

ENSOLUM						Client: <u>Oxy</u>		
Boring ID: <u>SVW01</u>						Project Name: <u>Pville Federal S-7 Wellhead</u>		
Site Sketch: <u>N</u>						Project Number: <u>09A141105</u>		
						Date: <u>10-24-2022</u>		
						Logged by: <u>Daniel Thomas</u>		
						Driller: <u>Site Services</u>		
						Drilling Method: <u>Direct Push</u>		
						Sample Method: <u>Continuous (Macro)</u>		
Boring Diameter: <u>1 3/4"</u>						Well Diameter: <u>1"</u>		
Well Material: <u>pvc</u>						Surface Completion: <u>Pvc Riser</u>		
Casing Interval: <u>14.5' (7.5-10.5')</u>						Screen Interval: <u>3' (10.5'-13.5')</u>		
Grout Interval: <u>N/A</u>						Bentonite Interval: <u>9' (0-9')</u>		
						DTP/DTW: <u>~15'</u>		
						Sand Interval: <u>1.5' (9-10.5')</u>		
Depth (ft)	Run / Recovery	Moisture	PID (ppm) CH ₄ %	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		Moist	2.5%	N		CL/SM	0-1 Clay, some Fg. Sand, trace silt, brown, moist, low plasticity, little cohesion, no stain, no odor	
1			0.6%			SW	1-6' Fg-Cg Sand, trace gravels, brown, moist, well-graded, no stain, no odor	
2			1.0%				@ 3'-6' trace clay, @ 6' 0.3% CO ₂	
3			0.7%				6'-15' Fg-Cg Sand, some gravels, orange-ish tan, moist → dry, well-graded fluvial sands, no odor, intermittent iron-oxide stain from 6-8.75'	
4	4' / 4'		0.0%			SW	@ 8' - 2" dark brown	
5			0.0%				@ 10' - 6" clay lens some Fg-Mg sands, trace gravels, dark-brown, dry, increased compaction, low plasticity, cohesive, no stain, no odor	
6			0.0%				ETD - CO ₂ = 0.2%	
7			0.0%					
8			0.0%					
9			0.0%					
10	5' / 5'		0.0%					
11			0.0%					
12			0.0%					
13			0.0%					
14			0.0%					
15			0.0%					
16			0.0%					
17			0.0%					
18			0.0%					
19			0.0%					
20			0.0%					
21			0.0%					
22			0.0%					
23			0.0%					
24			0.0%					
25			0.0%					
26			0.0%					
27			0.0%					
28			0.0%					
29			0.0%					
30			0.0%					

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Project Name:


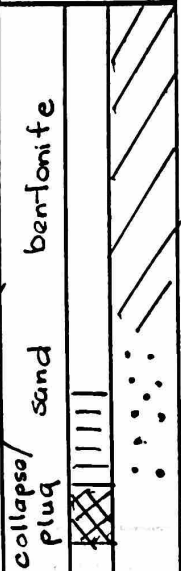
ENSOLUM						Client: Oxy			
Boring ID: SVW01 FS SVW02						Project Name: Pville Federal 5-7 Wellhead			
Site Sketch:						Project Number: 09A1417105			
see SVW01						Date: 10/24/22			
						Logged by: Daniel Thomas, Fatima Smith			
						Driller: site services			
						Drilling Method: direct push			
						Sample Method: continuous			
						Boring Diameter: 1 3/4" Well Diameter: 1"			
Well Material: PVC						Surface Completion: PVC riser			
Casing Interval: 14.5' (14-10.5')						Screen Interval: 3' (10.5-13.5')			
Grout Interval: NA						Bentonite Interval: 9' (0-9')			
						DTP/DTW: ~15'			
						Sand Interval: 1.5' (9-10.5')			
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4% LEL	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		moist	0.0	0	N		CL/sm	0-1' clay, some fg sand, moist, low plas, little cohesion, no stain/odor (at 6' = 0.3% CO2)	bentonite
5			0.0	0			SW	1-6' fg-cg sand, trace gravels, brwn, moist, well graded, no stain/odor	
4 1/4'			0.0	0					collapse/ sand plug
10		dry	0.0	0			Sw	@ 2-6' trace - few clay	
5 1/5'		moist	0.0	0				6-15' fg-cg sand, some gravels, orangish tan, moist (at 9'), well graded, fluvial sand, no odor, intermittent iron oxide staining @ 7-9'	
15		wet	0.0	0				@ 10' trace clay @ 15' saturated @ TD - CO2 = 0.8%	
20								@ 14-15' borehole collapse @ 13.5 - 14' bentonite plug	
25									
30									

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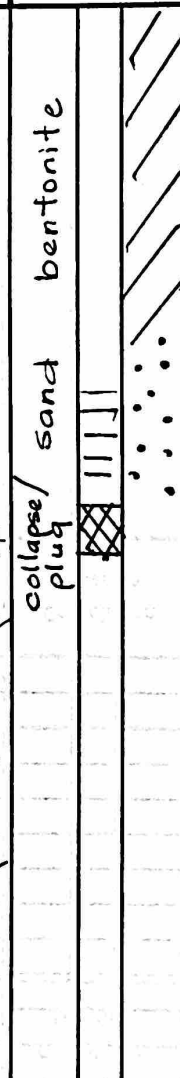
Project Name:


set as pvc stickup


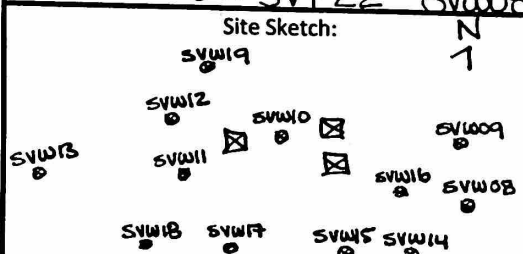
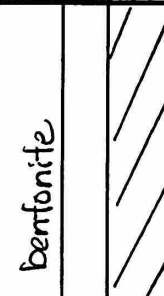
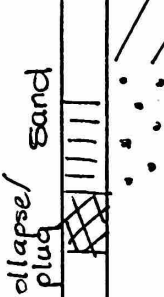
ENSOLUM						Client: Oxy			
Boring ID: SVW03						Project Name: P Vile Federal 5-7 Wellhead			
Site Sketch: see SVW01						Project Number: 09A1417105			
						Date: 10/24/22			
						Logged by: D. Thomas, F. Smith			
						Driller: Site Services			
						Drilling Method: Direct Push			
						Sample Method: Continuous			
						Boring Diameter: 1 3/4" Well Diameter: 1"			
						Well Material: pvc			
						Surface Completion: pvc riser			
Casing Interval: 14.5' (14-10.5')						Screen Interval: 3' (10.5'-13.5')		DTP/DTW: ~15'	
Grout Interval: NA						Bentonite Interval: 9' (0-9')		Sand Interval: 1.5' (9-10.5')	
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS symbol	Geologic Description	Completion Diagram
0		moist	0.0	0	N		CL/SM	0-2' clay, some fq sand, tr silt, brwn, moist, low plas, cohesive, no stain/odor	bentonite
5			0.0	0			SW	2-6' fq-cq sand, trace-few gravels, light brwn, moist well graded no stain/odor	
10	2.5/4	dry	0.0	0			SW	@ 6' 0.5% CO2	
15	5/5	moist	0.0	0				6-15' fq-cq sand, some gravels, tan, moist → dry, well graded, fluvial, no stain/odor	
20		vry moist	0.0	0				@ 6-8' no recovery	
25								@ 10.75' - 6' tr clay	
30								@ 12.75 - 13.25 iron oxide staining	
								@ TD - CO2 = 9.7%, O2 = 6.5%	
								- borehole collapse @ 14-15'	
								- plug 13.5' - 14' ~ 1" bentonite	
								- set as pvc stick up	

						Client: Oxy			
Boring ID: SVW04						Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch: see SVW01						Project Number: 09A1417105			
						Date: 10/24/22			
						Logged by: D. Thomas, F. Smith			
						Driller: Site Services			
						Drilling Method: Direct Push			
						Sample Method: Continuous			
						Boring Diameter: 3/4" Well Diameter: 1"			
						Well Material: pvc			
						Surface Completion: pvc riser			
Casing Interval: 14.6' (14-10.5')						Screen Interval: 3' (10.5'-13.5')		DTP/DTW: ~15'	
Grout Interval: NA						Bentonite Interval: 9' (0-9')		Sand Interval: 1.5' (9-10.5')	
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		moist	0.0	0	N		CL/SH	0-2' clay, some fq sand, tr silt, brwn, moist, low plas, cohesive, no stain/odor	
5			0.0	0			SW	2-6' fq-cq sand, little-some gravel, light brwn, moist, well graded, no stain/odor	
10	4/4	dry	0.0	0			SW	6-15' fq-cq sand, some gravels, orangish tan, moist, well graded, fluvial, no stain/odor	
15	6/5	moist	0.0	0				@ 6.75-8.50' intermittent iron oxide staining @ 10' tr clay 2" @ 12.5' tr clay 1" @ 13.75' drk brwn 1" @ TD - CO ₂ = 3.7%, O ₂ = 16.2% @ 14-15' collapse - plug 13.5'-14 w/ bentonite - set as pvc stickup	
20									
25									
30									

ENSOLUM							Client: Oxy			
Boring ID: SVW05							Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch:							Project Number: 09A1417105			
See SVW01							Date: 10/24/22			
							Logged by: D. Thomas, F. Smith			
							Driller: Site Services			
							Drilling Method: Direct Push			
							Sample Method: Continuous			
							Boring Diameter: 1 3/4" Well Diameter: 1"			
							Well Material: pvc			
							Surface Completion: pvc riser			
Casing Interval: 14.5' (14-10.5')							Screen Interval: 3' (10.5'-13.5')		DTP/DTW: ~15'	
Grout Interval: NA							Bentonite Interval: 9' (0-9')		Sand Interval: 1.5' (9-10.5')	
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS symbol	Geologic Description	Completion Diagram	
0		Moist	0.0	0	N		CL/SH	0-2' clay, some fq sand, tr silts, brwn, moist, low plas, little cohesion, no stain/odor	bentonite	
5			0.0	0			SW	2-6' fq-cq sand, tr gravels, brwn, Moist, well graded, no stain/odor @ 6' CO2 = 0%		
10	4/4	dry	0.0	0			SW	6-15' fq-cq sand, little fq, few gravels, orangish tan, Moist, well graded, fluvial, no stain/odor		
15	5/5	Moist	0.0	0				7-7.50' drk brwn 6-8.75' intermittent iron oxide stain 12.75' 1" drk brwn TD - CO2 = 1.0%	collapse/ sand plug	
20										
25								14-15' borehole collapse 13.5-14' bentonite plug - set as pvc stickup		
30										

						Client: Oxy			
Boring ID: SVW006						Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch: see SVW01						Project Number: 09A1417105			
						Date: 10/24/22			
						Logged by: D. Thomas, F. Smith			
						Driller: Site Services			
						Drilling Method: Direct Push			
						Sample Method: Continuous			
						Boring Diameter: 3/4" Well Diameter: 1"			
Well Material: PVC						Surface Completion: pvc riser			
Casing Interval: 14.5' (14-10.5')						Screen Interval: 3' (10.5'-13.5')			
Grout Interval: NA						Bentonite Interval: 9' (0-9')			
						DTP/DTW: ~16'			
						Sand Interval: 1.5' (9-10.5')			
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		moist	1.0	0	N		CL/SH	0-1' clay, few fq sand, tr silt, brwn, moist, low plas, cohesive, no stain/odor	
		0.1	0				SW		
		0.0	0						
		0.2	0						
5		0.0	0						
	4/4	0.0	0						
		0.0	0						
10		dry	0.0	0			SW	1-6' fq-cq sand, little gravel, brwn, moist, well graded, no stain/odor @ 6' CO2=0%.	
	5/5	moist	0.0	0					
		0.0	0						
15		very moist	0.0	0				6-15' fq-cq sand, little gravel, orangish tan, moist → dry @ 6-7.50' intermittent iron oxide stain, well graded, fluvial, no odor @ 8.50-9' drk brwn 3" @ 11' 2" drk brwn @ TD - O2 = 15.1%, CO2 = 3.0%,	
20									
25									
30								borehole collapse 14-15' @ 13.5-14' bentonite plug	

						Client: Oxy			
Boring ID: SVW07						Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch:						Project Number: 09A1417105			
See SVW01						Date: 10/24/22			
						Logged by: D. Thomas, F. Smith			
						Driller: Site Services			
						Drilling Method: Direct Push			
						Sample Method: Continuous			
						Boring Diameter: 3/4" Well Diameter: 1"			
Well Material: PVC						Surface Completion: pvc riser			
Casing Interval: 14.6' (14-10.5')						Screen Interval: 3' (10.5-13.5')		DTP/DTW: ~15'	
Grout Interval: NA						Bentonite Interval: 9' (0-9')		Sand Interval: 1.5' (9-10.5')	
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		Moist	0.0	0	N		CL/SH	0-2' clay, few fq sands, tr silts, brwn, moist, low plas, cohesive, no stain/odor	bentonite
5			0.0	0			SW		
10	4/4	dry	0.0	0			SW	2-6' fq-cq sand, @ 3' tr clay, little gravels, brwn, moist, well graded, no stain/odor	collapse/ sand plug
15	5/5	Moist	0.0	0			SW	@ 6' CO2 = 0.1%, 6-15' fq-cq sand, little gravel, brown, orange tan, moist → dry @ 7', well graded, fluvial, no stain/odor	
20			0.0	0				@ 6-7.50' intermittent iron oxide stain @ 9.25-9.50' drk brwn @ 10-10.75' drk brwn	collapse/ sand plug
25			0.0	0				@ 14-15' borehole collapse - bentonite plug 13.5-14'	
30									

						Client: <u>Oxy</u>		
Boring ID: <u>SVP22^{FB} SVW08</u>						Project Name: <u>Pville Federal S-7 Wellhead</u>		
Site Sketch: <u>N</u> 						Project Number: <u>09A1417105</u>		
Date: <u>10/25/22</u>						Logged by: <u>F. Smith</u>		
Driller: <u>Site Services</u>						Drilling Method: <u>direct push</u>		
Sample Method: <u>continuous</u>						Boring Diameter: <u>3/4"</u> Well Diameter: <u>1"</u>		
Well Material: <u>PVC</u>						Surface Completion: <u>pvc riser</u>		
Casing Interval: <u>14.5' (14-10.5')</u>						Screen Interval: <u>3' (10.5-13.5')</u>		DTP/DTW: <u>~15'</u>
Grout Interval: <u>NA</u>						Bentonite Interval: <u>9' (0-9')</u>		Sand Interval: <u>1.5' (9-10.5')</u>
Depth (ft)	Run / Recovery	Moisture	PID (ppm) CH ₄ LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		moist	1.0/0	N		clay	0-2' clay, some fg sand, trace silts, brwn, moist, low plas, little cohesion, no stain/odor	
5	5'/5'		0.3/0 0.2/0 0.2/0 0.4/0			SW	2-6' fg-cg sand, some gravels, brwn, moist, well graded, no stain/odor @ 6' CO ₂ =0%	
10	5'/5'	dry	0.1/0 0.0/0 0.0/0			SW	6-15' fg-cg sand, some gravels, orangish tan, moist → dry, well graded, fluvial sands, intermittent iron oxide staining @ 6.50-8.75', no odor @ 8.75 2" dark brwn @ 11' trace clay @ 10-11.75' intermittent iron oxide staining @ TD - CO ₂ =0% @ 14-15' borehole collapse bentonite plug @ 13.5-14'	
15		moist						
20								
25								
30								

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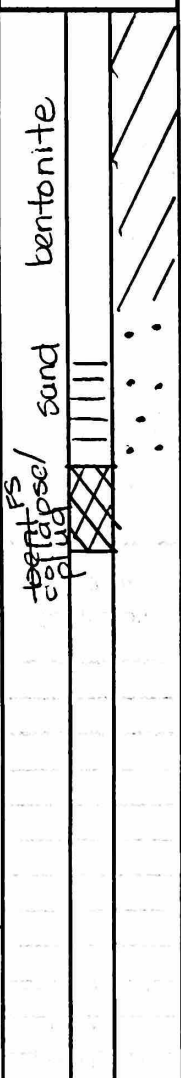
Project Name:


ENSOLUM					Client: <u>Oxy</u>				
Boring ID: <u>SV23 FS SVW09</u>					Project Name: <u>Pville Federal S-7 wellhead</u>				
Site Sketch: see SVW08					Project Number: <u>09A1417105</u>				
					Date: <u>10/26/22</u>				
					Logged by: <u>F. Smith</u>				
					Driller: <u>site services</u>				
					Drilling Method: <u>direct push</u>				
					Sample Method: <u>continuous</u>				
					Boring Diameter: <u>3/4"</u> Well Diameter: <u>1"</u>				
					Well Material: <u>pvc</u>				
					Surface Completion: <u>pvc riser</u>				
Casing Interval: <u>14.5' (14-10.5')</u>					Screen Interval: <u>3' (10.5-13.5)</u>				
Grout Interval: <u>NA</u>					DTP/DTW: <u>~15'</u>				
					Sand Interval: <u>1.5' (9-10.5')</u>				
					Bentonite Interval: <u>9' (0-9')</u>				
Depth (ft)	Run / Recovery	Moisture	PID (ppm) CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram	
0		Moist	0.1/0	N		CL6M	0-1 clay, some fq sand, trace silt, low plas, little cohesion, no stain / odor	bentonite	
5	5/5		0.0/0 0.0/0 0.1/0 0.0/0			Sw	1-5' - fq-cq sand, trace clay @ 2', some gravel, brown-light brown, moist, well graded, no stain / odor		
10	5/5	dry	0.0/0			Sw	5-15' C02 0%.	collapse sand plug	
15		moist	0.0/0 0.0/0 0.0/0				5-15 fq-cq sand, few gravels, orangish tan, moist → dry, well graded, fluvial sands, intermittent iron oxide stain @ 6.25-7.25', no odor		
20							@ 10.50 trace clay @ 11" 3" cl rk brwn @ TD-C02 0%	bentonite plug	
25							@ 14-15' borehole collapse @ 13.5'-14'		
30									

ENSOLUM						Client: Oxy		
Boring ID: SVP24-SVW10						Project Name: Pville Federal 5-7 Wellhead		
Site Sketch:						Project Number: 09A1417105		
see SVW08						Date: 10/26/22		
						Logged by: F. Smith		
						Driller: site services		
						Drilling Method: direct push		
						Sample Method: continuous		
						Boring Diameter: 1 3/4" Well Diameter: 1 1/4"		
Well Material: pvc						Surface Completion: flushmount		
Casing Interval: 14.5' (14-10.5)						Screen Interval: 3' (10.5-13.5)		
Grout Interval: NA						Bentonite Interval: 9' (0-9')		
						DTP/DTW: ~16'		
						Sand Interval: 1.5' (9-10.5')		
Depth (ft)	Run/Recovery	Moisture	PID (ppm)	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		Moist	0.1/0	N		CL/SM	0-1' clay, little fq, brown sand, traces silt, Moist	
			0.0/0			SW	low plas, little cohesion, no stain/odor	
			0.2/0				1-5' fq-cq sand, some gravels, brown, moist, well graded, no stain/odor	
5	25/5		0.3/0				@ 2' trace clay	
			0.2/0				@ 5' CO2 = 0.1%	
10	3.5/5	dry moist	0.0/0			SW	5-15' fq-cq sand, few gravels, brown-tan, moist → dry, well grade, fluvial, no stain/odor	
			0.0/0				@ 6.50-6.75 trace clay	
15		very moist					@ 7.50 trace clay	
							@ 8 trace clay	
							@ 12.25 trace clay	
20							@ 11-11.75 clay	
							@ TD - CO2 = 0.1%	
25							collapse @ 14-15'	
30							bentonite t/ 13.5'	

ENSOLUM

Project Name: comp set as flushmount


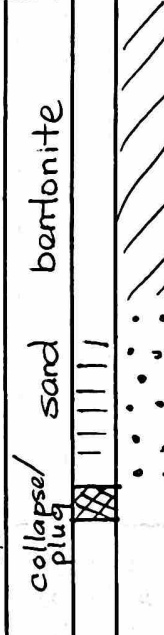
						Client: Oxy			
Boring ID: SVW11						Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch: see SVW08						Project Number: 09A1417105			
						Date: 10/25/22			
						Logged by: F. Smith			
						Driller: Site Services			
						Drilling Method: Direct Push			
						Sample Method: Continuous			
						Boring Diameter: 3/4" Well Diameter: 1"			
Well Material: pvc						Surface Completion: pvc riser			
Casing Interval: (12.75-9.75)						Screen Interval: 3' (12.75-9.75)		DTP/DTW: ~15'	
Grout Interval: NA						Bentonite Interval: 8.25' (8-8.25')		Sand Interval: 1.5' (8.25-9.75)	
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		Moist	0.0	0	N		CL/SM	CO ₂ = 0.0% @ 5'	
5	3/5		0.0	0			SW	0-1' clay, little fq sand, tr silts, brwn, moist, low plas, cohesive, no stain/odor	
			0.0	0			CL	1-5' fq-cq sand, tr. clay @ 4', brwn, moist, well graded, no stain/odor	
10	4/5	dry	0.0	0			SW	5-6' clay, few fq sands, brwn, moist, low plas, few-little cohesion, no stain/odor	
		Moist	0.0	0			SW	6-15' fq-cq sand, brwn → tan, moist, well graded, fluvial, no stain/odor	
15		Vry moist	0.0	0				@ 11.50 2" clay lens	
								@ 12.25 3" clay lens	
25								@ 12.75-13.75' drk brwn	
								@ TD-CO ₂ = 0.2%	
30								collapse t/12.75	

						Client: Oxy			
Boring ID: SVW12						Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch:						Project Number: 09A1417105			
see SVW08						Date: 10/25/22			
						Logged by: F. Smith			
						Driller: Site Services			
						Drilling Method: Direct Push			
						Sample Method: Continuous			
						Boring Diameter: 1 3/4" Well Diameter: 1"			
Well Material: pvc						Surface Completion: pvc riser			
Casing Interval: 14.5 - 10.5'						Screen Interval: 3' (10.5 - 13.5')			
Grout Interval: NA						Bentonite Interval: 9' (0 - 9')			
						DTP/DTW: ~15'			
						Sand Interval: 1.5 (9 - 10.5')			
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		Moist	0.3	0	N		CL/SM	0-1' clay, little fq sands, tr. silts, brwn, moist, low plas, cohesive, no stain/odor	bentonite
			0.0	0			SW		
			0.3	0					
5	5/5		0.1	0			CL/SM	1-4' fq-cq sand, little-some gravels, brwn, moist, well graded, no stain/odor	collapse / sand plug
			30.2	0					
			147.7	0					
10	5/5	dry	0.1	0	N		SW	4-6' clay, little fq-mq sands, brwn - orangish, brwn, moist, low plas, few cohesion, blk staining, odor @ 5-6'	
			0.0	0					
			0.0	0					
15		Moist	0.0	0				6-15' fq-cq sands, few gravels, brwn - orangish, tan, moist, well graded, fluvial, intermittent iron oxide stain @ 7-8', no odor @ 11-12.50' iron oxide stain @ TD-CO2=0.3%, collapse @ 14-15'	
			0.0	0					
			0.0	0					
20									
25									
30									

set @ pvc riser




						Client: Oxy Project Name: P Ville Federal 5-7 Wellhead Project Number: 09A1417105 Date: 10/25/22 Logged by: F. Smith Driller: Site Services Drilling Method: Direct Push Sample Method: Continuous Boring Diameter: 1 3/4" Well Diameter: 1"		
Boring ID: SVW13 Site Sketch: <div style="text-align: center; margin-top: 20px;">see SW08</div>						Well Material: pvc Surface Completion: pvc riser		
Casing Interval:			Screen Interval: 3' (10.5-13.5')			DTP/DTW: ~15'		
Grout Interval: NA			Bentonite Interval: 9' (0-9')			Sand Interval: 15' (9-10.5')		


Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		moist	0.0	0	N		CL/SH	0-1' clay, little fq sand, tr silts, low plas, cohesive, no stain/odor	bentonite sand collapse plug
5	5/5		0.0	0			SW	1-6' fq-cq sand, some gravels, brwn, moist, well graded, no stain/odor	
10	5/5	dry	0.0	0			SW	5-15' fq-cq sand, tr. gravels, orangeish tan, moist → dry, well graded, fluvial, intermittent iron oxide stain @ 5.75-7', no odor	
15		moist	0.0	0				@ 6-6.75' clay lens @ 13.50' drk brwn @ 14.25' drk brwn	
20								@ TD - CO ₂ = 0.4%	
25								collapse t/14'	
30								bentonite plug 13.5-14' set as pvc riser	

 ENSOLUM							Client: Oxy					
Boring ID: SVW014							Project Name: P Ville Federal 5-7 Wellhead					
Site Sketch: see SVW008							Project Number: 09A1417105					
							Date: 10/25/22					
							Logged by: F. Smith					
							Driller: Site Services					
							Drilling Method: Direct Push					
							Sample Method: Continuous					
							Boring Diameter: 1 3/4" Well Diameter: 1"					
							Well Material: PVC					
Surface Completion: PVC riser												
Casing Interval: (10.8-13.8) - (10.8)							Screen Interval: 3' (10.8-13.8)			DTP/DTW: ~15'		
Grout Interval: NA							Bentonite Interval: 9.3' (0-9.3')			Sand Interval: 1.5' (9.3-10.8')		
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram			
0		moist	0.1	0	N		CL/SH	0-1 clay, little fq sand, tr. silts, brwn, moist, low plas, cohesive, no stain/odor				
			0.0	0			SW					
			0.1	0								
			0.0	0								
5	5/5		0.0	0								
			0.0	0								
			0.0	0								
			0.0	0								
10	5/5	dry		0			SW	1-5' fq-cq sand, some gravels, brwn, moist, well graded, no stain/odor @ 5' CO2 = 0.1%				
			0.0	0								
			0.0	0								
15	5/5	moist		0				5-15' fq-cq sand, tr. gravels, orangish tan, moist → dry, @ 7-9.50' intermittent iron oxide stain, no odor				
		very moist	0.0	0				@ 9.25 2" drk brwn				
								@ 9.75 2" drk brwn				
								@ 10.25 1" drk brwn				
								@ 10.75 1" drk brwn				
								@ 11.25 2" drk brwn				
								@ TD-CO2 = 1.0%,				
20								@ 13.8 borehole collapse				
25												
30												

ENSOLUM						Client: Oxy			
Boring ID: <u>SVW15</u>						Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch: See SVW08						Project Number: 09A1417105			
						Date: <u>10/26/22</u>			
						Logged by: <u>F. Smith</u>			
						Driller: Site Services			
						Drilling Method: Direct Push			
						Sample Method: Continuous			
						Boring Diameter: <u>3/4"</u> Well Diameter: <u>1"</u>			
						Well Material: <u>pvc</u>			
						Surface Completion: <u>pvc riser</u>			
Casing Interval: <u>(14-10.5')</u>						Screen Interval: <u>3' (10.5-13.5)</u>		DTP/DTW: <u>~15'</u>	
Grout Interval: <u>NA</u>						Bentonite Interval: <u>9' (0-9)</u>		Sand Interval: <u>1.5' (9-10.5')</u>	
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS symbol	Geologic Description	Completion Diagram
0		Moist	0.1	0	N		CL/SH	0-1' clay, little fq sand, tr. silts, brwn, moist, low plas, cohesive, no stain/odor	bentonite
			0.0	0			SW	1-5 fq-cq sand, some gravels, brwn, moist, well graded, no stain/odor	
5	5/5		0.0	0			SW	5-10' fq-cq sand, tr. gravels, orangish tan, moist → dry, intermittent iron oxide stain @ 7.25-8.25', no odor	
			0.0	0			CL		
10	5/5	dry	0.0	0			SW	10-11' clay, some fq-wq sands, brwn, dry, increased competency, low plas, cohesive, no stain/odor	
			0.0	0				11-15' fq-cq sand, tr. gravels, orangish tan, dry → moist, drk brwn @ 10.75-11.25, no odor	
15		very moist	0.0	0				@ TD - O ₂ = 10.5%, CO ₂ = 5.9%	
20									
25									
30									

ENSOLUM							Client: Oxy			
Boring ID: SVW16							Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch:							Project Number: 09A1417105			
See SVW08							Date: 10/25/22			
							Logged by: F. Smith			
							Driller: Site Services			
							Drilling Method: Direct Push			
							Sample Method: Continuous			
							Boring Diameter: 2 1/4" Well Diameter: 1"			
Well Material: pvc							Surface Completion: pvc riser			
Casing Interval: (14-10.5')							Screen Interval: 3' (10.5-13.5)		DTP/DTW: ~15'	
Grout Interval: NA							Bentonite Interval: 9' (0-9')		Sand Interval: 1.5' (9-10.5')	
Depth (ft)	Run/Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram	
0		Moist	0.0	0	N		CL/SH	0-2 clay, little fq sands, low plas, cohesive, brwn, moist, no stain/odor		
			0.0	0			SW			
			0.0	0						
			0.0	0						
5			0.0	0				2-5' fq-cq sand, some gravel, brwn, moist, well graded, no stain/odor		
	5/5		0.0	0						
		dry	0.0	0			SW	5-15' fq-cq sand, tr. gravels, orangish tan, moist → dry, well graded, fluvial,		
10			0.0	0						
	5/5	Moist	0.0	0						
			0.0	0				26-8.50' iron oxide staining		
15			0.0	0				210.50 3" clay lens		
								212.50-12.75 drk brwn		
20								2TD-CO2=0.3%		
								collapse 214'		
25								bentonite plug 213.5-14'		
30										

 ENSOLUM						Client: Oxy			
						Project Name: P Ville Federal 5-7 Wellhead			
Boring ID: <u>SVW17</u>						Project Number: <u>09A1417105</u>			
Site Sketch: <div style="text-align: center; font-size: 1.2em;">See SVW08</div>						Date: <u>10/25/22</u>			
						Logged by: <u>F. Smith</u>			
						Driller: <u>Site Services</u>			
						Drilling Method: <u>Direct Push</u>			
						Sample Method: <u>Continuous</u>			
						Boring Diameter: <u>3/4"</u> Well Diameter: <u>1"</u>			
Well Material: <u>pvc</u>						Surface Completion: <u>pvc riser</u>			
Casing Interval: <u>(14-10.5')</u>						Screen Interval: <u>3' (10.5-13.5)</u>		DTP/DTW: <u>~15'</u>	
Grout Interval: <u>NA</u>						Bentonite Interval: <u>9' (0-9')</u>		Sand Interval: <u>1.5' (9-10.5')</u>	
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		Moist	0.0	0	N		CL/SM	0-1 clay, little fq sand, tr. silts, brwn, moist, low plas, little cohesion, no stain/odor	<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">bentonite</div>  </div>
5	5/5		0.0	0			SW	1-5' fq-cq sand, some gravels, brwn, moist, well graded, no stain/odor	
10	5/5	dry	0.0	0			SW	5-15' fq-eg sand, tr. gravels, brwn-orange, tan, moist → dry, well graded, fluvial, @ 6.50-7.50 iron oxide stain, no odor	
15		Moist	0.0	0				@ 13' 1" drk brwn	
20								@ TD - CO ₂ = 0.2%	
25									
30									
								collapse @ 14' bentonite plug @ 13.5-14'	<div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">collapse plug</div>  </div>

							Client: Oxy		
Boring ID: SVW18							Project Name: P Ville Federal 5-7 Wellhead		
Site Sketch: see SVW08							Project Number: 09A1417105		
							Date: 10/25/22		
							Logged by: F. Smith		
							Driller: Site Services		
							Drilling Method: Direct Push		
							Sample Method: Continuous		
							Boring Diameter: 1 3/4" Well Diameter: 1"		
							Well Material: PVC		
							Surface Completion: PVC riser		
Casing Interval:				Screen Interval: 3' (10.5-13.5)			DTP/DTW: ~15'		
Grout Interval: NA				Bentonite Interval: 9' (0-9')			Sand Interval: 1.5' (9-10.5')		

Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		moist	0.0	0	N		CL/SH	0-1 clay, few - little fq sands, tr. silts, brwn, moist, low plas, cohesive, no stain/odor	bentonite
5	5/5		0.0	0			SW		
10	5/5	dry	0.0	0			SW	1-5' fq-cq sand, some gravels, brwn, moist, well graded, no stain/odor @ 25' CO ₂ =0.0%	
15		moist	0.0	0				5-10' fq-cq sand, orangish tan, moist → dry, well graded, intermittent iron oxide stain @ 6.50-7.25', no odor @ 10.75-12.50 iron oxide staining @ 13.50 3" drk brwn @ 14' 3" drk brwn @ TD-CO ₂ =0.2%	collapse/cand plug
20		very moist	0.0	0					
25									
30								collapse @ 14' bentonite @ 13.5-14'	

ENSOLUM							Client: Oxy		
Boring ID: SVW19							Project Name: P Ville Federal 5-7 Wellhead		
Site Sketch:							Project Number: 09A1417105		
see SVW08							Date: 10/25/22		
							Logged by: F. Smith		
							Driller: Site Services		
							Drilling Method: Direct Push		
							Sample Method: Continuous		
							Boring Diameter: 3/4" Well Diameter: 1"		
Well Material: PVC							Surface Completion: PVC riser		
Casing Interval:				Screen Interval: 3' (10.5-13.5')		DTP/DTW: ~15'			
Grout Interval: NA				Bentonite Interval: 9' (0-9')		Sand Interval: 1.5' (9-10.5')			
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		moist	0.0	0	N		CL SM	0-1' clay, little fq sands, tr. silts, brwn, moist, low plas, cohesive, no stain/odor	bentonite
			0.0	0			SW		
			0.0	0					
5	4/5		0.0	0				1-5' fq-cq sand, some gravels, brwn, moist, well graded, no stain/odor	
			0.0	0			SW	5-15' fq-cq sand, tr. gravels, brwn-orange tan, moist → dry, well graded, no stain/odor	sand
10	5/5	dry	0.0	0					
		moist	0.0	0					
			0.0	0					
15		very moist	0.0	0			CL SW	@ 6.50' 3" clay lens @ 7.50' 2" clay lens @ 13' 1" clay lens @ 13.5-14' clay, ^ tr. fq sands brwn, moist, low plas, cohesive, no stain/odor @ TD-CO2 0.1%	collapse / plug
20									
25								collapse @ 14'	bentonite plug @ 13.5-14'
30									

ENSOLUM

Client: Oxy

Project Name: P Ville Federal 5-7 Wellhead

Boring ID: SVW20

Project Number: 09A1417105

Site Sketch:

Date: 10/26/22

Logged by: F. Smith

Driller: Site Services**Drilling Method: Direct Push**

Sample Method: Continuous

Boring Diameter: 1 3/4" Well Diameter: 1"

Well Material: PVC

Surface Completion: pvc riser

Casing Interval: (14-10.5')

Screen Interval: 3' (10.5-13.5)


DTP/DTW: ~15'


Grout Interval: NA


Bentonite Interval: $q'(0-q')$

Sand Interval: 1.5' (9-10.5')

Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH ₄ LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		Moist	0.0	0.0	N		CL/SM	@ 5' CO ₂ =0.0%	
5	5/S	dry	0.0	0.0			SW	0-1' clay, little fq sands, tr. silts, brwn, moist, low plas, cohesive, no stain/odor 1-5' fq-cq sand, some gravels, brwn, moist, well graded, no stain/odor	bentonite
10	5/S	moist	0.0	0.0			SW	5-15' fq-cq sand tr-tifs few gravels, orangish tan, moist → dry, well graded, fluvial, @ 5-7.25' intermitt iron oxide stain @ 10-10.50 tr. clay @ 10-10.25 drk brwn @ 13.75-14 drk brwn	sand
15		very moist	0.0	0.0				@ 5-7.25' intermitt iron oxide stain @ 10-10.50 tr. clay @ 10-10.25 drk brwn @ 13.75-14 drk brwn	collapse/plug
20								@ TD-CO ₂ =0.0%	
25								collapse @ 14.20'	
30								bentonite plug @ 14.20-13.5'	

						Client: Oxy					
						Project Name: P Ville Federal 5-7 Wellhead					
Boring ID: SVW21						Project Number: 09A1417105					
Site Sketch: see SVW20						Date: 10/26/22					
						Logged by: F. Smith					
						Driller: Site Services					
						Drilling Method: Direct Push					
						Sample Method: Continuous					
						Boring Diameter: 1 3/4" Well Diameter: 1"					
Well Material:						Surface Completion:					
Casing Interval: (14-10.5')						Screen Interval: 3' (10.5-13.5)			DTP/DTW: ~15'		
Grout Interval: NA						Bentonite Interval: 9' (0-9')			Sand Interval: 1.5' (9-10.5')		
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram		
0		moist	0.0	0	N		CL/SM	0-1 clay, few-little fq sand, tr. silts, brwn, moist, low plas, little cohesion, no stain/odor	bentonite collapse sand plug		
5	3/5		0.0	0			SW	1-5' fq-cq sand, some gravels, brwn, moist, well graded, no stain/odor			
10	5/5	dry	0.0	0			SW	5-15' fq-cq sands, brwn-tan, moist, well graded, fluviol, no stain/odor			
15		moist	0.0	0				2.5-6' tr. gravels			
20								10-10.25' tr. clays			
25								13.5' 1" drk brwn			
30								15' 1" drk brwn			
@TD - CO2 = 0.0% collapse @ 14' bentonite plug t/ 13.5'											


 ENSOLUM							Client: Oxy Project Name: P Ville Federal 5-7 Wellhead			
Boring ID: SVW22							Project Number: 09A1417105			
Site Sketch: <p style="text-align: center;">see SVW20</p>							Date: 10/26/22			
							Logged by: F. Smith			
							Driller: Site Services			
							Drilling Method: Direct Push			
							Sample Method: Continuous			
							Boring Diameter: 1 3/4" Well Diameter: 1"			
Well Material: pvc							Surface Completion: pvc riser			
Casing Interval: (14-10.5')							Screen Interval: 3' (10.5-13.5)		DTP/DTW: ~15'	
Grout Interval: NA							Bentonite Interval: 9 (0-9)		Sand Interval: 1.5' (9-10.5')	
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram	
0		moist	0.0	0	N		CL/SH	0-1' clay, few-little fq sands, tr silts, brwn, moist, low plas, cohesive, no stain / odor	bentonite	
5	5/s		0.0	0			Sw	1-5' fq-cq sand, some gravels, brwn, moist, well graded, no stain / odor		
10	5/s	dry	0.0	0			Sw	5-15' fq-cq sand, trace gravels, brwn-tan, moist, well graded	collapse sand plug	
15	5/s	moist	0.0	0				at 7-7.50' intermittent iron oxide staining, no odor		
20								at 7.75 iron concretion 1" length		
25								at 12.50-13.50' iron oxide staining, drk brwn - orange		
30								at PS		
								at TD-CO2 0.1%		
								collapse + 14'		
								bentonite plug 13.5-14'		


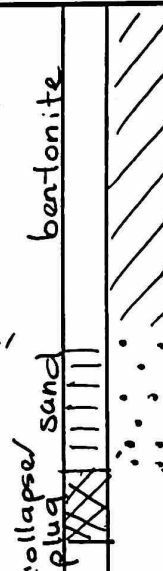
						Client: Oxy			
Boring ID: SVW23						Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch:						Project Number: 09A1417105			
see SVW20						Date: 10/26/22			
						Logged by: F. Smith			
						Driller: Site Services			
						Drilling Method: Direct Push			
						Sample Method: Continuous			
						Boring Diameter: 1 3/4" Well Diameter: 1"			
Well Material: pvc						Surface Completion: pvc riser			
Casing Interval:						Screen Interval: 3' (10.5-13.5)		DTP/DTW: ~15'	
Grout Interval: NA						Bentonite Interval: 9' (0-9)		Sand Interval: 1.5' (9-10.5)	
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		moist	0.0	0	N		CL/SH	0-2' clay, little fq sands, tr. silts, brwn, moist, low plas, cohesive, no stain/odor	bentonite
5			0.0	0			SW	2-5' fq-cq sand, little-few gravels, trace clay @ 3', brwn, moist, well graded, no stain/odor	
5/5			0.0	0			SW	5-15' fq-cq sand, tr. gravels, orakish tan, moist → dry, well graded, fluvial, intermittent iron oxide stain @ 6-8.25', no odor	collapse plug sand
10	dry	dry	0.0	0				@ 10' 3" drk brwn @ 12.25'-13 intermittent iron oxide stain @ 14.25' iron oxide stain @ TD-CO2 = 0.0% @ collapse @ 14.6'	
5/5	moist	moist	0.0	0					
15			0.0	0					
20									
25									
30									

bentonite
t/13.5

ENSOLUM						Client: Oxy			
Boring ID: SVW24						Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch: See SVW20						Project Number: 09A1417105			
						Date: 10/26/22			
						Logged by: F. Smith			
						Driller: Site Services			
						Drilling Method: Direct Push			
						Sample Method: Continuous			
						Boring Diameter: 1 3/4" Well Diameter: 1"			
Well Material: PVC						Surface Completion: flush mount			
Casing Interval:						Screen Interval: 3'		DTP/DTW: 13.5'	
Grout Interval: NA						Bentonite Interval: 9'		Sand Interval: 1.5'	
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		Moist	0.1	0	N		CL/SM	at 5' CO ₂ = 0.0%	
0-2'			0.0	0			SW	clay, little fg sand, tr. silts, brwn, moist, low plas, cohesive, no stain/odor	
2-5'	5/5		0.0	0			SW	fg-cg sand, some gravels, brwn, moist, well graded, no stain/odor	
5-10'			0.0	0			SW	3-4' few-trace clay	
10-15'	3.5/5	dry	0.0	0			SW	5-15' fg-cg sand, trace - few gravel, brwn, moist → dry (saturated @ 13.5')	
15-20'		moist	0.3	0	grey			no odor, @ 14.25 2" iron oxide stain	
20-25'		wet	0.0	0	N			@ 14' grey stain	
25-30'								@ TD - CO ₂ = 0.1%	
30'								bentonite plug @ 12.5-15' set as flush mount	

ENSOLUM						Client: Oxy			
Boring ID: SVW25						Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch:						Project Number: 09A1417105			
See SVW20						Date: 10/26/22			
						Logged by: F. Smith			
						Driller: Site Services			
						Drilling Method: Direct Push			
						Sample Method: Continuous			
						Boring Diameter: 1 3/4" Well Diameter: 1"			
Well Material: PVC						Surface Completion: flushmount			
Casing Interval:			Screen Interval: 3' (9.5-12.5')			DTP/DTW: 13.25' (9.5-11)			
Grout Interval: NA			Bentonite Interval: 0.5 (0-9.5)			Sand Interval: 1.5' (9-10.5)			
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		Moist	0.0		N		CL/SH	0-1 clay, little fg sand, trace silts, brwn, moist, low plas, cohesive, no stain/odor	
5	5/5	0.0	0.0				SW	1-5' fg-cg sand, some gravels, @ 2-4' few-tr. clay, brwn, moist, well graded, no stain/odor	
10	5/5	dry	0.0				SW	5-15' fg-cg sand, tr. gravels, brwn, moist, well graded, fluvial, no stain/odor	
15	5/5	moist wet	0.0		grey			@ 9" 1" trace clay	
20			0.0					@ 14.75 1" iron oxide stain	
25			0.0					@ 13-13.50' grey staining, no odor	
30								@ TD-CO2 = 0.0%	
								bentonite plug @ 12.5-15'	
								set as flushmount	

						Client: Oxy Project Name: P Ville Federal 5-7 Wellhead Project Number: 09A1417105 Date: 10/26/22 Logged by: F. Smith Driller: Site Services Drilling Method: Direct Push Sample Method: Continuous Boring Diameter: 1 3/4" Well Diameter: 1" Well Material: pvc Surface Completion: pvc riser			
Boring ID: SVW26 Site Sketch: See SVW20						Casing Interval: 14.5 (14-10.5) Screen Interval: 3' (10.5-13.5) DTP/DTW: ~15' Grout Interval: NA Bentonite Interval: 9' (0-9) Sand Interval: 1.5' (9-10.5)			
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		moist	0.0	0	N		CL/SH	~5' CO2 = 0.0%	
5			0.0	0			SW	0-2' clay, some fg sands, trace silts, brwn, moist, low plas, little cohesion, no stain/odor	
10	4.5/s	dry	0.0	0	grey N		SW	2-5' fg-cg sand some gravels, brwn, moist, well graded, no stain/odor	
15	5/s	moist	0.0	0				~2-3' few-tr. clay	
20		very moist	0.0	0				5-15' fg-cg sand, trace gravel, brwn-orange tan, w/fg moist-dry, well graded, ~7.50 1" grey stain, trace clay, no odor	
25								~8.50-9.25 drk brwn	
30								~10.25 trace clay	
								~TD-CO2 = 0.1%	
								collapse ~14' bentonite plug	
								~13.5-15'	

						Client: Oxy			
Boring ID: SVW27						Project Name: P Ville Federal 5-7 Wellhead			
Site Sketch: see SVW20						Project Number: 09A1417105			
						Date: 10/26/22			
						Logged by: F. Smith			
						Driller: Site Services			
						Drilling Method: Direct Push			
						Sample Method: Continuous			
						Boring Diameter: 3/4" Well Diameter: 1"			
Well Material: pvc						Surface Completion: pvc riser			
Casing Interval: 14.5 (14-10.5)						Screen Interval: 3' (10.5-13.5)			
Grout Interval: NA						Bentonite Interval: 9' (0-9')			
						DTP/DTW: ~15'			
						Sand Interval: 1.5 (9-10.5')			
Depth (ft)	Run / Recovery	Moisture	PID (ppm)	CH4 LELs	Stain	Sample ID	USCS Symbol	Geologic Description	Completion Diagram
0		moist	0.2	0	N		CL/SM	0-1' clay, little fg sands, trace clay, brwn, moist, low plas, cohesive, no stain/odor	
			0.2	0			SW		
			0.3	6					
			0.1	0					
5	5/5		0.0	0				1-5' fg-cg sand, little gravels, orangish brwn, moist, well graded, no stain/odor	
			0.0	0			SW		
			0.0	0					
			0.0	0					
10	5/5	dry	0.0	0				5-15' fg-cg sand, trace gravel, orangish tan, moist, well graded, fluvial,	
		moist	0.0	0					
15		very moist	0.0	0				28-37.5 iron oxide staining, no odor	
								29.50-10 clrk brwn, no odor	
								211-12' iron oxide staining	
								210.75-11 clrk brwn	
								2TD-CO2=0.1%	
30									