

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	10 Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	AB-45L	Sample Time:	
Locked?:	Yes	Weather:	partly cloudy
Sampled By:	Jamie T. Honeycutt/Lindsey Romine	Air Temp:	75 ° F
Flow Through Cell Serial No.:	16B100463	Pump Serial No.:	24745
		Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point:	Top of Casing		
Depth to Water:	6.52	ft-TOC	
Total Well Depth:	50.75	ft-TOC	
Height of Water Column:	44.23	feet	
Screen Length:	10	feet	Stickup: 2.75 ft-GRD

Well Volume		
Well Diameter	2	inch
Water Volume	7.2	Gal
3 * Well Volume	21.65	Gal
5 * Well Volume	36.09	Gal

Well Purging Information

Purge Method:	Submersible Pump	Start Time:	14:15	End Time:	14:25
(If Used) Bladder Pump Control Settings:	On (sec):	Off (sec):	Pressure:		
Pump Intake Depth from Top of Casing:	45	ft-TOC			
Water Column Above Pump Intake:	38.48	feet	Flow Through Cell Vol:	250	mL
DTW-TOC at 25% Drawdown of WC Above Pump:	16.14	ft-TOC	Comments:		
Final Volume Purged:	0.8	Gallons	Used YSI Pro Plus. During purging, drillers came back to nearby well to complete drilling. We had to abandon purging.		
Final Volume Purge Rate:	300	mL/min			
Well Purged Dry?:	no	(Yes/No)			

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment
14:15	0.0									Start Purging
14:20	0.4	300	7.18	19.9	8.8	521	1.7	-143	232	
14:25	0.8	300	7.27	19.6	8.8	514	1.8	-141	220	Abandon Purging

Final: 14:25 0.8 300 7.27 19.6 8.8 514 1.8 -141 220 End of Purging

Sample Method: Submersible Pump **Sample Start Time:** **Sample End Time:**

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3
Sulfate	1	PET	Zinc Acetate/ NaOH	Hex Chromium 218.7	1	PET	(NH4)2 SO4 & NH4OH

Name	Signature	Date
(1) Jamie T Honeycutt	_____	9/28/2016
(2) Lindsey Romine	_____	9/28/2016

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	95 Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	GWA-6BR	Sample Time:	17:15
Locked?:	Yes	Weather:	partly cloudy/rain
Sampled By:	Jamie T. Honeycutt/Lindsey Romine	Air Temp:	75 ° F
Flow Through Cell Serial No.:	16B100463	Pump Serial No.:	24745
		Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point:		Top of Casing	
Depth to Water:	42.12	ft-TOC	
Total Well Depth:	101.00	ft-TOC	
Height of Water Column:	58.88	feet	
Screen Length:	5	feet	Stickup: 3 ft-GRD

Well Volume		
Well Diameter	2	inch
Water Volume	9.6	Gal
3 * Well Volume	28.83	Gal
5 * Well Volume	48.04	Gal

Well Purging Information

Purge Method:	Submersible Pump	Start Time:	15:35	End Time:	17:10
(If Used) Bladder Pump Control Settings:	On (sec):	Off (sec):	Pressure:		
Pump Intake Depth from Top of Casing:	99	ft-TOC			
Water Column Above Pump Intake:	56.88	feet		Flow Through Cell Vol.:	250 mL
DTW-TOC at 25% Drawdown of WC Above Pump:	56.34	ft-TOC			
Final Volume Purged:	3.4	Gallons	Comments:		
Final Volume Purge Rate:	100	mL/min	Used YSI Pro Plus. Unable to maintain flow rate at 100 mL/min		
Well Purged Dry?:	no	(Yes/No)			

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment
15:35	0.0									Start Purging
15:40	0.3	250	45.56	17.8	7.6	1,183	7.5	-127	26.9	
15:45	0.5	100	46.33	19.3	7.6	1,183	7.0	-134	18.8	
15:50	0.6	100	46.60	19.6	7.6	1,182	6.8	-130	15.8	
15:55	0.7	100	47.43	19.7	7.5	1,187	6.7	-130	13.9	
16:05	1.0	100	49.13	19.2	7.6	1,169	3.3	-103	11.0	
16:10	1.1	50	49.37	20.4	7.6	1,179	2.1	-6	9.84	Storm standdown
16:55	2.8	150	53.22	18.8	7.6	1,172	4.2	-114	4.71	
17:00	3.0	150	54.25	18.3	7.6	1,182	3.8	-117	2.93	
17:05	3.2	150	55.74	17.6	7.6	1,170	3.7	-124	3.22	
17:10	3.4	100	56.95	18.1	7.6	1,168	3.7	-124	2.39	End Purging

Final: 17:10 3.4 100 56.95 18.1 7.6 1,168 3.7 -124 2.4 End of Purging

Sample Method: Submersible Pump **Sample Start Time:** 17:15 **Sample End Time:** 17:50

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3
Sulfate	1	PET	Zinc Acetate/ NaOH	Hex Chromium 218.7	1	PET	(NH4)2 SO4 & NH4OH

Name	Signature	Date
(1) Jamie T Honeycutt	_____	9/28/2016
(2) Lindsey Romine	_____	9/28/2016

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	GWA-14BRU	Sample Time:	
Locked?:	Yes	Weather:	Sunny
Sampled By:	Darren Cox	Air Temp:	75 ° F
Flow Through Cell Serial No.:	13K100920	Pump Serial No.:	27244
		Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point: Top of Casing				Well Volume		
Depth to Water: 96.85 ft-TOC				Well Diameter: 2 inch		
Total Well Depth: 101.80 ft-TOC				Water Volume: 0.8 Gal		
Height of Water Column: 4.95 feet				3 * Well Volume: 2.42 Gal		
Screen Length: 5 feet				5 * Well Volume: 4.04 Gal		
Stickup: 2.8 ft-GRD						

Well Purging Information

Purge Method: Submersible Pump		Start Time: 9:15	End Time:
(If Used) Bladder Pump Control Settings:	On (sec):	Off (sec):	Pressure: psi
Pump Intake Depth from Top of Casing: 100 ft-TOC			
Water Column Above Pump Intake: 3.15 feet		Flow Through Cell Vol: 500 mL	
DTW-TOC at 25% Drawdown of WC Above Pump: 97.64 ft-TOC		Comments:	
Final Volume Purged:		Used YSI Pro Plus	
Final Volume Purge Rate:		mL/min	
Well Purged Dry?: No		(Yes/No)	

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment
09:15	0.0									Start Purging
										insufficient water
										purged cell/tubing

Final: _____ End of Purging

Sample Method: Submersible Pump **Sample Start Time:** _____ **Sample End Time:** _____

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3
Sulfate	1	PET	Zinc Acetate/ NaOH	Hex Chromium 218.7	1	PET	(NH4)2 SO4 & NH4OH

Name	Signature	Date
(1) Darren Cox	_____	9/28/2016
(2) Bryan Wence	_____	9/28/2016

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	70 Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	GWA-14D	Sample Time:	11:20
Locked?:	Yes	Weather:	Mix of Sun/Clouds
Sampled By:	Darren Cox	Air Temp:	70s ° F
Flow Through Cell Serial No.:	15C100211	Pump Serial No.:	1519
		Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point:	Top of Casing		
Depth to Water:	11.10	ft-TOC	
Total Well Depth:	66.50	ft-TOC	
Height of Water Column:	55.40	feet	
Screen Length:	5	feet	Stickup: 2.8 ft-GRD

Well Volume		
Well Diameter	2	inch
Water Volume	9.0	Gal
3 * Well Volume	27.12	Gal
5 * Well Volume	45.20	Gal

Well Purging Information

Purge Method:	Bladder Pump	Start Time:	10:05	End Time:	11:15
(If Used) Bladder Pump Control Settings:	On (sec): 10	Off (sec):	5	Pressure:	18 psi
Pump Intake Depth from Top of Casing:	64	ft-TOC			
Water Column Above Pump Intake:	52.90	feet			
DTW-TOC at 25% Drawdown of WC Above Pump:	24.33	ft-TOC			
Final Volume Purged:	2.2	Gallons	Comments: Used YSI Pro Plus		
Final Volume Purge Rate:	100	mL/min			
Well Purged Dry?:	No	(Yes/No)			

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment
10:05										Start Purging
10:25	0.8	150	20.86	18.4	12.4	4,493	0.2	160	5.59	
10:30	1.0	150	21.34	18.3	12.4	4,490	0.2	118	8.39	
10:35	1.2	150	22.20	18.1	12.3	4,502	0.2	130	4.27	
10:40	1.3	100	23.12	18.1	12.3	4,497	0.2	118	4.60	
10:45	1.5	100	23.85	18.1	12.4	4,498	0.2	115	1.63	
10:50	1.6	100	24.68	18.4	12.4	4,489	0.2	139	1.29	
10:55	1.7	100	25.42	18.3	12.4	4,494	0.2	144	2.74	
11:00	1.8	100	26.26	18.4	12.3	4,495	0.2	118	4.75	
11:05	2.0	100	26.96	18.6	12.3	4,490	0.2	115	5.09	
11:10	2.1	100	27.62	18.6	12.3	4,492	0.2	111	2.67	
11:15	2.2	100	28.27	18.6	12.3	4,488	0.2	109	1.29	

Final: 11:15 2.2 100 28.27 18.6 12.3 4,488 0.2 109 1.3 End of Purging

Sample Method: Bladder Pump **Sample Start Time:** 11:20 **Sample End Time:** 12:40

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3

Name	Signature	Date
(1) Darren Cox	_____	9/28/2016
(2) Bryan Wence	_____	9/28/2016

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	65 Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	GWA-14S	Sample Time:	11:30
Locked?:	Yes	Weather:	Mix of Sun/Clouds
Sampled By:	Darren Cox	Air Temp:	80 ° F
Flow Through Cell Serial No.:	15C100211	Pump Serial No.:	1155
		Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point:		Top of Casing		Well Volume	
Depth to Water:	11.35	ft-TOC	Well Diameter	2	inch
Total Well Depth:	16.80	ft-TOC	Water Volume	0.9	Gal
Height of Water Column:	5.45	feet	3 * Well Volume	2.67	Gal
Screen Length:	10	feet	5 * Well Volume	4.45	Gal
Stickup:	2.8	ft-GRD			

Well Purging Information

Purge Method:	Bladder Pump	Start Time:	10:20	End Time:	11:25
(If Used) Bladder Pump Control Settings:	On (sec): 6	Off (sec):	14	Pressure:	20 psi
Pump Intake Depth from Top of Casing:	15	ft-TOC			
Water Column Above Pump Intake:	3.45	feet	Flow Through Cell Vol.:	200	mL
DTW-TOC at 25% Drawdown of WC Above Pump:	12.21	ft-TOC	Comments:		
Final Volume Purged:	1.7	Gallons	Used YSI Pro Plus		
Final Volume Purge Rate:	100	mL/min			
Well Purged Dry?:	No	(Yes/No)			

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment	
10:20	0.0	100								Start Purging	
10:25	0.1	100	11.59	20.2	4.9	79	0.1	276	422		
10:40	0.5	100	11.59	20.3	4.9	78	0.5	290	38.3		
10:55	0.9	100	11.60	21.0	5.0	77	1.3	296	19.0		
11:05	1.2	100	11.61	21.3	5.0	77	1.0	296	14.1		
11:15	1.5	100	11.61	21.1	5.0	78	1.1	297	8.36		
11:20	1.6	100	11.61	21.4	5.0	77	1.1	298	6.90		
11:25	1.7	100	11.61	21.5	5.0	78	1.1	299	5.75		
Final:	11:25	1.7	100	11.61	21.5	5.0	78	1.1	299	5.8	End of Purging

Sample Method: Bladder Pump
 Sample Start Time: 11:30
 Sample End Time: 12:40

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3
Sulfate	1	PET	Zinc Acetate/ NaOH	Hex Chromium 218.7	1	PET	(NH4)2 SO4 & NH4OH

Name	Signature	Date
(1) Darren Cox	_____	9/28/2016
(2) Bryan Wence	_____	9/228/16

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	120 Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	GWA-15D	Sample Time:	16:35
Locked?:	Yes	Weather:	Mix of Sun/Clouds
Sampled By:	Darren Cox	Air Temp:	70s ° F
Flow Through Cell Serial No.:	15C100211	Pump Serial No.:	1519
		Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point:		Top of Casing		Well Volume	
Depth to Water:	9.96	ft-TOC	Well Diameter	2	inch
Total Well Depth:	111.00	ft-TOC	Water Volume	16.5	Gal
Height of Water Column:	101.04	feet	3 * Well Volume	49.47	Gal
Screen Length:	5	feet	5 * Well Volume	82.44	Gal
Stickup:	2.8	ft-GRD			

Well Purging Information

Purge Method:		Bladder Pump		Start Time:	14:30	End Time:	16:30
(If Used)	Bladder Pump Control Settings:	On (sec):	7.5	Off (sec):	7.5	Pressure:	50 psi
Pump Intake Depth from Top of Casing:		109		ft-TOC			
Water Column Above Pump Intake:		99.04		feet		Flow Through Cell Vol.:	200 mL
DTW-TOC at 25% Drawdown of WC Above Pump:		34.72		ft-TOC		Comments:	
Final Volume Purged:		6.8		Gallons		Used YSI Pro Plus	
Final Volume Purge Rate:		150		mL/min			
Well Purged Dry?:		No		(Yes/No)			

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment
14:30		300	10.31	17.7	7.0	118	0.2	-59	1.92	Start Purging
14:35	0.3	250	10.48	18.3	6.6	105	0.2	-35	8.83	
14:40	0.7	250	10.44	18.3	6.6	98	0.2	-21	12.5	
14:45	1.0	250	10.46	18.2	6.5	96	0.2	-13	15.1	
14:50	1.4	300	10.48	17.4	6.4	92	0.2	-9	17.4	
14:55	1.8	300	10.48	17.6	6.4	89	0.2	-7	16.0	
15:00	2.2	300	10.48	17.7	6.4	88	0.2	-6	15.5	
15:05	2.6	300	10.48	17.7	6.4	87	0.2	-3	16.1	
15:10	3.0	300	10.48	17.7	6.4	87	0.2	-3	17.5	
15:15	3.4	300	10.48	17.8	6.4	87	0.2	-2	15.3	
15:20	3.6	200	10.36	18.4	6.4	87	0.2	-1	14.7	
15:25	3.9	200	10.36	18.7	6.4	86	0.2	-1	14.1	
15:30	4.2	200	10.36	18.7	6.5	86	0.2	-1	15.1	
15:35	4.4	200	10.36	18.8	6.5	86	0.2	4	14.4	
15:40	4.7	200	10.36	18.7	6.5	86	0.2	7	13.2	
15:45	5.0	200	10.36	18.9	6.5	86	0.2	8	14.4	
15:50	5.2	200	10.36	18.6	6.5	86	0.2	10	13.9	
15:55	5.4	150	10.32	19.3	6.5	86	0.2	9	15.1	
16:00	5.6	150	10.32	19.6	6.6	86	0.2	9	16.5	
16:05	5.8	150	10.32	18.3	6.4	86	0.2	20	9.9	
16:10	6.0	150	10.32	18.3	6.3	86	0.2	25	9.9	
16:15	6.2	150	10.32	17.9	6.3	85	0.2	30	10.1	
16:20	6.4	150	10.32	18.0	6.3	85	0.2	35	11.0	
16:25	6.6	150	10.32	18.0	6.3	85	0.2	40	12.0	
16:30	6.8	150	10.32	17.8	6.3	85	0.2	45	11.6	

Final: 16:30 6.8 150 10.32 17.8 6.3 85 0.2 45 11.6 End of Purging

Sample Method: Bladder Pump **Sample Start Time:** 16:35 **Sample End Time:** 17:35

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3

Name	Signature	Date
(1) Darren Cox	_____	9/28/2016
(2) Bryan Wence	_____	9/28/2016

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	30 Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	GWA-155	Sample Time:	14:55
Locked?:	Yes	Weather:	Mix of Sun/Clouds
Sampled By:	Darren Cox	Air Temp:	80 ° F
Flow Through Cell Serial No.:	15C100211	Pump Serial No.:	1155
		Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point:				Top of Casing		Well Volume		
Depth to Water:				9.70	ft-TOC	Well Diameter	2	inch
Total Well Depth:				20.80	ft-TOC	Water Volume	1.8	Gal
Height of Water Column:				11.10	feet	3 * Well Volume	5.43	Gal
Screen Length:	10	feet	Stickup:	2.8	ft-GRD	5 * Well Volume	9.06	Gal

Well Purging Information

Purge Method:		Bladder Pump		Start Time:	14:20	End Time:	14:50
(If Used)	Bladder Pump Control Settings:	On (sec):	6	Off (sec):	14	Pressure:	20 psi
Pump Intake Depth from Top of Casing:		18		ft-TOC			
Water Column Above Pump Intake:		8.60		feet		Flow Through Cell Vol: 200 mL	
DTW-TOC at 25% Drawdown of WC Above Pump:		11.85		ft-TOC		Comments:	
Final Volume Purged:		0.8		Gallons		Used YSI Pro Plus	
Final Volume Purge Rate:		100		mL/min			
Well Purged Dry?:		No		(Yes/No)			

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment
14:20	0.0	100								Start Purging
14:30	0.3	100	10.13	23.1	5.0	67	1.0	286	1.54	
14:35	0.4	100	10.10	23.6	5.0	66	2.3	282	2.40	
14:40	0.5	100	10.12	23.4	4.9	66	0.3	284	1.10	
14:45	0.7	100	10.12	23.6	4.9	64	0.3	287	2.41	
14:50	0.8	100	10.12	23.6	4.9	63	0.3	286	2.59	

Final: 14:50 0.8 100 10.12 23.6 4.9 63 0.3 286 2.6 End of Purging

Sample Method: Bladder Pump **Sample Start Time:** 14:55 **Sample End Time:** 15:50

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3
Sulfate	1	PET	Zinc Acetate/ NaOH	Hex Chromium 218.7	1	PET	(NH4)2 SO4 & NH4OH

Name	Signature	Date
(1) Darren Cox	_____	9/28/2016
(2) Bryan Wence	_____	9/28/2016

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	90 Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	GWA-17S	Sample Time:	16:00
Locked?:	yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	80 ° F
Flow Through Cell Serial No.:	15C101918	Pump Serial No.:	PRO1527
		Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point: Top of Casing				Well Volume		
Depth to Water:	36.44	ft-TOC		Well Diameter	2	inch
Total Well Depth:	41.00	ft-TOC		Water Volume	0.7	Gal
Height of Water Column:	4.56	feet		3 * Well Volume	2.23	Gal
Screen Length:	10	feet	Stickup:	3	ft-GRD	
				5 * Well Volume	3.72	Gal

Well Purging Information

Purge Method:	Submersible Pump	Start Time:	14:30	End Time:	16:00
(If Used) Bladder Pump Control Settings:	On (sec):	Off (sec):		Pressure:	psi
Pump Intake Depth from Top of Casing:	40	ft-TOC			
Water Column Above Pump Intake:	3.56	feet		Flow Through Cell Vol:	500 mL
DTW-TOC at 25% Drawdown of WC Above Pump:	37.33	ft-TOC		Comments:	
Final Volume Purged:	2.8	Gallons			
Final Volume Purge Rate:	100	mL/min			
Well Purged Dry?:	No	(Yes/No)			

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment	
14:30	0.0									Start Purging	
14:35	0.3	200	37.70	19.0	6.5	280	0.5	-75	388		
14:40	0.5	200	37.14	19.0	6.5	287	0.3	-115	447		
14:45	0.7	150	37.17	19.7	6.5	281	0.3	-122	334		
14:50	0.9	150	37.31	19.8	6.5	270	0.4	-108	196		
14:55	1.1	100	37.29	20.1	6.4	253	0.5	-90	114		
15:00	1.2	100	37.17	20.7	6.5	252	0.5	-91	80.1		
15:05	1.3	100	37.14	21.4	6.5	251	0.6	-86	76.0		
15:10	1.5	100	37.03	21.9	6.5	248	0.6	-55	40.0		
15:15	1.6	100	36.99	22.3	6.5	245	0.6	-59	36.9		
15:20	1.7	100	36.98	21.1	6.4	236	0.9	-45	29.6		
15:25	1.8	100	36.99	21.1	6.4	234	0.9	-42	20.0		
15:30	2.0	100	36.99	21.3	6.4	231	1.0	-35	18.8		
15:35	2.1	100	36.99	21.3	6.4	229	0.9	-22	13.5		
15:40	2.2	100	36.99	21.4	6.4	223	1.2	-10	16.4		
15:45	2.4	100	36.99	21.2	6.4	221	1.0	-7	11.7		
15:50	2.5	100	36.99	21.3	6.4	220	1.0	-3	9.4		
15:55	2.6	100	36.99	21.4	6.4	218	1.0	3	9.2		
16:00	2.8	100	36.99	21.4	6.4	217	1.1	3	9.0	Sampling Time	
Final:	16:00	2.8	100	36.99	21.4	6.4	217	1.1	3	9.0	End of Purging

Sample Method: Peristaltic Pump **Sample Start Time:** 16:00 **Sample End Time:** 16:05

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3
Sulfate	1	PET	Zinc Acetate/ NaOH	Hex Chromium 218.7	1	PET	(NH4)2 SO4 & NH4OH

Name	Signature	Date
(1) James Waters	_____	9/28/2016
(2) Travis O'Quinn	_____	9/28/2016

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	120 Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	GWA-18D	Sample Time:	14:27
Locked?:	Yes	Weather:	Sunny, Warm
Sampled By:	David Klemm	Air Temp:	85 ° F
Flow Through Cell Serial No.:	13K100921	Pump Serial No.:	24710
		Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point:		Top of Casing		Well Volume	
Depth to Water:	127.78	ft-TOC		Well Diameter	2
Total Well Depth:	155.90	ft-TOC		Water Volume	4.6
Height of Water Column:	28.12	feet		3 * Well Volume	13.77
Screen Length:	5	feet	Stickup:	2.9	ft-GRD
				5 * Well Volume	22.94
					Gal

Well Purging Information

Purge Method:		Submersible Pump		Start Time:	12:24	End Time:	14:24
(If Used)	Bladder Pump Control Settings:	On (sec):	153	Off (sec):		Pressure:	
	Pump Intake Depth from Top of Casing:						psi
	Water Column Above Pump Intake:	25.62	feet	Flow Through Cell Vol:			mL
	DTW-TOC at 25% Drawdown of WC Above Pump:	134.19	ft-TOC	Comments:			
	Final Volume Purged:	3.3	Gallons	Used YSI Pro Plus			
	Final Volume Purge Rate:	100	mL/min				
	Well Purged Dry?:	No	(Yes/No)				

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment	
12:24	0.0	110	132.50	18.0	12.2	3,562	1.7	-136	119.4	Start Purging	
12:29	0.1	110	133.15	18.2	12.2	3,581	0.4	-133	115		
12:34	0.3	110	133.80	18.7	12.2	3,565	0.4	-128	106		
12:39	0.4	100	135.75	18.5	12.2	3,556	0.4	-127	105		
12:45	0.7	150	136.10	17.6	12.2	3,510	6.9	-105	78.7		
12:50	0.9	150	136.98	18.5	12.2	3,460	6.5	-104	75.7		
12:55	1.0	100	137.64	18.9	12.2	3,435	6.3	-101	48.8		
13:00	1.1	100	138.10	19.2	12.2	3,425	6.2	-97	47.6		
13:05	1.3	100	138.70	19.4	12.2	3,399	6.0	-97	38.4		
13:10	1.4	100	139.40	19.5	12.2	3,381	5.7	-97	37.0		
13:15	1.5	100	139.85	19.7	12.2	3,375	5.6	-99	35.7		
13:20	1.7	100	140.43	19.8	12.2	3,357	5.4	-98	29.9		
13:25	1.8	100	141.05	20.0	12.1	3,346	5.2	-100	25.3		
13:31	1.9	100	141.65	19.9	12.1	3,330	5.1	-97	22.0		
13:36	2.1	100	142.40	19.9	12.2	3,319	5.0	-97	22.7		
13:42	2.2	100	142.85	20.1	12.1	3,310	4.8	-98	18.6		
13:47	2.4	100	143.15	20.0	12.1	3,303	4.5	-96	14.5		
13:52	2.5	100	143.64	20.4	12.1	3,283	4.6	-97	8.9		
13:57	2.6	100	144.16	20.1	12.1	3,295	4.6	-94	10.7		
14:03	2.8	100	144.78	19.9	12.2	3,281	4.4	-93	11.6		
14:08	2.9	100	145.27	19.9	12.2	3,276	4.3	-93	12.5		
14:13	3.1	100	145.77	19.8	12.2	3,273	4.3	-92	10.9		
14:18	3.2	100	146.41	20.0	12.1	3,273	4.1	-92	7.9		
14:24	3.3	100	147.04	20.1	12.1	3,271	4.0	-92	8.1	Told if below 10	
Final:	14:24	3.3	100	147.04	20.1	12.1	3,271	4.0	-92	8.1	End of Purging

Sample Method: Submersible Pump **Sample Start Time:** 14:27 **Sample End Time:** 15:43

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3
Sulfate	1	PET	Zinc Acetate/ NaOH	Hex Chromium 218.7	1	PET	(NH4)2 SO4 & NH4OH

Name	Signature	Date
(1) David Klemm	_____	9/28/2016
(2) Brant Alyea	_____	9/28/2016

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	90 Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	GWA-18S	Sample Time:	11:35
Locked?:	Yes	Weather:	Sunny, Warm
Sampled By:	David Klemm	Air Temp:	85 ° F
Flow Through Cell Serial No.:	16F100208	Pump Serial No.:	24711
		Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point:		Top of Casing	
Depth to Water:	61.84	ft-TOC	
Total Well Depth:	139.90	ft-TOC	
Height of Water Column:	78.06	feet	
Screen Length:	10	feet	
Stickup:	2.9	ft-GRD	

Well Volume		
Well Diameter	2	inch
Water Volume	12.7	Gal
3 * Well Volume	38.22	Gal
5 * Well Volume	63.69	Gal

Well Purging Information

Purge Method:	Submersible Pump	Start Time:	10:02	End Time:	11:32
(If Used) Bladder Pump Control Settings:	On (sec):	Off (sec):		Pressure:	psi
Pump Intake Depth from Top of Casing:	135	ft-TOC			
Water Column Above Pump Intake:	73.16	feet	Flow Through Cell Vol.:	200	mL
DTW-TOC at 25% Drawdown of WC Above Pump:	80.13	ft-TOC	Comments:		
Final Volume Purged:	2.4	Gallons	Used YSI Pro Plus		
Final Volume Purge Rate:	100	mL/min			
Well Purged Dry?:	No	(Yes/No)			

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP+ (mV)	Turbidity (NTU)	Comment
10:02	0.0	100	65.35	18.3	6.5	563	0.8	-22	36.4	Start Purging
10:07	0.1	100	65.66	19.0	6.5	562	0.4	-26	34.8	
10:12	0.3	100	66.11	19.2	6.5	565	0.3	-25	25.9	
10:17	0.4	100	66.54	19.2	6.5	563	0.3	-24	21.1	
10:22	0.5	100	66.69	19.3	6.5	559	0.3	-20	19.2	
10:27	0.7	100	66.96	19.1	6.5	563	0.3	-22	17.8	
10:32	0.8	100	67.30	19.2	6.5	562	0.3	-21	20.1	
10:37	0.9	100	67.43	19.0	6.5	560	0.4	-23	15.9	
10:42	1.1	100	67.73	18.8	6.5	559	0.3	-24	15.2	
10:47	1.2	100	67.98	18.8	6.5	558	0.4	-25	13.8	
10:52	1.3	100	68.19	19.0	6.5	557	0.4	-25	9.60	
10:57	1.5	100	68.32	19.1	6.5	557	0.3	-24	12.1	
11:02	1.6	100	68.54	19.1	6.5	557	0.3	-24	11.1	
11:07	1.7	100	68.75	19.1	6.5	556	0.4	-24	10.6	
11:12	1.8	100	68.87	19.1	6.5	556	0.4	-22	10.3	
11:17	2.0	100	68.98	19.2	6.5	556	0.4	-22	10.3	
11:22	2.1	100	69.19	19.1	6.5	556	0.3	-23	8.8	
11:27	2.2	100	69.33	19.1	6.5	556	0.3	-24	8.0	
11:32	2.4	100	69.47	19.2	6.5	555	0.3	-25	8.1	

Final: 11:32 | 2.4 | 100 | 69.47 | 19.2 | 6.5 | 555 | 0.3 | -25 | 8.1 | End of Purging

Sample Method: Submersible Pump **Sample Start Time:** 11:35 **Sample End Time:** 12:57

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3
Sulfate	1	PET	Zinc Acetate/ NaOH	Hex Chromium 218.7	1	PET	(NH4)2 SO4 & NH4OH

Name	Signature	Date
(1) David Klemm	_____	9/28/2016
(2) Brant Alyea	_____	9/28/2016

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	55 Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	GWA-20D	Sample Time:	12:40
Locked?:	Yes	Weather:	cloudy
Sampled By:	Travis O'Quinn	Air Temp:	70's ° F
Flow Through Cell Serial No.:		Pump Serial No.:	24768
			Calibration Date: September 27, 2016

Water Level & Well Data

Measuring Point:		Top of Casing	
Depth to Water:	8.54	ft-TOC	
Total Well Depth:	45.55	ft-TOC	
Height of Water Column:	37.01	feet	
Screen Length:	5	feet	Stickup: 2.85 ft-GRD

Well Volume		
Well Diameter	2	inch
Water Volume	6.0	Gal
3 * Well Volume	18.12	Gal
5 * Well Volume	30.20	Gal

Well Purging Information

Purge Method:		Submersible Pump		Start Time:	11:40	End Time:	12:35
(If Used)	Bladder Pump Control Settings:	On (sec):		Off (sec):		Pressure:	
Pump Intake Depth from Top of Casing:		43		ft-TOC			
Water Column Above Pump Intake:		34.51		feet			
DTW-TOC at 25% Drawdown of WC Above Pump:		17.17		ft-TOC			
Final Volume Purged:		3.6		Gallons			
Final Volume Purge Rate:		250		mL/min			
Well Purged Dry?:		No		(Yes/No)			

Flow Through Cell Vol: 500 mL

Comments: Used YSI Pro Plus

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment
11:40	0.0									Start Purging
11:45	0.3	250	8.87	18.0	6.7	359	0.0	-109	120	
11:50	0.7	250	8.85	17.8	6.8	364	0.0	-117	120	
11:55	1.0	250	8.85	18.1	7.0	364	0.0	-126	55.9	
12:00	1.3	250	8.87	17.9	7.1	363	0.0	-130	34.1	
12:05	1.7	250	8.87	18.7	7.1	362	0.0	-132	20.4	recal DO
12:20	2.6	250	8.81	18.7	7.1	371	0.0	-145	10.7	
12:25	3.0	250	8.81	18.9	7.0	367	0.0	-153	4.26	
12:30	3.3	250	8.81	18.9	7.1	365	0.0	-156	6.57	
12:35	3.6	250	8.81	18.3	7.1	361	0.1	-156	5.05	
Final: 12:35 3.6 250 8.81 18.3 7.1 361 0.1 -156 5.1 End of Purging										

Sample Method: Submersible Pump **Sample Start Time:** 12:40 **Sample End Time:** 16:17

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3
Sulfate	1	PET	Zinc Acetate/ NaOH	Hex Chromium 218.7	1	PET	(NH4)2 SO4 & NH4OH

Name	Signature	Date
(1) Travis O'Quinn	_____	9/28/2016
(2)	_____	_____

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016
Project Location:	Salisbury, NC	Purge Time:	65 Minutes
Project Number:	7126-16-032A	Sample Date:	September 28, 2016
Source Well:	GWA-20S	Sample Time:	12:35
Locked?:	Yes	Weather:	Partly Cloudy
Sampled By:	James Waters	Air Temp:	80 ° F
Flow Through Cell Serial No.:	15C101918	Pump Serial No.:	PRO1527
		Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point: Top of Casing				Well Volume			
Depth to Water:		8.89		Well Diameter		2 inch	
Total Well Depth:		16.70		Water Volume		1.3 Gal	
Height of Water Column:		7.81		3 * Well Volume		3.82 Gal	
Screen Length:		10 feet		5 * Well Volume		6.37 Gal	
Stickup:		2.7					
		ft-GRD					

Well Purging Information

Purge Method:		Peristaltic Pump		Start Time:	11:30	End Time:	12:35
(If Used)	Bladder Pump Control Settings:	On (sec):		Off (sec):		Pressure:	
Pump Intake Depth from Top of Casing:		14					
Water Column Above Pump Intake:		5.11		Flow Through Cell Vol:		500 mL	
DTW-TOC at 25% Drawdown of WC Above Pump:		10.17		Comments:			
Final Volume Purged:		2.7					
Final Volume Purge Rate:		150					
Well Purged Dry?:		No		(Yes/No)			

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment
11:30	0.0									Start Purging
11:35	0.3	200	9.30	18.8	6.6	505	1.0	-11	11.6	
11:40	0.5	200	9.39	18.7	6.2	347	0.6	4	10.7	
11:45	0.7	150	9.36	18.8	6.2	297	0.5	8	12.5	
11:50	0.9	150	9.35	19.0	6.3	287	0.5	3	7.24	
11:55	1.1	150	9.35	18.9	6.4	278	0.6	2	9.24	
12:00	1.3	150	9.35	18.9	6.4	273	0.6	5	9.56	
12:05	1.5	150	9.35	18.8	6.4	271	0.7	7	6.88	
12:10	1.7	150	9.35	18.9	6.4	271	0.7	9	5.29	
12:15	1.9	150	9.35	18.9	6.5	271	0.6	8	5.56	
12:20	2.1	150	9.35	19.0	6.4	271	0.6	8	4.12	
12:25	2.3	150	9.35	19.0	6.4	271	0.7	8	4.99	
12:30	2.5	150	9.35	19.1	6.5	271	0.7	8	4.66	
12:35	2.7	150	9.35	19.2	6.5	271	0.7	8	5.01	Sampling Time

Final: 12:35 2.7 150 9.35 19.2 6.5 271 0.7 8 5.0 End of Purging

Sample Method: Peristaltic Pump **Sample Start Time:** 12:35 **Sample End Time:** 13:30

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3
Sulfate	1	PET	Zinc Acetate/ NaOH	Hex Chromium 218.7	1	PET	(NH4)2 SO4 & NH4OH

Name	Signature	Date
(1) James Waters	_____	9/29/2016
(2)	_____	_____

Notes: To convert ORP to Eh, add 205 mv to ORP.

Low Flow Groundwater Sampling Field Form



Project Name:	Buck Steam Station	Purge Date:	September 28, 2016	
Project Location:	Salisbury, NC	Purge Time:	35 Minutes	
Project Number:	7126-16-032A	Sample Date:	September 28, 2016	
Source Well:	GWA-22D	Sample Time:	11:40	
Locked?:	Yes	Weather:	partly cloudy	
Sampled By:	Jamie T. Honeycutt/Lindsey Romine		Air Temp:	75 ° F
Flow Through Cell Serial No.:	16B100463	Pump Serial No.:	24745	
			Calibration Date:	September 28, 2016

Water Level & Well Data

Measuring Point:		Top of Casing	
Depth to Water:	7.13	ft-TOC	
Total Well Depth:	33.50	ft-TOC	
Height of Water Column:	26.37	feet	
Screen Length:	5	feet	Stickup: 3 ft-GRD

Well Volume		
Well Diameter	2	inch
Water Volume	4.3	Gal
3 * Well Volume	12.91	Gal
5 * Well Volume	21.52	Gal

Well Purging Information

Purge Method:	Submersible Pump	Start Time:	11:00	End Time:	11:35
(If Used) Bladder Pump Control Settings:	On (sec):	Off (sec):		Pressure:	psi
Pump Intake Depth from Top of Casing:	31	ft-TOC			
Water Column Above Pump Intake:	23.87	feet		Flow Through Cell Vol:	250 mL
DTW-TOC at 25% Drawdown of WC Above Pump:	13.10	ft-TOC		Comments: Used YSI Pro Plus.	
Final Volume Purged:	2.2	Gallons			
Final Volume Purge Rate:	250	mL/min			
Well Purged Dry?:	no	(Yes/No)			

Field Parameters (Taken at time intervals with purge volumes ≥ 2 Flow Through Cell Volumes)

Time	Volume Purged (gal)	Flow Rate (mL/min)	Depth to Water (ft)	Temp (°C)	pH (s.u.)	Spec. Cond. (µS/cm)	Dissolved Oxygen (mg/L)	ORP* (mV)	Turbidity (NTU)	Comment
11:00	0.0									Start Purging
11:05	0.3	200	7.20	19.3	5.8	251	1.1	82	26.8	
11:10	0.6	250	7.21	19.0	5.8	249	1.2	98	16.2	
11:15	0.9	250	7.21	19.2	5.8	248	1.2	82	8.60	
11:20	1.3	250	7.21	19.1	5.8	247	1.1	73	6.44	
11:25	1.6	250	7.21	18.9	5.8	247	1.2	76	4.82	
11:30	1.9	250	7.21	18.8	5.8	248	1.2	74	2.67	
11:35	2.2	250	7.21	18.7	5.8	247	1.2	72	2.46	End Purging
Final:	2.2	250	7.21	18.7	5.8	247	1.2	72	2.5	End of Purging

Sample Method: Submersible Pump **Sample Start Time:** 11:40 **Sample End Time:** 12:25

Analytical Data

Method	Qty	Container	Preservative	Method	Qty	Container	Preservative
TSS	1	PET	Ice	TOC	3	Glass	Phosphoric Acid
TDS	1	PET	Ice	Nitrate-Nitrite	1	PET	H2SO4
Methane RSK-175	3	Glass	HCl	Radium 226 & 228	3	PET	HNO3
Cl, SO4	1	PET	Ice	Metals- Total	1	HDPE	HNO3
Alkalinity, Bicarbonate, Carbonate	1	PET	Ice	Metals - Dissolved	1	HDPE	HNO3
Sulfate	1	PET	Zinc Acetate/ NaOH	Hex Chromium 218.7	1	PET	(NH4)2 SO4 & NH4OH

Name	Signature	Date
(1) Jamie T Honeycutt	_____	9/28/2016
(2) Lindsey Romine	_____	9/28/2016

Notes: To convert ORP to Eh, add 205 mv to ORP.

Project Name: Duke Buck Station
Project Location: Dukeville Road, Salisbury
Project Number: 7126-16-032A

Water Quality Meter Calibration

Date: 28-Sep-16
Personnel: Jamie Honeycutt/Lindsey Romine
Equipment ID: YSI Flow-through cell with meter
Model: YSI Professional Series-Plus
Serial #: 13G102143

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday Check	pH Buffer 4 (S.U.)	pH Buffer 7 (S.U.)	pH Buffer 10 (S.U.)	DO (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)
7:20	Pass	Pre Cal	4.0	7.2	9.0	0.1	1006	260
		Midday						
17:50	Pass	Post Cal	4.2	6.8	9.9	0.2	1006	253

pH Buffer 4
 Lot #: 6GA755 **DO Solution (0 mg/L)** Lot #: 201046-2 (9-26-2016)
 Expiration date: Jan-18 Expiration date: _____
pH Buffer 7
 Lot #: 6GD380 **ORP Solution (257.6 mV)** Post: 257.6
 Expiration date: Apr-18 Lot #: NA Expiration date: _____
pH Buffer 10
 Lot #: 6GA660 **Specific Conductivity Solution (1000 µmhos/cm)**
 Expiration date: Jan-18 Lot #: 6GF129 Expiration date: Jun-17

Comments: _____

Turbidity Meter Calibration

Date: 28-Sep-16
Personnel: Jamie Honeycutt/Lindsey Romine
Equipment ID: Micro TPW Turbidimeter
Model: Micro TPW Turbidimeter
Serial #: 201505279

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday	Turbidity Solution		
			0.02 NTU	10 NTU	1000 NTU
7:20	Pass	Pre Cal	0.00	10.0	978
		Midday			
17:25	Pass	Post Cal	0.57	10.4	907

Turbidity - 10 NTU Solution
 Lot #: 50539
 Expiration date: May-17

Turbidity - 0.02 NTU Solution
 Lot #: 50501
 Expiration date: May-17

Turbidity - 1000 NTU Solution
 Lot #: 50503
 Expiration date: May-17

Comments: _____

Project Name: Duke Buck Station
Project Location: Dukeville Road, Salisbury
Project Number: 7126-16-032

Water Quality Meter Calibration

Date: 28-Sep-16
Personnel: Darren Cox Bryan Wence
Equipment ID: YSI Flow-through cell with meter
Model: YSI Professional Series
Serial #: 13K100920

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday Check	pH Buffer 4 (S.U.)	pH Buffer 7 (S.U.)	pH Buffer 10 (S.U.)	DO (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)
7:30	Pass	Pre Cal	3.9	6.9	10.1	0.2	997	258
		Midday						
15:15	Pass	Post Cal	4.3	7.0	10.0	0.1	988	249

pH Buffer 4
 Lot #: 6GA755
 Expiration date: Jan-18

DO Solution (0 mg/L)
 Lot #: 201046-2 9-26-16
 Expiration date: _____

pH Buffer 7
 Lot #: 6GD380
 Expiration date: Apr-16

ORP Solution (259.0 mV) Post: 254
 Lot #: NA
 Expiration date: _____

pH Buffer 10
 Lot #: 6GA660
 Expiration date: Jan-16

Specific Conductivity Solution (1000 µmhos/cm)
 Lot #: 6GF129
 Expiration date: 17-Jun

Comments: _____

Turbidity Meter Calibration

Date: 28-Sep-16
Personnel: Darren Cox Bryan Wence
Equipment ID: Micro TPW Turbidimeter
Model: Micro TPW Turbidimeter
Serial #: 201504364

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday	Turbidity Solution		
			0.02 NTU	10 NTU	1000 NTU
7:30	Pass	Pre Cal	0.02	10.0	998
		Midday			
16:35	Pass	Post Cal	0.02	10.0	994

Turbidity - 10 NTU Solution
 Lot #: 50539
 Expiration date: May-17

Turbidity - 0.02 NTU Solution
 Lot #: 50501
 Expiration date: May-17

Turbidity - 1000 NTU Solution
 Lot #: 50503
 Expiration date: May-17

Comments: _____

Project Name: Duke Buck Station
Project Location: Dukeville Road, Salisbury
Project Number: 7126-16-032

Water Quality Meter Calibration

Date: 28-Sep-16
Personnel: Darren Cox Bryan Wence
Equipment ID: YSI Flow-through cell with meter
Model: YSI Professional Series
Serial #: 15C101918

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday Check	pH Buffer 4 (S.U.)	pH Buffer 7 (S.U.)	pH Buffer 10 (S.U.)	DO (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)
7:30	Pass	Pre Cal	4.1	7.0	10.0	0.1	1005	251
		Midday						
16:50	Pass	Post Cal	4.1	7.1	10.1	0.2	1011	247

pH Buffer 4
 Lot #: 6GA755
 Expiration date: Jan-18

DO Solution (0 mg/L)
 Lot #: 201046-2 9-26-16
 Expiration date: _____

pH Buffer 7
 Lot #: 6GD380
 Expiration date: Apr-18

ORP Solution (259.0 mV) Post: 254
 Lot #: NA
 Expiration date: _____

pH Buffer 10
 Lot #: 6GA660
 Expiration date: Jan-16

Specific Conductivity Solution (1000 µmhos/cm)
 Lot #: 6GF129
 Expiration date: 17-Jun

Comments: _____

Turbidity Meter Calibration

Date: 28-Sep-16
Personnel: Darren Cox Bryan Wence
Equipment ID: Micro TPW Turbidimeter
Model: Micro TPW Turbidimeter
Serial #: 201504364

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday	Turbidity Solution		
			0.02 NTU	10 NTU	1000 NTU
7:30	Pass	Pre Cal	0.02	10.0	998
		Midday			
16:35	Pass	Post Cal	0.02	10.0	994

Turbidity - 10 NTU Solution
 Lot #: 50539
 Expiration date: May-17

Turbidity - 0.02 NTU Solution
 Lot #: 50501
 Expiration date: May-17

Turbidity - 1000 NTU Solution
 Lot #: 50503
 Expiration date: May-17

Comments: _____

Project Name: Duke Buck Station
Project Location: Dukeville Road, Salisbury
Project Number: 7126-16-032

Water Quality Meter Calibration

Date: 28-Sep-16
Personnel: Travis O'Quinn & James Waters
Equipment ID: YSI Flow-through cell with meter
Model: YSI Professional Series
Serial #: 13C100808

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday Check	pH Buffer 4 (S.U.)	pH Buffer 7 (S.U.)	pH Buffer 10 (S.U.)	DO (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)
7:30	Pass	Pre Cal	4.0	7.0	10.0	0.0	1000	258
		Midday						
17:30	Pass	Post Cal	3.9	6.9	9.9	0.2	1000	254

pH Buffer 4	DO Solution (0 mg/L)	Comments:
Lot #: <u>6GA755</u>	Lot #: <u>201046-2 9-26-16</u>	_____
Expiration date: <u>Jan-18</u>	Expiration date: _____	_____
pH Buffer 7	ORP Solution (257.6 mV) Post: 253.5	_____
Lot #: <u>6GD380</u>	Lot #: <u>NA</u>	_____
Expiration date: <u>Apr-16</u>	Expiration date: _____	_____
pH Buffer 10	Specific Conductivity Solution (1000 µmhos/cm)	_____
Lot #: <u>6GA660</u>	Lot #: <u>6GF129</u>	_____
Expiration date: <u>Jan-16</u>	Expiration date: <u>17-Jun</u>	_____

Turbidity Meter Calibration

Date: 28-Sep-16
Personnel: Travis O'Quinn & James Waters
Equipment ID: Micro TPW Turbidimeter
Model: Micro TPW Turbidimeter
Serial #: 201504364

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday	Turbidity Solution		
			0.02 NTU	10 NTU	1000 NTU
7:30	Pass	Pre Cal	0.02	10.0	1000
		Midday			
17:30	Pass	Post Cal	0.06	10.0	1003

Turbidity - 10 NTU Solution	Comments:
Lot #: <u>41060</u>	<u>Used 1000 NTU solution from Team 1</u>
Expiration date: <u>Oct-16</u>	_____
Turbidity - 0.02 NTU Solution	_____
Lot #: <u>50701</u>	_____
Expiration date: <u>Jul-17</u>	_____
Turbidity - 1000 NTU Solution	_____
Lot #: <u>50503</u>	_____
Expiration date: <u>May-17</u>	_____

Project Name: Duke Buck Station
Project Location: Dukeville Road, Salisbury
Project Number: 7126-16-032A

Water Quality Meter Calibration

Date: 28-Sep-16
Personnel: David Klemm, Brant Alyea
Equipment ID: YSI Flow-through cell with meter
Model: YSI Professional Series
Serial #: 16F100208

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday Check	pH Buffer 4 (S.U.)	pH Buffer 7 (S.U.)	pH Buffer 10 (S.U.)	DO (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)
7:50	Pass	Pre Cal	4.0	7.0	10.0	0.1	1003	259
		Midday						
15:12	Pass	Post Cal	4.0	6.9	10.0	0.01	982	260

pH Buffer 4
 Lot #: 6GA755
 Expiration date: Jan-18

DO Solution (0 mg/L)
 Lot #: 201046-2
 Mix date: 9/26/2016

Comments: _____

pH Buffer 7
 Lot #: 6GD380
 Expiration date: Apr-18

ORP Solution (257.6 mV) 257.6
 Lot #: NA
 Mix date: 8/23/2016

pH Buffer 10
 Lot #: 6GA660
 Expiration date: Jan-18

Specific Conductivity Solution (1000 µmhos/cm)
 Lot #: 6GF129
 Expiration date: Jun-17

Turbidity Meter Calibration

Date: 28-Sep-16
Personnel: David Klemm, Brant Alyea
Equipment ID: Micro TPW Turbidimeter
Model: Micro TPW Turbidimeter
Serial #: 201505263

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday	Turbidity Solution		
			0.02 NTU	10 NTU	1000 NTU
7:50	Pass	Pre Cal	0.02	10.0	1000
		Midday			
15:12	Pass	Post Cal	0.01	10.0	1003

Turbidity - 10 NTU Solution
 Lot #: 50539
 Expiration date: May-17

Comments: _____

Turbidity - 0.02 NTU Solution
 Lot #: 50501
 Expiration date: May-17

Turbidity - 1000 NTU Solution
 Lot #: 50503
 Expiration date: May-17

Project Name: Duke Buck Station
Project Location: Dukeville Road, Salisbury
Project Number: 7126-16-032A

Water Quality Meter Calibration

Date: 28-Sep-16
Personnel: David Klemm, Brant Alyea
Equipment ID: YSI Flow-through cell with meter
Model: YSI Professional Series
Serial #: 13K100921

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday Check	pH Buffer 4 (S.U.)	pH Buffer 7 (S.U.)	pH Buffer 10 (S.U.)	DO (mg/L)	Specific Conductivity (µmhos/cm)	ORP (mV)
7:50	Pass	Pre Cal	4.0	7.0	10.0	0.1	997	252
		Midday						
15:30	Pass	Post Cal	4.1	6.9	10.0	0.0	997	250

pH Buffer 4
 Lot #: 6GA755
 Expiration date: Jan-18

DO Solution (0 mg/L)
 Lot #: 201046-2
 Mix date: 9/26/2016

Comments: _____

pH Buffer 7
 Lot #: 6GD380
 Expiration date: Apr-18

ORP Solution (257.6 mV) 257.6
 Lot #: NA
 Mix date: 9/19/2016

pH Buffer 10
 Lot #: 6GA660
 Expiration date: Apr-18

Specific Conductivity Solution (1000 µmhos/cm)
 Lot #: 6GF129
 Expiration date: Jun-17

Turbidity Meter Calibration

Date: 28-Sep-16
Personnel: David Klemm, Brant Alyea
Equipment ID: Micro TPW Turbidimeter
Model: Micro TPW Turbidimeter
Serial #: 201505263

Time of Calibration	Battery Check (Pass/Fail)	Pre/Post Calibration or Midday	Turbidity Solution		
			0.02 NTU	10 NTU	1000 NTU
7:50	Pass	Pre Cal	0.02	10.0	1000
		Midday			
15:12	Pass	Post Cal	0.01	10.0	1003

Turbidity - 10 NTU Solution
 Lot #: 50539
 Expiration date: May-17

Comments: _____

Turbidity - 0.02 NTU Solution
 Lot #: 50501
 Expiration date: May-17

Turbidity - 1000 NTU Solution
 Lot #: 50503
 Expiration date: May-17