



# TOPOCK WELL COMPLETION AND ACCEPTANCE REPORT REMEDIATION WELLS

Well Name: TCS-01 (Note: Documentation referencing TCS-1 is in reference to TCS-01.)

Screen Zone (feet below ground surface [bgs]): 171 – 190 (Upper screen) and 214 – 268 (lower screen)

Dates Pilot Borehole Drilling: 3/31/2022 – 4/13/2022

Temporary Backfill of Pilot Borehole: 4/13/2022 -4/14/2022

Dates Pilot Borehole Overdrilling: 6/3/20222 - 6/22/2022

Well Installation: 6/24/2022 - 7/09/2022

Dates Well Head Completion: The well vault was installed on 7/28/22. The well casing stick up will be cut

down it's final elevation during the installation of the well head flange at a later date.

Dates of Development: <u>8/3/2022 - 8/25/22</u>

Note: Well Testing was completed successfully and in accordance with Well Specification 33 22 00 unless noted below.

Well Testing Conducted	Required (Y/N)	Dates	Comments
Alignment Test	Υ	9/15/2022	The diameter of the dummy tool is acceptable based on Field Orders.
		9/1/2022 and 9/2/2022 (lower screen)	
Specific Capacity Test	Υ	9/7/2022 (upper screen)	None
		9/11/2022 and 9/13/2022 (lower screen)	
Injectivity Test	Y	9/12/2022 and 9/13/2022 (upper screen)	None
Plumbness Test (Gyroscope)	N		
Spinner Log	N		
Downhole Video	Υ	12/02/2022	None
Other			

### **Acceptance Criteria**

Meets Design Criteria for Construction - Well installed in accordance with well specifications and final design.

Comments: As-built well construction consistent with the final well design (see Attached Logs).

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	Upper: 6.5 gpm
Goal from 100% Design:	Lower: 6.5 gpm
Tested Rates	Upper: 13.6, 27.0, 40.0, 54.0
(gallons per minute [gpm]):	Lower: 13.5, 27.0, 40.0, 52.0
	6.41 gpm/ft per 2.12 ft of mounding at an injection rate of 13.6 gpm.
	8.09 gpm/ft per 3.35 ft of mounding at an injection rate of 27.1 gpm
Specific Injectivity: Upper	8.74 gpm/ft per 4.62 ft of mounding at an injection rate of 40.0 gpm
Screen	9.23 gpm/ft per 5.86 ft of mounding at an injection rate of 54.0 gpm
	3.35 gpm/ft per 4.04 ft of mounding at an injection rate of 13.5 gpm.
	2.88 gpm/ft per 9.44 ft of mounding at an injection rate of 27.0 gpm
Specific Injectivity: Lower	4.15 gpm/ft per 9.74 ft of mounding at an injection rate of 40.0 gpm
Screen	4.15 gpm/ft per 12.45 ft of mounding at an injection rate of 52.0 gpm
	The tested rates exceeded the proposed 100% design rate of 6.5 gpm per screen
	zone. Both screens exceed the design criteria for injection rates. See attached Well
Comments	Testing Data Package.

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**Comments:** Well was free of blockages and meets the design criteria for the intended use.

Meets Design Criteria for Plumbness and Equipment Install – The well was free of blockages and of sufficient plumbness and alignment to allow for well development, "Dummy Tool" alignment testing, well testing, and well sampling.

Downhole equipment has not been installed as of the submittal of this Completion Report. Installation is planned to be completed 2023.

### Meets Design Criteria for Turbidity (Turbidity less than 50 NTU)

**Comments:** Turbidity following well development meets the design criteria.

#### Final Turbidity at End of Well Development and SC Testing

Screen Zone	Turbidity (NTUs)
<u>171 – 190' and</u>	0.96
214 – 268' (no packer between screens)	
171 – 190' (end of SC test in upper screen)	2.67
214 – 268' (end of SC test in lower screen)	8.08

#### 

Water Quality Parameters at end of development

Screen Depths	Temp	рН	ORP	Cond	DO
	(C)		(mV)	(u <i>S</i> /cm)	
171 - 190' and 214 - 268' (no packer	29.9	7.43	173.0	8132	67.8
<u>between screens)</u>					
171 – 190' (end of SC test in upper screen)	33.2	8.01	154.1	3494	7.08
214 – 268' (end of SC test in lower screen)	30.3	7.40	229.4	3393	6.53

### **ATTACHMENTS**

- Final Well Design
- Boring Log
- Temporary Backfill Log
- Drilling Log
- Well Construction Log
- Well Development Log
- Specific Capacity Testing Package
- Specific Injectivity Testing Package
- Photo Logs
- Video Survey Report

NOTE: Field documentation for all phases of well installation, well development and testing are included in the Daily Well Construction Reports. The Daily Well Construction Reports and DoR Daily Well Construction Quality Control Reports are compiled and organized by date on *AutodeskBuild*. The parent folder for both daily reports are located on *AutodeskBuild* in the following location: Files/For the Field/DOR Drilling Quality Control/01 QC Documentation. Analytical reports are compiled and uploaded to *AutodeskBuild* in the same folder. The technical scopes were performed by or under the direct supervision of Designer of Record (DoR) Professional Geologists (see attached Certification Statement).

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### **ACCEPTANCE APPROVAL**

DoR Approver Name: Greg Foote

Approval Signature/Date:

DATE January 30, 2023

# **Attachment 1**

Final Well Design

#### Final Well Design TCS-01 (06/21/22)



TCS-01 Well Purpose: Well Type: Double Screened Well ID: Remediation Borehole Dia.: 18-16 in. Well Diameters: 10 in. **Backfill Volumes** 0 ft. Quantity Material Units 4 ft. Temp Backfill Sand 9.8 Bags 45 ft. 1338.0 **Neat Cement** Gallons **Well Construction Materials** 80 ft. For upper screen 170-190 ft: 10" Suregrip SDR-17 Casing 10" 18-slot 316L SS Wire Wrap Screen 120 ft. For lower screen 214-268 ft: 10" Suregrip SDR-17 Casing 10" 18-slot 316L SS Wire Wrap Screen 130.95 ft. 159 ft. 160 ft. 162 ft. 5.1 **Transition Sand** Bags Approximate DTW 164-170 ft bgs 167 ft. 170 ft. Results: 1,100 ug/L For upper transition sand 159-162 and 193-194 ft: Cemex #60 (40x70) Mesh Lapis Lustre Sand For upper primary filter pack 162-193 ft: Sand Pack Cemex #1/20 Mesh (20 x 40) Lapis Lustre Sand 52.7 bags For lower transition sand 205-206 ft: 190 ft. Cemex #60 (40x70) Mesh Lapis Lustre Sand For lower primary filter pack 206-275 ft: 193 ft. Cemex #1/20 Mesh (20 x 40) Lapis Lustre Sand 192-197 ft bgs 1.7 Transition Sand Bags Results: <0.025 ug/l 194 ft. 15.0 **Bentonite Pellets Buckets** 205 ft. **Transition Sand** 1.7 Bags 206 ft. 210 ft. 214 ft. \* Not to Scale 221-226 ft bgs Results: <0.025 ug/l Legend Transition Sand 119.1 Sand Pack bags Primary Filter Sand 254-259 ft bgs Bentonite Pellets or Chips Neat Cement Results: <0.13 ug/l Centralizers Suregrip SDR-17 casing 54.0 266-271 ft. bgs 316L SS Wire Wrap Screen Results: <0.13 ug/l Backfill Sand 268 ft. 4.5 270 ft. Natural Collapse/Sand Backfill 273.4 ft. 275 ft. 277 ft. Pilot Borehole Total Depth 280 ft.

# **Attachment 2**

**Boring Log** 

9	AR	CAD	IS		Вс	oring	j Lo	g		Shee	et: 1 of	14
Date S					Surface	e Eleva	ition:	622.31 ft amsl	Borin	a No.:	TCS-01	Pilot
	•	ted: <u>04/13/</u>			Northin		,	2101167.19			10001	<u></u>
Drilling		<u>Casca</u>			Easting		83):	7615165.89	Client:	PG&E		
Drilling			<u>Drilling</u>		Total D	•		280 ft bgs	•		/ Remedy Ph	
Drill Ri			Longyear drill	<u>nead</u>	Boreho			4-7 inches	Location:	PG&E To	opock, Need	les California
Driller I		Matt A			•			167.5 ft bgs 4 inch x 10 ft. Core Barrel	Droinet N		0406055	
Drilling			ppner / R We: Redner	St	Sampli Sampli	-		Continuous	Projectiv	umber. <u>s</u>	0120233	
Logge Editor:			McGrane		Conve	-						
		<u> </u>		0 E	1		110					
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS		Soil Description			Drilling Notes	Drilling Fluid
 _ 1 _				Fill	N/A		(0-1.5 ft	) Backfill used to grade drilling pad.			(0.0 - 1.5') Air-knifed for utility clearance.	(0.0 - 1.5') No drilling fluid used
- 2 _ - 2 _ - 3 _  _ 4 _				Fill	N/A		(1.5-4.5 matrix.	ft) Boulders, cobbles and pebbles supp	ported in a sa	indy	Logged from air-knifing observations. (1.5 - 4.5') Air-knifed for utility clearance. Logged from air-knifing observations.	(1.5 - 4.5') No drilling fluid used
_ 5 5 6 7 8 9	9.5			Fluvial Deposits	SM		void.	) Silty sand material that sloughed into	hole creating	large	(4.5 - 9.0') Air-knifed for utility clearance. Logged-from air knifing observations. Water added to help with sands sloughing into hole.	(4.5 - 9.0') 20 gallons of water used; 0 gallons of water recovered; 20 gallons of water recovered; 20 gallons of water lost
		No Sieve	No	Flundal			(9.5-10.	5 ft) Well graded sand with gravel (SW	); very pale b	rown	Completed air-knifing on	20 gallons of water used; 0
10  11		Samples Collected	Groundwater Samples Collected	Fluvial Deposits	SW		(10YR 7 little gra pebbles disturbe (10.5-15	7/3); very fine to coarse grained, subang nules, subangular to round; little small , subangular to subround; dry. NOTE: \$ d due to air-knifing. 5 ft) Poorly graded sand (SP); very pale	gular to subro to very large Sample was brown (10YF	ound;	4/1/22. (9.5 - 17.0') Normal drilling	gallons of water recovered; 20 gallons of water lost
121314	5.5			Fluvial Deposits	SP		subangı round; tı	nedium grained, trace very fine and coa ular to subround; trace small to large pt race granules, subangular to round; mo ned by air-knifing.	ebbles, subro			(9.5 - 17.0') No drilling fluid used
15				Fluvial	SW			5 ft) Well graded sand with gravel (SW)				
 16				Deposits	1		small to	6/2); fine to very coarse grained, angula very large, angular to subround; little g				
16 17 18 19	7			Fluvial Deposits	SW		(15.5-23 (10YR 7 little gra	nund; dry.  8 ft) Well graded sand with gravel (SW) (73); very fine to coarse grained, subang nules, subangular to round; little small, subangular to subround; trace silt; tra	gular to subro to very large		(17.0 - 37.0') Soft drilling	(17.0 - 37.0') No drilling fluid used
20												

9	AR	CAD	IS		Во	ring	y Log	9		She	et: 2 of	14
	tarted:				Surface	e Eleva	ition:	622.31 ft amsl	Borin	na No.:	TCS-01	Pilot
	•	ted: <u>04/13</u>	/2022		Northin	g (NAI	D83):	2101167.19			10001	1 1100
Drilling		Casca			Easting	•	83):	7615165.89	Client:	PG&E		
_	Metho		Drilling		Total D	-		280 ft bgs	•		V Remedy Pl	
	д Туре		Longyear drill	<u>head</u>	Boreho			4-7 inches	Location:	PG&E T	opock, Need	les California
	Name:	Matt A			-			167.5 ft bgs	Droiget N		00106055	
Drilling Logge			eppner / R We Redner	<u>sı</u>	Samplii Samplii	-		4 inch x 10 ft. Core Barrel Continuous	Project N	umber. <u>s</u>	00120233	
Editor:			McGrane		Conver	•		× Yes □ No				
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
21 21 22 23	Н			Fluvial Deposits	SW		(10YR 7 little gra	s ft) Well graded sand with gravel (SW)/3); very fine to coarse grained, subang nules, subangular to round; little small, subangular to subround; trace silt; tra	gular to subro to very large			
				Fluvial Deposits	SM			t) Silty sand (SM); light gray (10YR 7/2) subangular to subround; little silt; trac		fine		
25 25 26 27				Fluvial Deposits	SW-SM		(10YR 7 some sr	t) Well graded sand with silt and grave 1/2); very fine to very coarse grained, sunall to large pebbles, subangular to roullar to roullar to round; little silt; trace clay; dry.	ıbangular to ı	ound;		
27	7	No Sieve Samples Collected	No Groundwater Samples Collected		NR	0 0 0		ft) No Recovery				
35 36 37 38 39 40	2.5			Fluvial Deposits	SM		fine to fi large pe	ft) Silty sand with gravel (SM); light gr ne grained, subangular to subround; lit bbles, subangular to subround; trace g und; trace clay; dry.	tle silt; little s	mall to	(37.0 - 40.0') Soft drilling	(37.0 - 40.0') No drilling fluid used

9	AR	CAD	IS		Вс	oring	g Lo			She	et: 3 of	14
	started:				Surfac	e Eleva	ation:	622.31 ft amsl	Borine	a No .	TCS-01	Pilot
Date C	Comple	ted: <u>04/13/</u>	/2022		Northir	ng (NAI	D83):	2101167.19	Боші	9 110	. <u>100-01</u>	1 1101
Drilling	Co.:	<u>Casca</u>	nde		Easting		83):	7615165.89	-	PG&E		
_	Metho				Total D			280 ft bgs	•		N Remedy P	
	g Type		Longyear drill		Boreho			4-7 inches	Location:	PG&E T	opock, Need	<u>lles California</u>
	Name:				•			167.5 ft bgs			20100055	
Drilling			eppner / R We		Sampli	-		4 inch x 10 ft. Core Barrel	Project Nu	ımber: 🕃	30126255	
Logge Editor:			Redner McGrane		Sampli Conve	•		Continuous	-			
Luitoi.		<u> </u>	IVICGIANE				VV GII.	N les   NO				
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS		Soil Description			Drilling Notes	Drilling Fluid
 41				Fluvial Deposits	CL		plasticit grained	t) Lean clay with sand (CL); weak red ( y, slow dilatancy; little silt; little very fine sand, subangular to subround; trace g	e to very coarse ranules, angula	е		
				Fluvial Deposits	sc		medium clay.	<ul> <li>d; trace small to large pebbles, angula stiff; dry; NOTE: Compliance notified</li> <li>t) Clayey sand (SC); light yellowish bro</li> </ul>	about presence		(41.0 - 47.0') Hard drilling	(41.0 - 47.0') No drilling fluid used
				Fluvial			fine to fi dry to m	t) Clayey sand (SC), light yellowsh bit ne grained, subangular to subround; so oist; nodules and lens of Lean clay (Ct atancy; throughout unit. NOTE: Compli	ome clay; little L); medium pla	silt; sticity,		
43	8			Deposits	СН		presence (42-44 f	e of clay. t) Fat clay (CH); reddish brown (5YR 4, y; little silt; very stiff; moist. NOTE: Cor	/3); high plastic	city, no		
44 				Fluvial	CL		∖ about pi (44-45 f	esence of clay. t) Lean clay (CL); weak red (7.5R 5/3);	low to medium	1		
45				Deposits			subangı	y, slow dilatancy; some silt; little very fi ular to subround; soft; dry; NOTE: Com resence of clay.	ne grained san opliance notified	d, d		
46				Fluvial Deposits	SM		(45-47 f	t) Silty sand (SM); weak red (7.5R 5/2); grained, subangular to subround; some	; very fine to ve e silt; little clay;	ry dry.		
 47										7.5.5	(47.0 57.0)	(47.0 57.0)
 48							5/2); vei small to	) Well graded sand with gravel (SW); y fine to very coarse grained, angular t large pebbles, angular to subround; lit	o subround; so	me	(47.0 - 57.0') Hard drilling	(47.0 - 57.0') No drilling fluid used
							to subro	und; little silt; dry.				
49 _			No		<b>*</b>							
50		No Sieve Samples Collected	No Groundwater Samples				•					
 51		00,100,100	Collected	Alluvium Deposits	sw							
 52	8			Ворозна								
	0											
53 												
54												
55				Allender				t) Sandy lean clay (CL); brown (10YR 5				
56				Alluvium Deposits	CL		sand, aı	atancy; some silt; little very fine to very ngular to subround; trace granules, ang nall to large pebbles, angular to subrou	gular to subrou	nd;		
 57							(56-65 f	Compliance notified about presence of t) Silty sand with gravel (SM); grayish b to very coarse grained, angular to sub	rown (10YR 5/	(2);		
				A11			large pe	bbles, angular to subround; little silt; lit und; little clay; dry; trace clay nodules.	ttle granules, a		(57.0 - 67.0') Hard drilling	(57.0 - 67.0') No drilling fluid used
58 _	9			Alluvium Deposits	SM		:					
59							:					
 60							:					

9	AR	CAD	IS		Вс	ring	j Lo	9		She	et: 4 of	14
Date S					Surface	e Eleva	ation:	622.31 ft amsl	Borir	na No.:	TCS-01	Pilot
	•	ted: <u>04/13</u>			Northin		,	2101167.19				
Drilling		Casca			Easting		83):	7615165.89	_ Client:	PG&E		
Drilling			Drilling		Total D	-		280 ft bgs	-		V Remedy Pl	
Drill Ri Driller I		. <u>boart</u> Matt <i>A</i>	Longyear drill	neau	Boreho			4-7 inches 167.5 ft bgs	_ Location.	PG&E I	ороск, мееа	les California
Drilling			eppner / R We	 st	Sampli			4 inch x 10 ft. Core Barrel	- Proiect N	lumber: 3	30126255	
Logge			Redner	<u> </u>	Sampli	-		Continuous	_ 1 10,00011		70120200	
Editor:		·	McGrane		Conve	-			_			
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
61 62 63 64	9			Alluvium Deposits	SM		very fine large pe to subro	t) Silty sand with gravel (SM); grayish is to very coarse grained, angular to sull bbles, angular to subround; little silt; li und; little clay; dry; trace clay nodules	oround; little s ittle granules,	mall to		
65  66				Alluvium Deposits	ML		(65-66 f plasticit sand, ar	t) Sandy silt with gravel (ML); grayish by, rapid dilatancy; some very fine to vengular to subround; little small to large	ry coarse grai pebbles, ang	ned ular to		
67 68 69 70 71 72	7.5	No Sieve Samples Collected	No Groundwater Samples Collected	Alluvium Deposits	SW		stiff; dry (66-72 f very fine large pe to subro (69.5-70	d; little clay; trace granules, angular to; trace clay nodules.  b) Silty sand with gravel (SM); grayish I to very coarse grained, angular to sulbbles, angular to subround; little silt; liund; little clay; dry; trace clay nodules  of the Moist  fth Moist	orown (10YR oround; little s ittle granules,	5/2); mall to angular	(67.0 - 77.0') Hard drilling	(67.0 - 77.0') No drilling fluid used
73 74 75 76 77				Alluvium Deposits	SW		very fine very larg subroun	t) Well grade sand with gravel (SW); be to very coarse grained, angular to sulge pebbles, angular to subround; little digital trace silt; trace clay; dry.  arge cobble	oround; little s	mall to		
	7.6			Alluvium Deposits	SM		very fine	t) Silty sand with gravel (SM); grayish le to very coarse grained, angular to sul abbles, angular to subround; little grand d; little silt; little clay; dry.	oround; little s	mall to	(77.0 - 87.0') Hard drilling	(77.0 - 87.0') No drilling fluid used

9	AR	CAD	IS		Вс	ring	j Lo	9		She	et: 5 of	14
Date S	started:	03/31	/2022		Surface	e Eleva	ition:	622.31 ft amsl	Borin	ia No.:	TCS-01	Pilot
		ted: <u>04/13</u>	/2022		Northin	ıg (NAI	D83):	2101167.19		.9	10001	1 1100
Drilling		Casca			Easting		83):	7615165.89	Client:	PG&E		
Drilling			Drilling		Total D	•		280 ft bgs	•		V Remedy Pl	
Drill Ri			Longyear drill		Boreho			4-7 inches	Location:	PG&E T	opock, Need	<u>les California</u>
Driller		Matt A			•			167.5 ft bgs	D : (A)		20400055	
Drilling			eppner / R We: Redner		Sampli	•		4 inch x 10 ft. Core Barrel	Project N	umber: <u>s</u>	30126255	
Logge Editor:			McGrane		Sampli Conver	-		Continuous				
Luitoi.		<u>ocan</u>	IVICOIAIIC	., c	T		VVCII.					
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS		Soil Description			Drilling Notes	Drilling Fluid
 81  82				Alluvium Deposits	SM		very fine	t) Silty sand with gravel (SM); grayish be to very coarse grained, angular to sub bbles, angular to subround; little granu d; little silt; little clay; dry. t) Moist	round; little s	mall to		
83 84 84	7.6			Alluvium Deposits	SC		6/4); vei clay; litt	t) Clayey sand with gravel (SC); light ye y fine to very coarse grained, angul <mark>ar to e small to very large pebbles, angular t</mark> anules, angular to subround; <mark>dr</mark> y.	o s <mark>ubr</mark> ound; s	some		
85 86 87				Alluvium Deposits	SW-SM		brown ( subrour granule	t) Well graded sand with silt and gravel 10YR 5/2); very fine to very coarse grain d; little small to large pebbles, angular s, angular to subround; little silt; trace o	ned, angular to subround; blay; dry.	to little	(47.0.07.0)	(07.0.07.0)
88  89				Alluvium Deposits	SC		fine to v	6 ft) Clayey sand with gravel (SC); browery coarse grained, angular to subroune; pepebbles, angular to subround; little cs, angular to subround; little cs, angular to subround; dry; nodules of	d; some sma lay; little silt;	II to little	(87.0 - 97.0') Hard drilling	(87.0 - 97.0') No drilling fluid used
90 91		No Sieve Samples Collected	No Groundwater Samples Collected	Alluvium Deposits	CL		low to mebbles grained subrour	ft) Gravelly lean clay with sand (CL); bedium plasticity, slow dilatancy; some, angular to subround; little silt; little versand, angular to subround; trace granud; very stiff; dry; nodules of hard clay wt) Silty sand with gravel (SM); brown (10).	small to very ry fine to very ıles, angular rithin unit.	large coarse to		
 92	7.8			Alluvium Deposits	SM	679/33	very coa	rise grained, angular to subround; som, , angular to subround; little silt; little cla to subround; dry; nodules of hard clay	e small to ve ny; trace gran	ry large		
 93				Alluvium Deposits	CL		to medi	t)Gravelly lean clay with sand (CL); bro um plasticity, slow dilatancy; some sma , angular to subround; little sit; little ver	all to very larg ry fine to very	coarse		
94 95 96				Alluvium Deposits	SM		subrour (93-97 f very coa pebbles	sand, angular to subround; trace granud; very stiff; dry; nodules of hard clay with Silty sand with gravel (SM); brown (10 arse grained, angular to subround; little, angular to subround; little clato subround; dry; nodules of hard clay with the subround; dry; nodules of hard clay with subround; dry; nodules with subround; dry; nodules with subround; nodules wi	ithin unit. DYR 5/3); ver small to very sy; trace gran	y fine to large		
97 98 99 100	7.6			Alluvium Deposits	SC		fine to v silt; little	ft) Clayey sand with gravel (SC); brown ery coarse grained, angular to subround small to large pebbles, angular to sub s, angular to subround; dry; nodules of	d; some clay round; trace	little	(97.0 - 107.0') Hard drilling	(97.0 - 107.0') No drilling fluid used

9	AR	CAD	IS		Вс	ring	g Log	 g	Sł	neet: 6 of	14
Date S					Surface	e Eleva	ation:	622.31 ft amsl	Boring No	· TCS-01	Pilot
Date C	omple	ted: <u>04/13/</u>	/2022		Northir	ng (NAI	D83):	2101167.19	Borning No	<u>103-01</u>	riiot
Drilling	Co.:	Casca	ide		Easting	g (NAD	83):	7615165.89	Client: PG&E		
Drilling	Metho		Drilling		Total D	epth:		280 ft bgs	Project: Final C	•	
Drill Ri			Longyear drill		Boreho			4-7 inches	Location: PG&E	Topock, Need	<u>lles California</u>
Driller I		Matt A			•			167.5 ft bgs	· _ <del></del>		
Drilling			eppner / R We		Sampli	•		4 inch x 10 ft. Core Barrel	Project Number:	30126255	
Logge Editor:			Redner McGrane		Sampli Conve	-		Continuous	-		
Editor.		Sean	IVICGIANE		Conve	leu io	VV EII.	△ res ☐ No			
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS		Soil Description		Drilling Notes	Drilling Fluid
 _101_ 				Alluvium Deposits	SC		fine to v	ft) Clayey sand with gravel (SC); brow ery coarse grained, angular to subroun small to large pebbles, angular to sub s, angular to subround; dry; nodules of	d; some clay; little bround; trace		
_102_								7 ft) Well grade sand with silt and grav			
 103							∮ little sm	5/3); very fine to very coarse grained, ar all to large pebbles, angular to subrour			
	7.6						angular	to subround; little silt; trace clay; dry.			
_104_	7.0						•				
				Alluvium	SW-SM						
_105				Deposits				(6)			
 _106_											
107								9.5 ft) Clayey sand with gravel (SC); br		(107.0 - 117.0')	(107.0 - 117.0')
 108							some si	ery coarse grained, subangular to subr It; little small to medium pebbles, angu	lar to subround;	Hard drilling	No drilling fluid
				Alluvium Deposits	sc		trace gr	anules, angular to subangular; dry to m	IOIST.		used
_109_											
			No				1 `	2 ft) Moist	D 5(0)		
_110_		No Sieve Samples	Groundwater Samples	Alluvium Deposits	sc		very coa	l 10.5 ft) Clayey sand (SC); brown (10Y arse grained, angular to subround; som	e clay; little silt; trace		
		Collected	Collected	Deposits				s, angular to subangular; trace small to to subangular; moist.	medium pebbles,		
111				Alluvium	SC			12 ft) Clayey sand with gravel (SC); br ery coarse grained, subangular to subr			
				Deposits	50		some si	It; little small to medium pebbles, anguanules, angular to subangular; dry to m	lar to subround;		
_112_	8.1						(112-11	4 ft) Silty sand with gravel (SM); grayis	h brown (10YR 5/2);		
 113				Alluvium			some cl	e to very coarse grained, subangular to ay; little small to medium pebbles, ang			
113				Deposits	SM		trace gr	anules, angular to subangular; moist.			
114											
							very fine	9 ft) Silty sand with gravel (SM); grayisle to very coarse grained, subangular to	subround; some silt;		
_115_								y; little small to medium pebbles, angu s, angular to subangular; dry.	lar to subround; trace		
116				Alluvium							
 117				Deposits	SM		:				
!							1			(117.0 - 127.0')	(117.0 - 127.0')
 118							1			Hard drilling	No drilling fluid
	7.8						:				used
_119	5						(4.15.1-	0.001	7.5)(D.5(0) "		
				Alluvium Deposits	CL		plasticit	0 ft) Lean clay with sand (CL); brown ( y, slow dilatancy; some silt; little very fi	ne to very coarse		
120				Pehosita	1	V/////	₁ grained	sand, subangular to subround; trace g	ranules, subangular	[	ĺ

9	ΑR	CAD	IS		Вс	ring	g Log	9		She	eet: 7 of	14
	tarted:				Surfac			622.31 ft amsl	Rorin	na No	: TCS-01	Pilot
Date C	Comple	ted: <u>04/13</u>	/2022		Northin	ng (NAI	D83):	2101167.19		.g 110.	. <u>100-01</u>	<u> </u>
Drilling	Co.:	<u>Casca</u>	ıde		Easting		83):	7615165.89	_ Client:	PG&E		
_	Metho				Total D			280 ft bgs	-		W Remedy P	
	д Туре		Longyear drill	<u>head</u>	Boreho			4-7 inches	_ Location:	PG&E	<u> Fopock, Need</u>	<u>lles California</u>
	Name:	Matt A			•			167.5 ft bgs	-			
Drilling			ppner / R We	st	Sampli	-		4 inch x 10 ft. Core Barrel	_ Project N	umber:	30126255	
Logge Editor:			Redner McGrane		Sampli Conve	-		Continuous	-			
Editor.		Sean	IVICGIANE		Conve	Ted to	VV CII.	△ IES ☐ INO				
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS		Soil Description			Drilling Notes	Drilling Fluid
							subroun	und; trace small to medium pebbles, s d; very stiff; moist.				
_121_							(120-12 5/2): ve	5.5 ft) Silty sand with gravel (SM); gray ry fine to very coarse grained, subang	ish brown (10 ular to subrou	YR nd:		
							some si	lt; little clay; little small to medium peb d; trace granules, angular to subangul	bles, angular	to		
_122_							Jubioun	a, trace granales, angular to subungu	iai, di y.			
				Alluvium	SM							
_123_				Deposits								
104	7.8											
_124												
 _125_												
120							:					
 _126_								27 ft) Silt with sand (ML); brown (7.5Y), rapid dilatancy; little very fine to very				
-120				Alluvium Deposits	ML		sand, si	ibangular to subround; trace granules,	, subangular t	0		
_127_							stiff; dry					
								Oft) Sandy silt (ML); grayish brown (10 atancy; some very fine to very coarse;		lasticity,	(127.0 - 137.0')	(127.0 - 137.0')
_128_							subangu	ılar to subround; little clay; little small to subround; trace granules, angular t	to very large p		Hard drilling	No drilling fluid used
				Alluvium	ML		soft; dry		o subuligulai,	VCIY		
_129_				Deposits								
		N. O	No		474							
130		No Sieve Samples	Groundwater Samples				(130-13	2 ft) Silty sand with gravel (SM); browr	1 (7 5YR 5/3)·	verv		
		Collected	Collected				fine to v	ery coarse grained, subangular to sub very large pebbles, angular to subrou	round; some s	silt; little		
131				Alluvium Deposits	SM			s, angular to subangular; dry.	riu, iitile ciay,	liace		
_132_	6.9							5 ft) Well graded sand with clay and g				
 133								7.5YR 5/3); very fine to very coarse gra d; little small to large pebbles, angula				
133				Alluvium	0144 0.0		clay; tra	ce silt; trace granules, angular to suba	angular; dry.			
 134				Deposits	SW-SC		1					
135												
								7 ft) Silty sand with gravel (SM); browr ery coarse grained, subangular to sub				
136				Alluvium	SM		very larg	je pebbles, angular to subround; little i lar; little silt; little clay; dry.				
<u> </u>				Deposits			. Japangt	nai, nuo oni, nuo olay, uly.				
_137					-		. (107.44	7 ft\ Cilty aand with are 1 (CNA). I	(7 EVD 5/0)	von.	(407.0	(427.0
							fine to v	7 ft) Silty sand with gravel (SM); browr ery coarse grained, subangular to sub	round; somé s	silt; little	(137.0 - 142.0')	(137.0 - 142.0')
_138							granules	very large pebbles, angular to subrou s, angular to subangular; dry; nodules			Hard drilling	No drilling fluid used
-	3.7			Alluvium Deposits	SM		unit.					
_139							:					
L _							:					
140						1.1.1.	<u>+</u>				1	

9	AR	CAD	IS		Вс	ring	g Log	g		She	et: 8 of	14
Date S				_	Surfac			622.31 ft amsl	Borin	g No.:	TCS-01	Pilot
	•	ted: <u>04/13/</u>			Northir		,	2101167.19				
Drilling		<u>Casca</u>			Easting		183):	7615165.89	Client:	PG&E	N Domody D	200
Drilling Drill Ri			Drilling Longyear drill	head	Total D	•	meter:	280 ft bgs 4-7 inches	-		V Remedy Pl	nase za Iles California
Driller I		Matt A	•	neau				167.5 ft bgs	Location.	I Gal I	ороск, песс	iles Calilottila
Drilling			eppner / R We	st	Sampli			4 inch x 10 ft. Core Barrel	Project N	umber: 3	30126255	
Logge			Redner		Sampli	-		Continuous		_		
Editor:		<u>Sean</u>	McGrane		Conve	rted to	Well:					
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
 141  142	3.7						fine to v	7 ft) Silty sand with gravel (SM); brown ery coarse grained, subangular to subr very large pebbles, angular to subrour s, angular to subangular; dry; nodules o	ound; some s id; little clay; t	ilt; little race	(142.0 -	(142.0 -
143 				Alluvium Deposits	SM		(143 ft) dilatanc	2-inch lens with some clay, l <mark>ow-med</mark> ium y.	m p <mark>lastic</mark> ity, ra	apid	152.0' Hard drilling	152.0') No drilling fluid used
 _145_ 								10),				
146  147	7.8						(147.15	Off) City and with grave (CM) brown	/7 EVD E/2\\.			
148 149 150 151 151 152		No Sieve Samples Collected	No Groundwater Samples Collected	Alluvium Deposits	SM		fine to v	2 ft) Silty sand with gravel (SM); brown ery coarse grained, subangular to subrope pebbles, angular to subround; little s, angular to subangular; dry; nodules of	ound; little sm ilt; little clay;	nall to trace		
102				Alluvium Deposits	ML		(152-15	2.5 ft) Sandy silt (ML); grayish brown (1 y, rapid dilatancy; some clay; some ver	10YR 5/2); lov	/	(152.0 - 162.0')	(152.0 - 162.0')
153  154				Alluvium Deposits	SM		grained subango medium (152.5-^ 5/2); veo	sand, angular to subround; trace grantular; trace small to medium pebbles, an a stiff; moist. I54.5 ft) Silty sand with gravel (SM); gray fine to very coarse grained, subangul It; little small to very large pebbles, and	iles, angular to ngular to suba ayish brown (1 ar to subroun gular to subrou	ngular; I0YR d; und;	Hard drilling	No drilling fluid used
155 156 157 158 159 160	7.3			Alluvium Deposits	SM		hard cla (154.5-1 fine to v small to	y; trace granules, angular to subangular y within unit.  164 ft) Silty sand with gravel (SM); brow ery coarse grained, subangular to subrow large pebbles, angular to subangular; to subangular; dry; nodules of hard cla	/n (7.5YR 5/3) ound; some s trace granule	; very ilt; little		

9	AR	CADI	S		Вс	rinç	j Lo	3		Sh	eet: 9 of	14
Date S					Surface			622.31 ft amsl	Borin	q No.	: TCS-01	Pilot
Date C	•				Northin	- '		2101167.19				
Drilling Drilling		Casca od: Sonic			Easting Total D		83):	7615165.89 280 ft bgs	Client: Project:	PG&E	W Remedy Pl	1250 2A
Drill Ri			_ongyear drill		Boreho	•	neter:	4-7 inches	•		Topock, Need	
Driller I			•					167.5 ft bgs				
Drilling	Asst:	D Hoe	ppner / R We	st	Sampli	ng Met	thod:	4 inch x 10 ft. Core Barrel	Project N	umber:	30126255	
Logge			Redner		Sampli	-		Continuous				
Editor:		Sean N	<u>McGrane</u>		Conver	ted to	Well:					T
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS Class		Soil Description			Drilling Notes	Drilling Fluid
 _161  _162	7.3	TCS-1-SS- 159-164 4/13/2022	No Groundwater Samples	Alluvium Deposits	SM		fine to v	64 ft) Silty sand with gravel (SM); browery coarse grained, subangular to subr large pebbles, angular to subangular; to subangular; dry; nodules of hard cla	ound; some s trace granule	ilt; little	(162.0 -	(162.0 -
 _163_  _164_		14:30	Collected					(1)			170.0') Hard drilling	170.0') No drilling fluid used
 _165				Alluvium Deposits	SM		to very of trace gra	5 ft) Silty sand with gravel (SM); br <mark>own</mark> oarse grained, s <mark>ubangular to subround</mark> anules, subangu <mark>lar to subround;</mark> trace s ilar to subround; wet.	d: little silt: litt	le clav:		
 166	6.5		TCS-1-VAS-	Alluvium Deposits	SM		(165-16) fine to v	for the subsection, we're subsection of the subs	ound; somé s	ilt; little		
 167		TCS-1-SS- 164-170	164-169 (1100) 4/3/2022 10:50	Alluvium Deposits	SM		(166-16) fine to v	s, angular <mark>to</mark> subrou <mark>n</mark> d; dry. 7 ft) Silty sa <mark>nd</mark> with gravel (SM); brown ery coarse grained, subangular to subr	ound; some s	ilt; little	7	
		4/13/2022 15:10	10.50	Alluvium Deposits	SM		clay; tra medium	ce granules, subangular to subround; t pebbles, subangular to subround; wet	race small to	3	Z	
168 169 170				Alluvium Deposits	SM		(167-16 coarse of granules subangu (167.5-1 coarse of granules	7.5 ft) Silty sand (SM); brown (7.5YR 5, prained, subangular to subround; some s, subangular to subround; trace small lar to subround; dry.  70 ft) Silty sand (SM); brown (7.5YR 5, grained, subangular to subround; little s, subangular to subround; trace small lar to subround; wet.	/3); very fine to silt; little clay to medium per //3); very fine to silt; little clay;	y; trace ebbles, o very trace		
 _171_				Alluvium Deposits	ML		medium grained	If the Silt with sand (ML); brown (7.5YR plasticity, rapid dilatancy; little very fin sand, angular to subround; trace grant d; trace small pebbles, angular to subroiet	e to very coar ules, angular t	se	(170.0 - 177.0') Hard drilling	(170.0 - 177.0') No drilling fluid used
172							(171-18	2 ft) Sandy silt (ML); brown (10YR 5/3);				
-		TCS-1-SS-					subroun	<li>y; some very fine to very coarse grained d; little clay; trace granules, angular to medium pebbles, angular to subround</li>	subround; tra	ice		
173		170-176 4/13/2022					moist.	modam possico, angular lo ousrouna	, modium oui	, ary to		
 174	5	15:18										
175				Alluvium			(175-17	9.5 ft) Moist				
 _176_				Deposits	ML							
_177											(177.0	(177.0 -
 _178_		TCS-1-SS- 176-182 4/13/2022									(177.0 - 187.0') Normal drilling	187.0')
L	7.6	15:25										
179												
180												

9	AR	CAD	S		Вс	ring	g Log	9		She	et: 10 of	14
Date S					Surfac			622.31 ft amsl	Borin	g No.:	TCS-01	Pilot
	•	ted: <u>04/13/</u>			Northin		,	<u>2101167.19</u> 7615165.89	_			
Drilling Drilling		<u>Casca</u>	ae Drilling		Easting Total D	• `	103).	280 ft bgs		PG&E Final GV	V Remedy Pl	nase 2Δ
Drill Ri			Longyear drill		Boreho	•	meter:	4-7 inches	•		•	lles California
Driller I			•	<u> </u>				167.5 ft bgs			<u> </u>	noo Gamorriia
Drilling	Asst:	D Hoe	ppner / R We	st	Sampli	ng Me	thod:	4 inch x 10 ft. Core Barrel	Project Nu	ımber: 3	30126255	
Logge	r:	Ellen F	Redner		Sampli	ng Inte	erval:	Continuous	-			
Editor:		<u>Sean l</u>	<u>McGrane</u>		Conve	rted to	Well:					T
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	SOSO	USCS		Soil Description			Drilling Notes	Drilling Fluid
 181  182				Alluvium Deposits	ML		dilatanc subroun small to moist.	2 ft) Sandy silt (ML); brown (10YR 5/3) y; some very fine to very coarse graine d; little clay; trace granules, angular to medium pebbles, angular to subround 2 ft) Moist	d sand, angula subround; trad	r to ce		
183							coarse dilatanc	4.5 ft) Silty sand (SM); brown (10YR 5/grained, angular to subround, and silt; y; little clay; trace granules, angular to	no plasticity, ra sub <mark>angular</mark> ; tra	pid ace		
	7.6						small to stiff; mo	medium pebbles, angular to subround ist.	d; medium stiff	to very		
_184_	7.0	TCS-1-SS-										
		182-187 4/13/2022										
185		15:33						1011				
186												
107												
187											(187.0 -	(187.0 -
188											192.0') Normal drilling	
				Alluvium Deposits	SM		70					used
_189_		TCS-1-SS-		·								
	3.7	187-192 4/13/2022										
_190_		15:39					•					
191												
192											(192.0 -	(192.0 -
 _193_											197.0') Normal drilling	197.0') No drilling fluid
195												used
194		T00.4.00	TCS-1-VAS-									
	4.9	TCS-1-SS- 192-197	192-197-EB	All								
_195_		4/13/2022 15:45	(<0.025) 4/4/2022 09:45	Alluvium Deposits	SW		to very o	95 ft) Well graded sand (SW); brown coarse grained, subangular to subround	d; trace granule	es,		
-				Alluvium			trace sil	to subround; trace small pebbles, sub- t; trace clay; wet.				
196				Deposits	ML			6.5 ft) Sandy silt (ML); brown (10YR 5/y; and very fine to very coarse grained				
- -				Alluvium	SW-SM		subroun	d; trace small to medium pebbles, and anules, angular to subangular; trace cl	gular to subrou	nd;		
197				Deposits	1		very stif	f; dry to moist.			(197.0 -	(197.0 -
 _198_							brown (	97 ft) Well graded sand with silt and g 7.5YR 5/3); very fine to very coarse gra	ined, subangu	ar to	206.0') Normal drilling	
_130_	7.0	TCS-1-SS- 197-200.5		Alluvium	ML		subroun	d; little silt; trace small to medium peb d; trace granules, angular to subround	l; trace clay; we	et.		used
199	7.2	4/13/2022 15:48		Deposits	IVIL			0.5 ft) Sandy silt with gravel (ML); brow y, rapid dilatancy; some clay; some ver				
							grained	sand, angular to subround; little small ular; trace granules, angular to subang	pebbles, angu			
200		. 11000 - 1		<u></u>					·			

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, ,		<b>CADI</b>					g Lo	<u> </u>		She		
Date S		: <u>03/31/2</u> eted: <u>04/13/2</u>			Surfac			622.31 ft amsl	Borir	g No.:	TCS-01	Pilot
Date C Drilling	•	cascad	_		Northir Easting		,	<u>2101167.19</u> 7615165.89	Client:	PG&E		
Drilling			D :11:		Total D		,00).	280 ft bgs			V Remedy Ph	nase 2A
Drill Ri			ongyear drill		Boreho	•	neter:	4-7 inches	•		opock, Need	
Driller								167.5 ft bgs			•	
Drilling	Asst:	D Hoe	ppner / R We	st	Sampli	ing Me	thod:	4 inch x 10 ft. Core Barrel	Project N	umber: 3	30126255	
Logge	r:	Ellen R	Redner		Sampli	ing Inte	erval:	Continuous	-			
Editor:		Sean N	<u>McGrane</u>		Conve	rted to	Well:					
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	SSCS	USCS		Soil Description			Drilling Notes	Drilling Fluid
					ML							
_201_  _202_				Alluvium Deposits	ML		plasticit sand, su pebbles subrour	202 ft) Sandy silt with gravel (ML); brow y, rapid dilatancy; little very fine to very ubangular to subround; little clay; little s , angular to subround; trace granules, s id; medium stiff; moist.	coarse grain small to large subangular to	ed		
203 204 205	7.2	TCS-1-SS- 200.5-205.5 4/13/2022 15:51		Alluvium Deposits	ML		dilatano subrour	6 ft) Sandy silt (ML); brown (10YR 5/3); y; little very fine to very coarse grained d; little clay; trace granules, subangula large pebbles, angular to subround; m	sand, suband or to subround	jular to l; trace		
_206  _207  _208		TCS-1-SS-		Alluvium Deposits	ML		plasticit grained angular medium (207.5-2	7.5 ft) Sandy silt with gravel (ML); brow y, rapid dilatancy; some clay; little very sand, subangular to subround; little sm to subround; trace granules, subangula stiff; moist. 214 ft) Sandy silt with gravel (ML); brow	fine to very chall to large par to subroun	parse ebbles, d;	(206.0 - 217.0') Normal drilling	(206.0 - 217.0') No drilling fluid used
200 209 210 211		205.5-211 4/13/2022 15:54		Alluvium Deposits	ML		sand, su subangi subrour	y, rapid dilatancy; some very fine to ver	granules,			
	8.8	TCS-1-SS-		·								
214		211-217 4/13/2022 15:57		Alluvium Deposits	SM		very fine	7 ft) Silty sand with gravel (SM); reddisi to very coarse grained, subangular to all to very large pebbles, subangular to anules, subangular to subround; moist.	subround; so round; little	me silt;		
217 218 219 220	8.5	TCS-1-SS- 217-221 4/13/2022 16:00		Alluvium Deposits	ML		no plast sand, su pebbles	0 ft) Sandy silt with gravel (ML); reddisl icity, rapid dilatancy; some very fine to ubangular to subround; some clay; little, angular to subround; trace granules, sid; medium stiff; moist.	very coarse g small to larg	rained e	(217.0 - 227.0') Normal drilling	(217.0 - 227.0') No drilling fluid used

9	AR	CADI	S		Вс	rinç	g Log	g		She	eet: 12 of	14
	Started			_	Surfac			622.31 ft amsl	Borin	a No.	: TCS-01	Pilot
	•	eted: 04/13/2			Northir		,	2101167.19				
Drilling		Casca			Easting		83):	7615165.89		PG&E		
_	Metho				Total D	•		280 ft bgs	•		N Remedy Pr	
	ig Type Name:		_ongyear drill	nead	Boreho			4-7 inches	Location:	PG&E	Topock, Need	ies California
Drilling			ppner / R We	et .	Sampli			167.5 ft bgs 4 inch x 10 ft. Core Barrel	Project Nu	ımbor: '	20126255	
Logge			<del>ppner / ix we</del> Redner	:St	Sampli	-		Continuous	Flojectivi	ullibel. <u>s</u>	30120233	
Editor			McGrane		Conve	-		× Yes  No	•			
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS		Soil Description			Drilling Notes	Drilling Fluid
				Alluvium Deposits	ML		no plast sand, su	1 ft) Sandy silt with gravel (ML); reddishicity, rapid dilatancy; some very fine to ubangular to subround; little clay; trace dishress areall to medium publics and	very coarse gi granules, ang	rained Jular to		
	8.5	TCS-1-SS- 221-227 4/13/2022 16:03	TCS-1-VAS- 221-226 (<0.025) 4/5/2022 10:45	Alluvium Deposits	SM		medium (221-22 very fine small to	id; trace small to medium pebbles, ang stiff; moist to wet.  5 ft) Silty sand with gravel (SM); reddist e to very coarse grained, angular to sublarge pebbles, angular to subround; little clay; wet.	n brown (5YR round; little si	4/3); It; little		
				Alluvium Deposits	SW			5.5 ft) Well grade sand with gravel (SW				
226 				Alluvium Deposits	] <sub>SM</sub>		little gra angular (225.5-2 very fine	3); very fine to very coarse grained, ang nules, angular to subround; little small to subround; trace silt; trace clay; wet. 227 ft) Silty sand with gravel (SM); reddie e to very coarse grained, angular to sub large pebbles, angular to subround; litt	to large pebblish brown (5Y round; little si	R 4/3); It; little		
		TCS-1-SS- 227-230 4/14/2022 07:50		Alluvium Deposits	ML		to subro (227-23 4/2); lov grained subango	rund; little clay; wet.  0 ft) Sandy silt with gravel (ML); dark re plasticity, rapid dilatancy; little very fin sand, angular to subround; little small talar to subround; little clay; trace granulid; medium stiff; moist.	ddish gray (5) e to very coar to medium pe	YR se bbles,	(227.0 - 230.0') Normal drilling	(227.0 - 230.0') No drilling fluid used
_230_  _231_  _232_	7			Alluvium Deposits	SM		very fine	2 ft) Silty sand with gravel (SM); very da to very coarse grained, subangular to y; little small to large pebbles, angular t s, angular to subround; moist.	subround; sor	me silt;	(230.0 - 235.0') Hard drilling	(230.0 - 235.0') No drilling fluid used
233		TCS-1-SS- 230-235 4/14/2022 07:55		Alluvium Deposits	ML		4/2); lov grained subangu	4 ft) Sandy silt with gravel (ML); dark re v plasticity, rapid dilatancy; little very fin sand, angular to subround; little small i ular to subround; little clay; trace granul d; medium stiff; moist.	e to very coar to medium pe	se bbles,		
				Alluvium Deposits	SM		very fine	5 ft) Silty sand with gravel (SM); very da to very coarse grained, subangular to y; little small to large pebbles, angular t s, angular to subround; moist.	subround; sor	me silt;		
236 				Alluvium Deposits	ML		(235-23 low plas pebbles grained	s, angular to subround, motst. 7 ft) Gravelly silt with sand (ML); grayis ticity, rapid dilatancy; some clay; little s , angular to subangular; little very fine t sand, angular to subround; trace granu ular; medium stiff; moist.	small to medit o very coarse	ım	(235.0 - 245.0') Hard drilling	(235.0 - 245.0') No drilling fluid used
238 239 	8.7	TCS-1-SS- 235-240 4/14/2022 08:00		Alluvium Deposits	ML		plasticit sand, ar pebbles	5 ft) Sandy silt with gravel (ML); brown y, rapid dilatancy; some very fine to very ngular to subround; little clay; little smal , subangular to subround; trace granule d; medium stiff; moist.	y coarse grain Il to medium			

9	AR	CADI	S		Вс	ring	g Log			Shee	et: 13 of	14
Date S					Surface	e Eleva	ation:	622.31 ft amsl	Borin	a No .	TCS-01	Pilot
	•	ted: <u>04/13/</u>	2022		Northin	ıg (NA	D83):	2101167.19		ig 110	100 01	1 1100
Drilling		<u>Casca</u>			Easting	• •	83):	7615165.89	_ Client:	PG&E		
Drilling			•		Total D	•		280 ft bgs	•		/ Remedy Pl	
Drill Ri			<u>_ongyear drill</u> · ·	<u>head</u>	Boreho			4-7 inches	_ Location:	PG&E T	opock, Need	<u>les California</u>
Driller								167.5 ft bgs	- D!4 N		0400055	
Drilling			<u>ppner / R We</u> Redner	SI	Sampli Sampli	-		4 inch x 10 ft. Core Barrel Continuous	_ Project N	umber: <u>3</u>	0126255	
Logge Editor:			McGrane		Conve	•		× Yes □ No	-			
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	apo Code	USCS		Soil Description			Drilling Notes	Drilling Fluid
_	Ä.			ο <sub>6</sub>			(007.04	500	(7.5) (D.5(0)			
241 242 243 244 245	8.7	TCS-1-SS- 240-245 4/14/2022 08:04		Alluvium Deposits	ML		plasticity sand, ar pebbles	5 ft) Sandy silt with gravel (ML); brown , rapid dilatancy; some very fine to ver igular to subround; little clay; little sma subangular to subround; trace granul d; medium stiff; moist.	ry coarse grai all to medium	ned		
246 247 248 249 250 251	9	TCS-1-SS- 245-251.5 4/14/2022 08:08		Alluvium Deposits	ML		low plas sand, ar subroun moist.	1.5 ft) Sandy silt with gravel (ML); redditicity, rapid dilatancy; some very fine to gular to subround; little clay; trace grad; trace small to medium pebbles, sub	o very coarse inules, angula pangular to su	grained ir to bround;	(245.0 - 257.0') Hard drilling	(245.0 - 257.0') No drilling fluid used
_252  _253				Alluvium Deposits	SM		very coa granules subangu	53 ft) Silty sand (SM); reddish brown ( rse grained, angular to subround; som s, angular to subround; trace small to r llar to subround; dry.	ne silt; little cla medium pebb	ay; trace es,		
		TCS-1-SS- 251.5-257 4/14/2022		Alluvium Deposits	ML		plasticity subangu angular	4.5 ft) Gravelly silt with sand (ML); red , rapid dilatancy; little small to large p ilar; little clay; little very fine to very coa to subround; trace granules, angular to	èbbles, angul arse grained s o subround; n	ar to sand, noist.		
_255_  _256_  _257_		08:13	TCS-1-VAS- 254-259 (<0.13) 4/7/2022	Alluvium Deposits	SM		very fine medium	57 ft) Silty sand with gravel (SM); redo to very coarse grained, angular to sub pebbles, subangular to subround; little s, angular to subround; wet.	oround; littlè s	mall to		
258 259	3.8	TCS-1-SS- 257-263 4/14/2022 08:18	11:40	Alluvium Deposits	SM		very coa	8.5 ft) Silty sand (SM); reddish brown ( rse grained, subangular to subround; anules, angular to subangular; trace si angular to subangular; moist to wet.	some silt; sor	ne clay;	(257.0 - 262.0') Hard drilling	(257.0 - 262.0') No drilling fluid used
260						1:1:4:	1					

9	AR	CADI	S		Вс	ring	Log	SI	neet: 14 of	14
Date S	tarted:	03/31/	2022		Surface	e Eleva	tion: <u>622.31 ft amsl</u>	Boring No	· TCS-01	Pilot
Date C	omple	ted: <u>04/13/</u>	2022		Northin	ıg (NAI	D83): <u>2101167.19</u>	Borning itto	<u>100 01</u>	1 1101
Drilling	Co.:	<u>Casca</u>	de		Easting	(NAD	83): <u>7615165.89</u>	Client: PG&E		
Drilling	Metho	od: <u>Sonic</u>	Drilling		Total D	epth:	280 ft bgs	Project: Final C	<u> SW Remedy Pl</u>	nase 2A
Drill Ri	д Туре	: <u>Boart l</u>	Longyear drill	head	Boreho	le Diar	neter: 4-7 inches	Location: PG&E	Topock, Need	<u>les California</u>
Driller	Name:				Depth 1	to First	Water: <u>167.5 ft bgs</u>	. <u> </u>		
Drilling	Asst:		ppner / R We		Sampli	-		Project Number:	30126255	
Logge			Redner		Sampli	-		-		
Editor:		<u>Sean I</u>	<u> McGrane</u>		Conver	ted to	Well: ⊠ Yes □ No			
Depth (ft)	Recovery (ft)	Sieve Sample ID	Groundwater Sample ID	Geologic Formation	USCS	USCS	Soil Description		Drilling Notes	Drilling Fluid
	3.8	TCS-1-SS- 257-263 4/14/2022 08:18					(257-268.5 ft) Silty sand (SM); reddish brown (see year) coarse grained, subangular to subround; see trace granules, angular to subangular; trace see pebbles, angular to subangular; moist to wet.  (262-268.5 ft) Wet	some silt; some clay;	(262.0 - 275.0')	(262.0 - 275.0')
_263_  _264_				Alluvium	SM				Normal drilling	No drilling fluid used
265 266		TCS-1-SS- 263-268.5 4/14/2022		Deposits			A (2)			
267 268	9.8	08:23	TCS-1-VAS- 266-271-EB (<0.13) 4/13/2022			× × ×		(500 1/0) 5		
_269 270 271_			4/13/2022 09:20	Weathered Bedrock -		× × × × × × × × × × × × × × × × × × ×	(268.5-273.5 ft) Sedimentary Rock; reddish brograined to medium grained, subangular to subiweathered; soft; moist.			
272 273 				Conglomera	te	X X X X X X X X X X X X X X X X X X X	(273.5-277 ft) Sedimentary Rock; reddish brow	in (SVD AIA): fino		
_274_  _275_		No Sieve Samples Collected	No	Competent	i l	× × × × × × × × × × × × × × × × × × ×	grained; moderately weathered; soft; friable; puprocess; moist to dry.	ulverized by drilling	(275.0	(275.0
276_ 277			Groundwater Samples Collected	Bedrock - Conglomera	te	X X X X X X X X X X X X X X X X X X X	(275 ft) NOTE: Color change to 2.5YR 4/4 - red		(275.0 - 280.0') Hard drilling	(275.0 - 280.0') No drilling fluid used
278  279	4.5			Competent Bedrock - Conglomera		× × × × × × × × × × × × × × × × × × ×	(277-280 ft) Sedimentary Rock; reddish brown grained to medium grained, subangular to sub weathered; soft; friable; pulverized by drilling p	round; moderately		
280		11000 1	1 10 0		. 0	× × ×	End of Boring at 280 ft bgs	11		N. D.

# **Attachment 3**

**Temporary Backfill Log** 

9	ARC	ADIS			Temporary	<b>Backfil</b>	l Log	S	Sheet: 1 of 14
	tarted:	04/13/2022			_ Surface Elevation:	622.31 ft		Well ID: T	CS-1 Pilot
	-	04/14/2022			_ Northing (NAD83):	<u>2101167.</u>			
Drilling		Cascade			_ Easting (NAD83):	<u>7615165.</u>		Client: PG&I	
_	Method:	Sonic Drilling			_ Total Depth:	280 ft bgs		_ ,	GW Remedy Phase 2A
	Name:	Matt Arnold			_ Borehole Diameter:	4-7 inches		Location: <u>PG&amp;l</u>	E Topock, Needles California
Drilling		D Hoeppner Ellen Redner		<u>est</u>	_ Depth to First Wate _ Editor:	r: <u>167.5 ft b</u> <u>Sean Mc0</u>	-	 Project Number	r: 20126255
_ogge						struction Details			. 50120233
Depth (ft)	Groundwate Sample ID	Geologic Formation	USCS	USCS		Struction Details		Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
 _ 1 _		Fill	N/A		(0.0 - 0.5') Steel plate		(0.0 - 38.0') 7" Diameter Borehole		Note: Steel plate used to mark pilot borehole
_ 2 _ 2 _ 3 _ 4		Fill	N/A		(0.5 - 4.0') Cemex #60 (40x70) — Lapis Lustre Sand			(0.5 - 4.0') 2.1 bags	(0.5 - 4.0') 3 bags (143%) Note: Surface sand seal, used >20% of the calculated volume due to potential voids that formed during drilling.
_					(4.0 - 5.0') Cemex #3 (8x20) — Lapis Lustre Sand		1	(4.0 - 5.0') 0.5 bags	(4.0 - 5.0') 0.5 bags (100%) Note: Surface sand seal
		Fluvial Deposits	SM 				(3)		
	No	Fluidal	NIX						
10 _	Groundwater Samples Collected	Fluvial Deposits	SW						
11 12 13 14		Fluvial Deposits	SP		(5.0 - 267.0') Cemex 8 Mesh (8x16) Lapis Lustre Sand			(5.0 - 267.0') 108.7 bags	(5.0 - 267.0') 117 bags (108%) Note: Backfill sand
15		Fluvial	SW						
		Deposits							
16 17 18 19 19		Fluvial Deposits	SW						
20 Abbrox	iations: 119	CS - Unified	Soil C	[∵ૐ∵∴t] laccificati	ion System ft - foot h	gs = bolow o	around surface or	mel = above mean	sea level NR = No Recovery

**Temporary Backfill Log** Sheet: Surface Elevation: 622.31 ft amsl Well ID: TCS-1 Pilot Date Completed: 04/14/2022 Northing (NAD83): 2101167.19 Drilling Co.: <u>Cascade</u> Easting (NAD83): 7615165.89 Client: PG&E Drilling Method: Sonic Drilling Total Depth: 280 ft bgs Project: Final GW Remedy Phase 2A Driller Name: Matt Arnold Borehole Diameter: 4-7 inches Location: PG&E Topock, Needles California Drilling Asst: D Hoeppner / R West Depth to First Water: 167.5 ft bgs Ellen Redner Editor: Sean McGrane Project Number: 30126255 \_ogger: Construction Details Geologic Formation USCS Class Material Volumes Installed USCS Code Depth (ft) Groundwater Calculated Note: percentages are the actual volume vs the calculated volume Sample ID Material Volumes 21 Fluvial SW Deposits 22 23 Fluvial Deposits 25 Fluvial SW-SM Deposits 26 27 28 29 (5.0 - 267.0')(5.0 - 267.0') 108.7 bags Cemex 8 Mesh (5.0 - 267.0') 117 bags (108%) Groundwater 30 (8x16) Lapis Lustre Samples Note: Backfill sand Sand NR 31 32 33 35 36 Fluvial SM Deposits 38 (38.0 - 274.0')6" Diameter Borehole 39

9	ARC	ADIS			Temporary I	Backfill Log	5	Sheet: 3 of 14
Date C Drilling	Method: Name: Asst:	Cascade Sonic Drilli Matt Arnol D Hoeppn	4/14/2022 ascade onic Drilling latt Arnold Hoeppner / R West		Surface Elevation: Northing (NAD83): Easting (NAD83): Total Depth: Borehole Diameter: Depth to First Water: Editor:	622.31 ft amsl 2101167.19 7615165.89 280 ft bgs 4-7 inches 167.5 ft bgs Sean McGrane	Client: <u>PG&amp;l</u> Project: <u>Final</u>	GW Remedy Phase 2A  E Topock, Needles California
Depth (ft)	Groundwate Sample ID	Geologic Formation	USCS	USCS Class	Consti	ruction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
41		Fluvial Deposits	CL					
 42		Fluvial Deposits	sc sc					
43 44		Fluvial Deposits	CH				2	
 45		Fluvial Deposits	CL					
46  47		Fluvial Deposits	SM					
48	No Groundwater Samples Collected	Alluvium Deposits	S SW		(5.0 - 267.0') Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 267.0') 108.7 bags	(5.0 - 267.0') 117 bags (108%) Note: Backfill sand
 56		Alluvium Deposits	CL					
575859		Alluvium Deposits						

9	ARC	ADIS			Temporary I	Backfill Log	S	Sheet: 4 of 14
Date S	tarted:	04/13/2022			Surface Elevation:	622.31 ft amsl	Well ID: T	CS-1 Pilot
	-	04/14/2022			Northing (NAD83):	2101167.19		
Drilling		Cascade			Easting (NAD83):	7615165.89	Client: PG&I	
	Method:	Sonic Drilling			Total Depth:	280 ft bgs	•	GW Remedy Phase 2A
	Name:	Matt Arnold			Borehole Diameter:	4-7 inches	Location: <u>PG&amp;I</u>	E Topock, Needles California
Orilling		D Hoeppner		est	Depth to First Water: Editor:	_	— — — — — — — — — — — — — — — — — — —	- 2042C2EE
_ogge	1.	Ellen Redner	1			Sean McGrane	Project Number	. 30120233
Depth (ft)	Groundwate Sample ID	Geologic Formation	Code	USCS	Consti	ruction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
61 62 63 64 65		Alluvium Deposits	SM					
 66		Alluvium Deposits	ML					
67 68 69 70 71 72	No Groundwater Samples Collected	Alluvium Deposits	sw		(5.0 - 267.0') Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 267.0') 108.7 bags	(5.0 - 267.0') 117 bags (108%) Note: Backfill sand
		Alluvium Deposits	SW					
78 79 		Alluvium Deposits	SM					

9	ARC	ADIS			Temporary I	Backfill Log	5	Sheet: 5 of 14
Date S	Started:	04/13/2022			_ Surface Elevation:	622.31 ft amsl	Well ID: T	CS-1 Pilot
	-	04/14/2022			Northing (NAD83):	2101167.19		
Drilling		Cascade			_ Easting (NAD83):	7615165.89	Client: PG&I	
_	g Method: Name:	Sonic Drilling	g		Total Depth: Borehole Diameter:	280 ft bgs		GW Remedy Phase 2A
Drilling		Matt Arnold  D Hoeppner	. / P W.c	et	Borenole Diameter. Depth to First Water:	4-7 inches	Location. <u>PG&amp;t</u>	E Topock, Needles California
Logge	=	Ellen Redne		.St	Beptir to rilist water. Editor:	Sean McGrane	 Project Number	: 30126255
		o c			Constr	ruction Details		
Depth (ft)	Groundwate Sample ID	Geologic	Code	USCS	· · ·		Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
81 81		Alluvium Deposits	SM					
83 83 84		Alluvium Deposits	SC				<b>1</b> .	
85								
86 87		Alluvium Deposits	SW-SM					
88		Alluvium Deposits	SC					
90 91	No Groundwater Samples Collected	Alluvium Deposits	CL		(5.0 - 267.0') Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 267.0') 108.7 bags	(5.0 - 267.0') 117 bags (108%) Note: Backfill sand
92	-	Alluvium Deposits	SM	279777				
93	<u> </u>  -	Alluvium Deposits	CL					
94 95		Alluvium Deposits	SM					
96 97								
98		Alluvium Deposits	SC					
100	viations: 110	CS = Unific	1 501 0	assification	ion System ft - foot ha	s = below ground surface of	mel = ahove moon	sea level, NR = No Recovery,

9	ARC	ADIS			Temporary E	Backfill Log	5	Sheet: 6 of 14
Date S Date C Drilling	ctarted: completed: Co.: Method: Name: Asst:	04/13/2022 04/14/2022 Cascade Sonic Drilling Matt Arnold D Hoeppner / R West Ellen Redner		Surface Elevation: Northing (NAD83): Easting (NAD83): Total Depth: Borehole Diameter: Depth to First Water: Editor:	622.31 ft amsl 2101167.19 7615165.89 280 ft bgs 4-7 inches		GW Remedy Phase 2A  Topock, Needles California	
Depth (ft)	Groundwate Sample ID	Geologic Formation	USCS	USCS	Constr	ruction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
 101  102		Alluvium Deposits	SC					
103 104 105 106 107		Alluvium Deposits	SW-SN					
108	N.	Alluvium Deposits	sc		(F.O. 267.0)			
110	No Groundwater Samples Collected	Alluvium Deposits	sc		(5.0 - 267.0') Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 267.0') 108.7 bags	(5.0 - 267.0') 117 bags (108%) Note: Backfill sand
111  112		Alluvium Deposits	SC					
113 114		Alluvium Deposits	SM					
115 116 117 118 119		Alluvium Deposits	SM					
	intions: LC	Alluvium Deposits	CL CL	Jacobs - 1	ion Cyptom # = foot be		mol = abays =====	sea level, NR = No Recovery,

9	ARC	ADIS			Temporary E	Backfill Log	S	Sheet: 7 of 14
Date S	Started:	04/13/2022			Surface Elevation:	622.31 ft amsl	Well ID: T	CS-1 Pilot
Date C	Completed:	04/14/2022			Northing (NAD83):	2101167.19		
Drilling		Cascade			Easting (NAD83):	7615165.89	Client: PG&I	
	Method:	Sonic Drilling			Total Depth:	280 ft bgs	•	GW Remedy Phase 2A
	Name:	Matt Arnold			Borehole Diameter:	4-7 inches	Location: <u>PG&amp;I</u>	E Topock, Needles California
Drilling		D Hoeppner		st	Depth to First Water:	_		00400055
_ogge	r:	Ellen Redne	r		Editor:	Sean McGrane	Project Number	: <u>30126255</u>
Depth (ft)	Groundwate Sample ID	Geologic Formation	USCS	USCS	Constr	uction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
		Alluvium Deposits	SM					
126  127		Alluvium Deposits	ML					
	No Groundwater	Alluvium Deposits	ML		(5.0 - 267.0') Cemex 8 Mesh		(5.0 - 267.0')	(5.0 - 267.0') 117 bags (108%)
 131  132	Samples Collected	Alluvium Deposits	SM		(8x16) Lapis Lustre Sand		108.7 bags	Note: Backfill sand
133 134 135		Alluvium Deposits	sw-sc					
 136  137		Alluvium Deposits	SM					
		Alluvium Deposits	SM					

Date Started: Date Completed: Drilling Co.: Drilling Method:	04/13/2022 04/14/2022				Backfill Log	Sheet: 8 of 14	
Driller Name: Drilling Asst: Logger:	Cascade Sonic Drilling Matt Arnold D Hoeppner Ellen Redner	/RWe	est	_ Surface Elevation: _ Northing (NAD83): _ Easting (NAD83): _ Total Depth: _ Borehole Diameter: _ Depth to First Water: _ Editor:	622.31 ft amsl 2101167.19 7615165.89 280 ft bgs 4-7 inches 167.5 ft bgs Sean McGrane		GW Remedy Phase 2A  Topock, Needles California
Groundwate Sample ID		USCS	USCS Class	Constr	ruction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
	Alluvium Deposits Alluvium Deposits	SM SM		(5.0 - 267.0') Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 267.0') 108.7 bags	(5.0 - 267.0') 117 bags (108%) Note: Backfill sand

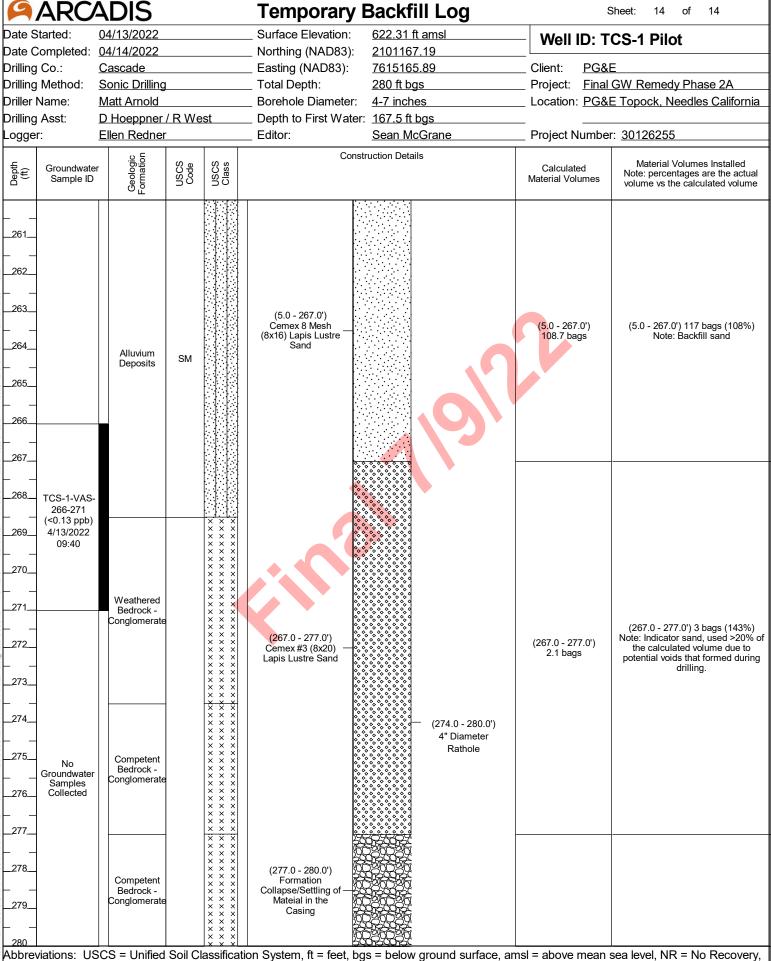
ARCADIS					Temporary I	Backfill Log	Sheet: 9 of 14		
Date Started: <u>04/13/2022</u>				Surface Elevation:	622.31 ft amsl	Well ID: TCS-1 Pilot			
Date Completed: 04/			22		Northing (NAD83):	2101167.19			
_	Drilling Co.:         Cascade           Drilling Method:         Sonic Drilling           Driller Name:         Matt Arnold           Drilling Asst:         D Hoeppner / R West           Logger:         Ellen Redner		Easting (NAD83):	7615165.89	Client: PG&				
_			Total Depth:	280 ft bgs		GW Remedy Phase 2A			
			Borehole Diameter:	4-7 inches	Location: PG&	E Topock, Needles California			
_				esi	Depth to First Water: Editor:	Sean McGrane	Project Number: <u>30126255</u>		
Loggo	1.					ruction Details	1 Toject Number. 30120233		
Depth (ft)	Groundwate Sample ID	Geologic Formation	USCS	USCS	Const	ruction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume	
161 162 163 164	No Groundwater Samples Collected	Alluviur Deposi	n s SM				<b>9</b> .		
 165		Alluviur Deposi							
 166	TCS-1-VAS-	Alluviur Deposi							
	164-169 (1100 ppb) 4/3/2022	Alluviur Deposi	s Sivi		▼				
_	10:50	Alluviur Deposi							
168 169 170		Alluviur Deposi			(5.0 - 267.0') Cemex 8 Mesh		(5.0 - 267.0')	(5.0 - 267.0') 117 bags (108%)	
		Alluviur Deposi			(8x16) Lapis Lustre		`108.7 bags´	Note: Backfill sand	
172173174174175176177178178179		Alluviur Deposi							
180		100		<u> </u>		:: :::::::::::::::::::::::::::::::::::			

**Temporary Backfill Log** Sheet: Surface Elevation: 622.31 ft amsl Well ID: TCS-1 Pilot Date Completed: 04/14/2022 Northing (NAD83): 2101167.19 Drilling Co.: <u>Cascade</u> Easting (NAD83): 7615165.89 Client: PG&E Drilling Method: Sonic Drilling Total Depth: 280 ft bgs Project: Final GW Remedy Phase 2A Driller Name: Matt Arnold Borehole Diameter: 4-7 inches Location: PG&E Topock, Needles California Drilling Asst: D Hoeppner / R West Depth to First Water: 167.5 ft bgs Ellen Redner Editor: Project Number: 30126255 \_ogger: Sean McGrane Construction Details Geologic Formation USCS Class Material Volumes Installed USCS Code Depth (ft) Groundwater Calculated Note: percentages are the actual volume vs the calculated volume Sample ID Material Volumes Alluvium \_181. ML Deposits 182 183\_ 184 185 186 \_187\_ \_188\_ Alluvium SM Deposits 189 (5.0 - 267.0')(5.0 - 267.0') 108.7 bags (5.0 - 267.0') 117 bags (108%) Note: Backfill sand Cemex 8 Mesh \_190\_ (8x16) Lapis Lustre Sand \_191 192 \_193\_ TCS-1-VAS-192-197 (<0.025 ppb) Alluvium SW Deposits 195. 4/4/2022 09:45 Alluvium ML Deposits 196 Alluvium SW-SM 197 Deposits \_198\_ Alluvium Deposits 199

ARCADIS					Temporary I	Backfill Log	Sheet: 11 of 14		
Date Started: 04/13/2022					Surface Elevation:	622.31 ft amsl	Well ID: T	CS-1 Pilot	
	Date Completed: 04/14/2022				Northing (NAD83):	2101167.19	_		
_	ling Co.: Cascade				Easting (NAD83):	7615165.89	Client: PG&E		
_	g Method:         Sonic Drilling           Name:         Matt Arnold           g Asst:         D Hoeppner / R West		Total Depth: Borehole Diameter:	280 ft bgs 4-7 inches	Project: Final GW Remedy Phase 2A Location: PG&E Topock, Needles Califor				
					_ Location. <u>PG&amp;t</u>	z Topock, Needles California			
Logge					Editor:	Sean McGrane	 _ Project Number	r: <u>30126255</u>	
_		gic	Oυ	S S	Consti	ruction Details	0.1.1.1	Material Volumes Installed	
Depth (ft)	Groundwate Sample ID		Code	USCS	, , , , , , , , , , , , , , , , , , , ,		Calculated Material Volumes	Note: percentages are the actual volume vs the calculated volume	
			ML						
_201		Alluvium Deposits	ML						
_202									
 _203									
_204		Alluvium Deposits	ML						
 _205									
_206									
 _207		Alluvium Deposits	ML						
		Deposits							
_208									
 _209									
					(5.0 - 267.0')				
_210					Cemex 8 Mesh (8x16) Lapis Lustre		(5.0 - 267.0') 108.7 bags	(5.0 - 267.0') 117 bags (108%) Note: Backfill sand	
- – _211		Alluvium Deposits	ML		Sand				
		]   Deposite							
_212									
 _213									
_213									
_214			L						
						상황회			
_215		Alluvium	014						
 216		Deposits	SM						
_217									
 _218_									
- ]		Alluvium Deposits	ML						
_219		200010							
 220									
				<del></del>	<del> </del>				

ARCADIS						Temporary I	Backfill Log	Sheet: 12 of 14		
Date Started: Date Completed: Drilling Co.: Drilling Method:		04/13 04/14 Casca Sonic	3/2022 1/2022 ade Drilling			Surface Elevation: Northing (NAD83): Easting (NAD83): Total Depth:	622.31 ft amsl 2101167.19 7615165.89 280 ft bgs	Well ID: TCS-1 Pilot  Client: PG&E  Project: Final GW Remedy Phase 2A		
	Oriller Name: Matt Arnold  Orilling Asst: D Hoeppner / R West  Ogger: Ellen Redner		Borehole Diameter: 4-7 inches Depth to First Water: 167.5 ft bgs Editor: Sean McGrane		Location: PG&E Topock, Needles California Project Number: 30126255					
Drilling Logge										
Depth (ft)	Groundwate Sample ID			Const	ruction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume			
			lluvium eposits	ML						
	TCS-1-VAS- 221-226 (<0.025 ppb) 4/5/2022 10:45		lluvium eposits	SM				7		
_225			lluvium eposits	SW						
226		Al	lluvium eposits	SM						
227 			lluvium eposits	ML		(5.0 - 267.0') Cemex 8 Mesh		(5.0 - 267.0')	(5.0 - 267.0') 117 bags (108%)	
230 231 		AI De	lluvium eposits	SM		(8x16) Lapis Lustre Sand		108.7 bags	Note: Backfill sand	
			lluvium eposits	ML						
			lluvium eposits	SM						
235 236 			lluvium eposits	ML						
238 239 			lluvium eposits	ML						

ARCADIS					Temporary	Backfill Log		Sheet: 13 of 14		
Date Started: Date Completed: Drilling Co.: Drilling Method: Driller Name: Drilling Asst: Logger:		04/13/202 04/14/202 Cascade Sonic Drilli Matt Arnol D Hoeppn Ellen Redr	ng d er / R W	est	Surface Elevation: Northing (NAD83): Easting (NAD83): Total Depth: Borehole Diameter: Depth to First Water Editor:	622.31 ft amsl 2101167.19 7615165.89 280 ft bgs 4-7 inches 167.5 ft bgs Sean McGrane	Client: PG& Project: Final Location: PG&			
Depth (ft)	Groundwate Sample ID			Const	truction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume			
241 242 243 244 245		Alluvium Deposits								
246 247 248 249 250 251		Alluvium Deposits			(5.0 - 267.0°) Cemex 8 Mesh (8x16) Lapis Lustre Sand		(5.0 - 267.0') 108.7 bags	(5.0 - 267.0') 117 bags (108%) Note: Backfill sand		
252 		Alluvium Deposits								
		Alluvium Deposits								
255 256 	TCS-1-VAS- 254-259 (<0.13 ppb) 4/7/2022	Alluvium Deposits								
258 259 	11:40	Alluvium Deposits	SIVI					and level NP = No Perceion		



# **Attachment 4**

**Drilling Log** 

9	ARC/	7DIS	;		Drilling Log					Sheet:	1 of 15			
		06/03/20			Surface Elevation:		22.31 ft amsl							
	completed:				Northing (NAD83):		101167.19		Borin	g No.: <u>TC</u>	<u>:S-01</u>			
Drilling	•	<u>Cascade</u>			Easting (NAD83):		615165.89		Client:	PG&E				
_		Dual Rot			Total Depth:		80.2 ft bgs		Project:		medy Phase 2A			
_		Foremos	-		Conductor Casing Diameter		-		_ocation:					
Driller I		J Saldan			_Drill Casing Diameter:		6 inches			California	,			
Drilling		A Amezo					5 5/8" & 17 5/8" T	ricone F	Project Nu	ımber: 30126	255			
Tool-P		Arnold La			Depth to First Water:		4.7 ft bgs		•					
Rig Ge	eologist:	Ellen Red	dner		Converted to Well:	×	Yes No							
	D.1111 D. /	60)			Description	T								
Depth (ft)	Drilling Run ( and Average Penetration Ra	Code	USCS Class		(See Pilot boring log for full geologic descriptions)		Drilling notes and o temporary ba				Drilling Fluid			
				(0-1.5 ft) l	Backfill used to grade drilling pad.	$\dashv$	(0.0 - 0.5') Confirme	ed drill casi	ng was lined	l up over pilot				
		N/A		,			borehole.	drilling ch	anged out d	rill bit and	(0.1 - 20.2')			
_ 1 _						(0.1 - 20.2') Normal drilling reamed out casing.				IIII bit and	400 gallons of water used; 150 gallons of			
				(1.5-4.5 ft	t) Boulders, cobbles and pebbles d in a sandy matrix.						water recovered; 250 gallons of water lost			
2											ganoris of water lost			
_ 3 _		N/A					(3.0') Observed trace	e amounts	of Cemey #	60 (40v70) Lanis				
							Lustre Sand in drill of	cuttings.	of Cernex #	00 (40x70) Lapis				
4														
				(4 E O #)	ft) Silty sand material that sloughed into									
_ 5 _					Siity sand material that sloughed into ting large void.	<b>'</b>								
6														
7		SM												
					•									
8					Y									
_														
_ 3 _		NR		(9-9.5 ft)	No Recovery.									
 10	(0.0 - 20.2)			(9.5-10.5	ft) Well graded sand with gravel (SV	V);								
10	2.23 mins/ft	SW		very pale	brown (10YR 7/3)		(10.0') Observed sor	me Cemex	#8 (8x16) L	apis Lustre Sand				
				(10.5-15 f	ft) Poorly graded sand (SP); very pale	9	in drill cuttings.							
11				brown (10	OYR 7/3)									
12														
		SP												
13														
14														
15				(15 15 5 f	t) \\\all graded eand with gravel (C\\									
		SW	\$ * (* 1 * 1 * 1	light brow	ft) Well graded sand with gravel (SW nish gray (10YR 6/2)	);								
16					t) Well graded sand with gravel (SW brown (10YR 7/3)	');								
				voi y paie	Siowii (1011(1/0)									
17			[:e:::0]											
18		sw												
 19														
 20														
			اه ۱۵ ۵ ۵ ۰ ۰ ۰ ۰											

9	ARC	ADIS	<u> </u>	Drilling Log		Sheet:	2 of 15
Date S	tarted:	06/03/202	22	Surface Elevation:	622.31 ft amsl	Boring No.: TO	:S-01
	completed:		22	Northing (NAD83):	2101167.19		<del>// / / / / / / / / / / / / / / / / / /</del>
Drilling		Cascade		Easting (NAD83):	7615165.89	Client: PG&E	
_		Dual Rota	•	Total Depth:	280.2 ft bgs	•	medy Phase 2A
Drill Ri Driller I	g Type:		DR 24HD	Conductor Casing Diameter:		Location: PG&E Topod California	CK, INEEGIES
Drilling			a / A Lamon uita / D Aldona	Drill Casing Diameter: aDrill Bit:	16 inches 15 5/8" & 17 5/8" Tricone		255
Tool-P		Arnold La		Depth to First Water:	94.7 ft bgs	1 Toject Number. 30120	200
	ologist:	Ellen Red		Converted to Well:	× Yes No		
Depth (ft)	Drilling Run of and Averag Penetration R	Codo	USCS Class	Description  (See Pilot boring log for full geologic descriptions)	Drilling notes and observati	aterial in drill cuttings	Drilling Fluid
21	(20.2 - 40.2) 2.95 mins/ft	SW-SM  NR  SM-SM	(23-24) (24-27) (SW-S	23 ft) Well graded sand with gravel (SW); ale brown (10YR 7/3)  ft) Silty sand (SM); light gray (10YR 7/2)  ft) Well graded sand with silt and gravel (SM); light gray (10YR 7/2)  5 ft) No Recovery	(25.0') Observed little Cemes in drill cuttings.	#8 (8x16) Lapis Lustre Sand	(20.2 - 40.2') 700 gallons of water used; 500 gallons of water recovered; 200 gallons of water lost
39  40	inkin 110			ification System ft = feet has =		La phone are an	OW

9	ARC/	\DIS	5		Drilling Log				Sheet:	3 of 15
		06/03/20			Surface Elevation:	6	22.31 ft amsl	Borin	g No.: <u>TC</u>	`S_01
Date C	Completed:	06/22/20	22		Northing (NAD83):	2	101167.19			<u>/0-0 i</u>
Drilling		<u>Cascade</u>			Easting (NAD83):		615165.89	Client:	PG&E	
_		Dual Rota	•		_Total Depth:		80.2 ft bgs	Project:		medy Phase 2A
	• • •	Foremos			Conductor Casing Diameter			Location:	PG&E Topoo	ck, Needles
Drillier Drilling		<u>J Saldan:</u> A Amezq			_Drill Casing Diameter: _Drill Bit:		6 inches 5 5/8" & 17 5/8" Tricone	Droiget No	California	255
_		Arnold La		HIUUITA	_Depth to First Water:		4.7 ft bgs	Projectivi	JIIIDEI. <u>30120</u>	200
		Ellen Red			Converted to Well:	_	× Yes No			
					Description	T				
Depth (ft)	Drilling Run ( and Average Penetration Ra	Code	USCS Class		(See Pilot boring log for full geologic descriptions)		Drilling notes and observation temporary backfill ma		Drilling Fluid	
 41		CL		(7.5R 5/3			(40.2 - 60.2') Normal drilling			(40.2 - 60.2') 600 gallons of water used; 400 gallons of
 42		sc		brown (10	•			water recovered; 200 gallons of water lost		
43				(42-44 ft)	Fat clay (CH); reddish brown (5YR 4	/3)				
10 		CH								
· · · _ 45		CL		(44-45 ft)	Lean clay (CL); weak red (7.5R 5/3)		(45 M Ohan A Bull O 40 (2 (2))			
				(45-47 ft)	Silty sand (SM); weak red (7.5R 5/2)		(45.0') Observed little Cemex in drill cuttings.	(#8 (8x16) La	pis Lustre Sand	
46		SM								
							O'			
47				(47-55 ft)	Well graded sand with gravel (SW);	4				
_ 48				grayisii bi	rown (10YR 5/2)					
49										
 50	(40.2 - 60.2)				*. 4					
	3.40 mins/ft									
51		SW								
52										
 53										
54										
56 56		CL		(55-56 ft) 5/3)	Sandy lean clay (CL); brown (10YR		(55.0') Observed trace Ceme in drill cuttings.	x #8 (8x16) La	apis Lustre Sand	
50				(56-65 ft) brown (10	Silty sand with gravel (SM); grayish OYR 5/2)					
57										
 58		SM		1						
		SIVI								
59										
_										
60	viations: LIS		find Soil	Classific	ration System ft = feet_bas =	hol	low ground surface, ame	l = abovo n	nean sea level	GW -

9	ARC	ADIS	;	Drilling Log		Sheet:	4 of 15	
Date S	Started:	06/03/202	22	Surface Elevation:	622.31 ft amsl	Boring No.: TO	S-01	
	•	06/22/202	22	Northing (NAD83):	2101167.19		<u> </u>	
Drilling	-	Cascade		Easting (NAD83):	7615165.89	Client: PG&E		
-	Method:	Dual Rota	-	Total Depth: <u>HD</u> Conductor Casing Diameter:	280.2 ft bgs	•	medy Phase 2A	
	ig Type: Name:	Foremost J Saldana		•	18 inches 16 inches	Location: PG&E Topod California	ck, Needles	
© Drilling				Aldona Drill Bit:	15 5/8" & 17 5/8" Tricone		 255	
-	usher:	Arnold La		Depth to First Water:	94.7 ft bgs	1 10,000 140111001. <u>00120</u>	200	
<u>-</u> Π	eologist:	Ellen Red		Converted to Well:	X Yes			
EMPLA:	Drilling Run	(ft)		Description				
Depth (ft)	and Averag	e Cada	USCS Class	(See Pilot boring log for	Drilling notes and observati temporary backfill ma	Drilling Fluid		
Depth (ftt)   Depth (ftt)	renetiation	ale	** * * * * * * * * * * * * * * * * * * *	full geologic descriptions)				
H.G.				(56-65 ft) Silty sand with gravel (SM); grayish brown (10YR 5/2)	(60.2 - 80.2') Normal drilling		(60.2 - 80.2')	
្ច្ចី61_							1000 gallons of water used; 800 gallons of water recovered; 200	
ND	-							
62								
38 2022	-	SM	SM					
63_	-							
	-							
64	-							
	_			] (64.5-65 ft) Moist				
65	-			(65-66 ft) Sandy silt with gravel (ML); grayish		ex #8 (8x16) Lapis Lustre Sand		
- CC	_	ML		brown (10YR 5/2)	in drill cuttings.			
66	-			(66-72 ft) Silty sand with gravel (SM); grayish				
≝⊢ - ≝67_	-			brown (10YR 5/2)				
	-							
ă -								
906								
69		sw						
Q = 0 = 0 = 0								
<sup>1</sup> 70	(60.2 - 80.2)			(69.5-70 ft) Moist				
	4.80 mins/ft			(70.5-71.5 ft) Moist				
_71_	-			(10.0-11.3 tt) Worst				
SHAR	_							
72	-		*******	(72-77 ft) Well grade sand with gravel (SW);	-			
NSTER -	-			brown (10YR 5/3)				
S73_	-							
5	-							
5574	1			(74 ft) Large cobble				
ピー -  75		SW						
ZWW					(75.0') Observed little Cemes in drill cuttings.	x#8 (8x16) Lapis Lustre Sand		
76								
W@SS								
Mamily				(77, 00 ft) Oilting 1, 111	_			
- AREPO	_			(77-82 ft) Silty sand with gravel (SM); grayish brown (10YR 5/2)				
78	-							
ADISO	-	SM						
79	-							
9	-							
≣ <u>  80</u> 8 Abbre	viations: US	SCS = Unit	ied Soil	Classification System, ft = feet, bgs =	below ground surface. ams	l = above mean sea level	, GW =	
ν —				er table mark represents depth to wate				
×	aliate,e.			1 3-1-3-1-3-1	<u>,                                    </u>	<u> </u>		

9	ARC	<b>ADIS</b>		Drilling Log			Sheet:	5 of 15
	Started:	06/03/202		Surface Elevation:	622.31 ft amsl	Rorin	g No.: TO	`S-01
Date C	Completed:	06/22/202	22	Northing (NAD83):	2101167.19	Borini	9 140 <u>10</u>	<del>/0-01</del>
Drilling		Cascade		Easting (NAD83):	7615165.89	Client:	PG&E	
_		Dual Rota	-	•	280.2 ft bgs	Project:		medy Phase 2A
	g Type:	<u>Foremost</u>		•		Location:	PG&E Topoo	ck, Needles
	Name:	J Saldana		<u> </u>	16 inches	D : (N	California	055
Drilling	ı Asst: Yusher:	A Amezqu Arnold La		Aldona Drill Bit: Depth to First Water:	<u>15 5/8" &amp; 17 5/8" Tricone</u> Project Number: <u>3012</u> <u>94.7 ft bgs</u>			255
	eologist:	Ellen Red		Converted to Well:	× Yes No			
				Description	100   100			
Depth (ft)	Drilling Run of and Average Penetration R	Codo	USCS Class	(See Pilot boring log for full geologic descriptions)	Drilling notes and observations confirming presence of temporary backfill material in drill cuttings			Drilling Fluid
81 81 82		SM		(77-82 ft) Silty sand with gravel (SM); grayish brown (10YR 5/2) (80-81 ft) Moist	(80.2 - 100.2') Normal drilling normal drilling 95-100.2' bgs.	0.2' bgs. 1100 gallons used; 900 ga water recover		(80.2 - 100.2') 1100 gallons of water used; 900 gallons of water recovered; 200 gallons of water lost
83 83 84 85		SC		(82-85 ft) Clayey sand with gravel (SC); light yellowish brown (10YR 6/4)				
86 86 87		SW-SM		(85-87 ft) Well graded sand with silt and gravel (SW-SM); grayish brown (10YR 5/2)	(85.0') Observed little Cemex in drill cuttings.	:#8 (8x16) La	pis Lustre Sand	
 88  89		sc		(87-89.5 ft) Clayey sand with gravel (SC); brown (10YR 5/3)				
 90  91	(80.2 - 100.2) 5.70 mins/ft	CL		(89.5-91 ft) Gravelly lean clay with sand (CL); brown (10YR 5/3)				
 92		SM		(91-92 ft) Silty sand with gravel (SM); brown (10YR 5/3)				
 93		CL		(92-93 ft) Gravelly lean clay with sand (CL); brown (10YR 5/3)				
94		SM		(93-97 ft) Silty sand with gravel (SM); brown (10YR 5/3)  (97-102 ft) Clayey sand with gravel (SC); brown (7.5YR 5/2)	(95.0') Observed trace Ceme in drill cuttings.	x #8 (8x16) La	apis Lustre Sand	
100	<u> </u>	1	<u> </u>					

	<u>ARC/</u>		<b>)</b>	Drilling Log					Sheet: 6	of 15
Date S		06/03/20		Surface Elevation:		2.31 ft a		Borin	g No.: <u>TC</u>	S-01
	•	06/22/20		Northing (NAD83):		01167. <sup>-</sup>				
Drilling		Cascade		Easting (NAD83):		<u> 15165.8</u>		Client:	PG&E	
_		Dual Ro	•	Total Depth:		0.2 ft bo	<u>IS</u>	Project:		medy Phase 2A
			st DR 241	•				Location:	PG&E Topod	ck, Needles
Oriller N			ia / A Lan	<b>G</b>		inches	47.5/01.T:	D :	California	055
Drilling Tool-Pu		Arnold L	quita / D <i>I</i>	Aldona Drill Bit: Depth to First Water:	<u>15 5/8" &amp; 17 5/8" Tricone</u> Project Number: <u>3012625</u> <u>94.7 ft bgs</u>				255	
		Ellen Re		Converted to Well:		Yes	No			
1.9 00				Description	T	103				
Depth (ft)	Drilling Run ( and Average Penetration R	(ft) e ate Code		(See Pilot boring log for full geologic descriptions)	temporary backfill m		ions confirming presence of aterial in drill cuttings		Drilling Fluid	
		SC		(97-102 ft) Clayey sand with gravel (SC); brown (7.5YR 5/2)			14.0') Hard drilling, ne gear box.	stop drilling o	due to replace	(100.2 - 114.0') 600 gallons of wate used; 450 gallons o water recovered; 15
_102_				(102-107 ft) Well grade sand with silt and grave	-					gallons of water los
 _103				(SW-SM); brown (10YR 5/3)						
_104		SW-S	sw-sm							
_105						(105.0') ( in drill cu	Observed little Ceme ttings.	ex #8 (8x16) L	apis Lustre Sand	
_106						9				
	(100.2 - 114.0 6.88 mins/ft	))		(107-109.5 ft) Clayey sand with gravel (SC); brown (10YR 5/3)						
_108_  _109_		sc /////								
109  _110				(109-112 ft) Moist (109-5-110.5 ft) Clayey sand (SC); brown (10YF	2					
		SC		(110.5-112 ft) Clayey sand with gravel (SC);						
_111  _112		sc	brown (10YR 5/3)							
		CM		(112-114 ft) Silty sand with gravel (SM); grayish brown (10YR 5/2)						
		SM								
				(114-119 ft) Silty sand with gravel (SM); grayish brown (10YR 5/2)		(114.0 - 1	20.2') Hard drilling			(114.0 - 120.2') 600 gallons of wate used; 500 gallons
116							Observed some Cen Irill cuttings.	nex #8 (8x16)	Lapis Lustre	water recovered; 10 gallons of water los
	(114.0 - 120.2	SM								
117  118	8.23 mins/ft									
 _119_				(119-120 ft) Lean clay with sand (CL); brown						
120	. ,	CL		(7.5YR 5/3)						0111
				Classification System, ft = feet, bgs =						
ground	water, NOT	zs. Suiid	olue wale	er table mark represents depth to water	(IL.	uys.) a	epin io water m	<del>c</del> asureu dl	aring collection	OF LIFE HISL VAS

ARCADIS Drilling Log Sheet:	7 of 15
Date Started: 06/03/2022 Surface Elevation: 622.31 ft amsl Boring No.: TO	CS-01
Date Completed: U6/22/2022 Nortning (NAD83): 2101167.19	
Drilling Co.: Cascade Easting (NAD83): 7615165.89 Client: PG&E	. 5.
	emedy Phase 2A
Drill Rig Type: Foremost DR 24HD Conductor Casing Diameter: 18 inches Location: PG&E Topo  Driller Name: J Saldana / A Lamon Drill Casing Diameter: 16 inches California	ck, needles
© Drilling Asst: A Amezquita / D Aldona Drill Bit: 15 5/8" & 17 5/8" Tricone Project Number: 30126	S255
Tool-Pusher: Arnold Lamon Depth to First Water: 94.7 ft bgs	,200
Rig Geologist: Ellen Redner Converted to Well: X Yes No	
Description  Description  Description  Description	
Depth and Average Code Class (See Pilot boring log for temporary backfill material in drill cuttings	Drilling Fluid
full geologic descriptions)	
Depth and Average Penetration Rate (ft) and Average (ft)	(120.2 - 131.0') 800 gallons of water used; 750 gallons of water recovered; 50 gallons of water lost
125 (120.2 - 131.0) (120.2 - 131.0) (120.2 - 131.0)	
126 125.5 - 137.6 (125.5-127 ft) Silt with sand (ML); brown (7.5YR	
128   ML	
131 SM	
(131.0 - 140.2') Normal drilling	(131.0 - 140.2') 600 gallons of water
131	used; 300 gallons of water recovered; 300 gallons of water lost
(135.137 ft) Silty sand with gravel (SM); brown (7.5YR 5/3) (135.137 ft) Silty sand with gravel (SM); brown (7.5YR 5/3)	
= 136_   5.06 mins/it     sm	
2 137	
2 (107 147 h) Sand Wat graves (Sin), From	
SM   SM   SM   SM   SM   SM   SM   SM	
Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea leve	I, GW =
groundwater, Notes: Solid blue water table mark represents depth to water (ft. bgs.) depth to water measured during collection	of the first VAS

9	ARC	ADIS	;	Drilling Log		Sheet:	8 of 15			
Date S	Started:	06/03/202	22	Surface Elevation:	622.31 ft amsl	Boring No.: TO	CS-01			
	Completed:	06/22/202	22	Northing (NAD83):	2101167.19					
Drilling	g Co.: g Method:	<u>Cascade</u>	nr. /	Easting (NAD83): Total Depth:	7615165.89	Client: PG&E  Project: Final GW Re	emedy Phase 2A			
_	j Metrioa. ig Type:	Dual Rota Foremost	-	•	·					
	Name:	J Saldana		_	16 inches California					
Drilling				Aldona Drill Bit:	15 5/8" & 17 5/8" Tricone		255			
Tool-F	Pusher:	Arnold La	mon	Depth to First Water:	94.7 ft bgs					
51 °	eologist:	Ellen Red	ner	Converted to Well:	× Yes No					
Depth (ftt)	Drilling Run	(ft) USCS	USCS	Description	Drilling notes and observation	one confirming processes of	Drilling Fluid			
(ft)	and Ăverag Penetration F	e   Cada	Class	(See Pilot boring log for	(See Pilot boring log for temporary backfill material in drill cuttings ull geologic descriptions)					
<u> </u>				[(137-147 ft) Silty sand with gravel (SM); brown						
ECT.G	(140.2 - 160.2') Normal drilling						(140.2 - 160.2') 600 gallons of water			
ਨੂੰ141	_						used; 500 gallons of water recovered; 100			
12/GIN	-			<u>[</u>			gallons of water lost			
142	-									
~ - - 143_	-									
= - 1 <b>- 1 - 1 - 1</b>		SM		(143 ft) 2-inch lens with some clay, low-mediun plasticity, rapid dilatancy.	n					
5 144		Sivi		producty, rapid dilatarity.						
₩ -										
g145				1	(4.45.01) Observed trees Com	#0 (0:-40)				
= -	_			. <u>.</u> 	(145.0') Observed trace Cem Sand in drill cuttings.	ex #8 (8x16) Lapis Lustre				
146	-									
N										
<u>147</u>	_			: (147-152 ft) Silty sand with gravel (SM); brown						
ğ	_			(7.5YR 5/3)						
릴148	-									
SE EDI		SM								
<sup>돌</sup> 150	(140.2 - 160.2	2)								
O.O.	3.60 mins/ft									
151	-									
- ARAR	-									
<u> 152</u>	-	ML		(152-152.5 ft) Sandy silt (ML); grayish brown						
50 153	-			{(10YR 5/2) {(152.5-154.5 ft) Silty sand with gravel (SM);						
0100_		CM		grayish brown (10YR 5/2)						
일 154		SM								
EAMS)				(45.45.45.45.45.45.45.45.45.45.45.45.45.4						
	_			(154.5-164 ft) Silty sand with gravel (SM); brow (7.5YR 5/3)	n (155.0') Observed trace Cem	ov #0 (0v16) Lania Lustra				
	-				Sand in drill cuttings.	ex #0 (0x10) Lapis Lustie				
156				·! 						
Ö	<u>.</u>									
<u>157</u>	_	SM								
158_	1									
20365	1			1						
= - - - - - - - - - - - - - - - - - - -	]									
151										
160										
ν ———				Classification System, ft = feet, bgs =	<u> </u>					
groun	awater, Not	es: Solid b	iue wate	er table mark represents depth to wate	r (π. bgs.) depth to water me	easured during collection	of the first VAS			

9	ARC	ADIS	)	Drilling Log		Sheet:	9 of 15			
Date S	Started:	06/03/202	22	Surface Elevation:	622.31 ft amsl	Boring No.: TO	CS-01			
	•		22	Northing (NAD83):	2101167.19					
Drilling		Cascade		Easting (NAD83):	7615165.89	Client: PG&E	L DI 04			
1	g Method:	Dual Rota	-	Total Depth:	280.2 ft bgs	Project: Final GW Results Location: PG&E Topos	emedy Phase 2A			
	ig Type: Name:	Foremost J Saldana		•	: <u>18 inches</u> Location: <u>PG&amp;E To</u> <u>16 inches</u> <u>California</u>		ck, needles			
©rilling Brilling				Aldona Drill Bit:	15 5/8" & 17 5/8" Tricone		255			
-	Pusher:	Arnold La		Depth to First Water:	94.7 ft bgs	1 10,000 140111001. <u>00120</u>	200			
5 I	eologist:	Ellen Red		Converted to Well:	× Yes  No					
MPLA	Deillin e Don	<b>(4)</b>		Description						
Depth (ft)	Drilling Run and Averag	ie Cada	USCS	(See Pilot boring log for	Drilling notes and observations confirming presence of temporary backfill material in drill cuttings					
Depth (ftt)	Penetration F	cate		full geologic descriptions)						
T.GPJ				(154.5-164 ft) Silty sand with gravel (SM); browi (7.5YR 5/3)	1 (160.2 - 180.2') Normal drillin	ng	(160.2 - 180.2')			
្គ 161							650 gallons of water used; 600 gallons of			
E   							water recovered; 50 gallons of water lost			
162_		SM								
8 2022										
163	_									
	_									
164	1			(164-165 ft) Silty sand with gravel (SM); brown						
ā   	_	SM		(10YR 5/3)						
§165	1			(165-166 ft) Silty sand with gravel (SM); brown	(165.0') Observed trace Cem	ex #8 (8x16) Lapis Lustre				
<u> </u>	-	SM		(7.5YR 5/2)	Sand in drill cuttings.	, , ,				
166	1			(166-167 ft) Silty sand with gravel (SM); brown						
OF 407	1	SM		(7.5YR 5/3)						
필167	1	SM		(167-167.5 ft) Silty sand (SM); brown (7.5YR 5/	3)					
8 ⊒168	1			(167.5-170 ft) Silty sand (SM); brown (7.5YR 5/	3)					
# IOO_										
	1	SM								
#										
등170	(160.2 - 180.2	2)								
¥	3.00 mins/ft	Í I ML		(170-171 ft) Silt with sand (ML); brown (7.5YR   5/3)						
<u>171_</u>	_			(47) 400 (0.0)						
HARE -	1			(171-182 π) Sandy slit (ML); brown (10 YR 5/3)						
172										
STRUC	-									
Ś173_	1									
	1									
<u>174_</u>	-									
475	1									
% _1/5_	1			(175-179.5 ft) Moist	(175.0') Observed trace Cem	ex #8 (8x16) Lapis Lustre				
≨    476	1	ML			Sand in drill cuttings.					
170										
Ĭ 177	1									
NO I										
He in the second										
018036										
179_	1									
90]	1									
180	<u> </u>			1						
Abbre	viations: US	SCS = Unit	ied Soil	Classification System, ft = feet, bgs =	below ground surface, ams	I = above mean sea level	, GW =			
groun	171. 172. 173. 174. 175. 179.5 ft) Moist (175-179.5 ft) Moist (175-179.5 ft) Moist (177-179.5									

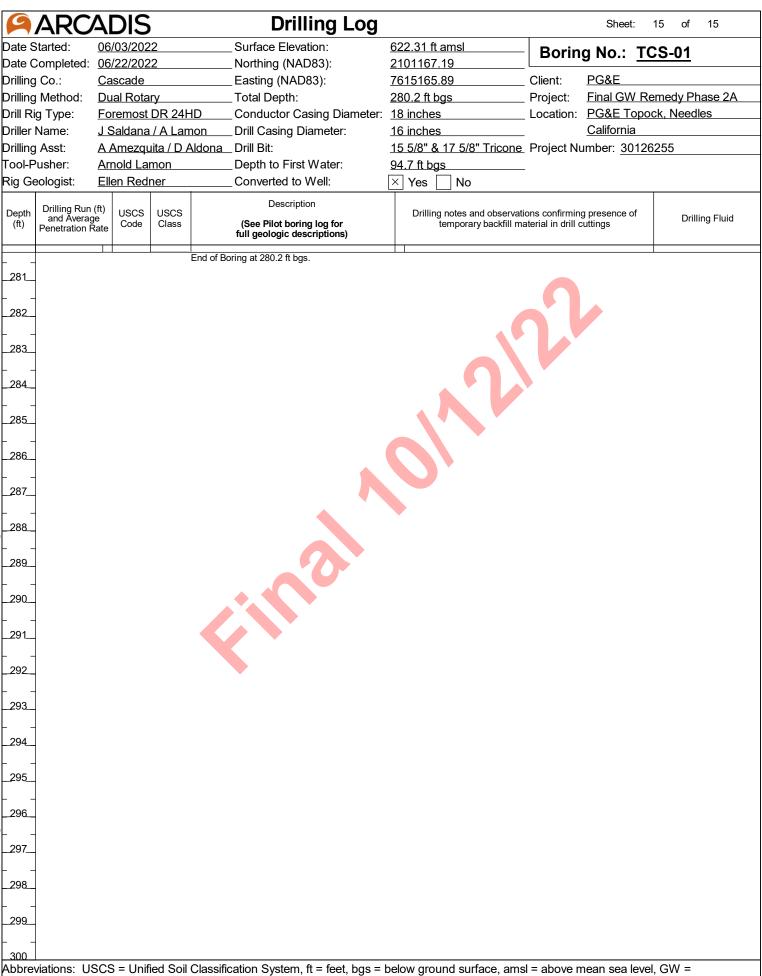
181   ML       ML	9	ARC/	<b>ADIS</b>	)	Drilling Log				Sheet:	10 of 15
Conting Co.   Cascade								Borin	g No.: TO	CS-01
Deling Name		•		22						<del></del> _
Description   Robert   Conductor Casing Diameter   18   Inches   Location   PG&E TOpock Needles					- · · · · ·			_		amady Dhaga 2A
Driller   Asset   A	-	-		-	·		-	•		-
Description   Depth		• • •			· ·			_ Location.	•	ok, recuics
Depth   Color   Depth   Color   Depth   Color   Depth   Converted to Well:   X   Yes   No					<u> </u>			- Proiect Nu		6255
Description   Onling Run (ft)   USCS   Code   Class   Description   Code   Plant   Code   C	•	•						- , -		
Depth   Code	Rig G	eologist:	Ellen Red	ner	Converted to Well:	× Yes	No			,
181		and Average	Codo		(See Pilot boring log for	Drill				Drilling Fluid
183			ML					ing 180.2-190.2	2' bgs, hard	(180.2 - 200.2') 700 gallons of water used; 600 gallons of water recovered; 100 gallons of water lost
185					(182-194.5 ft) Silty sand (SM); brown (10YR 5/3	3)				
(185.0) Observed trace Cemex #8 (8x16) Lapis Lustre Sand in drill cuttings.  SM  SM  190 (180.2 - 200.2) 3.10 mins/ft  191   192   193   194   195   SW :: (194.5-195 ft) Well graded sand (SW); brown (7.5 YR 6x3) (195-196.5 ft) Sandy silt (ML); brown (10 YR 5x3) (197-200.5 ft) Sandy silt with gravel (ML); brown (10 YR 6x3) (197-200.5 ft) Sandy silt with gravel (ML); brown (10 YR 6x3) (197-200.5 ft) Sandy silt with gravel (ML); brown (10 YR 6x3) (197-200.5 ft) Sandy silt with gravel (ML); brown (10 YR 6x3) (197-200.5 ft) Sandy silt with gravel (ML); brown (10 YR 6x3) (197-200.5 ft) Sandy silt with gravel (ML); brown (10 YR 6x3) (10 YR 6		-					NV			
188_   189_   189_   190_   (180.2 - 200.2)   3.10 mins/ft   191_   192_   193_   194_   195_   19		-						mex #8 (8x16) I	Lapis Lustre	
180					<b>A</b>					
189	188		SM							
3.10 mins/ft	189	-	Civi							
	190	(180.2 - 200.2 3.10 mins/ft	)							
SW (194.5-195 ft) Well graded sand (SW); brown  (7.5 YR 5/3)  ML (195-196.5 ft) Sandy silt (ML); brown (10 YR 5/3)  SW-SM (195-196.5 ft) Sandy silt (ML); brown (10 YR 5/3)  SW-SM (196.5-197 ft) Well graded sand with silt and gravel (SW-SM); brown (7.5 YR 5/3)  (197-200.5 ft) Sandy silt with gravel (ML); brown (10 YR 5/3)  Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW =	191	-								
SW SW (194.5-195 ft) Well graded sand (SW); brown (7.5 YR 5/3)  ML (195.0') Observed trace Cemex #8 (8x16) Lapis Lustre Sand in drill cuttings.  SW-SM (195.196.5 ft) Sandy silt (ML); brown (7.5 YR 5/3)  SW-SM (195.200.5 ft) Sandy silt with gravel (ML); brown (10 YR 5/3)  ML (195.0') Observed trace Cemex #8 (8x16) Lapis Lustre Sand in drill cuttings.  MI (195.0') Observed trace Cemex #8 (8x16) Lapis Lustre Sand in drill cuttings.  Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW =		<u>-</u>			•					
SW		-								
195 (195.0') Observed trace Cemex #8 (8x16) Lapis Lustre Sand in drill cuttings.  SW-SM (195.196.5-197 ft) Well graded sand with silt and gravel (SW-SM); brown (7.5YR 5/3) (197-200.5 ft) Sandy silt with gravel (ML); brown (10YR 5/3)  ML (197-200.5 ft) Sandy silt with gravel (ML); brown (10YR 5/3)  ML (197-200.5 ft) Sandy silt with gravel (ML); brown (10YR 5/3)  SW-SM (197-200.5 ft) Sandy silt with gravel (ML); brown (10YR 5/3)  SW-SM (195.197 ft) Well graded sand with silt and gravel (ML); brown (10YR 5/3)  (197-200.5 ft) Sandy silt with gravel (ML); brown (10YR 5/3)  ML (195.0') Observed trace Cemex #8 (8x16) Lapis Lustre Sand in drill cuttings.	194	-								
ML  SW-SM  SW-SM  SW-SM); (196.5-197 ft) Well graded sand with silt and (197-200.5 ft) Sandy silt with gravel (ML); brown  (10YR 5/3)  ML  ML  SW-SM  SW-SM); (196.5-197 ft) Well graded sand with silt and (10YR 5/3)  (197-200.5 ft) Sandy silt with gravel (ML); brown  (10YR 5/3)  Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW =	195	_	SW		(7.5YR 5/3)			mex #8 (8x16) I	Lapis Lustre	
	196		ML			Sand	in drill cuttings.			
	197	]	SW-SM		gravel (SW-SM); brown (7.5YR 5/3) (197-200.5 ft) Sandy silt with gravel (ML); brow					
	198		ML		((10YR 5/3)					
Abbreviations: USCS = Unified Soil Classification System, ft = feet, bgs = below ground surface, amsl = above mean sea level, GW =		-								
, , ,		viations: US	CS = l Jnif	ied Soil	Classification Svstem. ft = feet. bds =	below ar	ound surface, am	sl = above n	nean sea leve	l. GW =
, i					·					

ARC	ADIS	5	Drilling Log			Sheet:	11 of 15	
Date Started:	06/03/20		Surface Elevation:	622.31 ft amsl	Borino	No.: <u>TC</u>	`S_01	
Date Completed:	06/22/20	22	Northing (NAD83):	2101167.19			<del>70-01</del>	
Drilling Co.:	Cascade		Easting (NAD83):	7615165.89		PG&E		
Drilling Method:	Dual Rota	•	Total Depth:	280.2 ft bgs	,		emedy Phase 2A	
Drill Rig Type: Driller Name:	Foremos J Saldana		•	16 inches		PG&E Topo California	CK, Needles	
Drilling Asst:	A Amezq		<u> </u>	15 5/8" & 17 5/8" Tricone			255	
Tool-Pusher:	Arnold La		Depth to First Water:	94.7 ft bgs				
Rig Geologist:	Ellen Red		Converted to Well:	× Yes No				
Depth Drilling Run	(ft) USCS	USCS	Description	Drilling notes and observation	tions confirming presence of			
(ft) and Average Penetration F	Rate Code	Class	(See Pilot boring log for full geologic descriptions)	temporary backfill ma			Drilling Fluid	
	ML		: : :(200.5-202 ft) Sandy silt with gravel (ML); brown	(200.2 - 220.2') Normal drillin	g		(200.2 - 220.2') 700 gallons of water	
_201_	ML		. (200.3-202 ii) Sairdy siit with graver (wie), brown .: (7.5YR 5/3) .:				used; 800 gallons of water recovered; 100	
			·				gallons of water gained	
			(202-206 ft) Sandy silt (ML); brown (10YR 5/3)		7			
_203_								
_204	ML		1					
_205			:	(205.0') Observed trace Cem	ex #8 (8x16) La	apis Lustre		
 _206_				Sand in drill cuttings.				
			(206-207.5 ft) Sandy silt with gravel (ML); brown (7.5YR 5/3)					
207_	ML							
_208			∵ (207.5-214 ft) Sandy silt with gravel (ML); brown ∵ (7.5YR 5/3)					
_209_			(209 ft) Color change to brown (10YR 5/3).					
210 (200.2 - 220.: 2.90 mins/fi								
	ML							
_212								
_213			4					
_214_			(214-217 ft) Silty sand with gravel (SM); reddish	-				
 _215_			brown (5YR 4/4)					
_213_				(215.0') Observed trace Cem Sand in drill cuttings.	ex #8 (8x16) La	apis Lustre		
_216	SM		:	Cand in drin cuttings.				
_217			()	_				
			: (217-220 ft) Sandy silt with gravel (ML); reddish : brown (5YR 4/4)					
_218								
	ML							
_219_			;					
220			1					

<b>ARC</b>	ΆC	)IS			Drilling Log				Sheet:	12 of 15
Date Started:		3/202			Surface Elevation:	62	22.31 ft amsl	Borin	g No.: TO	°S 01
Date Completed	l: <u>06/2</u>	2/202	2		Northing (NAD83):	<u>21</u>	01167.19	БОПП	g 140 <u>10</u>	<del>/3-01</del>
Drilling Co.:	Caso	cade			Easting (NAD83):	<u>76</u>	315165.89	Client:	PG&E	
Drilling Method:			•		Total Depth:		30.2 ft bgs	Project:		medy Phase 2A
Drill Rig Type:		most			<u> </u>			Location:	PG&E Topoo	ck, Needles
Driller Name:		ldana					S inches		California	_
Drilling Asst:					Aldona Drill Bit:	15 5/8" & 17 5/8" Tricone		Project Nu	ımber: <u>30126</u>	255
Tool-Pusher:		old La			Depth to First Water:	94.7 ft bgs  X Yes No				
Rig Geologist:	⊑llei	Red	iei	1	Converted to Well:	Yes No				
Depth (ft) Drilling Ru and Aver Penetration	age	JSCS Code	USC Clas		Description (See Pilot boring log for full geologic descriptions)			tions confirming presence of naterial in drill cuttings		Drilling Fluid
		ML			(220-221 ft) Sandy silt with gravel (ML); reddish brown (5YR 4/3)		(220.2 - 240.2') Normal drillin	g		(220.2 - 240.2') 750 gallons of water used; 1000 gallons of
_					(221-225 ft) Silty sand with gravel (SM); reddish brown (5YR 4/3)					water recovered; 250 gallons of water gained
		SM								
224 							NV			
		SW	بنان		(225-225.5 ft) Well grade sand with gravel (SW reddish brown (5YR 4/3)	);	(225.0') Observed trace Cem Sand in drill cuttings.	ex #8 (8x16) l	apis Lustre	
		SM			(225.5-227 ft) Silty sand with gravel (SM); reddish brown (5YR 4/3)	1	Cana in anii cuttings.			
_227					(227-230 ft) Sandy silt with gravel (ML); dark reddish gray (5YR 4/2)					
_ 228 _ 		ML								
229 	0.0)									
230 (220.2 - 24 3.25 mins					(230-232 ft) Silty sand with gravel (SM); very dat gray (5YR 3/1)	'n				
_231 		SM								
_232_ 					(232-234 ft) Sandy silt with gravel (ML); dark reddish gray (5YR 4/2)					
_233 		ML								
_234_  _235_		SM			(234-235 ft) Silty sand with gravel (SM); very dai gray (5YR 3/1)					
236		ML		200	(235-237 ft) Gravelly silt with sand (ML); grayish brown (10YR 5/2)		(235.0') Observed trace Cem Sand in drill cuttings.	ex #8 (8x16) l	Lapis Lustre	
 _237_					(237-245 ft) Sandy silt with gravel (ML); brown					
		N di			(7.5YR 5/2)					
		ML								
240				<u>                                     </u>		_	<u> </u>			

9	ARC	ADIS	<u> </u>	Drilling Log		Sheet:	13 of 15
	Started:	06/03/202	22	Surface Elevation:	622.31 ft amsl	Boring No.: TO	CS-01
	•		22	Northing (NAD83):	<u>2101167.19</u>		<del>/                                    </del>
Drilling	-	Cascade		Easting (NAD83):		Client: PG&E	
1	Method:	Dual Rota	-	Total Depth:	•	Project: <u>Final GW Re</u> Location: <u>PG&amp;E Topo</u>	emedy Phase 2A
	ig Type: Name:	Foremost J Saldana		•	18 inches	ck, needles	
Drilling				Aldona Drill Bit:	15 5/8" & 17 5/8" Tricone	<u>California</u> Project Number: 30126	255
_	usher:	Arnold La		Depth to First Water:	94.7 ft bgs	1 10,000 140111501. <u>00 120</u>	200
5	eologist:	Ellen Red		Converted to Well:	Yes		
- I	Drilling Run	(ff)		Description	5		
Depth (ft)	and Averag	je Codo	USCS Class	(See Pilot boring log for	Drilling notes and observation temporary backfill mate		Drilling Fluid
<u>z</u>	T GHOUGHON T			full geologic descriptions)  (237-245 ft) Sandy silt with gravel (ML); brown			
Depth (ft)  241  242  243  244  245  246  247  248  249	-			( <i>IZ31-245</i> ft) Sandy slift with gravel (ML); brown (7.5YR 5/2)	(240.2 - 260.2') Normal drilling 252-260.2' bgs	240.2-252' bgs, soft drilling	(240.2 - 260.2') 450 gallons of water
<u>2</u> 41_	-			.}			used; 600 gallons of water recovered; 150
5 242	-						gallons of water gained
77-77		ML					
243_		IVIL					
<u>-</u>	-			:			
<u>244_</u>	-						
<u> </u>	-			:			
245_	_			: (245-251.5 ft) Sandy silt with gravel (ML); reddi:		x #8 (8x16) Lapis Lustre	
246	_			brown (5YR 4/3)	Sand in drill cuttings.		
_240_	-						
247							
_248_	-						
905	-	ML					
249_							
HASE -	_						
<u>~</u>	(240.2 - 260.2 2.10 mins/ft						
	-						
201							
252				.](251.5-2 <mark>53 ft)</mark> Silty sand (SM); reddish brown :[(5YR 4/3)			
	-	SM					
_253_	1			(253-254.5 ft) Gravelly silt with sand (ML); red			
			600	(2.5YR 4/6)			
_254_	-	ML					
255	1			(254.5-257 ft) Silty sand with gravel (SM);	+		
_255_	1			reddish brown (5YR 4/4)	(255.0') Observed trace Ceme	x #8 (8x16) Lapis Lustre	
256	1	SM			Sand in drill cuttings.		
				:			
257_				VOEZ 200 F #\ 011			
	_			(257-268.5 ft) Silty sand (SM); reddish brown (5YR 4/4)			
258_	-			:			
	-	SM					
259_	-			:}			
251 _ 252 _ 253 _ 254 _ 255 _ 256 _ 257 _ 256 _ 257 _ 258 _ 258 _ 259 _ 260 _ 259 _ 260 _ 250 _	1			:			
Abbre	viations: US	SCS = Uni	fied Soil	l Classification System, ft = feet, bgs =	below ground surface, amsl	= above mean sea level	, GW =
groun			lue wate	er table mark represents depth to wate	r (ft. bgs.) depth to water me	asured during collection	of the first VAS
' k .		t barabala					

9	ARC	ADIS	;	Drilling Log		Sheet:	14 of 15
Date S	Started:	06/03/202	22	Surface Elevation:	622.31 ft amsl	Boring No.: TO	CS-01
	Completed:	06/22/202	22	Northing (NAD83):	2101167.19		<del></del>
Drilling	-	Cascade		Easting (NAD83):	7615165.89	Client: PG&E	1 DI 04
	Method:	Dual Rota	-	Total Depth:	280.2 ft bgs	•	emedy Phase 2A
	ig Type: Name:	Foremost J Saldana		· ·	18 inches 16 inches	Location: <u>PG&amp;E Topo</u> California	ck, ineedies
Drilling				Aldona Drill Bit:	15 5/8" & 17 5/8" Tricone		255
-	usher:	Arnold La		Depth to First Water:	94.7 ft bgs		200
	eologist:	Ellen Red	Iner	Converted to Well:			
	Drilling Run	(ft)		Description			
Depth (ft)	and Averag	je Codo	USCS Class	(See Pilot boring log for		ons confirming presence of aterial in drill cuttings	Drilling Fluid
5	T GHOUGHON T	1	to success	full geologic descriptions)	1		
Depth (ft)  Depth (ft)  261  262  263  264  265  266  267  268  269  269  270				(257-268.5 ft) Silty sand (SM); reddish brown (5YR 4/4)	(260.2 - 280.0') Soft drilling		(260.2 - 280.0') 400 gallons of water used; 400 gallons of
<u></u>	-						water recovered; 0 gallons of water lost
_262_	1			(262-268.5 ft) Wet			
	-			(222 200.0 1.) ***********************************			
_263_	_						
		SM					
					(265.0') Observed trace Cem	nex #8 (8x16) Lapis Lustre	
					Sand in drill cuttings.	, , ,	
				<b>\</b>			
			× × × × × × × × ×	(268.5-273.5 ft) Sedimentary Rock; reddish brown (5YR 4/4)			
	(260.2 - 280.0 1.57 mins/ft	0)	× × × × × × × × ×				
 _271_	-		× × × × × × × × × × × × × ×				
_ 272_							
273							
274			× × × × × × × × × × × × × × × ×	(273.5-277 ft) Sedimentary Rock; reddish brow (5YR 4/4)	n		
275			× × × × × × × × ×	(275 ft) NOTE: Color change to 2.5YR 4/4 - Ireddish brown.	(275.0') Observed trace Cem Sand in drill cuttings.	nex #3 (8x20) Lapis Lustre	
_276_			× × × × × × × × ×				
277			× × × × × × × × ×	(277-280.2 ft) Sedimentary Rock; reddish brow ((5YR 4/4)			
_278_			× × × × × × × × × × × × × × ×				
			× × × × × × × × × × × × × × × × × × ×				
280		1	× × × × × ×	01		La abassa da di	0)4/
				Classification System, ft = feet, bgs =	<u> </u>		
	dwater, Not		iue wate	er table mark represents depth to wate	i (ii. bgs.) depin to water m	easured during collection	or the first VAS



interval in the pilot borehole.

## **Attachment 5**

**Well Construction Log** 

6	ARC	ADIS			Well Cons	stru	ction Log	5	Sheet: 1 of 15
	ite Started:	06/24/2022			_Surface Elevation:	<u>62</u>	2.31 ft amsl	Well ID: TO	CS-01
Da	te Completed				_Shallow Well Elevatio			_	
	illing Co.:	Cascade			_Deep Well Elevation:			Client: PG&E	
Dri	illing Method:	Dual Rotary			_Northing (NAD83):		01167.19	,	GW Remedy Phase 2A
20	iller Name:	J Saldana / A			_Easting (NAD83):		15165.89	Location: <u>PG&amp;E</u>	Topock, Needles California
<u> </u>	illing Asst:	A Amezquita		ona	_Borehole Diameter:		.5-18 inches		
- 1	gger:	Ellen Redner			_Static Water Level:		e Log for Depths	Project Number	r: <u>30126255</u>
≥	litor:	Sean McGra	ne		Development End Date: 8/24/2022			 To Be Completed	in Mall Vault
4 10	tal Depth:	280.2 ft bgs	1		_Well Completion:	struction		To be Completed	III VVEII Vault
Depth	Groundwa Sample II		USCS	USCS	Cons	Struction	Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
2-10-18/GINI PRO	1 _	Fill	N/A						
- ILE	3	Fill	N/A		(0.0 - 4.0') Well Vault	П			Note: Well vault dimensions 4x5 feet by 4 feet deep.
- ES/00 N	4 _				(3.5 - 170.4') 10" SHUR-GRIP		(0.0 - 131.0')		
	5				SDR17 PVC Casing		18" Diameter Borehole	. Ch	
	_								
- A	6 _								
	7	Fluvial Deposits	SM						
	· _	J Specific							
90/5N	8 _								(4.0. 44.01) 440 11 (4570/)
									(4.0 - 14.8') 143 gallons (157%) Note: Grout seal fourth lift, used
HASE —	9				(4.0 - 14.8')				>20% of the calculated volume due to potential grout migration and
- ASI	- No		NR	٠٠٠٠٠	Portland Cement — Grout with up to 6%			(4.0 - 14.8') 91.3 gallons	voids forming during drilling. Added 2 bags of bentonite chips
	10 Groundwate Samples	er Fluvial Deposits	SW		bentonite hydrogel			Ü	(Holeplug 3/8", 50 lb. bags each) at 8.9 ft. bgs to fill potential void.
<u> </u>	_ Collected								Bentonite chips brought material up to 7.9 ft. bgs.
WISHA	11_								ap 10 1.0 11. 2go.
	-								
	12								
	13	Fluvial Deposits	SP						
#									
EAMS)	14								
\$00 —									
	15	Fluvial							
SLIDA —	_	Deposits	SW	**************************************					
омо — ^	16								
- N	-								
, — ARE	17				(14.8 - 92.7') Portland Cement			(14.8 - 92.7')	(14.8 - 92.7') 741.5 gallons (113%)
- 13865.ST	10	Fluvial	SW		Grout with up to 6%			658.7 gallons	Note: Grout seal third lift
	18	Deposits			bentonite hydrogel				
S MAR.	19								
JE IAIL				D					
	20								
$\sim$					· · · · · · · · · · · · · · · · · · ·				sea level, SS = Stainless
									low blue water table marks
rep	present depth	to water (ft. bg	gs.) colle	cted du	ring the specific capaci	ity test	from the upper and lowe	er screen intervals,	respectively.

9	<b>ARC</b>	ADIS			Well Cons	truction Log	;	Sheet: 2 of 15
Date S	Started:	06/24/2022			_Surface Elevation:	622.31 ft amsl	Well ID: TO	CS-01
Date 0	Completed:	07/09/2022			_Shallow Well Elevation	: <u>N/A</u>		
Drilling	-	Cascade			_Deep Well Elevation:	N/A	Client: PG&E	
1	-	Dual Rotary			_Northing (NAD83):	2101167.19	•	GW Remedy Phase 2A
	Name:	J Saldana / A			_Easting (NAD83):	7615165.89	Location: PG&E	Topock, Needles California
_	g Asst:	A Amezquita		na	_Borehole Diameter:	15.5-18 inches		
Logge		Ellen Redner			_Static Water Level:	See Log for Depths	Project Numbe	r: <u>30126255</u>
Editor:		Sean McGrar	ne		_Development End Date			: \A/-11\/14
Total L	Depth:	280.2 ft bgs			_Well Completion:	☐ Flush☐ Stick-up ☒ ruction Details	To Be Completed	in vveii vauli
Depth (ft)	Groundwat Sample II		USCS	USCS Class		dollon betails	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
21 22 		Fluvial Deposits	SW		(3.5 - 170.4') 10" SHUR-GRIP SDR17 PVC Casing			-9.
 24	-	Fluvial Deposits	SM	••••				
25 26 27		Fluvial Deposits	SW-SM				18	
28 29 30	No Groundwate Samples Collected	г	NR		(14,8 - 92.7') Portland Cement Grout with up to 6% bentonite hydrogel		(14.8 - 92.7') 658.7 gallons	(14.8 - 92.7') 741.5 gallons (113%) Note: Grout seal third lift
31 32 33  34			N					
35 36 37 38 39 40		Fluvial Deposits	SM					

9	ARC	ADIS			Well Cons	strı	uction Log	;	Sheet: 3 of 15
Date S	Started:	06/24/2022			_Surface Elevation:	6	322.31 ft amsl	Well ID: TO	CS-01
Date C	Completed:	07/09/2022			_Shallow Well Elevation			_	
Drilling	Co.:	Cascade			_Deep Well Elevation:		I/A	Client: PG&E	
Drilling	Method:	<b>Dual Rotary</b>			_Northing (NAD83):	2	2101167.19	Project: <u>Final</u>	GW Remedy Phase 2A
	Name:	J Saldana / A			_Easting (NAD83):		<u>′615165.89</u>	Location: <u>PG&amp;</u> E	E Topock, Needles California
Drilling		A Amezquita		ona	_Borehole Diameter:		5.5-18 inches		
Logge		Ellen Redner			_Static Water Level:		See Log for Depths	Project Numbe	r: <u>30126255</u>
Editor:		Sean McGra	ne		_Development End Da	ate: <u>8</u>		 	. 14/ 113/ 16
Total D	Jeptn:	280.2 ft bgs	1		_Well Completion:	etructio	Flush Stick-up 🗵	To Be Completed	in vveii vauit
Depth (ft)	Groundwat Sample II		USCS	USCS				Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
 41		Fluvial Deposits	CL		(3.5 - 170.4') — 10" SHUR-GRIP SDR17 PVC Casing				
 42		Fluvial Deposits	sc						
43  44		Fluvial Deposits	СН						2
		Fluvial Deposits	CL					0	
46 47		Fluvial Deposits	SM					140	,
47 48 49	No				(44.0.00 71)				
50 51 52 53	Groundwate Samples Collected	Alluvium Deposits	SW		(14.8 - 92.7') Portland Cement Grout with up to 6% bentonite hydrogel			(14.8 - 92.7') 658.7 gallons	(14.8 - 92.7') 741.5 gallons (113%) Note: Grout seal third lift
54 55 55		Alluvium Deposits	CL						
56		Alluvium Deposits	SM						
	·	000 11 :6				~~			1 100 01:1

9	ARC	ADIS			Well Cons	str	uction Log	;	Sheet: 4 of 15
Date S	Started:	06/24/2022			_Surface Elevation:		622.31 ft amsl	Well ID: TO	CS-01
Date C	Completed:	07/09/2022			_Shallow Well Elevation	1 :no	N/A		<del>55-01</del>
Drilling	Co.:	Cascade			_Deep Well Elevation:	<u>1</u>	N/A	Client: PG&E	
Drilling	Method:	Dual Rotary			_Northing (NAD83):	2	2101167.19	Project: <u>Final</u>	GW Remedy Phase 2A
Driller I	Name:	J Saldana / A	Lamor	1	_Easting (NAD83):	Ī	7615165.89	Location: <u>PG&amp;</u> E	E Topock, Needles California
Drilling	Asst:	A Amezquita		ona	_Borehole Diameter:	1	15.5-18 inches		
Logge		Ellen Redner			_Static Water Level:		See Log for Depths	Project Numbe	r: <u>30126255</u>
Editor:		Sean McGrar	ne		_Development End Da	ate: <u>{</u>			
Total D	Depth:	280.2 ft bgs			_Well Completion:	etructi	☐ Flush ☐ Stick-up 区	To Be Completed	in Well Vault
Depth (ft)	Groundwat Sample ID		USCS	USCS Class	Cui	istructi	on Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
61 62 63 64 65		Alluvium Deposits	SM		(3.5 - 170.4') 10" SHUR-GRIP SDR17 PVC Casing				
05		Alluvium	ML						
66 67 68 69 70 71 72	No Groundwate Samples Collected	Alluvium Deposits	SW		(14.8 - 92.7') Portland Cement Grout with up to 6% bentonite hydrogel			(14.8 - 92.7') 658.7 gallons	(14.8 - 92.7') 741.5 gallons (113%) Note: Grout seal third lift
73		Alluvium Deposits	SW						
78 78 79 80		Alluvium Deposits	SM						

C	ARC	ADIS			Well Con	str	uction Log	5	Sheet: 5 of 15
Date	e Started:	06/24/2022			_Surface Elevation:		622.31 ft amsl	Well ID: TO	`S_01
Date	Completed:	07/09/2022			_Shallow Well Elevati	ion:	N/A		<del>55-01</del>
Drilli	ng Co.:	Cascade			_Deep Well Elevation	ո: ქ	N/A	Client: PG&E	Ξ
Drilli	ng Method:	Dual Rotary			_Northing (NAD83):		2101167.19	Project: Final	GW Remedy Phase 2A
	er Name:	J Saldana / A	Lamon		_Easting (NAD83):		7615165.89	•	Topock, Needles California
8	ng Asst:	A Amezquita			Borehole Diameter:		15.5-18 inches		•
<u> </u>	ger:	Ellen Redner			_Static Water Level:		See Log for Depths	Project Number	r: 30126255
∄ Edit		Sean McGra			_ _Development End D			,	
∄ Tota	al Depth:	280.2 ft bgs			_ Well Completion:			To Be Completed	in Well Vault
T DAT					•	nstruct	ion Details		
Depth	Groundwat Sample ID		Code	USCS				Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
840 2022-10-18/GINT PRO.	-	Alluvium Deposits	SM		(3.5 - 170.4') — 10" SHUR-GRIP SDR17 PVC Casing				
MT FILES/00 NEW PHASE 2 GINT FILES/		Alluvium Deposits	SC						22
	-	Alluvium Deposits	SW-SM		(14.8 - 92.7') Portland Cement — Grout with up to 6% bentonite hydrogel			(14.8 - 92.7') 658.7 gallons	(14.8 - 92.7') 741.5 gallons (113%) Note: Grout seal third lift
173/PHASE II DRILLING/06_FIEL	-	Alluvium Deposits	SC						
.HARED DOCUMEN — — — — — — — — — — — — — — — — — — —	Samples Collected	Alluvium Deposits	CL		6				
180 TRUCTION/S		Alluvium Deposits	SM						
DEOCKCONS	_	Alluvium Deposits	CL						
M@SSLIDAVWWWROOTITEAMSIPGETO	   	Alluvium Deposits	SM		(92.7 - 136.8')			(0.7, 10.7, 1)	(92.7 - 136.8') 646 gallons (181%) Note: Grout seal second lift, used
ON DETAILS WARCADISO385.SHAREPOINT.COM	-	Alluvium Deposits	SC		Portland Cement Grout with up to 6% bentonite hydrogel			(92.7 - 136.8') 356.6 gallons	>20% of the calculated volume due to potential grout migration and voids forming during drilling.
<u> </u>	reviations: 11	SCS = Unified	l Soil Cla	<i>y.y.y</i> ∤ Issificati	ion System ft = feet	bas =	below ground surface, ar	nsl = above mean	sea level. SS = Stainless
$\circ$					•		-		low blue water table marks
iii	<u> </u>		1			<u> </u>			<del>-</del>

represent depth to water (ft. bgs.) collected during the specific capacity test from the upper and lower screen intervals, respectively.

9	ARC	ADIS		Well Const	ruction Log	5	Sheet: 6 of 15
Date S	tarted:	06/24/2022		_Surface Elevation:	622.31 ft amsl	Well ID: TO	CS-01
Date C	ompleted:	07/09/2022		_Shallow Well Elevation:			<del>70 01</del>
Drilling		Cascade		Deep Well Elevation:	N/A	_ Client: PG&E	
_		Dual Rotary		Northing (NAD83):	2101167.19		GW Remedy Phase 2A
Driller I		<u>J Saldana / A</u>		Easting (NAD83):	7615165.89	_ Location: <u>PG&amp;E</u>	Topock, Needles California
Drilling		A Amezquita	/ D Aldona	_Borehole Diameter:	15.5-18 inches		
Logge		Ellen Redner		_Static Water Level:	See Log for Depths	_ Project Number	r: <u>30126255</u>
Editor:		Sean McGrar	ne	Development End Date			: \A/-II\/II
Total D	eptn:	280.2 ft bgs		Well Completion:	☐ Flush☐ Stick-up ☒ T	Γο Be Completed	
Depth (ft)	Groundwat Sample II		USCS Code USCS USCS	(0.5.470.40 N//	A 17774	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
 101  102		Alluvium Deposits	sc	(3.5 - 170.4') 10" SHUR-GRIP SDR17 PVC Casing			
103 104 105 106		Alluvium Deposits	SW-SM			100	
107 108 109 	No	Alluvium Deposits	SC	(92.7 - 136.8')		(007, 4000)	(92.7 - 136.8') 646 gallons (181%) Note: Grout seal second lift, used
110	Groundwate Samples Collected	r Alluvium Deposits	sc /////	Portland Cement Grout with up to 6%		(92.7 - 136.8') 356.6 gallons	>20% of the calculated volume due to potential grout migration and voids forming during drilling.
111  112		Alluvium Deposits	sc	bentonite hydrogel			voids forming during drilling.
 113  114		Alluvium Deposits	SM				
115 116 117 118 119		Alluvium Deposits	SM				
		Alluvium Deposits	CL				

<b>AR</b>	C/	DIS			Well Con	str	ucti	on Log		5	Sheet: 7 of 15
Date Started:		6/24/2022			_Surface Elevation:		622.3°	l ft amsl	Well I	D· TC	CS-01
Date Comple	ted: <u>0</u>	7/09/2022			_Shallow Well Elevati	ion:	N/A			<u> </u>	<del>50-01</del>
Drilling Co.:		ascade			_Deep Well Elevation		N/A		Client:	PG&E	
Drilling Metho		•			_Northing (NAD83):			67.19	•		GW Remedy Phase 2A
Driller Name:		Saldana / A			_Easting (NAD83):			65.89	Location	: <u>PG&amp;E</u>	Topock, Needles California
Drilling Asst:		. Amezquita	/ D Aldo	na	_Borehole Diameter:			8 inches			
Logger:		Ilen Redner			_Static Water Level:			og for Depths	Project N	Numbei	r: <u>30126255</u>
Editor:		ean McGrar	ne		_Development End D	)ate:					. 14/ 111/ 16
Total Depth:	2	80.2 ft bgs			_Well Completion:				To Be Con	npietea	in Well Vault
Ground Samp	dwater ble ID	Geologic Formation	USCS	USCS Class	Col	iistiuci	tion Deta	ans	Calculat Material Vo		Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
121		Alluvium Deposits	SM		(3.5 - 170.4') — 10" SHUR-GRIP SDR17 PVC Casing					2	
5 — — 2 — 126 — 3 — — —		Alluvium Deposits	ML								
128_ 129_ 129_ No. 130_ Ground		Alluvium Deposits	ML		(92.7 - 136.8') Portland Cement — Grout with up to 6% bentonite hydrogel				(92.7 - 13 356.6 gal		(92.7 - 136.8') 646 gallons (181%) Note: Grout seal second lift, used >20% of the calculated volume due to potential grout migration and voids forming during drilling.
Samp Collect		Alluvium Deposits	SM	••••	<b>6</b> ,			— (131.0 - 278.0') 16" Diameter Borehole			
133_		Alluvium Deposits	SW-SC		511						
		Alluvium Deposits	SM								
137 138 138 139 140		Alluvium Deposits	SM		(136.8 - 156.5') Portland Cement — Grout with up to 6% bentonite hydrogel				(136.8 - 1! 111.9 gal	lons	(136.8 - 156.5') 123.5 gallons (110%) Note: Grout seal first lift sea level, SS = Stainless

9	ARC	ADIS			Well Const	ruction Log	S	Sheet: 8 of 15
Date S	tarted:	06/24/2022			_Surface Elevation:	622.31 ft amsl	Well ID: TC	S-01
1	•	07/09/2022				N/A		
Drilling		Cascade			_Deep Well Elevation:	N/A	_ Client: <u>PG&amp;E</u>	
_		Dual Rotary			_Northing (NAD83):	2101167.19	•	GW Remedy Phase 2A
Driller I		J Saldana / A			_Easting (NAD83):	7615165.89	_ Location: <u>PG&amp;E</u>	Topock, Needles California
Drilling		A Amezquita		na	_Borehole Diameter:	15.5-18 inches		
Logge		Ellen Redner			_Static Water Level:	See Log for Depths	_ Project Number	: <u>30126255</u>
Editor: Total D		Sean McGrar 280.2 ft bgs	ne		_Development End Date: _Well Completion:		_ Го Be Completed	in Well Vault
Total	орин.				-	ction Details	To Bo Completed	
Depth (ft)	Groundwat Sample II		USCS	USCS Class			Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
141		Alluvium Deposits	SM		(3.5 - 170.4') 10" SHUR-GRIP SDR17 PVC Casing			
148 149 150 151 152	No Groundwate Samples Collected	Alluvium Deposits	SM		(136.8 - 156.5') Portland Cement Grout with up to 6% bentonite hydrogel		(136.8 - 156.5') 111.9 gallons	(136.8 - 156.5') 123.5 gallons (110%) Note: Grout seal first lift
		Deposits	ML .					
153  154		Alluvium Deposits	SM					
155 156  157					(156.5 - 157.9')			(156.5 - 157.9') 2 bags (133%) Note: Bentonite seal, used >20%
157 		Alluvium Deposits	SM :		Wyoming Bentonite — Chips - Holeplug 3/8"		(156.5 - 157.9') 1.5 bags	of the calculated volume due to potential voids that formed during drilling.
					(157.9 - 160.9')  Cemex #60 Mesh — (40x70) Lapis Lustre  Sand		(157.9 - 160.9') 4.6 bags	(157.9 - 160.9') 5 bags (109%) Note: Transition sand
	/iations: U	SCS = Unified	Soil Cla	ssificat	ion System, ft = feet, bgs	= below ground surface, am	sl = above mean s	sea level, SS = Stainless

9	ARC	ADIS			Well Con	str	ucti	on Log		Sheet: 9 of 15
l l		06/24/2022			Surface Elevation:			l ft amsl	Well ID: To	CS-01
	-	07/09/2022			Shallow Well Elevat				_	
Drilling	-	Cascade			Deep Well Elevation		N/A		Client: PG&I	
-	•	Dual Rotary			Northing (NAD83):			67.19	· ·	GW Remedy Phase 2A
20		J Saldana / A			Easting (NAD83):			65.89	Location: <u>PG&amp;I</u>	E Topock, Needles California
= 1	_	A Amezquita	/ D Aldona		Borehole Diameter:			8 inches		00400055
Logge		Ellen Redner			Static Water Level:			og for Depths	Project Numbe	er: <u>30126255</u>
Editor		Sean McGran 280.2 ft bgs	ie		Development End Development En	pate:			 To Be Completed	in Well Vault
1 Otal I	Бериі.					nstruct	ion Deta		To be Completed	III VVEII Vault
Depth (ft)	Groundwate Sample ID		USCS Code USCS	Class					Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
					(3.5 - 170.4') — 10" SHUR-GRIP				(157.9 - 160.9') 4.6 bags	(157.9 - 160.9') 5 bags (109%) Note: Transition sand
161					SDR17 PVC Casing	% % %  ::::::	· · · · · ·		zago	Troto: Transition cana
	No									
162	Groundwate Samples	Alluvium Deposits	SM ∷							
<u>-</u>	Collected	Boposito								
163										
<u> </u>										
<u>164</u>									<b>A</b>	
		Alluvium Deposits	SM 🔆							
165		-		+						
- –		Alluvium Deposits	SM 🔡	·   <u>-</u>						
166	TCS-1-VAS- 164-169	-		+						
	(1100 ppb)	Alluvium Deposits	SM ∷							
167	4/3/2022 10:50	Alluvium	SM ::							
90 -		Deposits	OW							
168										
<u> </u>		Alluvium	SM							
169		Deposits								(160.9 - 192.9') 72.3 bags (149%) Note: Filter pack, used >20% of
<u> </u>	<u> </u>									the calculated volume due to
§170					(170.4 - 190.6') 10" 18-Slot 316L SS		4		(160.0102.0!)	potential voids that formed during drilling. Swabbed the filter pack for
E		Alluvium Deposits	ML		Wire Wrap Screen — Screen				(160.9 - 192.9') 48.6 bags	approximately 30 minutes prior to the installation of the bentonite
<u>≸</u> 171	1		<u>, , , , , , , , , , , , , , , , , , , </u>		Screen					seal. Approximately 4.7 bags of
= -										sand passed through the screen during swabbing was subtracted
≝172_	1				(160.9 - 192.9')		<u></u>  ∷∷			from the actual volume installed.
) 	1				Cemex #1/20 Mesh (20x40) Lapis Lustre		<u></u>  ∷			
<u>ੂੰ</u> 173					Sand	<b> </b> ::::	∃∷⊹l			
H	1					::::	- :::			
174	1						744			
175	1					<b> </b> ::::	<b> </b>   : :			
§ 175	1	Alluvium				::::t	::::			
176		Deposits	ML :::				<u></u>  ∷∷			
<u>176_</u>	1						<u>-</u>  ::::			
177	1			[: :]			- :::			
177 <u> </u>				[][[			7:::			
7,995	1						::::			
[8]178	1						<b> </b>   : :			
 179_	1			1:1:1		:::: <u> </u>	<u></u>  ∷:			
F A. 1. 8.			-			::::}	<u></u>  ∷:			
180						[: ::	- :::			
	ا ا بمحردتاما	CCC - Unified	Cail Class	:£: £: _	Curtains # - fact	<u> </u>	لنصامط ،			soa lovol SS - Stainless

9	ARC	ADIS		Well Consti	ruction Log	S	Sheet: 10 of 15
Date S	tarted:	06/24/2022		_Surface Elevation:	622.31 ft amsl	Well ID: TO	CS-01
	•	07/09/2022			N/A	_	
Drilling		Cascade		_Deep Well Elevation:	N/A	_ Client: PG&E	
		Dual Rotary		_Northing (NAD83):	2101167.19	•	GW Remedy Phase 2A
Driller	Name:	<u>J Saldana / A</u>	Lamon	_Easting (NAD83):	7615165.89	_ Location: <u>PG&amp;E</u>	Topock, Needles California
Drilling	Asst:	A Amezquita /	<sup>/</sup> D Aldona	_Borehole Diameter:	15.5-18 inches		
Logge		Ellen Redner		_Static Water Level:	See Log for Depths	_ Project Number	T: <u>30126255</u>
Editor:		Sean McGran	e	_Development End Date:		_	
Total D	epth:	280.2 ft bgs		_Well Completion:	☐ Flush☐ Stick-up ☒ ·	To Be Completed	in Well Vault
Depth (ft)	Groundwat Sample ID		USCS Code USCS Class	Constitut	Cition Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
 181  182		Alluvium Deposits	ML	(170.4 - 190.6')  10" 18-Slot 316L SS  Wire Wrap Screen  Screen			
		Alluvium Deposits	SM	(160.9 - 192.9') Cemex #1/20 Mesh — (20x40) Lapis Lustre Sand	(190.6 - 214.1') 10" SHUR-GRIP SDR17 PVC Casing	(160.9 - 192.9') 48.6 bags	'60.9 - 192.9') 72.3 bags (149%) Note: Filter pack, used >20% of the calculated volume due to potential voids that formed during drilling. Swabbed the filter pack for approximately 30 minutes prior to the installation of the bentonite seal. Approximately 4.7 bags of sand passed through the screen during swabbing was subtracted from the actual volume installed.
193 194	TCS-1-VAS			(192.9 - 194.2') Cemex #60 Mesh (40x70) Lapis Lustre Sand		(192.9 - 194.2') 2 bags	(192.9 - 194.2') 3 bags (150%) Note: Transition sand, used >20% of the calculated volume due to potential voids that formed during drilling.
195	(<0.025 ppt 4/4/2022	) Alluvium Deposits	SW ::::::				
196	09:45	Alluvium Deposits	ML				(404.2 - 204.5)\ 20 km   1 - (402.2)
197 198 199		Alluvium Deposits  Alluvium Deposits	SW-SM	(194.2 - 204.5') Pel-Plug Bentonite — Pellets 3/8" TR30		(194.2 - 204.5') 12.5 buckets	(194.2 - 204.5') 20 buckets (160%) Note: Intermediate seal, used >20% of the calculated volume due to potential voids that formed during drilling.
200 Abbrev	<i>i</i> ations: U	SCS = Unified	Soil Classifica	tion System, ft = feet, bas	= below ground surface, am	ısl = above mean s	sea level, SS = Stainless

9	ARC	ADIS			Well Const	ruction Log	S	Sheet: 11 of 15
Date S	tarted:	06/24/2022			_Surface Elevation:	622.31 ft amsl	Well ID: TO	:S-01
Date C	completed:	07/09/2022			_Shallow Well Elevation:	N/A		<u> </u>
Drilling		Cascade			_Deep Well Elevation:	N/A	_Client: <u>PG&amp;E</u>	
Drilling	Method:	Dual Rotary			_Northing (NAD83):	2101167.19	_Project: <u>Final (</u>	GW Remedy Phase 2A
Driller I	Name:	J Saldana / A	Lamon		_Easting (NAD83):	7615165.89	_Location: <u>PG&amp;E</u>	Topock, Needles California
Drilling	Asst:	A Amezquita	D Aldo	na	_Borehole Diameter:	15.5-18 inches		
Logge		Ellen Redner			_Static Water Level:	See Log for Depths	_ Project Number	r: <u>30126255</u>
Editor:		Sean McGran	ie		_Development End Date:		_	
Total D	Depth:	280.2 ft bgs			_Well Completion:	☐ Flush ☐ Stick-up ☒ T	o Be Completed	in Well Vault
Depth (ft)	Groundwat Sample II		epoo Sosn	USCS Class	Odista	onon Betans	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
			ML			— (190.6 - 214.1') 10" SHUR-GRIP		
201		Alluvium Deposits	ML			SDR17 PVC Casing		(194.2 - 204.5') 20 buckets (160%)
202 		Alluvium Deposits	ML		(194.2 - 204.5') Pel-Plug Bentonite — Pellets 3/8" TR30		(194.2 - 204.5') 12.5 buckets	(194.2 - 204.5) 20 buckets (160%) Note: Intermediate seal, used >20% of the calculated volume due to potential voids that formed during drilling.
205 					(204.5 - 205.5') Cemex #60 Mesh (40x70) Lapis Lustre Sand		(204.5 - 205.5') 1.5 bags	(204.5 - 205.5') 5 bags (333%) Note: Transition sand, used >20% of the calculated volume due to potential voids that formed during drilling.
		Alluvium Deposits	ML		<b>3</b>			
208 								
211 		Alluvium Deposits	ML					(205.5 - 279.0') 170.6 bags (145%) Note: Filter pack, used >20% of the calculated volume due to potential voids that formed during drilling. Swabbed the filter pack for
213 					(205.5 - 279.0') Cemex #1/20 Mesh (20x40) Lapis Lustre Sand		(205.5 - 279.0') 117.8 bags	approximately 30 minutes and ran prealignment "dummy tool" prior to installation of the intermediate seal. Approximately 3.4 bgs of sand passed through the screen during swabbing and was
215 216 		Alluvium Deposits	SM			(214.1 - 268.9') 10.8" 18-Slot 316L SS Wire Wrap Screen Screen		subtracted from the actual volume installed.
218 219 		Alluvium Deposits	ML					
Abbrev	<i>r</i> iations: U	SCS = Unified	Soil Cl	assificat	ion System, ft = $\overline{\text{feet, bgs}}$	= below ground surface, ams	sl = above mean s	sea level, SS = Stainless

9	ARC	ADIS		Well Cons	struction Log	S	Sheet: 12 of 15
Date S	Started:	06/24/2022		_Surface Elevation:	622.31 ft amsl	Well ID: TO	:S-01
Date 0	Completed:	07/09/2022		_Shallow Well Elevation	on: <u>N/A</u>	ven ib. 10	<del>/0-01</del>
Drilling	g Co.:	Cascade		_Deep Well Elevation:	<u>N/A</u>	Client: PG&E	
Drilling	g Method:	Dual Rotary		_Northing (NAD83):	2101167.19	Project: Final 0	GW Remedy Phase 2A
Driller	Name:	J Saldana / A	Lamon	_Easting (NAD83):	7615165.89	Location: PG&E	Topock, Needles California
Drilling	g Asst:	A Amezquita	/ D Aldona	_Borehole Diameter:	15.5-18 inches		
Logge	er:	Ellen Redner		_Static Water Level:	See Log for Depths	Project Number	:: <u>30126255</u>
Editor:	:	Sean McGrar	ne	_Development End Da		_	
Total [	Depth:	280.2 ft bgs		_Well Completion:	☐ Flush☐ Stick-up ☒ T	o Be Completed	in Well Vault
Depth (ft)	Groundwat Sample ID		USCS Code USCS Class	Cons	Struction Details	Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
 221		Alluvium Deposits	ML		(214.1 - 268.9') 10.8" 18-Slot 316L SS Wire Wrap		
	TCS-1-VAS 221-226 (<0.025 ppt 4/5/2022 10:45	Deposits	SM		Screen Screen		
225	-	Alluvium	SW S				
226		Alluvium Deposits	SM				
		Alluvium Deposits	ML	(205.5 - 279.0')		(205.5 - 279.0')	(205.5 - 279.0') 170.6 bags (145%) Note: Filter pack, used >20% of the calculated volume due to potential voids that formed during drilling. Swabbed the filter pack for approximately 30 minutes and ran
230 231  232		Alluvium Deposits	SM	Cemex #1/20 Mesh		117.8 bags	prealignment "dummy tool" prior to installation of the intermediate seal. Approximately 3.4 bgs of sand passed through the screen during swabbing and was subtracted from the actual volume installed.
233 		Alluvium Deposits	ML :				
		Alluvium Deposits	SM				
236 		Alluvium Deposits	ML 000				
238 239 240		Alluvium Deposits	ML				
Abbre	viations: U	SCS = Unified	Soil Classifica	tion System, ft = feet, b	ogs = below ground surface, ams	sl = above mean s	sea level. SS = Stainless

9	ARC	ADIS			Well Con	str	uctio	on Log			Sh	neet: 13	of 15
	started:	06/24/2022			_Surface Elevation:	<u>(</u>	522.31	ft amsl	_ w	ell ID:	TCS	S-01	
Date C	completed:	07/09/2022			_Shallow Well Elevati	1 :no	N/A			CII ID.	100	<u> </u>	
Drilling	Co.:	Cascade			Deep Well Elevation	<u>1</u> :	N/A		Clie	nt: <u>P</u>	G&E		
Drilling	Method:	Dual Rotary			Northing (NAD83):	2	210116	67.19	Proj	Project: Final GW Remedy Phase 2A			
Driller I	Name: <u>J Saldana / A Lamon</u>			_Easting (NAD83):		761516	55.89	Loca	ation: <u>P</u>	G&E	Topock, Ne	edles California	
Drilling	Asst:	A Amezquita	/ D Aldon	na	Borehole Diameter:	_	15.5-18	3 inches					
Logge	r:	Ellen Redner			Static Water Level:	5	See Lo	g for Depths	Proj	ect Nur	mber:	30126255	
Editor:		Sean McGrar	ne		_Development End D	ate: <u>{</u>	3/24/20						
Total D	Depth:	280.2 ft bgs	<u> </u>		_Well Completion:	[	Flu		To Be	Comple	eted in	n Well Vault	
Depth (ft)	Groundwat Sample II		Code	USCS	Col	Structi	on Detai			alculated ial Volum		Note: percenta	lumes Installed ages are the actual calculated volume
241 242 243 244 245		Alluvium Deposits	ML					- (214.1 - 268.9') 10.8" 18-Slot 316L SS Wire Wrap Screen Screen		2			
246 247 248 249 250 251		Alluvium Deposits	ML		(205.5 - 279.0') Cemex #1/20 Mesh (20x40) Lapis Lustre Sand					.5 - 279.0 7.8 bags	),) t	Note: Filter pa the calculate potential voids drilling. Swabbo approximately orealignment "c installation of seal. Approxi sand passed t during swa	170.6 bags (145%) ack, used >20% of ed volume due to that formed during ed the filter pack for 30 minutes and ran dummy tool" prior to the intermediate mately 3.4 bgs of hrough the screen libbing and was in the actual volume
252  253		Alluvium Deposits	SM :										stalled.
		Alluvium Deposits	ML )	2000	6								
255 256 257	TCS-1-VAS 254-259 (<0.13 ppb) 4/7/2022		SM										
258 259	11:40	Alluvium Deposits	SM										
260 Abbrev	viations: U	SCS = Unified	Soil Clas	ssificati	ion System, ft = feet, l	نننا as =	below	ground surface, a	nsl = at	oove me	ean se	ea level. SS	= Stainless

06/24/2022 : 07/09/2022 Cascade Dual Rotary		_Surface Elevation:	622.31 ft amsl		
Cascade				─ Well ID: TC	CS-01
		_Shallow Well Elevation	on: <u>N/A</u>		<del>// / / / / / / / / / / / / / / / / / /</del>
Dual Rotary		_Deep Well Elevation:	· · · · · · · · · · · · · · · · · · ·	_ Client: <u>PG&amp;E</u>	
		_Northing (NAD83):	2101167.19		GW Remedy Phase 2A
		_Easting (NAD83):	7615165.89	_ Location: <u>PG&amp;E</u>	Topock, Needles California
		<del></del>			
		<del>-</del>	- · · · · · · · · · · · · · · · · · · ·	_ Project Number	r: <u>30126255</u>
	<u>ie</u>			_ Fo Be Completed	in Well Vault
		•		то ве сотприска	III VVCII Vadit
Geologic Formatio	USCS Code USCS Class	00		Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
Alluvium Deposits		(205.5 - 279.0') Cemex #1/20 Mesh — (20x40) Lapis Lustre Sand	(268.85 - 274.01') 10" SHUR-GRIP SDR17 —PVC Sund 316L	(205.5 - 279.0') 117.8 bags	(205.5 - 279.0') 170.6 bags (145%) Note: Filter pack, used >20% of the calculated volume due to potential voids that formed during drilling. Swabbed the filter pack for approximately 30 minutes and ran prealignment "dummy tool" prior to installation of the intermediate seal. Approximately 3.4 bgs of sand passed through the screen during swabbing and was subtracted from the actual volume installed.
Competent Bedrock -	*	(279.0 - 280.2') Native sediments	— (278.0 - 280.2') 15.5" Diameter Borehole		
to d	A Amezquita Ellen Redner Sean McGrar 280.2 ft bgs  ater ID  Alluvium Deposits  Weathered Bedrock - Conglomerate Competent Bedrock - Conglomerate Conglomerate Conglomerate	Alluvium Deposits SM  S-b)  Weathered Bedrock - Conglomerate  Competent Sedrock - Conglomerate	A Amezquita / D Aldona  Ellen Redner  Sean McGrane  280.2 ft bgs  Alluvium Deposits  SM  Alluvium Deposits  SM  SS  SS  SS  SS  SS  SS  SS  SS  S	A Amezquita / D Aldona Ellen Redner Sean McGrane Development End Date: 8/24/2022  280.2 ft bgs Well Completion: Flush Stick-up Thus all properties of the pr	A Amezquita / D. Aldona Borehole Diameter: 15.5-18 inches Sea Log for Depths Project Number Sean McGrane Development End Date: \$2842/0222 280.2 ft bgs Well Completion: Flush Stick-up X To Be Completed Material Volumes    Sear McGrane

9	ARC	ADIS			Well Const	ruction Log	;	Sheet: 15 of 15
Date S	Started:	06/24/2022			_Surface Elevation:	622.31 ft amsl	Well ID: To	CS-01
Date C	Completed:	07/09/2022			_Shallow Well Elevation:	N/A		
Drilling		Cascade			_Deep Well Elevation:	N/A	Client: PG&I	
_	Method:	Dual Rotary			_Northing (NAD83):	2101167.19	•	GW Remedy Phase 2A
Driller		J Saldana / A			_Easting (NAD83):	7615165.89	Location: <u>PG&amp;I</u>	E Topock, Needles California
Drilling		A Amezquita	D Aldo	na	_Borehole Diameter:	15.5-18 inches		00400055
ੁੱLogge Editor:		Ellen Redner Sean McGrar	10		_Static Water Level: _Development End Date:	See Log for Depths	Project Numbe	r: <u>30126255</u>
Total E		280.2 ft bgs	i <del>C</del>		_Development End Date. _Well Completion:	☐ Flush ☐ Stick-up [	—— ╳ To Be Completed	in Well Vault
I DA					•	ction Details		
Depth (ft)	Groundwat Sample II		USCS	USCS Class			Calculated Material Volumes	Material Volumes Installed Note: percentages are the actual volume vs the calculated volume
L PRO				x x x	LAX		,	_
								o' V
						/		
285							8	
286						0		
287 - 287					(A)	()		
288								
289								
290								
290_								
≘								
NOIL _								
_292_				V				
× – –								
293								
					6111			
NO. T								
<u></u>								
298								
MARCA —								
299								
ON DET								
300 Abbrev	viations: I	SCS = Unified	Soil Cla	assifica	tion System, ft = feet, bgs	= below around surface	amsl = ahove mean	sea level SS = Stainless
$\sim$								llow blue water table marks

represent depth to water (ft. bgs.) collected during the specific capacity test from the upper and lower screen intervals, respectively.

## **Attachment 6**

Well Development Log



8 3 1017 - 8 25 172	
Well Development Record Project Name: DGSE Topock Phase 2A GW Remedy	PG of
Date(s) \$13/2022 Tm of 9/22 Project # 30126255 Arcadis Oversight: Daniel Bernasia	ACLIDIS Job Title: Project Geologist
Well ID TCS-1 Measuring Point (MP) 1.50 Total Depth (ft. BMP) 266. \$2 Scree bgs)	in Interval (ft. 214.12 - 268.85
(ft. BMP): 166. 48 DTW (ft. bgs): 164. 98 Water column 99.54 Diameter of well (in.): 91	14" Gallons in well: 347.34
3.4 Cot Rig operator: Dom Gonzalez Rig type: Development Bailer make and size: 276 × 10	S Water L/A
and size: 9 × 5 Pump make and size: 60 vids 85 65 50 , 4"	source: N/D
	mg/L) Notes/Gallons I 7
10:28 Tag - 166.48 266.02	soft bottom
10:41 Begin bailing	THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TRANSPORT NAMED IN COLUMN TWO IS NAMED IN COL
11:11 Collect Inhoff cone - 70 % L Sand 580 / L Total Salids	s after 2 hours sign
12:00 55-gallons drum full, advised not to pump w	ATU INIT
	E & Otri Aur
13:13 GWP arrives w/ poly tank, pump off drum	
13:23 continue bailing	iolids after 30 minutes
13:39 COULCUT PHOTOLIC COLLE	501:05 2112 30 10000
* 14:15 Switch out bailers - 3/8" x 10.6 stainless	steel
14:17 Tag - 166.40 271.54	Sandy bottom
15:19 55 - gallon drum full - pump into poly tote	
15:27 - Firished for the day - 110 gallons 1	sailed —
8/4/2022	
10.37 Tag - 15492 272.10	sandy bottom
15.71 KENGSEG ST.	3/8' x 5.5'
	OM/ 1 850 my/ after
	sand Testal Solids 3.13
11:25 Tag - 166.69 269.90	Sandy bottom
12:02 Tag - 166.57 271.13	Sandy bottom
3:00 Tag 270.23	Sondy bottom
13:50 Tag - 166.57 270.37	Sandy bottom
14:30 Tag - 166.53 270.50	Sandy bottom
14:32 Switch to swabbling - will begin 5' above sample 10 and Time: TC5-1-268-082422 @ 1522	last TD tag
Total gallons removed at completion of development: 13,150-25	
Arcadis Staff: Daniel Bernasconi	

TCS-1 - Well Development Record



Date(s)	8.	The Me	वावारा	Project #	30126255		Arcadi	Oversight:	Daniel	Bernas	Well ID	2 or 14 TCS-1	
13:3		nofer	GPM	DTW (ft. BMP)	Total Depth (ft. BMP)	Temp *C	pH (± 1.0)	ORP (mV) (± 10.0 mV)	Cond. (µS/cm) (± 3%)	Turb NTU (<10.0 NTU)	DO (mg/L) (± 0.3 mg/L)	Notes/Gallons Removed/Water Clarity	Noss
14:	48	-	pump	pump	d	run	inte	po	ly to	te,	coll	ect 7 25 go	Mens
15	03		50	mp 16	- h	bot	112	trem	Las	+ 0	ailei	downhole -	
			54	ab	gette	5.						to f.7	
			bel	ter.	W	lent ·	back	do	va '	hole	and	got	
			hu	5	p or	to	a af	bo	Hom	Sire	ed i	nterval.	
			to	o b	LK o	4 0	he	le a	and	+1: w	med	wifer.	
15	:30	-		-wis	hed.	tor t	he o	day	1 80	gal	ons	bailed —	
	111						3/	ce					-
069	111	ag	C	100.5	\$ 270.	10	Luc	-1	- T	270	21	-	
			1 3 3 3 3 3		111	L 4		000	40000	Su	160011	s wev.	
07	1.04	1		+=	1	Mari	-14	Sandl	ine	toc	Swa	b interval.	
n.	20	R	0-1-	51.10	hhine	inte	ruta/	760	.0-	462.	9	100	
0	1.45	EN	de	Jahhi	ne	260.0	-265.0	0	TOC	Mar	KA	ext Intern	
							- 01	-	111				
W.	1/4	1	1 5	wabt	ma	1500	-	. 0	010	- Par	ark	next inter	
40	.20	0			الم م	250.0	1 45:	-	DIOC	33000			
100			10	1 1 1		1460	750	20	hinc			next Interv	
01	3150	54	art.	rwab	oing :	1450	- 250	0.0	2000	ma	rk ne	at Interval	
0	1:15	Eno	1 5	Charb.	bing	240.0	-246	.0	btoc		0.0		-
0	7.4	F	1 6	albin	9 2	40.0	- 245	.0 1	stoc,	mar	k next	Interval	
0	149	10	vck	Reg	0								"
	9:51			0011	00	b 23	5.0	Mark	on	Sendlin	ie and	tag @ 235.	1/
-	. 24	, )		270	54	-		242.0	1.1.				
100	:43		in S	wa bb	ing	235.0	-	240.0			1	nect Intervo	
1	1:08	€.	1 5	wall.	1/19	2350		40.0	bto	,	WK V	ME ME VI	
12	110	Ber	917	swab	1	2300		35.0	btoc	100	ext	next interum	1
12	1:36	Eno	1	Swabi	ng	230.0		30.0	bto	DESCRIPTION OF THE PERSON	Y	TO TO TO	-
1	1:42	Sto	wt	Swa	bong	225.0	, ,		0,10		199		

TCS-1 - Well Development Record



Da	te(s)	7-5-	ajatra	Project 8	30126255		Arcadi	s Oversight:	Daniel	Berna	Well ID	3 or 14 765-1
-	Time	Task	GPM	(ft. BMP)	Total Depth	Temp *C	pH (+1.0)	ORP (mV)	(µS/cm)	Turb NTU	DO (mg/L)	Notes/Gallons Removed/Water Clarity
1	3.15	tha	Swa	pylog	225	0-23	0.0	stoc.	Mari	K AP	+ m	terva) i
-		icuse	1 5	wabb	ing.	between	12:	54 a	nd 1	3:00	10	set up railing
L	3:16	Beg	n Su	vabb	ng 2	20.0-	225.	0 6+	oc -			
1	3.41	End	Swo	bblo	22	P.O -	225-0	b to	c. 1	nork	neas	Interval
1	3:46	Tag	Sw	ab	on t	20 of	lowe	+ ser	een	at.	214.6	.8
1	5.53	beg	n 50	unbb!	9 6	15.0	to 2	20.0	Pto	-		
1	4:18	End	54	666	29 2	15.0	to	220.0	640	-,-		
1	4:19	Tag	166.52	1	270.3	1 -	2				, ,,	10
1	14.20	Tolg	w	per	an to	p of	49	er s	ereer	0	170.	) >
1	V: 03	beg	the s	wasb	ing	1874	- 19	1.0				
-	5.00	End	Sw	4661	75	187.0		7.0				
	5.06	reng	1	1-1-	1 6	И	1		do	11005	COM	nued —
	13./0		Im	isne	4 401	-8-	10-	2021	1 9	11012	TON	oved -
	אמיפת	1.	-	1665	4 290.1	41 -						
	1010	20			spine	182	10-1	87.0	6-	ac -		
	15.0	Deg	1	, abl	9	182	.0-	187.0	bt	oc -		
		0 1		11//	19 7/9	ACI				CO MARKET		
	15.50	2	-	Fi	shea	for	the	day	- 6	galle	on s	enoved -
	-					- 8.	7-2	022	-	9		removed —
	04:33	Tag	-	166.6	0 269.	90 -	15.	see (	comme	nt be	low	
	06:48	8 Bes	in s	swat	bing	-199	7.0	84.0	99.0	89.0		
	07:13	En	d si	wabb	ing -	179.0	-18	1.0-	Ma	TE Nex	it into	erval
	07:20		1	00	f w	iper.	at	79.0	mai	A -	lag	10003 101
	10-		1 - 9	اان	up con		میں	and	1 1 1 1 1 1	eck	other	
	-			mar	ks as	e of	F. L	ikely	Sla		n lin	11100
	-	-		thet		Syrami		wil	1 0	onth	ve su	along team
	-	-		COLL	e a ted	dept	1.	7	- 10	40	17/6	et zamin )
	07:24	1 Be	gh	Swal	sbing	100	9 1	16.5	710	4.0	17.5	2 30 2000
	08:0	-		wabl		176.5	Name of Street, or other Designation of the last of th	4.0				
)	081	54 B	egn	Swa	bling	171.5	- 171					
	08:7	E E.	nd Su	Meddan	9 1	41.5-	176.					

TCS-1 - Well Development Record



2		am	والالماء	Project II	30126255		Arcad	dis Oversight	Deniel	Bernas	Well ID	TCS-1	
	Time	Task	GPM	DTW (ft. BMP)	Total Dept (ft. BMP)	h Temp *C	pH	ORP (mV)		Turb NTU	DO (mg/L)	Notes/Gallons	
	08:41	Taig	-	-	269.9		(±1.0)	(± 10.0 mV)	(± 3%)	(<10.0 NTU)	(± 0.3 mg/L)	Removed/Water Clarity	
	08:43	-	lect	Sav		in bo	H16 6	ran S	Root	6-110			
	08:46	6	lect	1ml	wiff.	sample	face 1	and ha	Nec	160	omly sh	784 19 BUY	Total after
	08:52	( ara			270.6	1 -	114-1			60	114	111 700	soleds hour
	09/11	Tag	_		269.2								
	09:34	Tag			270.0	N Contract of	-	N	PRODUCTION OF THE PROPERTY OF				
	09:57	Tag	_		274.1		Pump	off 5	5 gal	on dr	m %	HS gallons	
	10:46	Tag	1		272.3				792				
	13:10	-	mp	aff s	55	110-	deua	1 16	40	- 11	. 0		
	13:19	Tag	-	166.55	174 6		CHOIL		10	gallor	u of	water	
	14:05	Tac	-		174.6						100000		
		_ ,	Poll	et !		for	Les	h . 1	or la	·C	- 9-1	ning to small	
	14:08	11	la.L	1.6	. of	11000	ius i	11	10-	Mo	Al/, SANO	190 my 15th	1 40 After
	14:28	0	lect	Zm,	· H (	one t	nm 14	7 600	ier	140	,	110. 12 5031	lites After
	-	חי	1 30	105	70	bottom	ut	hole	an	d (	ag 1	op at	
)	14, 977	w	iper	at	24	0.3	btoc	( 1)	4				
	11.07	beg	111	swabb	ing	265.0	- 270	0.3	goc				
	-	- 100	this	1~	tervox	Not	Su	robbe	d $d$	uring	firs	t round	
		du				fect							
												swab	
		Som	e )	nter	ral	agawa	Lon	voriou	, we	orking	up	me hole.	
	14:45	Pun	red	off	55-9	ullan	drum	2 1	5 ga	llons	2 6		
		Marie .	2	20 9	well as	af	sand	M	bo Ho	n of	55	- gallan	
		da	m t	a	10	12 4	he z	BC 1	tote.				
1	5:02					70.3							
7	5:0	-	1	shed		r the	1	ay .	THE PLANT	SPASS CO.	llons	bailed-	
-1	5118-	lag	-		74.6	9 -		J		0		1100	
-		-		-	8-	8-	2022	_					-
-	0110 1		- 1	66.83 2									
	10 TO	ag		19273		216	2	1272	bto				
		Begr		Jabbi	100	265.	AND THE PERSON NAMED IN	CTOTOGO PATRICIL		Charles Services 197			
	8!53	End		661	9	265.0	1- 27	0.3	bfoc	1 mes	V nex	t interval	
) of	8:55	Begli	1 5	wast	ning	260.	0-26	55.0	Pte	٥٥			
0	9:20 8	End	100000000000000000000000000000000000000	bbing	26	0.0	- 269	5.0 6	toc,	mar	k nex	t interera	1

TCS-1 - Well Development Record



	22/2010				Total Depth (ft. BMP)	100000000000000000000000000000000000000			Cond.		DE CONTRACTOR	5 of 14 TCS - I Notes/Gallons Removed/Water Clarity	
	11me	Task	GPM	(ft. BMP)	(tr. emp)	Temp °C	(±1.0)	(± 10.0 mV)	(± 3%)	(<10.0 NTU)	(FO.3 mg/c)		
0	9:47	· En	J S	wald	ma.	255	0 - 7	60.0	· N	wK	next	mterna/	
	_	- 1	light	nina	Ste	nddoc	UN	(15)	miles)	-			
1	0104	K	dala	SINO	Lhha	25	0.0 -	455.	0		1		
1	0110	6	5+	Swa	4 - 6	andlin	e b	roke	+ w	11/	90 4	shing	
1			Ca	cade	101	mong	0 40	H. w	1 5.	- 1h	anllo	night as removed-	
V	1:25			-	- X	9-	202	2 -	7	4	7		
1	2.21	1	-	1665	269.9	0 > 5	wab	los	+ 52	well.	_		
1	13:28	6.		Limia		hole	C:6	hudo	ullic.	amp	Cers +	ting	
			stop	w	irk,	cusc	nde	picks	UP 1	nore	hydra	vice flood	
	15:00	0 -		C.	sal de	-							
	16:10	F	ish	Swa	b 0.	4 0	w	ell -	6	0.0	11005	removed -	_
	_			tinis	hed	ter	- 70	2/2	- 1	4	4110.00	removed -	
1			1	14.			ALC: NO.						
	011	2 3	100			7500	- 25	5.0	pre	wously	scral	bed for 5	
													rics.
	8:23	3 8.	1 1		ine	250.0	- 52	5.0	meas	ure 3	Mark	next Interva	
	08:5	HE 0	851	End	sumb	211	2012	15	.0,			mark next in	
	08:	58 B	egin s	wash	ing	240	0 - 2	45.0	,	mark	next	interval	
	09:	20 2	nd :	Single	Lina	235	5.0 -	240.0	_				
			Stop	(40)	K to	- A	thony	7.00	5 (	Safety	4) +	inspect down	nerts)
	09:	12 2	esun	50	noboh	9 6	55.0-	- 410	.0				
	12:	37 E	end	SWA	وملطط	25,	0 -1	240.0		nark	next	Interval	
	10:	38 8	Segin	SW	abbla			- 250		4		interval	
	111	03 F	103	Charle	bina	750	0.0	730		nak	ner	140000	
	11:	05 1	Beyon	Suro	bbing	72	5.0	- 73	10	MATK	rext	Interval	
		AP1 /	COLUMN TWO IS NOT THE OWNER.	6 - 100	bblng			-	-	Nan I	10011		

TCS-1 - Well Development Record



	Date(s)	mala	tr	Project #	30126255		Arcadi	s Oversight:	David 1	Jernasco	Well ID	Tcs -1		
-	Time	Task	GPM	DTW (ft. BMP)		Temp *C	pH (±1.0)	ORP (mV) (± 10.0 mV)	Inches	Turb NTU (<10.0 NTU)	DO (mg/L) (± 0.3 mg/L)	Notes/Gallons Removed/Water Clarity		
1	13:18	End	SW	albha	22	0,0-1	225.0	, Me	rK	next	int	erval		
-		- 11		a bblne	21	5.0-	20.0	-			. 4	wer		
				bly			20.0		nish	ed c	1/ 7	screen		
	14:03	Begi	SW	abbla	19	1.0	187.	0 -						
	10.7			0			187.0							
	14155	End	in Si	V6561	19 1	7.0	- 182.							•
	14:5	End	50				- 17			1.00		_		
	15:2	o Eo	th s	wahl	100	182	0-1-	77.0				<u> </u>		
	15:2	o Ba		Swab	biso	172	1.0-1	77.0	,					
	15:4	5 End	1 5	wabb	ng	172.0	0 - 17	4.0	-					
		8 Tag	ROW THE RESIDENCE OF		\$ 274.3					,				
	_	0		- Fin	ished	for	The o	lay	+	Ø ga	Mrs 1	Renoved -		
-				8-	11 -	202	2 -							
	06:5	9 Tag	-	166.70	274.3	2 ~	1.19	Sund	sedim	ent				
,	07:3	15 Be	gin	Bail	ing	-		C ,	1 7.	- 6 -	Laff-			
	07:4	11 6	nect	wat	er sn	re t	nom +	Sand Sand	85	my/L	EdAles!	solids after 1		
	-	-		aft c		N C	m La	1 1	11-0	B 1	h - 4 - 0	~		
	08:4	is Col	lex4	water	Cone	8	ny Lsa	nd 73	M	1 Total	ed Solids	atteris?		
	-	101		1112	7 7514	70 -			100		1959	hard		
		19 Tag		no	- 2	.1 -	drum	, ~	35	gallons	s wo	ter.		
	09:0		000	and .	MAP	asire	ler 4	14 +	00	Comme	1010	cerror p	ule.	
	10:	4	1	Ala	0	-	hee M	100.11	4 1 1		PIP			
	10			100		V 6	1	1 1 1	~ in	sulate,	c. 19	CKCT.		
		0.7	200	I DY	101	1.1		10 0	0 con	31 W	Wate	IN PROPERTY.		
	1	1 23	Casa	nde	will	brin	y at	nec	U 500	ol an	0 50	et purp nex		
	1	- 20		1		5000 House	CONTRACTOR OF THE PARTY OF THE	1000	MARKET - NA		STATE OF THE PARTY OF	COLUMN TO SERVICE AND ADDRESS OF THE PARTY O		No.
	-		- F	in ish	ea	ter	the o	lay -		emou	1 0.	5 gallers —	=	
				100			- 0	10 7	-			^		
D					-	15	ee ?	)						
			-	11/10		100								

TCS-1 - Well Development Record



0	late(s)	mal	2/0/2	Project #		PG&E Topoc		o Oversight:	J Hur	remoder	Well ID	TCS-1	
	Time	Task	GPM	DTW (ft. BMP)	Total Depth (ft. BMP)	Temp °C	pH (± 1.0)	ORP (mV) (± 10.0 mV)	Cond. (µS/cm) (±3%)	Turb NTU (<10.0 NTU)	DO (mg/L) (± 0.3 mg/L)	Notes/Gallons Removed/Water Clarity	
	(B30	Tag	-	146.74	27470	_			3017			Solid bottom	
	1446			ache	-	Α.	0		1				
	1456	1	thei .	test	1	on ple		pass	(d)				
	1502	11	yeril		cleer	to 5	reep	74 1	-				
١	1534	-	1 was		eak erila	pack	,						
Ì		Po				TOX #		dep	th -				
Ì	1550	300000000	70700	1	THE F	ihisle		+ A		ry -	Ø 04	Mons removed	
1					-8	117/20							
	<del>00</del> 4	4700	3/	166.8	-	-					, ,		
	094	y Tag	-	166.8		from .	1		1	pach	(24)		
	0947	P P	4	- I	Si Si	urgei	Sterr	(Pu	ino o	7)			
	094	1	urge		1							-	
	094	10 100 200	urge	3									
	095	10	rge	2									
	1102		1 1	ation	of	YST	ana	e fuel	odity	mes	for co	implete	
	000	-											†
	1105	Too	) 166	166	182	1						110-0/0-0	
	1106	7	Buida	.0 "	11	31.2		7 239		38.6		very clear.	
	#	The second second	" "		-	201	JA 7.39		9 3731		-	TA CONTRACTOR OF THE CONTRACTO	
	11 16	Stop	40.	10.270	20	30.6	1	COLUMN TOWNS TO SERVICE AND ADDRESS OF THE PARTY OF THE P	1 803	THE PARTY AND DESCRIPTION	44.	THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.	
		1 from	P	168			9 1.0		0				
	114	3	/	100%	= (189	1)_							
	115%	0	ge 1		-								
	1155	0	sge 3		_								
	115	-	rige	ALC: NO DESCRIPTION OF	-								
	1150	10	rge			+							
	1200	10	ang	15 0	18	2	-		0 -			7 1100/	
	120	0	1 g 4	3 1663	76 (189	130.	875	4 17	1.2 855	11.0	1 49.	7 very cle	er
	120	47	141	168	B "	30.	77.9	311	1.986	45 5.	4148	.71	

TCS-1 - Well Development Record



>	ate(s) O	m 2/9	132	Project #	30126255		Arcadis	Oversight:	J.ALO	xande	Well ID	TCS-1	
		Task	GPM	DTW (ft. BMP)	Total Depth (ft. BMP)	Temp 'C	pH (±1.0)	ORP (mV)	Cond. (µS/cm)	Turb NTU	DO (mg/L) (± 0.3 mg/L)	Notes/Gallons Removed/Water Clarity	
1		15.00		The second second	-		THE PERSON NAMED IN	THE RESERVE OF THE PARTY OF THE		The second second		clear	
	1212					lyn	e =	1048	.21	gall	ons		
	_			Lh.	shed	for	e = 1	lay			2013		
	_				- 08/1	8/22	-	-	1				
	0718	Tag	-	166.85	pum	pinto	ke o	A 22	2			74.97.26	
		Sur	321	_		'					_	)	
		Sug	Complete Com	_								(22.11	
		Sur		-								28.16 gal	
	2180	Su	1ge 4	_	Con Live		1 100						
	0815	Su	gr a										
		Top Pupu		166.8	222	maa	7.39	100 1	8412	270	244	, ,	,,
ŀ	0000	Propri	U19	8 168 .82		299	145	140.4	7992	3.02	43.1	265 (cumula)	(ve)
ļ			A STATE OF THE PARTY OF THE PAR	8 148.8	The state of the s	25.9	7.44	169.0	8062	1-93	45.9	415 fotal	,
		Pur			и	_						487.25 6/1	
Ì		Tax		166.85	pur	الما وب	alce o	1 (20	12')	-			
Ì		Su						)					
I		Sur										)	
	0920	Sur	923	-							-	(509.7 foto	1
		Su										Pas	
۱	0924	Su	ige S	_	N	1	- 0.0			-72		7	
	092	Pung	,41	166.74	242	150.4	7.85	174.1	1413	142.1	17.5	700 11	
l	093	Vum	40.9	168.7	1.	30.9	7.72	164.	19514	18.5	30-1	900 fotal	,
	0935	Tump	40.5	1687	il	>0.5	1.50	176.	800	4.82	95.8	900.82 fotal	1
	09	Penn	POH	168.1	610	A -						1018.22 104	
	1035	Tag		100.8	268			-		-	-	5	
	1035	Sur	Je 1									1	1, 6
		Sa										(1040.62 9	al
		Su							10000		100	So for	
		Sur						1900				)	
		Tog			-								
	15 16	100		1-0-0									

TCS-1 - Well Development Record



	rate(s)	4	8/20/21		oject Name:	PG&E Topoc	k Phase 2A C	W Remedy Oversight:	J. AG	Example		9 of 14 TCS-1	
Γ	7	ml al	apr				Aicean		Cond.			Notes/Gallons	
-	Time	Task	GPM	(ft. BMP)	Total Depth (ft. BMP)	Temp *C	pH (±1.0)	ORP (mV) (± 10.0 mV)	(µS/cm) (±3%)		DO (mg/L) (± 0.3 mg/L)	Removed/Water Clarity	1001
	21275000000	0	40.16	-	(268)	32.0	8.42	114	21018	76.4	51.7	119.14 tota	1 -1
1	1055		40.0			30.5	7.85	90.8	9782	9.04	32.4	1236.12 John	1901.
1			39.38			30.4	7.67	112.8	8518	3.33	48.3	1448.50 fd	Lacel
- 1	1105	^	940.16	168.83	4	30.4	1.5+	130.9	8276	-	54.1	1215.92 to	falgal purges
3	11007	Pina	08			ecifi	Ca	4	7	ect.		14.5.72	9 7 0
	120	Tie	10.00	1110	100000000000000000000000000000000000000					-			
	1311	1	lower	0,		Jane	upp	10	1 00				
	1317	-	low	_	The second secon	Tou	a upi	sec 1	6.83	-			
	1405	_	36.9	4 169	5 (268)	30.5		98.8			45.4	1335 gal	
	1410		38.2	6 169.7	K		7.49					1511 gal	
	1415	1.		0 1697			7.48					1706 gal.	,
	141	7 pu	mp	off	-		10	,	1			1790.00	gal
	142				Fin	shed		1 1	/	1 - 3	505-9	2 gal remov	201
7		-			-	.0.	01	19/2	-	+ 1		e.)	
,	~	-	1-		The second second	i ti	Cay	Care	110	90'	be Co	e preker ille	(e)
	102				166.88	110	ang u	The	166.	85' (	after	scike in Pla	
	103	-		Mort		pump		1-1	1				
	105	7 19 40 1	-31			she	e fo	or the	day	(00	gallon	s pumped) -	
				0.00	0	8/20/	22 -		1	THE VE			
		-			-Spe	efic	cap	deity	tes	t Conf	per si	cher was alr	ed4)
	09	15 ]	ang 1	owe	166	919	ing !	Uppes	11603	166.9	3 (	her was alr	
	00	41	Po	to p	where			7.A	. 08/2	ofez (			
	04	==	Qe .	o e									1 (20/12
	08	35 1	est ·	3 fact	(pum		2 (4	d us	a 11-	1 06	4 103	1537.54	3408/20/22
	04	B-07	1 22	166	.97	29			3 11-	NAME OF TAXABLE PARTY.	4 106.	1000	
	09	1	22	40	11	20	v 13	1 186	6 44	72.7	2 106	4 1608 58	gal
	09	-	-	THE RESERVE	11	79	7 7	31 195	044	10 0.6	7 106		gal pumped,
5	091	18	22	-40 B	nselike		op.	test &	end	+			-
1	) -	15 To		- 166	1 1	and	potto	-	27	1.70	-		
	140	15 10	7	100	- 1	1 0	h	- 10	1.		He	The output	- J. Merende

TCS-1 - Well Development Record



Di	ate(s)	120/20	19/22	Project #	oject Name: 30126255			s Oversight:		Kemde	Well ID	TCS-1	
1	Time	Task	GPM	DTW (ft. BMP)	Total Depth (ft. BMP)	Temp *C	pH (± 1.0)	ORP (mV) (+ 10.0 mV)	Cond. (µS/cm) (± 3%)	Turb NTU	DO (mg/L) (± 0.3 mg/L)	Notes/Gallons Removed/Water Clarity	
	1525	Bea	in s	wal	TRANSPORT NAMED IN	inter	The second second	, ,	-270	,		Design of the last	
	1550		The same of the sa	-	bbing	inter	val.	265'.	270	. –			
ť	550	Tag	-	166.73	274.70	soft	botton	-					
-	_	/		F.413	hed	for -	tue	oldry	(165	3.12	gal p	unped -	
F	-				AND ASSESSMENT OF THE PARTY OF		1/22	1 1					
п	0735	1	-	166.9			oft b		2 -				
н	0745	-	110	O TOTAL PROPERTY	by white	1	260'-		_				
Г	0810	^	_	wabb	-	1	260'		-				
-	0810	0	-	wal		terv	0	55 .	1				
1	0839	0		11	to has			3-25					
-	0635		-	wable	-	terra	,	0-25	1		100		
1	0900	^		Swall	111	ten	,	15'-2	1				
-	0925	-	1.		bing	Lifer		415'-					
	0925	0	The second		5,49	when	_	240'-		200		90000	
	0950	-	1	walls		interi		240		-1			
	0952	0		swal	11	In ter		235'-	240	ena	lat	1015	
3	1015	0 6	gih .	swale	6143	In ter	val à	2	30'-	235	eno	at 1040	
	1040	B	egh	Swar	Spring /	Herva	-	25'-		, en	dat	1105	
	1105	Be	igin	5 was	bling	inter	val 2	To the party of the last	/			1130	
	1130	Be	gih	swab	bling	inter	val;	215-2	20	, as	nd a	1155	
	1155	Toro			6 2745			How).	1				
	(249	5 tra	ok c	able	for					5			
	1315	Be	2/2	gwal	bb. ing	The second second		187 -	192				
	1340	Er	TO THE OWNER OF	wable			icual	-	107	,			
	134	Be	igh	Swal	phy		real	182					
	140	-		Swab	11	11	erval	(200) Total (200) (200)	-187		. 1	\$ 1450	
	140	0 0	gin	gwa	11	1-16	0	177	-182	1		at 1515	
	145		ging		abbin	-	erval	172		T, e	101	1513	
	1515	2	3	166.8		42 (	soft	botto	7				
	1522		gin	baili	2	10	1	1	4				
	152	\$ 200	1100	100	1	71	8/21/22	- Per	7				

TCS-1 - Well Development Record



		- 3.	w alet	Project #	Total Depth		pH	Oversight:	Cond. (µS/cm)		DO (mg/L)	Notes/Gallons	
	Time	Task	GPM /	(ft. BMP)	(ft. BMP)	Temp 'C	(±1.0)	(±10.0 mV)	(± 3%)	(<10.0 NTU)	(± 0.3 mg/L)		
ŀ	1528	Coll-	ect w	afer	Sample	e foo	n 15		riler	& Los	hoff	cone.	
1		/ //	Link	off	cone		MIL	Sand	-	O MYL	Section of the section of	Solids	
1	1540	-	Andread Control of the Control of th	n_	ysus	V Accessors				) bad		inhoff core.	
1	.0	-	mhor		12 50		120 1107	1,8	10.11	L TOP	4 Soll	ais .	
1	1541	109	-		270	4.70	hard		-	- 11	- /	1/0-1/-	
				inis	hed		Ree.	day	(10	gallon	5 60	100)	
		T		16. 0-	I COMMON DESIGNATION OF THE PARTY OF THE PAR	122/		// 1					
	0800	lag		700	274.70	1		0.7			1 1	-42-	
	0810	Sea	1	wald			ul 17:		Date of the last		1 4	0835	-
	0835	Be	1		billia	1	val 1	1	1	and		0900 Lupp	een
	0900	154	gh	Swal	111	. ,	rval	1	- 187	1	10122000	0925 50	
	0925	Be	31~	Swa	boling		erval	187		1	ol at	0750	
	Strate .	7	1	- 4	i'd	. 11	1	177 00 2	1-6				
	0950	2		1 1	6-605	1	1	15'-2	201	0	l af	1035	
4	1010	0	sin s	,	ing	hter	al 2	The second second	THE RESERVE THE	eno	0 1	1100	
	1035	0 "		wal			ral 22			1	0 1	1125	
	1100	De Co	-	100000000000000000000000000000000000000	11	. 1	0	100 CO 100 CO 100 CO	TO SHOULD SEE	end		t 1150	
	1125	D	1		66 tha	A STATE OF THE PARTY OF	011	230	1	, en	*	11150	
	1150	lag	A WINDSHIPPERSON A	16.88	100000000000000000000000000000000000000	1. 1	1	35'-	A STREET, STRE	1	dal	1340 lou	sec
	1315	00	200000000000000000000000000000000000000	1		inter	1	10'-2	The second	en	0 /	1405 SCA	
	1340	0			ob The	Inter			S CONTRACTOR OF THE PARTY OF TH	1 0	0		
	1405	Be	1 5	Wab 11	21-3		val 2			end		1430	
	1430	500	5- 5	اطمدن	they	myer	1 2	DO 7	762	and			
	1455	be	She o	wal	doing	1	cual				THE RESERVE TO SERVE	1520 \	
	1520	0			مأرطط		eval					1545	
	1545	DECEMBER OF	Sin	Swa	bling	hate	+ 1	205.	1270	, en	dat	1010	
	1610	Tag	-	166-77	274.56	7501	bet	(DW)	1	. //		( )	
1	1	_			high	ed to	p. Th	4 da	9 (	gallo	1	emoved) -	
19	815	Tag	-	166.80	274.5	\$ (50	At bo	dom).					
	0836	15	bail	1		,	0	1	1 .1	17	10	0	
	0840	Coll	ect	water	Som	ple	from	1st	pall	X 1.	nhols	cone	
	1		Imh	off	cone	150	141/6	Samo	9,1	100 "	7/1	total solids	

TCS-1 - Well Development Record



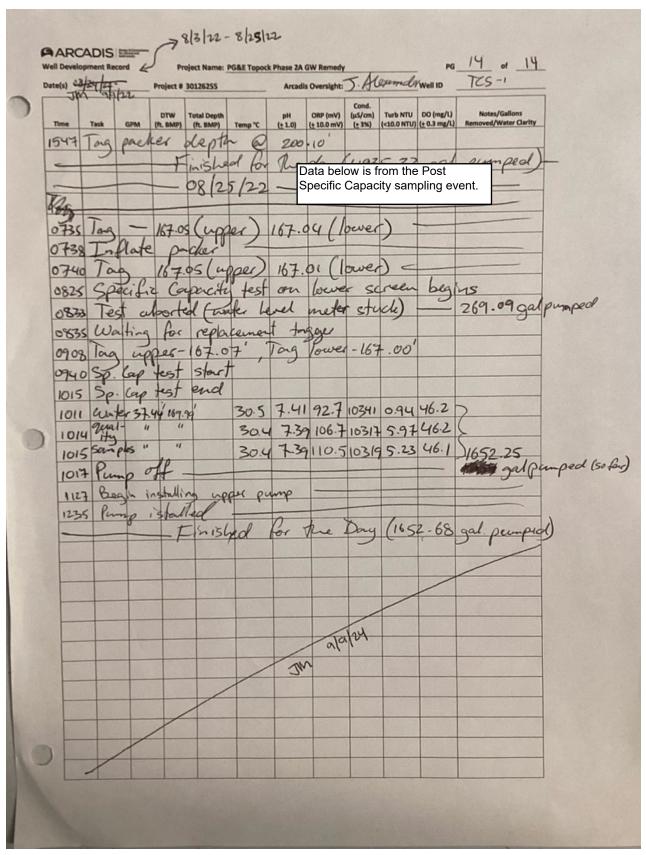
					-1.1	احاد							
* 1	ARC	ADIS	-	1	8/3/22-	8/25/2	2						*
	Date(s)	pment Re	ecord	) Pro	oject Name:	PG&E Topoc	k Phase 2A		-	cande		12 of 14 TCS-1	-
	NE	nala	122	Di Project s	30120255		Arcadi	oversight:	Cond.		Well ID	103-1	]
1	Time	Task	GPM	DTW (ft. BMP)	Total Depth (ft. BMP)	Temp *C	pH (± 1.0)	ORP (mV) (± 10.0 mV)	(µS/cm)		DO (mg/L) (± 0.3 mg/L)	Notes/Gallons Removed/Water Clarity	+
	0915	lasi	(8t	) bo	il, 1	Tag	166.9	0',	274	.700	ard bo	20 gal baile	d
	0917					ple fo							
			Linh	off	cone	1m11L	Samo	1, 4	\$ 45	MIL	total	solids	
	1445	Pad	cer t	ested		. 0						A	
		Topicolo 1		Fil	Bhea	for	The	day (	20 g	allone	bay	(ed) —	
	0.0	-		(	08/2	14/2	-2		5				
	0825	-		166.90	P	amp	interlea	at	182				
	0922			-									
	0924	12000	1)										
	0926	-	4	_									
		-	ge 5										
	THE RESERVE TO SHARE	Charles and Control	1	pourp.	1882	29.8	7.44	289.7	5420	17.7	78.8	7	
	0940	pump	55.00	16.96	11	DESCRIPTION OF THE PARTY OF THE	7.56	200000000000000000000000000000000000000	(C19) (C19) (C19)	Calculation of	100000000000000000000000000000000000000	(915.85 ga	1.
0	0945					The state of the s	7.50	NO ALMANDA DE	100000000000000000000000000000000000000	000000000000000000000000000000000000000	10/03/20/20/20/20/20		
9	0950	Pun	9 53.0	0167-64	"		7.44	CONTRACTOR AND AND ADDRESS.	- G - 1 - 1 - 1 - 1 - 1	10 STEP 12 STEP 1	A1900 CO. CO.	Sofar	1
OHON	0950										_	_	
	-	Tag	111	169.64	-								
	0951	Punt	off	_		111		V20)					wer
	Contract of the last of the la	1	d		Jamp	infork	e all	189/					agreen
	1027	1	rge 2										7
	1029	0	go 3										
			ge "										
	1075	Par	SUN	167.0	( 1891K	30.0	7.48	188.0	7671	6.07	53.9	7	6
	1040	Puna	53.2	169.5%		29.9	7.48	187.8	7631	3.21	56.05	\$ 1554.2 ga	1
	1045	Puny	53.5	9 169 -64	"		7.46					) far so	
	1046	Pun	-p of	P -	pung il								
					(222)	Proce -							
1	1 0000000000000000000000000000000000000	100	ge,	1000000									
0	1202	Su	Je z	-									
	1204	Sur	Je 3	_									
			-										

TCS-1 - Well Development Record

Tim	1	N 9			30126255				- /10			TCS-I
The		1 4	1/11	DTW	Total Depth		pH	ORP (mV)	Cond. (µS/cm)		DO (mg/L)	Notes/Gallons
1000	_	Task	GPM	(ft. BMP)	(ft. BMP)	Temp *C		(± 10.0 mV)	(± 3%)	(<10.0 NTU)	(+ 0.3 mg/L)	Removed/Water Clarity
120		Sur							5755.0			
	_	-	5e 5		pump infall	2 - 7	7 =0	100 2	1-770	w. 2	41.1	2
					222'8	30.2	778	124.3	0506	775	46.3	245194 gal.
				169.48		30.0	7.77	1112 11	1945	2.53	56.9	pumped 7
12:	15	O demis	515	166.50				1509				So feer
12	7	0.	0 9	Bl.		7.0	1.12		107-			
		-		166.85				E GOOD OF				
		Su										
	_	-	ge 2									
			ge 3	_								
13	56	Sur	rge 4									
13	58	Sun	Je 5	-	Draw Die	lake						
14	100	Pan	953.0	8 166.80	3 242"	30.4	793	115.7	14702	3.99	23.1	1 3709 CU 2 1 10U
14	105	Pun	p 52.1	2 169.3	3 "	30.1						3289.54 gal Sin
				4 169.3				140.1				So for
14	115	Purp	510	0 169.3	7 "	300	7.46	149.0	7876	2.99	60.0	
14	177	Pu	mp.	off								
14	145	lag	-	166.9	4,5	gerge	1 -					
100		755 E.S. C. C.	Je 2									
			rge 3	31 12 13 13 13								
	-	IN THE PARTY OF	39									
			Do !		puspial	ake Za (	7 12	157 2	1859	11 6	410	7
1	157	Pun	9 51.6	12 169.3	3 268	31.5	7.80	119 2	15251	24.7	20.9	1/
15	700	· D	0 507	169.4	11 "			124.				4935. 32 gal pumped so for
1	510	10mg	50.	12 169.4	-		THE RESERVE TO SERVE THE PARTY OF THE PARTY	STATE OF THE PARTY NAMED IN		III DESCRIPTION OF THE PARTY OF	62.3	1955 00 301
15	515	Run	0 507	13 169.4	15 "			3 7/30/97 78			62.1	C se Co
1	519	T	stal	( mi	cron .							1
-		St. Berlin Laborator	CONTRACTOR OF THE PARTY OF THE	- 2	dity					1.00	-	
100				com of	00	1						
1	522	- a	P 50.9	1 200					The second second	The second second	The second secon	

TCS-1 - Well Development Record





TCS-1 - Well Development Record

# **Attachment 7**

**Specific Capacity Testing Log** 

## **Specific Capacity Test**



Location/Well ID	TCS-01 (Lower Screen)
Date	9/1/2022-9/2/2022
Screened Interval Tested	214 - 268 ft bgs
Packer Set Depth	200.1
Packer Seal Test	Pass
Tests Conducted	four-step specific capacity test (13.5, 27, 40.5, and 54 gpm)
Purpose	Lower Screen Specific Capacity test
Summary	Specific capacity results: 13.5 gpm = 13.02 gpm/ft, 27 gpm = 13.70 gpm/ft, 40.5 gpm = 13.63 gpm/ft, and 54 gpm = 12.47 gpm/ft.
Notes	During the 13.50 gpm test the generator stopped and the first step was complete and under the guidance of the QC manager the SC test would move onto the second step at 27 gpm.
	The Specific Capacity for the last step at 54 gpm was 414 gpm/ft based off the manual data so use the transducer data that shows a average pumping rate of 53.88 gpm and a drawdown of 4.36 ft. The specific capacity based off the transducer data for the last step is 12.36 gpm/ft. Step 4 was conducted independend from the other 3 steps after the team ran out of time on September 1. There is a time limit for how long the teams can work at the station. Step 4 was conducted approximately 15.5 hours after the end of Step 3.
	There was no transducer data recorded for MW-67-185 observation well during the Specific Capacity Test that was conducted at TCS-01.
Oversight Signature	a. Seile
Date	11/7/2022



Location/Well ID	TCS-01
Date	9/1/2022-9/2/2022
Screened Interval	214 - 268 ft. bgs
Pump Depth (ft btoc)	268 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	166.98
Initial Totalizer Reading (gal)	123771.00
Final Totalizer Reading (gal)	139177
Approx Pumped Volume (gal)	14823.06
Calculated Volume Purged (gal)	15406.00
Difference in Volume Pumped vs. Calculated	-582.94
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27, 40.5 and 54 gp

Step 1 (13.5 GPM) Time (HR:MN:SEC)	Change in Time Between Measurements (min)	Elapsed Time (min)	Pumping Rate (gpm)	Total Volume Pumped (gal)	Depth to Water (ft)	Drawdown (ft)
9:50:00	0.00	0.00	13.77	0.00	167.36	0.38
9:50:15	0.25	0.25	13.77	3.44	167.43	0.45
9:50:30	0.25	0.50	13.77	6.88	167.45	0.47
9:50:45	0.25	0.75	13.77	10.33	167.47	0.49
9:51:00	0.25	1.00	13.77	13.77	167.50	0.52
9:52:00	1.00	2.00	13.44	27.21	167.52	0.54
9:53:00	1.00	3.00	13.44	40.65	167.99	1.01
9:54:00	1.00	4.00	13.44	54.09	167.99	1.01
9:55:00	1.00	5.00	13.44	67.53	168.00	1.02
9:56:00	1.00	6.00	13.77	81.30	168.02	1.04
9:57:00	1.00	7.00	13.89	95.19	168.04	1.06
9:58:00	1.00	8.00	14.00	109.19	168.04	1.06
9:59:00	1.00	9.00	14.26	123.45	168.04	1.06
10:00:00	1.00	10.00	13.94	137.39	168.04	1.06
10:02:00	2.00	12.00	13.94	165.27	168.04	1.06
10:04:00	2.00	14.00	13.94	193.15	168.04	1.06
10:06:00	2.00	16.00	13.94	221.03	168.04	1.06
10:08:00	2.00	18.00	13.94	248.91	168.04	1.06
10:10:00	2.00	20.00	13.94	276.79	168.04	1.06
<b>Total Volume Pumpe</b>	d for Step 1 (gal)		276.79			
<b>Average Pumping Ra</b>	te (gpm)		13.80			
Specific Capacity (gp	m/ft)		13.02			



Location/Well ID	TCS-01
Date	9/1/2022-9/2/2022
Screened Interval	214 - 268 ft. bgs
Pump Depth (ft btoc)	268 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	166.98
Initial Totalizer Reading (gal)	123771.00
Final Totalizer Reading (gal)	139177
Approx Pumped Volume (gal)	14823.06
Calculated Volume Purged (gal)	15406.00
Difference in Volume Pumped vs. Calculated	-582.94
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27, 40.5 and 54 gp

							-1
Step 2	Change in Time	Elapsed					Elapsed
(27 GPM)	Between	Time from	Pumping	T-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	Daniel La	S	Time from
Time	measurements	Test Start	Rate	Total Volume	Depth to	Drawdown	Step 2 Start
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (gal)	Water (ft)	(ft)	(min)
12:25:00	0.00	20.00	27.00	276.79	168.91	1.93	20.00
12:26:00	1.00	21.00	27.88	304.67	168.84	1.86	21.00
12:27:00	1.00	22.00	28.04	332.71	168.93	1.95	22.00
12:28:00	1.00	23.00	27.88	360.59	168.93	1.95	23.00
12:29:00	1.00	24.00	27.88	388.47	168.93	1.95	24.00
12:30:00	1.00	25.00	27.54	416.01	168.93	1.95	25.00
12:31:00	1.00	26.00	27.88	443.89	168.93	1.95	26.00
12:32:00	1.00	27.00	27.38	471.27	168.93	1.95	27.00
12:33:00	1.00	28.00	27.21	498.48	168.93	1.95	28.00
12:34:00	1.00	29.00	27.04	525.52	168.93	1.95	29.00
12:35:00	1.00	30.00	27.04	552.56	168.93	1.95	30.00
12:37:00	2.00	32.00	26.88	606.32	168.94	1.96	32.00
12:39:00	2.00	34.00	26.71	659.74	168.95	1.97	34.00
12:41:00	2.00	36.00	26.88	713.50	168.95	1.97	36.00
12:43:00	2.00	38.00	26.71	766.92	168.95	1.97	38.00
12:45:00	2.00	40.00	26.71	820.34	168.95	1.97	40.00
12:47:00	2.00	42.00	26.88	874.10	168.96	1.98	42.00
12:49:00	2.00	44.00	26.88	927.86	168.96	1.98	44.00
12:51:00	2.00	46.00	27.04	981.94	168.96	1.98	46.00
12:53:00	2.00	48.00	26.71	1035.36	168.96	1.98	48.00
12:55:00	2.00	50.00	26.88	1089.12	168.96	1.98	50.00
13:00:00	5.00	55.00	26.71	1222.67	168.96	1.98	55.00
13:05:00	5.00	60.00	27.04	1357.87	168.96	1.98	60.00
13:10:00	5.00	65.00	26.71	1491.42	168.96	1.98	65.00
13:15:00	5.00	70.00	26.88	1625.82	168.96	1.98	70.00
13:20:00	5.00	75.00	26.88	1760.22	168.96	1.98	75.00
13:25:00	5.00	80.00	26.88	1894.62	168.96	1.98	80.00
13:35:00	10.00	90.00	27.04	2165.02	168.96	1.98	90.00
13:45:00	10.00	100.00	27.04	2435.42	168.96	1.98	100.00
13:55:00	10.00	110.00	27.04	2705.82	168.96	1.98	110.00
14:05:00	10.00	120.00	27.21	2977.92	168.96	1.98	120.00
14:15:00	10.00	130.00	27.39	3251.82	168.96	1.98	130.00
14:25:00	10.00	140.00	27.04	3522.22	168.96	1.98	140.00
Total Volume Pumped for Step 2 (gal)		3245.43					
Average Pumping Ra			27.12				
Connection Comments of James			12.70				

13.70

Specific Capacity (gpm/ft)

Specific Capacity (gpm/ft)



Location/Well ID	TCS-01
Date	9/1/2022-9/2/2022
Screened Interval	214 - 268 ft. bgs
Pump Depth (ft btoc)	268 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	166.98
Initial Totalizer Reading (gal)	123771.00
Final Totalizer Reading (gal)	139177
Approx Pumped Volume (gal)	14823.06
Calculated Volume Purged (gal)	15406.00
Difference in Volume Pumped vs. Calculated	-582.94
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27, 40.5 and 54 gp

Chan 2	Change in Time	Floresed					Flamand
Step 3	Change in Time	Elapsed	Dumanina	Total Valuma			Elapsed Time from
( 40.5 gpm) Time	Between Measurements	Time from Test Start	Pumping Rate	Total Volume Pumped	Depth to	Drawdown	Step 3 Start
(HR:MN:SEC)		(min)		(Gallons)	Water (ft)	(ft)	(min)
	(min)	, ,	(gpm)	,			
14:40:00	0.00	155.00	0.00 40.56	3522.22	169.93	2.95	2.00
14:41:00	1.00	156.00 157.00		3562.78 3603.44	169.93 169.93	2.95 2.95	3.00
14:42:00 14:43:00	1.00		40.66 40.82			2.95	4.00
14:44:00	1.00 1.00	158.00 159.00	40.82	3644.26 3685.08	169.94 169.94	2.96	5.00 6.00
14:45:00	1.00	160.00	40.82	3725.96	169.95	2.90	7.00
14:46:00	1.00	161.00	40.88	3766.78	169.96	2.98	8.00
14:47:00	1.00	162.00	40.82	3807.77	169.98	3.00	9.00
14:48:00	1.00	163.00	40.99	3848.76	169.97	2.99	10.00
14:49:00	1.00		40.59	3889.26	169.97	2.99	11.00
14:49:00	1.00	165.00	40.99	3930.25	169.97	2.99	12.00
14:52:00	2.00	167.00	40.82	4011.89	169.97	2.99	14.00
14:54:00	2.00	169.00	40.82	4011.83	169.97	2.99	16.00
14:56:00	2.00	171.00	40.82	4175.17	169.97	2.99	18.00
14:58:00	2.00	173.00	40.66	4256.49	169.97	2.99	20.00
15:00:00	2.00	175.00	40.66	4337.81	169.97	2.99	22.00
15:02:00	2.00	177.00	40.82	4419.45	169.97	2.99	24.00
15:04:00	2.00	179.00	40.66	4500.77	169.97	2.99	26.00
15:06:00	2.00	181.00	40.66	4582.09	169.97	2.99	28.00
15:08:00	2.00	183.00	40.66	4663.41	169.97	2.99	30.00
15:10:00	2.00	185.00	40.82	4745.05	169.97	2.99	32.00
15:15:00	5.00	190.00	40.50	4947.55	169.97	2.99	37.00
15:20:00	5.00	195.00	40.82	5151.65	169.97	2.99	42.00
15:25:00	5.00	200.00	40.99	5356.60	169.97	2.99	47.00
15:30:00	5.00	205.00	40.66	5559.90	169.97	2.99	52.00
15:35:00	5.00	210.00	40.66	5763.20	169.97	2.99	57.00
15:40:00	5.00	215.00	40.82	5967.30	169.97	2.99	62.00
15:50:00	10.00	225.00	40.66	6373.90	169.97	2.99	72.00
16:00:00	10.00	235.00	40.50	6778.90	169.97	2.99	82.00
16:10:00	10.00	245.00	40.82	7187.10	169.97	2.99	92.00
16:20:00	10.00	255.00	40.82	7595.30	169.97	2.99	102.00
16:30:00	10.00	265.00	40.90	8004.30	169.97	2.99	112.00
16:40:00	10.00	275.00	40.82	8412.50	169.97	2.99	122.00
Total Volume Pumpe	ed for Step 3 (gal)		4890.28				
Average Pumping Ra	te (gpm)		40.76				
Connection Comments / James	/f+\		12.62				

13.63



Location/Well ID	TCS-01
Date	9/1/2022-9/2/2022
Screened Interval	214 - 268 ft. bgs
Pump Depth (ft btoc)	268 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	166.98
Initial Totalizer Reading (gal)	123771.00
Final Totalizer Reading (gal)	139177
Approx Pumped Volume (gal)	14823.06
Calculated Volume Purged (gal)	15406.00
Difference in Volume Pumped vs. Calculated	-582.94
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27, 40.5 and 54 gp

Step 4	Change in Time	Elapsed					Elapsed
(54 gpm)	Between	Time from	Pumping	Total Volume			Time from
Time	Measurements	Test Start	Rate	Pumped	Depth to	Drawdown	Step 3 Start
(HR:MN:SEC)	(min)	(min)	(gpm)	(Gallons)	Water (ft)	(ft)	(min)
8:26:00	0.00	275.00	54.55	8412.50	168.30	. ,	0.00
8:27:00	1.00	276.00	54.55	8467.05	168.91		1.00
8:28:00	1.00	277.00	54.55	8521.60	168.90		2.00
8:29:00	1.00	278.00	54.06	8575.66	168.91		3.00
8:30:00	1.00	279.00	54.06	8629.72	168.91		4.00
8:31:00	1.00	280.00	50.80	8680.52	168.91		5.00
8:32:00	1.00	281.00	54.06	8734.58	168.91		6.00
8:33:00	1.00	282.00	54.06	8788.64	168.91		7.00
8:34:00	1.00	283.00	54.22	8842.86	168.91		8.00
8:35:00	1.00	284.00	53.90	8896.76	168.91		9.00
8:37:00	2.00	286.00	53.90	9004.56	171.15	4.17	11.00
8:39:00	2.00	288.00	53.74	9112.04	171.21	4.23	13.00
8:41:00	2.00	290.00	53.74	9219.52	171.21	4.23	15.00
8:43:00	2.00	292.00	53.74	9327.00	171.21	4.23	17.00
8:45:00	2.00	294.00	53.57	9434.14	171.21	4.23	19.00
8:47:00	2.00	296.00	54.20	9542.54	171.21	4.23	21.00
8:49:00	2.00	298.00	53.74	9650.02	171.21	4.23	23.00
8:51:00	2.00	300.00	54.06	9758.14	171.21	4.23	25.00
8:53:00	2.00	302.00	53.24	9864.62	171.24	4.26	27.00
8:55:00	2.00	304.00	53.57	9971.76	171.24	4.26	29.00
9:00:00	5.00	309.00	53.90	10241.26	171.24	4.26	34.00
9:05:00	5.00	314.00	54.01	10511.31	171.26	4.28	39.00
9:10:00	5.00	319.00	53.57	10779.16	171.26	4.28	44.00
9:15:00	5.00	324.00	53.90	11048.66	171.27	4.29	49.00
9:20:00	5.00	329.00	54.06	11318.96	171.27	4.29	54.00
9:25:00	5.00	334.00	56.06	11599.26	171.27	4.29	59.00
9:35:00	10.00	344.00	53.90	12138.26	171.27	4.29	69.00
9:45:00	10.00	354.00	53.41	12672.36	171.30	4.32	79.00
9:55:00	10.00	364.00	53.37	13206.06	171.30	4.32	89.00
10:05:00	10.00	374.00	53.90	13745.06	171.24	4.26	99.00
10:15:00	10.00	384.00	53.90	14284.06	171.30	4.32	109.00
10:25:00	10.00	394.00	53.90	14823.06	171.30	4.32	119.00
Total Volume Pumpe			6410.56				
Average Pumping Ra	te (gpm)		53.88				

12.47

Specific Capacity (gpm/ft)

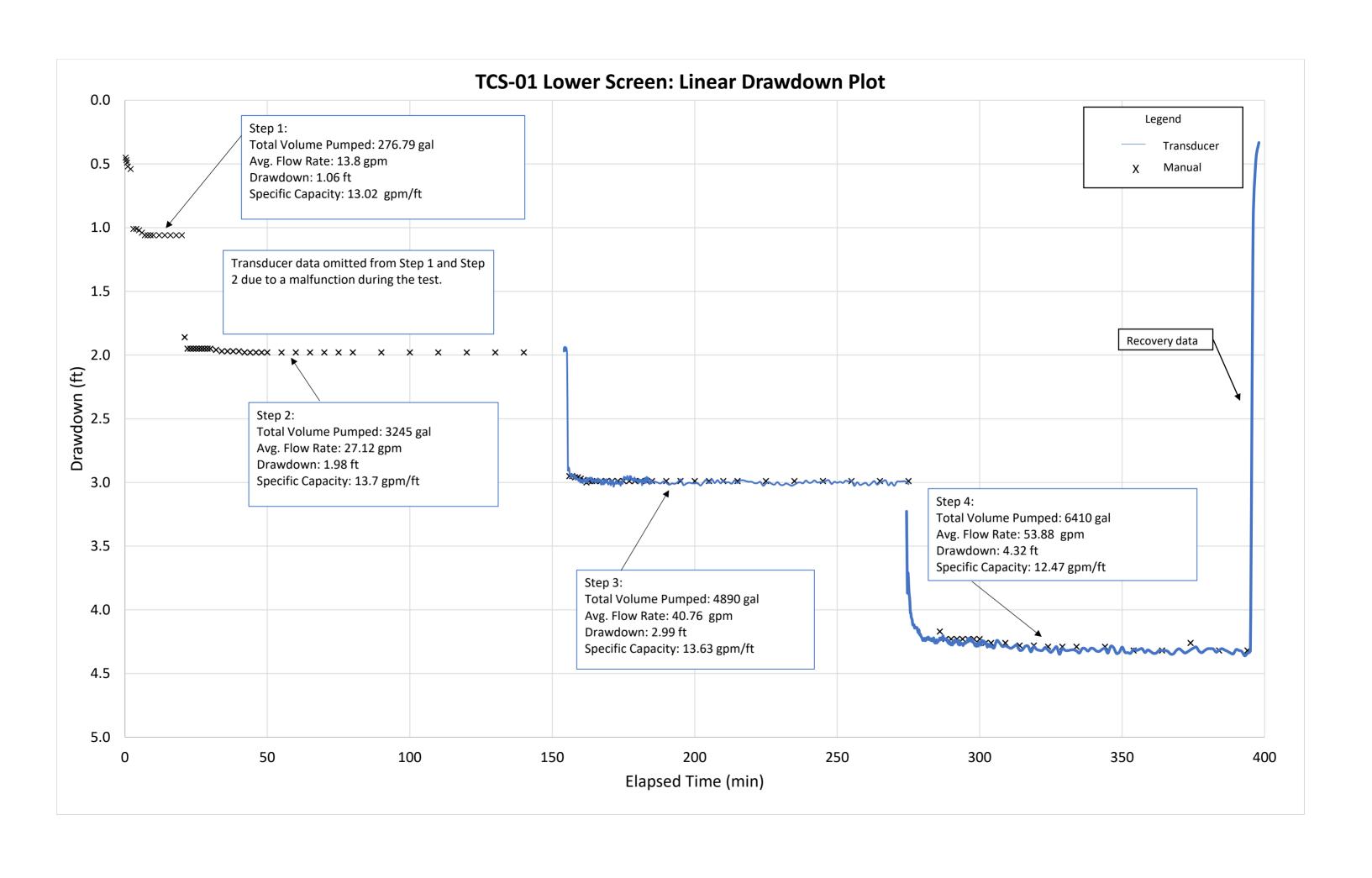
#### **Specific Capacity Test**

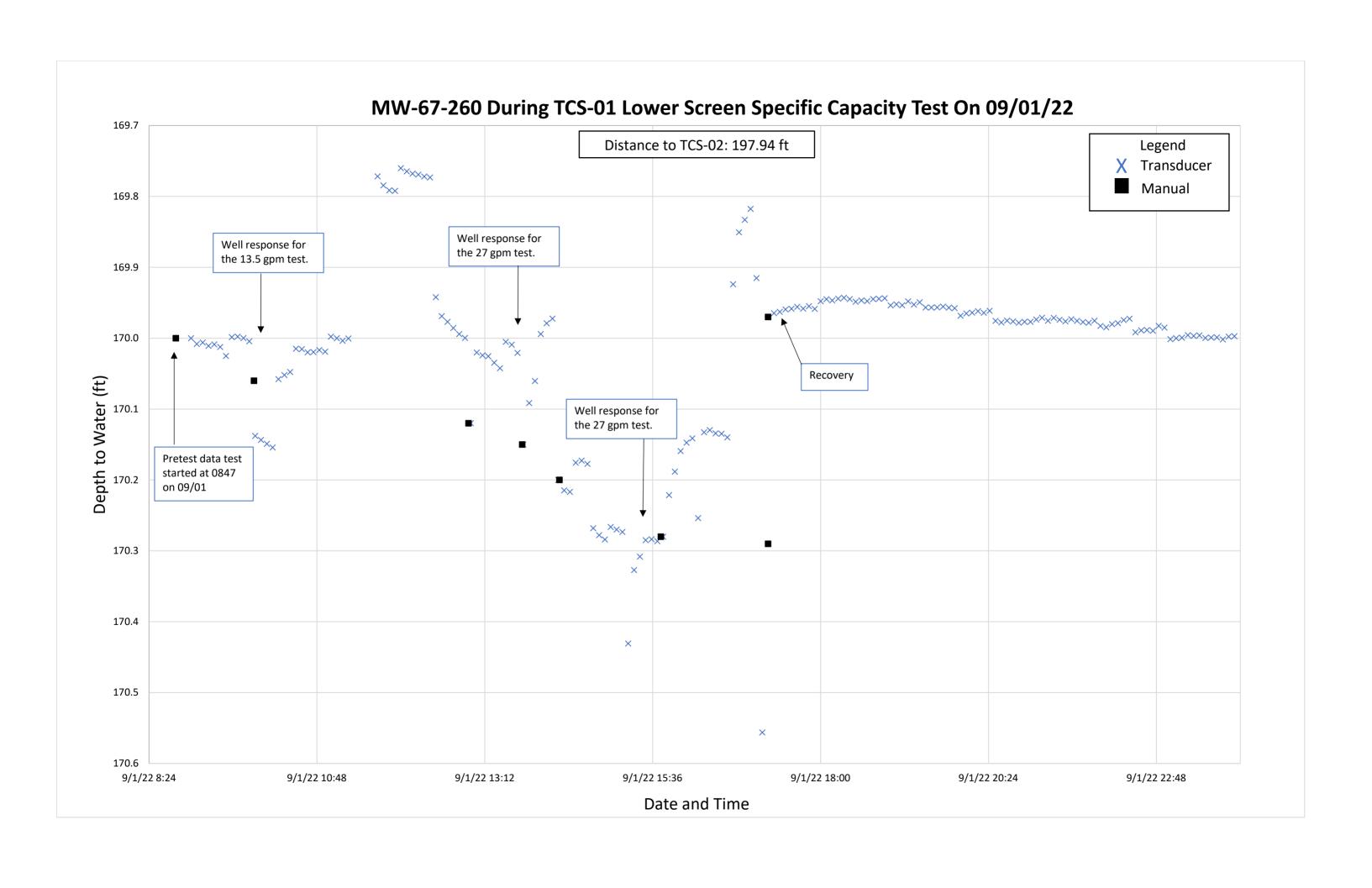


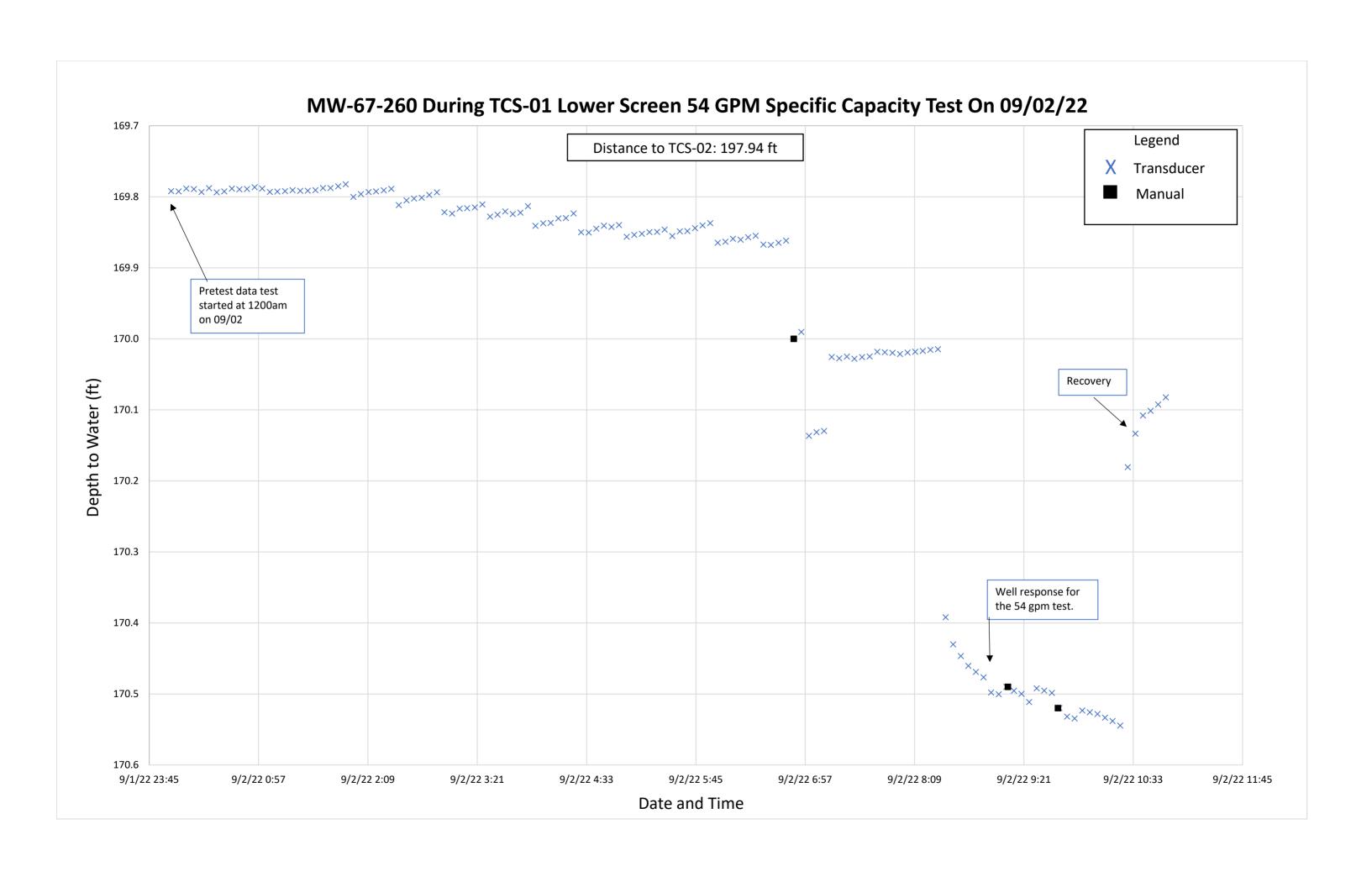
Location/Well ID	TCS-01
Date	9/1/2022-9/2/2022
Screened Interval	214 - 268 ft. bgs
Pump Depth (ft btoc)	268 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	166.98
Initial Totalizer Reading (gal)	123771.00
Final Totalizer Reading (gal)	139177
Approx Pumped Volume (gal)	14823.06
Calculated Volume Purged (gal)	15406.00
Difference in Volume Pumped vs. Calculated	-582.94
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27, 40.5 and 54 gp

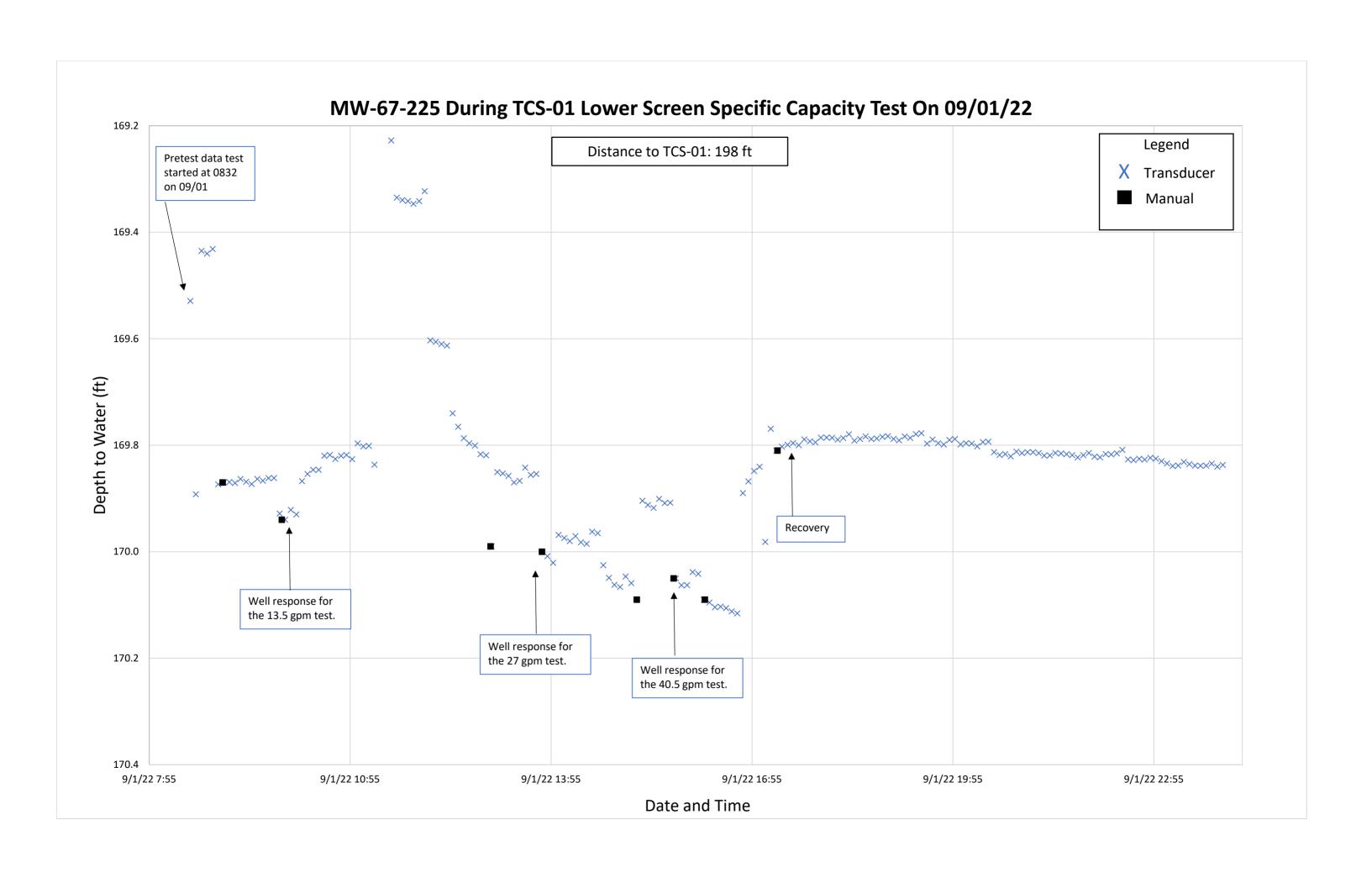
#### **Acronyms & Abbreviations**

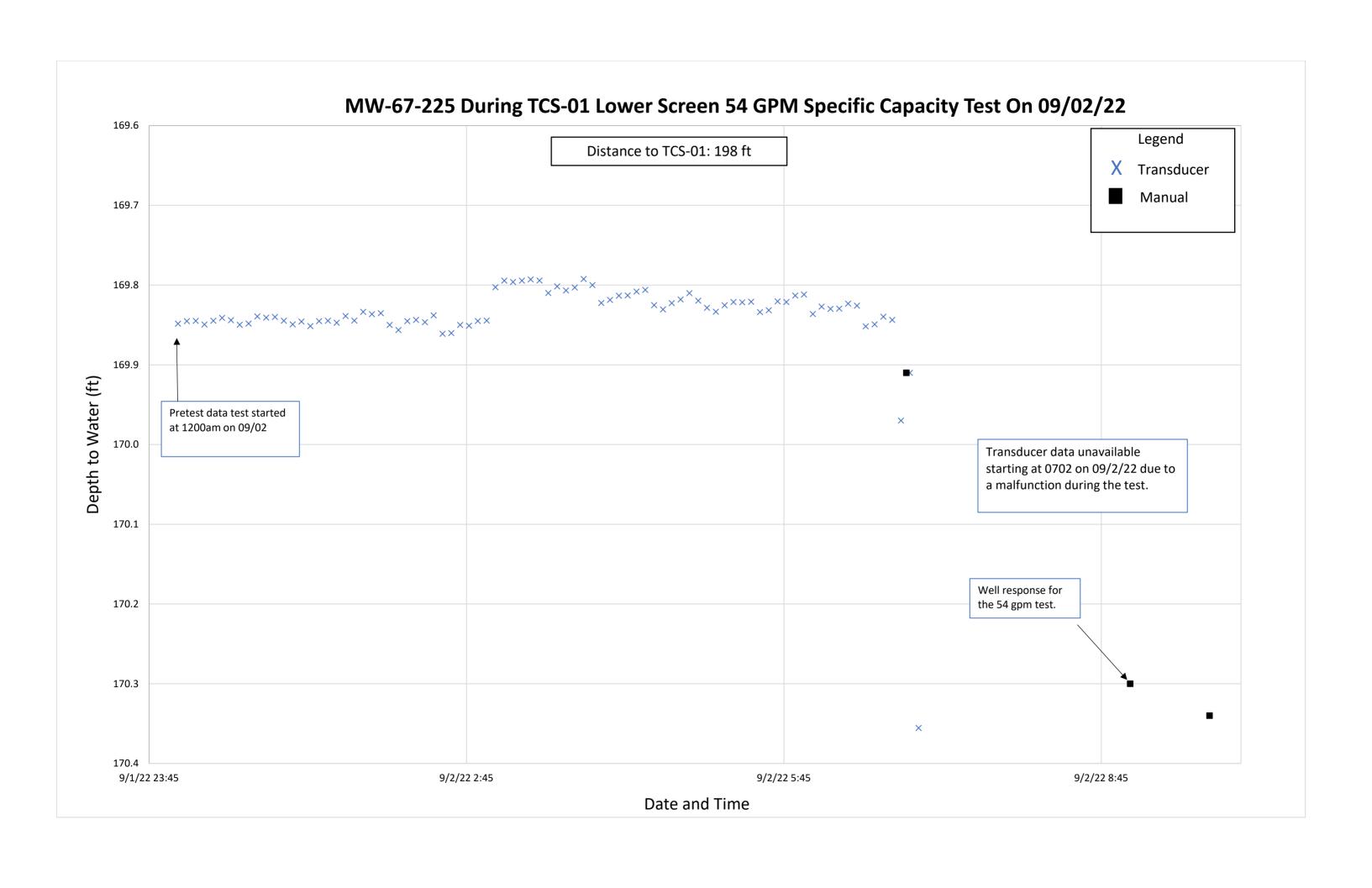
bgs = below ground surface btoc = below top of casing ft = feet gal = gallons gpm = gallons per minute min = minutes

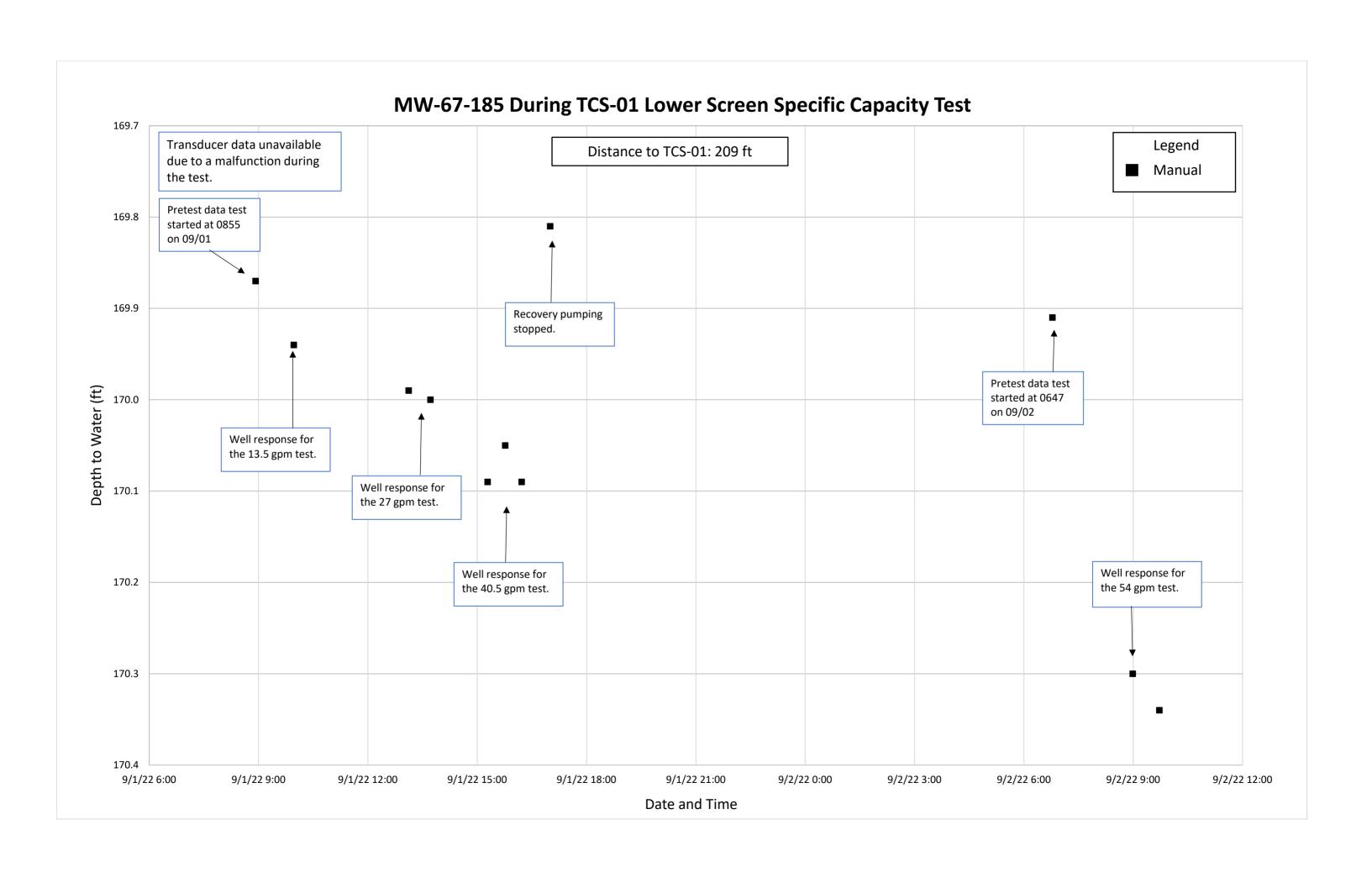












## **Specific Capacity Test**



Location/Well ID	TCS-01 (Upper Screen)					
Date	9/7/2022					
Screened Interval Tested	171 - 190 ft bgs					
Packer Set Depth	200 ft bgs					
Packer Seal Test	Pass					
Tests Conducted	three-step specific capacity test (13.5, 27, and 40.5 gpm)					
Purpose	Well performance test					
Summary	Specific capacity results: 13.5 gpm = 6.32 gpm/ft, 27 gpm = 5.94 gpm/ft, and 40.5 gpm= 4.92 gpm/ft.					
Notes	Transducer was not set-up correctly. Test results are based on manual data.					
Oversight Signature	an Sailel					
Date	10/3/2022					



Location/Well ID	TCS-01
Date	9/7/2022
Screened Interval	171 - 190 ft. bgs
Pump Depth (ft btoc)	189 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.07
Initial Totalizer Reading (gal)	140251.00
Final Totalizer Reading (gal)	151320
Approx Pumped Volume (gal)	10497.12
Calculated Volume Purged (gal)	11069.00
Difference in Volume Pumped vs. Calculated	-571.88
Number of Specific Capacity Steps	3
Pumping Rates (in order)	13.5, 27, and 40.5 gpm

Step 1 (13.5 GPM) Time	Change in Time Between Measurements	Elapsed Time	Pumping Rate	Total Volume	Depth to	Drawdown
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (gal)	Water (ft)	(ft)
8:24:00	0.00	0.00	0.00	0.00	167.07	0.00
9:30:00	0.00	0.00	13.50	0.00	168.40	1.33
9:30:20	0.33	0.33	13.50	4.50	168.57	1.50
9:30:40	0.33	0.67	13.50	9.00	168.57	1.50
9:31:00	0.33	1.00	13.60	13.53	168.55	1.48
9:32:00	1.00	2.00	13.60	27.13	168.63	1.56
9:33:00	1.00	3.00	13.60	40.73	168.87	1.80
9:34:00	1.00	4.00	13.60	54.33	168.96	1.89
9:35:00	1.00	5.00	13.60	67.93	169.00	1.93
9:36:00	1.00	6.00	13.60	81.53	169.03	1.96
9:37:00	1.00	7.00	13.50	95.03	169.04	1.97
9:38:00	1.00	8.00	13.50	108.53	169.06	1.99
9:39:00	1.00	9.00	13.60	122.13	169.07	2.00
9:40:00	1.00	10.00	13.60	135.73	169.08	2.01
9:42:00	2.00	12.00	13.60	162.93	169.10	2.03
9:44:00	2.00	14.00	13.60	190.13	169.12	2.05
9:46:00	2.00	16.00	13.60	217.33	169.12	2.05
9:48:00	2.00	18.00	13.60	244.53	169.10	2.03
9:50:00	2.00	20.00	13.50	271.53	169.11	2.04
9:52:00	2.00	22.00	13.50	298.53	169.12	2.05
9:54:00	2.00	24.00	13.50	325.53	169.13	2.06
9:56:00	2.00	26.00	13.50	352.53	169.14	2.07
9:58:00	2.00	28.00	13.50	379.53	169.15	2.08
10:00:00	2.00	30.00	13.50	406.53	169.16	2.09
10:05:00	5.00	35.00	13.60	474.53	169.15	2.08
10:10:00	5.00	40.00	13.60	542.53	169.17	2.10
10:15:00	5.00	45.00	13.60	610.53	169.16	2.09
10:20:00	5.00	50.00	13.70	679.03	169.17	2.10
10:25:00	5.00	55.00	13.70	747.53	169.18	2.11
10:30:00	5.00	60.00	13.70	816.03	169.18	2.11
10:40:00	10.00	70.00	13.70	953.03	169.20	2.13
10:50:00	10.00	80.00	13.70	1090.03	169.20	2.13
11:00:00	10.00	90.00	13.60	1226.03	169.22	2.15
11:10:00	10.00	100.00	13.60	1362.03	169.22	2.15
11:20:00	10.00	110.00	13.60	1498.03	169.22	2.15
11:30:00	10.00	120.00	13.60	1634.03	169.22	2.15
<b>Total Volume Pumpe</b>	Total Volume Pumped for Step 1 (gal)					
Average Pumping Ra	te (gpm)		13.58			
Specific Capacity (gpi	m/ft)		6.32			



Location/Well ID	TCS-01
Date	9/7/2022
Screened Interval	171 - 190 ft. bgs
Pump Depth (ft btoc)	189 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.07
Initial Totalizer Reading (gal)	140251.00
Final Totalizer Reading (gal)	151320
Approx Pumped Volume (gal)	10497.12
Calculated Volume Purged (gal)	11069.00
Difference in Volume Pumped vs. Calculated	-571.88
Number of Specific Capacity Steps	3
Pumping Rates (in order)	13.5, 27, and 40.5 gpm

Step 2 (27 GPM) Time	Change in Time Between measurements	Elapsed Time from Test Start	Pumping Rate	Total Volume	Depth to	Drawdown	Elapsed Time from Step 2 Start
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (gal)	Water (ft)	(ft)	(min)
11:32:00	0.00	120.00	27.04	1634.03	170.33	3.26	120.00
11:32:12	0.20	120.20	27.04	1639.44	170.33	3.26	120.20
11:32:24	0.20	120.40	27.04	1644.85	170.33	3.26	120.40
11:32:36	0.20	120.60	27.04	1650.26	170.33	3.26	120.60
11:32:48	0.20	120.80	27.04	1655.67	170.33	3.26	120.80
11:33:00	0.20	121.00	27.04	1661.07	170.40	3.33	121.00
11:34:00	1.00	122.00	27.04	1688.11	170.67	3.60	122.00
11:35:00	1.00	123.00	27.04	1715.15	170.85	3.78	123.00
11:36:00	1.00	124.00	27.04	1742.19	170.93	3.86	124.00
11:37:00	1.00	125.00	27.04	1769.23	171.01	3.94	125.00
11:38:00	1.00	126.00	27.21	1796.44	171.04	3.97	126.00
11:39:00	1.00	127.00	27.21	1823.65	171.06	3.99	127.00
11:40:00	1.00	128.00	27.21	1850.86	171.09	4.02	128.00
11:41:00	1.00	129.00	27.21	1878.07	171.12	4.05	129.00
11:42:00	1.00	130.00	27.21	1905.28	171.15	4.08	130.00
11:44:00	2.00	132.00	27.21	1959.70	171.18	4.11	132.00
11:46:00	2.00	134.00	27.21	2014.12	171.20	4.13	134.00
11:48:00	2.00	136.00	27.21	2068.54	171.22	4.15	136.00
11:50:00	2.00	138.00	27.21	2122.96	171.23	4.16	138.00
11:52:00	2.00	140.00	27.21	2177.38	171.24	4.17	140.00
11:54:00	2.00	142.00	27.01	2231.40	171.26	4.19	142.00
11:56:00	2.00	144.00	27.04	2285.48	171.27	4.20	144.00
11:58:00	2.00	146.00	27.04	2339.56	171.28	4.21	146.00
12:00:00	2.00	148.00	27.04	2393.64	171.28	4.21	148.00
12:02:00	2.00	150.00	27.04	2447.72	171.29	4.22	150.00
12:04:00	2.00	152.00	27.04	2501.80	171.31	4.24	152.00
12:12:00	8.00	160.00	26.88	2716.84	171.32	4.25	160.00
12:17:00	5.00	165.00	26.88	2851.24	171.34	4.27	165.00
12:22:00	5.00	170.00	27.04	2986.44	171.36	4.29	170.00
12:27:00	5.00	175.00	26.40	3118.44	171.44	4.37	175.00
12:32:00	5.00	180.00	27.21	3254.49	171.47	4.40	180.00
12:42:00	10.00	190.00	27.21	3526.59	171.50	4.43	190.00
12:52:00	10.00	200.00	27.04	3796.99	171.54	4.47	200.00
13:02:00	10.00	210.00	27.04	4067.39	171.54	4.47	210.00
13:12:00	10.00	220.00	27.04	4337.79	171.54	4.47	220.00
13:22:00	10.00	230.00	27.04	4608.19	171.55	4.48	230.00
13:32:00	10.00	240.00	27.21	4880.29	171.63	4.56	240.00
Total Volume Pumpe	d for Step 2 (gal)		3246.26				

Total Volume Pumped for Step 2 (gal) 3246.26

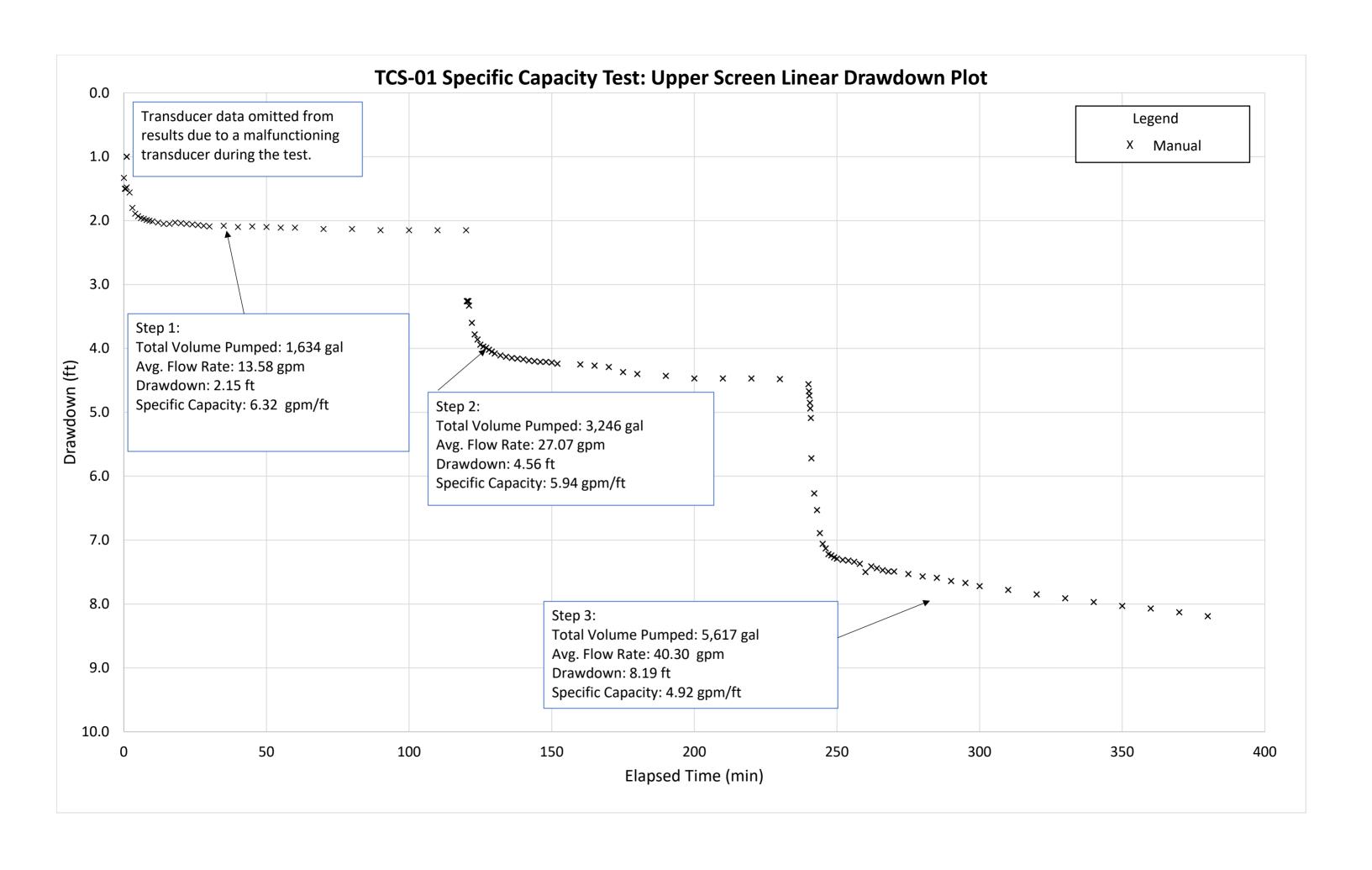
Average Pumping Rate (gpm) 27.07

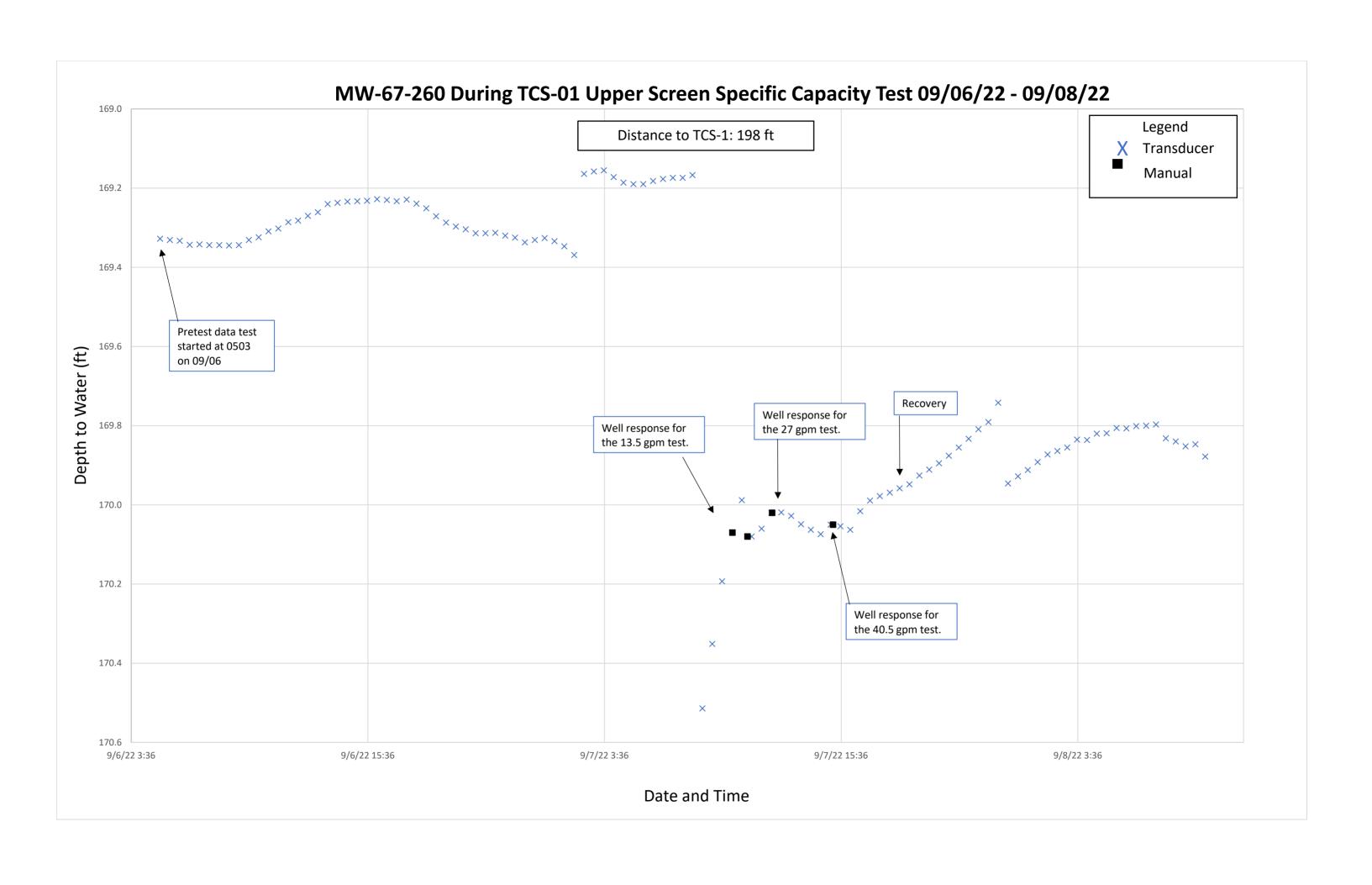
Specific Capacity (gpm/ft) 5.94

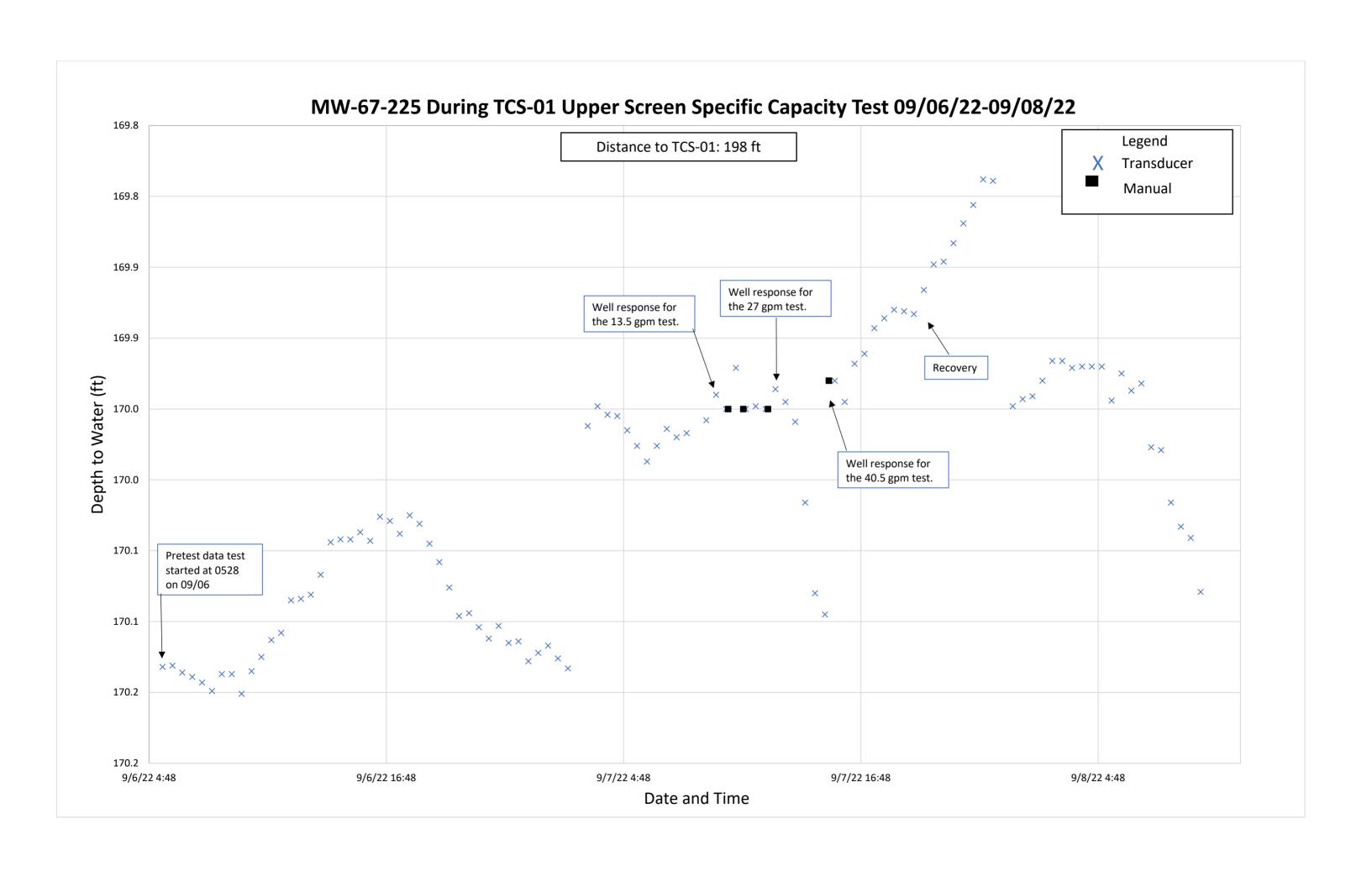


Location/Well ID	TCS-01
Date	9/7/2022
Screened Interval	171 - 190 ft. bgs
Pump Depth (ft btoc)	189 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.07
Initial Totalizer Reading (gal)	140251.00
Final Totalizer Reading (gal)	151320
Approx Pumped Volume (gal)	10497.12
Calculated Volume Purged (gal)	11069.00
Difference in Volume Pumped vs. Calculated	-571.88
Number of Specific Capacity Steps	3
Pumping Rates (in order)	13.5, 27, and 40.5 gpm
-	•

Step 3 ( 40.5 gpm) Time (HR:MN:SEC)	Change in Time Between Measurements (min)	Elapsed Time from Test Start (min)	Pumping Rate	Total Volume Pumped	Depth to Water (ft)	Drawdown	Elapsed Time from Step 3 Start (min)
13:40:00	0.00	240.00	<b>(gpm)</b> 40.50	(Gallons) 4880.29	171.65	(ft) 4.58	2.00
13:40:00	0.00	240.00	40.50	4880.29 4887.04	171.05	4.58	2.00
13:40:20	0.17	240.17	40.50	4893.79	171.74	4.07	2.17
13:40:30	0.17	240.50	40.50	4900.54	171.81	4.74	2.50
13:40:40	0.17	240.50	40.50	4900.34	171.92	4.83	2.50
13:40:50	0.17	240.83	40.50	4907.29	172.01	5.09	2.83
13:41:00	0.17	241.00	40.82	4920.85	172.10	5.72	3.00
13:42:00	1.00	242.00	40.82	4961.35	173.34	6.27	4.00
13:42:00	1.00	243.00	40.50	5001.85	173.60	6.53	5.00
13:44:00	1.00	244.00	40.66	5042.51	173.00	6.89	6.00
13:45:00	1.00	245.00	40.66	5083.17	174.13	7.06	7.00
13:46:00	1.00	246.00	40.50	5123.67	174.13	7.00	8.00
13:47:00	1.00	247.00	40.50	5164.17	174.29	7.13	9.00
13:48:00	1.00	248.00	40.50	5204.67	174.23	7.22	10.00
13:49:00	1.00	249.00	40.33	5245.00	174.34	7.27	11.00
13:50:00	1.00	250.00	40.33	5285.33	174.36	7.29	12.00
13:52:00	2.00	252.00	40.50	5366.33	174.38	7.31	14.00
13:54:00	2.00	254.00	40.33	5446.99	174.39	7.32	16.00
13:56:00	2.00	256.00	40.33	5527.65	174.41	7.34	18.00
13:58:00	2.00	258.00	40.16	5607.97	174.44	7.37	20.00
14:00:00	2.00	260.00	40.16	5688.29	174.57	7.50	22.00
14:02:00	2.00	262.00	40.33	5768.95	174.48	7.41	24.00
14:04:00	2.00	264.00	40.33	5849.61	174.51	7.44	26.00
14:06:00	2.00	266.00	40.16	5929.93	174.54	7.47	28.00
14:08:00	2.00	268.00	40.16	6010.25	174.56	7.49	30.00
14:10:00	2.00	270.00	40.16	6090.57	174.56	7.49	32.00
14:15:00	5.00	275.00	40.33	6292.22	174.60	7.53	37.00
14:20:00	5.00	280.00	40.16	6493.02	174.64	7.57	42.00
14:25:00	5.00	285.00	40.16	6693.82	174.66	7.59	47.00
14:30:00	5.00	290.00	40.00	6893.82	174.71	7.64	52.00
14:35:00	5.00	295.00	40.16	7094.62	174.74	7.67	57.00
14:40:00	5.00	300.00	40.00	7294.62	174.79	7.72	62.00
14:50:00	10.00	310.00	40.00	7694.62	174.85	7.78	72.00
15:00:00	10.00	320.00	40.00	8094.62	174.92	7.85	82.00
15:10:00	10.00	330.00	40.08	8495.42	174.98	7.91	92.00
15:20:00	10.00	340.00	40.16	8897.02	175.04	7.97	102.00
15:30:00	10.00	350.00	40.00	9297.02	175.10	8.03	112.00
15:40:00	10.00	360.00	40.16	9698.62	175.14	8.07	122.00
15:50:00	10.00	370.00	40.00	10098.62	175.20	8.13	132.00
16:00:00	10.00	380.00	39.85	10497.12	175.26	8.19	142.00
<b>Total Volume Pumpe</b>	Total Volume Pumped for Step 3 (gal)						
Average Pumping Ra	te (gpm)		40.30				
Specific Capacity (gpi	m/ft)		4.92				







# **Attachment 8**

**Specific Injectivity Testing Package** 



Location/Well ID	TCS-01 (Lower Screen)
Date	9/11/2022 & 9/13/2022
Screened Interval Tested	214-268 ft bgs
Packer Set Depth	200 ft bgs
Packer Seal Test	Pass
Tests Conducted	Four-step injectivity test (13.5, 27, 40.5, and 52 gpm)
Purpose	Well performance test
Summary	Specific injectivity results: $13.5 \text{ gpm} = 3.35 \text{ gpm/ft}$ , $27 \text{ gpm} = 2.88 \text{ gpm/ft}$ , $40.5 \text{ gpm} = 4.15 \text{ gpm/ft}$ , $54 \text{ gpm} = 4.15 \text{ gpm/ft}$ .
Notes	Water Level meter was swapped on 9/11/2022 at 9:29. Tried 3 different water level meter and the water level keeps flunctuating. Tested WL meter in upper screen and it is working properly.  At 10:42 on 9/11/2022 the transducer relocated to a new depth of 211 ft
	bgs.
Oversight Signature	and Saile
Date	10/3/2022



Location/Well ID	TCS-01
Date	9/11/2022 & 9/13/2022
Screened Interval	214 - 268 ft. bgs
Injection Outlet Depth (ft btoc)	266 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.04
Initial Totalizer Reading (gal)	157846.00
Final Totalizer Reading (gal)	167585
Approx Pumped Volume (gal)	17165.64
Calculated Volume Purged (gal)	9739.00
Difference in Volume Pumped vs. Calculated	7426.64
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27,40.5 and 52 gpm

Step 1 (13.5 GPM) Time	Change in Time Between Measurements	Elapsed Time	Pumping Rate	Total Volume	Depth to	Mounding
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (gal)	Water (ft)	(ft)
9:25:00	0.00	0.00	0.00	0.00	167.04	0.00
9:25:15	0.25	0.25	13.50	3.37	166.08	0.96
9:25:30	0.25	0.50	13.50	6.75	166.35	0.69
9:25:45	0.25	0.75	13.66	10.17	166.25	0.79
9:26:00	0.25	1.00	13.77	13.61	166.15	0.89
9:27:00	1.00	2.00	13.77	27.38	166.07	0.97
9:28:00	1.00	3.00	13.77	41.15	166.00	1.04
9:29:00	1.00	4.00	13.77	54.92		
9:30:00	1.00	5.00	13.44	68.36		
9:31:00	1.00	6.00	13.44	81.80		
9:32:00	1.00	7.00	13.60	95.40		
9:33:00	1.00	8.00	13.44	108.84		
9:34:00	1.00	9.00	13.44	122.28		
9:35:00	1.00	10.00	13.44	135.72		
9:37:00	2.00	12.00	13.44	162.60		
9:39:00	2.00	14.00	13.44	189.48		
9:41:00	2.00	16.00	13.27	216.02		
9:43:00	2.00	18.00	13.44	242.90		
9:45:00	2.00	20.00	13.44	269.78		
9:47:00	2.00	22.00	13.27	296.32		
9:49:00	2.00	24.00	13.27	322.86		
9:51:00	2.00	26.00	13.27	349.40		
9:53:00	2.00	28.00	13.77	376.94	163.25	3.79
9:55:00	2.00	30.00	13.27	403.48	163.55	3.49
10:00:00	5.00	35.00	13.10	468.98	163.51	3.53
10:05:00	5.00	40.00	13.77	537.83	162.70	4.34
10:10:00	5.00	45.00	13.60	605.83	162.25	4.79
10:15:00	5.00	50.00	13.60	673.83	162.91	4.13
10:20:00	5.00	55.00	13.60	741.83	162.55	4.49



Location/Well ID	TCS-01
Date	9/11/2022 & 9/13/2022
Screened Interval	214 - 268 ft. bgs
Injection Outlet Depth (ft btoc)	266 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.04
Initial Totalizer Reading (gal)	157846.00
Final Totalizer Reading (gal)	167585
Approx Pumped Volume (gal)	17165.64
Calculated Volume Purged (gal)	9739.00
Difference in Volume Pumped vs. Calculated	7426.64
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27,40.5 and 52 gpm

Step 1 (13.5 GPM) Time (HR:MN:SEC)	Change in Time Between Measurements (min)	Elapsed Time (min)	Pumping Rate (gpm)	Total Volume Pumped (gal)	Depth to Water (ft)	Mounding (ft)
10:25:00	5.00	60.00	13.77	810.68	163.18	3.86
10:35:00	10.00	70.00	13.77	948.38	162.99	4.05
10:45:00	10.00	80.00	13.77	1086.08	162.67	4.37
10:55:00	10.00	90.00	13.60	1222.08	162.39	4.65
11:05:00	10.00	100.00	13.77	1359.78	162.91	4.13
11:15:00	10.00	110.00	13.60	1495.78	163.00	4.04
<b>Total Volume Pumpe</b>	d for Step 1 (gal)		1495.78		<u> </u>	_
Average Pumping Ra	te (gpm)		13.54			
Specific Injectivity (g	pm/ft)		3.35			



Location/Well ID	TCS-01
Date	9/11/2022 & 9/13/2022
Screened Interval	214 - 268 ft. bgs
Injection Outlet Depth (ft btoc)	266 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.04
Initial Totalizer Reading (gal)	157846.00
Final Totalizer Reading (gal)	167585
Approx Pumped Volume (gal)	17165.64
Calculated Volume Purged (gal)	9739.00
Difference in Volume Pumped vs. Calculated	7426.64
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27,40.5 and 52 gpm

Step 2 (27 GPM) Time	Change in Time Between measurements	Elapsed Time from Test Start	Pumping Rate	Total Volume	Depth to	Drawdown	Elapsed Time from Step 2 Start
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (gal)	Water (ft)	(ft)	(min)
11:15:00	0.00	110.00	13.60	1495.78	163.00	4.04	0.00
11:25:20	10.33	120.33	18.20	1683.84	162.98	4.06	10.33
11:25:40	0.33	120.67	22.80	1691.44	163.10	3.94	10.67
11:26:00	0.33	121.00	27.38	1700.57			11.00
11:27:00	1.00	122.00	27.38	1727.95	163.00	4.04	12.00
11:28:00	1.00	123.00	27.54	1755.49			13.00
11:29:00	1.00	124.00	27.21	1782.70			14.00
11:30:00	1.00	125.00	27.21	1809.91			15.00
11:31:00	1.00	126.00	27.21	1837.12			16.00
11:32:00	1.00	127.00	27.21	1864.33			17.00
11:33:00	1.00	128.00	27.21	1891.54			18.00
11:34:00	1.00	129.00	27.21	1918.75			19.00
11:35:00	1.00	130.00	27.21	1945.96			20.00
11:37:00	2.00	132.00	27.38	2000.72			22.00
11:39:00	2.00	134.00	27.21	2055.14	157.30	9.74	24.00
11:41:00	2.00	136.00	27.38	2109.90	157.51	9.53	26.00
11:43:00	2.00	138.00	27.54	2164.98	158.10	8.94	28.00
11:45:00	2.00	140.00	27.21	2219.40			30.00
11:47:00	2.00	142.00	27.21	2273.82	155.10	11.94	32.00
11:49:00	2.00	144.00	27.04	2327.90			34.00
11:51:00	2.00	146.00	27.04	2381.98			36.00
11:53:00	2.00	148.00	27.21	2436.40			38.00
11:55:00	2.00	150.00	27.21	2490.82	154.40	12.64	40.00
12:00:00	5.00	155.00	27.04	2626.02	157.94	9.10	45.00
12:05:00	5.00	160.00	27.04	2761.22	157.40	9.64	50.00
12:10:00	5.00	165.00	27.04	2896.42	157.35	9.69	55.00
12:15:00	5.00	170.00	27.21	3032.47	157.13	9.91	60.00
12:20:00	5.00	175.00	27.21	3168.52	158.00	9.04	65.00
12:25:00	5.00	180.00	27.38	3305.42	157.21	9.83	70.00



Location/Well ID	TCS-01
Date	9/11/2022 & 9/13/2022
Screened Interval	214 - 268 ft. bgs
Injection Outlet Depth (ft btoc)	266 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.04
Initial Totalizer Reading (gal)	157846.00
Final Totalizer Reading (gal)	167585
Approx Pumped Volume (gal)	17165.64
Calculated Volume Purged (gal)	9739.00
Difference in Volume Pumped vs. Calculated	7426.64
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27,40.5 and 52 gpm

Step 2	Change in Time	Elapsed					Elapsed
(27 GPM)	Between	Time from	Pumping				Time from
Time	measurements	Test Start	Rate	Total Volume	Depth to	Drawdown	Step 2 Start
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (gal)	Water (ft)	(ft)	(min)
12:35:00	10.00	190.00	27.21	3577.52	159.25	7.79	80.00
12:45:00	10.00	200.00	27.04	3847.92	157.70	9.34	90.00
12:55:00	10.00	210.00	27.21	4120.02	157.04	10.00	100.00
13:05:00	10.00	220.00	27.38	4393.82	157.34	9.70	110.00
13:15:00	10.00	230.00	27.04	4664.22	157.60	9.44	120.00
<b>Total Volume Pumpe</b>	ed for Step 2 (gal)		3168.44				
<b>Average Pumping Ra</b>	te (gpm)		27.23				
Specific Injectivity (g	pm/ft)		2.88				



Location/Well ID	TCS-01
Date	9/11/2022 & 9/13/2022
Screened Interval	214 - 268 ft. bgs
Injection Outlet Depth (ft btoc)	266 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.04
Initial Totalizer Reading (gal)	157846.00
Final Totalizer Reading (gal)	167585
Approx Pumped Volume (gal)	17165.64
Calculated Volume Purged (gal)	9739.00
Difference in Volume Pumped vs. Calculated	7426.64
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27,40.5 and 52 gpm

Step 3	Change in Time	Elapsed					Elapsed
( 40.5 gpm) 	Between	Time from					Time from
Time	Measurements	Test Start	Rate	Total Volume	Depth to	Drawdown	Step 3 Start
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (Gallons)	Water (ft)	(ft)	(min)
13:15:00	0.00	230.00	27.04	4664.22	157.60	9.44	0.00
13:25:00	10.00	240.00	33.36	4997.77	158.00	9.04	10.00
13:25:20	0.33	240.33	39.67	5010.99	158.40	8.64	10.33
13:25:40	0.33	240.67	40.00	5024.33	157.95	9.09	10.67
13:26:00	0.33	241.00	40.33	5037.77	157.50	9.54	11.00
13:27:00	1.00	242.00	40.66	5078.43	151.71	15.33	12.00
13:28:00	1.00	243.00	40.66	5119.09	148.17	18.87	13.00
13:29:00	1.00	244.00	40.60	5159.69	152.84	14.20	14.00
13:30:00	1.00	245.00	40.50	5200.19	151.41	15.63	15.00
13:31:00	1.00	246.00	40.60	5240.79	153.65	13.39	16.00
13:32:00	1.00	247.00	40.50	5281.29	155.38	11.66	17.00
13:33:00	1.00	248.00	40.50	5321.79	155.19	11.85	18.00
13:34:00	1.00	249.00	40.50	5362.29	154.30	12.74	19.00
13:35:00	1.00	250.00	40.50	5402.79	156.52	10.52	20.00
13:37:00	2.00	252.00	40.50	5483.79	155.98	11.06	22.00
13:39:00	2.00	254.00	40.50	5564.79	155.50	11.54	24.00
13:41:00	2.00	256.00	40.33	5645.45	155.55	11.49	26.00
13:43:00	2.00	258.00	40.33	5726.11	156.00	11.04	28.00
13:45:00	2.00	260.00	40.33	5806.77	155.65	11.39	30.00
13:47:00	2.00	262.00	40.33	5887.43	155.20	11.84	32.00
13:49:00	2.00	264.00	40.33	5968.09	156.40	10.64	34.00
13:51:00	2.00	266.00	40.33	6048.75	155.56	11.48	36.00
13:53:00	2.00	268.00	40.33	6129.41	155.56	11.48	38.00
13:55:00	2.00	270.00	40.50	6210.41	156.67	10.37	40.00
14:00:00	5.00	275.00	40.33	6412.06	155.58	11.46	45.00
14:05:00	5.00	280.00	40.33	6613.71	156.45	10.59	50.00
14:10:00	5.00	285.00	40.33	6815.36	155.41	11.63	55.00
14:15:00	5.00	290.00	40.33	7017.01	156.29	10.75	60.00
14:20:00	5.00	295.00	40.33	7218.66	156.60	10.44	65.00



Location/Well ID	TCS-01
Date	9/11/2022 & 9/13/2022
Screened Interval	214 - 268 ft. bgs
Injection Outlet Depth (ft btoc)	266 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.04
Initial Totalizer Reading (gal)	157846.00
Final Totalizer Reading (gal)	167585
Approx Pumped Volume (gal)	17165.64
Calculated Volume Purged (gal)	9739.00
Difference in Volume Pumped vs. Calculated	7426.64
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27,40.5 and 52 gpm

Step 3 ( 40.5 gpm) Time (HR:MN:SEC)	Change in Time Between Measurements (min)	Elapsed Time from Test Start (min)	Pumping Rate (gpm)	Total Volume Pumped (Gallons)	Depth to Water (ft)	Drawdown (ft)	Elapsed Time from Step 3 Start (min)
14:25:00		. ,			155.63	11.41	
14:35:00	10.00	310.00	40.33	7823.61	156.80	10.24	80.00
14:45:00	10.00	320.00	40.33	8226.91	156.37	10.67	90.00
14:55:00	10.00	330.00	40.33	8630.21	157.65	9.39	100.00
15:05:00	10.00	340.00	40.33	9033.51	156.59	10.45	110.00
15:15:00	10.00	350.00	40.16	9435.11	156.90	10.14	120.00
15:25:00	10.00	360.00	40.35	9838.61	157.30	9.74	130.00
<b>Total Volume Pumpe</b>	d for Step 3 (gal)		5174.39				
<b>Average Pumping Ra</b>	te (gpm)		40.41				
Specific Injectivity (g	pm/ft)		4.15				

Average Pumping Rate (gpm)

Specific Injectivity (gpm/ft)

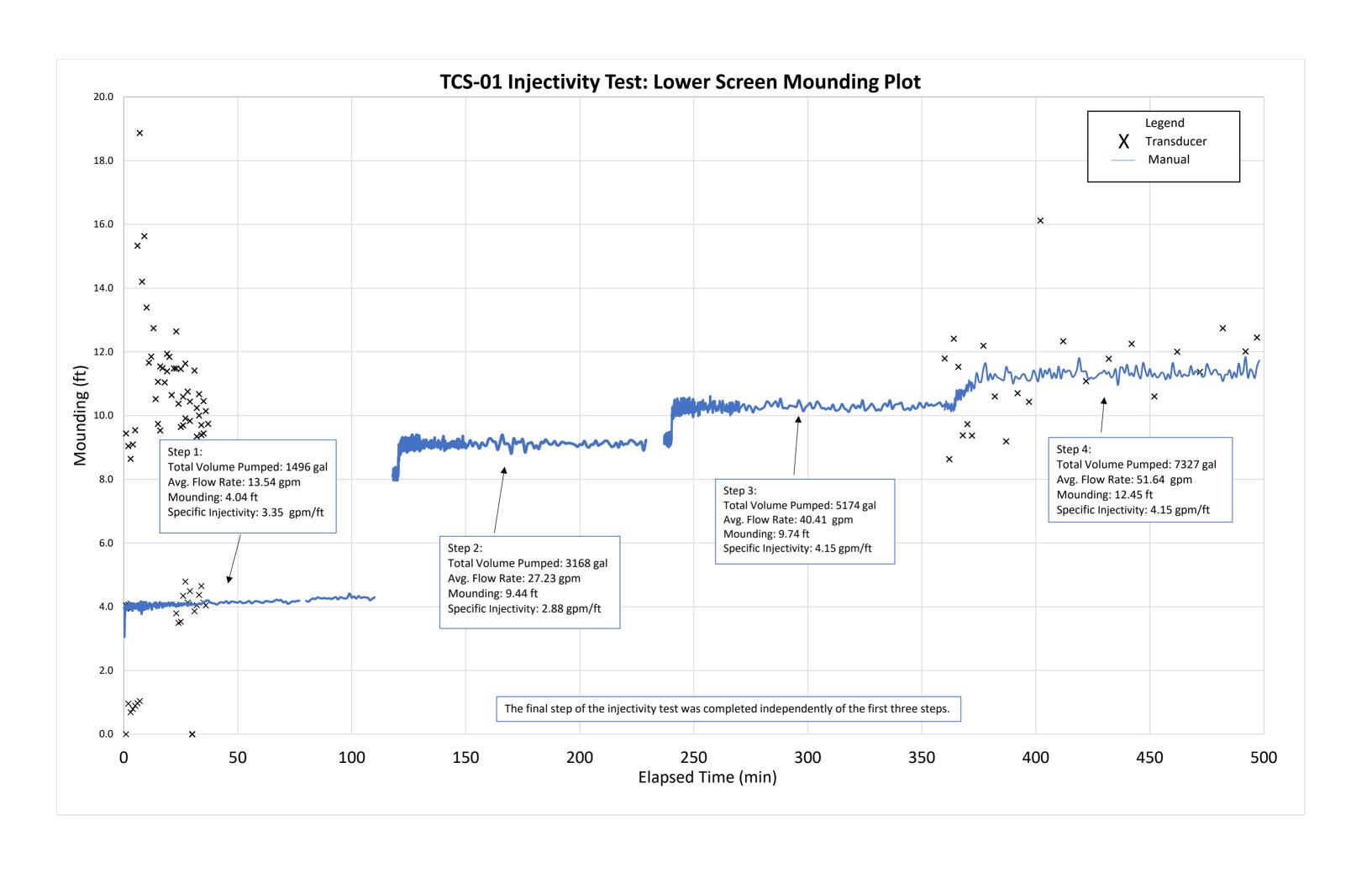


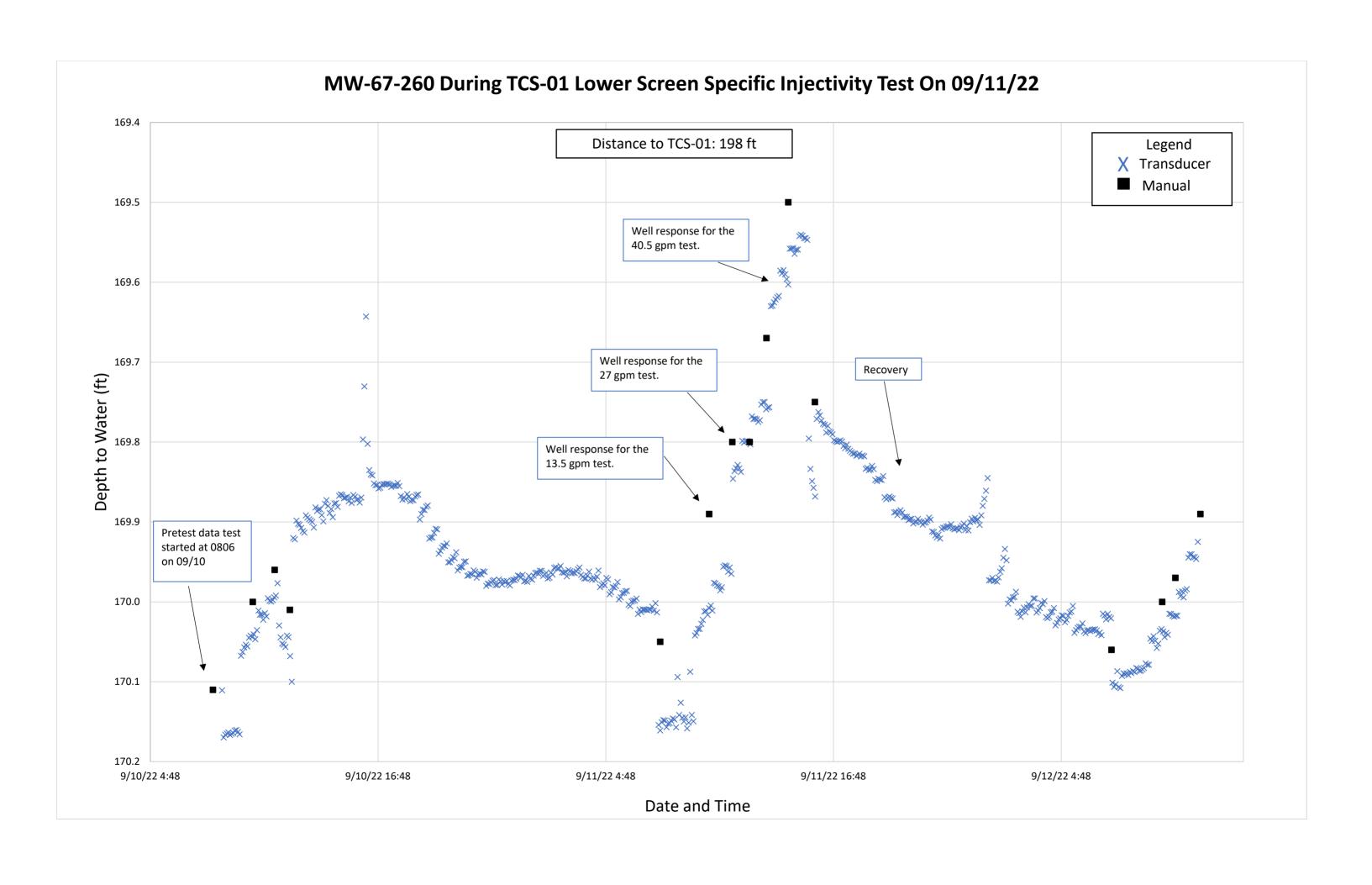
Location/Well ID	TCS-01
Date	9/11/2022 & 9/13/2022
Screened Interval	214 - 268 ft. bgs
Injection Outlet Depth (ft btoc)	266 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.04
Initial Totalizer Reading (gal)	157846.00
Final Totalizer Reading (gal)	167585
Approx Pumped Volume (gal)	17165.64
Calculated Volume Purged (gal)	9739.00
Difference in Volume Pumped vs. Calculated	7426.64
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27,40.5 and 52 gpm

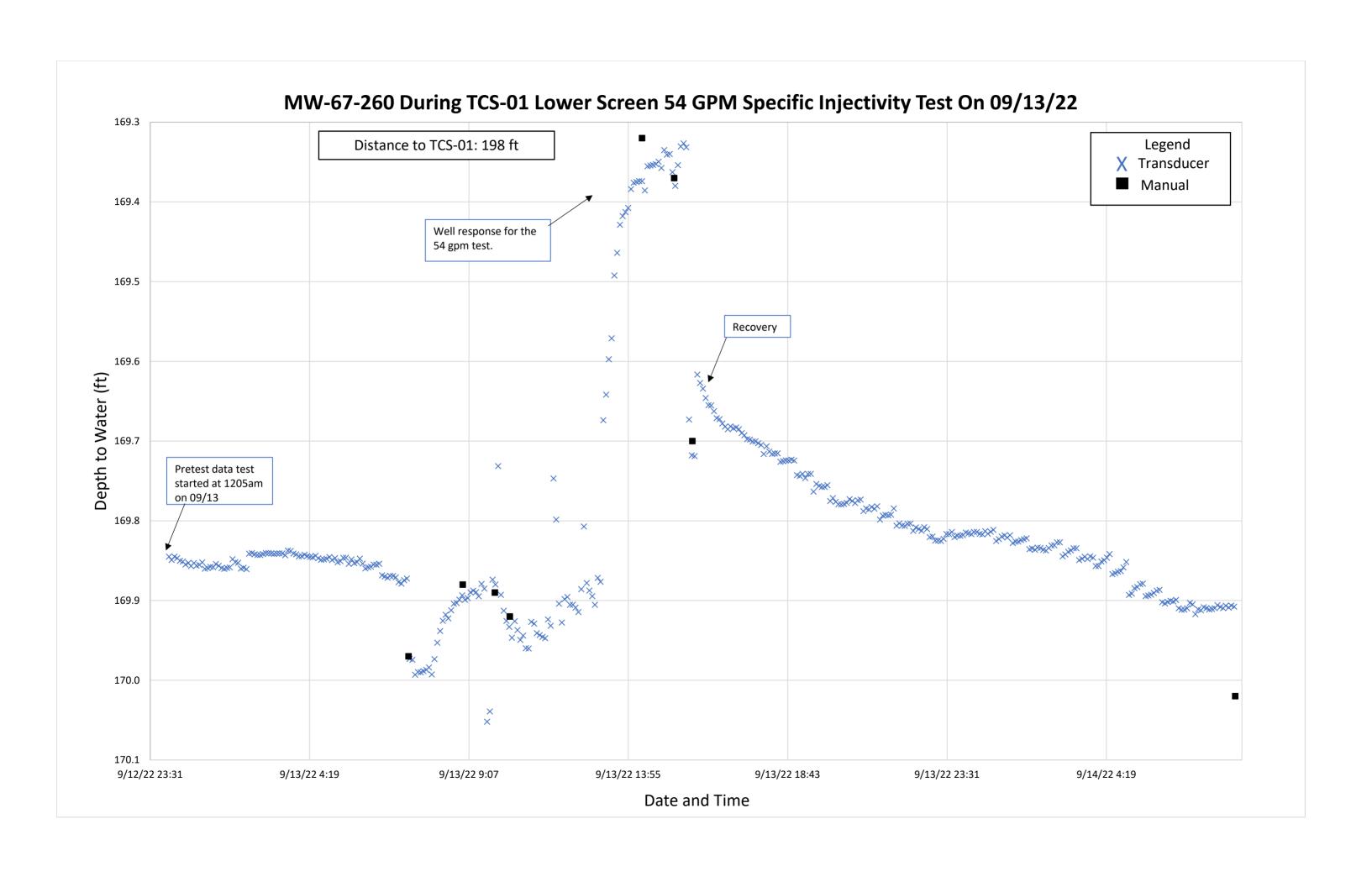
Step 4 ( 54.0 gpm) Time	Change in Time Between Measurements	Elapsed Time from Test Start	Pumping Rate	Total Volume	Depth to	Drawdown	Elapsed Time from Step 3 Start
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (Gallons)	Water (ft)	(ft)	(min)
13:23:00	0.00	360.00	41.81	9838.61	155.25	11.79	0.00
13:25:00	2.00	362.00	42.27	9923.15	158.41	8.63	132.00
13:27:00	2.00	364.00	42.12	10007.39	154.63	12.41	134.00
13:29:00	2.00	366.00	47.22	10101.83	155.51	11.53	136.00
13:31:00	2.00	368.00	47.38	10196.59	157.66	9.38	138.00
13:33:00	2.00	370.00	50.05	10296.69	157.31	9.73	140.00
13:35:00	2.00	372.00	50.05	10396.79	157.67	9.37	142.00
13:40:00	5.00	377.00	54.39	10668.74	154.85	12.19	147.00
13:45:00	5.00	382.00	54.39	10940.69	156.44	10.60	152.00
13:50:00	5.00	387.00	54.39	11212.64	157.85	9.19	157.00
13:55:00	5.00	392.00	54.22	11483.74	156.34	10.70	162.00
14:00:00	5.00	397.00	54.22	11754.84	156.61	10.43	167.00
14:05:00	5.00	402.00	54.06	12025.14	150.92	16.12	172.00
14:15:00	10.00	412.00	54.06	12565.74	154.71	12.33	182.00
14:25:00	10.00	422.00	54.06	13106.34	155.96	11.08	192.00
14:35:00	10.00	432.00	54.22	13648.54	155.26	11.78	202.00
14:45:00	10.00	442.00	54.06	14189.14	154.79	12.25	212.00
14:55:00	10.00	452.00	54.22	14731.34	156.44	10.60	222.00
15:05:00	10.00	462.00	54.22	15273.54	155.04	12.00	232.00
15:15:00	10.00	472.00	54.06	15814.14	155.67	11.37	242.00
15:25:00	10.00	482.00	54.06	16354.74	154.30	12.74	252.00
15:35:00	10.00	492.00	54.06	16895.34	155.03	12.01	262.00
15:40:00	5.00	497.00	54.06	17165.64	154.59	12.45	267.00
Total Volume Pumpe	d for Step 3 (gal)		7327.03			<del></del>	

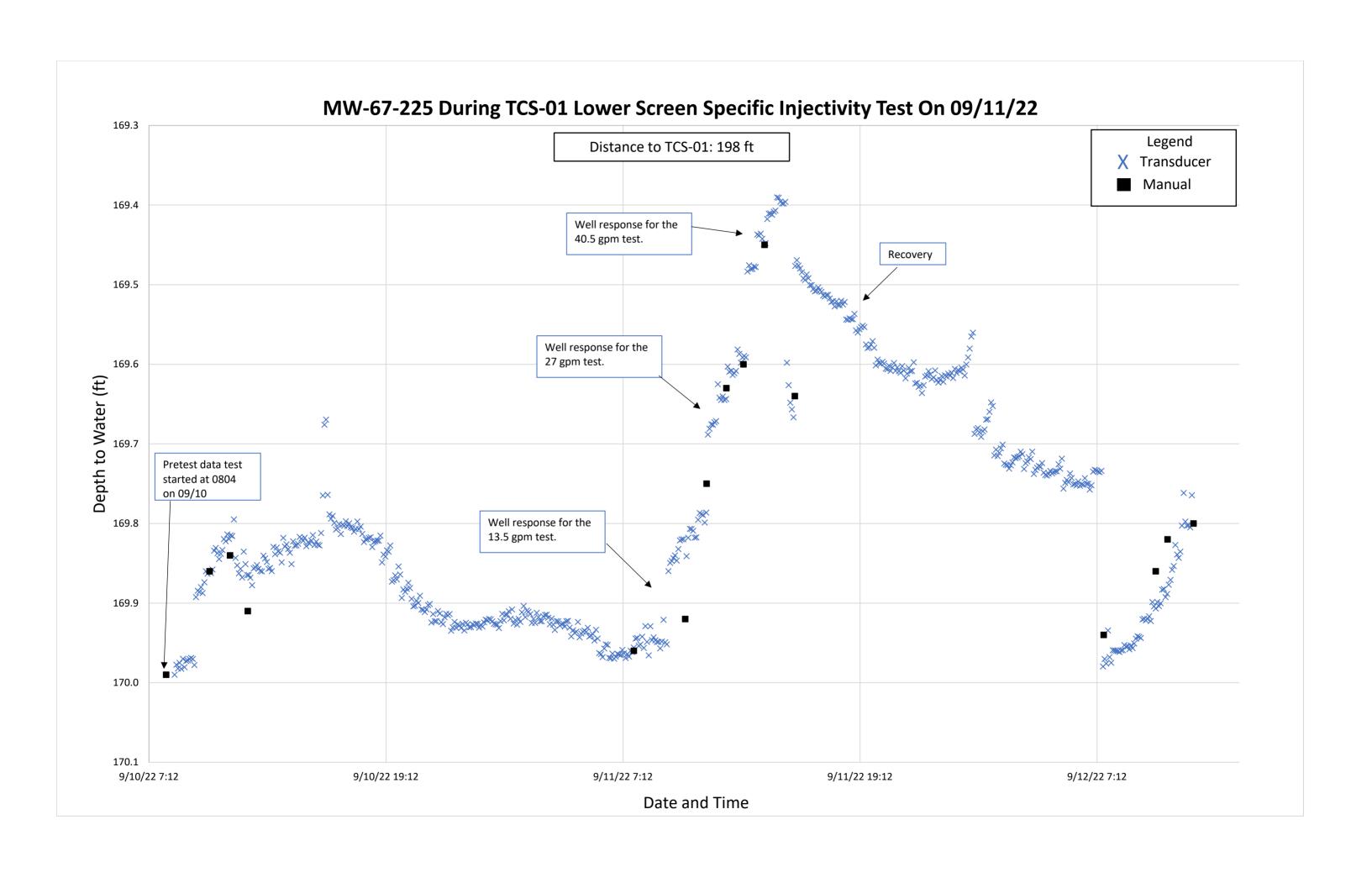
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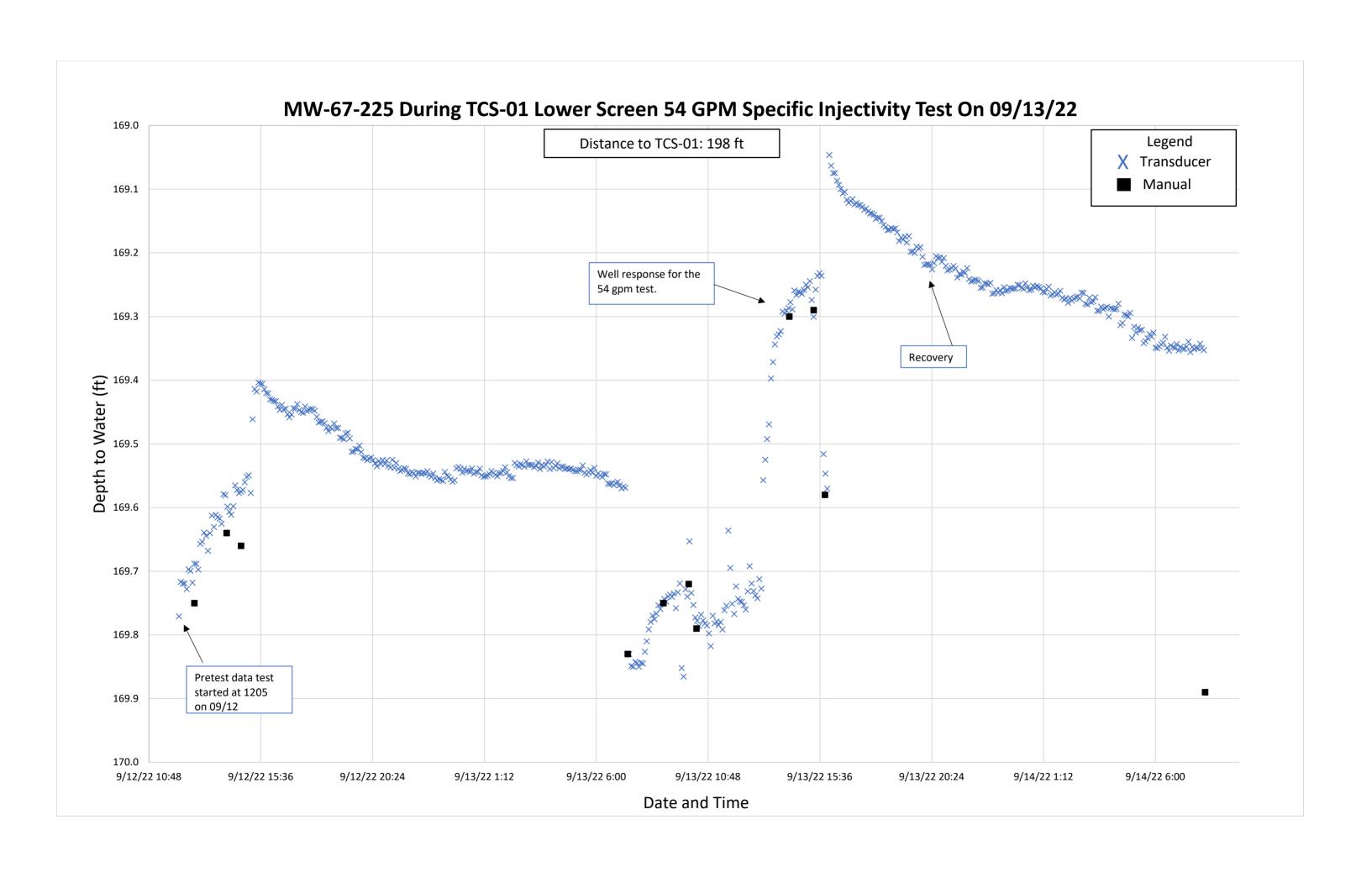
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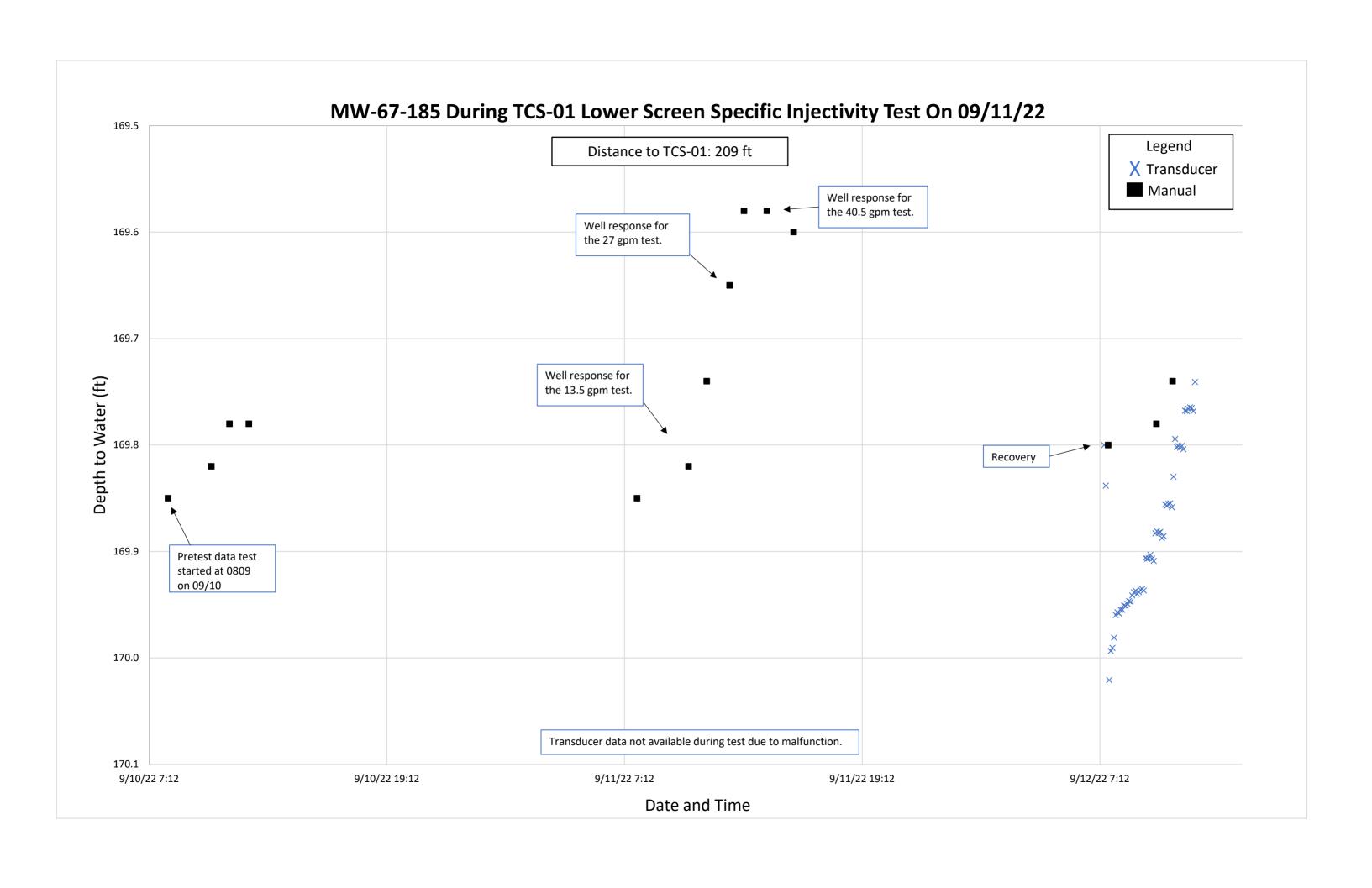


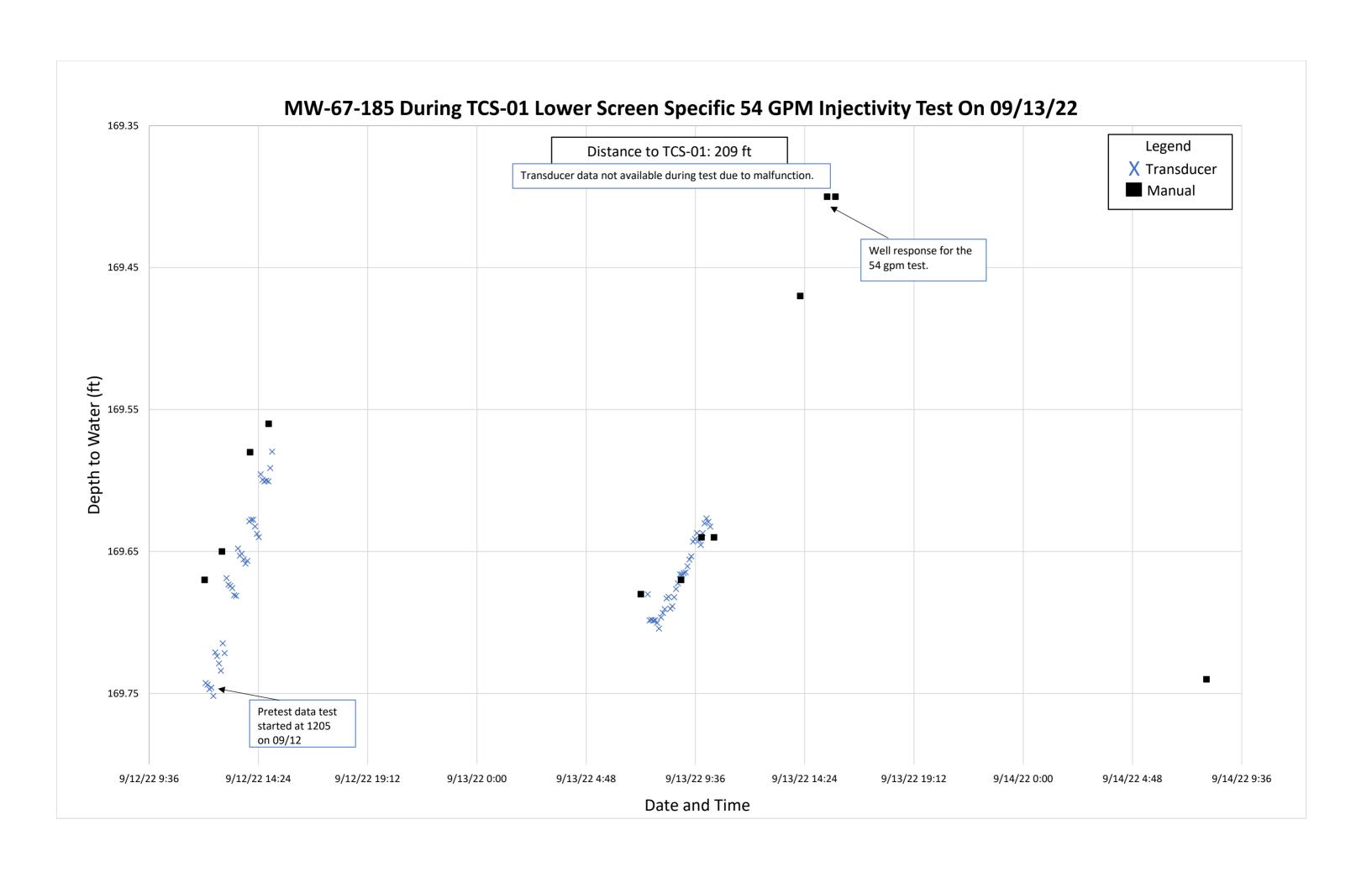














Location/Well ID	TCS-01 (Upper Screen)				
Date	9/12/2022 to 9/13/2022				
Screened Interval Tested	171 - 190 ft bgs				
Packer Set Depth	200 ft bgs				
Packer Seal Test	N/A				
Tests Conducted	four-step injectivity test (13.5, 27, 40.5, and 54 gpm)				
Purpose	Well performance test				
Summary	Specific injectivity results: $13.5 \text{ gpm} = 6.41 \text{ gpm/ft}$ , $27 \text{ gpm} = 8.09 \text{ gpm/ft}$ , $40.5 \text{ gpm} = 8.74 \text{ gpm/ft}$ , $54 \text{ gpm} = 9.23 \text{ gpm/ft}$ .				
Notes	The transducer used during this test was not set-up correctly. The test results are based on the manual data.				
Oversight Signature	a. Sill				
Date	10/3/2022				



Location/Well ID	TCS-01
Date	9/12/2022 - 9/13/2022
Screened Interval	171 - 190 ft. bgs
Injection Outlet Depth (ft btoc)	187 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.00
Initial Totalizer Reading (gal)	167585.00
Final Totalizer Reading (gal)	177470
Approx Pumped Volume (gal)	15829.15
Calculated Volume Purged (gal)	9885.00
Difference in Volume Pumped vs. Calculated	5944.15
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27, 40.5 and 54 gpm

Step 1 (13.5 GPM) Time	Change in Time Between Measurements	Elapsed Time	Pumping Rate	Total Volume	Depth to	Increase in Water Level
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (gal)	Water (ft)	(ft)
9:00:00	0.00	0.00	0.00	0.00	167.00	0.00
9:00:30	0.50	0.50	13.50	6.75	165.88	1.12
9:01:00	0.50	1.00	13.25	13.38	165.48	1.52
9:02:00	1.00	2.00	13.60	26.97	165.19	1.81
9:03:00	1.00	3.00	13.60	40.57	165.04	1.96
9:04:00	1.00	4.00	13.60	54.18	164.92	2.08
9:05:00	1.00	5.00	13.60	67.77	164.90	2.10
9:06:00	1.00	6.00	13.60	81.37	164.85	2.15
9:07:00	1.00	7.00	13.60	94.97	164.33	2.67
9:08:00	1.00	8.00	13.60	108.57	164.80	2.20
9:09:00	1.00	9.00	13.77	122.35	164.70	2.30
9:10:00	1.00	10.00	13.60	135.94	164.75	2.25
9:12:00	2.00	12.00	13.60	163.15	164.75	2.25
9:14:00	2.00	14.00	13.60	190.35	164.74	2.26
9:16:00	2.00	16.00	13.77	217.89	164.75	2.25
9:18:00	2.00	18.00	13.60	245.09	164.74	2.26
9:20:00	2.00	20.00	13.59	272.27	164.74	2.26
9:22:00	2.00	22.00	13.71	299.69	164.74	2.26
9:24:00	2.00	24.00	13.60	326.89	164.75	2.25
9:26:00	2.00	26.00	13.60	354.09	164.75	2.25
9:28:00	2.00	28.00	13.60	381.29	164.75	2.25
9:30:00	2.00	30.00	13.60	408.49	164.76	2.24
9:35:00	5.00	35.00	13.60	476.49	164.79	2.21
9:40:00	5.00	40.00	13.60	544.48	164.80	2.20
9:45:00	5.00	45.00	13.44	611.68	164.84	2.16
9:50:00	5.00	50.00	13.60	679.68	164.88	2.12
9:55:00	5.00	55.00	13.60	747.68	164.85	2.15
10:00:00	5.00	60.00	13.60	815.68	164.88	2.12
10:10:00	10.00	70.00	13.44	950.08	164.90	2.10
10:20:00	10.00	80.00	13.60	1086.09	164.91	2.09
10:30:00	10.00	90.00	13.60	1222.09	164.92	2.08
10:40:00	10.00	100.00	13.60	1358.09	164.95	2.05
10:50:00	10.00	110.00	13.60	1494.09	164.97	2.03
11:00:00	10.00	120.00	13.60	1630.09	164.88	2.12
<b>Total Volume Pumpe</b>	d for Step 1 (gal)	1630.09			<u>-</u>	
	Average Pumping Rate (gpm)					
Specific Injectivity (g	pm/ft)		6.41			



Location/Well ID	TCS-01
Date	9/12/2022 - 9/13/2022
Screened Interval	171 - 190 ft. bgs
Injection Outlet Depth (ft btoc)	187 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.00
Initial Totalizer Reading (gal)	167585.00
Final Totalizer Reading (gal)	177470
Approx Pumped Volume (gal)	15829.15
Calculated Volume Purged (gal)	9885.00
Difference in Volume Pumped vs. Calculated	5944.15
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27, 40.5 and 54 gpm

Step 2 (27 GPM)	Change in Time Between	Elapsed Time from	Pumping			Increase in	Elapsed Time from
Time	measurements	<b>Test Start</b>	Rate	Total Volume	Depth to	Water Level	Step 2 Start
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (gal)	Water (ft)	(ft)	(min)
11:00:00	0.00	120.00	27.00	1630.09	164.88	2.12	0.00
11:00:30	0.50	120.50	27.00	1643.59	164.80	2.20	0.50
11:01:00	0.50	121.00	27.21	1657.19	163.68	3.32	1.00
11:02:00	1.00	122.00	27.04	1684.23	163.62	3.38	2.00
11:03:00	1.00	123.00	27.04	1711.27	163.59	3.41	3.00
11:04:00	1.00	124.00	27.21	1738.48	163.50	3.50	4.00
11:05:00	1.00	125.00	27.21	1765.69	163.48	3.52	5.00
11:06:00	1.00	126.00	27.21	1792.90	163.45	3.55	6.00
11:07:00	1.00	127.00	27.21	1820.11	163.44	3.56	7.00
11:08:00	1.00	128.00	27.21	1847.32	163.43	3.57	8.00
11:09:00	1.00	129.00	27.38	1874.70	163.42	3.58	9.00
11:10:00	1.00	130.00	27.21	1901.91	163.40	3.60	10.00
11:12:00	2.00	132.00	27.04	1955.99	163.40	3.60	12.00
11:14:00	2.00	134.00	27.04	2010.07	163.44	3.56	14.00
11:16:00	2.00	136.00	27.04	2064.15	163.44	3.56	16.00
11:18:00	2.00	138.00	27.04	2118.23	163.44	3.56	18.00
11:20:00	2.00	140.00	27.04	2172.31	163.45	3.55	20.00
11:22:00	2.00	142.00	27.04	2226.39	163.47	3.53	22.00
11:24:00	2.00	144.00	27.04	2280.47	163.47	3.53	24.00
11:26:00	2.00	146.00	27.21	2334.89	163.45	3.55	26.00
11:28:00	2.00	148.00	27.04	2388.97	163.45	3.55	28.00
11:30:00	2.00	150.00	27.04	2443.05	163.50	3.50	30.00
11:35:00	5.00	155.00	27.04	2578.25	163.51	3.49	35.00
11:40:00	5.00	160.00	27.04	2713.45	163.52	3.48	40.00
11:45:00	5.00	165.00	27.04	2848.65	163.55	3.45	45.00
11:50:00	5.00	170.00	27.04	2983.85	163.59	3.41	50.00
11:55:00	5.00	175.00	27.04	3119.05	163.59	3.41	55.00
12:00:00	5.00	180.00	27.04	3254.25	163.58	3.42	60.00
12:10:00	10.00	190.00	27.04	3524.65	163.60	3.40	70.00
12:20:00	10.00	200.00	27.04	3795.05	163.62	3.38	80.00
12:30:00	10.00	210.00	27.04	4065.45	163.64	3.36	90.00
12:40:00	10.00	220.00	27.04	4335.85	163.69	3.31	100.00
12:50:00	10.00	230.00	27.04	4606.25	163.65	3.35	110.00
13:00:00	10.00	240.00	27.04	4876.65	163.65	3.35	120.00
•	Total Volume Pumped for Step 2 (gal)		3246.56				
Average Pumping Ra	101 /		27.09				
Specific Injectivity (g	pm/ft)		8.09				



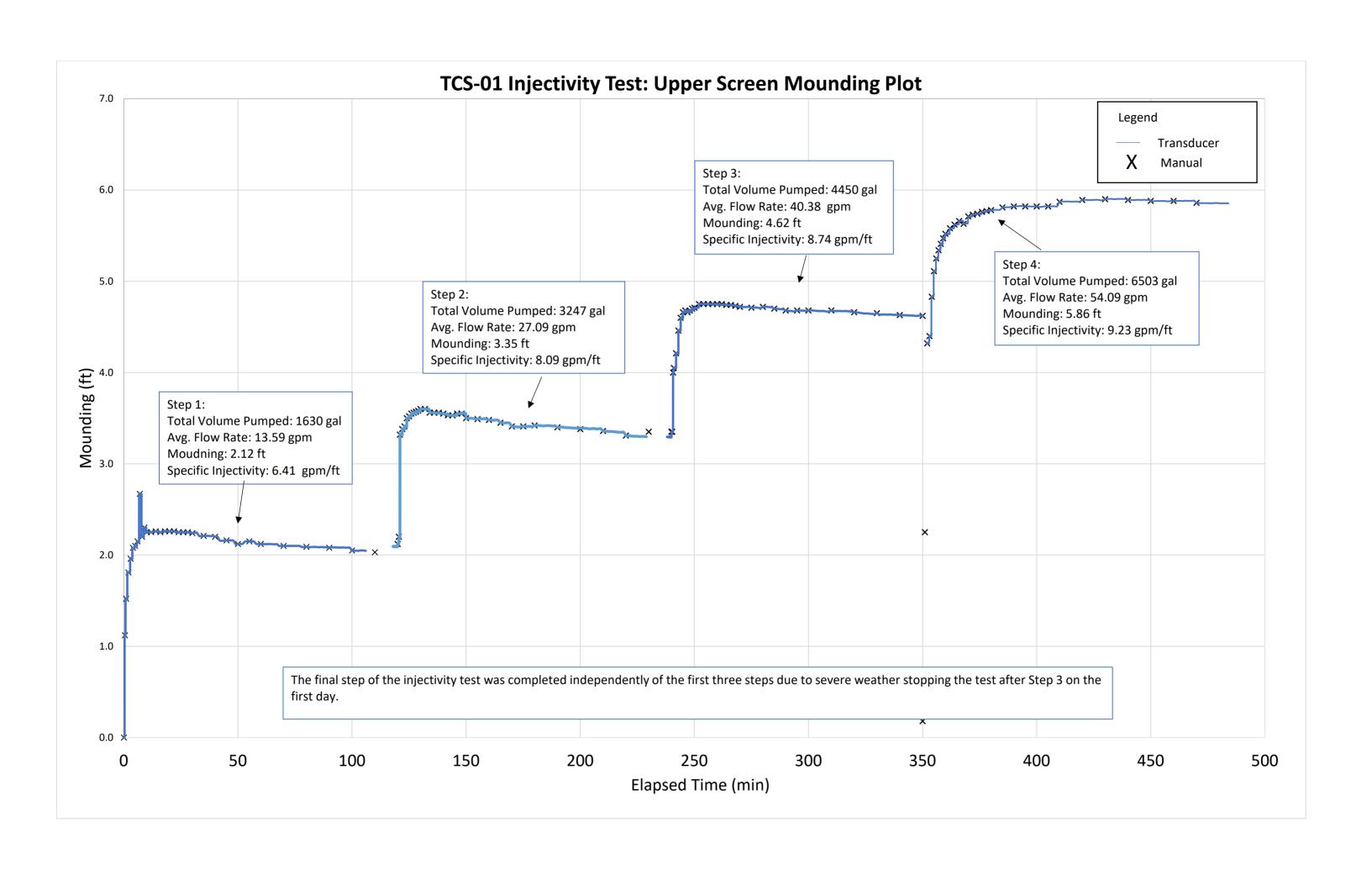
Location/Well ID	TCS-01
Date	9/12/2022 - 9/13/2022
Screened Interval	171 - 190 ft. bgs
Injection Outlet Depth (ft btoc)	187 ft bgs
Packer Depth (ft btoc)	200 ft bgs
Packer Leak Test (Pass/Fail)	Pass
Initial Water Level (ft btoc)	167.00
Initial Totalizer Reading (gal)	167585.00
Final Totalizer Reading (gal)	177470
Approx Pumped Volume (gal)	15829.15
Calculated Volume Purged (gal)	9885.00
Difference in Volume Pumped vs. Calculated	5944.15
Number of Specific Capacity Steps	4
Pumping Rates (in order)	13.5, 27, 40.5 and 54 gpm

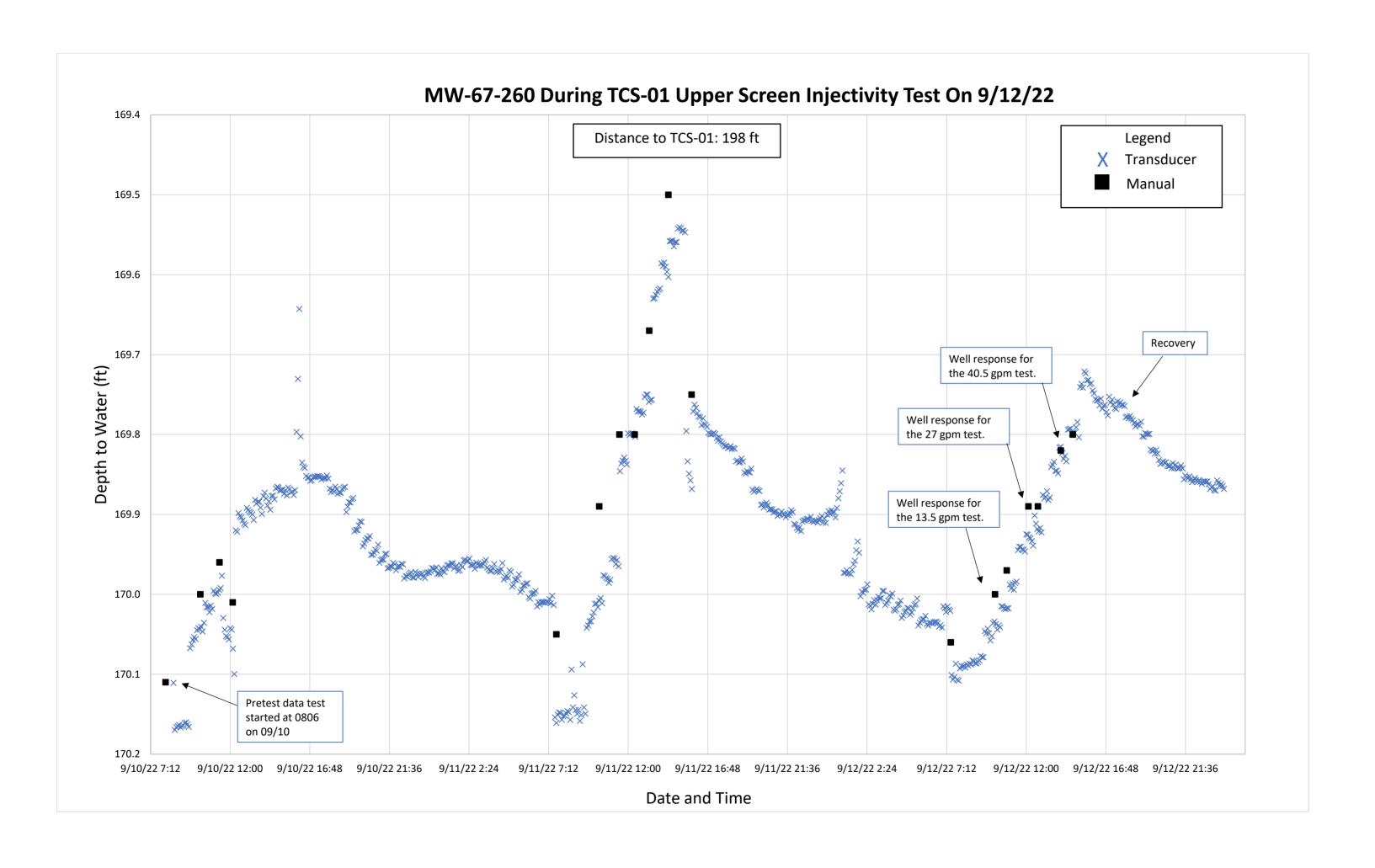
Step 3 ( 40.5 gpm) Time (HR:MN:SEC)	Change in Time Between Measurements (min)	Elapsed Time from Test Start (min)	Pumping Rate (gpm)	Total Volume Pumped (Gallons)	Depth to Water (ft)	Increase in Water Level (ft)	Elapsed Time from Step 3 Start (min)
13:00:00	0.00	240.00	40.50	4876.65	163.65	3.35	0.00
13:00:20	0.33	240.33	40.50	4890.15	163.65	3.35	0.33
13:00:40	0.33	240.67	40.50	4903.65	163.00	4.00	0.67
13:01:00	0.33	241.00	37.77	4916.24	162.95	4.05	1.00
13:02:00	1.00	242.00	39.06	4955.30	162.79	4.21	2.00
13:03:00	1.00	243.00	40.16	4995.46	162.54	4.46	3.00
13:04:00	1.00	244.00	40.66	5036.12	162.40	4.60	4.00
13:05:00	1.00	245.00	40.66	5076.78	162.34	4.66	5.00
13:06:00	1.00	246.00	40.66	5117.44	162.32	4.68	6.00
13:07:00	1.00	247.00	40.50	5157.94	162.34	4.66	7.00
13:08:00	1.00	248.00	40.50	5198.44	162.32	4.68	8.00
13:09:00	1.00	249.00	40.66	5239.10	162.30	4.70	9.00
13:10:00	1.00	250.00	40.50	5279.60	162.29	4.71	10.00
13:12:00	2.00	252.00	40.50	5360.60	162.25	4.75	12.00
13:14:00	2.00	254.00	40.50	5441.60	162.25	4.75	14.00
13:16:00	2.00	256.00	40.66	5522.92	162.25	4.75	16.00
13:18:00	2.00	258.00	40.50	5603.92	162.25	4.75	18.00
13:20:00	2.00	260.00	40.50	5684.92	162.25	4.75	20.00
13:22:00	2.00	262.00	40.66	5766.24	162.25	4.75	22.00
13:24:00	2.00	264.00	40.66	5847.56	162.26	4.74	24.00
13:26:00	2.00	266.00	40.50	5928.56	162.26	4.74	26.00
13:28:00	2.00	268.00	40.66	6009.88	162.27	4.73	28.00
13:30:00	2.00	270.00	40.50	6090.88	162.28	4.72	30.00
13:35:00	5.00	275.00	40.33	6292.53	162.29	4.71	35.00
13:40:00	5.00	280.00	40.33	6494.18	162.28	4.72	40.00
13:45:00	5.00	285.00	40.50	6696.68	162.30	4.70	45.00
13:50:00	5.00	290.00	40.16	6897.48	162.32	4.68	50.00
13:55:00	5.00	295.00	40.33	7099.13	162.32	4.68	55.00
14:00:00	5.00	300.00	40.50	7301.63	162.32	4.68	60.00
14:10:00	10.00	310.00	40.66	7708.23	162.32	4.68	70.00
14:20:00	10.00	320.00	40.66	8114.83	162.34	4.66	80.00
14:30:00	10.00	330.00	40.50	8519.83	162.35	4.65	90.00
14:40:00	10.00	340.00	40.33	8923.13	162.37	4.63	100.00
14:50:00	10.00	350.00	40.33	9326.43	162.38	4.62	110.00
Total Volume Pumped for Step 3 (gal)			4449.78				
Average Pumping Rate (gpm)			40.38				
Specific Injectivity (gpm/ft)			8.74				

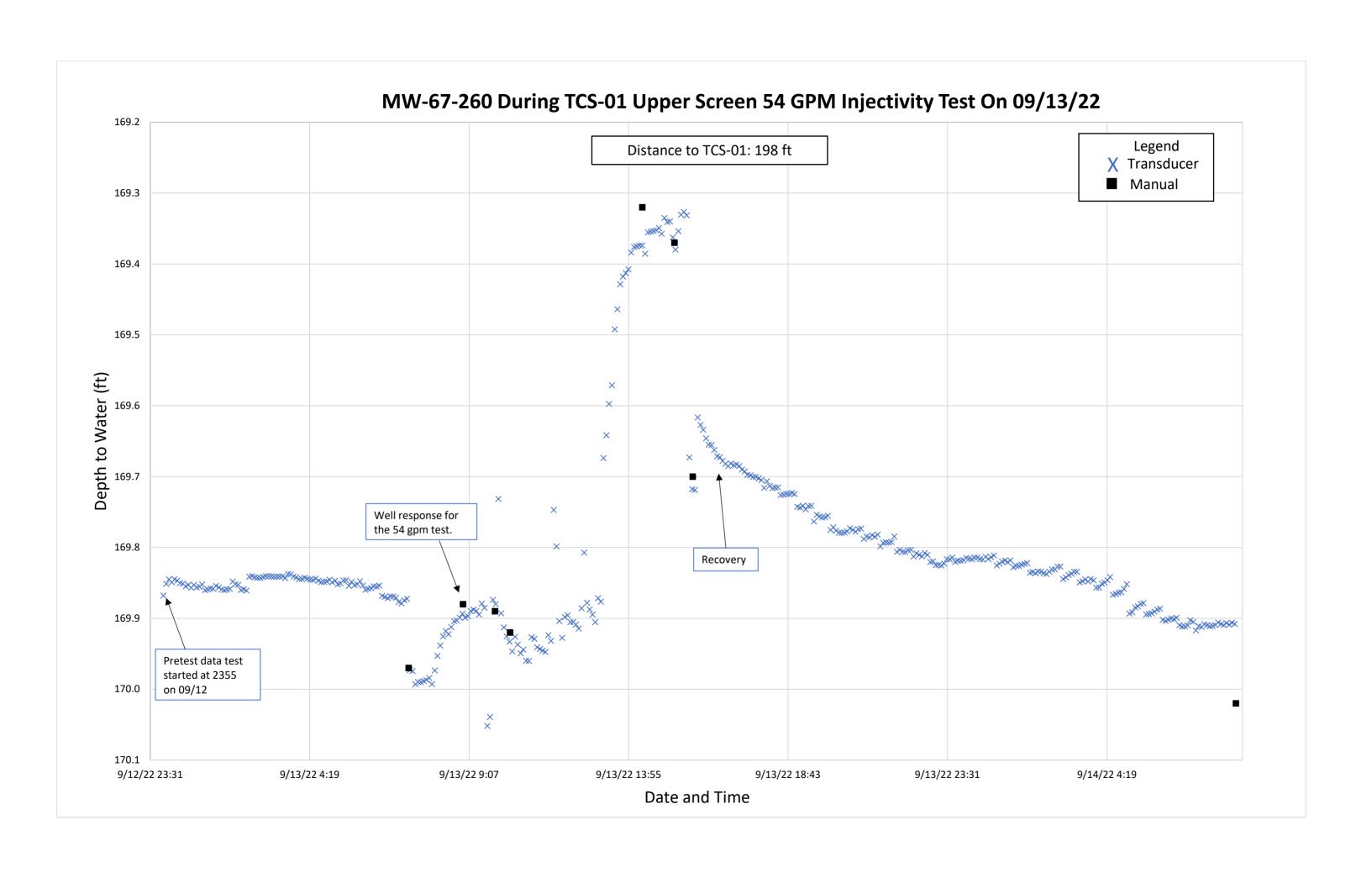


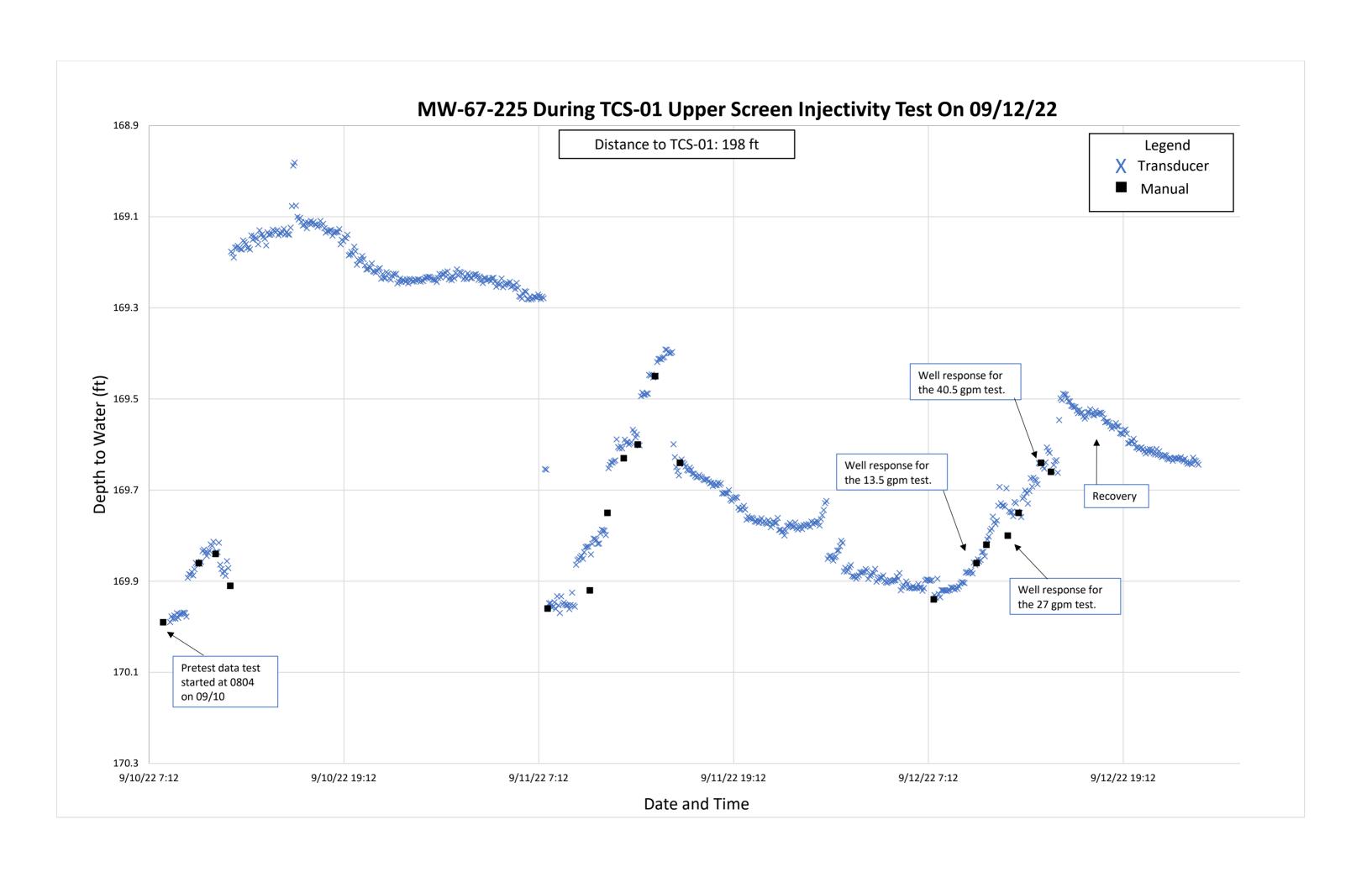
Location/Well ID	TCS-01		
Date	9/12/2022 - 9/13/2022		
Screened Interval	171 - 190 ft. bgs		
Injection Outlet Depth (ft btoc)	187 ft bgs		
Packer Depth (ft btoc)	200 ft bgs		
Packer Leak Test (Pass/Fail)	Pass		
Initial Water Level (ft btoc)	167.00		
Initial Totalizer Reading (gal)	167585.00		
Final Totalizer Reading (gal)	177470		
Approx Pumped Volume (gal)	15829.15		
Calculated Volume Purged (gal)	9885.00		
Difference in Volume Pumped vs. Calculated	5944.15		
Number of Specific Capacity Steps	4		
Pumping Rates (in order)	13.5, 27, 40.5 and 54 gpm		

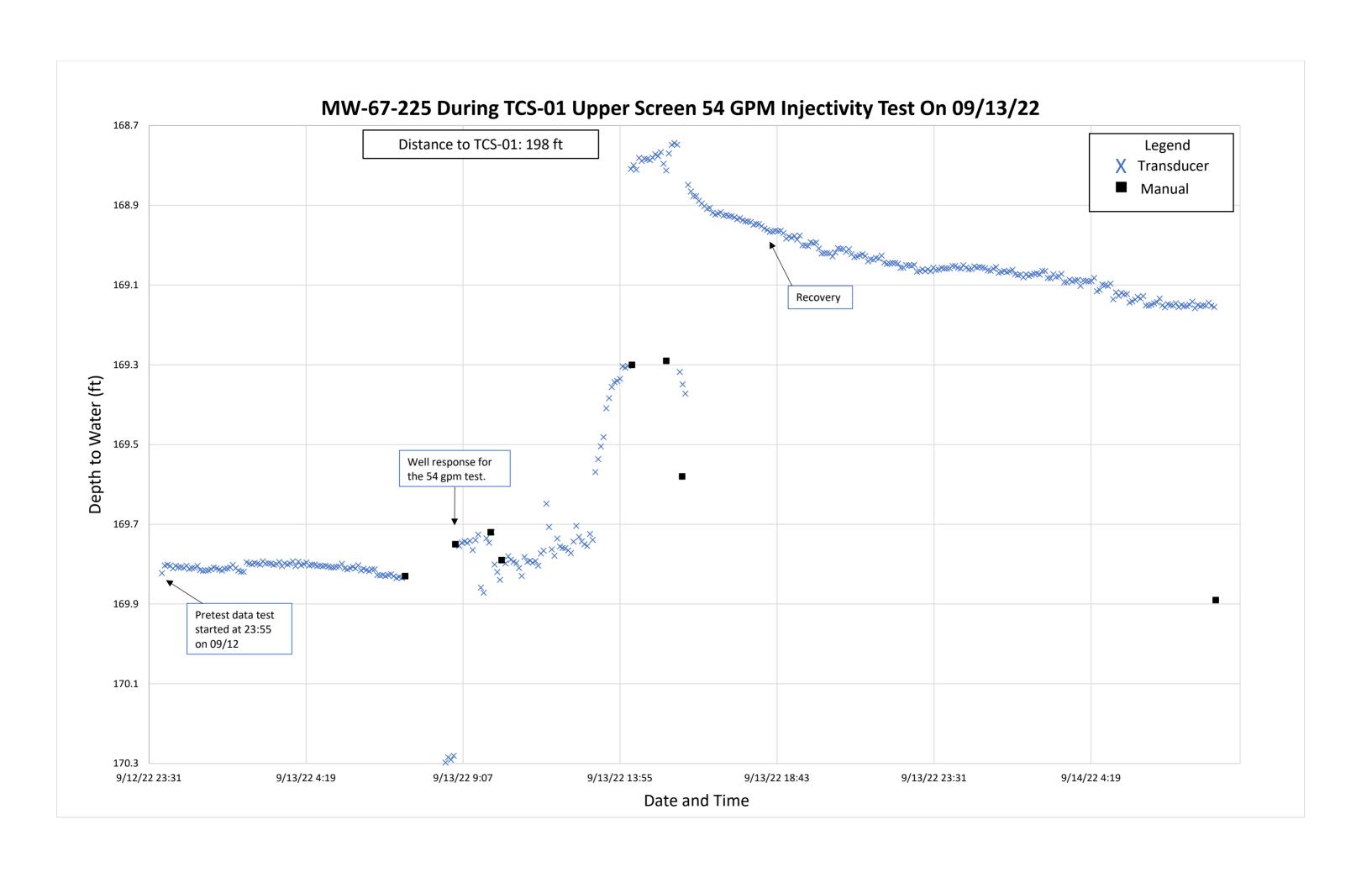
Step 4 ( 54.0 gpm)	Change in Time Between	Elapsed Time from	Pumping			Increase in	Elapsed Time from
Time	Measurements	Test Start	Rate	Total Volume	Depth to	Water Level	Step 3 Start
(HR:MN:SEC)	(min)	(min)	(gpm)	Pumped (Gallons)	Water (ft)	(ft)	(min)
8:00:00	0.00	350.00	0.00	9326.43	166.82	0.18	0.00
8:01:00	1.00	351.00	53.24	9379.67	164.75	2.25	111.00
8:02:00	1.00	352.00	53.14	9432.81	162.68	4.32	112.00
8:03:00	1.00	353.00	53.04	9485.85	162.60	4.40	113.00
8:04:00	1.00	354.00	54.12	9539.97	162.17	4.83	114.00
8:05:00	1.00	355.00	54.06	9594.03	161.89	5.11	115.00
8:06:00	1.00	356.00	54.06	9648.09	161.75	5.25	116.00
8:07:00	1.00	357.00	54.22	9702.31	161.66	5.34	117.00
8:08:00	1.00	358.00	54.06	9756.37	161.59	5.41	118.00
8:09:00	1.00	359.00	54.22	9810.59	161.53	5.47	119.00
8:10:00	1.00	360.00	54.22	9864.81	161.48	5.52	120.00
8:12:00	2.00	362.00	54.22	9973.25	161.42	5.58	122.00
8:14:00	2.00	364.00	54.06	10081.37	161.38	5.62	124.00
8:16:00	2.00	366.00	54.22	10189.81	161.34	5.66	126.00
8:18:00	2.00	368.00	54.22	10298.25	161.37	5.63	128.00
8:20:00	2.00	370.00	54.39	10407.03	161.29	5.71	130.00
8:22:00	2.00	372.00	54.06	10515.15	161.27	5.73	132.00
8:24:00	2.00	374.00	54.22	10623.59	161.26	5.74	134.00
8:26:00	2.00	376.00	54.22	10732.03	161.24	5.76	136.00
8:28:00	2.00	378.00	54.22	10840.47	161.23	5.77	138.00
8:30:00	2.00	380.00	54.39	10949.25	161.22	5.78	140.00
8:35:00	5.00	385.00	54.06	11219.55	161.19	5.81	145.00
8:40:00	5.00	390.00	54.02	11489.65	161.18	5.82	150.00
8:45:00	5.00	395.00	54.06	11759.95	161.18	5.82	155.00
8:50:00	5.00	400.00	53.90	12029.45	161.18	5.82	160.00
8:55:00	5.00	405.00	54.06	12299.75	161.18	5.82	165.00
9:00:00	5.00	410.00	54.22	12570.85	161.13	5.87	170.00
9:10:00	10.00	420.00	54.22	13113.05	161.11	5.89	180.00
9:20:00	10.00	430.00	54.39	13656.95	161.10	5.90	190.00
9:30:00	10.00	440.00	54.39	14200.85	161.11	5.89	200.00
9:40:00	10.00	450.00	54.39	14744.75	161.12	5.88	210.00
9:50:00	10.00	460.00	54.22	15286.95	161.12	5.88	220.00
10:00:00	10.00	470.00	54.22	15829.15	161.14	5.86	230.00
otal Volume Pumped for Step 3 (gal)			6502.72				
Average Pumping Rate (gpm)			54.09				
Specific Injectivity (gpm/ft)			9.23				

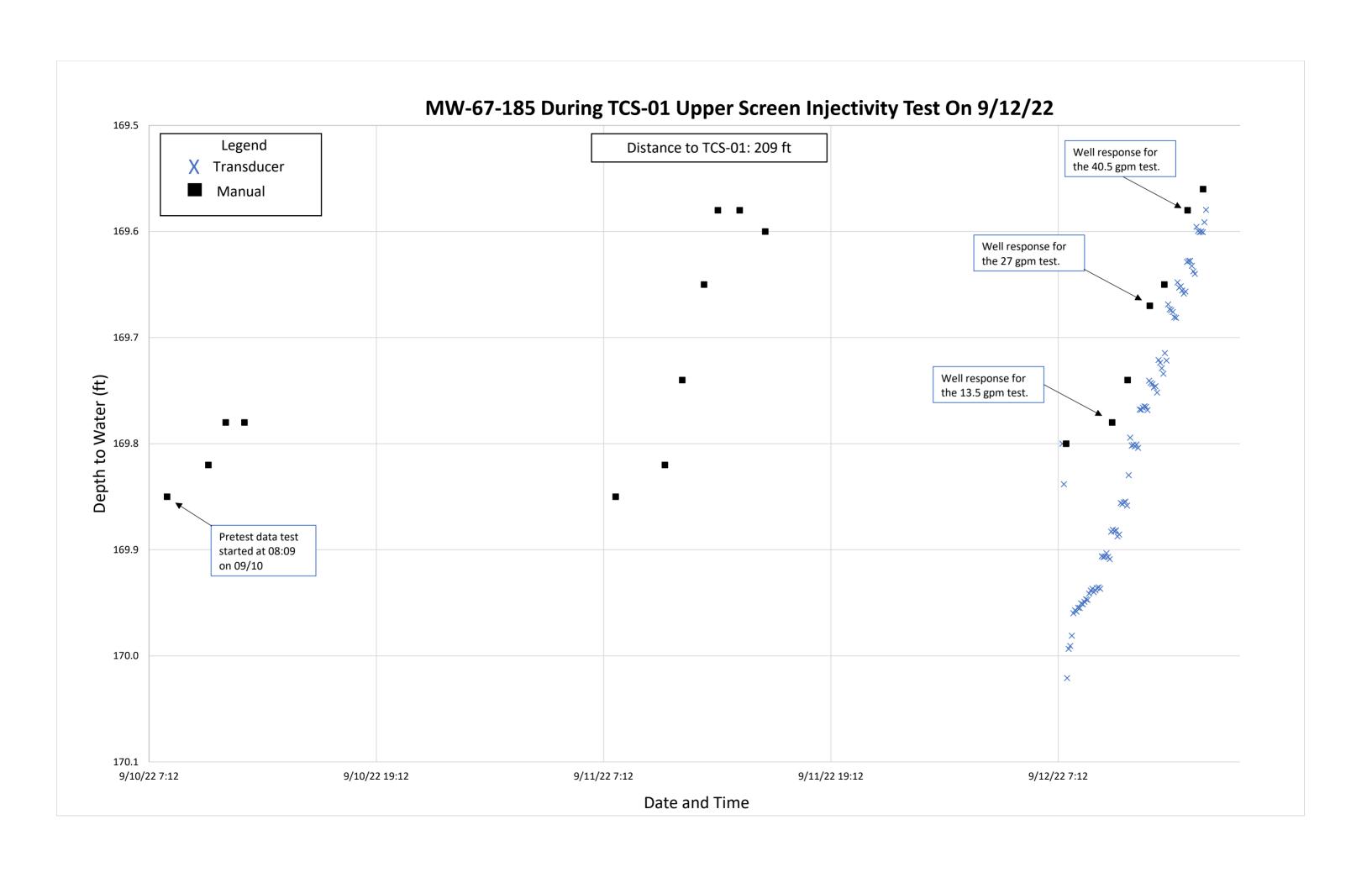


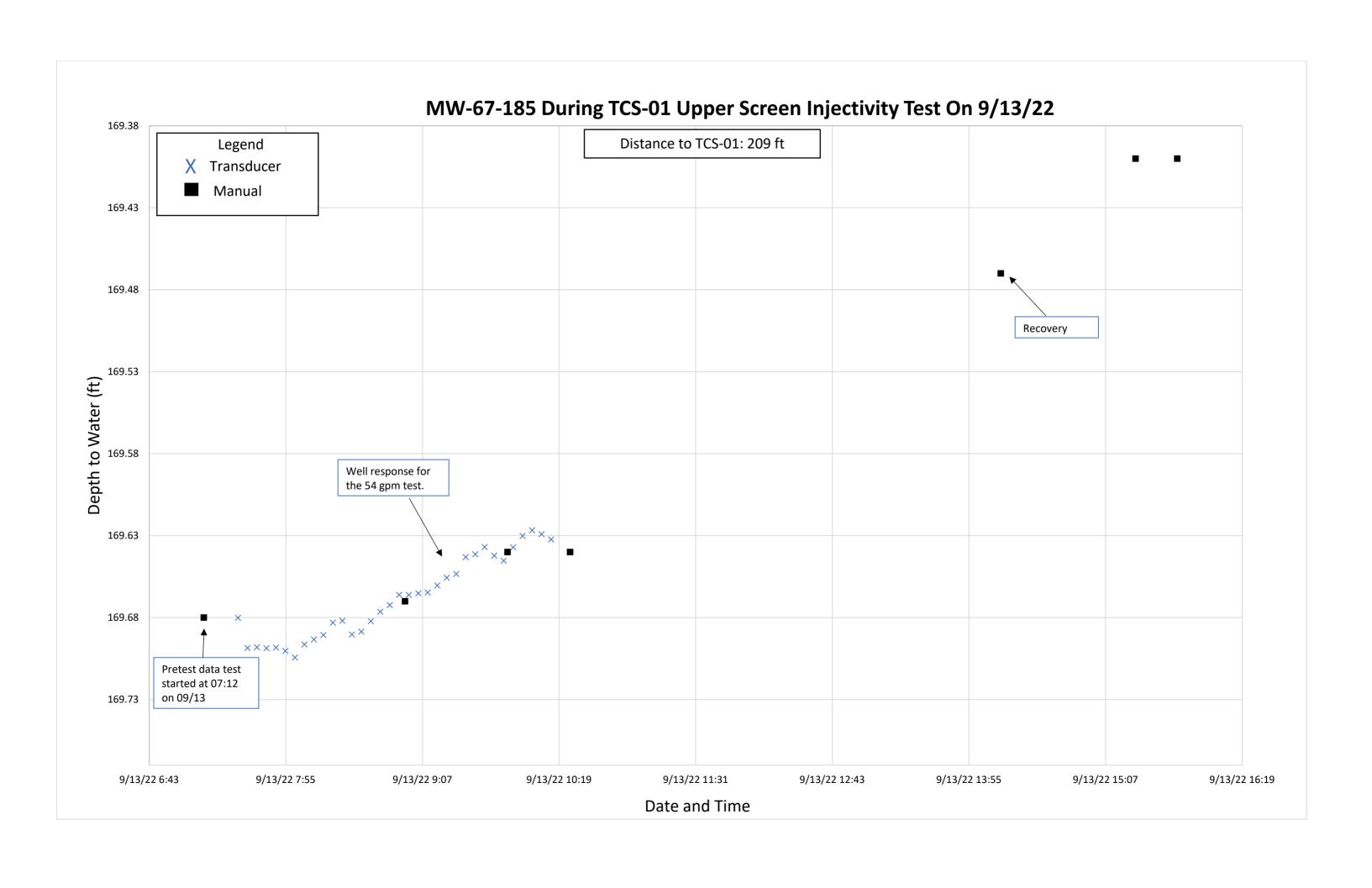












## **Attachment 9**

**Photo Logs** 



**CLIENT NAME: PG&F** 

### PILOT BOREHOLE OVERDRILL: TEMPORARY **BACKFILL REMOVAL VERIFICATION PHOTO LOG**

TCS-01 0 to 280 ft

#### PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 6/22/2022



Drill Cuttings Depth: Approx. 3' bgs Description: Confirmation of Cemex #60 Lapis Lustre Sand in drill cuttings.

Date: 6/4/2022



Drill Cuttings Depth: Approx. 10' bgs Description: Confirmation of Cemex 8 Mesh Lapis Description: Confirmation of Cemex 8 Mesh Lustre Sand in drill cuttings.

Date: 6/4/2022



Drill Cuttings Depth: Approx. 20' bgs Lapis Lustre Sand in drill cuttings.

Date: 6/4/2022

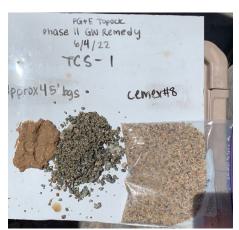


Drill Cuttings Depth: Approx. 25' bgs Description: Confirmation of Cemex 8 Mesh Lapis Lustre Sand in drill cuttings. Date: 6/4/2022



Drill Cuttings Depth: Approx. 35' bgs Description: Confirmation of Cemex 8 Mesh Lapis Description: Confirmation of Cemex 8 Mesh Lustre Sand in drill cuttings.

Date: 6/4/2022



Drill Cuttings Depth: Approx. 45' bgs Lapis Lustre Sand in drill cuttings.

Date: 6/4/2022



**CLIENT NAME: PG&F** 

PILOT BOREHOLE OVERDRILL: TEMPORARY **BACKFILL REMOVAL VERIFICATION PHOTO LOG** 

TCS-01 0 to 280 ft

PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 6/22/2022



Drill Cuttings Depth: Approx. 55' bgs Description: Confirmation of Cemex 8 Mesh Lapis Lustre Sand in drill cuttings. Date: 6/4/2022



Drill Cuttings Depth: Approx. 65' bgs Lustre Sand in drill cuttings.



**Drill Cuttings Depth: Approx. 75' bgs** Description: Confirmation of Cemex 8 Mesh Lapis Description: Confirmation of Cemex 8 Mesh Lapis Lustre Sand in drill cuttings. Date: 6/6/2022

Date: 6/6/2022



Drill Cuttings Depth: Approx. 85' bgs Description: Confirmation of Cemex 8 Mesh Lapis Lustre Sand in drill cuttings. Date: 6/6/2022



Drill Cuttings Depth: Approx. 95' bgs Description: Confirmation of Cemex 8 Mesh Lapis Description: Confirmation of Cemex 8 Mesh Lapis Lustre Sand in drill cuttings. Date: 6/6/2022



Drill Cuttings Depth: Approx. 105' bgs Lustre Sand in drill cuttings.

Date: 6/7/2022



**CLIENT NAME: PG&F** 

PILOT BOREHOLE OVERDRILL: TEMPORARY **BACKFILL REMOVAL VERIFICATION PHOTO LOG** 

TCS-01 0 to 280 ft

PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 6/22/2022



Drill Cuttings Depth: Approx. 115' bgs Description: Confirmation of Cemex 8 Mesh Lapis Description: Confirmation of Cemex 8 Lustre Sand in drill cuttings.

Date: 6/13/2022



Drill Cuttings Depth: Approx. 125' bgs Mesh Lapis Lustre Sand in drill cuttings.

Date: 6/13/2022



Drill Cuttings Depth: Approx. 135' bgs **Description: Confirmation of Cemex 8 Mesh Lapis** 

Lustre Sand in drill cuttings.

Date: 6/17/2022



Drill Cuttings Depth: Approx. 145' bgs Description: Confirmation of Cemex 8 Mesh Lapis Description: Confirmation of Cemex 8 Lustre Sand in drill cuttings.

Date: 6/17/2022



Drill Cuttings Depth: Approx. 155' bgs

Mesh Lapis Lustre Sand in drill cuttings. Date: 6/17/2022



Drill Cuttings Depth: Approx. 165' bgs **Description: Confirmation of Cemex 8 Mesh Lapis** 

Lustre Sand in drill cuttings.

Date: 6/17/2022



**CLIENT NAME: PG&E** 

PILOT BOREHOLE OVERDRILL: TEMPORARY
BACKFILL REMOVAL VERIFICATION PHOTO LOG

TCS-01 0 to 280 ft

PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 6/22/2022



Drill Cuttings Depth: Approx. 175' bgs Description: Confirmation of Cemex 8 Mesh Lapis

Lustre Sand in drill cuttings.

Date: 6/17/2022



Drill Cuttings Depth: Approx. 185' bgs Description: Confirmation of Cemex 8 Mesh Lapis Lustre Sand in drill cuttings.

Date: 6/21/2022



Drill Cuttings Depth: Approx. 195' bgs Description: Confirmation of Cemex 8 Mesh Lapis Lustre Sand in drill cuttings.

Date: 6/21/2022



Drill Cuttings Depth: Approx. 205' bgs
Description: Confirmation of Cemex 8 Mesh Lapis
Lustre Sand in drill cuttings.

Date: 6/21/2022



Drill Cuttings Depth: Approx. 215' bgs Description: Confirmation of Cemex 8 Mesh Lapis Lustre Sand in drill cuttings.

Date: 6/21/2022



Drill Cuttings Depth: Approx. 225' bgs Description: Confirmation of Cemex 8 Mesh Lapis Lustre Sand in drill cuttings.

Date: 6/21/2022



**CLIENT NAME: PG&E** 

## PILOT BOREHOLE OVERDRILL: TEMPORARY BACKFILL REMOVAL VERIFICATION PHOTO LOG

TCS-01 0 to 280 ft

#### PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

**PHOTOS LAST ADDED:** 6/22/2022



Drill Cuttings Depth: Approx. 235' bgs
Description: Confirmation of Cemex 8 Mesh

Lapis Lustre Sand in drill cuttings.

Date: 6/21/2022



Drill Cuttings Depth: Approx. 245' bgs Description: Confirmation of Cemex 8 Mesh

Lapis Lustre Sand in drill cuttings.

Date: 6/22/2022



Drill Cuttings Depth: Approx. 255' bgs Description: Confirmation of Cemex 8 Mesh

Lapis Lustre Sand in drill cuttings.

Date: 6/22/2022



Drill Cuttings Depth: Approx. 265' bgs
Description: Confirmation of Cemex 8 Mesh
Lapis Lustre Sand in drill cuttings.

Date: 6/22/2022



Drill Cuttings Depth: Approx. 275' bgs Description: Confirmation of Cemex #3 Lapis

Lustre Sand in drill cuttings.

Date: 6/22/2022



**Arcadis PROJECT NO:** 30126255

## PILOT BOREHOLE CORE PHOTO LOG TCS-01 Pilot 0 to 280 ft

PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 4/13/2022



Core Depth: 0 to 12

Description: Samples (0-7' bgs) previously collected for logging during air knifing activities.

Date: 4/1/2022



Core Depth: 0 to 12

Description: Samples (0-7' bgs) previously collected for logging during air knifing activities.

Date: 4/1/2022



Core Depth: 9.5 to 12

Description: Date: 4/1/2022



Core Depth: 12 to 14.5

Description: Date: 4/1/2022



Core Depth: 14.5 to 17

Description: Date: 4/1/2022



Core Depth: 17 to 22



**Arcadis PROJECT NO:** 30126255

### PILOT BOREHOLE CORE PHOTO LOG TCS-01 Pilot 0 to 280 ft

### PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 4/13/2022



Core Depth: 22 to 27 Description:

Date: 4/2/2022

Core Depth: 34.5 to 37

Description: No recovery 27 to 34.5' bgs.

Date: 4/2/2022

Core Depth: 37 to 42

Description: Date: 4/2/2022



Core Depth: 39.5 to 42

Description: Date: 4/2/2022



Core Depth: 42 to 47

Description: Date: 4/2/2022 Core Depth: 47 to 52 **Description:** 

Date: 4/2/2022



**Arcadis PROJECT NO:** 30126255

# PILOT BOREHOLE CORE PHOTO LOG TCS-01 Pilot 0 to 280 ft

### PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 4/13/2022



Core Depth: 52 to 57 Description:

Date: 4/2/2022

Core Depth: 57 to 62 Description:

Date: 4/2/2022

Core Depth: 62 to 67 Description:

Date: 4/2/2022



Core Depth: 67 to 72

Description: Date: 4/2/2022 Core Depth: 72 to 77

Description: Date: 4/2/2022 Core Depth: 77 to 82



**CLIENT NAME:** PG&E

PILOT BOREHOLE CORE PHOTO LOG

TCS-01 Pilot 0 to 280 ft

PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 4/13/2022



Core Depth: 82 to 87 Description: Date: 4/2/2022 Core Depth: 87 to 92 Description: Date: 4/2/2022 Core Depth: 92 to 97 Description: Date: 4/2/2022



Core Depth: 97 to 102

Description: Date: 4/4/2022 Core Depth: 102 to 107

Description: Date: 4/4/2022 Core Depth: 107 to 112



**CLIENT NAME:** PG&E

PILOT BOREHOLE CORE PHOTO LOG TCS-01 Pilot 0 to 280 ft

PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 4/13/2022



Core Depth: 112 to 117

Description: Date: 4/2/2022 **Core Depth: 117 to 122** 

Description: Date: 4/2/2022



Core Depth: 122 to 127

Description: Date: 4/2/2022



Core Depth: 127 to 132

Description: Date: 4/2/2022 **Core Depth: 132 to 137** 

Description: Date: 4/2/2022



**CLIENT NAME:** PG&E

PILOT BOREHOLE CORE PHOTO LOG TCS-01 Pilot 0 to 280 ft

PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 4/13/2022



Core Depth: 142 to 147

Description: Date: 4/2/2022

Core Depth: 147 to 152

Description: Date: 4/2/2022



Core Depth: 152 to 157

Description: Date: 4/2/2022



TCS-1 Pilot

147-152

PT. 865.

Core Depth: 157 to 162

Description: Date: 4/2/2022 Core Depth: 162 to 167

Description: Date: 4/2/2022 Core Depth: 167 to 170



Arcadis PROJECT NO: 30126255

# PILOT BOREHOLE CORE PHOTO LOG TCS-01 Pilot 0 to 280 ft

PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 4/13/2022



Core Depth: 170 to 174.5

Description: Date: 4/3/2022 Core Depth: 174.5 to 177

Description: Date: 4/3/2022 Core Depth: 177 to 182

Description: Date: 4/4/2022



Core Depth: 182 to 187

Description: Date: 4/3/2022 **Core Depth: 187 to 192** 

Description: Date: 4/3/2022 Core Depth: 192 to 197



**Arcadis PROJECT NO:** 30126255

### PILOT BOREHOLE CORE PHOTO LOG TCS-01 Pilot 0 to 280 ft

### PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 4/13/2022



Core Depth: 192 to 194.5

Description: Date: 4/3/2022 Core Depth: 194.5 to 196

Description: Date: 4/3/2022



Core Depth: 196 to 197

Description: Date: 4/3/2022



Core Depth: 197 to 202

Description: Date: 4/4/2022 Core Depth: 202 to 206

Description: Date: 4/4/2022 Core Depth: 206 to 212



**Arcadis PROJECT NO:** 30126255

### PILOT BOREHOLE CORE PHOTO LOG TCS-01 Pilot 0 to 280 ft

#### PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 4/13/2022



Core Depth: 212 to 217

Description: Date: 4/4/2022 Core Depth: 217 to 222

**Description:** Date: 4/4/2022 Core Depth: 222 to 227

Description: Date: 4/4/2022



Core Depth: 227 to 232

Description: Date: 4/5/2022 Core Depth: 232 to 235

Description: Date: 4/5/2022 Core Depth: 235 to 239.5

**Description:** Date: 4/5/2022



**Arcadis PROJECT NO:** 30126255

# PILOT BOREHOLE CORE PHOTO LOG TCS-01 Pilot 0 to 280 ft

#### PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 4/13/2022



Core Depth: 239.5 to 245

Description: Date: 4/5/2022



Core Depth: 245 to 252

Description: Date: 4/5/2022



Core Depth: 252 to 257

Description: Date: 4/5/2022



Core Depth: 257 to 262 Description:

Date: 4/5/2022



Core Depth: 262 to 264.5

Description: Date: 4/12/2022



Core Depth: 264.5 to 269.5

Description: Date: 4/12/2022



**Arcadis PROJECT NO:** 30126255

## PILOT BOREHOLE CORE PHOTO LOG TCS-01 Pilot 0 to 280 ft

#### PROJECT NAME / LOCATION:

Topock Compressor Station, Needles, California

PHOTOS LAST ADDED: 4/13/2022







Core Depth: 269.5 to 275

Description: Date: 4/12/2022 Core Depth: 275 to 277.5

Description: Date: 4/13/2022 Core Depth: 277.5 to 280

Description: Date: 4/13/2022



Core Depth: 275 to 280

Description: Date: 4/13/2022



**Arcadis PROJECT NO: 30126255** 

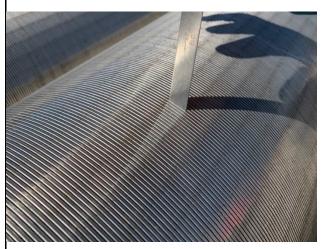
CLIENT NAME: PG&E WELL CONSTRUCTION PHOTO LOG

**PROJECT NAME / LOCATION:** Final Groundwater Remedy, PG&E Topock Compressor Station/Needles, CA

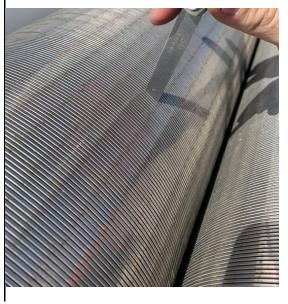
WELL ID: TCS-01



6/24/2022 - TCS-01: Well materials being dropped off



6/24/2022 – TCS-01: 10-inch 18-slot Stainless Steel 316L Wire Wrap Screen slot size confirmation



6/24/2022 – TCS-01: 10-inch 18-slot Stainless Steel 316L Wire Wrap Screen slot size confirmation





6/24/2022 – TCS-01: 18-slot stamp on 316L Stainless Steel Wire Wrap Screen



6/24/2022 – TCS-01: 18-slot stamp on 316L Stainless Steel Wire Wrap Screen



6/24/2022 - TCS-01: Kwik-Zip Centralizers



WELL CONSTRUCTION PHOTO LOG

**PROJECT NAME / LOCATION:** Final Groundwater Remedy, PG&E Topock Compressor Station/Needles, CA

WELL ID: TCS-01

Arcadis PROJECT NO: 30126255



6/24/2022 - TCS-01: 10-inch Shur-Grip SDR-17 PVC



6/24/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing outer diameter (10.80-inches)



6/24/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing inner diameter (9.24-inch)

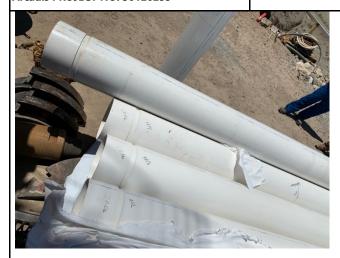


WELL CONSTRUCTION PHOTO LOG

**PROJECT NAME / LOCATION:** Final Groundwater Remedy, PG&E Topock Compressor Station/Needles, CA

WELL ID: TCS-01

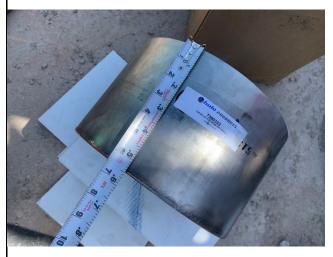
Arcadis PROJECT NO: 30126255



6/24/2022 - TCS-01: 10-inch Shur-Grip SDR-17 PVC casing



6/24/2022 - TCS-01: 10-inch Shur-Grip SDR-17 PVC casing



6/24/2022 - TCS-01: 10-inch 316L Stainless Steel End Cap





6/24/2022 – TCS-01: 10-inch 316L Stainless Steel End Cap



6/24/2022 - TCS-01: 10-inch 18-slot, 316L Stainless Steel Wire Wrap Screen



6/24/2022 – TCS-01: End cap and sump with centralizer set at approximately 272' bgs (#1)





6/24/2022 – TCS-01: 10-inch 18-slot Stainless Steel 316L Wire Wrap Screen installation (#2)



6/24/2022 - TCS-01: 10-inch 18-slot Stainless Steel 316L Wire Wrap Screen installation (#3)



6/24/2022 – TCS-01: 10-inch 18-slot Stainless Steel 316L Wire Wrap Screen installation (#4)





6/24/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation (#5)



6/24/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation with centralizer set at approximately 210' bgs, (#5)



6/24/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation (#6)









6/24/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation (#8)



6/24/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation with centralizer set at approximately 160' bgs (#8)





6/25/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation (#9)



6/25/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation (#10)



6/25/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation centralizer set at approximately 120' bgs (#10)





6/25/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation (#12)



6/25/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation with centralizer set at approximately 80' bgs (#12)



6/25/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation (#13)





6/25/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation (#14)



6/25/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation with centralizer set at approximately 45' bgs (#14)



6/25/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation (#15)





6/25/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing installation (#16)



6/25/2022 – TCS-01: 10-inch Shur-Grip SDR-17 PVC casing stickup installation (#17)



6/26/2022 – TCS-01: Cemex #1/20 Mesh (20x40) Lapis Lustre Sand used for upper and lower filter pack





#### 6/26/2022 - TCS-01:

Batch number stamped on Cemex #1/20 Mesh (20x40) Lapis Lustre Sand used for upper and lower filter pack



#### 6/28/2022 - TCS-01:

Outside diameter of alignment tool (8.75-inches)



#### 6/28/2022 - TCS-01:

Inner diameter of alignment tool (7.5-inches)





6/28/2022 – TCS-01: Hoisting "Dummy Tool" for preliminary alignment test



6/28/2022 – TCS-01: Installing "Dummy Tool" for preliminary alignment test



6/28/2022 – TCS-01: Swabbing tool used to surge upper and lower screen to promote filter pack settling



WELL CONSTRUCTION PHOTO LOG

**PROJECT NAME / LOCATION:** Final Groundwater Remedy, PG&E Topock Compressor Station/Needles, CA

WELL ID: TCS-01

Arcadis PROJECT NO: 30126255



6/29/2022 – TCS-01: Cemex #60 Mesh (40x70) Lapis Lustre Sand used for transition sand



6/29/2022 – TCS-01: Cemex #60 Mesh (40x70) Lapis Lustre Sand used for transition sand



6/29/2022 – TCS-01: Pel-Plug Bentonite Pellets 3/8" TR30 used for intermediate seal



WELL CONSTRUCTION PHOTO LOG

**PROJECT NAME / LOCATION:** Final Groundwater Remedy, PG&E Topock Compressor Station/Needles, CA

WELL ID: TCS-01

Arcadis PROJECT NO: 30126255



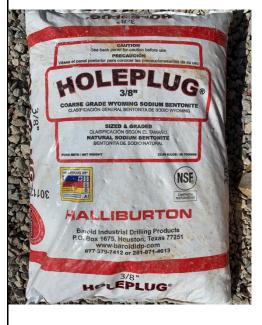
6/29/2022 - TCS-01:

Cemex #1/20 Mesh (20x40) Lapis Lustre Sand used for upper and lower filter pack



6/29/2022 - TCS-01:

Cemex #1/20 Mesh (20x40) Lapis Lustre Sand used for upper and lower filter pack



7/6/2022 - TCS-01:

Holeplug 3/8" Wyoming Bentonite used for intermediate bentonite seal



WELL CONSTRUCTION PHOTO LOG

**PROJECT NAME / LOCATION:** Final Groundwater Remedy, PG&E Topock Compressor Station/Needles, CA

WELL ID: TCS-01

Arcadis PROJECT NO: 30126255



7/6/2022 - TCS-01:

Holeplug 3/8" Wyoming Bentonite used for intermediate bentonite seal



7/6/2022 - TCS-01:

Portland Cement Type I, II and V, used for cement grout



7/6/2022 - TCS-01:

Wyoming Bentonite Hydrogel used for cement grout



WELL CONSTRUCTION PHOTO LOG

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WELL ID: TCS-01

Arcadis PROJECT NO: 30126255



7/9/2022 - TCS-01:

Samples of cement grout used during well installation, after it has hardened



7/9/2022 - TCS-01:

Cemex #0/30 Mesh (30x50) Lapis Lustre Sand used for temporary backfill

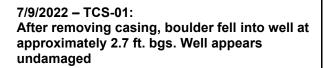


7/9/2022 - TCS-01:

Cemex #3 Mesh Lapis Lustre Sand used for temporary backfill









7/9/2022 – TCS-01: Inside of well checked after boulder fell into borehole, no issues/damage observed



7/9/2022 – TCS-01: Inside of well checked after boulder fell into borehole, no issues/damage observed





#### 7/9/2022 - TCS-01:

Well completed with backfill sand. Temporary 1-foot stickup added to well along with cap



#### 7/9/2022 - TCS-01:

Well completed with temporary backfill sand. Temporary 1-foot stickup added to well along with cap



#### 7/9/2022 - TCS-01:

Well completed with temporary backfill sand. Temporary 1-foot stickup added to well along with cap

## **Attachment 10**

Video Survey Report



	Pacific Surv	eys		
	a full service geophysical weil loggin Video Survey Repor	g company		
Company:	Cascade Drilling	Date:	02-Dec-22	
Well:	TCS-01	Run No.	One	Truck PS-6
Field:	Topock	Job Ticket:	30505	
State:	Arizona	Total Depth:	273.1 ft	
Location:	145453 National Trails Hwy.	Water Level:		SWL
	24.2022	Oil on Water	No	Amount: N/A
GPS:	34.715554,-114.4936028	Operator:	Conner	
Zero Datum Reason for :		Guides Set	9 in	Dead Space 1.25 ft
Depth	Observations		Well Details	
0.0 ft	Began survey at ground level.		Perforation:	From Survey
9.6 ft	First joint in casing; appears to be tight and uniform.		Wire-Wrap	170.00 ft to 190.00 ft
29.7 ft 49.7 ft	Second joint in casing; appears to be tight and uniform.  Third joint in casing; appears to be tight and uniform.			214.00 ft to 268.00 ft
166.1 ft	SWL; water is clear.			
169.8 ft	Top of screened interval; appears to be open.			
190.1 ft	Bottom of screened interval.			
213.6 ft	Top of screened interval; appears to be open.			
268.3 ft	Bottom of screened interval.			
272.7 ft 273.1 ft	Top of soft fill material.  Camera light bar tags bottom.			
L/3.1 IL	Survey ends.			
			Casing Size (in)	From Survey
			OD ID	
			10.000 N/A	0.00 ft to 273.40 ft
			Casing Material	PVC
			Screen Material	Stainless Steel
	0829.7	0176.3		0192.6

TCS-1 - Pacific Surveys video log description