

TEP BWQ Groundwater Monitoring Field Form

Project Information			
Project:	TEP BWQ	Sample Purpose:	2 nd Sub Rule 615 (pre 2021 pad)
Site Name (Pad/Facility):	Tompkins Pad	Site API or Facility ID:	438312
Station Name:	North Star Well (4505392)	Sample Date:	8-16-2023
Sample Facility ID:	753874	Start Time:	1325
Field Sample ID:	North Star Well	End Time:	1500
Landowner Name:	Thomas and Lynn Tompkins	Sample Time:	1445
Landowner Address:	269 CR 309 Parachute CO	Sample Team:	JM ASH
Water Right/Well Owner:	Thomas and Lynn Tompkins	Observer:	JM
Well Permit:	67379-F	Lead Signature:	<i>[Signature]</i>
Receipt Number:	3629522	Date:	8-16-23

Station Information			
Station Description: Well house near entrance to Tompkins Pad. Domestic well.			
Approximate Distance to Well Pad (from well location): 200 ft			
Station Type: Well / Spring / Seep / Other:		Water Use: Domestic / Monitoring / Other:	
Sampling Location: Kitchen Tap / Pipe / Well House / Hose bib / Hydrant / WWL Tubing / Bailer / Other:			
GPS Well Location: Zone	x -108.014736	y 39.459497	z 5540
GPS Sampling Location: Zone	x	y	z
Total Depth (ft):	178.0	Static Depth to Water (ft):	151.75
Total Volume x 3 gal)	65.06	Total Volume Purged (gal)	66
			Well diameter (in): 6

Weather Conditions	
Sky: Clear / Scattered / Cloudy / Overcast	Estimated Air Temp (deg F): 85
Precipitation: None / Light / Moderate / Heavy	Precip Type: None / Rain / Sleet / Hail / Snow
Wind: Calm / Light / Mod / Strong	Wind Speed/Direction: 2 mph east

Field Measurements							
Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments
Water Temp	deg C	17.3	1445		YSI	Container	
pH	s.u.	7.89	↓		↓	↓	
Sp. Conductivity	uS/cm	510.4					
Conductivity	uS/cm	440.0					
DO Saturation	%	50.1					
DO	mg/L	5.28					
Baro Press	mmHg	650.2					
ORP	RmV	1007.9					
Turbidity	NTU	0.79	↓	AV	MicroTPW	↓	0.58, 1.19, 0.69
Discharge	Gpm / Cfs	1.60					
VOCs	ppm			NM			
Color:	Clear / White / Yellow / Brown / Green / Blue / Other			Light / Med / Dark			
Odor:	None / Mild / Mod / Strong						
Effervescence:	None / Mild / Mod / Strong			Bubbles: None / Low / Mod / High			
Sediment:	None / Light / Mod / Heavy			VOA Headspace: None / ≤ Pea Size / ≥ Pea Size			
Lab Analysis:	Rule 615 / Rule 411 / Rule 907 / COA / Other						
Field Filtered:	Yes / No		Filter Size:	No. Filters used:			

Flag Codes: AV (averaged value), E (estimated), EC (exceeds calibration range), I (insufficient sample), N/A (not applicable), NM (not measured), NS (not stabilized), OT (other flag, see comment or notes), Q (uncertain value), Y (calculated value), VAR (variable)

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Station ID: _____ Date: _____

Landowner Comments on water quality:

Additional information:

- at 109 ft water level indicator went to slack, no detection of groundwater. Got stuck on something. Was able to get passed it and got a water level.

- well cap was not secure on well. Cap came off without loosening any bolts.

- pump turned on before purging started. Domestic use while sampling/purging

- parameters "Tomphins South" (1530) - duplicate

Temp 17.1°C Bar 630.2 mmHg 84.6 DO% 5.13 DO mg/L 516.0 uS/cm SpC
 C 442.1 uS/cm 7.87 pH, 1009.9 ORP mV
 0.93, 1.33, 1.43 NTU = 1.23 NTU (AV)

Calibration Information			Date:		Location:			
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
	pH	s.u.						
	pH	s.u.						
	pH	s.u.						
	SpC	uS/cm						
	SpC	uS/cm						
	DO	%						
	DO	%						
	ORP	RmV						
	Turbidity	NTU						

See WMC 24-17
8/16/23

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WELL PURGING INFORMATION												
Date: 8-16-23			Well ID: North Star Well				Project: TEP BWQ					
Purge Method: 3 casing + stable					Borehole/Casing Radius (r) (in)/(ft): 2.25							
Total Depth, ft (D _t): 178.0			Static Depth to Water, ft (D _w): 151.75				Sample/Pump Depth (ft): 163					
Water column height, h (ft): D _t - D _w : 26.25					Total Volume x 3 (gal or ft ³):							
Total Volume (gal or ft ³): 21.69 gal					(1 ft ³ = 7.48 gal): 65.06 gal							
Borehole/Casing Volume = $\pi \cdot r^2 \cdot (D_t - D_w) =$ <u>ft³</u> Or Borehole/Casing Volume = $\pi \cdot r^2 \cdot (D_t - D_w) \cdot 7.48 =$ <u>gal</u> With r = in, h = ft: Calculation: $\pi \cdot r^2 \cdot (D_t - D_w) :: r^2 \cdot h \cdot 0.0218 =$ ft ³ Or $r^2 \cdot h \cdot 0.1632 =$ gallons $7.48 \left(\pi \left(\frac{2.25}{12} \right)^2 (26.25) \right)$												
Purge #	Time	Temp (°C) ±0.2°C ±3%	DO (%)	DO (mg/L) ±10%	SpC (uS/cm) ±3%	Cond (uS/cm)	pH (s.u.) ±0.1 s.u.	ORP (RmV) ±10 RmV	Water Clarity (Poor/Mod/Good) or NTUs ±10% OR <5	Effervescence (None/Slight/Mod/Heavy)	Volume Purged (gal)	Cumulative Volume Purged (gal)
1	1403	17.3	84.6	7.74	519.2	444.0	6.71	977.0	1.35	N/A	5	5
2	1407	16.4	71.4	6.83	517.9	435.0	7.09	984.1	1.33	N/A	5	10
3	1410	16.4	64.1	6.20	514.9	431.5	7.39	992.8	1.12	N/A	5	15
4	1413	16.9	61.8	5.91	513.1	434.3	7.50	1002.7	0.75	N/A	5	20
5	1416	17.0	63.9	6.02	514.2	437.4	7.59	1004.8	1.44	N/A	5	25
6	1419	17.2	63.2	5.96	515.1	439.9	7.68	1006.0	1.30	N/A	5	30
7	1422	17.3	67.0	6.18	515.7	440.9	7.72	1008.0	1.20	N/A	5	35
8	1425	17.4	67.8	6.34	515.5	440.7	7.77	1007.6	0.79	N/A	5	40
9	1428	17.3	60.3	5.72	515.0	440.8	7.78	1009.0	0.65	N/A	5	45
10	1431	17.3	57.8	5.49	516.3	441.2	7.80	1007.6	0.91	N/A	5	50
11	1434	17.4	65.8	6.11	516.4	439.6	7.85	1005.7	0.94	N/A	5	55
12	1437	17.4	65.2	6.11	515.8	440.3	7.85	1005.2	0.75	N/A	5	60
13	1440	17.3	64.7	6.06	516.8	439.4	7.86	1005.7	0.79	N/A	5	65
Post purge DTW = 151.35'												

Purge rate = 38 sec/gal = 1.6 gal/min

Pump turned on before purging started.

Started Purging at 1400