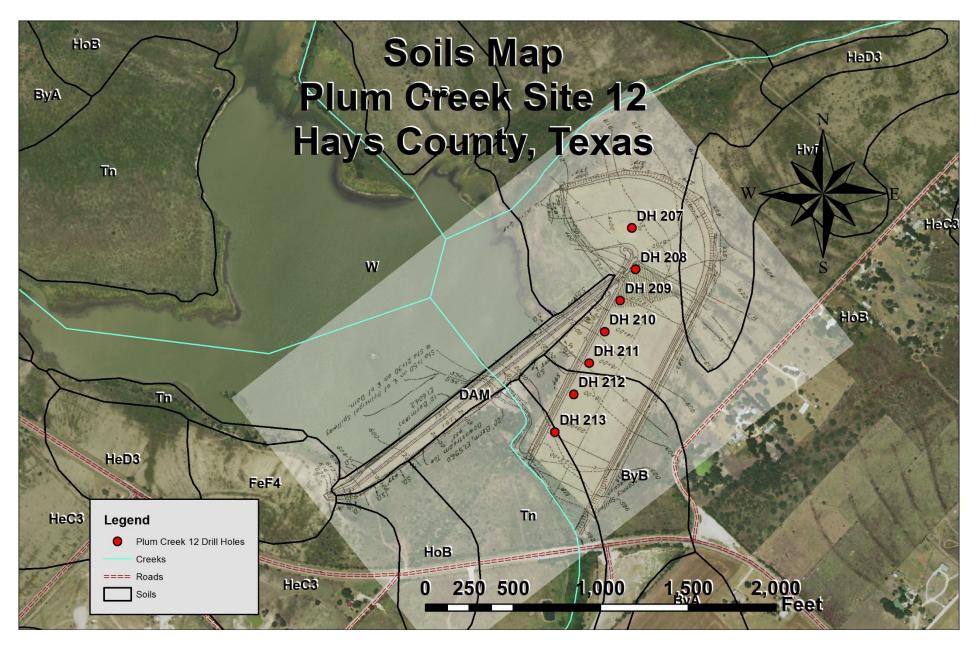






Modified from: Geologic Atlas of Texas, Austin Sheet, Bureau of Economic Geology, The University of Texas Austin, 1974





Base Map: USDA/NRCS 2014 NAIP from http://datagateway.nrcs.usda.gov/, Soils from USDA/NRCS SOIL Survey Geographic (SSURGO), Hays County, Texas, 2003, As-built from NRCS Texas State Office Files, 07/07/1963, Georeferenced with ArcGIS 10.2 03/18/2015, Creeks from National Hydrology Database, Roads from TNRIS http://tnris.org/data-download/#/statewide, Texas Strategic Mapping Program (StratMap) 2006, Hole Location from field survey 08/20/2014

Engineering Properties

Comal and Hays Counties, Texas

[Absence of an entry indicates that the data were not estimated. This report shows only the major soils in each map unit]

Man aynahal			Classi	ification	Fragi	ments	Per	cent passing	g sieve num	ber	Linuid	Disatisitu
Map symbol and soil name	Depth	USDA texture	Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200	Liquid limit	Plasticity index
	In	•			Pct	Pct			•	•	Pct	
ByA:												
Branyon	0-6	Clay	СН	A-7-6	0	0	95-100	85-100	80-100	75-100	54-80	35-55
	6-44	Clay, silty clay	CH	A-7-6	0	0	95-100	85-100	80-100	75-100	54-80	35-55
	44-80	Clay, silty clay	СН	A-7	0	0	90-100	85-100	80-100	75-100	54-80	38-60
ByB:												
Branyon	0-6	Clay	СН	A-7-6	0	0	95-100	85-100	80-100	75-100	54-80	35-55
	6-48	Clay, silty clay	СН	A-7-6	0	0	95-100	85-100	80-100	75-100	54-80	35-55
	48-80	Clay, silty clay	CH	A-7	0	0	90-100	85-100	80-100	75-100	54-80	38-60
DAM:												
Dams												
FeF4:												
Ferris, severely eroded	0-12	Clay	СН	A-7-6	0	0	92-100	92-100	75-100	75-100	51-76	35-55
	12-35	Clay, silty clay	СН	A-7-6	0	0	92-100	92-100	75-100	72-100	51-78	35-56
	35-60	Clay, silty clay	СН	A-7-6	0	0	92-100	92-100	85-100	75-100	61-100	42-75
HeC3:												
Heiden, eroded	0-13	Clay	СН	A-7-6	0	0	95-100	90-100	80-100	75-99	51-80	32-55
	13-22	Clay, silty clay	CH	A-7-6	0	0	95-100	90-100	80-100	75-99	51-80	32-55
	22-58	Clay, silty clay	CH, CL	A-7-6	0	0	95-100	90-100	75-100	70-90	49-80	32-55
	58-80	Clay	CH, CL	A-7-6	0	0	92-100	92-100	85-100	70-90	49-80	32-55



Survey Area Version: 9
Survey Area Version Date: 12/12/2013

Engineering Properties

Comal and Hays Counties, Texas

Manaymbal			Classi	ification	Fragr	ments	Per	cent passing	sieve numl	oer	Liquid	Plasticity
Map symbol and soil name	Depth	USDA texture	Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200	Liquid limit	index
	In		•		Pct	Pct					Pct	•
HeD3:												
Heiden, eroded	0-13	Clay	CH	A-7-6	0	0	95-100	90-100	80-100	75-99	51-80	32-55
	13-28	Clay, silty clay	CH	A-7-6	0	0	95-100	90-100	80-100	75-99	51-80	32-55
	28-57	Clay, silty clay	CH, CL	A-7-6	0	0	95-100	90-100	75-100	70-90	49-80	32-55
	57-80	Clay	CH, CL	A-7-6	0	0	92-100	92-100	85-100	70-90	49-80	32-55
HoB:												
Houston Black	0-5	Clay	CH	A-7-6	0	0	97-100	96-100	94-100	88-98	58-90	34-60
	5-50	Clay, silty clay	CH	A-7-6	0	0	98-100	98-100	92-100	88-97	58-98	37-72
	50-77	Clay, silty clay	СН	A-7-6	0	0	94-100	93-100	87-100	84-99	51-99	32-78
HvD:												
Houston Black	0-5	Gravelly clay	CH	A-7-6	0	0-5	55-80	55-80	55-80	50-75	58-90	34-60
	5-54	Clay, silty clay	CH	A-7-6	0	0	98-100	98-100	92-100	88-97	58-98	37-72
	54-77	Clay, silty clay	СН	A-7-6	0	0	94-100	93-100	87-100	84-99	51-99	32-78
Tn:												
Tinn	0-25	Clay	CH, CL	A-7	0	0	95-100	95-100	85-100	80-100	45-75	25-54
	25-60	Clay, silty clay	СН	A-7	0	0	95-100	90-100	80-100	80-100	55-75	35-54
	60-80	Clay, silty clay	СН	A-7	0	0	95-100	90-100	80-100	80-100	55-75	35-54
W:												
Water												

