ATTACHMENT E-6

Groundwater Sampling Field Logs (April 2018), CSIs

AEM Groundwater Sampling Field Log

AEM Project: Ingersoll Rand-Sylvania Remediation AEM Job No.: 1162-1801-2 Well No.: SP-5

Sampling Personnel: G. Ingle/~~D. McCartha~~/~~R. Oliver~~ Date: 4/4/18

Comments: Time In: 1040 Time Out: 1125

Well Information

Well Diameter: 2.0 inches Reference Point Marked: (Yes) No

Depth to Water: 7.88 feet below T.O.C. Well Depth: 10.58 feet below T.O.C.

0.04 gal/ft in 1-inch-ID well
0.16 gal/ft in 2-inch-ID well
0.65 gal/ft in 4-inch-ID well

Purging Information

Water Column: 2.70 ft

1 Well Volume= 0.43 gal

3 Well Volume= 1.30 gal

Total Purged: 1.35 gal

Well Purge Dry (?) yes/(no)

Purge Method (check): ■ Traditional Purge ☐ Tubing In-Screen Method

Purge Start Time: 1051

Purge End Time: 1113

Total Time: 22 min

Purge Rate: 0.06 gpm

Purging Equipment and Calibration Information

Bailer: ☐ Teflon ☐ Poly. Pump: ☐ Grundfos ■ Peri. ID# P-8

Pump Tubing Type: ☐ Teflon ■ Teflon-Lined Poly. ☐ Polyethylene

Meter(s) Used: ■ Hanna 991300 ☐ YSI 556 ■ Lamotte 2020 ID#'s 3, 7

Calibration Date/Time: 4/4/18, 0835

Comments:

Groundwater Field Parameters

Time	Gallons Purged	Temp. Deg. Cel	Cond. mS/cm	pH SU	Dissolved Oxygen mg/L	ORP mV	Turbidity NTUs	Water Level ft. from TOC
1057	0.30	22.2	~~0.14~~ 0.13	4.97	—	—	1.82	9.21
1103	0.65	20.2	0.13	4.91	—	—	1.46	8.99
1109	1.10	19.8	0.13	4.89	—	—	1.35	9.29
1112	1.30	19.8	0.13	4.88	—	—	1.34	9.37
Stabilization Info:		+/- 0.5 deg.	+/- 5%	+/- 0.1 SU	-----	-----	<10 NTUs	-----

Sample Collection Parameters

Sample Collection Method (check all): ☐ Bailer ☐ Straw Method ☒ Pump Tubing ☐ Vacuum Jug ☐ Other

Final Tubing/Pump Depth: ~10' feet below T.O.C

Final Groundwater Depth (if applic. 9.37 feet below T.O.C

Final Sample Turbidity 1.34 NTUs

Ferrous Iron Concentration (if sampled): — mg/L

Comments:

Laboratory Analytical Information

Sample ID	Analysis	Container	Qty.	Preservative	Time Sampled
	VOCs (Full List)	40 ml glass vials		HCl + Ice	
	1,4-Dioxane	40 ml glass vials		HCl + Ice	
	Sulfide	500 ml HDPE		Zn. Acetate/NaOH	
SP-5	~~Metals~~ COPPER	250 ml HDPE	1	HNO3 + Ice	1115
SP-5	Cyanide	500 ml HDPE	1	NaOH + Ice	1115
	SVOCs	1000 ml HDPE		Ice	
	Herbicides(Dinoseb)	1000 ml HDPE		Ice	

Sample Laboratory: ■ AES ☐ ACL ☐ TA ☐ XENCO Delivery Method: ■ Hand Delivery ☐ Fed Ex ☐ UPS

Field Personnel Signature:

AEM Groundwater Sampling Field Log

AEM Project: Ingersoll Rand-Sylvania Remediation AEM Job No.: 1162-1801-2 Well No.: SP-7

Sampling Personnel: Gerald Ingle Date: 4/3/18

Comments: Time In: 1830 Time Out: 4/6/18 0900

Well Information

Well Diameter: 2.0 inches Reference Point Marked: (Yes) No

Depth to Water: ~~5.95~~ feet below T.O.C. Well Depth: 10.99 feet below T.O.C.

0.04 gal/ft in 1-inch-ID well
0.16 gal/ft in 2-inch-ID well
0.65 gal/ft in 4-inch-ID well

Purging Information

Water Column: 5.95 ft

1 Well Volume= 0.95 gal

3 Well Volume= 2.86 gal

Total Purged: 1.1 gal

Well Purge Dry (?) yes no

Purge Method (check): ☒ Traditional Purge ☐ Tubing In-Screen Method

Purge Start Time: 1848

Purge End Time: 1859

Total Time: 11 min

Purge Rate: 0.10 gpm

Purging Equipment and Calibration Information

Bailer: ☐ Teflon ☐ Poly. Pump: ☐ Grundfos ☒ Peri. ID# P-8

Pump Tubing Type: ☐ Teflon ☒ Teflon-Lined Poly. ☐ Polyethylene

Meter(s) Used: ☒ Hanna 991300 ☐ YSI 556 ☒ Lamotte 2020 ID#'s 37

Calibration Date/Time: 4/3/18, 1815

Comments:

Groundwater Field Parameters

Time	Gallons Purged	Temp. Deg. Cel	Cond. µS/cm	pH SU	Dissolved Oxygen mg/L	ORP mV	Turbidity NTUs	Water Level ft. from TOC
1856	1.0	24.5	5.56	8.56	—	—	3.81	>9.50'
1859	DRY @	1.1	GALLONS					
Stabilization Info:		+/- 0.5 deg.	+/- 5%	+/- 0.1 SU	-----	-----	<10 NTUs	-----

Sample Collection Parameters

Sample Collection Method (check all): ☐ Bailer ☒ Straw Method ☒ Pump Tubing ☐ Vacuum Jug ☐ Other

Final Tubing/Pump Depth: ~9' feet below T.O.C

Final Groundwater Depth(if applic. >9.56 feet below T.O.C

Final Sample Turbidity 5.59 NTUs

Ferrous Iron Concentration (if sampled): — mg/L

Comments: STRAW METHOD FOR VOCs ONLY

Laboratory Analytical Information

Sample ID	Analysis	Container	Qty.	Preservative	Time Sampled
SP-7	Appendix IX VOCs	40 ml. glass	4	Ice	0900, 4/4/18
SP-7	Appendix IX Total Cyanide	500 ml. HDPE	1	NaOH + Ice	0900, 4/4/18
SP-7	Appendix IX Metals	500 ml. HDPE	1	Ice	0900, 4/4/18
SP-7	Appendix IX Sulfide	500 ml. HDPE	1	Zinc Acet./NaOH	0900, 4/4/18
SP-7	App. IX Base/Neutral Acids	1000 ml. glass amber	2	None	0900, 4/4/18
	App. IX Pest./PCBs	1000 ml. glass amber		None	
SP-7	App. IX Herbicides	1000 ml. glass amber	1	None	0900, 4/4/18
	App. IX Dioxins/Furans	1000 ml. glass amber		None	
	App. IX Extra Sample	1000 ml. glass amber		None	

NOTE: METALS AND VOC VIALS UNPRESERVED DUE TO HIGH CYANIDE

Sample Laboratory: ☒ AES ☐ ACL ☐ TA ☐ XENCO Delivery Method: ☒ Hand Delivery ☐ Fed Ex ☐ UPS

Field Personnel Signature:

AEM Groundwater Sampling Field Log

AEM Project: Ingersoll Rand-Sylvania Remediation AEM Job No.: 1162-1801-2 Well No.: SP-8A

Sampling Personnel: G. Ingle/D. ~~McCartha~~/R. ~~Oliver~~ Date: 4/4/18

Comments: Time In: 1450 Time Out: 1555

Well Information

Well Diameter: 2.0 inches Reference Point Marked: (Yes) No

Depth to Water: 4.30 feet below T.O.C. Well Depth: 11.64 feet below T.O.C.

0.04 gal/ft in 1-inch-ID well
0.16 gal/ft in 2-inch-ID well
0.65 gal/ft in 4-inch-ID well

Purging Information

Water Column: 7.34 ft

1 Well Volume= 1.17 gal

3 Well Volume= 3.52 gal

Total Purged: 4.00 gal

Well Purge Dry (?) yes/(no)

Purge Method (check): ■ Traditional Purge ☐ Tubing In-Screen Method

Purge Start Time: 1453

Purge End Time: 1537

Total Time: 44 min

Purge Rate: 0.09 gpm

Purging Equipment and Calibration Information

Bailer: ☐ Teflon ☐ Poly. Pump: ☐ Grundfos ■ Peri. ID# P-8

Pump Tubing Type: ☐ Teflon ■ Teflon-Lined Poly. ☐ Polyethylene

Meter(s) Used: ■ Hanna 991300 ☐ YSI 556 ■ Lamotte 2020 ID#'s 5,7

Calibration Date/Time: 4/4/18, 0835

Comments:

Groundwater Field Parameters

Time	Gallons Purged	Temp. Deg. Cel	Cond. mS/cm	pH SU	Dissolved Oxygen mg/L	ORP mV	Turbidity NTUs	Water Level ft. from TOC
1507	1.25	21.5	3.26 ~~3.67~~	~~3.26~~ 8.67	—	—	1.72	5.35
1518	2.25	20.7	2.88 ~~3.00~~	8.64	—	—	1.37	5.61
1528	3.25	20.4	2.34	8.59	—	—	1.24	5.85
1533	3.60	20.1	2.51	8.57	—	—	1.29	5.90
1536	4.00	20.0	2.47	8.64	—	—	1.12	6.01
Stabilization Info:		+/- 0.5 deg.	+/- 5%	+/- 0.1 SU	-----	-----	<10 NTUs	-----

Sample Collection Parameters

Sample Collection Method (check all): ☐ Bailer ☑ Straw Method ☑ Pump Tubing ☐ Vacuum Jug ☐ Other

Final Tubing/Pump Depth: ~5' feet below T.O.C

Final Groundwater Depth (if applic. 6.01 feet below T.O.C

Final Sample Turbidity 1.07 NTUs

Ferrous Iron Concentration (if sampled): — mg/L

Comments:

Laboratory Analytical Information

Sample ID	Analysis	Container	Qty.	Preservative	Time Sampled
SP-8A	VOCs (Full List)	40 ml glass vials	2	HCl + Ice	1540
SP-8A	1,4-Dioxane	40 ml glass vials	2	HCl + Ice	1540
SP-8A	Sulfide	500 ml HDPE	1	Zn. Acetate/NaOH	1540
SP-8A	Metals	250 ml HDPE	1	HNO3 + Ice	1540
SP-8A	Cyanide	500 ml HDPE	1	NaOH + Ice	1540
SP-8A	SVOCs	1000 ml HDPE	2	Ice	1540
SP-8A	Herbicides(Dinoseb)	1000 ml HDPE	2	Ice	1540

Sample Laboratory: ■ AES ☐ ACL ☐ TA ☐ XENCO Delivery Method: ■ Hand Delivery ☐ Fed Ex ☐ UPS

Field Personnel Signature:

AEM Groundwater Sampling Field Log

AEM Project: Ingersoll Rand-Sylvania Remediation AEM Job No.: 1162-1801-2 Well No.: SP-9

Sampling Personnel: ~~G. Ingle/D. McCartha/R. Oliver~~ Date: 4/4/18

Comments: Time In: 1130 Time Out: 1700

Well Information

Well Diameter: 2.0 inches Reference Point Marked: (Yes) No

Depth to Water: 3.61 feet below T.O.C. Well Depth: 13.22 feet below T.O.C.

0.04 gal/ft in 1-inch-ID well
0.16 gal/ft in 2-inch-ID well
0.65 gal/ft in 4-inch-ID well

Purging Information

Water Column: 9.61 ft

1 Well Volume= 1.54 gal

3 Well Volume= 4.61 gal

Total Purged: 2.25 gal

Well Purge Dry (?) (yes) no

Purge Method (check): ■ Traditional Purge ☐ Tubing In-Screen Method

Purge Start Time: 1143

Purge End Time: 1209

Total Time: 26 min

Purge Rate: 0.09 gpm

Purging Equipment and Calibration Information

Bailer: ☐ Teflon ☐ Poly. Pump: ☐ Grundfos ■ Peri. ID# P-8

Pump Tubing Type: ☐ Teflon ■ Teflon-Lined Poly. ☐ Polyethylene

Meter(s) Used: ■ Hanna 991300 ☐ YSI 556 ■ Lamotte 2020 ID#'s 3,7

Calibration Date/Time: 4/4/18, 0835

Comments:

Groundwater Field Parameters

Time	Gallons Purged	Temp. Deg. Cel	Cond. mS/cm	pH SU	Dissolved Oxygen mg/L	ORP mV	Turbidity NTUs	Water Level ft. from TOC
1158	1.40	20.4	0.46	6.49	—	—	1.91	10.05
1209	2.25	PUT @ 2.25 Gallons						
Stabilization Info:		+/- 0.5 deg.	+/- 5%	+/- 0.1 SU	-----	-----	<10 NTUs	-----

Sample Collection Parameters

Sample Collection Method (check all): ☐ Bailer ☐ Straw Method ☐ Pump Tubing ☐ Vacuum Jug ☐ Other

Final Tubing/Pump Depth: 11.22 feet below T.O.C

Final Groundwater Depth (if applic. 8.50' feet below T.O.C

Final Sample Turbidity 5.53 NTUs

Ferrous Iron Concentration (if sampled): — mg/L

Comments:

Laboratory Analytical Information

Sample ID	Analysis	Container	Qty.	Preservative	Time Sampled
—	~~VOCs (Full List)~~	~~40 ml glass vials~~	—	~~HCl + Ice~~	—
—	~~1,4-Dioxane~~	~~40 ml glass vials~~	—	~~HCl + Ice~~	—
—	~~Sulfide~~	~~500 ml HDPE~~	—	~~Zn. Acetate/NaOH~~	—
SP-9	~~Metals~~ COPPER	250 ml HDPE	1	HNO3 + Ice	1650
SP-9	Cyanide	500 ml HDPE	1	NaOH + Ice	1650
—	~~SVOCs~~	~~1000 ml HDPE~~	—	~~Ice~~	—
—	~~Herbicides(Dinoseb)~~	~~1000 ml HDPE~~	—	~~Ice~~	—

Sample Laboratory: ■ AES ☐ ACL ☐ TA ☐ XENCO Delivery Method: ■ Hand Delivery ☐ Fed Ex ☐ UPS

Field Personnel Signature:

AEM Groundwater Sampling Field Log

AEM Project: Ingersoll Rand-Sylvania Remediation AEM Job No.: 1162-1801-2 Well No.: SP-9D

Sampling Personnel: G. Ingle/D. ~~McCartha~~/R. ~~Oliver~~ Date: 4/5/18

Comments: Time In: 0915 Time Out: 1750

Well Information

Well Diameter: 2.0 inches Reference Point Marked: (Yes) No

Depth to Water: 38.00 feet below T.O.C. Well Depth: 40.11 feet below T.O.C.

0.04 gal/ft in 1-inch-ID well
0.16 gal/ft in 2-inch-ID well
0.65 gal/ft in 4-inch-ID well

Purging Information

Water Column: 2.11 ft

1 Well Volume= 0.34 gal

3 Well Volume= 1.01 gal

Total Purged: 0.50 gal

Well Purge Dry (?) yes/no

Purge Method (check): ■ Traditional Purge ☐ Tubing In-Screen Method

Purge Start Time: 0918

Purge End Time: 0924

Total Time: 6 min

Purge Rate: 0.08 gpm

Purging Equipment and Calibration Information

Bailer: ☐ Teflon ☐ Poly. Pump: ☐ Grundfos ■ Peri. ID# P-8

Pump Tubing Type: ☐ Teflon ■ Teflon-Lined Poly. ☐ Polyethylene

Meter(s) Used: ■ Hanna 991300 ☐ YSI 556 ■ Lamotte 2020 ID#'s 37

Calibration Date/Time: 4/5/18, 0846

Comments:

Groundwater Field Parameters

Time	Gallons Purged	Temp. Deg. Cel	Cond. mS/cm	pH SU	Dissolved Oxygen mg/L	ORP mV	Turbidity NTUs	Water Level ft. from TOC
0923	0.45	13.8	0.63	5.86	—	—	6.42	NM
0924	0.50	Pkg						
Stabilization Info:		+/- 0.5 deg.	+/- 5%	+/- 0.1 SU	-----	-----	<10 NTUs	-----

Sample Collection Parameters

Sample Collection Method (check all): ■ Bailer ☐ Straw Method ☐ Pump Tubing ☐ Vacuum Jug ☐ Other

Final Tubing/Pump Depth: — feet below T.O.C

Final Groundwater Depth (if applic. — feet below T.O.C

Final Sample Turbidity 0.72 NTUs

Ferrous Iron Concentration (if sampled): — mg/L

Comments: INSUFFICIENT RECOVERY TO COLLECT VOCs, SVOCs, OR HERBICIDES; SULFIDE BOTTLE HALF FILLED

Laboratory Analytical Information

Sample ID	Analysis	Container	Qty.	Preservative	Time Sampled
—	~~VOCs (Full List)~~	~~40 ml glass vials~~	—	~~HCl + Ice~~	—
—	~~1,4-Dioxane~~	~~40 ml glass vials~~	—	~~HCl + Ice~~	—
SP-9D	Sulfide	500 ml HDPE	1	Zn. Acetate/NaOH	1730
SP-9D	Metals	250 ml HDPE	1	HNO3 + Ice	1730
SP-9D	Cyanide	500 ml HDPE	1	NaOH + Ice	1730
—	~~SVOCs~~	~~1000 ml HDPE~~	—	~~Ice~~	—
—	~~Herbicides(Dinoseb)~~	~~1000 ml HDPE~~	—	~~Ice~~	—

Sample Laboratory: ■ AES ☐ ACL ☐ TA ☐ XENCO Delivery Method: ■ Hand Delivery ☐ Fed Ex ☐ UPS

Field Personnel Signature:

AEM Groundwater Sampling Field Log

AEM Project: Ingersoll Rand-Sylvania Remediation AEM Job No.: 1162-1801-2 Well No.: W-5

Sampling Personnel: G. Ingle/D. McCartha/~~R. Oliver~~ Date: 4/4/18

Comments: Time In: 1320 Time Out: 1435

Well Information

Well Diameter: 2.0 inches Reference Point Marked: (Yes) No

Depth to Water: 6.36 feet below T.O.C. Well Depth: 17.30 feet below T.O.C.

0.04 gal/ft in 1-inch-ID well
0.16 gal/ft in 2-inch-ID well
0.65 gal/ft in 4-inch-ID well

Purging Information

Water Column: 10.94 ft

1 Well Volume= 1.75 gal

3 Well Volume= 5.25 gal

Total Purged: 5.45 gal

Well Purge Dry (?) yes/(no)

Purge Method (check): ■ Traditional Purge ☐ Tubing In-Screen Method

Purge Start Time: 1325

Purge End Time: 1427

Total Time: 62 ~~64~~ min

Purge Rate: 0.09 gpm

Purging Equipment and Calibration Information

Bailer: ☐ Teflon ☐ Poly. Pump: ☐ Grundfos ■ Peri. ID# P-8

Pump Tubing Type: ☐ Teflon ■ Teflon-Lined Poly. ☐ Polyethylene

Meter(s) Used: ■ Hanna 991300 ☐ YSI 556 ■ Lamotte 2020 ID#'s 3,7

Calibration Date/Time: 4/4/18, 0835

Comments:

Groundwater Field Parameters

Time	Gallons Purged	Temp. Deg. Cel	Cond. ~~mS~~ µS/cm	pH SU	Dissolved Oxygen mg/L	ORP mV	Turbidity NTUs	Water Level ft. from TOC
1343	1.80	21.7	0.23	5.03	—	—	1.02	12.08
1402	3.50	20.2	0.23	4.86	—	—	1.13	14.08
1420	5.10	20.3	0.22	4.90	—	—	1.01	15.90
1426	5.40	20.1	0.22	4.90	—	—	0.97	15.99
Stabilization Info:		+/- 0.5 deg.	+/- 5%	+/- 0.1 SU	-----	-----	<10 NTUs	-----

Sample Collection Parameters

Sample Collection Method (check all): ☐ Bailer ☐ Straw Method ■ Pump Tubing ☐ Vacuum Jug ☐ Other

Final Tubing/Pump Depth: ~16.50 feet below T.O.C

Final Groundwater Depth (if applic. 15.99 feet below T.O.C

Final Sample Turbidity 0.97 NTUs

Ferrous Iron Concentration (if sampled): — mg/L

Comments:

Laboratory Analytical Information

Sample ID	Analysis	Container	Qty.	Preservative	Time Sampled
—	~~VOCs (Full List)~~	~~40 ml glass vials~~	—	~~HCl + Ice~~	—
—	~~1,4-Dioxane~~	~~40 ml glass vials~~	—	~~HCl + Ice~~	—
—	~~Sulfide~~	~~500 ml HDPE~~	—	~~Zn. Acetate/NaOH~~	—
W-5	~~Metals~~ Copper	250 ml HDPE		HNO3 + Ice	1430
W-5	Cyanide	500 ml HDPE		NaOH + Ice	1430
—	~~SVOCs~~	~~1000 ml HDPE~~	—	~~Ice~~	—
—	~~Herbicides(Dinoseb)~~	~~1000 ml HDPE~~	—	~~Ice~~	—

Sample Laboratory: ■ AES ☐ ACL ☐ TA ☐ XENCO Delivery Method: ■ Hand Delivery ☐ Fed Ex ☐ UPS

Field Personnel Signature:

AEM Groundwater Sampling Field Log

AEM Project: Ingersoll Rand-Sylvania Remediation AEM Job No.: 1162-1801-2 Well No.: W-275

Sampling Personnel: ~~G. Ingle~~/D. ~~McCartha~~/R. Oliver Date: 4/2/18

Comments: Time In: 1610 Time Out: 1800

Well Information

Well Diameter: 2 inches Reference Point Marked: (Yes) No

Depth to Water: 12.80 feet below T.O.C. Well Depth: 19.64 feet below T.O.C.

0.04 gal/ft in 1-inch-ID well
0.16 gal/ft in 2-inch-ID well
0.65 gal/ft in 4-inch-ID well

Purging Information

Water Column: 6.84 ft

1 Well Volume= 1.1 gal

3 Well Volume= 3.3 gal

Total Purged: 4.0 gal

Well Purge Dry (?) yes (no)

Purge Method (check): ☒ Traditional Purge ☐ Tubing In-Screen Method

Purge Start Time: 1620

Purge End Time: 1745

Total Time: 65 min

Purge Rate: 0.06 gpm

Purging Equipment and Calibration Information

Bailer: ☐ Teflon ☐ Poly. Pump: ☐ Grundfos ☐ Peri. ID#

Pump Tubing Type: ☐ Teflon ☒ Teflon-Lined Poly. ☐ Polyethylene

Meter(s) Used: ☒ Hanna 991300 ☐ YSI 556 ☒ Lamotte 2020 ID#'s 11 } 9

Calibration Date/Time: 4/2/18 1400

Comments:

Groundwater Field Parameters

Time	Gallons Purged	Temp. Deg. Cel	Cond. µS/cm	pH SU	Dissolved Oxygen mg/L	ORP mV	Turbidity NTUs	Water Level ft. from TOC
1645	1.0	21.9	28	4.60	—	—	0.93	13.00
1700	2.0	20.9	25	4.15	—	—	0.68	13.05
1725	3.0	21.3	27	4.14	—	—	0.52	13.08
1745	4.0	20.6	26	4.10	—	—	0.59	13.10
~~1800~~	~~5.0~~	~~19.7~~	~~20~~					
Stabilization Info:		+/- 0.5 deg.	+/- 5%	+/- 0.1 SU	-----	-----	<10 NTUs	-----

Sample Collection Parameters

Sample Collection Method (check all): ☐ Bailer ☒ Straw Method ☒ Pump Tubing ☐ Vacuum Jug ☐ Other

Final Tubing/Pump Depth: 13.10 feet below T.O.C

Final Groundwater Depth (if applic. — feet below T.O.C

Final Sample Turbidity 0.59 NTUs

Ferrous Iron Concentration (if sampled): — mg/L

Comments:

Laboratory Analytical Information

Sample ID	Analysis	Container	Qty.	Preservative	Time Sampled
W-275	VOCs (Full List)	40 ml glass vials	2	HCl + Ice	1750
W-275	1,4-Dioxane	40 ml glass vials	2	HCl + Ice	1750
W-275	Sulfide	500 ml HDPE	1	Zn. Acetate/NaOH	1750
W-275	Metals	250 ml HDPE	1	HNO3 + Ice	1750
W-275	Cyanide	500 ml HDPE	1	NaOH + Ice	1750
—	~~SVOCs~~	~~1000 ml HDPE~~	—	~~Ice~~	—
—	~~Herbicides(Dinoseb)~~	~~1000 ml HDPE~~	—	~~Ice~~	—

Sample Laboratory: ■ AES ☐ ACL ☐ TA ☐ XENCO Delivery Method: ■ Hand Delivery ☐ Fed Ex ☐ UPS

Field Personnel Signature:

AEM Groundwater Sampling Field Log

AEM Project: Ingersoll Rand-Sylvania Remediation AEM Job No.: 1162-1801-2 Well No.: W-27D

Sampling Personnel: ~~Gerald Ingle~~/D. ~~McCartha~~/R. Oliver Date: 4/2/18

Comments: Time In: ~~2:30~~ 1430 Time Out: 1600

Well Information

Well Diameter: ~~2~~ 2 inches Reference Point Marked: (Yes) No

Depth to Water: 27.59 feet below T.O.C. Well Depth: 54.01 feet below T.O.C.

0.04 gal/ft in 1-inch-ID well
0.16 gal/ft in 2-inch-ID well
0.65 gal/ft in 4-inch-ID well

Purging Information

Water Column: 26.42ft
1 Well Volume= 4.22 gal
3 Well Volume= 12.68 gal
Total Purged: 13 gal
Well Purge Dry (?) yes/no

Purge Method (check): ☑ Traditional Purge ☐ Tubing In-Screen Method 14:45

Purge Start Time: ~~1500~~
Purge End Time: 1530
Total Time: 45 min
Purge Rate: 0.3 gpm

Purging Equipment and Calibration Information

Bailer: ☑ Teflon ☐ Poly. Pump: ☐ Grundfos ☐ Peri. ID#

Pump Tubing Type: ☐ Teflon ☐ Teflon-Lined Poly. ☐ Polyethylene

Meter(s) Used: ~~☐ Hanna 991300~~ ☐ YSI 556 ~~☐ Lamotte 2020~~ ID#'s G and H

Calibration Date/Time: 4/2/18 14:00

Comments:

Groundwater Field Parameters

Time	Gallons Purged	Temp. Deg. Cel	Cond. µS/cm	pH SU	Dissolved Oxygen mg/L	ORP mV	Turbidity NTUs	Water Level ft. from TOC
1505	4.00	22.5	44	4.88	/	/	32.1	~~32.1~~ 29.05
1510	8.00	21.4	~~34~~ 34	4.84	/	/	24.1	NM
1525	12.00	21.1	37	4.82	/	/	7.91	NM
1530	13.00	20.8	33	5.85	/	/	7.42	NM

Stabilization Info: +/- 0.5 deg. | +/- 5% | +/- 0.1 SU | ----- | ----- | <10 NTUs | -----

Sample Collection Parameters

Sample Collection Method (check all): ☑ Bailer ☐ Straw Method ☐ Pump Tubing ☐ Vacuum Jug ☐ Other

Final Tubing/Pump Depth: N/A feet below T.O.C

Final Groundwater Depth (if applic) N/A feet below T.O.C

Final Sample Turbidity 7.42 NTUs

Ferrous Iron Concentration (if sampled): N/A mg/L

Comments:

Laboratory Analytical Information

Sample ID	Analysis	Container	Qty.	Preservative	Time Sampled
W-27D	VOCs (Full List)	40 ml glass vials	~~2~~	HCl + Ice	1545
W-27D	1,4-Dioxane	40 ml glass vials	1	HCl + Ice	1545
W-27D	Sulfide	~~500 ml HDPE~~	1	2N Acetate/NaOH	1541
W-27D	Metals	250 HDPE	1	HNO3 to pH<2	1541
W-27D	Cyanide	500ml HDPE	1	NaOH to pH>12	1541
~~W-27D~~					

Sample Laboratory: ■ AES ☐ ACL ☐ TA ☐ XENCO Delivery Method: ■ Hand Delivery ☐ Fed Ex ☐ UPS

Field Personnel Signature: [signature]

SP- 4/2/18 1530

Calibration Record
Ingersoll Rand-Sylvania Remediation

Meter	Date	Time	pH			Conductivity (µS/cm)			ORP		D.O. (mg/L)		Turbidity	
				Before	After		Before	After	Before	After	Before	After	Before	After
#3	4/4/18	0835	7	6.99	7.01	1,413	Temperature	18.4	Temperature		Barometric Pressure			
			4	4.02	3.99	12.88	12.85	12.88						
			10											
#7	4/4/18	0835	7			1,413	Temperature		Temperature		Barometric Pressure		1.05/1.0	0.99/1.0
			4			12.88								
			10											
#3	4/3/18	1815	7	7.12	7.01	1,413	Temperature	21.9	Temperature		Barometric Pressure			
			4	4.06	4.01	12.88	12.38	12.87						
			10											
#7	4/3/18	1815	7			1,413	Temperature		Temperature		Barometric Pressure		1.11/1.0	1.05/1.0
			4			12.88								
			10											
#3	4/5/18	0845	7	7.09	7.04	1,413	Temperature	8.1	Temperature		Barometric Pressure			
			4	4.03	4.00	12.88	13.43	12.88						
			10											
#7	4/5/18	0845	7	7.02	7.03	1,413	Temperature		Temperature		Barometric Pressure		1.05/1.0	1.01/1.0
			4	3.93	4.00	12.88								
			10											
#3	4/9/18	1330	7	7.02	7.05	1,413	Temperature	15.4	Temperature		Barometric Pressure			
			4	3.93	4.00	12.88	12.60	12.84						
			10											

Standard	Lot Number	Expiration
pH 7	26010 E85	10/2018
pH 4	2612 C90	12/2018
Conductivity	76 H561	8/2018
ORP		
Turbidity		

ORP Calibration Chart	
Temp °C	Value, mV
10	250.5
15	244.0
20	237.5
25	231.0
30	224.5
35	218.0

Notes:

Field Personnel Signature

Designation	Meters	Serial #
1	Hanna HI 991300	
2	LaMotte 2020we	1542-4211
3	Hanna HI 991300	
10	Hanna HI 991301	Not in use

Designation	Meters	Serial #
4	YSI 556 MPS	06L1239AN
5	LaMotte 2020we	2024-1012
6	Hydac	9700142667
11	LaMotte 2020we	1546-4211

Designation	Meters	Serial #
7	LaMotte 2020we	185-3710
8	Hanna HI 991300	
9	Hanna HI 991300	8257290
12	YSI 556 MPS	112L100450

Calibration Record
Ingersoll Rand-Sylvania Remediation

Meter	Date	Time	pH Standard	pH Before	pH After	Conductivity Standard	Conductivity Before	Conductivity After	ORP Before	ORP After	D.O. (mg/L) Before	D.O. (mg/L) After	Turbidity (NTU) Before	Turbidity (NTU) After
#7	4/9/18	1330	7 / 4 / 10			1,413 / 12.88	Temperature		Temperature		Barometric Pressure		0.91/1.0	0.93/1.0
#3	4/10/18	0815	7 / 4 / 10	7.06 / 4.04	7.03 / 4.00	1,413 / 12.88	Temperature 12.79	17.9 / 12.88	Temperature		Barometric Pressure			
#7	4/10/18	0815	7 / 4 / 10			1,413 / 12.88	Temperature		Temperature		Barometric Pressure		0.92/1.0	0.95/1.0
			7 / 4 / 10			1,413 / 12.88	Temperature		Temperature		Barometric Pressure			
			7 / 4 / 10			1,413 / 12.88	Temperature		Temperature		Barometric Pressure			
			7 / 4 / 10			1,413 / 12.88	Temperature		Temperature		Barometric Pressure			
			7 / 4 / 10			1,413 / 12.88	Temperature		Temperature		Barometric Pressure			

Standard	Lot Number	Expiration
pH 7	2601OE85	10/2018
pH 4	2612C90	12/2018
Conductivity	7GH561	8/2018
ORP		
Turbidity		

ORP Calibration Chart

Temp °C	Value, mV
10	250.5
15	244.0
20	237.5
25	231.0
30	224.5
35	218.0

Designation	Meters	Serial #
1	Hanna HI 991300	
2	LaMotte 2020we	1542-4211
3	Hanna HI 991300	
10	Hanna HI 991301	Not in use

Designation	Meters	Serial #
4	YSI 556 MPS	06L1239AN
5	LaMotte 2020we	2024-1012
6	Hydac	9700142667
11	LaMotte 2020we	1546-4211

Designation	Meters	Serial #
7	LaMotte 2020we	185-3710
8	Hanna HI 991300	
9	Hanna HI 991300	8257290
12	YSI 556 MPS	112L100450

Notes:

Field Personnel Signature: [signature]

Calibration Record
Ingersoll Rand-Sylvania Remediation

Meter	Date	Time	pH			Conductivity (µS/cm)			ORP		D.O. (mg/L)		Turbidity (NTU)	
				Before	After		Before	After	Before	After	Before	After	Before	After
Hanna 8	4-03-18	1350	7	7.17	7.03	1,413	Temperature	20.5 °C	Temperature		Barometric Pressure			
			4	4.13	3.99	12.88	1341	1415						
			10											
Lamotte 5	4-03-18	1350	7			1,413	Temperature		Temperature		Barometric Pressure		0.00	0.00
			4			12.88							0.91	
			10											
Hanna 8	4-04-18	0815	7	7.08	7.03	1,413	Temperature	21.4 °C	Temperature		Barometric Pressure			
			4	4.02	3.99	12.88	1407	1413						
			10											
Lamotte 5	4-04-18	0815	7			1,413	Temperature		Temperature		Barometric Pressure		0.00	0.00
			4			12.88							0.94	
			10											
Hanna 8	4-05-18	0830	7	7.10	7.04	1,413	Temperature	7.7 °C	Temperature		Barometric Pressure			
			4	3.90	3.99	12.88	1497	1413						
			10											
Lamotte 5	4-05-18	0830	7			1,413	Temperature		Temperature		Barometric Pressure		0.00	0.00
			4			12.88							0.68	
			10											
			7			1,413	Temperature		Temperature		Barometric Pressure			
			4			12.88								
			10											

Standard	Lot Number	Expiration
pH 7	26010 E85	10/2018
pH 4	2612 C90	12/18
Conductivity	76H561	8/18
ORP		
Turbidity		

ORP Calibration Chart	
Temp °C	Value, mV
10	250.5
15	244.0
20	237.5
25	231.0
30	224.5
35	218.0

Notes:

Field Personnel Signature

Designation	Meters	Serial #
1	Hanna HI 991300	
2	LaMotte 2020we	1542-4211
3	Hanna HI 991300	
10	Hanna HI 991301	Not in use

Designation	Meters	Serial #
4	YSI 556 MPS	06L1239AN
5	LaMotte 2020we	2024-1012
6	Hydac	9700142667
11	LaMotte 2020we	1546-4211

Designation	Meters	Serial #
7	LaMotte 2020we	185-3710
8	Hanna HI 991300	
9	Hanna HI 991300	8257290
12	YSI 556 MPS	112L100450

Calibration Record
Ingersoll Rand-Sylvania Remediation

Meter	Date	Time	pH			Conductivity (µS/cm)			ORP		D.O. (mg/L)		Turbidity (NTU)	
				Before	After		Before	After	Before	After	Before	After	Before	After
Hanna 8	4-06-18	0910	7	7.01	7.00	1,413	Temperature 9.9 °C		Temperature		Barometric Pressure			
			4	4.02	3.98	12.88	1340	1413						
			10											
LaMotte 5	4-06-18	0910	7			1,413	Temperature		Temperature		Barometric Pressure		0.00	
			4			12.88							0.52	0.00
			10											
Hanna 8	4-09-18	1435	7	7.05	7.04	1,413	Temperature 17.9°C		Temperature		Barometric Pressure			
			4	4.01	3.98	12.88	1474	1413						
			10											
LaMotte 5	4-09-18	1435	7			1,413	Temperature		Temperature		Barometric Pressure		0.00	
			4			12.88							0.89	0.00
			10											
Hanna 8	4-10-18	0820	7	7.09	7.04	1,413	Temperature 13.3°C		Temperature		Barometric Pressure			
			4	3.84	3.98	12.88	1384	1413						
			10											
LaMotte 5	4-10-18	0820	7			1,413	Temperature		Temperature		Barometric Pressure		0.00	
			4			12.88							0.82	0.00
			10											
Hanna 8 LaMotte 5	4-11-18	0830	7	7.03	7.01	1,413	Temperature 16.1°C		Temperature		Barometric Pressure		0.00	
			4	3.95	3.99	12.88	1428	1414					0.64	0.00
			10											

Standard	Lot Number	Expiration
pH 7	26010 E85	10/2018
pH 4	2612 C90	12/2018
Conductivity	76H561	8/2018
ORP		
Turbidity		

ORP Calibration Chart	
Temp °C	Value, mV
10	250.5
15	244.0
20	237.5
25	231.0
30	224.5
35	218.0

Notes:

Designation	Meters	Serial #
1	Hanna HI 991300	
2	LaMotte 2020we	1542-4211
3	Hanna HI 991300	
10	Hanna HI 991301	Not in use

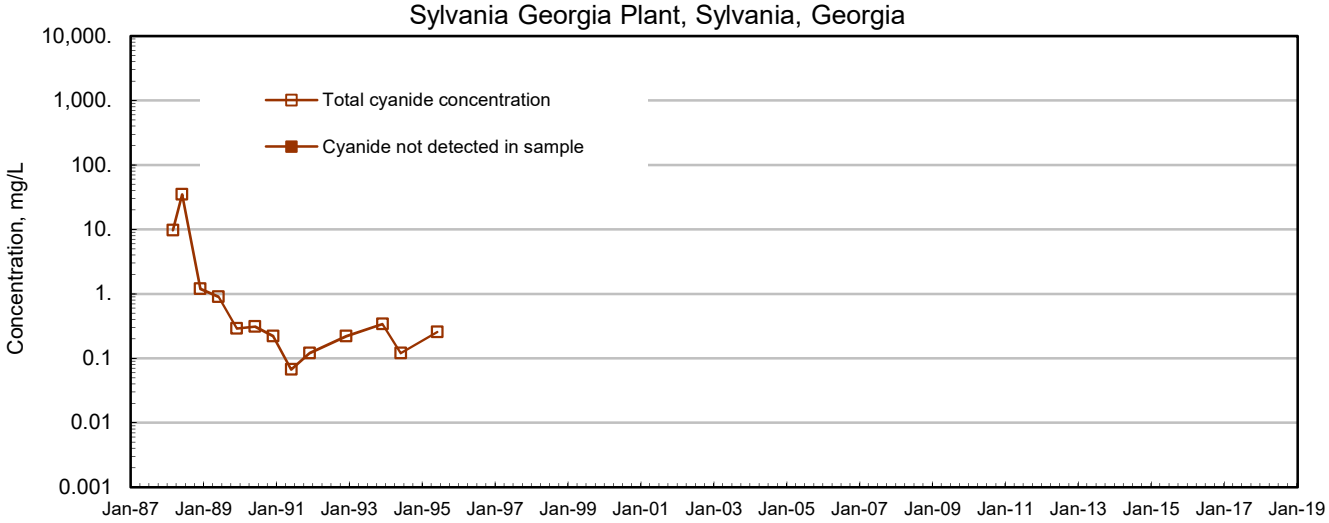
Designation	Meters	Serial #
4	YSI 556 MPS	06L1239AN
5	LaMotte 2020we	2024-1012
6	Hydac	9700142667
11	LaMotte 2020we	1546-4211

Designation	Meters	Serial #
7	LaMotte 2020we	185-3710
8	Hanna HI 991300	
9	Hanna HI 991300	8257290
12	YSI 556 MPS	112L100450

Field Personnel Signature

ATTACHMENT E-7
Time-Trend Graphs for Cyanide and Copper CSIs

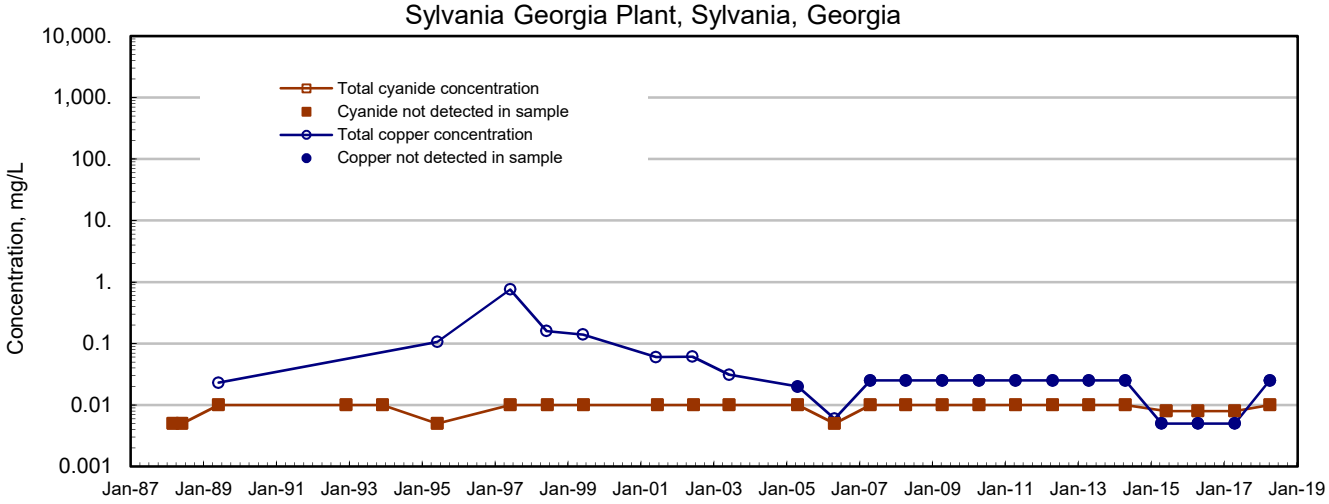
Total Cyanide Concentrations vs Time in SP-3
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia



Perched Water-Bearing Zone Well
Total Cyanide

Sample Date	Conc., mg/L
March-1988	9.7
June-1988	35.
December-1988	1.2
June-1989	0.9
December-1989	0.29
June-1990	0.31
December-1990	0.22
June-1991	0.067
December-1991	0.12
December-1992	0.22
December-1993	0.34
June-1994	0.12
June-1995	0.256

Total Cyanide and Copper Concentrations vs Time in SP-5
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia

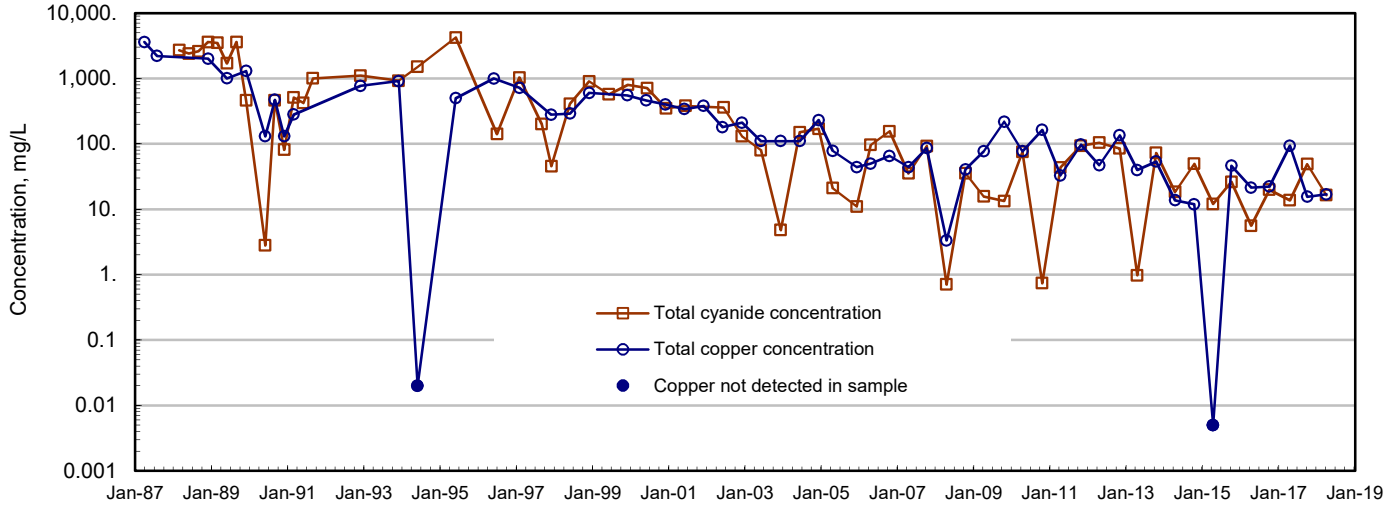


Perched Water-Bearing Zone Well

Total Cyanide	
Sample Date	Conc., mg/L
March-1988	<0.005
June-1988	<0.005
June-1989	<0.01
December-1992	<0.01
December-1993	<0.01
June-1995	<0.005
June-1997	<0.01
June-1998	<0.01
June-1999	<0.01
June-2001	<0.01
June-2002	<0.01
June-2003	<0.01
April-2005	<0.01
April-2006	<0.005
April-2007	<0.01
April-2008	<0.01
April-2009	<0.01
April-2010	<0.01
April-2011	<0.01
April-2012	<0.01
April-2013	<0.01
April-2014	<0.01
June-2015	<0.008
April-2016	<0.008
April-2017	<0.008
April-2018	<0.01

Total Copper	
Sample Date	Conc., mg/L
June-1989	0.023
June-1995	0.106
June-1997	0.758
June-1998	0.16
June-1999	0.14
June-2001	0.06
June-2002	0.061
June-2003	0.031
April-2005	<0.02
April-2006	0.006
April-2007	<0.025
April-2008	<0.025
April-2009	<0.025
April-2010	<0.025
April-2011	<0.025
April-2012	<0.025
April-2013	<0.025
April-2014	<0.025
April-2015	<0.005
April-2016	<0.005
April-2017	<0.005
April-2018	<0.025

Total Cyanide and Copper Concentrations vs Time in SP-7
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia



Perched Water-Bearing Zone Well

Cyanide Date	Conc. mg/L
Mar-88	2,700.
Jun-88	2,400.
Sep-88	2,600.
Dec-88	3,600.
Mar-89	3,500.
Jun-89	1,700.
Sep-89	3,600.
Dec-89	460.
Jun-90	2.8
Sep-90	460.
Dec-90	81.
Mar-91	510.
Jun-91	420.
Sep-91	1,000.
Dec-92	1,100.
Dec-93	920.
Jun-94	1,500.
Jun-95	4,220.
Jul-96	141.
Feb-97	1,030.
Sep-97	200.
Dec-97	45.4
Jun-98	410.
Dec-98	900.
Jun-99	570.
Dec-99	800.
Jun-00	710.
Dec-00	350.
Jun-01	380.
Dec-01	550.

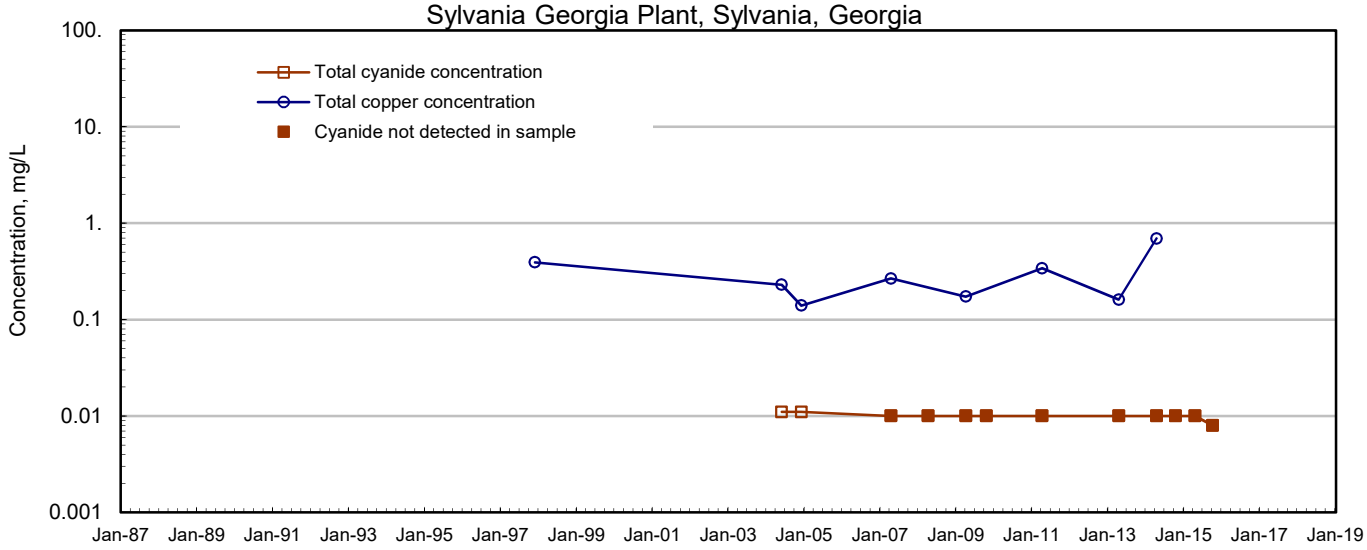
Cyanide Date	Conc. mg/L
Jun-02	360.
Dec-02	130.
Jun-03	80.
Dec-03	4.8
Jun-04	150.
Dec-04	170.
Apr-05	21.
Dec-05	11.
Apr-06	96.0
Oct-06	155.
Apr-07	35.3
Oct-07	92.3
Apr-08	0.705
Oct-08	35.4
Apr-09	15.7
Oct-09	13.3
Apr-10	75.0
Oct-10	0.74
Apr-11	43.4
Oct-11	93.3
Apr-12	104.
Oct-12	84.9
Apr-13	0.976
Oct-13	72.7
Apr-14	18.3
Oct-14	49.4
Apr-15	12.0
Oct-15	26.2
Apr-16	5.6
Oct-16	19.8

Cyanide Date	Conc. mg/L
Apr-17	13.7
Oct-17	48.8
Apr-18	16.4

Copper Date	Conc. mg/L
Apr-87	3,600.
Aug-87	2,200.
Dec-88	2,000.
Jun-89	1,000.
Dec-89	1,300.
Jun-90	130.
Sep-90	470.
Dec-90	130.
Mar-91	280.
Dec-92	770.
Dec-93	910.
Jun-94	<0.02
Jun-95	498.
Jun-96	993.
Feb-97	718.
Dec-97	279.
Jun-98	290.
Dec-98	600.
Dec-99	550.
Jun-00	460.
Dec-00	400.
Jun-01	340.
Dec-01	380.
Jun-02	180.
Dec-02	210.
Jun-03	110.
Dec-03	110.
Jun-04	110.
Dec-04	230.
Apr-05	78.

Copper Date	Conc. mg/L
Dec-05	44.
Apr-06	49.6
Oct-06	65.1
Apr-07	43.9
Oct-07	85.7
Apr-08	3.32
Oct-08	40.6
Apr-09	76.9
Oct-09	217.
Apr-10	76.7
Oct-10	163.
Apr-11	32.7
Oct-11	97.
Apr-12	46.9
Oct-12	135.
Apr-13	39.6
Oct-13	53.6
Apr-14	13.7
Oct-14	11.9
Apr-15	<0.005
Oct-15	46.1
Apr-16	21.4
Oct-16	22.2
Apr-17	93.2
Oct-17	15.5
Apr-18	16.9

Total Cyanide and Copper Concentrations vs Time in SP-8
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia



Perched Water-Bearing Zone Well

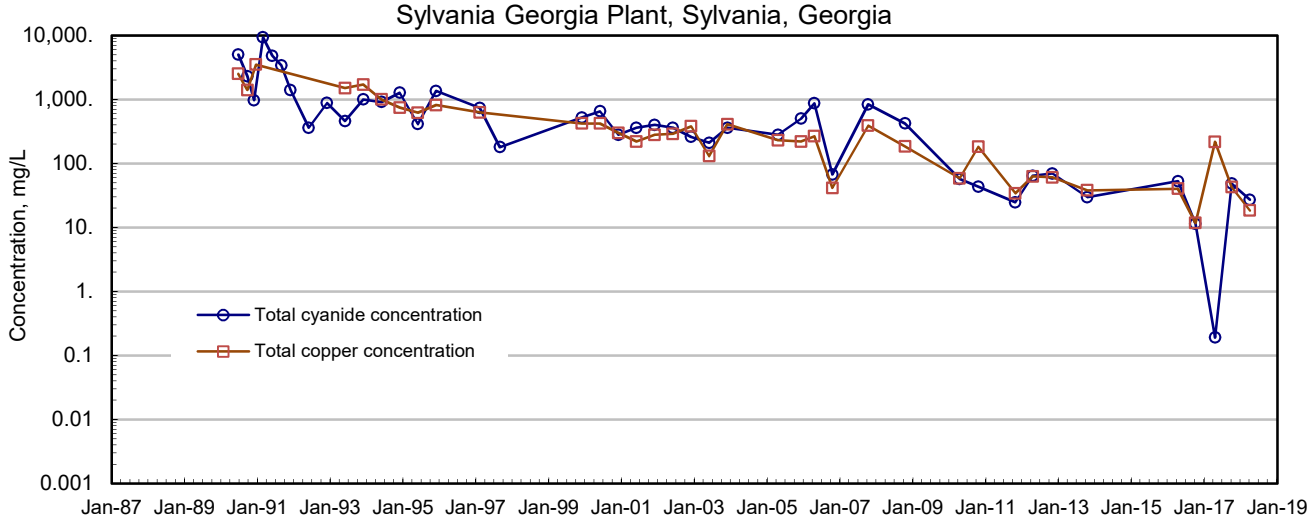
Total Cyanide

Sample Date	Conc., mg/L
December-1997	NS
June-2004	0.011
December-2004	0.011
April-2007	<0.01
April-2008	<0.01
April-2009	<0.01
October-2009	<0.01
April-2011	<0.01
April-2013	<0.01
April-2014	<0.01
October-2014	<0.01
April-2015	<0.01
October-2015	<0.008

Total Copper

Sample Date	Conc., mg/L
December-1997	0.392
June-2004	0.23
December-2004	0.14
April-2007	0.267
April-2009	0.173
April-2011	0.340
April-2013	0.161
April-2014	0.694

Total Cyanide and Copper Concentrations vs Time in SP-8A
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia



Perched Water-Bearing Zone Well

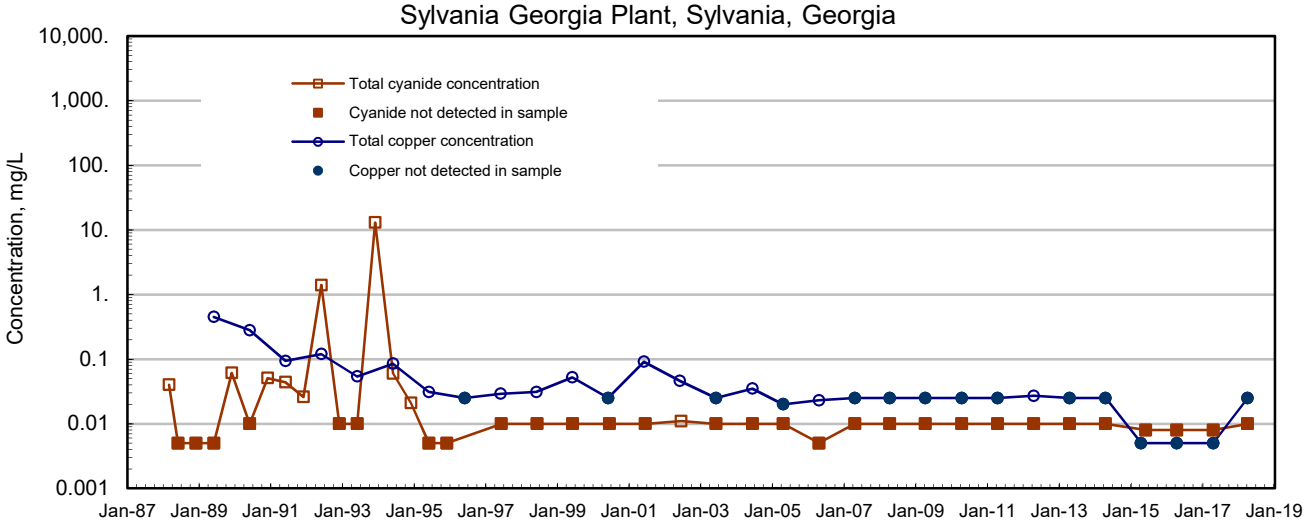
Total Cyanide Sample Date	Conc. mg/L
June-1990	5,000.
September-1990	2,300.
December-1990	970.
March-1991	9,300.
June-1991	4,800.
September-1991	3,400.
December-1991	1,400.
June-1992	360.
December-1992	880.
June-1993	460.
December-1993	1,000.
June-1994	910.
December-1994	1,270.
June-1995	411.
December-1995	1,350.
February-1997	736.
September-1997	180.
December-1999	520.
June-2000	650.
December-2000	280.
June-2001	360.
December-2001	400.
June-2002	360.
December-2002	260.
June-2003	210.
December-2003	360.
April-2005	280.
December-2005	500.
April-2006	870.
October-2006	67.

Total Cyanide Sample Date	Conc. mg/L
October-2007	834.
October-2008	421.
April-2010	57.2
October-2010	43.4
October-2011	24.7
April-2012	64.1
October-2012	69.5
October-2013	29.7
April-2016	52.6
October-2016	11.3
April-2017	0.19
October-2017	48.2
April-2018	27.0

Total Copper Sample Date	Conc. mg/L
June-1990	2,500.
September-1990	1,400.
December-1990	3,500.
December-1991	2,300.
June-1992	1,600.
December-1992	1,400.
June-1993	1,500.
December-1993	1,700.
June-1994	1,000.
December-1994	742.
June-1995	619.
December-1995	816.
February-1997	627.
December-1999	420.
June-2000	420.
December-2000	300.
June-2001	220.
December-2001	280.
June-2002	290.
December-2002	380.
June-2003	130.
December-2003	410.
April-2005	230.
December-2005	220.
April-2006	265.
October-2006	41.4
October-2007	388.
October-2008	184.
April-2010	58.3
October-2010	182.

Total Copper Sample Date	Conc. mg/L
October-2011	34.1
April-2012	62.7
October-2012	60.4
October-2013	38.0
April-2016	40.2
October-2016	11.7
April-2017	217.0
October-2017	42.5
April-2018	18.4

Total Cyanide and Copper Concentrations vs Time in SP-9
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia



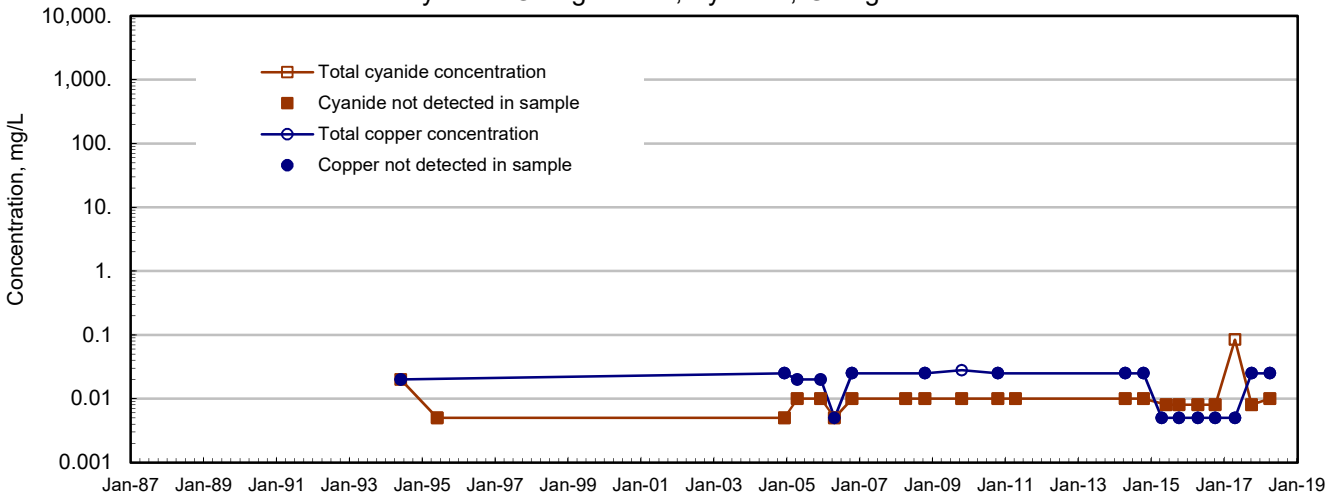
Perched Water-Bearing Zone Well

Total Cyanide Sample Date	Conc. mg/L
March-1988	0.04
June-1988	<0.005
December-1988	<0.005
June-1989	<0.005
December-1989	0.061
June-1990	<0.01
December-1990	0.051
June-1991	0.044
December-1991	0.026
June-1992	1.4
December-1992	<0.01
June-1993	<0.01
December-1993	13.
June-1994	0.06
December-1994	0.021
June-1995	<0.005
December-1995	<0.005
June-1997	<0.01
June-1998	<0.01
June-1999	<0.01
June-2000	<0.01
June-2001	<0.01
June-2002	0.011
June-2003	<0.01
June-2004	<0.01
April-2005	<0.01
April-2006	<0.005
April-2007	<0.01
April-2008	<0.01
April-2009	<0.01

Total Cyanide Sample Date	Conc. mg/L
April-2010	<0.01
April-2011	<0.01
April-2012	<0.01
April-2013	<0.01
April-2014	<0.01
June-2015	<0.008
April-2016	<0.008
April-2017	<0.008
April-2018	<0.01

Total Copper Sample Date	Conc. mg/L
June-1989	0.45
June-1990	0.28
June-1991	0.094
June-1992	0.12
June-1993	0.054
June-1994	0.085
June-1995	0.031
June-1996	<0.025
June-1997	0.029
June-1998	0.031
June-1999	0.052
June-2000	<0.025
June-2001	0.091
June-2002	0.046
June-2003	<0.025
June-2004	0.035
April-2005	<0.02
April-2006	0.023
April-2007	<0.025
April-2008	<0.025
April-2009	<0.025
April-2010	<0.025
April-2011	<0.025
April-2012	0.027
April-2013	<0.025
April-2014	<0.025
April-2015	<0.005
April-2016	<0.005
April-2017	<0.005
April-2018	<0.025

Total Cyanide and Copper Concentrations vs Time in SP-9D
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia



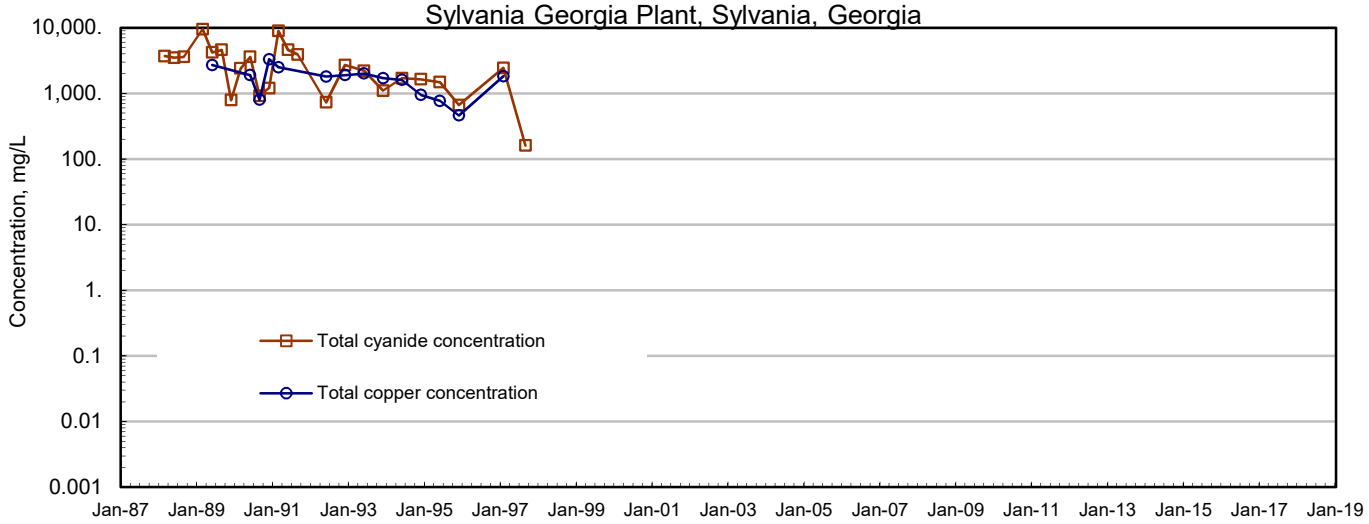
Upper Horizon of the Uppermost Aquifer Well

Total Cyanide	
Sample Date	Conc., mg/L
June-1994	0.02
June-1995	<0.005
December-2004	<0.005
April-2005	<0.01
December-2005	<0.01
April-2006	<0.005
October-2006	<0.01
April-2008	<0.01
October-2008	<0.01
October-2009	<0.01
October-2010	<0.01
April-2011	<0.01
April-2014	<0.01
October-2014	<0.01
June-2015	<0.008
October-2015	<0.008
April-2016	<0.008
October-2016	<0.008
April-2017	0.0840
October-2017	<0.008
April-2018	<0.01

Total Copper	
Sample Date	Conc., mg/L
June-1994	<0.02
December-2004	<0.025
April-2005	<0.02
December-2005	<0.02
April-2006	<0.005
October-2006	<0.025
October-2008	<0.025
October-2009	0.028
October-2010	<0.025
April-2014	<0.025
October-2014	<0.025
April-2015	<0.005
October-2015	<0.005
April-2016	<0.005
October-2016	<0.005
April-2017	<0.005
October-2017	<0.025
April-2018	<0.025

Notes:
SP-9D did not contain sufficient groundwater to collect a sample for copper in April 2011.

Total Cyanide and Copper Concentrations vs Time in SP-10
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia

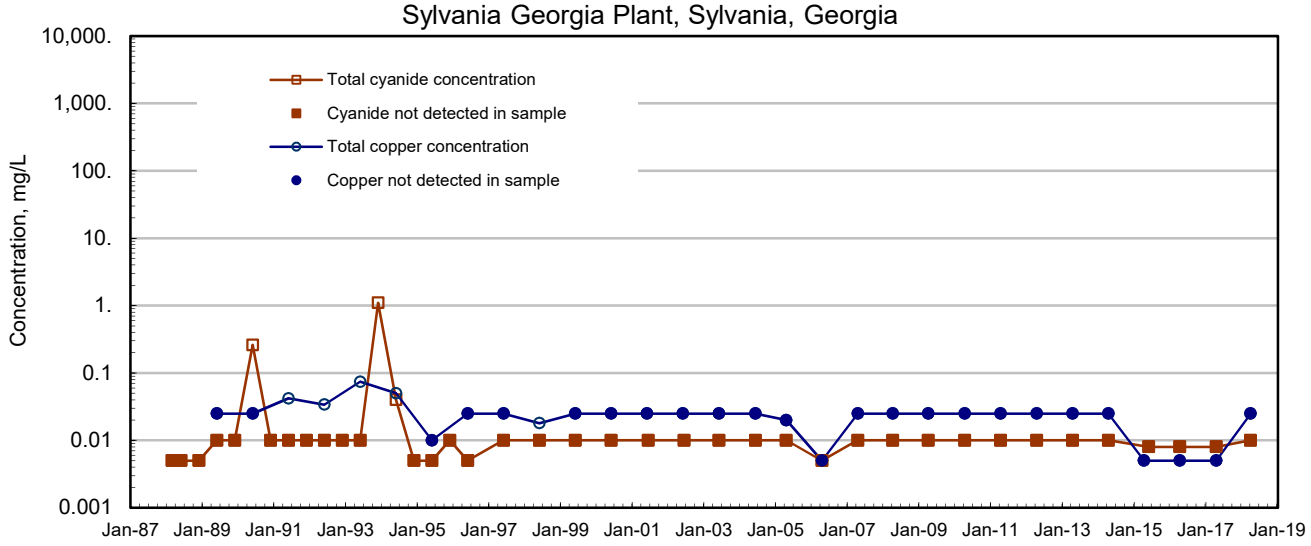


Perched Water-Bearing Zone Well

Total Cyanide Sample Date	Conc. mg/L
March-1988	3,700.
June-1988	3,500.
September-1988	3,600.
March-1989	9,500.
June-1989	4,200.
September-1989	4,600.
December-1989	790.
March-1990	2,400.
June-1990	3,600.
September-1990	920.
December-1990	1,200.
March-1991	8,900.
June-1991	4,600.
September-1991	3,900.
June-1992	730.
December-1992	2,700.
June-1993	2,200.
December-1993	1,100.
June-1994	1,700.
December-1994	1,640.
June-1995	1,480.
December-1995	663.
February-1997	2,440.
September-1997	160.

Total Copper Sample Date	Conc. mg/L
June-1989	2,700.
June-1990	1,900.
September-1990	800.
December-1990	3,300.
March-1991	2,500.
June-1992	1,800.
December-1992	1,900.
June-1993	2,000.
December-1993	1,700.
June-1994	1,600.
December-1994	946.
June-1995	768.
December-1995	460.
February-1997	1,820.

Total Cyanide and Copper Concentrations vs Time in W-5
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia



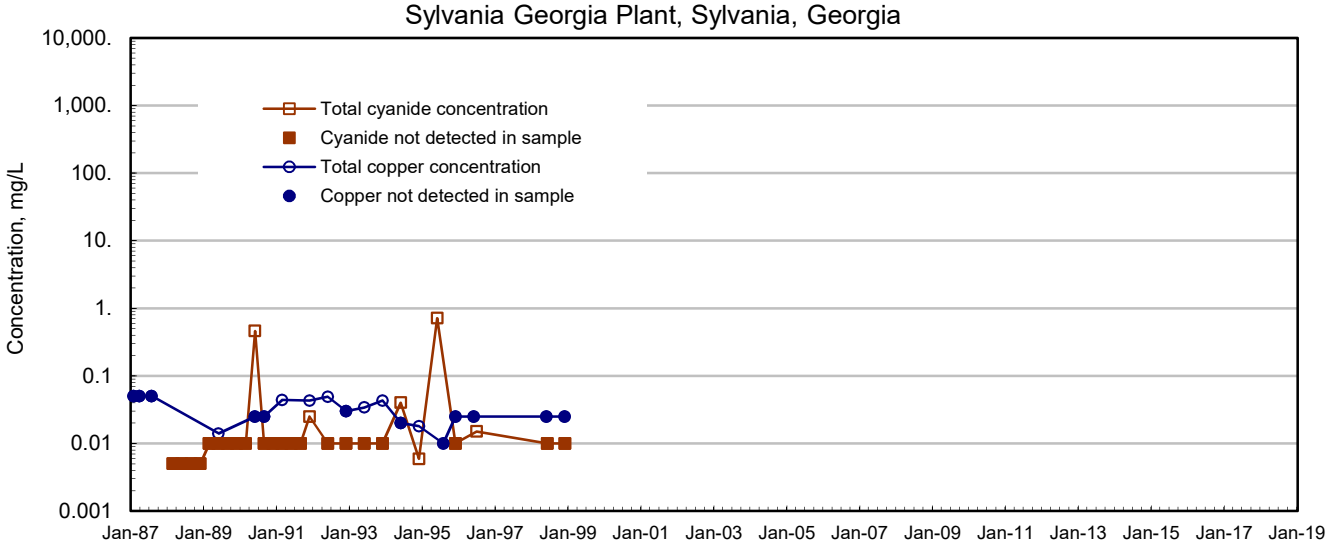
Perched Water-Bearing Zone Well

Total Cyanide Sample Date	Conc. mg/L
March-1988	<0.005
June-1988	<0.005
December-1988	<0.005
June-1989	<0.01
December-1989	<0.01
June-1990	0.26
December-1990	<0.01
June-1991	<0.01
December-1991	<0.01
June-1992	<0.01
December-1992	<0.01
June-1993	<0.01
December-1993	1.1
June-1994	0.04
December-1994	<0.005
June-1995	<0.005
December-1995	<0.01
June-1996	<0.005
June-1997	<0.01
June-1998	<0.01
June-1999	<0.01
June-2000	<0.01
June-2001	<0.01
June-2002	<0.01
June-2003	<0.01
June-2004	<0.01
April-2005	<0.01
April-2006	<0.005
April-2007	<0.01
April-2008	<0.01

Total Cyanide Sample Date	Conc. mg/L
April-2009	<0.01
April-2010	<0.01
April-2011	<0.01
April-2012	<0.01
April-2013	<0.01
April-2014	<0.01
June-2015	<0.008
April-2016	<0.008
April-2017	<0.008
April-2018	<0.01

Total Copper Sample Date	Conc. mg/L
June-1989	<0.025
June-1990	<0.025
June-1991	0.042
June-1992	0.034
June-1993	0.074
June-1994	0.050
June-1995	<0.01
June-1996	<0.025
June-1997	<0.025
June-1998	0.018
June-1999	<0.025
June-2000	<0.025
June-2001	<0.025
June-2002	<0.025
June-2003	<0.025
June-2004	<0.025
April-2005	<0.02
April-2006	<0.005
April-2007	<0.025
April-2008	<0.025
April-2009	<0.025
April-2010	<0.025
April-2011	<0.025
April-2012	<0.025
April-2013	<0.025
April-2014	<0.025
April-2015	<0.005
April-2016	<0.005
April-2017	<0.005
April-2018	<0.025

Total Cyanide and Copper Concentrations vs Time in W-11
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia

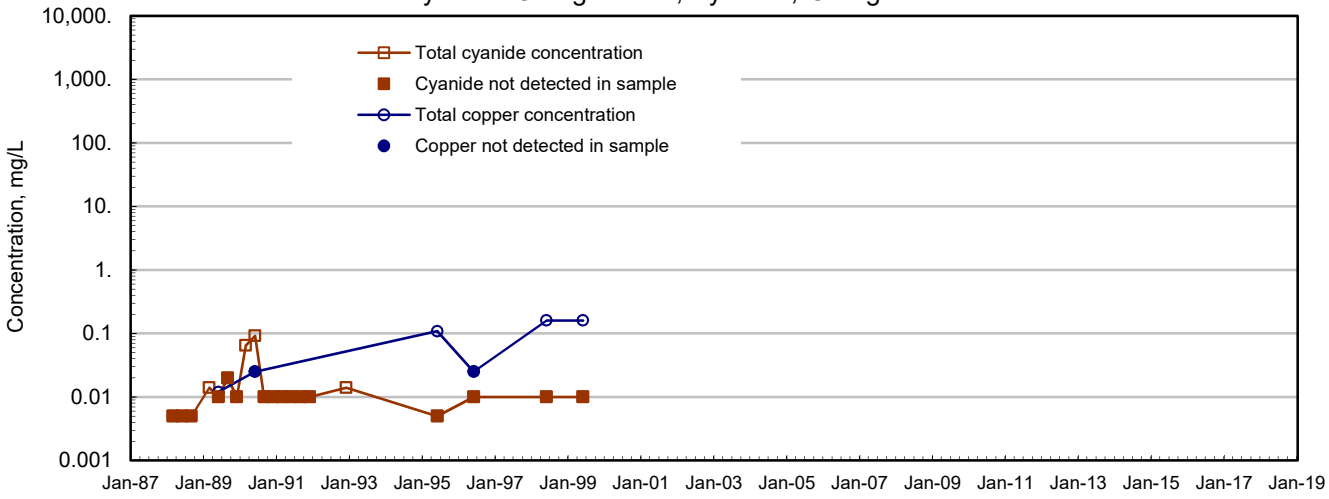


Upper Horizon of the Uppermost Aquifer Well

Total Cyanide	
Sample Date	Conc., mg/L
March-1988	<0.005
June-1988	<0.005
September-1988	<0.005
December-1988	<0.005
March-1989	<0.01
June-1989	<0.01
September-1989	<0.01
December-1989	<0.01
March-1990	<0.01
June-1990	0.46
September-1990	<0.01
December-1990	<0.01
March-1991	<0.01
June-1991	<0.01
September-1991	<0.01
December-1991	0.025
June-1992	<0.01
December-1992	<0.01
June-1993	<0.01
December-1993	<0.01
June-1994	0.04
December-1994	0.006
June-1995	0.712
December-1995	<0.01
July-1996	0.015
June-1998	<0.01
December-1998	<0.01

Total Copper	
Sample Date	Conc., mg/L
July-1986	<0.05
November-1986	<0.05
February-1987	<0.05
April-1987	<0.05
August-1987	<0.05
June-1989	0.014
June-1990	<0.025
September-1990	<0.025
March-1991	0.044
December-1991	0.043
June-1992	0.049
December-1992	<0.03
June-1993	0.034
December-1993	0.043
June-1994	<0.02
December-1994	0.018
August-1995	<0.01
December-1995	<0.025
June-1996	<0.025
June-1998	<0.025
December-1998	<0.025

Total Cyanide and Copper Concentrations vs Time in W-13
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia



Upper Horizon of the Uppermost Aquifer Well

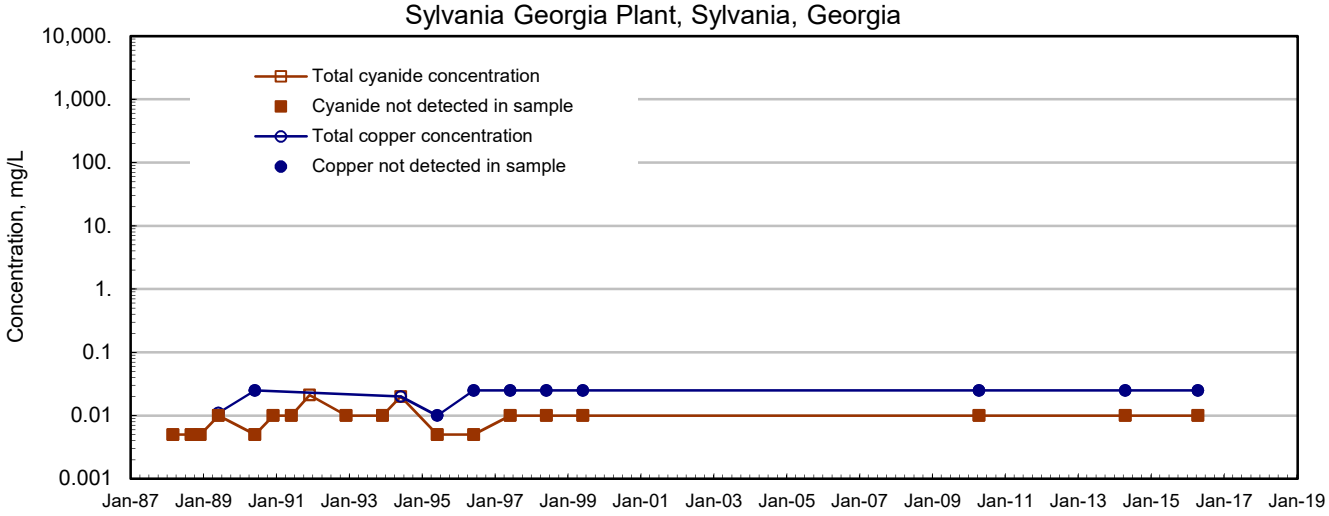
Total Cyanide

Sample Date	Conc., mg/L
March-1988	<0.005
June-1988	<0.005
September-1988	<0.005
March-1989	0.014
June-1989	<0.01
September-1989	<0.02
December-1989	<0.01
March-1990	0.065
June-1990	0.092
September-1990	<0.01
December-1990	<0.01
March-1991	<0.01
June-1991	<0.01
September-1991	<0.01
December-1991	<0.01
December-1992	0.014
June-1995	<0.005
June-1996	<0.01
June-1998	<0.01
June-1999	<0.01

Total Copper

Sample Date	Conc., mg/L
June-1989	0.012
June-1990	<0.025
June-1995	0.109
June-1996	<0.025
June-1998	0.16
June-1999	0.16

Total Cyanide and Copper Concentrations vs Time in W-17
Cyanide Surface Impoundments Area
Sylvania Georgia Plant, Sylvania, Georgia



Upper Horizon of the Uppermost Aquifer Well

Total Cyanide	
Sample Date	Conc., mg/L
March-1988	<0.005
September-1988	<0.005
December-1988	<0.005
June-1989	<0.01
June-1990	<0.005
December-1990	<0.01
June-1991	<0.01
December-1991	0.021
December-1992	<0.01
December-1993	<0.01
June-1994	0.02
June-1995	<0.005
June-1996	<0.005
June-1997	<0.01
June-1998	<0.01
June-1999	<0.01
April-2010	<0.01
April-2014	<0.01
April-2016	<0.01
April-2017	<0.01

Total Copper	
Sample Date	Conc., mg/L
June-1989	0.011
June-1990	<0.025
June-1994	0.02
June-1995	<0.01
June-1996	<0.025
June-1997	<0.025
June-1998	<0.025
June-1999	<0.025
April-2010	<0.025
April-2014	<0.025
April-2016	<0.025
April-2017	<0.005