HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	BH14A (Good)	**Project Number:**	1343-005.18	**Date:**	June 3, 2016
Station Status:		**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny 10°C
UTM Location:	Z. 8 E. 585585 N. 6914007	**Waypoint:**	GPS Hem ID BH14AG	**Recovery:**	☐ Good ☐ Bad ☒ Ok
Photos:	Cam. Hem Nos. 585-587	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X		

Initial Depth to Water (m):	3.678	**Purge Start Time:**	11:55			**Purge End Time:**	12:09			
Depth to Bottom (m):	6.439	**Purge Interval Time (3) min, Vol. (___) L**	11:57	12:00	12:03	12:06				
Submerged Tubing Depth (m):	6.0	**Depth to water (m)**	3.810	3.856	3.879	3.868				
Well Stick-up Height (m):	0.05	**Temperature (°C)**	2.9	3.6	3.8	4.0				
Estimated Water Volume (L):	5.5	**pH (pH Units)**	6.73	6.68	6.68	6.69				
		Cond. (µs/cm)	2451	2476	2513	2547				
		Specific Cond. (µs/cm)	4237	4202	4219	4246				
		Redox (mV)	112.1	115.7	117.6	117.8				
		DO (mg/L)	0.87	0.79	0.81	0.61				
		DO (%)	6.5	6.1	6.4	4.6				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear				
		Turbidity (NTU):	—	—	—	2.21				
		Interval Purge Volume (L):	.15	.2	.25	.25				
		Cumulative Purge Volume (L):	.15	.35	.60	.85				

DTB – DTW) x (πr^{2})*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	12:08	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	12:10					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): BH14A

Sample Date (Con't): June 3, 2016

Sample Time (Con't): 12:10

General Notes (Condition of well, or other features):

Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	BH14B (Grey)	**Project Number:**	1343-005.18	**Date:**	June 3, 2016
Station Status:		**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny 10°C
UTM Location:	Z. 8 E. 585585 N. 6914007	**Waypoint:**	GPS Ken ID BH14AB	**Recovery:**	☐ Good ☒ Bad ☐ Ok
Photos:	Cam. Ken Nos. 582-584	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name		X		

Initial Depth to Water (m):	4.285	**Purge Start Time:**	11:29				**Purge End Time:**	11:44		
Depth to Bottom (m):	10.119	**Purge Interval Time (☒) min, Vol. (___) L**	11:31	11:34	11:37	11:40	11:43			
Submerged Tubing Depth (m):	9.3	**Depth to water (m)**	4.437	4.577	4.696	4.780	4.938	← spike caused by		
Well Stick-up Height (m):	0.64	**Temperature (°C)**	3.7	4.4	4.4	4.3	4.7	← pump breaking through		
Estimated Water Volume (L):	11.8	**pH (pH Units)**	6.82	6.76	6.81	6.77	6.80	clouds + heating		
		Cond. (µs/cm)	2280	2346	2349	2340	2355	the flow through cell.		
		Specific Cond. (µs/cm)	3848	3868	3874	3869	3849			
		Redox (mV)	105.9	106.3	103.6	101.4	102.7			
		DO (mg/L)	1.48	0.32	0.28	0.28	0.36			
		DO (%)	11.1	2.4	2.1	2.2	2.7			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear	clear			
		Turbidity (NTU):	—	—	—	—	11.8			
		Interval Purge Volume (L):	.2	.3	.15	.2	.25			
		Cumulative Purge Volume (L):	.2	.5	.65	.85	1.10			

DTB – DTW) x (πr^{2})*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	11:44	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	11:45					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): BH14B

Sample Date (Con't): June 3

Sample Time (Con't): 11:45

General Notes (Condition of well, or other features):

Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____.
- ☐ Other _____.

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	CH14-107-MW007A	**Project Number:**	1343-005.18	**Date:**	Jun. 1 / 2016
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	cloudy ~15°C
UTM Location:	Z. 8 E. 584485 N. 6913098	**Waypoint:**	GPS 625 ID site ID	**Recovery:**	☐ Good ☐ Bad ☒ Ok
Photos:	Cam. ELC Nos. 018-020	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	3.617	**Purge Start Time:**	11:52					**Purge End Time:**		12:26	
Depth to Bottom (m):	5.755	**Purge Interval Time (5) min, Vol. (___) L**	11:53	11:57	12:03	12:07	12:11	12:16	12:21	12:26	12:31
Submerged Tubing Depth (m):	~5	**Depth to water (m)**	3.798	3.798	3.813	3.819	3.827	3.824	3.837	3.834	
Well Stick-up Height (m):	~0.890	**Temperature (°C)**	5.0	3.6	4.3	4.8	4.5	4.2	5.0	5.8	
Estimated Water Volume (L):	4.276	**pH (pH Units)**	5.95	5.99	5.98	5.90	5.98	5.93	5.98	5.93	
		Cond. (µs/cm)	2771	2674	2715	2757	2746	2721	2784	2820	
		Specific Cond. (µs/cm)	4564	4521	4490	4492	4516	4516	4458	4455	
		Redox (mV)	65.6	76.4	81.6	82.2	78.4	79.6	83.2	83.7	
		DO (mg/L)	1.03	0.32	0.28	0.26	0.26	0.27	0.27	0.26	
		DO (%)	7.5	2.4	2.0	2.1	2.1	2.1	2.1	2.2	
		Appearance & Odour (Clear, Silty, HC odours, etc.)	Brown tinge	same	same	clearer	~~clear~~ Brown tinge	same	same	same	
		Turbidity (NTU):	/	/	/	/	/	/	/	6.82	
		Interval Purge Volume (L):	/	0.70	0.55	0.40	0.45	0.45	0.50	6.5	
		Cumulative Purge Volume (L):	/	0.70	1.25	1.65	2.10	2.55	3.05	3.55	

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	12:26	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	12:30					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

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Sample Site (Con't): CH14-107-MW007A

Sample Date (Con't): Jun.1/2016

Sample Time (Con't): 12:30

General Notes (Condition of well, or other features):

Transducer found in well.
Did not remove during sampling process.
- Temp did not stabilize, all other parameters stable.

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 7 m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6"
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	CH14-107-MW007B	**Project Number:**	1343-005.18	**Date:**	1-Jun-16
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	AN/MM
Piezometer Diameter:	4"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	sunny to cloudy periods.
UTM Location:	Z. 8 E. 584484 N. 6913099	**Waypoint:**	GPS 625 ID site ID	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 018 - 022	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	4.027	**Purge Start Time:**	12:44			**Purge End Time:**					
Depth to Bottom (m):	9.690	**Purge Interval Time (5) min, Vol. (___) L**	12:46	12:51	12:56	13:01	13:06	13:11	13:16		
Submerged Tubing Depth (m):	~8.6	**Depth to water (m)**	4.040	4.04	4.04	4.040	4.040	4.04	4.040		
Well Stick-up Height (m):	0.65	**Temperature (°C)**	7.5	3.5	3.3	3.1	3.1	2.8	3.1		
Estimated Water Volume (L):	~45.3	**pH (pH Units)**	6.32	6.04	5.97	5.96	5.93	5.92	5.91		
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	1109	982	963	967	1016	1026	1040		
		Specific Cond. (µs/cm)	1745	1667	1646	1665	1748	1784	1786		
		Redox (mV)	6.60	3.7	15.5	23.5	29.5	31.6	32.4		
		DO (mg/L)	0.63	0.24	0.22	0.22	0.27	0.2	0.37		
		DO (%)	4.60	1.8	1.6	1.8	2.1	2.32	2.80		
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear, slight odour	same	same	same	slt. clear, no odour	same	same		
		Turbidity (NTU):	—	—	—	—	—	—	1.22		
		Interval Purge Volume (L):	—	1.0	1.6	1.6	1.35	1.0	1.25		
		Cumulative Purge Volume (L):	—	1.0	2.6	4.20	5.55	6.55	7.80		

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	13:16	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit					
Sample Time	13:20					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): CH14-107-MW007B

Sample Date (Con't): Jun.1/2016

Sample Time (Con't): 13:30

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Sealed w J-Plug.

Transducer found in well. did not remove during sampling process.

- Temp was bouncing around between 2.8-3.1°C; all our parameters stable therefore sampling occurred.

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 10 m *
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6" *
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1,000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	CH14-107-MW009	**Project Number:**	1343-005.18	**Date:**	Jan. 1/2016.
Station Status:	GOOD.	**Client:**	GY - AAM	**Samplers:**	AN, MM.
Piezometer Diameter:	4"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Cloudy ~12°C.
UTM Location:	Z. 8 E. 584502 N. 6913096	**Waypoint:**	GPS 625 ID CH14-107-	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 0012 - 14	**Purge Method:**			
Duplicate Collected:	☒ Yes ☐ No Name DUP2	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X		

Initial Depth to Water (m):	4.296	**Purge Start Time:**	10:06				**Purge End Time:**	10:27		
Depth to Bottom (m):	12.021	**Purge Interval Time (5) min, Vol. (___) L**	10:07	10:12	10:17	10:22	10:27			
Submerged Tubing Depth (m):	~11.0	**Depth to water (m)**	4.301	4.310	4.310	4.3	—			
Well Stick-up Height (m):	1.05	**Temperature (°C)**	4.1	3.5	3.3	3.4	3.4			
Estimated Water Volume (L):	62.57	**pH (pH Units)**	5.85	5.84	5.84	5.82	5.86			
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	810	800	797	796	793			
		Specific Cond. (µs/cm)	1381	1358	1352	1352	1352			
		Redox (mV)	126.2	200.6	177.7	161.2	164.4			
		DO (mg/L)	2.35	1.02	1.11	1.15	0.93			
		DO (%)	18.1	8.0	8.5	8.8	7.0			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear no odour	Some	Some	Some	Some			
		Turbidity (NTU):	—	—	—	—	0.94			
		Interval Purge Volume (L):	—	0.85	0.6	0.65	1.0			
		Cumulative Purge Volume (L):	—	0.85	1.45	2.1	3.1			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	10:29	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	10:30					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): CH14-107 - MW009

Sample Date (Con't): Jun. 1 / 2016

Sample Time (Con't): 10:30

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Sealed w J-Plug.

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 12 m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6"
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	2	Including DUP2.
1 L (plastic)	General Chemistry	500 ml	-	-	2	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	CH14-107-MW010	**Project Number:**	1343-005.18	**Date:**	Jun. 1/2016
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	4"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	cloudy ~ 15°C
UTM Location:	Z. 8 E. 584491 N. 6913097	**Waypoint:**	GPS 625 ID site ID	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 15-17	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____	Hydrolift.			

Initial Depth to Water (m):	2.735	**Purge Start Time:**	11:04			**Purge End Time:**	11:30			
Depth to Bottom (m):	32.840	**Purge Interval Time (5) min, Vol. (___) L**	11:10	11:15	11:20	11:25	11:30			
Submerged Tubing Depth (m):	~31.0	**Depth to water (m)**	2.858	2.887	2.902	2.920	2.928			
Well Stick-up Height (m):	1.025	**Temperature (°C)**	3.2	2.7	2.5	2.5	2.4			
Estimated Water Volume (L):	243.85	**pH (pH Units)**	5.82	5.82	5.84	5.83	5.84			
DTB – DTW) x (πr²)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	485.5	485.7	482.6	482.5	481.7			
		Specific Cond. (µs/cm)	830.3	844.5	846.5	846.1	847.2			
		Redox (mV)	45.8	66.2	65.5	68.2	67.9			
		DO (mg/L)	4.20	3.45	3.36	3.51	3.78			
		DO (%)	31.7	25.5	24.6	25.8	27.6			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	slightly turbid grey	Same	Same	Same.	same			
		Turbidity (NTU):	—	—	—	—	10.78			
		Interval Purge Volume (L):	12	12	12	12	12			
		Cumulative Purge Volume (L):	12	24	36	48	60			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	11:31	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	Hydrodiff				
Sample Time	11:35					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): CH14-107-MW010

Sample Date (Con't): Jun.1/2016

Sample Time (Con't): 11:35

General Notes (Condition of well, or other features):

Sealed w J-Plug.

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☒ 5/8" HDPE (Waterra) 40 m
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☒ D-25 (2" well) foot valves 1 each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	100	
1 L (plastic)	General Chemistry	500 ml	-	-	500	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	CH15-107-MW029	**Project Number:**	1343-005.18	**Date:**	June 3, 2016
Station Status:	(Good)	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	4"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Cloudy 7°C
UTM Location:	Z. 8 E. 585759 N. 6917126	**Waypoint:**	GPS Hem ID MW029	**Recovery:**	☐ Good ☒ Bad ☒ Ok
Photos:	Cam. Hem Nos. 579-581	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X		

Initial Depth to Water (m):	1.595	**Purge Start Time:**	10:51			**Purge End Time:**	11:09			
Depth to Bottom (m):	3.665	**Purge Interval Time (5) min, Vol. (___) L**	10:53	10:58	11:03	11:08				
Submerged Tubing Depth (m):	3.2	**Depth to water (m)**	1.603	1.603	1.603	1.610				
Well Stick-up Height (m):	~~3.2~~ 0.85	**Temperature (°C)**	2.4	2.6	2.6	2.6				
Estimated Water Volume (L):	16.8	**pH (pH Units)**	7.26	7.18	7.18	7.18				
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	1070	1066	1065	1059				
		Specific Cond. (µs/cm)	1883	1864	1860	1865				
		Redox (mV)	103.8	108.5	110.7	111.4				
		DO (mg/L)	7.79	7.56	7.56	7.41				
		DO (%)	57.3	55.8	55.8	54.5				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear				
		Turbidity (NTU):	—	—	—	2.52				
		Interval Purge Volume (L):	.15	.45	.45	.45				
		Cumulative Purge Volume (L):	.15	.6	1.05	1.5				

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**			
Time logged on YSI (24hr):	11:09	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X		
Sample Time	11:10				

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): CH15-107-MW029

Sample Date (Con't): June 3, 2016

Sample Time (Con't): 11:10

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Good Condition

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 14 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	CH15-10 / MW030	**Project Number:**	1343-005.18	**Date:**	June 3, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	SH + NB
Piezometer Diameter:	4"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sun + Cloud 8°C
UTM Location:	Z. 8 E. 585826 N. 6914180	**Waypoint:**	GPS ~~Ken~~ ID MW030	**Recovery:**	☑ Good ☐ Bad ☐ Ok
Photos:	Cam: ~~Ken~~ Nos. 576-578	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X		

Initial Depth to Water (m):	4.084	**Purge Start Time:**	10:18			**Purge End Time:**	10:34			
Depth to Bottom (m):	4.478	**Purge Interval** Time (3) min, Vol. (__) L	10:20	10:23	10:26	10:29	10:32			
Submerged Tubing Depth (m):	4.35	**Depth to water (m)**	4.084	4.084	4.084	4.084	4.084			
Well Stick-up Height (m):	0.38	**Temperature (°C)**	3.5	3.3	2.5	2.4	2.5			
Estimated Water Volume (L):	3.2	**pH (pH Units)**	7.17	7.04	7.03	7.03	7.03			
		Cond. (µs/cm)	1280	1230	1197	1190	1191			
		Specific Cond. (µs/cm)	2171	2105	2096	2096	2078			
		Redox (mV)	96.9	108.2	112.1	113.1	114.1			
		DO (mg/L)	4.24	6.66	7.78	7.92	7.76			
		DO (%)	31.9	52.5	57.6	58.4	57.5			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	turbid light brown	turbid light brown	less turbid; clear	clear	clear			
		Turbidity (NTU):	–	–	–	–	3.49			
		Interval Purge Volume (L):	.2	.2	.35	.35	.35			
		Cumulative Purge Volume (L):	.2	.4	.75	1.10	1.45			

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	10:33	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	10:35					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): CH15-107-MW030

Sample Date (Con't): June 3, 2016

Sample Time (Con't): 10:35

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

- Good Condition
- Well needs development to remove silt from bottom.

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 16.5 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1 L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	CH15-107-MW032	**Project Number:**	1343-005.18	**Date:**	June 3, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	4"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	cloudy 8°C
UTM Location:	Z. 8 E. 585786 N. 6914251	**Waypoint:**	GPS Ken ID MW032	**Recovery:**	☐ Good ☒ Bad ☒ Ok
Photos:	Cam. Ken Nos. 573-575	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X		

Initial Depth to Water (m):	2.309	**Purge Start Time:**	9:41				**Purge End Time:**	10:02		
Depth to Bottom (m):	9.083	**Purge Interval** Time (5) min, Vol. (___) L	9:43	9:48	9:53	9:58				
Submerged Tubing Depth (m):	8.2	**Depth to water (m)**	2.403	2.507	2.570	2.612				
Well Stick-up Height (m):	1.00	**Temperature (°C)**	3.2	3.7	3.8	3.8				
Estimated Water Volume (L):	55	**pH (pH Units)**	7.50	7.55	7.55	7.55				
DTB – DTW) x (πr²)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	1502	1492	1497	1540				
		Specific Cond. (µs/cm)	2597	2596	2595	2591				
		Redox (mV)	119.7	111.6	103.9	104.9				
		DO (mg/L)	1.15	0.88	0.37	0.35				
		DO (%)	8.1	6.6	6.4	6.5				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear				
		Turbidity (NTU):	–	–	–	1.42				
		Interval Purge Volume (L):	.25	.5	.5	.5				
		Cumulative Purge Volume (L):	.25	.75	1.25	1.75				

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	10:00	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit					
Sample Time	10:05		X			

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): CH15-107-MW032

Sample Date (Con't): Jun 3, 2016

Sample Time (Con't): 10:05

General Notes (Condition of well, or other features):

Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 33 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	CH15-107-MW033	**Project Number:**	1343-005.18	**Date:**	Jun 3, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	4"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny 10°C
UTM Location:	Z. 8 E. 585765 N. 6914250	**Waypoint:**	GPS Hem ID MW033	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. Hem Nos. 569-571	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X		

Initial Depth to Water (m):	2.525	**Purge Start Time:**	9:13				**Purge End Time:**	9:34		
Depth to Bottom (m):	3.894	**Purge Interval** Time (5) min, Vol. (___) L	9:20	9:25	9:09	9:34				
Submerged Tubing Depth (m):	3.6	**Depth to water (m)**	2.543	2.543	2.543	2.543				
Well Stick-up Height (m):	1.03	**Temperature (°C)**	3.3	3.4	3.4	3.3				
Estimated Water Volume (L):	11	**pH (pH Units)**	6.80	6.79	6.93	6.87				
		Cond. (µs/cm)	1317	1310	1276	1216				
		Specific Cond. (µs/cm)	2260	2234	2171	2074				
		Redox (mV)	116.2	119.7	124.1	129.5				
		DO (mg/L)	1.96	2.00	2.44	3.30				
		DO (%)	14.6	15.2	18.5	24.8				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear				
		Turbidity (NTU):	–	–	–	1.54				
		Interval Purge Volume (L):	.4	.5	.5	.6				
		Cumulative Purge Volume (L):	.4	.9	1.4	2.0				

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	9:34	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	9:35					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): CH15-107-MW033

Sample Date (Con't): June 3, 2016

Sample Time (Con't): 9:35

General Notes (Condition of well, or other features):

Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 13 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1 L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	CH15-107-MW034	**Project Number:**	1343-005.18	**Date:**	June 3, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	4"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny 8°C
UTM Location:	Z. 8 E. 585756 N. 6914487	**Waypoint:**	GPS Hem ID MW034	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. Hem Nos. 566-568	**Purge Method:**			
Duplicate Collected:	☒ Yes ☐ No Name Dup5				
Field Blank Collected:	☒ Yes ☐ No Name FB3				

Purge Method:

Waterra	Peristaltic	Disp. Bailer	Redi-flo	Other
	X			

Initial Depth to Water (m):	3.205
Depth to Bottom (m):	6.109
Submerged Tubing Depth (m):	5.6
Well Stick-up Height (m):	0.98
Estimated Water Volume (L):	23.52

Purge Start Time: 8:26 **Purge End Time:** 8:45

Purge Interval Time (5) min, Vol. (___) L	8:28	8:33	8:38	8:43					
Depth to water (m)	3.256	3.268	3.266	3.266	← Sun started shining on flow through skewing Temp + Sp. Cond. Parameters considered stable.				
Temperature (°C)	3.5	3.2	3.4	3.6					
pH (pH Units)	6.66	6.66	6.68	6.69					
Cond. (µs/cm)	618	579	570	566					
Specific Cond. (µs/cm)	1059	993	968	957					
Redox (mV)	120.0	119.4	120.1	953					
DO (mg/L)	6.33	6.25	6.05	6.31					
DO (%)	48	46.7	45.4	47.6					
Appearance & Odour (Clear, Silty, HC odours, etc.)	turbid	turbid	turbid	turbid					
Turbidity (NTU):	–	–	–	9.93					
Interval Purge Volume (L):	.35	.5	.45	.5					
Cumulative Purge Volume (L):	.35	.85	1.3	1.8					

DTB – DTW) x (πr²)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No
Time logged on YSI (24hr):	8:45
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit
Sample Time	8:45

Sample Method:

Waterra	Peristaltic	Disp. Bailer	Redi-flo	Other
	X			

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): CH15-107-MW034

Sample Date (Con't): June 3, 2016

Sample Time (Con't): 8:45

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Good Condition

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 25 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	PO1-01A (Good)	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:		**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	cloudy 12°C
UTM Location:	Z. 8 E. 579697 N. 6914855	**Waypoint:**	GPS Hem ID Po1-01A	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. Hem Nos. 562-565	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____	Hydrolift				

Initial Depth to Water (m):	3.560	**Purge Start Time:**	15:29				**Purge End Time:**	15:47		
Depth to Bottom (m):	~~20.312~~	**Purge Interval Time (___) min, Vol. (10) L**	15:34	15:38	15:42	15:47				
Submerged Tubing Depth (m):	19.3	**Depth to water (m)**	3.566	3.586	3.592	3.592				
Well Stick-up Height (m):	0.60	**Temperature (°C)**	3.3	2.6	2.4	2.2				
Estimated Water Volume (L):	33.5	**pH (pH Units)**	7.02	6.91	6.95	6.98				
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	~~1134~~	1137	1127	1121				
		Specific Cond. (µs/cm)	1974	1986	1980	1985				
		Redox (mV)	68.7	76.3	72.4	68.4				
		DO (mg/L)	0.81	0.91	0.81	0.95				
		DO (%)	6.2	6.7	6.0	6.8				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	turbid	clear	clear	clear				
		Turbidity (NTU):	–	–	–	0.35				
		Interval Purge Volume (L):	10	10	10	10				
		Cumulative Purge Volume (L):	10	20	30	40				

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	15:47	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	Hydrolift				
Sample Time	15:48					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): P01-01A

Sample Date (Con't): June 2, 2016

Sample Time (Con't): 15:48

General Notes (Condition of well, or other features):

Good Conditions

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	MW-01B	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sun + Cloud 14°C
UTM Location:	Z. 8 E. 579697 N. 6914855	**Waypoint:**	GPS Hem ID MW-01A	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. Hem Nos. 562-565	**Purge Method:**			
Duplicate Collected:	☒ Yes ☐ No Name Dup 4	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☒ Yes ☐ No Name FB2	Hydrolift				

Initial Depth to Water (m):	3.716	**Purge Start Time:**	15:56			**Purge End Time:**	16:12				
Depth to Bottom (m):	35.296	**Purge Interval Time (__) min, Vol. (15) L**	16:00	16:03	16:07	16:10					
Submerged Tubing Depth (m):	34.2	**Depth to water (m)**	3.746	3.746	3.746						
Well Stick-up Height (m):	0.56	**Temperature (°C)**	2.6	2.4	2.4	2.6					
Estimated Water Volume (L):	63	**pH (pH Units)**	7.31	7.36	7.35	7.34					
		Cond. (µs/cm)	891	900	901	903					
		Specific Cond. (µs/cm)	1555	1583	1582	1581					
		Redox (mV)	-34.0	-41.0	-42.7	-42.2					
		DO (mg/L)	1.32	1.02	1.06	0.89					
		DO (%)	9.6	7.5	7.8	6.6					
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear						
		Turbidity (NTU):	—	—	—	0.24					
		Interval Purge Volume (L):	15	15	15						
		Cumulative Purge Volume (L):	15	30	45						

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	16:11	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	Hydrolift				
Sample Time	16:15					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): 101-01B

Sample Date (Con't): June 2, 2016

Sample Time (Con't): 16:15

General Notes (Condition of well, or other features):

Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	P01-02A	**Project Number:**	1343-005.18	**Date:**	Jun. 2/2016
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Overcast ~10°C
UTM Location:	Z. 8 E. 579962 N. 6914230	**Waypoint:**	GPS625 ID P01-02A	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. CLR Nos. 32-36	**Purge Method:**			
Duplicate Collected:	☒ Yes ☐ No Name DUP3	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name		X		

Initial Depth to Water (m):	1.924	**Purge Start Time:**	9:54			**Purge End Time:**	10:15			
Depth to Bottom (m):	14.370	**Purge Interval Time (5) min, Vol. (___) L**	9:55	10:00	10:05	10:10	10:15			
Submerged Tubing Depth (m):	~12.5	**Depth to water (m)**	1.94	1.94	1.94	—	—			
Well Stick-up Height (m):	0.61	**Temperature (°C)**	5.5	4.7	4.6	4.6	4.7			
Estimated Water Volume (L):	~24.8	**pH (pH Units)**	7.49	7.48	7.48	7.48	7.48			
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	444.3	437.0	436.4	443.3	446.1			
		Specific Cond. (µs/cm)	712.4	714.0	714.7	727.6	729.6			
		Redox (mV)	106.0	65.7	54.4	48.3	42.8			
		DO (mg/L)	0.97	6.16	0.14	0.12	0.12			
		DO (%)	6.3	1.3	1.1	1.0	0.9			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear no odour	Same	Same	Same	Same			
		Turbidity (NTU):	—	—	—	—	0.70			
		Interval Purge Volume (L):	—	1.0	1.0	1.2	1.2			
		Cumulative Purge Volume (L):	—	1.0	2.0	2.2	3.4			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	10:16	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	10:20					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): PGI-02A

Sample Date (Con't): Jun. 2 / 2016

Sample Time (Con't): 10:20

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Sealed with J. Plug.

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 15 m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6"
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

Cam: Hem Nos: 553-555

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	POI-02B	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:	Partially obstructed	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Cloudy 10°C
UTM Location:	Z. 8 E. 579962 N. 6914230	**Waypoint:**	GPS625 ID POI-02A	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. [redacted] Nos. [redacted]	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X		

Initial Depth to Water (m):	0.255	**Purge Start Time:**	13:19			**Purge End Time:**	13:31			
Depth to Bottom (m):	29.851	**Purge Interval Time (3) min, Vol. (___) L**	13:21	13:24	13:27	13:30				
Submerged Tubing Depth (m):	29.0	**Depth to water (m)**	0.910	0.900	0.900	0.900				
Well Stick-up Height (m):	1.60	**Temperature (°C)**	8.3	8.4	8.5	8.5				
Estimated Water Volume (L):	59	**pH (pH Units)**	7.72	7.68	7.67	7.67				
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	405.6	398.5	394.5	394.2				
		Specific Cond. (µs/cm)	591.8	582.7	576.9	575.0				
		Redox (mV)	-108	-114.2	-117.2	-118.2				
		DO (mg/L)	0.44	0.31	0.21	0.22				
		DO (%)	3.4	2.7	1.9	1.9				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	turbid clear	turbid clear	turbid clear	turbid clear				
		Turbidity (NTU):	-	-	-	-	3.83			
		Interval Purge Volume (L):	.3	.35	.3	.3				
		Cumulative Purge Volume (L):	.3	.65	.95	1.25				

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	13:31	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	13:32					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): PO1-02B

Sample Date (Con't): June 2, 2016

Sample Time (Con't): 13:32

General Notes (Condition of well, or other features):
Obstruction in well at 1.7m btop. Likely a rock. Still able to slide in tubing past it.

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:
- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	POL-03	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	light rain 10°C
UTM Location:	Z08 E. 0580521 N. 6914260	**Waypoint:**	GPS Item ID POL-03	**Recovery:**	☐ Good ☒ Bad ☐ Ok
Photos:	Camitem Nos. 3739-541	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	1.763	**Purge Start Time:**	9:41			**Purge End Time:**	10:05			
Depth to Bottom (m):	9.41	**Purge Interval Time (5) min, Vol. (___) L**	9:43	9:48	9:53	9:58	10:03			
Submerged Tubing Depth (m):	9.0	**Depth to water (m)**	1.763	2.36	2.637	2.835	3.050			
Well Stick-up Height (m):	0.40	**Temperature (°C)**	4.0	3.8	4.2	4.5	4.3			
Estimated Water Volume (L):	15.8	**pH (pH Units)**	6.12	6.12	6.13	6.13	6.14			
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	2457	2438	2451	2460	2438			
		Specific Cond. (µs/cm)	4103	4046	4090	4039	4055			
		Redox (mV)	-28.3	-29.1	-30.2	-31.1	-31.8			
		DO (mg/L)	0.61	0.23	0.21	0.17	0.19			
		DO (%)	4.6	1.9	1.6	1.3	1.6			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear	clear			
		Turbidity (NTU):	–	–	–	–	28.6			
		Interval Purge Volume (L):	0.3	.45	.6	.4	.45			
		Cumulative Purge Volume (L):	0.3	.75	1.35	1.75	2.2			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	10:05	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	10:06					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): BH1-03

Sample Date (Con't): June 2, 2016

Sample Time (Con't): 10:06

General Notes (Condition of well, or other features):

-Slow recharge

[redacted]

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☒ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☒ Other [redacted]
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1 L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	POI-04A	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Cloudy 10°C
UTM Location:	Z08 E. 0580376 N. 6914073	**Waypoint:**	GPS Hem ID POI-04AG	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. Hem Nos. 548-550	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____	Hydrolift				

Initial Depth to Water (m):	0.190	**Purge Start Time:**	11:32				**Purge End Time:**		11:54	
Depth to Bottom (m):	53.134	**Purge Interval Time (__) min, Vol. (15) L**	11:36	11:44	11:48	11:53				
Submerged Tubing Depth (m):	52.5	**Depth to water (m)**	0.36	0.401	0.424	0.429				
Well Stick-up Height (m):	0.20	**Temperature (°C)**	3.4	3.5	3.4	3.5				
Estimated Water Volume (L):	106	**pH (pH Units)**	6.62	6.68	6.66	6.64				
		Cond. (µs/cm)	725	721	717	716				
		Specific Cond. (µs/cm)	1236	1222	1219	1214				
		Redox (mV)	-24.7	-27.2	-25.6	-23.3				
		DO (mg/L)	0.71	1.62	1.20	0.54				
		DO (%)	5.3	12.1	9.0	5.0				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	turbid sulphur odour	turbid sulphur odour	turbid sulphur odour	turbid sulphur odour				
		Turbidity (NTU):	—	—	—	2.42				
		Interval Purge Volume (L):	15	15	15	15				
		Cumulative Purge Volume (L):	15	30	45	60				

DTB – DTW) x (πr^{2})*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	11:53	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	Hydrolift				
Sample Time	11:55					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): P01-01A

Sample Date (Con't): June 2, 2016

Sample Time (Con't): 11:55

General Notes (Condition of well, or other features):

Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	P01-04B	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	cloudy 10°C
UTM Location:	Z08 E. 0583376 N. 6914073	**Waypoint:**	GPS Hem ID P01-04AB	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. Hem Nos. 551-553	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____	Hydrolift			

Initial Depth to Water (m):	0.808	**Purge Start Time:**	12:01				**Purge End Time:**	12:15		
Depth to Bottom (m):	19.027	**Purge Interval Time (___) min, Vol. (10) L**	12:04	12:07	12:11	12:15				
Submerged Tubing Depth (m):	18.2	**Depth to water (m)**	0.818	0.818	0.818	0.818				
Well Stick-up Height (m):	0.18	**Temperature (°C)**	3.1	3.2	3.2	3.3				
Estimated Water Volume (L):	35.5	**pH (pH Units)**	6.75	6.73	6.74	6.74				
		Cond. (µs/cm)	1726	1794	1796	1797				
		Specific Cond. (µs/cm)	2971	3072	3079	3070				
		Redox (mV)	-55.5	-55.0	-55.3	-52.5				
		DO (mg/L)	4.23	0.88	0.94	0.84				
		DO (%)	59.6	6.7	7.2	6.2				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear				
		Turbidity (NTU):	—	—	—	0.25				
		Interval Purge Volume (L):	10	10	10	10				
		Cumulative Purge Volume (L):	10	20	30	40				

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**			
Time logged on YSI (24hr):	12:15	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	Hydrolift			
Sample Time	12:16				

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): PO1-04B

Sample Date (Con't): June 2, 2016

Sample Time (Con't): 12:16

General Notes (Condition of well, or other features):

Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☐ HNO_3	120 ml	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	P01-11	**Project Number:**	1343-005.18	**Date:**	Jun 2 /2016
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Overcast/light rain ~12°C
UTM Location:	Z. 8 E. 580094 N. 6914488	**Waypoint:**	GPS 62S ID P01-11	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 43-45	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name ______				
Field Blank Collected:	☐ Yes ☒ No Name ______				

Purge Method:

Waterra	Peristaltic	Disp. Bailer	Redi-flo	Other
	X			

Initial Depth to Water (m):	0.965	**Purge Start Time:**	12:32			**Purge End Time:**	12:53					
Depth to Bottom (m):	11.010	**Purge Interval Time (5) min, Vol. (__) L**	12:33	12:38	12:43	12:48	12:53					
Submerged Tubing Depth (m):	~10.0	**Depth to water (m)**	0.97	0.97	—	—	—					
Well Stick-up Height (m):	1.39	**Temperature (°C)**	6.6	5.6	5.5	5.4	5.3					
Estimated Water Volume (L):	~ 20.09	**pH (pH Units)**	6.58	6.39	6.40	6.39	6.41					
		Cond. (µs/cm)	2457	2461	2451	2448	2439					
		Specific Cond. (µs/cm)	3857	3907	3911	3916	3915					
		Redox (mV)	-27.3	-35.4	-39.4	-42.1	-43.8					
		DO (mg/L)	1.11	0.30	0.23	0.20	0.13					
		DO (%)	8.6	2.4	1.8	1.6	1.5					
		Appearance & Odour (Clear, Silty, HC odours, etc.)	Clear light grey/brown	Clear.	Same	Same	same					
		Turbidity (NTU):	—	—	—	—	7.28					
		Interval Purge Volume (L):	—	1.0	1.0	1.3	1.3					
		Cumulative Purge Volume (L):	—	1.0	2.0	3.3	4.6					

DTB – DTW) x (πr^{2})*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**
Time logged on YSI (24hr):	12:54	
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	
Sample Time	13:05	

Sample Method:

Waterra	Peristaltic	Disp. Bailer	Redi-flo	Other
	X			

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): P01-11

Sample Date (Con't): Jun. 2 / 2016

Sample Time (Con't): 13:05

General Notes (Condition of well, or other features):

Sealed with PVC cap.

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 5 m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6"
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	P05-01-02	**Project Number:**	1343-005.18	**Date:**	02-Jun-16
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	1/2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny ~18°C
UTM Location:	Z. 8 E. 580054 N. 6914508	**Waypoint:**	GPS 625 ID P05-01	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 46-49	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	0.293	**Purge Start Time:**	14:06			**Purge End Time:**	14:27			
Depth to Bottom (m):	20.769	**Purge Interval Time (5) min, Vol. (___) L**	14:07	14:12	14:17	14:22	14:27			
Submerged Tubing Depth (m):	~20.0	**Depth to water (m)**	—	—	—	—	—			
Well Stick-up Height (m):	0.48	**Temperature (°C)**	5.7	5.3	5.1	5.0	5.0			
Estimated Water Volume (L):	~2.5	**pH (pH Units)**	6.34	6.25	6.25	6.24	6.23			
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	2243	2365	2364	2359	2358			
		Specific Cond. (µs/cm)	3580	3800	3806	3813	3808			
		Redox (mV)	-13.6	-0.1	0.2	-0.6	-1.2			
		DO (mg/L)	2.22	0.26	0.19	0.18	0.17			
		DO (%)	16.8	2.1	1.6	1.4	1.4			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear.	clear	same	same	same.			
		Turbidity (NTU):	—	—	/	—	2.03			
		Interval Purge Volume (L):	—	1.6	~~1.6~~ 1.3	1.0	1.35			
		Cumulative Purge Volume (L):	—	1.6	2.9	3.9	5.25			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	14:27	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	14:30					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): POS-01-02

Sample Date (Con't): Jun. 2 / 2016

Sample Time (Con't): 14:30

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Could not measure draw down due to well diameter.

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 0.5 m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6"
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	POS-01-04	**Project Number:**	1343-005.18	**Date:**	Jun. 2/2016
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	1/2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Overcast / light wind ~ 15°C
UTM Location:	Z. 8 E. 580054 N. 6914508	**Waypoint:**	GPS 625 ID POS-01	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 46-49	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name ____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name ____		X		

Initial Depth to Water (m):	1.969	**Purge Start Time:**	13:33			**Purge End Time:**	13:54			
Depth to Bottom (m):	12.093	**Purge Interval Time (5) min, Vol. (___) L**	13:34	13:39	13:44	13:49	13:54			
Submerged Tubing Depth (m):	~11.0	**Depth to water (m)**	—	—	—	—	—			
Well Stick-up Height (m):	0.53	**Temperature (°C)**	6.4	5.5	5.7	5.8	5.7			
Estimated Water Volume (L):	~1.29	**pH (pH Units)**	6.39	6.26	6.25	6.24	6.24			
		Cond. (µs/cm)	2212	2378	2429	2449	2438			
		Specific Cond. (µs/cm)	3454	3779	3854	3878	3859			
		Redox (mV)	-14.6	-13.2	-10.9	-11.3	-11.9			
		DO (mg/L)	1.70	0.37	0.25	0.20	0.18			
		DO (%)	13.2	2.9	2.0	1.6	1.4			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	slight turbid grey	same	clear.	clear.	same			
		Turbidity (NTU):	—	—	—	—	8.99			
		Interval Purge Volume (L):	—	1.0	0.7	0.75	0.8			
		Cumulative Purge Volume (L):	—	1.0	1.7	2.45	3.25			

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	13:55	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	13:55					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): P05-01-04

Sample Date (Con't): Jun. 2 / 2016

Sample Time (Con't): 17:55

General Notes (Condition of well, or other features):
Could not measure draw down due to well diameter.

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 12.5m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6"
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	P05-02	**Project Number:**	1343-005.18	**Date:**	Jun. 2/2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Overcast ~15°C
UTM Location:	Z.08 E. 0580035 N. 6911441	**Waypoint:**	GPS ELRID P05-02	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. 1 Nos. 40-42	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	2.614	**Purge Start Time:**	11:37			**Purge End Time:**	12:03				
Depth to Bottom (m):	5.879	**Purge Interval Time (5) min, Vol. (___) L**	11:38	11:43	11:48	11:53	11:58	12:03			
Submerged Tubing Depth (m):	~5	**Depth to water (m)**	2.610	2.610	2.610	2.610	2.610	2.610			
Well Stick-up Height (m):	1.895	**Temperature (°C)**	5.9	5.1	5.0	4.9	4.9	4.8			
Estimated Water Volume (L):	6.53	**pH (pH Units)**	6.25	6.23	6.20	6.22	6.22	6.22			
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	2311	2285	2275	2271	2272	2265			
		Specific Cond. (µs/cm)	3653	3682	3683	3678	3686	3690			
		Redox (mV)	11.7	10.4	7.6	5.3	4.4	3.2			
		DO (mg/L)	0.91	0.21	0.60	0.43	0.34	0.32			
		DO (%)	5.9	1.7	4.8	3.4	2.7	2.5			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	same	same	same	same	same			
		Turbidity (NTU):	/	/	/	/	/	0.68			
		Interval Purge Volume (L):	/	0.85	0.85	0.85	1.0	0.7			
		Cumulative Purge Volume (L):	/	0.85	1.70	2.55	3.55	4.25			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	12:04	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	12:05					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): PE5-02

Sample Date (Con't): 2-Jun-16

Sample Time (Con't): 12:05

General Notes (Condition of well, or other features):

- cap on well, ~~[illegible]~~

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 6 m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	PQ5 - 03	**Project Number:**	1343-005.18	**Date:**	2 - Jun-16
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN / MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	slight breeze, cloudy
UTM Location:	Z. 8 E. 529977 N. 6914348	**Waypoint:**	GPS 625 ID PQ5-03	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 37-39	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	4.378	**Purge Start Time:**	10:50			**Purge End Time:**	11:11			
Depth to Bottom (m):	7.986	**Purge Interval Time (5) min, Vol. (___) L**	10:51	10:56	11:01	11:06	11:11			
Submerged Tubing Depth (m):	~6	**Depth to water (m)**	4.381	4.381	4.381	—	—			
Well Stick-up Height (m):	0.82	**Temperature (°C)**	4.6	4.0	4.0	3.9	3.9			
Estimated Water Volume (L):	7.2	**pH (pH Units)**	6.81	6.74	6.68	6.72	6.72			
		Cond. (µs/cm)	1334	1338	1339	1337	1338			
		Specific Cond. (µs/cm)	2200	2232	2236	2237	2240			
		Redox (mV)	-16.7	-25.7	-29.2	-29.4	-30.0			
		DO (mg/L)	0.49	0.16	0.14	0.12	0.12			
		DO (%)	3.5	1.3	1.0	0.9	0.9			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	Clear	Same	Same	Same	Same			
		Turbidity (NTU):	—	—	—	—	1.62			
		Interval Purge Volume (L):	—	1.0	1.0	1.0	1.0			
		Cumulative Purge Volume (L):	—	1.0	1.0	3.0	4.0			

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

~~7.98~~ 7.986
4.378
3.608 * 2 = 7.216

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	11:12	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	11:15					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): POS-03

Sample Date (Con't): Jun. 2 / 2016

Sample Time (Con't): 11:15

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 8 m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6"
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☒ Other J-Plug.
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	P09-ETA-2	**Project Number:**	1343-005.18	**Date:**	Jun. 3/2016
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Overcast ~15°C
UTM Location:	Z. 8 E. 582704 N. 6913800	**Waypoint:**	GPS 625 ID P09ETA2	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. CLR Nos. 63-65	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____	Hydrolift			

Initial Depth to Water (m):	11.115	**Purge Start Time:**	14:33			**Purge End Time:**			15:08	
Depth to Bottom (m):	18.535	**Purge Interval Time (___) min, Vol. (___) L**	14:33	14:38	14:43	14:53	14:58	15:03	15:08	
Submerged Tubing Depth (m):	~16	**Depth to water (m)**	—	—	11.134	—	—	—	—	
Well Stick-up Height (m):	0.715	**Temperature (°C)**	4.8	3.4	3.2	4.4	3.4	3.7	3.6	
Estimated Water Volume (L):	14.8	**pH (pH Units)**	6.62	6.34	6.34	6.34	6.23	6.23	6.20	
		Cond. (µs/cm)	3728	3752	3788	3922	3832	3824	3879	
		Specific Cond. (µs/cm)	6102	6394	6469	6461	6506	6470	6407	
		Redox (mV)	-45.4	-32.0	-26.7	-30.3	-20.0	-19.3	-19.2	
		DO (mg/L)	5.32	3.74	1.37	3.76	2.34	1.93	1.85	
		DO (%)	40.0	26.9	10.3	29.1	18.0	14.6	14.6	
		Appearance & Odour (Clear, Silty, HC odours, etc.)	Slightly turbid	same	clear	same	same	same	same	
		Turbidity (NTU):	—	—	—	—	—	—	2.96	
		Interval Purge Volume (L):	—	5	4	4	4	4	4	
		Cumulative Purge Volume (L):	—	5	9	13	17	21	25	

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

18.535
11.115
07.420 x 2 = 14.840

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**			
Time logged on YSI (24hr):	15:11	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	Hydrolift			
Sample Time	15:15				

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): POA-ETA-2

Sample Date (Con't): 3-Jun-16

Sample Time (Con't): 15:15

General Notes (Condition of well, or other features):

~~Tubing~~

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1,000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	P2001-2A	**Project Number:**	1343-005.18	**Date:**	3-Jun-16
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	AN/MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	sunny ~7°C
UTM Location:	Z.08 E. 0593133 N. 6902867	**Waypoint:**	GPS ___ ID P2001-2A3	**Recovery:**	☐ Good ☐ Bad ☒ Ok
Photos:	Cam. 1 Nos. 54-56	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name ___	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name ___	Hydrolift				

Initial Depth to Water (m):	3.984	**Purge Start Time:**	9:13			**Purge End Time:**	10:03			
Depth to Bottom (m):	27.528	**Purge Interval Time (5) min, Vol. (___) L**	9:18	9:23	9:28	9:33	9:43	9:48	9:53	9:58	10:03
Submerged Tubing Depth (m):	~24	**Depth to water (m)**	/	/	/	9.70	/	/	/	/	/
Well Stick-up Height (m):	0.38	**Temperature (°C)**	4.0	4.2	~~4.1~~ 4.3	3.5	4.9	4.4	4.7	4.6	4.6
Estimated Water Volume (L):	47.088	**pH (pH Units)**	6.77	6.76	6.78	6.75	6.66	6.68	6.68	6.68	6.70
		Cond. (µs/cm)	1328	2328	2342	1629	2376	2338	2354	2339	2303
		Specific Cond. (µs/cm)	2219	3865	3866	2709	3857	3857	3849	3830	3769
		Redox (mV)	8.3	1.7	1.6	3.2	6.8	5.8	7.4	3.1	-3.1
		DO (mg/L)	2.88	2.08	2.50	2.23	3.34	5.23	6.56	2.37	2.17
		DO (%)	22.3	23.4	21.5	17.1	24.4	39.5	19.6	18.3	16.9
		Appearance & Odour (Clear, Silty, HC odours, etc.)	slightly turbid	some	some	some	some	some	some	clear	clear
		Turbidity (NTU):	/	/	/	/	/	/	/	/	9.93
		Interval Purge Volume (L):	5	5	4	4	2	2	2	2	2
		Cumulative Purge Volume (L):	5	10	~~9~~ 14	18	20	22	24	26	28

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

6 1 4
27.528
3.984
23.544 x2 = 47.088

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**			
Time logged on YSI (24hr):	10:05	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	Hydrolift				
Sample Time	10:05					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): P2001-2A

Sample Date (Con't): 3-June-16

Sample Time (Con't): 10:05

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

- Drawdown not monitor due to friction from tubing (possibly weighing water level) + low stick-up height (pinching fingers)
- Purging rate slowed down @ 9:33 due to draw down, attempt stable parameters.
-

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1,000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	P2001-28	**Project Number:**	1343-005.18	**Date:**	3-June-16
Station Status:	SLOW RECHARGE	**Client:**	GY - AAM	**Samplers:**	~~3-June-16~~ AN/MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	sunny ~ 7°C
UTM Location:	Z ~~08~~ E. 0593133 N. 6902867	**Waypoint:**	GPS ELR ID P2001-28	**Recovery:**	☐ Good ☒ Bad ☐ Ok
Photos:	Cam. 1 Nos. 54-56	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	4.193	**Purge Start Time:**	8:39			**Purge End Time:**	9:05				
Depth to Bottom (m):	6.384	**Purge Interval Time (5) min, Vol. (___) L**	8:41	8:46	8:51	8:56	9:01	9:05		13:35	
Submerged Tubing Depth (m):	nb	**Depth to water (m)**	4.449	4.605	4.70	5.080	5.580	—		4.25	
Well Stick-up Height (m):	0.60	**Temperature (°C)**	4.0	4.4	5.0	3.1	3.0	3.3		6.7	
Estimated Water Volume (L):	4.4	**pH (pH Units)**	6.61	6.68	6.64	6.65	6.75	6.73		6.67	
		Cond. (µs/cm)	~~2332~~	2235	2268	2462	2037	1999		2578	
		Specific Cond. (µs/cm)	3738	3683	3684	3725	3484	3414		3958	
		Redox (mV)	-19.6	-20.3	-11.1	-25.0	-20.7	-24.8		7.9	
		DO (mg/L)	1.02	0.55	0.45	0.65	3.04	3.42		1.42	
		DO (%)	13.1	4.3	3.6	4.9	~~23.3~~	25.8		12.1	
		Appearance & Odour (Clear, Silty, HC odours, etc.)	grey turbid	same	same	same	same	same		slight turb. grey	
		Turbidity (NTU):	—	—	—	—	—	—		45.6	
		Interval Purge Volume (L):	—	0.65	0.35	1.0	1.0	1.2		—	
		Cumulative Purge Volume (L):	—	0.65	1.0	2.0	3.0	4.2		—	

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

$$\frac{6.384 - 4.193}{2.191} \times 2 = 4.382$$

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	13:35	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit					
Sample Time	13:25					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): P2001-2B

Sample Date (Con't): Jun. 3/2016

Sample Time (Con't): 13:25

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Grey sediment found on the tip of WL meter after measuring DTB.

- ~~speed~~ increased @ 8:51 due to slow recharge; will purge dry & ~~return to sample~~ later.
- purged dry @ 9:05

* sampled @ 13:25 following recharge. Sample water grey/ turbid @ start, clearing by end of sample

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	P96-7	**Project Number:**	1343-005.18	**Date:**	June 1, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sun + Cloud 15°C
UTM Location:	Z08 E.0584122 N.6913288	**Waypoint:**	GPS Item ID P96-7*	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam Item Nos. 533-535	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	5.936	**Purge Start Time:**	15:39				**Purge End Time:**			
Depth to Bottom (m):	9.868	**Purge Interval Time (3) min, Vol. (__) L**	15:44	15:47	15:50	15:53	15:56			
Submerged Tubing Depth (m):	9.0	**Depth to water (m)**	5.979	5.989	5.992	5.994	5.996			
Well Stick-up Height (m):	0.85	**Temperature (°C)**	3.6	3.6	4.2	3.8	3.9			
Estimated Water Volume (L):	2.9	**pH (pH Units)**	7.21	7.14	7.21	7.22	7.[illegible]			
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	1907	1863	1848	1815	1808			
		Specific Cond. (µs/cm)	3233	3157	3068	3054	3022			
		Redox (mV)	58.7	82.4	90.3	96.0	99.8			
		DO (mg/L)	Q	Q	Q	Q	Q			
		DO (%)	Q	Q	Q	Q	Q			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear	clear			
		Turbidity (NTU):	–	–	–	–	1.72			
		Interval Purge Volume (L):	0.2	0.25	0.3	.3	.3			
		Cumulative Purge Volume (L):	0.2	0.45	0.75	1.05	1.35			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	15:59	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	16:00					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

19' 7.4"

HEMMERA

Sample Site (Con't): PW6-7

Sample Date (Con't): June 1, 2016

Sample Time (Con't): 16:00

General Notes (Condition of well, or other features):

- Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	PQ16-8A	**Project Number:**	1343-005.18	**Date:**	June 3, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny 12°C
UTM Location:	Z. 8 E. 583222 N. 6914672	**Waypoint:**	GPS Hem ID 196-8A6	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam Hem Nos. 588-590	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X		

Initial Depth to Water (m):	2.474	**Purge Start Time:**	13:24				**Purge End Time:**	13:45		
Depth to Bottom (m):	4.876	**Purge Interval Time (3) min, Vol. (__) L**	13:36	13:39	13:42	13:45				
Submerged Tubing Depth (m):	4.3	**Depth to water (m)**	2.484	2.484	2.484	2.484				
Well Stick-up Height (m):	0.79	**Temperature (°C)**	7.9	7.9	7.8	7.6				
Estimated Water Volume (L):	4.8	**pH (pH Units)**	3.46	3.37	3.34	3.33				
		Cond. (µs/cm)	6184	6114	6614	6673				
		Specific Cond. (µs/cm)	9182	9100	9072	9109				
		Redox (mV)	345.0	345.6	347.4	348.9				
		DO (mg/L)	0.46	0.31	0.23	0.22				
		DO (%)	4.1	2.7	2.0	1.9				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear				
		Turbidity (NTU):	—	—	—	0.24				
		Interval Purge Volume (L):	.1	.3	.3	.35				
		Cumulative Purge Volume (L):	.1	.4	.7	1.5				

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	13:45	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	13:46					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): MW6-8A

Sample Date (Con't): June 3, 2016

Sample Time (Con't): 13:46

General Notes (Condition of well, or other features):

good condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	P96-8B	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JA + NS
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny 12°C
UTM Location:	Z. 8 E. 583222 N. 6911407	**Waypoint:**	GPS ID P96-8AB	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam Nos. 591-593	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name		X			

Initial Depth to Water (m):	2.360	**Purge Start Time:**	13:54			**Purge End Time:**	14:08			
Depth to Bottom (m):	9.083	**Purge Interval Time (5) min, Vol. (___) L**	13:57	14:00	14:05	14:06				
Submerged Tubing Depth (m):	8.2	**Depth to water (m)**	2.367	2.364	2.364	2.364				
Well Stick-up Height (m):	0.7	**Temperature (°C)**	7.5	7.8	7.6	7.6				
Estimated Water Volume (L):	13.4	**pH (pH Units)**	4.77	4.88	4.89	4.91				
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	6128	6185	6153	6147				
		Specific Cond. (µs/cm)	9205	9167	9204	9203				
		Redox (mV)	201.0	174.5	167.9	162.6				
		DO (mg/L)	0.67	0.24	0.20	0.18				
		DO (%)	5.9	2.1	1.6	1.6				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear				
		Turbidity (NTU):	–	–	–	0.40				
		Interval Purge Volume (L):	.15	.2	.2	.2				
		Cumulative Purge Volume (L):	.15	.35	.55	.75				

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	14:06	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	14:10					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): PG-8B

Sample Date (Con't): June 3, 2015

Sample Time (Con't): 14:10

General Notes (Condition of well, or other features):

Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☐ HNO_3	120mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	P96-9A	**Project Number:**	1343-005.18	**Date:**	Jun. 3/2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	1.5"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Overcast ~15°C
UTM Location:	Z. 8 E. 592647 N. 6903347	**Waypoint:**	GPS 625 ID P96-9A	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 56-58	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	5.88	**Purge Start Time:**	10:53			**Purge End Time:**	11:16			
Depth to Bottom (m):	9.412	**Purge Interval** Time (5) min, Vol. (___) L	10:56	11:01	11:06	11:11	11:16			
Submerged Tubing Depth (m):	~8.5	**Depth to water (m)**	5.883	5.884	—	—	—			
Well Stick-up Height (m):	0.894	**Temperature (°C)**	3.9	2.9	3.0	2.8	3.0			
Estimated Water Volume (L):	~3.9	**pH (pH Units)**	6.88	6.71	6.69	6.74	6.72			
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	1719	1644	1651	1654	1661			
		Specific Cond. (µs/cm)	2912	2843	2848	2874	2862			
		Redox (mV)	77.9	91.4	92.5	99.1	101.4			
		DO (mg/L)	2.02	1.63	1.53	1.47	1.41			
		DO (%)	15.4	12.1	11.5	10.8	10.5			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	Clear.	Same.	Same	Same	Same			
		Turbidity (NTU):	—	—	—	—	1.62			
		Interval Purge Volume (L):	—	0.8	0.8	0.8	0.8			
		Cumulative Purge Volume (L):	—	0.8	1.6	2.4	3.2			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	11:16	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	11:20					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): P96-9A

Sample Date (Con't): Jun. 3/2016.

Sample Time (Con't): 11:20

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Brown sediment on tip of WL meter when measuring DTB.
Two wells in casing P96-9A. No markings. Sampled shorter well (i.e. PVC cut shorter), this was the only PVC with tubing already installed.

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6"
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____.
- ☐ Other _____.

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000.	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	S1A	**Project Number:**	1343-005.18	**Date:**	01-Jun-16
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN/MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny
UTM Location:	Z. 8 E. 584434 N. 6913115	**Waypoint:**	GPS 625 ID S1A	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 28-31	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X		

Initial Depth to Water (m):	4.691	**Purge Start Time:**	15:49			**Purge End Time:**	16:11			
Depth to Bottom (m):	13.080	**Purge Interval Time (5) min, Vol. (___) L**	15:51	15:56	16:01	16:06	16:11			
Submerged Tubing Depth (m):	11.0	**Depth to water (m)**	4.690	4.690	4.691	—	—			
Well Stick-up Height (m):	1.318	**Temperature (°C)**	5.7	4.6	4.3	4.3	4.1			
Estimated Water Volume (L):	16.8	**pH (pH Units)**	5.95	5.80	5.78	5.77	5.78			
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations: 13.080 4.691 8.389 * 2 = 16.778		**Cond. (µs/cm)**	1202	1160	1158	1160	1150			
		Specific Cond. (µs/cm)	1916	1910	1909	1924	1920			
		Redox (mV)	72.3	81.0	80.8	79.3	78.4			
		DO (mg/L)	1.06	0.41	0.28	0.31	0.38			
		DO (%)	8.5	3.3	2.2	2.4	2.8			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	same	same	same	same			
		Turbidity (NTU):	—	—	—	—	1.55			
		Interval Purge Volume (L):	—	1.0	1.0	0.75	0.85			
		Cumulative Purge Volume (L):	—	1.0	2.0	2.75	3.60			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**			
Time logged on YSI (24hr):	16:12	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X		
Sample Time	16:15				

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): 51A

Sample Date (Con't): Jun. 1 /2016

Sample Time (Con't): 16:15

General Notes (Condition of well, or other features):
Sealed with threaded PVC cap.

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:
- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6"
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	S1B	**Project Number:**	1343-005.18	**Date:**	01-Jun-16
Station Status:	SLOW RECHARGE	**Client:**	GY - AAM	**Samplers:**	AN/MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny
UTM Location:	Z. 8 E. 584434 N. 6913115	**Waypoint:**	GPS 625 ID S1A	**Recovery:**	☐ Good ☒ Bad ☐ Ok
Photos:	Cam. EL Nos. 028 - 031	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name ____				
Field Blank Collected:	☐ Yes ☒ No Name ____				

Purge Method:

Waterra	Peristaltic	Disp. Bailer	Redi-flo	Other
	X			

Initial Depth to Water (m):	4.480
Depth to Bottom (m):	~~5.140~~ 5.140
Submerged Tubing Depth (m):	~4.900
Well Stick-up Height (m):	1.175
Estimated Water Volume (L):	1.32

Purge Start Time: ~~15:33~~ 15:30 **Purge End Time:** 15:43

Purge Interval Time (5) min, Vol. (__) L	15:33	15:38	15:43	[illegible]		8:35	← Jun. 2/2016.		
Depth to water (m)	4.771	4.843	5.140			4.511			
Temperature (°C)	6.2	7.7	4.5			5.1			
pH (pH Units)	6.48	6.50	6.55			6.58			
Cond. (µs/cm)	528	537	497.9			536			
Specific Cond. (µs/cm)	825	801	804.1			859			
Redox (mV)	56.0	73.4	81.6			122.6			
DO (mg/L)	0.97	0.98	1.07			2.07			
DO (%)	7.6	7.9	8.4			16.4			
Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	same	same			clear.			
Turbidity (NTU):	/	/	/			9.38			
Interval Purge Volume (L):	/	0.5	0.65			—			
Cumulative Purge Volume (L):	/	0.5	1.15			—			

Parameters collected following sample collection

DTB – DTW) x (πr²)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

5.140
4.480
0.660 x 2 = 1.32

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**
Time logged on YSI (24hr):	8:58	
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	
Sample Time Jun. 2	@ 8:40	

Sample Method:

Waterra	Peristaltic	Disp. Bailer	Redi-flo	Other
	X			

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): SIB

Sample Date (Con't): Jun. 2 / 2016

Sample Time (Con't): 8:40

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

- @15:38 increased purge speed to ~~dry~~ purge well dry; well recharge very slow, will return tomorrow to sample.

Sample collected the following day directly without purging. @ 8:40.

Consumables:

- ☒ 1/4" HDPE (Peristaltic) ~~_____ ft.~~ 1 m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon 0.6 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000.	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	SZA	**Project Number:**	1343-005.18	**Date:**	June 1, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Cloudy 10°C
UTM Location:	Z08 E.0584469 N.6913120	**Waypoint:**	GPS ~~Item~~ ID SZAB	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam ~~Item~~ Nos. 518-520	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____	X			

Initial Depth to Water (m):	5.100	**Purge Start Time:**	12:34				**Purge End Time:**	13:00		
Depth to Bottom (m):	12.614	**Purge Interval Time (___) min, Vol. (2) L**	~~12:34~~	12:37	12:39	12:42	12:45	12:47	12:56	13:00
Submerged Tubing Depth (m):	~~1.230~~ 120	**Depth to water (m)**	5.364	5.697	—	—	—	9.604	—	—
Well Stick-up Height (m):	1.230	**Temperature (°C)**	4.0	3.0	2.8	2.6	2.6	2.6	2.7	3.1
Estimated Water Volume (L):	15	**pH (pH Units)**	6.05	6.09	6.00	6.00	6.10	6.15	6.06	6.04
		Cond. (µs/cm)	1116	1087	1055	822	803	786	1118	1162
		Specific Cond. (µs/cm)	1865	1849	1832	1434	1404	1372	1947	1998
		Redox (mV)	35.7	40.2	40.7	37.7	37.9	38.4	51.8	54.6
		DO (mg/L)	0.02	0.01	0.61	0.00	0.00	0.00	0.00	0.00
		DO (%)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
		Appearance & Odour (Clear, Silty, HC odours, etc.)	Silty, Brown	Silty Brown	Silty, Brown	Silty, Brown	less silty, light brown	Same	less silty, light grey	Same
		Turbidity (NTU):	—	—	—	—	—	—	—	78.2 AU
		Interval Purge Volume (L):	2	2	2	6	6	10	10	7
		Cumulative Purge Volume (L):	2	4	6	12	18	28	38	45

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	13:00	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	X				
Sample Time	13:05					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): S2A

Sample Date (Con't): June 1, 2016

Sample Time (Con't): 13:05

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

- Had to remove upper 0.9 m of well casing to purge well. This seems to work and doesn't require repair.

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☒ 0.45 micron inline filters 1 each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	S2B	**Project Number:**	1343-005.18	**Date:**	June 1, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	cloudy 10°C
UTM Location:	Z08 E.0584469 N.6913120	**Waypoint:**	GPS Hem ID S2AB	**Recovery:**	☐ Good ☐ Bad ☒ Ok
Photos:	Cam Hem Nos. 521-523	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	4.356	**Purge Start Time:**	13:09					**Purge End Time:**	13:31		
Depth to Bottom (m):	7.049	**Purge Interval Time (3) min, Vol. (___) L**	13:11	13:14	13:17	13:20	13:23	13:30			
Submerged Tubing Depth (m):	~~0.465~~ 6.4	**Depth to water (m)**	4.503	4.663	4.711	4.752	4.792	4.882			
Well Stick-up Height (m):	0.465	**Temperature (°C)**	5.1	4.2	4.6	4.6	4.4	4.6			
Estimated Water Volume (L):	5.4	**pH (pH Units)**	6.13	6.14	6.13	6.18	6.14	6.13			
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	3026	1962	2094	2230	3855	2569			
		Specific Cond. (µs/cm)	3246	3237	3425	3658	2340	4224			
		Redox (mV)	34.5	36.6	37.5	35.0	35.9	36.5			
		DO (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00			
		DO (%)	0.0	0.0	0.0	0.0	0.2	0.1			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	turbid	turbid	turbid	less turbid	less turbid	less turbid			
		Turbidity (NTU):	–	–	–	–	–	27.9			
		Interval Purge Volume (L):	.1	.4	.25	.2	.2	.3			
		Cumulative Purge Volume (L):	.1	.5	.75	.95	1.15	1.45			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	13:31	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	13:32					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): SZB

Sample Date (Con't): June 1, 2016

Sample Time (Con't): 13:32

General Notes (Condition of well, or other features):

- Good condition
- Slow recharge

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 (mL)	
1 L (plastic)	General Chemistry	500 ml	-	-	1 (L)	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	S3	**Project Number:**	1343-005.18	**Date:**	June 1, 2016
Station Status:	Missing / Destroyed	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:		**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	
UTM Location:	Z. __ E. _____ N. _____	**Waypoint:**	GPS ~~ID~~ _____	**Recovery:**	☐ ~~Good~~ ☐ Bad ☐ Ok
Photos:	Cam. ___ Nos. _____	**Purge Method:**			
Duplicate Collected:	☐ Yes ☐ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☐ No Name _____					

Initial Depth to Water (m):		**Purge Start Time:**			**Purge End Time:**					
Depth to Bottom (m):		**Purge Interval Time (___) min, Vol. (___) L**								
Submerged Tubing Depth (m):		**Depth to water (m)**								
Well Stick-up Height (m):		**Temperature (°C)**								
Estimated Water Volume (L):		**pH (pH Units)**								
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**								
		Specific Cond. (µs/cm)								
		Redox (mV)								
		DO (mg/L)								
		DO (%)								
		Appearance & Odour (Clear, Silty, HC odours, etc.)								
		Turbidity (NTU):								
		Interval Purge Volume (L):								
		Cumulative Purge Volume (L):								

See Comments

YSI Field Parameters Logged:	☐ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):		**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☐ YSI ☐ Pen Unit					
Sample Time						

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): S3

Sample Date (Con't): June 1, 2016

Sample Time (Con't): Destroyed

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

-Searched thoroughly for well using GPS + grid tactic but could not find. Enquired w/ Parsons staff who also have been unable to find it. My best guess is that road improvements have swallowed up the monitoring well, based on GPS coordinates + observations

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____.
- ☐ Other _____.

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	~~Dissolved Metals~~	100 ml	☐ Field Filtered	☐ HNO_3		
1 L (plastic)	~~General Chemistry~~	500 ml	-	-		

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	SRK05-9	**Project Number:**	1343-005.18	**Date:**	Jun. 3/2016
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	1.5"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny ~20°C
UTM Location:	Z. 8 E. 592952 N. 6903154	**Waypoint:**	GPS 625 ID SRK05-9	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 59-61	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____	~~Micro~~	X		

Initial Depth to Water (m):	2.844	**Purge Start Time:**	12:20			**Purge End Time:**				
Depth to Bottom (m):	3.984	**Purge Interval Time (5) min, Vol. (___) L**	12:21	12:26	12:31	12:36	12:38			
Submerged Tubing Depth (m):	~3.2	**Depth to water (m)**	2.893	2.884	—	—	—			
Well Stick-up Height (m):	0.51	**Temperature (°C)**	5.8	3.5	3.0	3.0	2.9			
Estimated Water Volume (L):	1.25	**pH (pH Units)**	7.26	7.33	7.36	7.36	7.33			
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	1368	1246	1211	1204	1200			
		Specific Cond. (µs/cm)	2180	2121	2089	2077	2074			
		Redox (mV)	107.0	117.6	115.4	113.7	114.2			
		DO (mg/L)	6.63	5.70	5.58	5.56	5.56			
		DO (%)	52.3	43.4	41.5	41.5	41.2			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	Same	Same	Same	Same			
		Turbidity (NTU):	—	—	—	—	0.70			
		Interval Purge Volume (L):	—	1.0	1.25	1.25	0.5			
		Cumulative Purge Volume (L):	—	1.0	2.25	3.5	4.0			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**			
Time logged on YSI (24hr):	12:39	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X		
Sample Time	12:40				

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): SRK05-9

Sample Date (Con't): Jun. 3/2016.

Sample Time (Con't): 12:40

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Transducer removed @ 11:55 (Jun. 3/2016).
Transducer replaced @ 12:47 (Jun. 3/2016)

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 3.0 m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6"
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	100	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

73' 7.2" = 73.6' * 0.3048 = 22.433 m
14' 9.1" = 4.498 m
14

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	SRK05-SP-4A	**Project Number:**	1343-005.18	**Date:**	Jne 1, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sun + cloud / 10°C
UTM Location:	Z. 08 E. 0584499 N. 6913109	**Waypoint:**	GPS Hem ID SRK05-SP-4A*	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. Hem Nos. 509-511	**Purge Method:**			
Duplicate Collected:	☒ Yes ☐ No Name Dup1	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☒ Yes ☐ No Name FB1		X			

Initial Depth to Water (m):	4.498	**Purge Start Time:**	10:01				**Purge End Time:**	10:27		
Depth to Bottom (m):	22.433	**Purge Interval Time (5) min, Vol. (___) L**	10:03	10:08	10:13	10:18	10:23			
Submerged Tubing Depth (m):	21.8	**Depth to water (m)**	4.503	4.503	4.503	4.503	—			
Well Stick-up Height (m):	0.698 m	**Temperature (°C)**	3.6	3.2	3.1	2.9	2.9			
Estimated Water Volume (L):	35.87	**pH (pH Units)**	5.91	5.87	5.89	5.97	5.89			
DTB – DTW) x (πr²)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	718	703	701	695	693			
		Specific Cond. (µs/cm)	1228	1206	1206	1203	1198			
		Redox (mV)	59.4	33.7	34.0	33.2	33.6			
		DO (mg/L)	0.03	0.0	0.0	0.01	0.00			
		DO (%)	0.3	0.0	0.0	0.0	0.0			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear	clear			
		Turbidity (NTU):	—	—	—	—	6.01			
		Interval Purge Volume (L):	0.2	0.4	0.5	0.5	0.5			
		Cumulative Purge Volume (L):	0.2	0.6	1.1	1.6	2.1			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	10:27	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	10:27					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): SRK05-SP-4A

Sample Date (Con't): June 1, 2016

Sample Time (Con't): 10:27

General Notes (Condition of well, or other features):

good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	Dupped
1 L (plastic)	General Chemistry	500 ml	-	-	1L	Dupped

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	SRK05-SP-4B	**Project Number:**	1343-005.18	**Date:**	June 1, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Cloudy 11°C
UTM Location:	Z:08 E.0584499 N.6913116	**Waypoint:**	GPS Hem ID SRK05-SP4B*	**Recovery:**	☐ Good ☒ Bad ☐ Ok
Photos:	Cam. Hem Nos. 512 - 514	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	3.995	**Purge Start Time:**	10:49		**Purge End Time:**	10:56						
Depth to Bottom (m):	4.727	**Purge Interval Time (3) min, Vol. (___) L**	10:52	10:55								
Submerged Tubing Depth (m):	4.4	**Depth to water (m)**	4.069	4.121								
Well Stick-up Height (m):	0.82	**Temperature (°C)**	3.4	2.8	* Switched to direct Sample							
Estimated Water Volume (L):	1.46	**pH (pH Units)**	5.90	5.79								
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	5561	5488								
		Specific Cond. (µs/cm)	9529	9526								
		Redox (mV)	70.2	69.6								
		DO (mg/L)	0.01	0.01								
		DO (%)	0.1	0.1								
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear								
		Turbidity (NTU):	—	9.44								
		Interval Purge Volume (L):	0.25	0.25								
		Cumulative Purge Volume (L):	0.25	0.5								

YSI Field Parameters Logged:	☐ Yes ☒ No	**Sample Method:**				
Time logged on YSI (24hr):	—	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	10:56					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): SRK05-SP-4B

Sample Date (Con't): June 1, 2016

Sample Time (Con't): 10:56

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

- Switched to direct sample after observing no recharge during purging.

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☑ HNO_3	110 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	850 mL	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	SRK05-SP5	**Project Number:**	1343-005.18	**Date:**	June 1, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Cloudy 15°C
UTM Location:	Z.08 E.354468 N.6913128	**Waypoint:**	GPS Item ID SRK05-SP5	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam Item Nos. 524-526	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	7.406	**Purge Start Time:**	13:48			**Purge End Time:**	14:09			
Depth to Bottom (m):	14.719	**Purge Interval Time (5) min, Vol. (___) L**	13:53	13:58	14:03	14:08				
Submerged Tubing Depth (m):	14.0	**Depth to water (m)**	6.807	6.812	6.812	6.817				
Well Stick-up Height (m):	0.98	**Temperature (°C)**	6.0	6.7	6.7	~~5.6~~ 6.5				
Estimated Water Volume (L):	14.5	**pH (pH Units)**	5.67	5.65	5.65	5.66				
DTB – DTW) x (πr²)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	6877	7008	7010	6999				
		Specific Cond. (µs/cm)	10746	10787	10832	10838				
		Redox (mV)	109.9	135.0	148.9	152.9				
		DO (mg/L)	Ø	Ø	Ø	Ø				
		DO (%)	Ø	Ø	0.1	Ø				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear				
		Turbidity (NTU):	—	—	—	8.44				
		Interval Purge Volume (L):	.4	.4	.5	.3				
		Cumulative Purge Volume (L):	.4	.8	1.3	1.6				

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	14:09	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	14:10					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): SRK05-SP5

Sample Date (Con't): June 1, 2016

Sample Time (Con't): 14:10

General Notes (Condition of well, or other features):

Good condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	SRK08-SBR2 (Good)	**Project Number:**	1343-005.18	**Date:**	June 1, 2016
Station Status:		**Client:**	GY - AAM	**Samplers:**	JH + ND
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny 16°C
UTM Location:	Z.08 E.0584476 N.6913120	**Waypoint:**	GPS then ID SRK08-SBR2	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam then Nos. 515 - 517	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	6.563	**Purge Start Time:**	11:20				**Purge End Time:**			
Depth to Bottom (m):	19.065	**Purge Interval** Time (5) min, Vol. (___) L	11:23	11:28	11:33	11:38	11:43			
Submerged Tubing Depth (m):	18.3	**Depth to water (m)**	6.72	6.73	6.72	6.73	6.72			
Well Stick-up Height (m):	1.060	**Temperature (°C)**	6.8	4.4	4.8	4.4	4.45			
Estimated Water Volume (L):	25	**pH (pH Units)**	5.90	5.82	5.84	5.85	5.84			
DTB – DTW) x (πr²)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	1580	1360	1333	1305	1309			
		Specific Cond. (µs/cm)	2509	2243	2172	2151	2154			
		Redox (mV)	114.6	174.7	193.9	205.4	214.2			
		DO (mg/L)	0.03	0.00	0.00	0.00	0.1			
		DO (%)	0.1	0.0	0.0	0.0	0.0			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear	clear			
		Turbidity (NTU):	—	—	—	—	18.9			
		Interval Purge Volume (L):	.35	.5	.5	.5	.5			
		Cumulative Purge Volume (L):	.35	.85	1.35	1.85	2.35			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	11:44	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	11:45					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): SRK08-SBR2

Sample Date (Con't): June 1, 2016

Sample Time (Con't): 11:45

General Notes (Condition of well, or other features):

Well installed on angle, but in good condition.

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	SRK08-SBR3	**Project Number:**	1343-005.18	**Date:**	June 1, 2016
Station Status:	Dry	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sun + cloud / 13°C
UTM Location:	Z08 E.0584395 N. 6913156	**Waypoint:**	GPS Hen ID SRK08-SBR3	**Recovery:**	☐ Good ☐ Bad ☐ Ok
Photos:	Cam. Hen Nos. 530-532	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____				

Initial Depth to Water (m):	Dry	**Purge Start Time:**				**Purge End Time:**					
Depth to Bottom (m):	13.208	**Purge Interval Time (___) min, Vol. (___) L**									
Submerged Tubing Depth (m):	/	**Depth to water (m)**									
Well Stick-up Height (m):	0.98	**Temperature (°C)**			Not		Sampled				
Estimated Water Volume (L):	Q	**pH (pH Units)**									
DTB – DTW) x (πr^{2})*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**									
		Specific Cond. (µs/cm)									
		Redox (mV)									
		DO (mg/L)									
		DO (%)									
		Appearance & Odour (Clear, Silty, HC odours, etc.)									
		Turbidity (NTU):									
		Interval Purge Volume (L):									
		Cumulative Purge Volume (L):									

YSI Field Parameters Logged:	☐ Yes ☐ No	**Sample Method:**			
Time logged on YSI (24hr):		**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
YSI Meter or Pen Unit?:	☐ YSI ☐ Pen Unit		Not	Sampled	
Sample Time					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): SRK08-SBR3

Sample Date (Con't): June, 2016

Sample Time (Con't): Not Sampled

General Notes (Condition of well, or other features):

- Well is dry
- Not Sampled

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____.
- ☐ Other _____.

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☐ Field Filtered	☐ HNO_3		
1 L (plastic)	General Chemistry	500 ml	-	-		

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	SRK08-SBR4	**Project Number:**	1343-005.18	**Date:**	June 1, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sun + cloud 12°C
UTM Location:	Z08 E. 0584446 N. 6913135	**Waypoint:**	GPS Hem ID SRK08-SBR4	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. Hem Nos. 527-529	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	7.229	**Purge Start Time:**	14:34			**Purge End Time:**	14:52			
Depth to Bottom (m):	21.209	**Purge Interval** Time (5) min, Vol. (___) L	14:37	14:42	14:46	14:50				
Submerged Tubing Depth (m):	20.5	**Depth to water (m)**	7.236	7.236	7.236	7.236				
Well Stick-up Height (m):	0.57	**Temperature (°C)**	4.7	5.0	5.2	5.0				
Estimated Water Volume (L):	28	**pH (pH Units)**	5.88	5.77	5.78	5.77				
		Cond. (µs/cm)	5770	5778	5787	5760				
		Specific Cond. (µs/cm)	9425	9350	9327	9307				
		Redox (mV)	155.9	156.6	155.7	155.0				
		DO (mg/L)	~~0~~	~~0~~	0	0				
		DO (%)	~~0~~	~~0~~	0	0.1				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear				
		Turbidity (NTU):	—	—	—	—	1.95			
		Interval Purge Volume (L):	.25	.5	.25	.3				
		Cumulative Purge Volume (L):	.25	.75	1.25	1.55				

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	14:52	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	14:53					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): SRK08-SBR4

Sample Date (Con't): June 1, 2016

Sample Time (Con't): 14:53

General Notes (Condition of well, or other features):

Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☐ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1 L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	SRK08 -SP-7A	**Project Number:**	1343-005.18	**Date:**	Jun.1/2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Cloudy ~16°C.
UTM Location:	Z. 8 E. 584437 N. 6913093	**Waypoint:**	GPS 625 ID Site ID	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 23-27	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____	Manual				

Initial Depth to Water (m):	2.637	**Purge Start Time:**	14:28			**Purge End Time:**				
Depth to Bottom (m):	17.776	**Purge Interval Time (___) min, Vol. (13) L**	14:31	14:34	14:41	14:45	14:49	14:55	14:59	
Submerged Tubing Depth (m):	~15	**Depth to water (m)**	2.880	4.960	2.960	2.960	2.960	~~2.960~~	2.960	
Well Stick-up Height (m):	1.05	**Temperature (°C)**	2.4	2.4	2.8	2.6	2.5	3.1	2.5	
Estimated Water Volume (L):	~~15.139~~ 30.378	**pH (pH Units)**	6.04	6.15	6.18	6.31	6.23	6.14	6.27	
		Cond. (µs/cm)	794	735	723	710	704	722	715	
		Specific Cond. (µs/cm)	1395	1292	1254	1241	1232	1241	1253	
		Redox (mV)	42.1	42.0	41.3	38.1	41.8	43.9	44.8	
		DO (mg/L)	1.03	~~1.39~~ 1.34	1.92	0.89	0.86	1.21	0.87	
		DO (%)	7.7	10.2	14.3	6.4	6.1	9.0	6.80	
		Appearance & Odour (Clear, Silty, HC odours, etc.)	very turbid	same	same	clearer	same (turbid)	same	same	
		Turbidity (NTU):	—	—	—	—	—	—	40.3	
		Interval Purge Volume (L):	13	13	13	13	13	13	13	
		Cumulative Purge Volume (L):	13	26	39	52	65	78	91	

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

17.776
2.637
15.139 * 2 = 30.378

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**			
Time logged on YSI (24hr):	15:00	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	manual				
Sample Time	~~15:30~~ 15:00					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): SRK08-SP7A

Sample Date (Con't): 1-Jun-16

Sample Time (Con't): 15:00

General Notes (Condition of well, or other features):

-waterra + peri present in well removed b/c too short.

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☒ 5/8" HDPE (Waterra) 18.7 ft. m
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☒ D-25 (2" well) foot valves 1 each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	SRK08-SP-7B	**Project Number:**	1343-005.18	**Date:**	Jun. 1/2016
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Cloudy ~ 18°C
UTM Location:	Z. 8 E. 584436 N. 6713099	**Waypoint:**	GPS 625 ID site ID	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 23-27	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	2.714	**Purge Start Time:**	13:44			**Purge End Time:**	14:11				
Depth to Bottom (m):	8.753	**Purge Interval Time (5) min, Vol. (___) L**	13:46	13:51	13:56	14:01	14:06	14:11			
Submerged Tubing Depth (m):	~ 7.8	**Depth to water (m)**	2.717	2.723	2.720	2.725	2.720	2.721			
Well Stick-up Height (m):	1.135	**Temperature (°C)**	3.4	3.0	2.6	2.6	2.8	2.6			
Estimated Water Volume (L):	12.078	**pH (pH Units)**	6.70	6.44	6.41	6.45	6.49	6.50			
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	151.2	132.5	132.5	134.6	136.7	136.2			
		Specific Cond. (µs/cm)	258.9	228.7	231.6	235.8	237.5	238.3			
		Redox (mV)	16.9	28.0	25.9	19.7	15.2	12.2			
		DO (mg/L)	0.68	0.16	0.14	0.12	0.11	0.11			
		DO (%)	4.3	1.2	1.0	1.0	0.8	0.8			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	Brown sus. solids turbid	clear	clear	same	same	same			
		Turbidity (NTU):	—	—	—	—	—	4.87			
		Interval Purge Volume (L):	0.4	1.0	1.0	1.0	1.2	1.5			
		Cumulative Purge Volume (L):	0.4	1.4	2.4	3.4	4.6	6.1			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	14:13	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	14:15					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): SRK08-SP-7B

Sample Date (Con't): Jun. 1 / 2016

Sample Time (Con't): 14:15

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2.5 m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 6"
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	X16A	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	1.5"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sun +clouds 12
UTM Location:	Z. 8 E. 0579441 N. 6914842	**Waypoint:**	GPS Hem ID X16AB	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. Hem Nos. 556-558	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	3.503	**Purge Start Time:**	14:00			**Purge End Time:**	14:18			
Depth to Bottom (m):	5.357	**Purge Interval Time (5) min, Vol. (___) L**	14:02	14:07	14:12	14:17				
Submerged Tubing Depth (m):	@ 5.0	**Depth to water (m)**	3.505	3.505	3.505	3.505				
Well Stick-up Height (m):	0.82	**Temperature (°C)**	5.1	4.7	4.5	4.3				
Estimated Water Volume (L):	~~3.20~~ 2.04	**pH (pH Units)**	7.74	7.71	7.72	7.71				
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	233.2	225	222.1	220.2				
		Specific Cond. (µs/cm)	336.8	368.4	365.4	364.3				
		Redox (mV)	-9.1	-14.6	-9.2	-5.6				
		DO (mg/L)	2.87	2.44	2.51	2.65				
		DO (%)	22.4	19.4	19.5	20.6				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	~~Turbid~~ clear	clear	clear	clear				
		Turbidity (NTU):	–	–	–	0.47				
		Interval Purge Volume (L):	.2	.5	.6	.7				
		Cumulative Purge Volume (L):	.2	.7	1.3	2.0				

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	14:18	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	14:20					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): X16A

Sample Date (Con't): June 2, 2016

Sample Time (Con't): 14:20

General Notes (Condition of well, or other features):

Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 20 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	~~100~~ 120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	X16B Good	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:		**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	3"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sun + cloud 12°C
UTM Location:	Z. 8 E. 0579441 N. 6914942	**Waypoint:**	GPS Hem ID X16AB	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. Hem Nos. 558-560	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____	Hydrolift				

Initial Depth to Water (m):	3.683	**Purge Start Time:**	14:36			**Purge End Time:**	14:55				
Depth to Bottom (m):	14.783	**Purge Interval Time (___) min, Vol. (10) L**	14:39	14:45	14:49	14:53					
Submerged Tubing Depth (m):	14.0	**Depth to water (m)**	3.693	3.698	3.700						
Well Stick-up Height (m):	1.05	**Temperature (°C)**	3.7	3.2	3.2	3.1					
Estimated Water Volume (L):	55	**pH (pH Units)**	7.73	7.83	7.84	7.86					
DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	244.5	240.6	241.0	240.5					
		Specific Cond. (µs/cm)	412.3	412.5	412.7	412.7					
		Redox (mV)	21.0	18.7	17.6	17.8					
		DO (mg/L)	6.60	5.15	5.53	4.97					
		DO (%)	50.0	39.0	41.2	37.1					
		Appearance & Odour (Clear, Silty, HC odours, etc.)	slight turbid	slightly turbid	slightly turbid	slightly turbid					
		Turbidity (NTU):	—	—	—	8.97					
		Interval Purge Volume (L):	10	10	10	10					
		Cumulative Purge Volume (L):	10	20	36	40					

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	14:54	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	Hydrolift				
Sample Time	14:55					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): X16B

Sample Date (Con't): Jun 2 2016

Sample Time (Con't): 14:55

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

-There's a broken joint approx 2m btop with some intruding bentonite. At this point Fixing the well would ~~be~~ require digging down to the break (~1.5m) and replace the top portion; or, re-drilling the well. However, the water quality is still clear, thus the repair is not eminent.

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☒ 5/8" HDPE (Waterra) 50 ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	X17A	**Project Number:**	1343-005.18	**Date:**	3-Jun-16
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN/NB/JH/MM
Piezometer Diameter:	1.5"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	overcast, slight breeze
UTM Location:	Z. 8 E. 8579755N. 6916648	**Waypoint:**	GPS 100 ID X17AB	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 594-597	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	~~2.285~~ 2.285	**Purge Start Time:**	15:58			**Purge End Time:**	16:25				
Depth to Bottom (m):	6.090	**Purge Interval Time (5) min, Vol. (___) L**	16:00	16:05	16:10	16:15	16:20	16:25			
Submerged Tubing Depth (m):	~5	**Depth to water (m)**	2.284	2.285	2.287	2.287	2.287				
Well Stick-up Height (m):	0.85	**Temperature (°C)**	5.3	3.7	3.9	3.9	4.0	3.6			
Estimated Water Volume (L):	7.7	**pH (pH Units)**	6.87	7.23	7.24	7.24	7.25	7.25			
		Cond. (µs/cm)	507	4009	382.4	379.5	378.8	374.6			
		Specific Cond. (µs/cm)	816	6753	640.0	634.2	633.5	634.3			
		Redox (mV)	-53.2	-34.2	-11.5	-4.9	0.5	9.0			
		DO (mg/L)	0.74	0.21	0.15	0.13	0.14	0.11			
		DO (%)	5.5	1.6	1.1	1.0	1.1	0.9			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear	clear	clear			
		Turbidity (NTU):	—	X	—	—	—	0.03			
		Interval Purge Volume (L):	—	~~1.0~~ 0.5	0.6	0.6	0.6	0.6			
		Cumulative Purge Volume (L):	—	~~1.0~~ 0.5	1.1	1.7	2.3	2.9			

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

5 1.8
6.090
2.285
3.805 * 7.210

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**			
Time logged on YSI (24hr):	16:25	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	16:30					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): X17A

Sample Date (Con't): ~~3-Jun-16~~ 3-Jun-16

Sample Time (Con't): 16:30

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 7.5 ~~ft~~
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	X17B	**Project Number:**	1343-005.18	**Date:**	3-Jun-16
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	JH/NB/AN/MM
Piezometer Diameter:	3"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	overcast, windy
UTM Location:	Z. 8VE. 8570355 N. 6914848	**Waypoint:**	GPS HEM ID X17AB	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 598-600	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____	Manual				

Initial Depth to Water (m):	1.852	**Purge Start Time:**	16:35					**Purge End Time:**	16:47	
Depth to Bottom (m):	23.410	**Purge Interval Time (___) min, Vol. (10) L**	16:35	16:37	16:38	16:40	16:41	16:43	16:45	16:47
Submerged Tubing Depth (m):	21.4	**Depth to water (m)**	1.840	/	1.870	/	/	/	/	/
Well Stick-up Height (m):	0.49	**Temperature (°C)**	3.8	3.3	3.1	3.1	3.1	3.0	3.1	3.1
Estimated Water Volume (L):	123	**pH (pH Units)**	6.93	6.84	6.89	6.88	6.89	6.92	6.88	6.88
		Cond. (µs/cm)	1171	1130	1094	1042	987	937	932	913
		Specific Cond. (µs/cm)	1961	1895	1871	1784	1691	1607	1596	1576
		Redox (mV)	-61.3	-71.8	-76.1	-72.2	-80.0	-79.4	-68.2	-68.4
		DO (mg/L)	1.05	0.60	1.27	1.70	1.09	1.19	0.38	0.20
		DO (%)	8.0	4.5	9.8	5.1	8.4	8.9	3.0	1.5
		Appearance & Odour (Clear, Silty, HC odours, etc.)	sulphur odour green tint	same	same	same	same	same	same	same
		Turbidity ~~(NTU)~~ AM	/	/	/	/	/	/	/	914 AM
		Interval Purge Volume (L):	10	10	10	10	10	10	10	10
		Cumulative Purge Volume (L):	10	20	30	40	50	60	70	80

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

20.558

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	16:48	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	manual				
Sample Time	17:00					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): X17B

Sample Date (Con't): 3-Jun-16

Sample Time (Con't): 17:00

General Notes (Condition of well, or other features):
- well stick-up is missing the upper-half (~80cm), well does not need repair

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:
- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☒ 5/8" HDPE (Waterra) 23 m ~~ft~~
- ☐ 1/4" Silicon _____ ft.
- ☒ 0.45 micron inline filters 1 each
- ☒ D-25 (2" well) foot valves 1 each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ ~~Field~~ Filtered	☑ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1,000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	X18A	**Project Number:**	1343-005.18	**Date:**	Jun. 2/2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny ~20°C
UTM Location:	Z. 08 E. 0579981 N. 6914717	**Waypoint:**	GPS ELR ID X18AR	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ___ Nos. 050-52	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name ___	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name ___		X			

Initial Depth to Water (m):	4.009	**Purge Start Time:**	15:14			**Purge End Time:**	15:35			
Depth to Bottom (m):	9.465	**Purge Interval Time (5) min, Vol. (___) L**	15:15	15:20	15:25	15:30	~~15:35~~			
Submerged Tubing Depth (m):	~ 8	**Depth to water (m)**	4.331	4.610	4.566	4.590	4.590			
Well Stick-up Height (m):	0.62	**Temperature (°C)**	4.1	3.3	3.8	~~3.8~~	3.9			
Estimated Water Volume (L):	~~10.9~~ 6.0	**pH (pH Units)**	6.83	6.77	6.80	6.79	6.79			
DTB – DTW) x (πr²)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume		**Cond. (µs/cm)**	1023	~~1627~~ 1001	1002	1006	1010			
		Specific Cond. (µs/cm)	1716	1676	1683	1693	1689			
		Redox (mV)	-28.3	-34.1	-35.6	-36.6	-38.2			
		DO (mg/L)	1.73	1.24	0.87	0.55	0.29			
		DO (%)	13.1	9.7	6.5	4.1	2.2			
Calculations: 9.465 − 4.009 = 5.456 *1.1 = 6.0 ~~*10 = 10.912~~		**Appearance & Odour (Clear, Silty, HC odours, etc.)**	Clear	~~Clear~~ slight odour	same	same	same			
		Turbidity (NTU):	/	/	/	/	2.81			
		Interval Purge Volume (L):	/	1.2	0.7	0.6	0.65			
		Cumulative Purge Volume (L):	/	1.2	1.9	2.2	~~2.85~~			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	15:36	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	15:40					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): X18A

Sample Date (Con't): 2-Jun-16

Sample Time (Con't): 15:40

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 9.5 m
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1,000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	X18B	**Project Number:**	1343-005.18	**Date:**	Jun. 7/2016.
Station Status:	GOOD	**Client:**	GY - AAM	**Samplers:**	AN, MM
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Sunny ~20°C
UTM Location:	Z. 08 E. 0579981 N. 6914717	**Waypoint:**	GPS ELR ID X18AB	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. ELR Nos. 050 - 052	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	3.800	**Purge Start Time:**	15:50				**Purge End Time:**	16:16		
Depth to Bottom (m):	10.739	**Purge Interval Time (5) min, Vol. (___) L**	15:51	15:56	16:01	16:06	16:11	16:16		
Submerged Tubing Depth (m):	~8	**Depth to water (m)**	3.840	3.840	3.840	3.840	3.840	3.840		
Well Stick-up Height (m):	0.65	**Temperature (°C)**	4.0	3.7	3.7	3.4	3.5	3.4		
Estimated Water Volume (L):	7.6	**pH (pH Units)**	6.80	6.75	6.78	6.76	6.75	6.76		
		Cond. (µs/cm)	880	1080	1088	1088	1092	1093		
		Specific Cond. (µs/cm)	1521	1826	1846	1851	1849	1860		
		Redox (mV)	-25.0	-3.3	6.8	9.1	18.9	21.6		
		DO (mg/L)	1.78	1.15	0.92	0.74	0.45	0.32		
		DO (%)	13.3	8.9	7.0	5.6	3.4	2.3		
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	slight sulphur odour	same	same	same	same		
		Turbidity (NTU):	—	—	—	—	—	0.76		
		Interval Purge Volume (L):	—	0.75	0.70	0.70	0.70	0.70		
		Cumulative Purge Volume (L):	—	0.75	1.45	2.15	2.85	3.55		

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

$$\frac{10.739 - 3.800}{6.939} * 1.1 = 7.6329$$

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	16:16	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	16:20					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): X18B

Sample Date (Con't): 2-Jun-16

Sample Time (Con't): 16:20

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____.
- ☐ Other _____.

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120	
1 L (plastic)	General Chemistry	500 ml	-	-	1000	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	X24-960 Good	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:		**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	1524 min 8°C
UTM Location:	Z 08 E. 0530547 N. 6914302	**Waypoint:**	GPS Hem ID X24-960	**Recovery:**	☐ Good ☒ Bad ☐ Ok
Photos:	Cam. Hem Nos. 536 - 538	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____	Hydrolift				

Initial Depth to Water (m):	2.525	**Purge Start Time:**	8:52			**Purge End Time:**	9:24			
Depth to Bottom (m):	28.372	**Purge Interval** Time (___) min, Vol. (10) L	8:55	9:02	9:09	9:17	9:22			
Submerged Tubing Depth (m):	27.5	**Depth to water (m)**	6.955	10.596	16.093	19.9	24.29			
Well Stick-up Height (m):	0.45	**Temperature (°C)**	3.8	3.8	3.6	3.7	3.4			
Estimated Water Volume (L):	51	**pH (pH Units)**	6.14	6.12	6.12	6.15	6.17			
DTB – DTW) x (πr²)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	2279	2280	2272	2325	2278			
		Specific Cond. (µs/cm)	3624	3834	3843	3722	3659			
		Redox (mV)	-46.1	-27.3	-9.9	-13.3	154			
		DO (mg/L)	3.44	1.90	1.87	2.45	2.44			
		DO (%)	63.1	14.5	14.4	18.8	18.6			
		Appearance & Odour (Clear, Silty, HC odours, etc.)	turbid clear	turbid clear	turbid clear	turbid clear	turbid Clear			
		Turbidity (NTU):	—	—	—	—	25.0			
		Interval Purge Volume (L):	10L	10L	10L	10L	10L			
		Cumulative Purge Volume (L):	10L	20L	30L	40L	50L			

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	9:24	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit	Hydrolift				
Sample Time	9:25					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): X24-96D

Sample Date (Con't): June 2, 2016

Sample Time (Con't): 9:25

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

- Cement footing of well begin to get undermined by erosion. To fix, need 1 shovel, 1 bag of cement + soil to rebuild the mound/base.
- Otherwise well in good condition, although slow recharge
- Put a new well cap on.

Consumables:

- ☐ 1/4" HDPE (Peristaltic) _____ ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☐ 1/4" Silicon _____ ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☒ Other 2" well cap
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	X25-96 A	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Cloudy 11°C
UTM Location:	Z08 E0580413 N.6914122	**Waypoint:**	GPS Hem ID X25-96AB	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam: Hem Nos. 542-544	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X			

Initial Depth to Water (m):	1.908	**Purge Start Time:**	10:24			**Purge End Time:**	10:42			
Depth to Bottom (m):	9.489	**Purge Interval Time (5) min, Vol. (___) L**	10:27	10:32	10:37	10:42				
Submerged Tubing Depth (m):	8.8	**Depth to water (m)**	1.908	1.908	1.908	1.908				
Well Stick-up Height (m):	0.48	**Temperature (°C)**	5.0	4.6	4.6	4.7				
Estimated Water Volume (L):	15.16	**pH (pH Units)**	6.94	6.91	6.90	6.92				
		Cond. (µs/cm)	1212	1176	1160	1164				
		Specific Cond. (µs/cm)	1964	1927	1980	1895				
		Redox (mV)	66.3	-62.8	-62.9	-63.8				
		DO (mg/L)	0.48	0.21	0.14	0.11				
		DO (%)	3.4	1.6	1.2	1.0				
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear				
		Turbidity (NTU):	–	–	–	1.12				
		Interval Purge Volume (L):	.2	.5	.6	.5				
		Cumulative Purge Volume (L):	.2	.7	1.3	1.8				

DTB – DTW) x (πr^2)*1000 (for well diameter) = 1 well volume
(DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume
(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume
(DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume

Calculations:

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	10:42	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	10:43					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): X25-96-A

Sample Date (Con't): June 2, 2016

Sample Time (Con't): 16:43

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (°C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

General Notes (Condition of well, or other features):

Good Condition

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 mL	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	

HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	X25-96B	**Project Number:**	1343-005.18	**Date:**	June 2, 2016
Station Status:	Good	**Client:**	GY - AAM	**Samplers:**	JH + NB
Piezometer Diameter:	2"	**Project Name:**	Faro 2016 GW Spring Sampling Program	**Weather/Temperature:**	Cloudy 11°C
UTM Location:	Z.08 E. 0580413 N. 6914122	**Waypoint:**	GPS Hem ID X25-96AB	**Recovery:**	☒ Good ☐ Bad ☐ Ok
Photos:	Cam. Hem Nos. 545-547	**Purge Method:**			
Duplicate Collected:	☐ Yes ☒ No Name _____	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo** / **Other**
Field Blank Collected:	☐ Yes ☒ No Name _____		X		

Initial Depth to Water (m):	~~1.814~~ 1.816	**Purge Start Time:**	10:52			**Purge End Time:**	11:11				
Depth to Bottom (m):	19.698	**Purge Interval Time (5) min, Vol. (___) L**	10:54	10:59	11:04	11:09					
Submerged Tubing Depth (m):	19.0	**Depth to water (m)**	1.762	1.762	1.762	1.762					
Well Stick-up Height (m):	0.45	**Temperature (°C)**	5.1	4.5	4.4	4.4					
Estimated Water Volume (L):	35.8	**pH (pH Units)**	7.56	7.55	7.56	7.56					
DTB – DTW) x (πr²)*1000 (for well diameter) = 1 well volume (DTB – DTW) x 8.1 (for 4" well diameter) = 1 well volume (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume (DTB-DTW) x 0.5 (for 1" diameter) = 1 well volume Calculations:		**Cond. (µs/cm)**	1160	1162	1158	1158					
		Specific Cond. (µs/cm)	1900	1910	1909	1910					
		Redox (mV)	-104.2	-112.3	-116.2	-118.4					
		DO (mg/L)	1.65	0.15	0.08	0.81					
		DO (%)	13.2	1.1	0.8	0.7					
		Appearance & Odour (Clear, Silty, HC odours, etc.)	clear	clear	clear	clear					
		Turbidity (NTU):	-	-	-	0.64					
		Interval Purge Volume (L):	.1	.7	.7	.7					
		Cumulative Purge Volume (L):	.1	.8	1.5	2.2					

YSI Field Parameters Logged:	☒ Yes ☐ No	**Sample Method:**				
Time logged on YSI (24hr):	11:11	**Waterra**	**Peristaltic**	**Disp. Bailer**	**Redi-flo**	**Other**
YSI Meter or Pen Unit?:	☒ YSI ☐ Pen Unit		X			
Sample Time	11:12					

*Field parameters are considered stable when the following criteria have been met; temperature ±3%, pH ±0.1, conductivity ±3%, redox ±10%, DO ±10%, turbidity 50 NTU.

HEMMERA

Sample Site (Con't): X25-96B

Sample Date (Con't): June 2, 2016

Sample Time (Con't): 11:12

General Notes (Condition of well, or other features):

Good Condition

Additional Purge Data:									
Purge Interval Time (___) min, Vol. (___) L									
Depth to water (m)									
Temperature (^{0}C)									
pH (pH Units)									
Cond. (µs/cm)									
Specific Cond. (µs/cm)									
Redox (mV)									
DO (mg/L)									
DO (%)									
Appearance & Odour (Clear, Silty, HC odours, etc.)									
Turbidity (NTU)									
Interval Purge Volume (L)									
Cumulative Purge Volume (L):									

Consumables:

- ☒ 1/4" HDPE (Peristaltic) 2 ft.
- ☐ 3/8" HDPE (Microwaterra) _____ ft.
- ☐ 5/8" HDPE (Waterra) _____ ft.
- ☒ 1/4" Silicon 0.5 ft.
- ☐ 0.45 micron inline filters _____ each
- ☐ D-25 (2" well) foot valves _____ each
- ☐ D-16 (1" well) foot valves _____ each
- ☐ SS-10 (5/8" well) foot valves _____ each
- ☐ 1" HDPE Bailer _____ each
- ☐ 2" HDPE Bailer _____ each
- ☐ Other _____
- ☐ Other _____

Sample Collection

Bottle Type	Parameters Analyzed	Min. Volume	Treatment ☒	Preservative Added ☒	Vol. Collected (ml)	Comments
120 ml (plastic)	Dissolved Metals	100 ml	☒ Field Filtered	☒ HNO_3	120 ml	
1 L (plastic)	General Chemistry	500 ml	-	-	1L	