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Memorandum

Prepared for: File
Project Title: Florence Copper
Project No.: 149050

Subject: Florence Copper Project, Temporary APP and UIC Permits, Ambient Event 6
Date: May 16, 2018
To: Ian Ream
From: Barb Sylvester

Groundwater sampling at the Florence Copper Project site took place December 12 through December 14 and December 27 and 28, 2017. Twelve (12) Point-of-Compliance (POC) and Supplemental wells were sampled as part of the ambient monitoring program for the Temporary APP and UIC permits. Thirteen total samples were collected, including one duplicate sample. Two wells (MW-01-O, MW-01-LBF) were sampled using a portable stainless-steel pump immediately following well development. Table 1 summarizes the sampling activities.

Ambient samples were to be analyzed for metals, inorganics, organics, and radionuclides (Table 2). Samples for metal analysis were filtered in the field.

Table 1. Summary of December 2017 Ambient Event

Date	Sample Identification	Pump Style	Analyses
December 12, 2017	M52-UBF M63.0 (Duplicate)	Low-Flow	Level II
	M54-LBF	Low-Flow	Level II
	M54-O	Low-Flow	Level II
	M55-UBF	Low-Flow	Level II
	M56-LBF	Low-Flow	Level II
December 13, 2017	M57-O	Low-Flow	Level II
	M58-O	Low-Flow	Level II
	M61-LFB	Low-Flow	Level II
December 14, 2017	M59-O	Low-Flow	Level II

Table 1. Summary of December 2017 Ambient Event			
Date	Sample Identification	Pump Style	Analyses
December 14, 2017	M60-O	Low-Flow	Level II
December 27, 2017	MW-01-O	Portable	Level II
December 28, 2017	MW-01-LBF	Portable	Level II

Table 2. Analytical Parameters		
Analysis	Method	Preservative
Inorganic Common Ions		
pH (lab)	SM 4500H+	None
Electroconductivity (EC) (lab)	SM 2510B	None
Bicarbonate Alkalinity	SM 2320B	None
Carbonate Alkalinity	SM 2320B	None
Hydroxide Alkalinity	SM 2320B	None
Total Alkalinity	SM 2320B	None
Chloride	EPA 300.0	None
Fluoride (Level I)	EPA 300.0	None
Nitrate as N	EPA 300.0	None
Nitrite as N	EPA 300.0	None
Sulfate (Level I)	EPA 300.0	None
Total Dissolved Solids (Level I)	SM 2540C	None
Cation/Anion Balance	Calculation	-
Cyanide	EPA 335.4	NaOH
Formation-Related Radiochemicals		
Gross Alpha	600/00-02	None
Gross Beta	900.0	None
Radium 226	903/GammaRay HPGE	None
Radium 228	904/GammaRay HPGE	None
Total Uranium Isotopes (if G. Alpha >12.0)	ASTM 6239	None
Radon 222	7500-Rn	None (Voas)
Total Uranium (unfiltered total as mg/L)	EPA 200.8	HNO3
Process-Related Organics		
Extractable Fuel Hydrocarbons (Diesel Range Organics)	EPA 8015D	None
Benzene	EPA 8260B	HCl Voas
Ethylbenzene	EPA 8260B	HCl Voas
Toluene	EPA 8260B	HCl Voas
Total Xylene	EPA 8260B	HCl Voas

Table 2. Analytical Parameters		
Analysis	Method	Preservative
Carbon Disulfide	EPA 8260B	HCl Voas
Napthalene	EPA 8260B	HCl Voas
Octane	EPA 8260B	HCl Voas
Trace Metals and Cations (Filtered-Dissolved)		
Aluminum	EPA 200.8	HNO3
Antimony	EPA 200.8	HNO3
Arsenic	EPA 200.8	HNO3
Barium	EPA 200.8	HNO3
Beryllium	EPA 200.8	HNO3
Calcium	EPA 200.7	HNO3
Cadmium	EPA 200.8	HNO3
Chromium	EPA 200.8	HNO3
Cobalt	EPA 200.8	HNO3
Copper	EPA 200.8	HNO3
Iron	EPA 200.7	HNO3
Lead	EPA 200.8	HNO3
Magnesium (Level I)	EPA 200.7	HNO3
Manganese	EPA 200.8	HNO3
Mercury	EPA 245.1	HNO3
Nickel	EPA 200.8	HNO3
Potassium	EPA 200.7	HNO3
Selenium	EPA 200.8	HNO3
Sodium	EPA 200.7	HNO3
Thallium	EPA 200.8	HNO3
Zinc	EPA 200.8	HNO3

Observations/Problems

1. MW-01-LBF and MW-01-O were sampled following well development. Multiple well volumes were purged during development.
2. Turbidity measurements above 5 NTUs were observed in M60-0, MW-01-LBF, and MW-01-O.

Table 3. Summary of Water Levels						
Sample Event:	Ambient Event 6				Measured By:	M. Orcutt/J. Joerger
Well ID	Sample Date	Depth to Water (feet bls)	Description of Measuring Point	Elevation of Measuring Point (feet amsl)	Water Level Elevation (feet amsl)	Comments
M52-UBF	12/12/2017	230.75	TOC	1485.04	1254.29	
M54-LBF	12/12/2017	230.11	TOC	1481.89	1251.78	
M54-O	12/12/2017	230.28	TOC	1482.40	1252.12	
M55-UBF	12/12/2017	226.45	TOC	1479.21	1252.76	
M56-LBF	12/12/2017	226.84	TOC	1478.69	1251.85	
M57-O	12/13/2017	225.53	TOC	1478.75	1253.22	
M58-O	12/13/2017	228.27	TOC	1481.16	1252.89	
M59-O	12/14/2017	227.49	TOC	1480.26	1252.77	
M60-O	12/14/2017	224.94	TOC	1477.45	1252.51	
M61-LBF	12/13/2017	228.49	TOC	1480.80	1252.31	
MW-01-LBF	12/28/2017	NM	TOC	NM	NA	Not Static
MW-01-O	12/27/2017	NM	TOC	NM	NA	Not Static

amsl = Above Mean Sea Level

TOC = Top of Casing

TOM = Top of Monument

NM = Not Measured

Table 4. Summary of Field Parameters						
Sample Event:	Ambient Event 6		Measured By:	M. Orcutt/J. Joerger		
Well ID	Sample Date	Temperature (°C)	pH	Conductivity (µmhos/cm)	Turbidity (NTU)	Comments
M52-UBF	12/12/2017	23.0	7.31	1,453	0.70	
M54-LBF	12/12/2017	22.9	7.31	1,539	3.28	
M54-O	12/12/2017	22.0	7.98	746	0.19	
M55-UBF	12/12/2017	22.6	7.20	1,509	3.43	
M56-LBF	12/12/2017	21.9	7.56	1,408	4.47	
M57-O	12/13/2017	22.0	7.74	862	1.25	
M58-O	12/13/2017	23.3	7.53	1,488	2.67	
M59-O	12/14/2017	21.8	7.83	818	1.07	
M60-O	12/14/2017	22.5	7.47	1,262	11.5	
M61-LBF	12/13/2017	23.9	8.04	789	2.60	
MW-01-LBF	12/28/2017	22.8	7.01	1,378	12.5	Development
MW-01-O	12/28/2017	25.2	7.02	1,323	8.29	Development

°C = degrees Celsius

°F = degrees Fahrenheit

µmhos/cm = Micromhos per Centimeter

NTU = Nephlometric Tubidity Units

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SITE VISITATION

JOB NAME: Florence **JOB NUMBER:** 149050

PERSONNEL: M Orcutt, J. Jaeger **DATE:** 12/12/2017

COMMENTS: Windy, cool. AM

0820 On site, Signed in for Mike and Jolene at front office. Jolene on site ~ 0745.
AirGas did not deliver Nitrogen so P/U 2-200 cf at 0700 this morning.
Tailgate safety meeting and mob to wells.
Warmed up BC's WQ Meters + rental Turb. meter.
Rental MP10H from equipco.
Calibrated meters.

0958 Sampled M54-O (M.O)
Sampled M54-LBF (J.J).

Sampled M55-UBF (J.J.)
1145 Sampled M56-LBF (M.O.)

1341 Sampled M52-UBF w/ Duplicate M63.0 @ 1400
1530 Samples to Ian for Turner labs.

1545 off site

12-12-17

C:\Temp\LocalCustDocs\Baptiste-Lord, Myla\Brown and Caldwell\Ordered Apr 19, 2013 12.05PM\Site visitation with 04-19-2013\WIP\Site visitation with Page Num_1.doc

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SITE VISITATION

JOB NAME: Florence **JOB NUMBER:** 149050

PERSONNEL: J. Joerger **DATE:** 12/13/2017

COMMENTS:

0715 onsite for New POC Ambient GW monitoring. signed in at Front desk, grabbed controller from storage unit.

0745 Spoke w/ Ian about plan for the day, mob to wells

0800 Set on M57-0, warmed up BC's WQ meter + rental turbidity meter

0830 Calibrated meters
* NO 10NTU standard, calibrated 0NTU + 1NTU

0908 Sampled M57-0
1130 Sampled M58-0
1250 pH check w 7pH standard
1330 Sampled M61-LBF

1515 Samples to Ian for Turner Labs

1530 OFF site

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SITE VISITATION

JOB NAME: Florence **JOB NUMBER:** 149050

PERSONNEL: J. Joerger **DATE:** 12/14/2017

COMMENTS:

0745 on site For New POC GW monitoring (Ambient)
grabbed controller from storage unit, mob to wells

0800 Set on M59-0 warmed up BC's YSI WQ meter
+ Rental turbidity meter

0825 Calibrated meters

0905 Sampled M59-0

1030 pH check w/ 7 pH standard

1110 Sampled M60-0

1245 Samples to Ian For Turner Labs

1300 Off site

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M52-UBF

SAMPLED BY: ~~M. Orcutt~~ J. Joergensen

DATE: 12 /12/2017

WELL INFORMATION

TD Casing: 275 feet

Static Depth to Water: 230.75 feet

System Purge before Params 2.6 liters

Time Purge Start: 1315 hours

Time Sample Start: 1329 hours

Time Purged: 14 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 237.5'
1329	23.2	7.32	1455	6.25	1.12	0.25	2.6	0.03	Clear, no odors
1333	23.2	7.32	1453	6.16	1.22	0.25	3.6	0.00	
1337	23.0	7.31	1454	6.19	0.71	0.25	4.6	0.00	
1341	23.0	7.31	1453	6.20	0.70	0.25	5.6	0.00	Lowered Flow For VOC's

Sample ID: M52-UBF Sample Time, 1341 Duplicate (ID = M63.0, Time 1400) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M54-LBF

SAMPLED BY: ~~M. Orcutt~~ J. Joerger

DATE: 12/12/2017

WELL INFORMATION

TD Casing: 630 feet

Static Depth to Water: 250.11 feet

System Purge before Params 3.9 liters

Time Purge Start: 0920 hours

Time Sample Start: 0940 hours

Time Purged: 20 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 470'
0940	22.6	7.55	1534	4.70	6.04	0.20	3.9	0.03	clear, no odor
0945	22.8	7.33	1539	4.17	3.82	0.20	4.9	0.00	
0950	22.9	7.32	1539	4.18	2.58	0.20	5.9	0.00	
0953	22.9	7.31	1539	4.17	3.28	0.33	6.9	0.00	Lowered Flow For VOC's

Sample ID: M54-LBF Sample Time, 0955 Duplicate (ID = NA, Time NA) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M54-O

SAMPLED BY: M. Orcutt

DATE : 12/12/2017

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 230.28 feet

System Purge before Params 9.2 liters

Time Purge Start: 0912 hours

Time Sample Start: 0958 hours

Time Purged: 46 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 1000'
0947	21.8	7.87	748	0.52	0.90	NO.25	10.0	0.00	clear, NO ODORS
0950	21.9	7.97	748	0.32	0.82		11.0	0.00	
0953	21.9	7.98	746	0.26	~~0.26~~ 0.25		12.0	0.00	
0956	22.0	7.98	746	0.23	0.19		13.0	0.00	
									Lowered flow for VOC's
									2,4,6,8

Sample ID: M54-O Sample Time, 0958 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M55-UBF

SAMPLED BY: ~~M. Orcutt~~ J. Joerger

DATE : 12 /12/2017

WELL INFORMATION

TD Casing: 260 feet

Static Depth to Water: 226.45 feet

System Purge before Params 2.8 liters

Time Purge Start: 1125 hours

Time Sample Start: 1138 hours

Time Purged: 13 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 250'
1138	22.6	7.22	1511	5.41	5.82	0.25	2.8	0.03	Clear, no odors
1142	22.6	7.21	1509	5.54	3.49	0.25	3.8	0.00	
1146	22.6	7.21	1510	5.35	3.54	0.25	4.8	0.00	
1150	22.6	7.20	1509	5.42	3.43	0.25	5.8	0.00	Lowered Flow For VOC's

Sample ID: M55-UBF Sample Time, 1150 Duplicate (ID = NA, Time NA) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M56-LBF

SAMPLED BY: M. Orcutt

DATE : 12/12/2017

WELL INFORMATION

TD Casing: 340 feet

Static Depth to Water: 226.94 feet

System Purge before Params 2.4 liters

Time Purge Start: 1123 hours

Time Sample Start: 1145 hours

Time Purged: 22 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 330'
1133	22.0	7.59	1403	1.36	7.00	NA 5	3.0	0.00	Clear, No ODORS
1136	22.0	7.57	1409	1.38	5.76		4.0	0.00	
1139	21.9	7.58	1407	1.34	4.17		5.0	0.01	
1142	21.9	7.56	1408	1.34	4.47		6.0	0.00	
									Lowered flow for VOC's

Sample ID: M56-LFB Sample Time, 1145 Duplicate (ID = N/A, Time N/A) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M57-O

SAMPLED BY: ~~M. Orcutt~~ J. Joerger

DATE: 12 /13/2017

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 225.53 feet

System Purge before Params 8.7 liters

Time Purge Start: 0820 hours

Time Sample Start: 0856 hours

Time Purged: 36 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 950'
0856	21.8	7.69	867	0.30	2.33	0.33	8.7	0.08	clear, no odors
0900	21.9	7.71	865	0.30	2.05	↓	9.7	0.03	
0903	22.0	7.74	862	0.26	2.07	↓	10.7	0.00	
0906	22.0	7.74	862	0.22	1.25	↓	11.7	0.00	
									Lowered Flow For VOC's

Sample ID: M57-O Sample Time, 0908 Duplicate (ID = NA, Time NA) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

HTT 1/11

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M58-O

SAMPLED BY: ~~M. Orcutt~~ J. Joerger

DATE: 12/13/2017

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 228.27 feet

System Purge before Params 8.7 liters

Time Purge Start: 1037 hours

Time Sample Start: 1130 hours

Time Purged: 53 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 950'
1113	23.2	7.47	1465	1.34	6.87	0.25	8.7	0.03	Clear, no odors
1117	23.2	7.49	1474	1.35	4.70	0.25	9.7	0.00	
1121	23.3	7.52	1484	1.34	2.90	0.25	10.7	0.00	
1125	23.3	7.53	1488	1.36	2.67	0.25	11.7	0.00	
									Lowered Flow For VOCs

Sample ID: M58-O Sample Time, 1130 Duplicate (ID = NA, Time NA) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

THL 1/1

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M59-O

SAMPLED BY: ~~M. Orcutt~~ J. Joerger

DATE : 12 /14/2017

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 227.49 feet

System Purge before Params 8.7 liters

Time Purge Start: 0812 hours

Time Sample Start: 0852 hours

Time Purged: 40 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 950'
0852	21.5	7.83	823	0.32	1.70	0.25	8.7	0.00	Clear, no odors
0856	21.6	7.84	822	0.31	1.72	0.25	9.7	0.00	
0900	21.7	7.84	819	0.27	1.68	0.25	10.7	0.00	
0904	21.8	7.83	818	0.26	1.07	0.25	11.7	0.00	
									Lowered Flow For VOC's

Sample ID: M59-O Sample Time, 0905 Duplicate (ID = NA, Time NA) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

~~IIII~~ III

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M60-O

SAMPLED BY: ~~M. Orcutt~~ J. Juerger

DATE: 12/14/2017

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: 224.94 feet

System Purge before Params 8.7 liters

Time Purge Start: 1016 hours

Time Sample Start: 1056 hours

Time Purged: 40 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 950'
1056	22.7	7.33	1267	1.62	48.6	0.25	8.7	0.02	Clear, no odors
1100	22.8	7.40	1272	1.60	28.3	0.25	9.7	0.02	
1104	22.6	7.45	1263	1.32	17.7	0.25	10.7	0.00	
1108	22.5	7.47	1262	1.22	11.5	0.25	11.7	0.00	
									Lowered Flow For VOCs

Sample ID: M60-O Sample Time, 1110 Duplicate (ID = NA, Time NA) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

~~HH~~ III

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: M61-LBF

SAMPLED BY: ~~M. Orcutt~~ J. Jcergec

DATE : 12 / 13/2017

WELL INFORMATION

TD Casing: 635 feet

Static Depth to Water: 228.49 feet

System Purge before Params 4.5 liters

Time Purge Start: 1246 hours

Time Sample Start: 1311 hours

Time Purged: 25 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate (L/min) <0.5L/min	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments QED Bladder Pump Intake 535'
1311	23.9	8.03	787	0.37	2.23	0.20	4.5	~~0.74~~	Clear, no odors
1316	23.9	8.04	793	0.35	2.31	0.20	5.5	0.08	
1321	23.9	8.05	775	0.30	2.43	0.20	6.5	0.87	
1326	23.9	8.04	789	0.27	2.60	0.20	7.5	0.92	
									Lowered Flow For VOC's

Sample ID: M61-LFB Sample Time, 1330 Duplicate (ID = NA, Time NA) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: MW-01-LBF

SAMPLED BY: S. Hensel

DATE: 12 / ~~27~~ 28 /2017

WELL INFORMATION

TD Casing: ~~630'~~ 440-SH feet

Static Depth to Water: – feet

System Purge before Params 5.0 liters

Time Purge Start: 1245 hours

Time Sample Start: 1420 hours

Time Purged: 95 minutes

Time	Temperature (°C) +/-3%	pH +/-0.1	EC (umhos/cm) +/-3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate ~~(L/min)~~ GPM ~~<0.5L/min~~	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments Submersable pump intake - SH ~~QED Bladder Pump Intake 580'~~
1245	22.9	7.05	1.377	–	28.7	60	–	–	Following well development
1310	23.8	7.01	1.369	–	17.7	60	–	–	
1330	22.0	7.06	1.377	–	17.3	60	–	–	
1350	22.9	7.05	1.372	–	16.1	60	–	–	
1400	23.4	7.02	1.363	–	15.0	60	–	–	
1410	22.8	7.01	1.378	–	12.5	60	5,700	–	
1420									collect sample

Sample ID: MW-01-LBF Sample Time, 1420 Duplicate (ID = –, Time –) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

GROUNDWATER SAMPLING FIELD DATA

PROJECT: Florence Copper

WELL ID: MW-01-O

SAMPLED BY: K. FORD

DATE: 12 / 27 /2017 to 12/28/2017

WELL INFORMATION

TD Casing: 1,200 feet

Static Depth to Water: – feet

System Purge before Params 9.2 liters

Time Purge Start: 2345 hours

Time Sample Start: 0040 hours

Time Purged: ~~65~~ 55 minutes

Time	Temperature (°C) +/- 3%	pH +/- 0.1	EC (umhos/cm) +/- 3%	DO (mg/L) 10% or <.5	Turbidity (NTU) 10% or <5	Pump Rate ~~(L/min)~~ GPM ~~<0.5L/min~~	Purge Volume (L)	Pulldown DTW (feet) <0.5 ft	Comments submersible pump intake 480' - SH ~~QED Bladder Pump Intake 1000'~~
2345	25.8	7.54	1.322	–	9.90	60	–	–	Following well development
2400	26.1	7.52	1.321	–	9.71	60	–	–	
0015	24.8	6.45	1.320	–	9.74	60	–	–	Calibrated YSI for pH
0025	25.4	6.72	1.326	–	9.14	60	–	–	
0040	–	–	–	–	–	–	–	–	Collected sample.
0050	25.2	7.02	1.325	–	8.29	60	3,360	–	

Sample ID: MW-01-O Sample Time, 0040 Duplicate (ID = – , Time –) Analyses Requested: Level II – Metals, Inorgs, Radios, BTEX, TPH-D

pH and TEMP CALIBRATION RECORD

Florence Copper Project

Instrument: 451556
SN: 15A102406
Probe SN: ~~600336~~ 660336 12/12/17

APP Sampling Event
Month: Dec
Year: 2017

Calibration Procedures:

-pH calibration/measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 4500 H pH.*** Gentle agitation or stirring of sample should maintained during pH calibration and sample analysis.

-Temperature measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2550 Temperature*** using an NIST traceable thermometer.

Calibration Standards Used:

Standard	Manufacturer	Lot#	Received	Expiration
4.00	Env. Supply	7GA124	12-6-17	Jan 18
7.00	↓	7GH158	11/30+12/12 2017	Aug 18
10.00		7GF884	12/7/17	Jun 19
7.00 Chk		7GG099	12/12/17	July 18

Calibration Record

Date	Time	Sampler	pH 4.00		pH 7.00		pH 10.00		pH 7.00Chk		Temp Chk*	Notes**
			T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	T (°C)	
12-12-17	0922	MBrett	12.6	4.00	12.9	6.99	12.5	10.0	14.4	6.98		

* Temperature check performed with second NIST thermometer.
** If meter does not provide slope, ensure that the calibration is confirmed with a recheck of pH 7.0 in the column "pH 7.00Chk".
***Perform 7-Check every 10 measurements or if Temperature increases by 15 °F.
**** All maintenance to instrument during the field event should be logged on this form. All maintenance should also be logged on the "Preventative Maintenance" log.

pH and TEMP CALIBRATION RECORD

Florence Copper Project

Instrument: YSI Proseries Quatro
SN: 17G100991
Probe SN: 17F100867

APP Sampling Event
Month: December
Year: 2017

Calibration Procedures:

-pH calibration/measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 4500 H pH.*** Gentle agitation or stirring of sample should maintained during pH calibration and sample analysis.

-Temperature measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2550 Temperature*** using an NIST traceable thermometer.

Calibration Standards Used:

Standard	Manufacturer	Lot#	Received	Expiration
4.00	EnviroSupplySer	7GF1144	12/10/2017	Jun/19
7.00	↓	7GH158	12/12/2017	Aug/19
10.00	↓	7GF884	12/10/2017	Jun/19
7.00 Chk	↓	7GG099	12/12/2017	Jul/19

Calibration Record

Date	Time	Sampler	pH 4.00		pH 7.00		pH 10.00		pH 7.00Chk		Temp Chk*	Notes**
			T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	T (°C)	
12/12	0830	J. Joerger	14.3	3.99	14.7	7.00	14.4	10.02	15.0	7.01		
12/12	1320	J Joerger	–	–	–	–	–	–	20.7	6.99		
12/13	0830	J. Joerger	16.5	4.00	16.6	7.00	16.4	10.01	16.3	6.98		
12/13	1250	J. Joerger	–	–	–	–	–	–	22.0	6.99		
12/14	0825	J. Joerger	14.4	4.00	14.0	7.00	13.8	10.00	13.6	6.99		
12/14	1030	J. Joerger	–	–	–	–	–	–	21.8	6.98		

* Temperature check performed with second NIST thermometer.
** If meter does not provide slope, ensure that the calibration is confirmed with a recheck of pH 7.0 in the column "pH 7.00Chk".
***Perform 7-Check every 10 measurements or if Temperature increases by 15 °F.
**** All maintenance to instrument during the field event should be logged on this form. All maintenance should also be logged on the "Preventative Maintenance" log.

EC and DO CALIBRATION RECORD

Florence Copper Project

Instrument: BC'S 151556
SN: 15A0240G
Probe SN: 600336

APP Sampling Event
Month: DEC
Year: 2017

Calibration Procedures:

-EC calibration/measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2510 Conductivity.***

-Temperature measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2550 Temperature*** using an NIST traceable thermometer.

-DO calibration/measurement should be performed as per manufacturer recommendations.

Calibration Standards Used:

Standard Conc.	Manufacturer	Lot#	Received	Expiration
1413	EnviSupply	7GH324	12/12/17	Aug 18
(check)				

Calibration Record

Date	Time	Sampler	Specific Conductance						DO calibration performed?	Notes*
			EC 1413		EC 1413		EC 1413 Chk			
			T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	Yes/No	
12-12-17	0940	M. Ohm			15.6	1413	N/A		Yes	100% SAT 771 mm/Hg

* All maintenance to instrument during the field event should be logged on this form. All maintenance should also be logged on the "Preventative Maintenance" log.

EC and DO CALIBRATION RECORD

Florence Copper Project

Instrument: YSI Proseries Quatro
SN: 17G100991
Probe SN: 17F100867

APP Sampling Event
Month: December
Year: 2017

Calibration Procedures:

-EC calibration/measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2510 Conductivity.***

-Temperature measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2550 Temperature*** using an NIST traceable thermometer.

-DO calibration/measurement should be performed as per manufacturer recommendations.

Calibration Standards Used:

Standard Conc.	Manufacturer	Lot#	Received	Expiration
1413uS/cm	EnviroSupply serv.	7GH324	12/12/17	Aug/2018
(check)				

Calibration Record

Date	Time	Sampler	Specific Conductance						DO calibration performed?	Notes*
			EC 1413		EC_____		EC 1413 Chk			
			T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	Yes/No	
12/12	0820	J. Joerger	14.5	1413			NA		Yes	100% sat
12/13	0825	J. Joerger	14.4	1413			NA		Yes	100% sat
12/14	0815	J. Joerger	14.4	1413			NA		Yes	100% Sat

* All maintenance to instrument during the field event should be logged on this form. All maintenance should also be logged on the "Preventative Maintenance" log.

TURBIDITY CALIBRATION RECORD

Florence Copper Project

Instrument: La Motte 2020e
SN: 10969
Probe SN: N/A

APP Sampling Event
Month: DEC 2
Year: 2017

Calibration Procedures:

-Calibration/measurement should be performed in accordance with protocols set forth by ***USEPA Method 180.1*** using an NIST traceable thermometer.

Calibration Standards Used:

Standard	Manufacturer	Lot#	Received	Expiration
0 NTU	AMCO	C691307	2/13/17	5/18
1 NTU	↓	C5822178	5/1/17	1/18
10 NTU	↓	C6898403	2/13/17	5/18
1 NTU Chk	↓	C5822178	5-1-17	1/18

Calibration Record

Date	Time	Sampler	0 NTU	1 NTU	10 NTU	1 NTU Chk	Notes**
12/12/17	0945	M. Orat	0.00	0.99	10.02	1.00	

TURBIDITY CALIBRATION RECORD

Florence Copper Project

Instrument: LaMotte 2020e
SN: ME-10960
Probe SN:

APP Sampling Event
Month: December
Year: 2017

Calibration Procedures:

-Calibration/measurement should be performed in accordance with protocols set forth by ***USEPA Method 180.1*** using an NIST traceable thermometer.

Calibration Standards Used:

Standard	Manufacturer	Lot#	Received	Expiration
0 NTU				
1 NTU				
10 NTU				
1 NTU Chk				

Calibration Record

Date	Time	Sampler	0 NTU	1 NTU	10 NTU	1 NTU Chk	Notes**
12/12	0910	J. Joerger	0.00	1.01	9.98	1.01	Rental from Terratech
12/13	0830	J. Joerger	0.01	0.99		0.98	NO 10 NTU Standard
12/14	0830	J. Joerger	0.00	0.99		0.99	"

pH and TEMP CALIBRATION RECORD

Florence Copper Project

Instrument: YSI Pro 1030
SN: 15A100392
Probe SN: 14L100171

APP Sampling Event
Month: December
Year: 2017

Calibration Procedures:

-pH calibration/measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 4500 H pH.*** Gentle agitation or stirring of sample should maintained during pH calibration and sample analysis.

-Temperature measurement should be performed in accordance with protocols set forth by ***Standard Methods for the Examination of Water and Wastewater – 2550 Temperature*** using an NIST traceable thermometer.

Calibration Standards Used:

Standard	Manufacturer	Lot#	Received	Expiration
4.00	HACH	AZ246	12/27/17	Sep-21
7.00	HACH	AZ254	12/27/17	Sep-19
10.00	HACH	AZ222	12/27/17	Aug-18
7.00 Chk	–	–	–	–

Calibration Record

Date	Time	Sampler	pH 4.00		pH 7.00		pH 10.00		pH 7.00Chk		Temp Chk*	Notes**
			T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	T (°C)	Cal.	T (°C)	
12-28-17	0815	KF + SH	–	–	10.9	7.00	9.2	10.02	–	–	–	YSI would not reach pH 4.00, 2 pt cal w ran

* Temperature check performed with second NIST thermometer.
** If meter does not provide slope, ensure that the calibration is confirmed with a recheck of pH 7.0 in the column "pH 7.00Chk".
***Perform 7-Check every 10 measurements or if Temperature increases by 15 °F.
**** All maintenance to instrument during the field event should be logged on this form. All maintenance should also be logged on the "Preventative Maintenance" log.

TURBIDITY CALIBRATION RECORD

Florence Copper Project

Instrument: HACH 2100Q
SN: 14090C035590
Probe SN: NA

APP Sampling Event
Month: December
Year: 2017

Calibration Procedures:

-Calibration/measurement should be performed in accordance with protocols set forth by ***USEPA Method 180.1*** using an NIST traceable thermometer.

Calibration Standards Used:

Standard	Manufacturer	Lot#	Received	Expiration
0 NTU	–	–	–	–
1 NTU	–	–	–	–
10 NTU	HACH	A4274	12/27/17	Jan 16
1 NTU Chk	–	–	–	–

Calibration Record

Date	Time	Sampler	0 NTU	1 NTU	10 NTU	1 NTU Chk	Notes**
~~16~~ 17-27-17	2350	KFOSTER			10.8		

YSI 556 NEW JAN 28, 2015

1/28/15

No Maint. Required

3/26/15

5/4/2015 DO not calibrating -
M. Orcutt Replaced DO Sensor membrane
Recalibration OK. (Florence).

5/7/2015 NIST Thermometer check.
M. Orcutt BC-1A Model 4146 Exp 11/8/2015
1°C from YSI 556 Temp.

8/10/2015
M. Orcutt pH not calibrating.
F.C. Forced readings -
Uncalibrated and pH 7.0
Re Calib. check OK. MV +140
at pH 7.0

8/13/2015 Replaced pH/ORP Sensor
M. Orcutt +0.6 MV - good

Scale: 1 square = _____

2016

Aug 9, - Ernies
M. Orcutt D.O. Fluid Replace
and D.O. Tip replaced

Aug 26 Replaced DO Tip
w/ new fluid.
M. Orcutt Andrews property

Sept. 6 M. Orcutt NWR
YSI pH failure.
Replaced pH/ORP Sensor
Equipco - repair.

Nov 10, 2016 M. Orcutt
Florence
Replaced YSI 556 pH/ORP Sensor

Nov 11, 2016 NIST Thermometer
check @ Florence (W15859378)
18.4°C - YSI / 19.4°C NIST (1°C)

Scale: 1 square = _____

Rite in the Rain

OLD pH Sensor report

pH	mV	Reading	Temp
pH 7	·29	7.00	24.8 °C
4	+85.9	4.00	8524.4 °C
10	-141.4	10.01	24.6

* pH 7 ok,
pH 4, 10 forced,

Changed Sensor (pH, ORP)

Scale: 1 square = _____

Scale: 1 square = _____

Calibration Certificate No. 1750.01

Calibration complies with ISO/IEC 17025, ANSI/NCSL Z540-1, and 9001

Cert. No.: 4353-7200114

Traceable® Certificate of Calibration for Extra-Long-Stem Thermometer

Instrument Identification:

Model: 4353 S/N: 151850378 Manufacturer: Control Company

Standards/Equipment:

Description	Serial Number	Due Date	NIST Traceable Reference
Temperature Calibration Bath TC-179	A45240		
Thermistor Module	A17118	3/03/16	1000371058
Temperature Probe	3039	4/02/16	15--A0P2S-20-1
Temperature Calibration Bath TC-231	A79341		
Digital Thermometer	130070752	2/20/16	4000-6561724

Certificate Information:

Technician: 68 Procedure: CAL-03 Cal Date: 11/10/15 Due Date: 11/10/17

Test Conditions: 24.7°C 46.0 %RH 1018 mBar

Calibration Data: (New Instrument)

Unit(s)	Nominal	As Found	In Tol	Nominal	As Left	In Tol	Min	Max	±U	TUR
°C		N.A.		0.000	0.3	Y	-1.0	1.0	0.10	>4:1
°C		N.A.		100.000	99.9	Y	99.0	101.0	0.059	>4:1

This Instrument was calibrated using Instruments Traceable to National Institute of Standards and Technology.

A Test Uncertainty Ratio of at least 4:1 is maintained unless otherwise stated and is calculated using the expanded measurement uncertainty. Uncertainty evaluation includes the instrument under test and is calculated in accordance with the ISO "Guide to the Expression of Uncertainty in Measurement" (GUM). The uncertainty represents an expanded uncertainty using a coverage factor k=2 to approximate a 95% confidence level. In tolerance conditions are based on test results falling within specified limits with no reduction by the uncertainty of the measurement. The results contained herein relate only to the item calibrated. This certificate shall not be reproduced except in full, without written approval of Control Company.

Nominal=Standard's Reading; As Left=Instrument's Reading; In Tol=In Tolerance; Min/Max=Acceptance Range; ±U=Expanded Measurement Uncertainty; TUR=Test Uncertainty Ratio; Accuracy=±(Max-Min)/2; Min = As Left Nominal(Rounded) - Tolerance; Max = As Left Nominal(Rounded) + Tolerance; Date=MM/DD/YY

Nicol Rodriguez, Quality Manager

Aaron Judice, Technical Manager

Maintaining Accuracy:

In our opinion once calibrated your Extra-Long-Stem Thermometer should maintain its accuracy. There is no exact way to determine how long calibration will be maintained. Extra-Long-Stem Thermometers change little, if any at all, but can be affected by aging, temperature, shock, and contamination.

Recalibration:

For factory calibration and re-certification traceable to National Institute of Standards and Technology contact Control Company.

CONTROL COMPANY 4455 Rex Road Friendswood, TX 77546 USA
Phone 281 482-1714 Fax 281 482-9448 service@control3.com www.control3.com

Control Company is an ISO 17025:2005 Calibration Laboratory Accredited by (A2LA) American Association for Laboratory Accreditation, Certificate No. 1750.01.
Control Company is ISO 9001:2008 Quality Certified by (DNV) Det Norske Veritas, Certificate No. CERT-01805-2006-AQ-HOU-RvA.
International Laboratory Accreditation Cooperation (ILAC) - Multilateral Recognition Arrangement (MRA).

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BROWN AND CALDWELL

Acknowledgement Form

Name of Project/Site: Curis/ Florence Copper	**Project No:** 149505
Project/Site Location: Florence, Arizona	**Permit Type (APP, AZPDES):** APP
Employee Completing Form: (Print and Sign): Michael Orcutt	**Date:** 1/31/2017

Employee Acknowledgement:

The following signatures indicate that these personnel have read and/or been briefed on the documents indicated and understand the work to be performed:

- [x] pH by SM 4500 H-B
- [x] temperature by SM 2550B
- [x] specific conductance by SM 2510 B
- [x] dissolved oxygen by SM 4500 O-G
- [x] turbidity by EPA 180.1
- [ ] Manufacturer Info for Instrument _____
- [ ] Manufacturer Info for Instrument _____

Print	Sign
M. Orcutt	

Comments

TURNER LABORATORIES INC
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 17L0412 DATE 12-12-2017 PAGE 2 OF 2

PROJECT NAME Florence Copper # _____
CONTACT NAME: ~~Brown + Co~~ Barb Sylvester
COMPANY NAME: Brown and Caldwell
ADDRESS: 201 E. Washington #500
CITY Phoenix STATE AZ ZIP CODE 85004
PHONE 602.562.4000 FAX -4001
SAMPLER'S SIGNATURE [signature]

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	VOC's/Organic 13+	Cyanide (Free)	Inorganic 13+	TPH/DRO	DISS. Metals-13+	Total Uranium	Radio Chem	Radon 222
MS4-LBF	12-12-17	0955		GW	12	X	X	X	X	X	X	X	X
MS5-LBF	↓	1150		GW	12	X	X	X	X	X	X	X	X
MS2-LBF		1341		GW	12	X	X	X	X	X	X	X	X
MG3,0		1400		GW	12	X	X	X	X	X	X	X	X
TB	↓	—		DI	1	X							

1. RELINQUISHED BY: [signature]
Signature: Jolene Jorger
Printed Name: Brown + Caldwell
Firm: 12/12/2017 1530
Date/Time

2. RECEIVED BY: [signature]
Signature: Ian Ream
Printed Name: FC
Firm: 12/12/17/1530
Date/Time

TURNAROUND REQUIREMENTS:
___ Standard (approx.10 days)*
___ Next day ___ 2 Day ___ 5 Day*
___ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
___ I. Routine Report
K II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ___ Y ___ N
P.O. # _____
Bill to: Florence Copper

SAMPLE RECEIPT:
Total Containers 49
Temperature 7.3
☒ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY: [signature]
Signature: Ian Ream
Printed Name: FC
Firm: 12/12/17 1643
Date/Time

4. RECEIVED BY: [signature]
Signature: Joseph Castalo
Printed Name: TURNER LABORATORIES, INC.
Firm: 12/12/17 1643
Date/Time

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes ☐ No	Custody Seals	☐	Preservation Confirmation	☒
ADEQ Forms:	☐ Yes ☐ No	Container Intact	☒	Appropriate Head Space	☒
Mail ADEQ Forms:	☐ Yes ☐ No	COC/Labels Agree	☒	Received Within Hold Time	☒

DISS. Metals field filtered, See Analytical 13+ w/ COC
* Radiochem Radon to lab by RC

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1710413 DATE 12-12-2017 PAGE 1 OF 2

PROJECT NAME Florence Copper # _____
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown + Caldwell
ADDRESS: 201 E. Washington #500
CITY Phoenix STATE AZ ZIP CODE 85004
PHONE 602.567.4000 FAX -4001
SAMPLER'S SIGNATURE _____

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	VOC's (Organic list)	Cyanide (Free)	Inorganic (list)	TPH DRO	Diss. Metals (list)	Total Uranium	Radio Chem (list)	Radon ZZZ
MS4-O	12-12-17	0958		GW	12	X	X	X	X	X	X	X	X
MS6-LBF	12-12-17	1145		GW	12	X	X	X	X	X	X	X	X
TB	12-12-17	—		DI ~~DI~~	1	X							

1. RELINQUISHED BY: Signature _____ Michael Orwell Printed Name Brown + Caldwell Firm 12-12-17 1530 Date/Time

2. RECEIVED BY: Signature _____ Ian Ream Printed Name FC Firm 12-12-17 Date/Time

TURNAROUND REQUIREMENTS:
____ Standard (approx.10 days)*
____ Next day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
☒ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ☒ Y ____ N
P.O. # _____
Bill to: Florence Copper

SAMPLE RECEIPT:
Total Containers 25
Temperature 7.3
☒ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY: Signature _____ Ian Ream Printed Name FC Firm 12-12-17 Date/Time

4. RECEIVED BY: Signature _____ Joseph Catalano Printed Name TURNER LABORATORIES, INC. Firm 12/12/17 1643 Date/Time

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes ☐ No	Custody Seals	☐	Preservation Confirmation	☒
ADEQ Forms:	☐ Yes ☐ No	Container Intact	☒	Appropriate Head Space	☒
Mail ADEQ Forms:	☐ Yes ☐ No	COC/Labels Agree	☒	Received Within Hold Time	☒

Diss. Metals field filtered, See Analytical list w/COC, * Radio Chem + Radon to Lab by

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1710447 DATE 12/13/2017 PAGE 1 OF 1

PROJECT NAME Florence Copper #
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown + Caldwell
ADDRESS: 201 E. Washington #500
CITY Phoenix STATE AZ ZIP CODE 85004
PHONE 602-567-4000 FAX -4001
SAMPLER'S SIGNATURE

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	VOCs/Organic list	Cyanide (Free)	Inorganic (list)	TPH/DRO	Diss. Metals (list)	Total Uranium	Radio Chem (list)	Radon 222
MS7-0	12/13/17	0908		GW	12	X	X	X	X	X	X	X	X
MS8-0	12/13/17	1130		GW	12	X	X	X	X	X	X	X	X
M61-LBF	12/13/17	1330		GW	12	X	X	X	X	X	X	X	X
T.B.	12/13/17	—		DI	1	X							

1. RELINQUISHED BY:
Signature
Joere Joerger
Printed Name
Brown + Caldwell
Firm
12/13/17 / 1530
Date/Time

2. RECEIVED BY:
Signature
Ian Ream
Printed Name
F-C
Firm
12/13/17 - 1530
Date/Time

TURNAROUND REQUIREMENTS:
____ Standard (approx.10 days)*
____ Next day ____ 2 Day ____ 5 Day*
____ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
____ III. Date Validation Report (includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ____ Y ____ N
P.O. # ____
Bill to: ____

SAMPLE RECEIPT:
Total Containers 37
Temperature 2.1
☒ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY:
Signature
Ian Ream
Printed Name
F-C
Firm
12/13/17 - 1640
Date/Time

4. RECEIVED BY:
Signature
Joseph Catakno
Printed Name
TURNER LABORATORIES, INC.
Firm
12/13/17 1640
Date/Time

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes ☐ No	Custody Seals	☐	Preservation Confirmation	☒
ADEQ Forms:	☐ Yes ☐ No	Container Intact	☒	Appropriate Head Space	☒
Mail ADEQ Forms:	☐ Yes ☐ No	COC/Labels Agree	☒	Received Within Hold Time	☒

Diss. Metals Field Filtered / Watch holds
* See Analysis list w/ COC

TURNER LABORATORIES INC.
2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 1710473 DATE 12/14/2017 PAGE 1 OF 1

PROJECT NAME Florence Copper #
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown + Caldwell
ADDRESS: 201 E Washington #800
CITY Phoenix STATE AZ ZIP CODE 85004
PHONE 602-567-4000 FAX
SAMPLER'S SIGNATURE

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	VOCs/organic list.	Cyanide (Free)	Inorganic (list)	Total TPH-DRO	Diss. Metals (list)	Total Uranium	Radio Chem (list)	Radon 222
MS9-0	12/14/17	0905		GW	12	X	X	X	X	X	X	X	X
M60-0	12/14/17	1110		GW	12	X	X	X	X	X	X	X	X
T.B.	12/14/17	—		D.I	1	X							

1. RELINQUISHED BY:
Signature
Jolene Joerger
Printed Name
Brown+Caldwell
Firm
12/14/17 1230
Date/Time

2. RECEIVED BY:
Signature
Ian Beam
Printed Name
FC
Firm
12-14-17 /1230
Date/Time

TURNAROUND REQUIREMENTS:
____Standard (approx.10 days)*
____Next day ____2 Day ____5 Day*
____ Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
____ I. Routine Report
____ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
____ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ____Y ____N
P.O. # ____
Bill to: ____

SAMPLE RECEIPT:
Total Containers 25
Temperature 2.8
☒ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY:
Signature
Ian Beam
Printed Name
FC
Firm
12-14-17/1645
Date/Time

4. RECEIVED BY:
Signature
Joseph Cutaia
Printed Name
TURNER LABORATORIES, INC.
Firm
12/14/17 1645
Date/Time

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes	☐ No	Custody Seals	☐	Preservation Confirmation	☒
ADEQ Forms:	☐ Yes	☐ No	Container Intact	☒	Appropriate Head Space	☒
Mail ADEQ Forms:	☐ Yes	☐ No	COC/Labels Agree	☒	Received Within Hold Time	☒

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 17L0634 DATE 12/28/17 PAGE 1 OF 1

PROJECT NAME Florence Copper
CONTACT NAME: Barb Sylvester
COMPANY NAME: Brown + Caldwell
ADDRESS: 201 E. Washington St. #500
CITY _____ STATE _____ ZIP CODE
PHONE 602-567-4000 FAX
SAMPLER'S SIGNATURE

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	VOC's (organics List)	Cyanide (Free)	Inorganics (List)	TPH (DRO)	Diss metals (List)	Total Uranium	Radio Chem (List)	Radon 222
MW01-0	12-28	0040		GW	12	X	X	X	X	X	X	X	X
MW01-LBF	12-28-17	1420		GW	12	X	X	X	X	X	X	X	X

1. RELINQUISHED BY:
Signature: Scott Hessel
Printed Name: Hydro and Air Sciences
Firm: 12/28/17 / 1500
Date/Time

2. RECEIVED BY:
Signature: Ian Ream
Printed Name: FC
Firm: 12-28-2017 / 1500
Date/Time

TURNAROUND REQUIREMENTS:
X Standard (approx.10 days)*
___Next day ___2 Day ___5 Day*
___Email Preliminary Results To:
* Working Days

REPORT REQUIREMENTS:
X I. Routine Report
___ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account ___Y ___N
P.O. # _____
Bill to: _____

SAMPLE RECEIPT:
Total Containers 24
Temperature 7 to 8
☒ Wet Ice ☐ Blue Ice

3. RELINQUISHED BY:
Signature: Ian Ream
Printed Name: FC
Firm: 12-28-2017
Date/Time: 1637

4. RECEIVED BY:
Signature: Joseph Catalano
Printed Name: TURNER LABORATORIES, INC.
Firm: 12/28/17
Date/Time: 1637

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis:	☐ Yes ☐ No	Custody Seals	☐	Preservation Confirmation	☒
ADEQ Forms:	☐ Yes ☐ No	Container Intact	☒	Appropriate Head Space	☒
Mail ADEQ Forms:	☐ Yes ☐ No	COC/Labels Agree	☒	Received Within Hold Time	☒

Diss metals field filtered / watch holds
x See LIST w/ COCs -

Florence Copper Project
New POC Wells - Ambient Monitoring

Inorganics - 500 ml Poly Unpreserved

pH (lab)
EC (lab)
Bicarbonate Alkalinity
Carbonate Alkalinity
Hydroxide Alkalinity
Total Alkalinity
Chloride
Fluoride
Nitrate as N (48-hr Hold time)
Nitrite as N (48-hr Hold time)
Sulfate
Total Dissolved Solids
Cation/Anion Balance

500 ml NaOH

Cyanide (free)

Organics

3 HCl Voas

Benzene
Ethylbenzene
Toluene
Total Xylene
Napthalene
Octane
Carbon Disulfide

2 1L Amber to TestAmerica

Extractable Fuel Hydrocarbons
(Diesel Range Organics)

Filtered Dissolved Metals - 250 ml NO3

Aluminum
Antimony
Arsenic
Barium
Beryllium
Cadmium
Calcium
Chromium
Cobalt
Copper
Iron
Lead
Magnesium
Manganese
Mercury
Nickel
Potassium
Selenium
Sodium
Thallium
Zinc

UNFiltered Total Metals - 250 ml NO3

Total Urnanium

Radiochems to Radiation Safety

1G unpreserved poly

Gross Alpha
Gross Beta
Radium 226+228

Uranium istotopes (if G. Alpha >12.0)

Adjusted Alpha (if G. Alpha >12.0)

2 blank Voas - 72 Hour Hold Time

Radon