

September 20, 2017

SOUTHWEST RESEARCH INSTITUTE®

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CHEMISTRY AND CHEMICAL ENGINEERING DIVISION
DEPARTMENT OF ANALYTICAL AND ENVIRONMENTAL CHEMISTRY



September 19, 2017

CH2M Hill Plateau Remediation Company
2420 Stevens Center Place
Mail Stop H8-41
Richland, WA 99352

Attn: Ms. Karen Waters-Husted

Subject: SAF No: W17-008
SDG Number: 619322
SwRI Project Number: 20859.01.00X
SwRI Task Order Number: 170810-17, 170811-14, 170815-1, 170816-3
SwRI Sample Receipt Number: 60203, 60217, 60230, 60240
Samples Received: 08.10.17, 08.11.17, 08.15.17, 08.16.17
Fraction: Cyanide Analyses

Dear Ms. Waters-Husted:

Please find the enclosed results for the twenty (20) overall water samples received on the above referenced date. If you should have any questions, please do not hesitate to call me at (210) 522-3242, or at radonna.spies@swri.org.

Sincerely,

Radonna Spies
Principal Scientist

APPROVED:

Michael J. Dammann
Director

RPS: jz
Encl



Benefitting government, industry and the public through innovative science and technology

September 20, 2017

SOUTHWEST RESEARCH INSTITUTE

CLIENT: CH2M Hill Plateau Remediation Company

SwRI PROJECT#: 20859.01.00X

**SwRI TASK ORDER: 170810-17, 170811-14,
170815-1, 170816-3**

SwRI SRR: 60203, 60217, 60230, 60240

SDG: 619322

VTSR: 08.10.2017, 08.11.2017, 08.15.2017, 08.16.2017

**CHAIN-OF-CUSTODY
&
SAMPLE RECEIPT PAPERWORK**

Total Page Count: 010001-
Fraction: Cyanide Pages: 010035

010002

2113

CH2M Hill Plateau Remediation Company	September 20, 2017 CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# W17-008-117 Page 1 of 1
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Collector: KATHY TURNER	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: CHPRC008	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: RCRA, AUGUST 2017	Logbook No.: HNF-N-506-93-86	Ice Chest No.: 6WS-648
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: 7798 8026 491
Protocol: RCRA	Priority: 30 Days	Offsite Property No.: 8283

POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	SPECIAL INSTRUCTIONS N/A
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Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3BJV2	Y	W	8-8-17	1215	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C
B3BJV3	N	W	8-8-17	1215	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C

CHPRC
SRR # 60203
SDG # 619322

SwRI Prjct # 20859.01.00X
TO: 170810-17

SWRI

Relinquished By: KATHY TURNER <i>Kathy Turner</i> AUG 08 2017 1340 <small>Print First and Last Name Signature Date/Time</small>	Received By: SSU-1 <small>Print First and Last Name Signature Date/Time</small>	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By: SSU-1 <small>Print First and Last Name Signature Date/Time</small>	Received By: Janelle Zunker <i>J Zunker</i> AUG 09 2017 0700 <small>Print First and Last Name Signature Date/Time</small>	
Relinquished By: Janelle Zunker <i>J Zunker</i> AUG 09 2017 1400 <small>Print First and Last Name Signature Date/Time</small>	Received By: FEDEX <small>Print First and Last Name Signature Date/Time</small>	
Relinquished By: FED EX <small>Print First and Last Name Signature Date/Time</small>	Received By: David Garcia <i>David Garcia</i> 08-10-2017 08:20 <small>Print First and Last Name Signature Date/Time</small>	
FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process):		Disposed By: _____ Date/Time: _____

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CH2MHill Plateau Remediation Company	<p style="color: red; font-size: 1.2em;">September 20, 2017</p> CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# W17-008-113
Page 1 of 1		

Collector: MIKE ESPARZA CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: W17-008	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: RCRA, AUGUST 2017	Logbook No.: HNF-N-506 -95 / 16	Ice Chest No.: <i>GWS-422 (old)</i>
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: <i>7799 0916 45382</i>
Protocol: RCRA	Priority: 30 Days	Offsite Property No.: <i>8294</i>

POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	SPECIAL INSTRUCTIONS N/A
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Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3BJT5	N	W	AUG 09 2017	1310	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C
B3BJT4	Y	W		1310	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C

CHPRC
 SRR # 60217
 SDG # 619322

SWRI

SwRI Prjct # 20859.01.00X
 TO: 170811-14

Relinquished By: MIKE ESPARZA CHPRC <i>Mike Esparza</i> AUG 09 2017 1355 <small>Print First and Last Name Signature Date/Time</small>	Received By: SSU-1 AUG 09 2017 1355 <small>Print First and Last Name Signature Date/Time</small>	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By: SSU-1 AUG 10 2017 0700 <small>Print First and Last Name Signature Date/Time</small>	Received By: Janelle Zunker CHPRC <i>J Zunker</i> AUG 10 2017 0700 <small>Print First and Last Name Signature Date/Time</small>	
Relinquished By: Janelle Zunker CHPRC <i>J Zunker</i> AUG 10 2017 1400 <small>Print First and Last Name Signature Date/Time</small>	Received By: FEDEX <small>Print First and Last Name Signature Date/Time</small>	
Relinquished By: FED EX <small>Print First and Last Name Signature Date/Time</small>	Received By: <i>Her Argueta</i> AUG 11 2017 0830 <small>Print First and Last Name Signature Date/Time</small>	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:
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Collector: Barbara Briggs /CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: W17-008	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: RCRA, AUGUST 2017	Logbook No.: HNF-N-506-93-87	Ice Chest No.: 605-682
Shipped To (Lab): Southwest Research Institute	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No.: 779913652170
Protocol RCRA	Priority: 30 Days	Offsite Property No.: 8296

POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	SPECIAL INSTRUCTIONS N/A
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Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3BJT7	N	W	8-10-17	1021	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C
B3BJT6	Y	W	8-10-17	1021	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C

CHPRC SRR # 60217 SwRI Prjct # 20859.01.00X
 SDG # 619322 TO: 170811-14
SWRI

Relinquished By: Barbara Briggs /CHPRC Print First and Last Name Signature Date/Time: AUG 10 2017 1050	Received By: Lesly Wall /CHPRC Print First and Last Name Signature Date/Time: AUG 10 2017 1050	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By: Lesly Wall /CHPRC Print First and Last Name Signature Date/Time: AUG 10 2017 1400	Received By: FEDEX Print First and Last Name Signature Date/Time:	
Relinquished By: FED EX Print First and Last Name Signature Date/Time:	Received By: Mrs Aracelis Gutierrez Print First and Last Name Signature Date/Time: 08.11.2017	
Relinquished By:	Received By: Paul Garcia /CHPRC Print First and Last Name Signature Date/Time: 08-11-2017	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:
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CH2M Hill Plateau Remediation Company	<p style="color: red; font-size: 1.2em;">September 20, 2017</p> CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# W17-008-115
Page 1 of 1		

Collector: Barbara Briggs /CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: W17-008	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: RCRA, AUGUST 2017	Logbook No.: HNF-N-506-93-87	Ice Chest No.: GWS-1082
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: 7799 1365 210
Protocol: RCRA	Priority: 30 Days	Offsite Property No.: 8296

POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	SPECIAL INSTRUCTIONS N/A
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Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3BJT9	N	W	8-10-17	1021	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C
B3BJT8	Y	W	8-10-17	1021	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C



Relinquished By: BeBrugg AUG 10 2017 1050 Print First and Last Name Signature Date/Time	Received By: Lesly Wall AUG 10 2017 1050 Print First and Last Name Signature Date/Time	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other		
Relinquished By: Lesly Wall AUG 10 2017 1400 Print First and Last Name Signature Date/Time	Received By: FEDEX Print First and Last Name Signature Date/Time			
Relinquished By: FED EX Print First and Last Name Signature Date/Time	Received By: Art Arguero 0830 08.11.2017 Print First and Last Name Signature Date/Time			
Relinquished By: _____ Print First and Last Name Signature Date/Time	Received By: David Garcia 0808 08-11-2017 1545 Print First and Last Name Signature Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process): _____	Disposed By: _____	Date/Time: _____

55 lbs

September 20, 2017

CH2M Hill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W17-008-120
Page 1 of 1		

Collector: MIKE ESPARZA CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: W17-008	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: RCRA, AUGUST 2017	Logbook No.: HNF-N-506 -95 / 14	Ice Chest No.: 625656
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: 7798 8927 1394
Protocol: RCRA	Priority: 30 Days	Offsite Property No.: 8289

POSSIBLE SAMPLE HAZARDS/REMARK
 ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
 N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3BJV8	Y	W	AUG 09 2017	1019	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C
B3BJV9	N	W		1019	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C

CHPRC
SRR # 60217
SDG # 619322

SwRI Prjct # 20859.01.00X
TQ: 170811-14

SWRI

Relinquished By: MIKE ESPARZA CHPRC <i>[Signature]</i> AUG 09 2017 1132 <small>Print First and Last Name Signature Date/Time</small>	Received By: Janelle Zunker CHPRC <i>[Signature]</i> AUG 09 2017 1132 <small>Print First and Last Name Signature Date/Time</small>	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other		
Relinquished By: Janelle Zunker CHPRC <i>[Signature]</i> AUG 09 2017 1400 <small>Print First and Last Name Signature Date/Time</small>	Received By: FEDEX <small>Print First and Last Name Signature Date/Time</small>			
Relinquished By: FED EX <small>Print First and Last Name Signature Date/Time</small>	Received By: <i>[Signature]</i> 0830 AUG 12 2017 <small>Print First and Last Name Signature Date/Time</small>			
Relinquished By: <small>Print First and Last Name Signature Date/Time</small>	Received By: <small>Print First and Last Name Signature Date/Time</small>			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

CH2M Hill Plateau Remediation Company	<p style="color: red; font-size: 1.2em;">September 20, 2017</p> CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# W17-008-108
Page 1 of 1		

Collector: Barbara Briggs CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: W17-008	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: RCRA, AUGUST 2017	Logbook No.: HNF-N-506 -93-87	Ice Chest No.: GWS-635
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: 7799 1592 05dp
Protocol: RCRA	Priority: 30 Days	Offsite Property No.: 8299

POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	SPECIAL INSTRUCTIONS N/A
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Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3BJW0	N	W	8-10-17	1223	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C
B3BJW0	N	W	8-10-17	1223	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2 / Cool <=6C
B3BCW4	Y	W	8-10-17	1223	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C

CHPRC
SRR # 60217
SDG # 619321

SwRI Prjct # 20859.01.00X
TO: 170811-15

CHPRC
SRR # 60217
SDG # 619322

SwRI Prjct # 20859.01.00X
TO: 170811-14

Relinquished By: Barbara Briggs CHPRC <i>Barbara Briggs</i> AUG 10 2017 1230 Print First and Last Name Signature Date/Time	Received By: Janelle Zunker CHPRC AUG 10 2017 1230 Print First and Last Name Signature Date/Time	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other		
Relinquished By: Janelle Zunker CHPRC <i>J Zunker</i> AUG 10 2017 1400 Print First and Last Name Signature Date/Time	Received By: FEDEX AUG 10 2017 1518 Print First and Last Name Signature Date/Time			
Relinquished By: FED EX Print First and Last Name Signature Date/Time	Received By: David Garcia AUG 11 2017 08:30 Print First and Last Name Signature Date/Time			
Relinquished By: _____ Print First and Last Name Signature Date/Time	Received By: _____ Print First and Last Name Signature Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process): _____	Disposed By: _____	Date/Time: _____

Collector: Barbara Briggs CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: W17-008	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: RCRA, AUGUST 2017	Logbook No.: HNF-N-506-93/88	Ice Chest No.: GWS-646 1080
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: 7799 71549498
Protocol: RCRA	Priority: 30 Days	Offsite Property No.: 8306

POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	SPECIAL INSTRUCTIONS N/A
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Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3BD67	Y	W	AUG 14 2017	0715	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C
B3BD63	N	W	AUG 14 2017	0715	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C

CHPRC
 SRR # 60230
 SDG # 619322

SwRI Prjct # 20859.01.00X
 TO: 170815-1
 SWRI

Relinquished By: Barbara Briggs CHPRC Signature: <i>Barbara Briggs</i> Date/Time: AUG 14 2017 1130	Received By: Janelle Zunker CHPRC Signature: <i>Janelle Zunker</i> Date/Time: AUG 14 2017 1130	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By: Janelle Zunker CHPRC Signature: <i>Janelle Zunker</i> Date/Time: AUG 14 2017 1400	Received By: FEDEX Signature: _____ Date/Time: _____		
Relinquished By: FED EX Signature: _____ Date/Time: _____	Received By: Daniel Garcia Signature: <i>Daniel Garcia</i> Date/Time: 0825-2017		
Relinquished By: _____ Signature: _____ Date/Time: _____	Received By: _____ Signature: _____ Date/Time: _____		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

September 20, 2017

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

**CH2MHill Plateau
Remediation Company**

C.O.C. #
W17-008-071
Page 1 of 1

Collector: Barbara Briggs /CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: W17-008	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: RCRA, AUGUST 2017	Logbook No.: HNF-N-506 - 93 / 88	Ice Chest No.: GWS-446 680
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: 779971651e 9498
Protocol: RCRA	Priority: 30 Days	Offsite Property No.: 8304

<p>POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1</p>	<p>SPECIAL INSTRUCTIONS N/A</p>
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Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3BD68	Y	W	AUG 14 2017	1004	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C
B3BD64	N	W	AUG 14 2017	1004	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C

CHPRC SRR # 60230 SDG # 619322
SwRI Prjct # 20859.01.00X TO: 170815-1

Relinquished By: Barbara Briggs /CHPRC <i>Be Briggs</i> AUG 14 2017 1130 Print First and Last Name Signature Date/Time	Received By: Janelle Zunker /CHPRC <i>J Zunker</i> AUG 14 2017 1130 Print First and Last Name Signature Date/Time	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By: Janelle Zunker /CHPRC <i>J Zunker</i> AUG 14 2017 1130 Print First and Last Name Signature Date/Time	Received By: FEDEX Print First and Last Name Signature Date/Time	
Relinquished By: FED EX Print First and Last Name Signature Date/Time	Received By: David Garcia /CHPRC <i>David Garcia</i> 08-15-2017 08:25 Print First and Last Name Signature Date/Time	
Relinquished By: Print First and Last Name Signature Date/Time	Received By: Print First and Last Name Signature Date/Time	
FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process):		Disposed By:
		Date/Time:

CH2M Hill Plateau
Remediation Company

September 20, 2017

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W17-008-065

Page 1 of 1

Collector: Jeff Lucas /CHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: W17-008	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: RCRA, AUGUST 2017	Logbook No.: HNF-N-506-95 / 18	Ice Chest No.: 605-298
Shipped To (Lab): Southwest Research Institute	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No.: 7700 0011 6604
Protocol RCRA	Priority: 30 Days	Offsite Property No.: 8310

POSSIBLE SAMPLE HAZARDS/REMARK
 ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
 Low Volume Wells. Do not use for QC.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3BD40	Y	W	AUG 15 2017	0950	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C
B3BD36	N	W	AUG 15 2017	0950	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C

CHPRC
SRR # 60240
SDG # 619322

SwRI Prjct # 20859.01.00X
TO: 170816-3
SwRI

Relinquished By: Jeff Lucas /CHPRC Signature: <i>Jeff Lucas</i> Date/Time: AUG 15 2017 1045	Received By: Lesly Wall /CHPRC Signature: <i>Lesly Wall</i> Date/Time: AUG 15 2017 1045	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By: Lesly Wall /CHPRC Signature: <i>Lesly Wall</i> Date/Time: AUG 15 2017 1400	Received By: FEDEX Signature: _____ Date/Time: _____		
Relinquished By: FED EX Signature: _____ Date/Time: _____	Received By: Daniel Garcia Signature: <i>Daniel Garcia</i> Date/Time: 08-16-2017 05:30		
Relinquished By: _____ Signature: _____ Date/Time: _____	Received By: _____ Signature: _____ Date/Time: _____		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

September 20, 2017

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

**CH2M Hill Plateau
Remediation Company**

C.O.C. #
W17-008-068

Page 1 of 1

Collector: Barbara Briggs JCHPRC	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: W17-008	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: RCRA, AUGUST 2017	Logbook No.: HNF-N-506-93/88	Ice Chest No.: GWS-298
Shipped To (Lab): Southwest Research Institute	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: 7700 0011 6604
Protocol: RCRA	Priority: 30 Days	Offsite Property No.: 8310

POSSIBLE SAMPLE HAZARDS/REMARK
 ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
 Low Volume Wells. Do not use for QC.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3BD53	Y	W	AUG 14 2017	1418	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C
B3BD51	N	W	AUG 14 2017	1418	1x500-mL aG	9012_CN (AMENABLE): COMMON; 9012_CYANIDE (TOTAL): COMMON; 9014_CN (FREE): COMMON	14 Days	NaOH to pH >=12 / Cool <=6C

CHPRC SRR # 60240
 SwRI Prjct # 20859.01.00X
 TO: 170816-3
 SDG # 619322



Relinquished By: Barbara Briggs <i>Barbara Briggs</i> Print First and Last Name Signature Date/Time AUG 14 2017 1450	Received By: SSU-1 Print First and Last Name Signature Date/Time AUG 14 2017 1450	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Relinquished By: SSU-1 Print First and Last Name Signature Date/Time AUG 15 2017 0700	Received By: Janelle Zunker CHPRC <i>J Zunker</i> Print First and Last Name Signature Date/Time AUG 15 2017 0700		
Relinquished By: Janelle Zunker CHPRC <i>J Zunker</i> Print First and Last Name Signature Date/Time AUG 15 2017 1400	Received By: FEDEX Print First and Last Name Signature Date/Time		
Relinquished By: FED EX Print First and Last Name Signature Date/Time	Received By: David Garcia David Garcia Print First and Last Name Signature Date/Time 08-16-2017 08:30		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

September 20, 2017 Laboratory Task Order

Southwest Research Institute

TO #: 170810-17 Revision: 3

 Project(s): 20659.01.00X
 Manager(s): SPIES, RADONNA
 To Client: 09/08/17

 SDG: 619322
 VTSR: 08/10/17
 SAF: W17-008

 SRR #'s: 60203
 Client(s): CH2M Hill Plateau Remediation Company

Instructions

 CH2M Hill Plateau Remediation Company. 300071
 SAF No. W17-008

SDG 619322 is open until 08/25/17

30-day TAT.

CURRENTLY, FINAL DATA/HARDCOPY IS DUE TO THE CLIENT ON 09/09/2017.

 5 overall samples (5 container) were received on 08/10/2017
 OUT of the 5 samples, ONLY the 2 sample that requires CN are listed here.

 Sample Analysis REQUIRED
 9012 _ Cyanide (Total)
 9012 _ Cyanide (Amenable)
 9014 _ Cyanide (Free)

 DATA DELIVERABLE _ Summary (Narrative / Results only)
 REQUESTER _ Karen Waters-Husted

 ATTACHMENT C - QC Requirements for Chemical and Radiochemical Analysis
 Section 7.2.2 Sample Data Packages
 Section 7.2.3 Hard Copy Deliverable format
 Section 7.2.4 Final Data Package Requirements
 Section 8.8 CHPRC Electronic Address

 Electronic copies of all sample receipt information, COCs, priority data packages, final data packages, corrected/revised data packages, closure reports, status reports, invoices, etc. shall be sent to: mailto:CPP_Sample_Management@rl.gov

 REVISION 1, DRmz 08/11/17: Task Order revised to indicate additional samples were received on 08/11/17, which have been grouped with SDG 619322, located in Task Order # 170811-14, SRR 60217.
 REVISION 2, DRmz 08/15/17: Task Order revised to indicate additional samples were received on 08/15/17, which have been grouped with SDG 619322, located in Task Order # 170815-1, SRR 60230.
 REVISION 3, DRmz 08/16/17: Task Order revised to indicate additional samples were received on 08/16/17, which have been grouped with SDG 619322, located in Task Order # 170816-3, SRR 60240.
 SDG is NOW CLOSED.

Documents Related to this task order: 226871[COC for SRR 60203], 226872[Paperwork for SRR 60203]

Deliverables --> Hard Copy: no EDD: -YES- PDF: -YES-

 Test: AMENCN_9012
 Section: WETCHEM

Holding: 14 days from CED

Amenable Cyanide by SW846 9012

Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619322		1	Water	B3BJV2	08 Aug 17	22 Aug 17
619323		1	Water	B3BJV3	08 Aug 17	22 Aug 17

 Test: CN_9012
 Section: WETCHEM

Holding: 14 days from CED

Cyanide by Method 9012 (Automated)

Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619322		1	Water	B3BJV2	08 Aug 17	22 Aug 17
619323		1	Water	B3BJV3	08 Aug 17	22 Aug 17

 Test: CN_9014
 Section: WETCHEM

Holding: 14 days from CED

Total Cyanide by SW846 9014

Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619322		1	Water	B3BJV2	08 Aug 17	22 Aug 17



September 20, 2017
Laboratory Task Order

Southwest Research Institute

TO #: 170810-17 Revision: 3

Project(s): 20859.01.00X
Manager(s): SPIES, RADONNA
To Client: 09/08/17

SDG: 619322
VTSR: 08/10/17
SAF: W17-008

SRR #s: 60203
Client(s): CH2M Hill Plateau Remediation Company

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619323		1	Water	B3BJV3	08 Aug 17	22 Aug 17



September 20, 2017

Laboratory Task Order

Southwest Research Institute

TO #: 170811-14 Revision: 3

 Project(s): 20859.01.00X
 Manager(s): SPIES, RADONNA
 To Client: 09/08/17

 SDG: 619322
 VTSR: 08/11/17
 SAF: W17-008

 SRR #'s: 60217
 Client(s): CH2M Hill Plateau Remediation Company

Instructions

 CH2MHill Plateau Remediation Company. 300071
 SAF No. W17-008

SDG 619322 is open until 08/25/17

GROUPED _ with samples in SDG 619322, located in Task Order # 170810-17, SRR 60203.

30-day TAT.

CURRENTLY, FINAL DATA/HARDCOPY IS DUE TO THE CLIENT ON 09/09/2017.

25 overall samples (79 containers) were received on 08/11/2017.

OUT of the 25 samples, ONLY the 10 samples that requires CN are listed here.

 Sample Analysis REQUIRED
 9012 _ Cyanide (Total)
 9012 _ Cyanide (Amenable)
 9014 _ Cyanide (Free)

 DATA DELIVERABLE _ Summary (Narrative / Results only)
 REQUESTTER _ Karen Waters-Husted

ATTACHMENT C - QC Requirements for Chemical and Radiochemical Analysis

Section 7.2.2 Sample Data Packages

Section 7.2.3 Hard Copy Deliverable format

Section 7.2.4 Final Data Package Requirements

Section 8.8 CHPRC Electronic Address

 Electronic copies of all sample receipt information, COCs, priority data packages, final data packages, corrected/revise data packages, closure reports, status reports, invoices, etc. shall be sent to: mailto:CPP_Sample_Management@rl.gov

REVISION 1, DRmz 08/11/17: Task Order revised to remove 2 samples, did not require Cn.

REVISION 2, DRmz 08/15/17: Task Order revised to indicate additional samples were received on 08/15/17, which have been grouped with SDG 619322, located in Task Order # 170815-1, SRR 60230.

REVISION 3, DRmz 08/16/17: Task Order revised to indicate additional samples were received on 08/16/17, which have been grouped with SDG 619322, located in Task Order # 170816-3, SRR 60240.

SDG is NOW CLOSED.

Documents Related to this task order: 226945[COC for SRR 60217], 226946[Paperwork for SRR 60217]

Deliverables --> Hard Copy: no EDD: -YES- PDF: -YES-

 Test: AMENCN_9012
 Section: WETCHEM

Holding: 14 days from CED

Amenable Cyanide by SW846 9012

Cnt: 10

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619442		1	Water	B3BJT4	09 Aug 17	23 Aug 17
619443		1	Water	B3BJT5	09 Aug 17	23 Aug 17
619444		1	Water	B3BJT6	10 Aug 17	24 Aug 17
619445		1	Water	B3BJT7	10 Aug 17	24 Aug 17
619446		1	Water	B3BJT8	10 Aug 17	24 Aug 17
619447		1	Water	B3BJT9	10 Aug 17	24 Aug 17
619448		1	Water	B3BJV8	09 Aug 17	23 Aug 17
619449		1	Water	B3BJV9	09 Aug 17	23 Aug 17
619452		1	Water	B3BCW4	10 Aug 17	24 Aug 17
619453		1-9012	Water	B3BJW0	10 Aug 17	24 Aug 17

 Test: CN_9012
 Section: WETCHEM

Holding: 14 days from CED

Cyanide by Method 9012 (Automated)

Cnt: 10

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619442		1	Water	B3BJT4	09 Aug 17	23 Aug 17



September 20, 2017

Laboratory Task Order

Southwest Research Institute

TO #: 170811-14 Revision: 3

 Project(s): 20859.01.00X
 Manager(s): SPIES, RADONNA
 To Client: 09/08/17

 SDG: 619322
 VTSR: 08/11/17
 SAF: W17-008

 SRR #'s: 60217
 Client(s): CH2M Hill Plateau Remediation Company

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619443		1	Water	B3BJT5	09 Aug 17	23 Aug 17
619444		1	Water	B3BJT6	10 Aug 17	24 Aug 17
619445		1	Water	B3BJT7	10 Aug 17	24 Aug 17
619446		1	Water	B3BJT8	10 Aug 17	24 Aug 17
619447		1	Water	B3BJT9	10 Aug 17	24 Aug 17
619448		1	Water	B3BJV8	09 Aug 17	23 Aug 17
619449		1	Water	B3BJV9	09 Aug 17	23 Aug 17
619452		1	Water	B3BCW4	10 Aug 17	24 Aug 17
619453		1-9012	Water	B3BJW0	10 Aug 17	24 Aug 17

Test: CN_9014

Holding: 14 days from CED

Section: WETCHEM

Total Cyanide by SW846 9014

Cnt: 10

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619442		1	Water	B3BJT4	09 Aug 17	23 Aug 17
619443		1	Water	B3BJT5	09 Aug 17	23 Aug 17
619444		1	Water	B3BJT6	10 Aug 17	24 Aug 17
619445		1	Water	B3BJT7	10 Aug 17	24 Aug 17
619446		1	Water	B3BJT8	10 Aug 17	24 Aug 17
619447		1	Water	B3BJT9	10 Aug 17	24 Aug 17
619448		1	Water	B3BJV8	09 Aug 17	23 Aug 17
619449		1	Water	B3BJV9	09 Aug 17	23 Aug 17
619452		1	Water	B3BCW4	10 Aug 17	24 Aug 17
619453		1-9012	Water	B3BJW0	10 Aug 17	24 Aug 17



September 20, 2017
Laboratory Task Order

Southwest Research Institute

TO #: 170815-1 Revision: 1

Project(s): 20859.01.00X
 Manager(s): SPIES, RADONNA
 To Client: 09/08/17

SDG: 619322
 VTSR: 08/15/17
 SAF: W17-008

SRR #'s: 60230
 Client(s): CH2M Hill Plateau Remediation Company

Instructions

CH2MHill Plateau Remediation Company. 300071
 SAF No. W17-008

SDG 619322 is open until 08/25/17

GROUPED _ with samples in SDG 619322, located in Task Order # 170810-17, SRR 60203; Task Order # 170811-14, SRR 60217

30-day TAT.
 CURRENTLY, FINAL DATA/HARDCOPY IS DUE TO THE CLIENT ON 09/09/2017.

8 overall samples (11 containers) were received on 08/15/2017.
 OUT of the 8 samples, ONLY the 4 samples that requires CN are listed here.

Sample Analysis REQUIRED
 9012 _ Cyanide (Total)
 9012 _ Cyanide (Amenable)
 9014 _ Cyanide (Free)

DATA DELIVERABLE _ Summary (Narrative / Results only)
 REQUESTER _ Karen Waters-Husted

ATTACHMENT C - QC Requirements for Chemical and Radiochemical Analysis
 Section 7.2.2 Sample Data Packages
 Section 7.2.3 Hard Copy Deliverable format
 Section 7.2.4 Final Data Package Requirements
 Section 8.8 CHPRC Electronic Address

Electronic copies of all sample receipt information, COCs, priority data packages, final data packages, corrected/revised data packages, closure reports, status reports, invoices, etc. shall be sent to: mailto:CPP_Sample_Management@rl.gov

REVISION 1, DRmz 08/16/17: Task Order revised to indicate additional samples were received on 08/16/17, which have been grouped with SDG 619322, located in Task Order # 170816-3, SRR 60240. SDG is NOW CLOSED.

Documents Related to this task order: 227134[COC for SRR 60230], 227135[Paperwork for SRR 60230]

Deliverables --> Hard Copy: no EDD: -YES- PDF: -YES-

Test: AMENCN_9012
 Section: WETCHEM

Holding: 14 days from CED

Amenable Cyanide by SW846 9012

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619599		1	Water	B3BD63	14 Aug 17	28 Aug 17
619600		1	Water	B3BD64	14 Aug 17	28 Aug 17
619601		1	Water	B3BD67	14 Aug 17	28 Aug 17
619602		1	Water	B3BD68	14 Aug 17	28 Aug 17

Test: CN_9012
 Section: WETCHEM

Holding: 14 days from CED

Cyanide by Method 9012 (Automated)

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619599		1	Water	B3BD63	14 Aug 17	28 Aug 17
619600		1	Water	B3BD64	14 Aug 17	28 Aug 17
619601		1	Water	B3BD67	14 Aug 17	28 Aug 17
619602		1	Water	B3BD68	14 Aug 17	28 Aug 17

Test: CN_9014
 Section: WETCHEM

Holding: 14 days from CED

Total Cyanide by SW846 9014

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
		1	Water	B3BD63	14 Aug 17	28 Aug 17



September 20, 2017 Laboratory Task Order

Southwest Research Institute

TO #: 170815-1 Revision: 1

Project(s): 20859.01.00X
Manager(s): SPIES, RADONNA
To Client: 09/08/17

SDG: 619322
VTSR: 08/15/17
SAF: W17-008

SRR #'s: 60230
Client(s): CH2M Hill Plateau Remediation Company

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619600		1	Water	B3BD64	14 Aug 17	28 Aug 17
619601		1	Water	B3BD67	14 Aug 17	28 Aug 17
619602		1	Water	B3BD68	14 Aug 17	28 Aug 17



September 20, 2017

Southwest Research Institute

Laboratory Task Order

TO #: 170816-3 Revision: 0

SDG: 619322
VTSR: 08/16/17
SAF: W17-008SRR #'s: 60240
Client(s): CH2M Hill Plateau Remediation CompanyProject(s): 20859.01.00X
Manager(s): SPIES, RADONNA
To Client: 09/08/17

Instructions

CH2MHill Plateau Remediation Company. 300071
SAF No. W17-008

SDG 619322 is open until 08/25/17

GROUPED _ with samples in SDG 619322, located in Task Order # 170810-17, SRR 60203; Task Order # 170811-14, SRR 60217; Task Order # 170815-1, SRR 60230.

30-day TAT.

CURRENTLY, FINAL DATA/HARDCOPY IS DUE TO THE CLIENT ON 09/09/2017.

7 overall samples (7 containers) were received on 08/16/2017.

OUT of the 7 samples, ONLY the 4 samples that requires CN are listed here. SDG 619322 has 20 samples.

Sample Analysis REQUIRED
9012 _ Cyanide (Total)
9012 _ Cyanide (Amenable)
9014 _ Cyanide (Free)DATA DELIVERABLE _ Summary (Narrative / Results only)
REQUESTER _ Karen Waters-Husted

ATTACHMENT C - QC Requirements for Chemical and Radiochemical Analysis

Section 7.2.2 Sample Data Packages

Section 7.2.3 Hard Copy Deliverable format

Section 7.2.4 Final Data Package Requirements

Section 8.8 CHPRC Electronic Address

Electronic copies of all sample receipt information, COCs, priority data packages, final data packages, corrected/revised data packages, closure reports, status reports, invoices, etc. shall be sent to: mailto:CPP_Sample_Management@rl.gov

Deliverables --> Hard Copy: no EDD: -YES- PDF: -YES-

Test: AMENCN_9012
Section: WETCHEM

Holding: 14 days from CED

Amenable Cyanide by SW846 9012

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619695		1	Water	B3BD36	15 Aug 17	29 Aug 17
619696		1	Water	B3BD51	14 Aug 17	28 Aug 17
619697		1	Water	B3BD53	14 Aug 17	28 Aug 17
619701		1	Water	B3BD40	15 Aug 17	29 Aug 17

Test: CN_9012
Section: WETCHEM

Holding: 14 days from CED

Cyanide by Method 9012 (Automated)

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619695		1	Water	B3BD36	15 Aug 17	29 Aug 17
619696		1	Water	B3BD51	14 Aug 17	28 Aug 17
619697		1	Water	B3BD53	14 Aug 17	28 Aug 17
619701		1	Water	B3BD40	15 Aug 17	29 Aug 17

Test: CN_9014
Section: WETCHEM

Holding: 14 days from CED

Total Cyanide by SW846 9014

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619695		1	Water	B3BD36	15 Aug 17	29 Aug 17



September 20, 2017

Southwest Research Institute

Laboratory Task Order

TO #: 170816-3 Revision: 0

Project(s): 20859.01.00X
Manager(s): SPIES, RADONNA
To Client: 09/08/17

SDG: 619322
VTSR: 08/16/17
SAF: W17-008

SRR #'s: 60240
Client(s): CH2M Hill Plateau Remediation Company

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
619696		1	Water	B3BD51	14 Aug 17	28 Aug 17
619697		1	Water	B3BD53	14 Aug 17	28 Aug 17
619701		1	Water	B3BD40	15 Aug 17	29 Aug 17



September 20, 2017

Sample Receipt

Southwest Research Institute

Sample Receipt Number: 60203
Revision: 1

VTSR: 08/10/17

Time: 08:20:00

Project: 20859.01.00X
Case #: CHPRC
Client: CH2M Hill Plateau Remediation Company

This Receipt was Revised 09/08/2017

Manager: SPIES, RADONNA
Logged in by: DXGARCIA
Creation Date: 08/10/17

Notes

Samples were received intact.

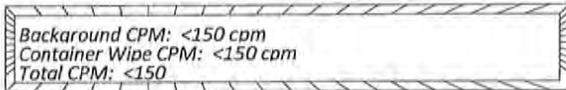
Fed Ex Tracking #(s):
7798 2026 4991 - 2.5 °C (wet ice)

pH Test Paper 0.0 to 3.0
lot - 230315
Exp: 10/30/2018

Ice Chest No.:
GWS-648

Test requirements located on the applicable Task Order.

Revision, 1 Added pH <2.



System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
619321	B3BCX1	08/08/17	Water	1	
619322	B3BJV2	08/08/17	Water	1	
619323	B3BJV3	08/08/17	Water	1	
619324	B3BKV8	08/08/17	Water	1	
619325	B3BL32	08/08/17	Water	1	

Containers: 5

Samples: 5

These documents are associated with this receipt: 226871[COC for SRR 60203], 226872[Paperwork for SRR 60203]

Thermometer: 021055
Temperature: 2.5

60203 CH2M Hill Plateau Remediation

September 20, 2017

Sample Receipt

Southwest Research Institute

VTSR: 08/11/17

Time: 08:30:00

Project: 20859.01.00X
 Case #: CHPRC
 Client: CH2M Hill Plateau Remediation Company

Sample Receipt Number: 60217
 Revision: 2
 This Receipt was Revised 09/08/2017

Manager: SPIES, RADONNA
 Logged in by: DXGARCIA
 Creation Date: 08/11/17

Notes

Samples were received intact. 2.0°C (wet ice)

Fed Ex Tracking #(s):

- 7799 1365 1634 - 2.0 °C (wet ice)
- 7799 0964 5316 - 2.0 °C (wet ice)
- 7799 1365 2170 - 2.0 °C (wet ice)
- 7799 0964 5382 - 2.0 °C (wet ice)
- 7798 0827 1394 - 2.0 °C (wet ice)
- 7799 1592 0566 - 2.0 °C (wet ice)

pH Test Paper 0.0 to 3.0

lot - 230315
 Exp: 10/30/2018

Ice Chest No.:

- GWS-614
- GWS-622
- GWS-682
- GWS-660
- GWS-656
- GWS-635

Test requirements located on the applicable Task Order.

Revision, 1 Corrected fedex tracking # 7798 8927 1394.

Background CPM: <150 cpm
 Container Wipe CPM: <150 cpm
 Total CPM: <150 cpm

System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
619452	B3BCW4	08/10/17	Water	1	
619431	B3BHB1	08/10/17	Water	5	
619432	B3BHB2	08/10/17	Water	5	
619433	B3BHC5	08/09/17	Water	4	
619434	B3BHL5	08/10/17	Water	5	
619435	B3BHL6	08/10/17	Water	5	
619436	B3BHM8	08/09/17	Water	4	
619437	B3BHN4	08/09/17	Water	4	
619438	B3BJF5	08/10/17	Water	8	
619439	B3BJF6	08/10/17	Water	8	
619440	B3BJF8	08/10/17	Water	8	
619441	B3BJF9	08/10/17	Water	8	
619442	B3BJT4	08/09/17	Water	1	
619443	B3BJT5	08/09/17	Water	1	
619444	B3BJT6	08/10/17	Water	1	
619445	B3BJT7	08/10/17	Water	1	
619446	B3BJT8	08/10/17	Water	1	

60217 CH2M Hill Plateau Remediation

September 20, 2017

Sample Receipt

Southwest Research Institute

VTSR: 08/11/17

Time: 08:30:00

Project: 20859.01.00X
 Case #: CHPRC
 Client: CH2M Hill Plateau Remediation Company

Sample Receipt Number: 60217
 Revision: 2

Manager: SPIES, RADONNA
 Logged in by: DXGARCIA
 Creation Date: 08/11/17

This Receipt was Revised 09/08/2017

System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
619447	B3BJT9	08/10/17	Water	1	
619448	B3BJV8	08/09/17	Water	1	
619449	B3BJV9	08/09/17	Water	1	
619453	B3BJW0	08/10/17	Water	2	
619450	B3BK88	08/10/17	Water	1	
619454	B3BL35	08/10/17	Water	1	
619455	B3BL36	08/10/17	Water	1	
619451	B3BLC4	08/09/17	Water	1	

Containers: 79

Samples: 25

These documents are associated with this receipt: 226945[COC for SRR 60217], 226946[Paperwork for SRR 60217]

Thermometer: 021055
 Temperature: 2.0

60217 CH2M Hill Plateau Remediation

September 20, 2017

Sample Receipt

Southwest Research Institute

VTSR: 08/15/17

Time: 08:25:00

Project: 20859.01.00X

Sample Receipt Number: 60230
Revision: 1

Manager: SPIES, RADONNA

Case #: CHPRC

This Receipt was Revised 09/20/2017

Logged in by: DXGARCIA

Client: CH2M Hill Plateau Remediation Company

Creation Date: 08/15/17

Notes

Samples were received intact.

Fed Ex Tracking #(s):
7799 7656 9498 - 2.5 °C (wet ice)

pH Test Paper 0.0 to 3.0
lot - 230315
Exp: 10/30/2018

Ice Chest No.:
GWS-680

Test requirements located on the applicable Task Order.

Rev. 1. Corrected COC record.

Background CPM: <150 cpm
Container Wipe CPM: <150 cpm
Total CPM: <150

System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
619599	B3BD63	08/14/17	Water	1	
619600	B3BD64	08/14/17	Water	1	
619601	B3BD67	08/14/17	Water	1	
619602	B3BD68	08/14/17	Water	1	
619603	B3BFH5	08/14/17	Water	2	
619604	B3BFH6	08/14/17	Water	2	
619605	B3BK97	08/14/17	Water	2	
619606	B3BKH9	08/14/17	Water	1	

Containers: 11

Samples: 8

These documents are associated with this receipt: 227134[COC for SRR 60230], 227135[Paperwork for SRR 60230]

Thermometer: 021055
Temperature: 2.5

60230 CH2M Hill Plateau Remediation

September 20, 2017

Sample Receipt

Southwest Research Institute

Sample Receipt Number: 60240

VTSR: 08/16/17

Time: 08:30:00

Project: 20859.01.00X
 Case #: CHPRC
 Client: CH2M Hill Plateau Remediation Company

Manager: SPIES, RADONNA
 Logged in by: DXGARCIA
 Creation Date: 08/16/17

Notes

Samples were received intact.

Fed Ex Tracking #(s):
 7700 0011 6604- 2.5 °C (wet ice)

pH Test Paper 0.0 to 3.0
 lot - 230315
 Exp: 10/30/2018

Ice Chest No.:
 GWS-298

Test requirements located on the applicable Task Order.

Background CPM: <150 cpm
 Container Wide CPM: <150 cpm
 Total CPM: <150

System ID	Customer ID	CED	Matrix	Containers	Special Reqs.
619695	B3BD36	08/15/17	Water	1	
619701	B3BD40	08/15/17	Water	1	
619696	B3BD51	08/14/17	Water	1	
619697	B3BD53	08/14/17	Water	1	
619698	B3BD73	08/15/17	Water	1	
619699	B3BD77	08/15/17	Water	1	
619700	B3BF04	08/15/17	Water	1	

Containers: 7

Samples: 7

Thermometer: 021055
 Temperature: 2.5

60240 CH2M Hill Plateau Remediation

September 20, 2017

Southwest Research Institute

Traffic Report

Sample Custodian Signature:

David Harris



- 1. Custody Seal Present
- 2. Chain of Custody Present
- 3. Sample Tags Not Present
Sample Tag Numbers Not on COC *N/A*
- 4. SMO Forms Present

Client: CH2M Hill Plateau Remediation Company

Project: 20859.01.00X

Case: CHPRC / SDG: SEE TO

Sample Receipt: 60203

Airbill: 7798 2026 4991

Custody Seal #(s): N/A

Date Received	Time Received	COC Record	SMO Sample #	Corresponding		Traffic Rpt, Tags, COC Agree	Sample Condition
				Sample Tag #	SwRI #		
08/10/17	08:20:00	W17-008-109	B3BCX1	N/A	619321	YES	Intact
08/10/17	08:20:00	W17-008-117	B3BJV2	N/A	619322	YES	Intact
08/10/17	08:20:00	W17-008-117	B3BJV3	N/A	619323	YES	Intact
08/10/17	08:20:00	S17-008-038	B3BKV8	N/A	619324	YES	Intact
08/10/17	08:20:00	S17-008-689	B3BL32	N/A	619325	YES	Intact

September 20, 2017

Southwest Research Institute

Traffic Report

Sample Custodian Signature: _____



- | | |
|---------------------|-------------|
| 1. Custody Seal | Present |
| 2. Chain of Custody | Present |
| 3. Sample Tags | Not Present |
| Sample Tag Numbers | Not on COC |
| 4. SMO Forms | Present |

N/A

Client: CH2M Hill Plateau Remediation Company

Project: 20859.01.00X

Case: CHPRC / SDG: SEE T.O.

Sample Receipt: 60217

Airbill: 779913651634,779909645316,779913652170

Custody Seal #(s): N/A

Date Received	Time Received	COC Record	SMO Sample #	Corresponding		Traffic Rpt, Tags, COC Agree	Sample Condition
				Sample Tag #	SwRI #		
08/11/17	08:30:00	S17-008-327	B3BHB1	N/A	619431	YES	Intact
08/11/17	08:30:00	S17-008-328	B3BHB2	N/A	619432	YES	Intact
08/11/17	08:30:00	S17-008-329	B3BHC5	N/A	619433	YES	Intact
08/11/17	08:30:00	S17-008-330	B3BHL5	N/A	619434	YES	Intact
08/11/17	08:30:00	S17-008-331	B3BHL6	N/A	619435	YES	Intact
08/11/17	08:30:00	S17-008-332	B3BHM8	N/A	619436	YES	Intact
08/11/17	08:30:00	S17-008-333	B3BHN4	N/A	619437	YES	Intact
08/11/17	08:30:00	X17-063-003	B3BJF5	N/A	619438	YES	Intact
08/11/17	08:30:00	X17-063-003	B3BJF6	N/A	619439	YES	Intact
08/11/17	08:30:00	X17-063-004	B3BJF8	N/A	619440	YES	Intact
08/11/17	08:30:00	X17-063-004	B3BJF9	N/A	619441	YES	Intact
08/11/17	08:30:00	W17-008-113	B3BJT4	N/A	619442	YES	Intact
08/11/17	08:30:00	W17-008-113	B3BJT5	N/A	619443	YES	Intact
08/11/17	08:30:00	W17-008-114	B3BJT6	N/A	619444	YES	Intact
08/11/17	08:30:00	W17-008-114	B3BJT7	N/A	619445	YES	Intact
08/11/17	08:30:00	W17-008-115	B3BJT8	N/A	619446	YES	Intact
08/11/17	08:30:00	W17-008-115	B3BJT9	N/A	619447	YES	Intact
08/11/17	08:30:00	W17-008-120	B3BJV8	N/A	619448	YES	Intact
08/11/17	08:30:00	W17-008-120	B3BJV9	N/A	619449	YES	Intact
08/11/17	08:30:00	S17-008-648	B3BK88	N/A	619450	YES	Intact
08/11/17	08:30:00	S17-008-692	B3BLC4	N/A	619451	YES	Intact
08/11/17	08:30:00	W17-008-108	B3BCW4	N/A	619452	YES	Intact
08/11/17	08:30:00	W17-008-108	B3BJW0	N/A	619453	YES	Intact
08/11/17	08:30:00	S17-008-690	B3BL35	N/A	619454	YES	Intact
08/11/17	08:30:00	S17-008-691	B3BL36	N/A	619455	YES	Intact

September 20, 2017

Southwest Research Institute
Traffic Report

Sample Custodian Signature: _____

David Gan



- 1. Custody Seal Present
- 2. Chain of Custody Present
- 3. Sample Tags Not Present *NIA*
Sample Tag Numbers Not on COC
- 4. SMO Forms Present

Client: CH2M Hill Plateau Remediation Company
 Project: 20859.01.00X
 Case: CHPRC / SDG: GET.U.
 Sample Receipt: 60230
 Airbill: 7799 7656 9498

Custody Seal #(s):

Date Received	Time Received	COC Record	SMO Sample #	Corresponding		Traffic Rpt, Tags, COC Agree	Sample Condition
				Sample Tag #	SwRI #		
08/15/17	08:25:00	W17-008-070	B3BD63	N/A	619599	YES	Intact
08/15/17	08:25:00	W17-008-071	B3BD64	N/A	619600	YES	Intact
08/15/17	08:25:00	W17-008-070	B3BD67	N/A	619601	YES	Intact
08/15/17	08:25:00	W17-008-071	B3BD68	N/A	619602	YES	Intact
08/15/17	08:25:00	S17-008-423	B3BFH5	N/A	619603	YES	Intact
08/15/17	08:25:00	S17-008-427	B3BFH6	N/A	619604	YES	Intact
08/15/17	08:25:00	S17-008-662	B3BK97	N/A	619605	YES	Intact
08/15/17	08:25:00	S17-008-673	B3BKH9	N/A	619606	YES	Intact

September 20, 2017
Southwest Research Institute

Traffic Report

Sample Custodian Signature: Daniel Harris



- 1. Custody Seal Present
- 2. Chain of Custody Present
- 3. Sample Tags Not Present *N/A*
Sample Tag Numbers Not on COC
- 4. SMO Forms Present

Client: CH2M Hill Plateau Remediation Company
Project: 20859.01.00X
Case: CHPRC / SDG: SEE T.O.
Sample Receipt: 60240
Airbill: 7700 0011 6604

Custody Seal #(s): N/A

Date Received	Time Received	COC Record	SMO Sample #	Corresponding		Traffic Rpt, Tags, COC Agree	Sample Condition
				Sample Tag #	SwRI #		
08/16/17	08:30:00	W17-008-065	B3BD36	N/A	619695	YES	Intact
08/16/17	08:30:00	W17-008-068	B3BD51	N/A	619696	YES	Intact
08/16/17	08:30:00	W17-008-068	B3BD53	N/A	619697	YES	Intact
08/16/17	08:30:00	W17-008-073	B3BD73	N/A	619698	YES	Intact
08/16/17	08:30:00	W17-008-073	B3BD77	N/A	619699	YES	Intact
08/16/17	08:30:00	S17-008-382	B3BF04	N/A	619700	YES	Intact
08/16/17	08:30:00	W17-008-065	B3BD40	N/A	619701	YES	Intact

Lab Name Southwest Research Institute			Page 1 of 1		
Received By (Print Name) DAVID GARCIA			Log-in Date 08/10/2017		
Received By (Signature) <i>David Garcia</i>					
Case Number CHPRC		Sample Delivery Group No. N/A		SAS Number N/A	
Remarks: 20859.01.00X					
		Corresponding		Remarks: Condition of Sample Shipment, etc	
	EPA Sample #	Sample Tag #	Assigned Lab #		
1. Custody Seal(s)	<input checked="" type="checkbox"/> Present / <input type="checkbox"/> Absent* <input checked="" type="checkbox"/> Intact / <input type="checkbox"/> Broken	B3BCX1	N/A	619321	Intact
2. Custody Seal Nos.	N/A	B3BJV2	N/A	619322	Intact
		B3BJV3	N/A	619323	Intact
3. Chain-of-Custody Records	<input checked="" type="checkbox"/> Present / <input type="checkbox"/> Absent*	B3BKV8	N/A	619324	Intact
4. Traffic Reports or Packing Lists	<input checked="" type="checkbox"/> Present / <input type="checkbox"/> Absent*	B3BL32	N/A	619325	Intact
5. Airbill	Airbill/Sticker <input checked="" type="checkbox"/> Present / <input type="checkbox"/> Absent*				
6. Airbill No.	7798 2026 4991				
7. Sample Tags	Present / <input checked="" type="checkbox"/> Absent				
Sample Tag Numbers	Listed / <input checked="" type="checkbox"/> Not listed on Chain of Custody				
8. Sample Condition	<input checked="" type="checkbox"/> Intact / <input type="checkbox"/> Broken* / <input type="checkbox"/> Leaking				
9. Cooler Temperature	2.5C				
10. Does Information on custody records, traffic reports, and sample tags agree?	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No*				
11. Date Received at Lab	08/10/2017				
12. Time Received	08:20:00				
Sample Transfer					
Fraction	<i>ORG. Inorg</i>	Fraction			
Area #	<i>R.13, R.40</i>	Area #			
By	DAVID GARCIA	By			
On	08/10/2017	On			

* Contact SMO and attach record of resolution

Reviewed By <i>David Garcia</i>	Logbook No. Sample Receipt (60203)
Date 08.10.17	Logbook Page No. 9908 SEC 2, 30P6

Lab Name Southwest Research Institute		Page 1 of 2	
Received By (Print Name) DAVID GARCIA		Log-in Date 08/11/2017	
Received By (Signature) <i>David Garcia</i>			
Case Number CHPRC	Sample Delivery Group No. N/A	SAS Number N/A	
Remarks: 20859.01.00X			
	EPA Sample #	Corresponding Sample Tag #	Assigned Lab #
1. Custody Seal(s)	<input checked="" type="checkbox"/> Present / <input type="checkbox"/> Absent* <input checked="" type="checkbox"/> Intact / <input type="checkbox"/> Broken	B3BHB1	N/A
		B3BHB2	N/A
2. Custody Seal Nos.	N/A	B3BHC5	N/A
		B3BHL5	N/A
3. Chain-of-Custody Records	<input checked="" type="checkbox"/> Present / <input type="checkbox"/> Absent*	B3BHL6	N/A
4. Traffic Reports or Packing Lists	<input checked="" type="checkbox"/> Present / <input type="checkbox"/> Absent*	B3BHM8	N/A
5. Airbill	Airbill/Sticker <input checked="" type="checkbox"/> Present / <input type="checkbox"/> Absent*	B3BHN4	N/A
		B3BJF5	N/A
6. Airbill No.	779913651634, 77990964 5316, 779913652170	B3BJF6	N/A
		B3BJF8	N/A
7. Sample Tags	Present / <input checked="" type="checkbox"/> Absent	B3BJF9	N/A
Sample Tag Numbers	Listed / <input checked="" type="checkbox"/> Not listed on Chain of Custody	B3BJT4	N/A
8. Sample Condition	Intact / <input type="checkbox"/> Broken* / <input checked="" type="checkbox"/> N/A Leaking	B3BJT5	N/A
9. Cooler Temperature	2.0C	B3BJT6	N/A
10. Does Information on custody records, traffic reports, and sample tags agree?	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No*	B3BJT7	N/A
		B3BJT8	N/A
11. Date Received at Lab	08/11/2017	B3BJT9	N/A
		B3BJV8	N/A
12. Time Received	08:30:00	B3BJV9	N/A
Sample Transfer		B3BK88	N/A
Fraction ORG. JIONS	Fraction	B3BLC4	N/A
Area # VARIOUS	Area #	B3BCW4	N/A
By DAVID GARCIA	By	B3BJW0	N/A
On 08/11/2017	On		

* Contact SMO and attach record of resolution

Reviewed By <i>Janis Garcia</i>	Logbook No. Sample Receipt (60217)
Date 9.8.17	Logbook Page No. 9909

Lab Name Southwest Research Institute			Page 2 of 2		
Received By (Print Name) DAVID GARCIA			Log-in Date 08/11/2017		
Received By (Signature) <i>David Garcia</i>					
Case Number CHPRC		Sample Delivery Group No. N/A		SAS Number N/A	
Remarks: 20859.01.00X					
		Corresponding		Remarks: Condition of Sample Shipment, etc	
		EPA Sample #	Sample Tag #		Assigned Lab #
1. Custody Seal(s)	<input checked="" type="checkbox"/> Present / Absent* <input checked="" type="checkbox"/> Intact / Broken	B3BL35	N/A	619454	Intact
2. Custody Seal Nos.	N/A	B3BL36	N/A	619455	Intact
3. Chain-of Custody Records	<input checked="" type="checkbox"/> Present / Absent*				
4. Traffic Reports or Packing Lists	<input checked="" type="checkbox"/> Present / Absent*				
5. Airbill	Airbill / Sticker <input checked="" type="checkbox"/> Present / Absent*				
6. Airbill No.	779913651634, 77990964 5316, 779913652170				
7. Sample Tags	Present / <input checked="" type="checkbox"/> Absent				
Sample Tag Numbers	Listed / <input checked="" type="checkbox"/> Not listed on Chain of Custody				
8. Sample Condition	<input checked="" type="checkbox"/> Intact / Broken* / <i>N/A</i> Leaking				
9. Cooler Temperature	2.0C				
10. Does Information on custody records, traffic reports, and sample tags agree?	<input checked="" type="checkbox"/> Yes / No*				
11. Date Received at Lab	08/11/2017				
12. Time Received	08:30:00				
Sample Transfer					
Fraction <i>ORG. INDRS</i>	Fraction				
Area # <i>VARIOUS</i>	Area #				
By DAVID GARCIA	By				
On 08/11/2017	On				

* Contact SMO and attach record of resolution

Reviewed By <i>Jennifer Sparks</i>	Logbook No. Sample Receipt (60217)
Date <i>9.8.17</i>	Logbook Page No. 9909

Lab Name Southwest Research Institute			Page 1 of 1		
Received By (Print Name) DAVID GARCIA			Log-in Date 08/15/2017		
Received By (Signature) <i>David Garcia</i>					
Case Number CHPRC		Sample Delivery Group No. N/A		SAS Number N/A	
Remarks: 20859.01.00X					
		Corresponding		Remarks: Condition of Sample Shipment, etc	
		EPA Sample #	Sample Tag #		Assigned Lab #
1. Custody Seal(s)	<input checked="" type="radio"/> Present / <input type="radio"/> Absent* <input checked="" type="radio"/> Intact / <input type="radio"/> Broken	B3BD63	N/A	619599	Intact
2. Custody Seal Nos.	N/A	B3BD64	N/A	619600	Intact
		B3BD67	N/A	619601	Intact
3. Chain-of Custody Records	<input checked="" type="radio"/> Present / <input type="radio"/> Absent*	B3BD68	N/A	619602	Intact
4. Traffic Reports or Packing Lists	<input checked="" type="radio"/> Present / <input type="radio"/> Absent*	B3BFH5	N/A	619603	Intact
5. Airbill	Airbill/Sticker <input checked="" type="radio"/> Present / <input type="radio"/> Absent*	B3BFH6	N/A	619604	Intact
6. Airbill No.	7799 7656 9498	B3BK97	N/A	619605	Intact
		B3BKH9	N/A	619606	Intact
7. Sample Tags	Present / <input checked="" type="radio"/> Absent*	[Large handwritten circle covering the right side of the table]			
Sample Tag Numbers	Listed / <input checked="" type="radio"/> Not listed on Chain of Custody N/A				
8. Sample Condition	<input checked="" type="radio"/> Intact / <input type="radio"/> Broken* / <input type="radio"/> Leaking				
9. Cooler Temperature	2.5C				
10. Does information on custody records, traffic reports, and sample tags agree?	<input checked="" type="radio"/> Yes / <input type="radio"/> No*				
11. Date Received at Lab	08/15/2017				
12. Time Received	08:25:00				
Sample Transfer					
Fraction <i>Indag</i>	Fraction				
Area # <i>R.40, R.13</i>	Area #				
By DAVID GARCIA	By				
On 08/15/2017	On				

* Contact SMO and attach record of resolution

Reviewed By <i>David Garcia</i>	Logbook No.	Sample Receipt (60230)
Date 9.20.17	Logbook Page No.	9913

Lab Name Southwest Research Institute			Page 1 of 1		
Received By (Print Name) DAVID GARCIA			Log-in Date 08/16/2017		
Received By (Signature) <i>David Garcia</i>					
Case Number CHPRC		Sample Delivery Group No. N/A		SAS Number N/A	
Remarks: 20859.01.00X		Corresponding		Remarks: Condition of Sample Shipment, etc	
		EPA Sample #	Sample Tag #	Assigned Lab #	
1. Custody Seal(s)	<input checked="" type="radio"/> Present / Absent* <input checked="" type="radio"/> Intact / Broken	B3BD36	N/A	619695	Intact
2. Custody Seal Nos.	N/A	B3BD51	N/A	619696	Intact
		B3BD53	N/A	619697	Intact
3. Chain-of-Custody Records	<input checked="" type="radio"/> Present / Absent*	B3BD73	N/A	619698	Intact
4. Traffic Reports or Packing Lists	<input checked="" type="radio"/> Present / Absent*	B3BD77	N/A	619699	Intact
5. Airbill	Airbill / Sticker <input checked="" type="radio"/> Present / Absent*	B3BF04	N/A	619700	Intact
6. Airbill No.	7700 0011 6604	B3BD40	N/A	619701	Intact
7. Sample Tags	Present <input checked="" type="radio"/> Absent N/A				
Sample Tag Numbers	Listed <input checked="" type="radio"/> Not listed on Chain of Custody				
8. Sample Condition	<input checked="" type="radio"/> Intact / Broken* / Leaking				
9. Cooler Temperature	2.5C				
10. Does Information on custody records, traffic reports, and sample tags agree?	<input checked="" type="radio"/> Yes / No*				
11. Date Received at Lab	08/16/2017				
12. Time Received	08:30:00				
Sample Transfer					
Fraction	ORG. Inorg	Fraction			
Area #	VARIOUS	Area #			
By	DAVID GARCIA	By			
On	08/16/2017	On			

* Contact SMO and attach record of resolution

Reviewed By <i>David Garcia</i>	Logbook No. Sample Receipt (60240)
Date 9.16.17	Logbook Page No. 9914 SEC 2013

September 20, 2017

SOUTHWEST RESEARCH INSTITUTE

CLIENT: CH2M Hill Plateau Remediation Company

SwRI PROJECT#: 20859.01.00X

**SwRI TASK ORDER: 170810-17, 170811-14,
170815-1, 170816-3**

SwRI SRR: 60203, 60217, 60230, 60240

SDG: 619322

VTSR: 08.10.2017, 08.11.2017, 08.15.2017, 08.16.2017

Case Narrative

September 20, 2017

CLIENT: CH2M Hill Plateau Remediation Company

SDG: 619322

SwRI Project Number: 20859.01.00X

SwRI Sample Receipt Number: 60203, 60217, 60230, 60240

Page#: 1

SwRI CASE NARRATIVE

1. Twenty (20) samples were received for Cyanide Analyses:

SwRI ID	Customer ID	Matrix
619322	B3BJV2	Water
619323	B3BJV3	Water
619442	B3BJT4	Water
619443	B3BJT5	Water
619444	B3BJT6	Water
619445	B3BJT7	Water
619446	B3BJT8	Water
619447	B3BJT9	Water
619448	B3BJV8	Water
619449	B3BJV9	Water
619452	B3BCW4	Water
619453	B3BJW0	Water
619599	B3BD63	Water
619600	B3BD64	Water
619601	B3BD67	Water
619602	B3BD68	Water
619695	B3BD36	Water
619696	B3BD51	Water
619697	B3BD53	Water
619701	B3BD40	Water

September 20, 2017

Client: CH2M Hill Plateau Remediation Company

SDG: 619322

SwRI Project Number: 20859.01.00X

SwRI Task Order Number(s): 170810-17, 170811-14, 170815-1, 170816-3

WETCHEM ANALYSIS

The following analyses were performed for this sample delivery group (SDG):

Total Cyanide – SW 846 9012

Amenable Cyanide – SW 846 9012

Free Cyanide – SW 846 9014

Holding Times:

All holding times were met.

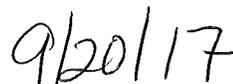
QC:

All PBs, ICB's and CCB's were less than the reporting limit. An "L" qualifier was placed on CCB2 for the total cyanide analysis performed on 08/22/17 due to the value being more negative than the RL. All data was re-evaluated on 08/23/17 to confirm sample concentrations. All values agreed, therefore values from 8/22/17 were reported due to holding time expiry on 8/23/17. All LCSWs were within 80-120% recovery and all ICV's and CCV's were within 90-110% recovery. The method states 90-110% recovery criteria for LCSH and LCSL; therefore, the LCSL on 8/23/17 with an 88.4% recovery was out of the specified criteria. The LCSH on 8/18/17, 8/22/17 & 8/25/17 with 81.6%, 89.2% & 88.8% respectively, were also out of the method specified criteria of 90-110% recovery. All LLCs were within 50-150% recovery and all duplicates were less than 20% recovery with the exception of amenable cyanide (SwRI #619695) with a 70.6% RPD and the free cyanide (SwRI #619322) with 200% RPD. Although the %RPD for the free cyanide was 200%, a control limit of plus or minus the reporting limit exception is given to samples less than 5 times the reporting limit and therefore no flag is required. If the method did not specify MS recovery criteria, then 75-125% was used. All matrix spike recoveries were within their specified criteria with the exception of total cyanide (SwRI #619322), with a matrix spike recovery of 49.0%. A post digestion spike was performed for the total cyanide sample with an 89.9% recovery.

"I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature. This report shall not be reproduced except in full without the written approval of SwRI."



Principal Scientist



Date

September 20, 2017**SOUTHWEST RESEARCH INSTITUTE****CLIENT: CH2M Hill Plateau Remediation Company****SwRI PROJECT#: 20859.01.00X****SwRI TASK ORDER: 170810-17, 170811-14,
170815-1, 170816-3****SwRI SRR: 60203, 60217, 60230, 60240****SDG: 619322****VTSR: 08.10.2017, 08.11.2017, 08.15.2017, 08.16.2017**

Cyanide Results

September 20, 2017

SOUTHWEST RESEARCH INSTITUTE

WetChem Report

Cover Page

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14, 170816-3, 170815-1,
 170810-17

SDG: 619322
 SRR: 60217, 60240, 60230, 60203

Case: CHPRC
 Project: 20859.01.00X

Client Sample ID	Lab Sample ID
B3BCW4	619452
B3BD36	619695
B3BD36D	619695D
B3BD36MS	619695S
B3BD40	619701
B3BD51	619696
B3BD53	619697
B3BD63	619599
B3BD64	619600
B3BD67	619601
B3BD68	619602
B3BJT4	619442
B3BJT5	619443
B3BJT6	619444
B3BJT7	619445
B3BJT8	619446
B3BJT9	619447
B3BJV2	619322
B3BJV2D	619322D
B3BJV2MS	619322S
B3BJV3	619323
B3BJV3D	619323D
B3BJV8	619448
B3BJV9	619449
B3BJW0	619453

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and the electronic data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature:  _____

Name: Radonna Spies _____

Date: 9/13/17 _____

Title: Principal Scientist _____

Cover Page

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619452
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/11/2017
 Collection Date: 08/10/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/24/2017 13:44
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/23/2017 10:31
57-12-5	Total Cyanide	0.267	N	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 17:05

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619695
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/16/2017
 Collection Date: 08/15/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.0460	*	NA	0.00500	0.00500	1	NA	08/24/2017 14:15
57-12-5	Free Cyanide	0.00752	*	KNO	0.00500	0.00500	1	20170828-P004	08/25/2017 14:46
57-12-5	Total Cyanide	0.688	DN	KNO	0.0250	0.0250	5	20170828-P004	08/25/2017 12:44

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619701
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/16/2017
 Collection Date: 08/15/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00600	*	NA	0.00500	0.00500	1	NA	08/24/2017 15:28
57-12-5	Free Cyanide	0.00649	*	KNO	0.00500	0.00500	1	20170828-P004	08/25/2017 13:44
57-12-5	Total Cyanide	0.681	DN	KNO	0.0250	0.0250	5	20170828-P004	08/25/2017 13:44

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619696
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/16/2017
 Collection Date: 08/14/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/24/2017 14:15
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	20170828-P004	08/25/2017 13:44
57-12-5	Total Cyanide	0.00500	UN	KNO	0.00500	0.00500	1	20170828-P004	08/25/2017 10:44

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619697
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/16/2017
 Collection Date: 08/14/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/24/2017 14:51
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	20170828-P004	08/25/2017 13:44
57-12-5	Total Cyanide	0.00500	UN	KNO	0.00500	0.00500	1	20170828-P004	08/25/2017 10:44

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619599
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/15/2017
 Collection Date: 08/14/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.214	*	NA	0.00500	0.00500	1	NA	08/24/2017 14:15
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/23/2017 11:07
57-12-5	Total Cyanide	0.214	N	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 17:05

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619600
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/15/2017
 Collection Date: 08/14/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/24/2017 14:15
57-12-5	Free Cyanide	0.00575	*	KNO	0.00500	0.00500	1	NA	08/23/2017 11:07
57-12-5	Total Cyanide	0.00500	UN	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 17:05

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

Form I-IN

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619601
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/15/2017
 Collection Date: 08/14/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/24/2017 14:15
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/23/2017 11:07
57-12-5	Total Cyanide	0.00500	UN	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 17:08

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

Form I-IN

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619602
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/15/2017
 Collection Date: 08/14/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/24/2017 14:15
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/23/2017 11:07
57-12-5	Total Cyanide	0.00500	UN	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 17:05

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619442
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/11/2017
 Collection Date: 08/09/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/22/2017 18:01
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/22/2017 16:02
57-12-5	Total Cyanide	0.00500	UN	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 16:19

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619443
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/11/2017
 Collection Date: 08/09/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/22/2017 18:01
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/22/2017 16:02
57-12-5	Total Cyanide	0.00500	UN	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 16:19

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619444
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/11/2017
 Collection Date: 08/10/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/22/2017 18:01
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/23/2017 10:31
57-12-5	Total Cyanide	0.0743	N	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 16:19

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619445
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/11/2017
 Collection Date: 08/10/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/22/2017 18:01
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/23/2017 10:31
57-12-5	Total Cyanide	0.0643	N	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 17:05

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619446
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/11/2017
 Collection Date: 08/10/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/24/2017 13:44
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/23/2017 13:49
57-12-5	Total Cyanide	0.0827	N	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 17:05

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619447
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/11/2017
 Collection Date: 08/10/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/24/2017 13:44
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/23/2017 10:31
57-12-5	Total Cyanide	0.0695	N	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 17:05

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619322
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/10/2017
 Collection Date: 08/08/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/22/2017 17:30
57-12-5	Free Cyanide	0.00545	*	KNO	0.00500	0.00500	1	NA	08/22/2017 16:02
57-12-5	Total Cyanide	0.0181	N	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 16:19

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619323
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/10/2017
 Collection Date: 08/08/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.0211	*	NA	0.00500	0.00500	1	NA	08/22/2017 17:30
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/22/2017 16:02
57-12-5	Total Cyanide	0.0380	N	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 16:19

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

Form I-IN

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
Task Order: 170811-14 + 3 others
Lab ID: 619448
Result Units: mg/L

SDG: 619322
SRR: 60203, 60217, 60230, 60240
Matrix: Water
% Solids: NA

Case: CHPRC
Project: 20859.01.00X
Receipt Date: 08/11/2017
Collection Date: 08/09/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00640	*	NA	0.00500	0.00500	1	NA	08/22/2017 18:01
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/23/2017 10:31
57-12-5	Total Cyanide	0.0190	N	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 17:05

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

Form I-IN

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619449
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/11/2017
 Collection Date: 08/09/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/22/2017 18:01
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/23/2017 10:31
57-12-5	Total Cyanide	0.0166	N	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 17:05

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Unknown

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: 619453
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: 08/11/2017
 Collection Date: 08/10/2017

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U*	NA	0.00500	0.00500	1	NA	08/24/2017 13:44
57-12-5	Free Cyanide	0.00500	U*	KNO	0.00500	0.00500	1	NA	08/23/2017 11:07
57-12-5	Total Cyanide	0.242	N	KNO	0.00500	0.00500	1	20170828-P001	08/18/2017 17:05

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Blank

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: PB17H18PB1
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: NA
 Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
57-12-5	Total Cyanide	0.00500	U	KNO	0.00500	0.0100	1	20170828-P001	08/18/2017 15:46

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Blank

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: PB17H22PB1
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: NA
 Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
57-12-5	Total Cyanide	0.00500	U	KNO	0.00500	0.0100	1	20170828-P002	08/22/2017 16:02

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Blank

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: PB17H22PB2
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: NA
 Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U	NA	0.00500	0.005	1	20170828-P002	08/22/2017 17:30

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Blank

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: PB17H24PB2
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: NA
 Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
	Amenable Cyanide	0.00500	U	NA	0.00500	0.005	1	20170828-P003	08/24/2017 13:44

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Blank

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: PB17H24PB1
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: NA
 Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
57-12-5	Total Cyanide	0.00500	U	KNO	0.00500	0.0100	1	20170828-P003	08/24/2017 13:43

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: Blank

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: PB17H25PB1
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: NA
 Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
57-12-5	Total Cyanide	0.00500	U	KNO	0.00500	0.0100	1	20170828-P004	08/25/2017 10:44

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: ICB/Blank

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: CN-ICB3
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: NA
 Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
57-12-5	Free Cyanide	0.00500	U	KNO	0.00500	0.00500	1	NA	08/25/2017 10:44

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: ICB/Blank

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: CN-ICB2
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: NA
 Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
57-12-5	Free Cyanide	0.00500	U	KNO	0.00500	0.00500	1	NA	08/23/2017 09:22

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Certificate of Analysis

Type: ICB/Blank

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170811-14 + 3 others
 Lab ID: CN-ICB
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X
 Receipt Date: NA
 Collection Date: NA

CAS No.	Analyte	Result	Qual	M	RL	CRDL	DF	Prep Batch	Analysis Date/Time
57-12-5	Free Cyanide	0.00500	U	KNO	0.00500	0.00500	1	NA	08/22/2017 16:02

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	RL - SwRI Reporting Limit	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	CRDL - Contract Req. Det. Limit	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	DF - Dilution Factor	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	M - Instrument	
E - Result is estimated due to interferences		
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A001

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Analyte	Initial Calibration Verification				Continuing Calibration Verification						
	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Total Cyanide	0.680	0.703	103.4%	90%-110%	0.680	0.694	102.1%	0.685	100.7%	90%-110%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L
Associated Analytical Batches: 20170828-A001

SDG: 619322
SRR: 60203, 60217, 60230, 60240
Initial Calibration Source: See Raw Data
Continuing Calibration Source: See Raw Data

Case: CHPRC
Project: 20859.01.00X

Continuing Calibration Verification					
Analyte	True	Found3	%Rec	Limit	M
Total Cyanide	0.680	0.727	106.9%	90%-110%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A002

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Analyte	Initial Calibration Verification				Continuing Calibration Verification						
	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Free Cyanide	0.680	0.671	98.7%	90%-110%	0.680	0.688	101.2%	0.679	99.9%	90%-110%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L
Associated Analytical Batches: 20170828-A002

SDG: 619322
SRR: 60203, 60217, 60230, 60240
Initial Calibration Source: See Raw Data
Continuing Calibration Source: See Raw Data

Case: CHPRC
Project: 20859.01.00X

Continuing Calibration Verification					
Analyte	True	Found3	%Rec	Limit	M
Free Cyanide	0.680	0.683	100.4%	90%-110%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A003

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Analyte	Initial Calibration Verification				Continuing Calibration Verification						
	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Total Cyanide	0.680	0.671	98.7%	90%-110%	0.680	0.688	101.2%	0.679	99.9%	90%-110%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L
Associated Analytical Batches: 20170828-A003

SDG: 619322
SRR: 60203, 60217, 60230, 60240
Initial Calibration Source: See Raw Data
Continuing Calibration Source: See Raw Data

Case: CHPRC
Project: 20859.01.00X

Continuing Calibration Verification					
Analyte	True	Found3	%Rec	Limit	M
Total Cyanide	0.680	0.683	100.4%	90%-110%	KNO

<i>Instruments/Methods (M)</i>
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A005

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Analyte	Initial Calibration Verification				Continuing Calibration Verification						
	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Free Cyanide	0.680	0.687	101.0%	90%-110%	0.680	0.704	103.5%	0.694	102.1%	90%-110%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A005

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Continuing Calibration Verification									
Analyte	True	Found3	%Rec	Found4	%Rec	Found5	%Rec	Limit	M
Free Cyanide	0.680	0.704	103.5%	0.744	109.4%	0.750	110.3%	90%-110%	KNO

<i>Instruments/Methods (M)</i>
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A006

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Analyte	Initial Calibration Verification				Continuing Calibration Verification						
	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Total Cyanide	0.680	0.687	101.0%	90%-110%	0.680	0.704	103.5%	0.694	102.1%	90%-110%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A006

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Continuing Calibration Verification									
Analyte	True	Found3	%Rec	Found4	%Rec	Found5	%Rec	Limit	M
Total Cyanide	0.680	0.704	103.5%	0.744	109.4%	0.750	110.3%	90%-110%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A007

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Analyte	Initial Calibration Verification				Continuing Calibration Verification						
	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Total Cyanide	0.680	0.726	106.8%	90%-110%	0.680	0.676	99.4%	0.673	99.0%	90%-110%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

SOUTHWEST RESEARCH INSTITUTE
 WetChem Report Form IIA
 September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A007

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Continuing Calibration Verification							
Analyte	True	Found3	%Rec	Found4	%Rec	Limit	M
Total Cyanide	0.680	0.695	102.2%	0.668	98.2%	90%-110%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A008

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Analyte	Initial Calibration Verification				Continuing Calibration Verification						
	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Free Cyanide	0.680	0.693	101.9%	90%-110%	0.680	0.739	108.7%	0.703	103.4%	90%-110%	KNO

<i>Instruments/Methods (M)</i>
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A008

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Continuing Calibration Verification

Analyte	True	Found3	%Rec	Found4	%Rec	Limit	M
Free Cyanide	0.680	0.708	104.1%	0.725	106.6%	90%-110%	KNO

Instruments/Methods (M)

KNO - Konelab/Cyanide 9012
 KNO - Konelab/Cyanide 9014
 NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A009

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Analyte	Initial Calibration Verification				Continuing Calibration Verification						
	True	Found	%Rec	Limit	True	Found1	%Rec	Found2	%Rec	Limit	M
Total Cyanide	0.680	0.693	101.9%	90%-110%	0.680	0.739	108.7%	0.703	103.4%	90%-110%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Initial and Continuing Calibration Verification

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batches: 20170828-A009

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Initial Calibration Source: See Raw Data
 Continuing Calibration Source: See Raw Data

Case: CHPRC
 Project: 20859.01.00X

Continuing Calibration Verification							
Analyte	True	Found3	%Rec	Found4	%Rec	Limit	M
Total Cyanide	0.680	0.708	104.1%	0.725	106.6%	90%-110%	KNO

<i>Instruments/Methods (M)</i>
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIA-IN

September 20, 2017

Low Level Check Standard

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L
Associated Analytical Batch: 20170828-A001

SDG: 619322
SRR: 60203, 60217, 60230, 60240

Case: CHPRC
Project: 20859.01.00X

LLC Standards					
Analyte	True	Found1	%Rec	Limit	M
Total Cyanide	0.00500	0.00570	114.0%	50%-150%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIB-IN

September 20, 2017

Low Level Check Standard

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L
Associated Analytical Batch: 20170828-A002

SDG: 619322
SRR: 60203, 60217, 60230, 60240

Case: CHPRC
Project: 20859.01.00X

LLC Standards					
Analyte	True	Found1	%Rec	Limit	M
Free Cyanide	0.00500	0.00464	92.8%	50%-150%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIB-IN

September 20, 2017

Low Level Check Standard

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L
Associated Analytical Batch: 20170828-A003

SDG: 619322
SRR: 60203, 60217, 60230, 60240

Case: CHPRC
Project: 20859.01.00X

LLC Standards					
Analyte	True	Found1	%Rec	Limit	M
Total Cyanide	0.00500	0.00464	92.8%	50%-150%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIB-IN

September 20, 2017

Low Level Check Standard

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L
Associated Analytical Batch: 20170828-A005

SDG: 619322
SRR: 60203, 60217, 60230, 60240

Case: CHPRC
Project: 20859.01.00X

LLC Standards					
Analyte	True	Found1	%Rec	Limit	M
Free Cyanide	0.00500	0.00546	109.2%	50%-150%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIB-IN

September 20, 2017

Low Level Check Standard

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L
Associated Analytical Batch: 20170828-A006

SDG: 619322
SRR: 60203, 60217, 60230, 60240

Case: CHPRC
Project: 20859.01.00X

LLC Standards					
Analyte	True	Found1	%Rec	Limit	M
Total Cyanide	0.00500	0.00546	109.2%	50%-150%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIB-IN

September 20, 2017

Low Level Check Standard

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L
Associated Analytical Batch: 20170828-A007

SDG: 619322
SRR: 60203, 60217, 60230, 60240

Case: CHPRC
Project: 20859.01.00X

LLC Standards					
Analyte	True	Found1	%Rec	Limit	M
Total Cyanide	0.00500	0.00644	128.8%	50%-150%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIB-IN

September 20, 2017

Low Level Check Standard

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Result Units: mg/L
 Associated Analytical Batch: 20170828-A008

SDG: 619322
 SRR: 60203, 60217, 60230, 60240

Case: CHPRC
 Project: 20859.01.00X

LLC Standards					
Analyte	True	Found1	%Rec	Limit	M
Free Cyanide	0.00500	0.00495	99.0%	50%-150%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIB-IN

September 20, 2017

Low Level Check Standard

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L
Associated Analytical Batch: 20170828-A009

SDG: 619322
SRR: 60203, 60217, 60230, 60240

Case: CHPRC
Project: 20859.01.00X

LLC Standards					
Analyte	True	Found1	%Rec	Limit	M
Total Cyanide	0.00500	0.00495	99.0%	50%-150%	KNO

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form IIB-IN

September 20, 2017

Blanks

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Preparation Blank Result Units: mg/L
 Initial/Continuing Blank Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Preparation Blank Matrix: Water
 Associated Prep Batches: 20170828-P001

Case: CHPRC
 Project: 20859.01.00X
 Associated Analytical Batches: 20170828-A001

Analyte	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank						M
	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	
Total Cyanide	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	KNO

Data Reporting Qualifiers (Qual)	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

Form III-IN

September 20, 2017

Blanks

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Preparation Blank Result Units: mg/L
 Initial/Continuing Blank Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Preparation Blank Matrix: Water
 Associated Prep Batches: 20170828-P002

Case: CHPRC
 Project: 20859.01.00X
 Associated Analytical Batches: 20170828-A002

Analyte	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank						M
	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	
Free Cyanide	0.00500	U	0.00500	U	0.00500	U	-0.0167	L	0.00500	U	KNO

Data Reporting Qualifiers (Qual)	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met L - Result is more negative than SwRI Reporting Limits (RL)	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

Form III-IN

September 20, 2017

Blanks

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Preparation Blank Result Units: mg/L
 Initial/Continuing Blank Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Preparation Blank Matrix: Water
 Associated Prep Batches: 20170828-P002

Case: CHPRC
 Project: 20859.01.00X
 Associated Analytical Batches: 20170828-A003

Analyte	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank						M
	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	
Total Cyanide	0.00500 0.00500	U U	0.00500	U	0.00500	U	-0.0167	L	0.00500	U	KNO

Data Reporting Qualifiers (Qual)	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met L - Result is more negative than SwRI Reporting Limits (RL)	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

Form III-IN

September 20, 2017

Blanks

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Preparation Blank Result Units: mg/L
 Initial/Continuing Blank Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Preparation Blank Matrix: Water
 Associated Prep Batches: 20170828-P003

Case: CHPRC
 Project: 20859.01.00X
 Associated Analytical Batches: 20170828-A005

Analyte	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank										M
	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	Found4	Qual	Found5	Qual	
Free Cyanide	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	KNO

Data Reporting Qualifiers (Qual)	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

Form III-IN

September 20, 2017

Blanks

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Preparation Blank Result Units: mg/L
 Initial/Continuing Blank Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Preparation Blank Matrix: Water
 Associated Prep Batches: 20170828-P002
 20170828-P003
 20170828-P001

Case: CHPRC
 Project: 20859.01.00X
 Associated Analytical Batches: 20170828-A006

Analyte	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank										M
	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	Found4	Qual	Found5	Qual	
Total Cyanide	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	KNO

Data Reporting Qualifiers (Qual)	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

Form III-IN

September 20, 2017

Blanks

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Preparation Blank Result Units: mg/L
 Initial/Continuing Blank Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Preparation Blank Matrix: Water
 Associated Prep Batches: 20170828-P003

Case: CHPRC
 Project: 20859.01.00X
 Associated Analytical Batches: 20170828-A007

Analyte	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank								M
	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	Found4	Qual	
Total Cyanide	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	KNO

Data Reporting Qualifiers (Qual)	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

Form III-IN

September 20, 2017

Blanks

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Preparation Blank Result Units: mg/L
 Initial/Continuing Blank Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Preparation Blank Matrix: Water
 Associated Prep Batches: 20170828-P004

Case: CHPRC
 Project: 20859.01.00X
 Associated Analytical Batches: 20170828-A008

Analyte	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank								M
	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	Found4	Qual	
Free Cyanide	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	KNO

Data Reporting Qualifiers (Qual)	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

September 20, 2017

Blanks

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Preparation Blank Result Units: mg/L
 Initial/Continuing Blank Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Preparation Blank Matrix: Water
 Associated Prep Batches: 20170828-P004

Case: CHPRC
 Project: 20859.01.00X
 Associated Analytical Batches: 20170828-A009

Analyte	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank								M
	Result	Qual	Found	Qual	Found1	Qual	Found2	Qual	Found3	Qual	Found4	Qual	
Total Cyanide	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	0.00500	U	KNO

Data Reporting Qualifiers (Qual)	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

September 20, 2017

Blanks

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Preparation Blank Result Units: mg/L
 Initial/Continuing Blank Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Preparation Blank Matrix:
 Associated Prep Batches: NA

Case: CHPRC
 Project: 20859.01.00X
 Associated Analytical Batches: 20170901-A002

Analyte	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank		M
	Result	Qual	Found	Qual	Found1	Qual	
Amenable Cyanide	0.00500	U	-	-	-	-	

Data Reporting Qualifiers (Qual)	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

September 20, 2017

Blanks

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Preparation Blank Result Units: mg/L
 Initial/Continuing Blank Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Preparation Blank Matrix:
 Associated Prep Batches: NA

Case: CHPRC
 Project: 20859.01.00X
 Associated Analytical Batches: 20170901-A003

Analyte	Preparation Blank		Initial Calibration Blank		Continuing Calibration Blank		M
	Result	Qual	Found	Qual	Found1	Qual	
Amenable Cyanide	0.00500	U	-	-	-	-	

Data Reporting Qualifiers (Qual)	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

September 20, 2017

Matrix Spike/Matrix Spike Duplicate Sample Recovery

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: 619322S-F
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X

Analyte	Parent Sample Result	Qual	MS Result	MS Spike Added	MS %Rec	MSD Result	MSD Spike Added	MSD %Rec	%RPD	Control Limit %Rec	Control Limit %RPD	M	Note
Free Cyanide	0.00545	*	0.313	0.250	123.0%	-	-	-	-	75%-125%	-	KNO	
Total Cyanide	0.0181	N	0.0377	0.0400	49.0%	-	-	-	-	75%-125%	-	KNO	

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	M - Instrument	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	MS - Matrix Spike	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	MSD - Matrix Spike Duplicate	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	Q - Qualifier	
E - Result is estimated due to interferences	RPD - Relative Percent Difference	
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

Matrix Spike/Matrix Spike Duplicate Sample Recovery

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: 619695S
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X

Analyte	Parent Sample Result	Qual	MS Result	MS Spike Added	MS %Rec	MSD Result	MSD Spike Added	MSD %Rec	%RPD	Control Limit %Rec	Control Limit %RPD	M	Note
Free Cyanide	0.00752	*	0.106	0.100	98.5%	-	-	-	-	75%-125%	-	KNO	
Total Cyanide	0.688	DN	0.733	0.0500	90.0%	-	-	-	-	75%-125%	-	KNO	#

Parent value exceeded 4 times the spike added, therefore MS/MSD %Recovery and %RPD are not required for evaluation.

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	M - Instrument	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	MS - Matrix Spike	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	MSD - Matrix Spike Duplicate	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	Q - Qualifier	
E - Result is estimated due to interferences	RPD - Relative Percent Difference	
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

Post-Digestion Spike Sample Recovery

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17, 170811-14, 170815-1
 Lab ID: 619322AS
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X

Analyte	Parent Sample Result	Qual	Spiked Sample Result	Qual	Spike Added	%Rec.	Control Limit	M	Q	DF	Prep Batch	Analysis Date/Time	Note
Amenable Cyanide	-		-		-	-	-	NA		-		-	
Free Cyanide	-		-		-	-	-	NA		-		-	
Total Cyanide	0.0181	N	0.108	N	0.100	89.9%	80%-120%	KNO		1	20170828-P001	08/23/2017 13:49	

Data Reporting Qualifiers (Qual)	Columns	Instruments/Methods (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL)	M - Instrument	KNO - Konelab/Cyanide 9012
U - Result is less than the SwRI Reporting Limit (RL)	MS - Matrix Spike	KNO - Konelab/Cyanide 9014
N - Matrix spike and/or matrix spike duplicate criteria was not met	MSD - Matrix Spike Duplicate	NA - Not Applicable/Amenable Cyanide
X - Analytical spike criteria was not met	Q - Qualifier	
E - Result is estimated due to interferences	RPD - Relative Percent Difference	
D - Result is reported from a dilution		
* - Duplicate criteria was not met		

September 20, 2017

Duplicates

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: 619322D-F
 Result Units:

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X

Analyte	Parent Sample Result	Qual	Duplicate Result	Qual	RPD	RPD Limit	Control Limit	M	Note
Free Cyanide	0.00545	*	0.00500	U*	200%	-	0.00500	KNO	
Total Cyanide	0.0181	N	0.0151	N	18.1%	-	0.00500	KNO	

Data Reporting Qualifiers (Qual)	Columns	Instruments/Method (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	M - Instrument RPD - Relative Percent Difference	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

Form VI-IN

September 20, 2017
 Duplicates

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: 619323D-CL
 Result Units:

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X

Analyte	Parent Sample Result	Qual	Duplicate Result	Qual	RPD	RPD Limit	Control Limit	M	Note
Amenable Cyanide	0.0211	*	0.0214	*	1.41%	-	0.00500	NA	

Data Reporting Qualifiers (Qual)	Columns	Instruments/Method (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	M - Instrument RPD - Relative Percent Difference	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

Form VI-IN

September 20, 2017
 Duplicates

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: 619695D-CL
 Result Units:

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 % Solids: NA

Case: CHPRC
 Project: 20859.01.00X

Analyte	Parent Sample Result	Qual	Duplicate Result	Qual	RPD	RPD Limit	Control Limit	M	Note
Amenable Cyanide	0.0460	*	0.0220	*	70.6%	-	0.00500	NA	
Free Cyanide	0.00752	*	0.00724	*	3.79%	-	0.00500	KNO	
Total Cyanide	0.688	DN	0.691	DN	0.435%	20%	-	KNO	

Data Reporting Qualifiers (Qual)	Columns	Instruments/Method (M)
J - Result is greater than or equal to the SwRI Reporting Limit (RL) and less than the Contract Required Detection Limit (CRDL) U - Result is less than the SwRI Reporting Limit (RL) N - Matrix spike and/or matrix spike duplicate criteria was not met X - Analytical spike criteria was not met E - Result is estimated due to interferences D - Result is reported from a dilution * - Duplicate criteria was not met	M - Instrument RPD - Relative Percent Difference	KNO - Konelab/Cyanide 9012 KNO - Konelab/Cyanide 9014 NA - Not Applicable/Amenable Cyanide

Form VI-IN

September 20, 2017

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: LCS17H18CS1
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P001

Case: CHPRC
 Project: 20859.01.00X
 LCS Source: ERA

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Total Cyanide	0.680	0.703	D	103.4%	85%-115%	KNO	08/18/2017 15:46

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: LCS17H28CS2
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P001

Case: CHPRC
 Project: 20859.01.00X
 LCS Source:

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Total Cyanide	0.500	0.408		81.6%	90%-110%	KNO	08/18/2017 17:30

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

September 20, 2017

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: LCS17H28CS3
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P001
 20170828-P003

Case: CHPRC
 Project: 20859.01.00X
 LCS Source:

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Total Cyanide	0.0500	0.0476		95.2%	90%-110%	KNO	08/18/2017

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

September 20, 2017

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: CN-ICV
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P002

Case: CHPRC
 Project: 20859.01.00X
 LCS Source: ERA

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Free Cyanide	0.680	0.671	D	98.7%	85%-115%	KNO	08/22/2017 16:02

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

September 20, 2017

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: LCS17H22SW1
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P002

Case: CHPRC
 Project: 20859.01.00X
 LCS Source: ERA

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Total Cyanide	0.680	0.705	D	103.7%	85%-115%	KNO	08/22/2017 16:02

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: LCS17H22SW2
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P002

Case: CHPRC
 Project: 20859.01.00X
 LCS Source:

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Total Cyanide	0.500	0.446		89.2%	90%-110%	KNO	08/22/2017 16:02

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

September 20, 2017

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: LCS17H22SW3
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P002

Case: CHPRC
 Project: 20859.01.00X
 LCS Source:

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Total Cyanide	0.0500	0.0500		100.0%	90%-110%	KNO	08/22/2017 16:02

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

September 20, 2017

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: CN-ICV2
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P003

Case: CHPRC
 Project: 20859.01.00X
 LCS Source: ERA

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Free Cyanide	0.680	0.687	D	101.0%	85%-115%	KNO	08/23/2017 09:22

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

September 20, 2017

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: LCS17H25CS2
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P003

Case: CHPRC
 Project: 20859.01.00X
 LCS Source:

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Total Cyanide	0.500	0.486		97.2%	90%-110%	KNO	08/24/2017 13:43

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

September 20, 2017

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: LCS17H24CS1
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P003

Case: CHPRC
 Project: 20859.01.00X
 LCS Source: ERA

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Total Cyanide	0.680	0.677	D	99.6%	85%-115%	KNO	08/24/2017 14:15

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

September 20, 2017

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: CN-ICV3
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P004

Case: CHPRC
 Project: 20859.01.00X
 LCS Source: ERA

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Free Cyanide	0.680	0.693	D	101.9%	85%-115%	KNO	08/25/2017 10:44

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

September 20, 2017

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: LCS17H25CS1
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P004

Case: CHPRC
 Project: 20859.01.00X
 LCS Source: ERA

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Total Cyanide	0.680	0.712	D	104.7%	85%-115%	KNO	08/25/2017 10:44

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

September 20, 2017

Laboratory Control Sample

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Lab ID: LCS17H28CS3
 Result Units: mg/L

SDG: 619322
 SRR: 60203, 60217, 60230, 60240
 Matrix: Water
 Associated Prep Batches: 20170828-P002

Case: CHPRC
 Project: 20859.01.00X
 LCS Source: ERA

Analyte	True	Found	Qual	%Rec.	Limit	M	Analysis Date/Time
Total Cyanide	0.050	0.0442		88.4%	90%-110%	KNO	08/23/2017 09:22

Instruments/Methods (M)
KNO - Konelab/Cyanide 9012
KNO - Konelab/Cyanide 9014
NA - Not Applicable/Amenable Cyanide

Form VII-IN

September 20, 2017

Detection Limits

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L

SDG: 619322
SRR: 60203, 60217, 60230, 60240
Instrument: Konelab

Case: CHPRC
Project: 20859.01.00X
Date: 01/09/2014

Analyte	Wavelength	RL	CRDL
Free Cyanide	575 nm	0.00500	0.00500
Total Cyanide	575 nm	0.00500	0.0100

Columns
RL - SwRI Reporting Limit
CRDL - Contract Req. Det. Limit

September 20, 2017

Detection Limits

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Result Units: mg/L

SDG: 619322
SRR: 60203, 60217, 60230, 60240
Instrument:

Case: CHPRC
Project: 20859.01.00X

Analyte	RL	CRDL
Amenable Cyanide	0.00500	0.00500

Columns	
RL	- SwRI Reporting Limit
CRDL	- Contract Req. Det. Limit

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Analysis Run Log

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Analytical Batch: 20170828-A001
 Analysis Method: Cyanide 9012

SDG: 619322, 619698
 SRR: 59883, 60203, 60217, 60230, 60240
 Instrument: Konelab

Case: CHPRC, 15EC043B
 Project: 20859.01.00X
 Start Date: 08/18/2017
 End Date: 08/18/2017

Lab Sample ID	Client Sample ID	Time	DF	A	T	C	C	T
				N	N	N	N	N
CN-0	CN-0	14:29	1					X
CN-0.005	CN-0.005	14:29	1					X
CN-0.01	CN-0.01	14:29	1					X
CN-0.05	CN-0.05	14:29	1					X
CN-0.1	CN-0.1	14:29	1					X
CN-0.25	CN-0.25	14:29	1					X
CN-0.5	CN-0.5	14:29	1					X
CN-ICV	CN-ICV	15:46	2					X
CN-ICB	CN-ICB	15:46	1					X
CN-LLC	NA	15:46	1					X
PB17H18PB1	NA	15:46	1					X
LCS17H18CS1	NA	15:46	2					X
LCS17H28CS2	NA	15:46	1					
LCS17H28CS3	NA	15:46	1					
619322	B3BJV2	16:19	1					X
619322D	B3BJV2D	16:19	1					X
Z	Z	16:19	1					
619323	B3BJV3	16:19	1					X
619442	B3BJT4	16:19	1					X
CN-CCV	CN-CCV	16:19	2					X
CN-CCB	CN-CCB	16:19	1					X
619443	B3BJT5	16:19	1					X
619444	B3BJT6	16:19	1					X
619445	B3BJT7	17:05	1					X
619446	B3BJT8	17:05	1					X
619447	B3BJT9	17:05	1					X
619448	B3BJV8	17:05	1					X
619449	B3BJV9	17:05	1					X
619452	B3BCW4	17:05	1					X
619453	B3BJW0	17:05	1					X
619599	B3BD63	17:05	1					X
CN-CCV2	CN-CCV2	17:05	2					X
CN-CCB2	CN-CCB2	17:05	1					X
619602	B3BD68	17:05	1					X
619600	B3BD64	17:05	1					X
619601	B3BD67	17:08	1					X
LCS17H28CS2	NA	17:30	1					X
LCS17H28CS3	NA	17:30	1					X
CN-CCV3	CN-CCV3	17:30	2					X
CN-CCB3	CN-CCB3	17:30	1					X
LCS17H28CS2	NA	17:59	2					
CN-CCV4	CN-CCV4	17:59	2					
CN-CCB4	CN-CCB4	17:59	1					

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Analysis Run Log

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Analytical Batch: 20170901-A002
 Analysis Method: Amenable Cyanide

SDG: 619322, 619698
 SRR: 59883, 60203, 60217, 60230, 60240
 Instrument:

Case: CHPRC, 15EC043B
 Project: 20859.01.00X
 Start Date: 08/22/2017
 End Date: 08/22/2017

Lab Sample ID	Client Sample ID	Time	DF	A	T	C	C	N	N
PB17H22PB2	NA	00:00	1	X					
619322-CL	B3BJV2	00:00	1	X					
619323-CL	B3BJV3	00:00	1	X					
619323D-CL	B3BJV3D	00:00	1	X					
619442-CL	B3BJT4	00:00	1	X					
619443-CL	B3BJT5	00:00	1	X					
619444-CL	B3BJT6	00:00	1	X					
619445-CL	B3BJT7	00:00	1	X					
619448-CL	B3BJV8	00:00	1	X					
619449-CL	B3BJV9	00:00	1	X					

Analysis Run Log

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Analytical Batch: 20170828-A003
 Analysis Method: Cyanide 9012

SDG: 619322, 619698
 SRR: 59883, 60203, 60217, 60230, 60240
 Instrument: Konelab

Case: CHPRC, 15EC043B
 Project: 20859.01.00X
 Start Date: 08/22/2017
 End Date: 08/22/2017

Lab Sample ID	Client Sample ID	Time	DF	ATT	CC	TT
				NN	NN	NN
CN-0	CN-0	15:16	1			X
CN-0.005	CN-0.005	15:16	1			X
CN-0.01	CN-0.01	15:16	1			X
CN-0.05	CN-0.05	15:16	1			X
CN-0.1	CN-0.1	15:16	1			X
CN-0.25	CN-0.25	15:16	1			X
CN-0.5	CN-0.5	15:16	1			X
CN-ICV	CN-ICV	16:02	2			X
CN-ICB	CN-ICB	16:02	1			X
CN-LLC	NA	16:02	1			
PB17H22PB1	NA	16:02	1			X
LCS17H22SW1	NA	16:02	2			X
LCS17H22SW2	NA	16:02	1			X
LCS17H22SW3	NA	16:02	1			X
CN-CCV	CN-CCV	17:30	2			X
CN-CCB	CN-CCB	17:30	1			X
LCS17H22SW2	NA	17:30	1			
PB17H22PB2	NA	17:30	1			X
Z	Z	17:30	1			
Z	Z	17:30	1			
Z	Z	17:30	1			
Z	Z	17:30	1			
Z	Z	17:30	1			
CN-CCV2	CN-CCV2	18:01	2			X
CN-CCB2	CN-CCB2	18:01	1			X
LLC-R	NA	18:01	1			X
Z	Z	18:01	1			
Z	Z	18:01	1			
Z	Z	18:01	1			
Z	Z	18:01	1			
Z	Z	18:01	1			
CN-CCV3	CN-CCV3	18:01	2			X
CN-CCB3	CN-CCB3	18:01	1			X

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Analysis Run Log

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Analytical Batch: 20170828-A002
 Analysis Method: Cyanide 9014

SDG: 619322, 619698
 SRR: 59883, 60203, 60217, 60230, 60240
 Instrument: Konelab

Case: CHPRC, 15EC043B
 Project: 20859.01.00X
 Start Date: 08/22/2017
 End Date: 08/22/2017

Lab Sample ID	Client Sample ID	Time	DF	ATT CCN NNN	T N N
CN-0	CN-0	15:16	1	X	
CN-0.005	CN-0.005	15:16	1	X	
CN-0.01	CN-0.01	15:16	1	X	
CN-0.05	CN-0.05	15:16	1	X	
CN-0.1	CN-0.1	15:16	1	X	
CN-0.25	CN-0.25	15:16	1	X	
CN-0.5	CN-0.5	15:16	1	X	
CN-ICV	NA	16:02	2	X	
CN-ICB	NA	16:02	1	X	
CN-LLC	NA	16:02	1		
619322-F	B3BJV2	16:02	1	X	
619322D-F	B3BJV2D	16:02	1	X	
619323-F	B3BJV3	16:02	1	X	
619442-F	B3BJT4	16:02	1	X	
619443-F	B3BJT5	16:02	1	X	
CN-CCV	CN-CCV	17:30	2	X	
CN-CCB	CN-CCB	17:30	1	X	
Z	Z	17:30	1		
619322S-F	B3BJV2MS	17:30	1	X	
CN-CCV2	CN-CCV2	18:01	2	X	
CN-CCB2	CN-CCB2	18:01	1	X	
LLC-R	NA	18:01	1	X	
CN-CCV3	CN-CCV3	18:01	2	X	
CN-CCB3	CN-CCB3	18:01	1	X	

Analysis Run Log

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Analytical Batch: 20170828-A006
 Analysis Method: Cyanide 9012

SDG: 619322, 619698
 SRR: 59883, 60203, 60217, 60230, 60240
 Instrument: Konelab

Case: CHPRC, 15EC043B
 Project: 20859.01.00X
 Start Date: 08/23/2017
 End Date: 08/23/2017

Lab Sample ID	Client Sample ID	Time	DF	ATT	CC	TT
				NN	NN	NN
CN-0	CN-0	08:53	1			X
CN-0.005	CN-0.005	08:53	1			X
CN-0.01	CN-0.01	08:53	1			X
CN-0.05	CN-0.05	08:53	1			X
CN-0.1	CN-0.1	08:53	1			X
CN-0.25	CN-0.25	08:53	1			X
CN-0.5	CN-0.5	08:53	1			X
CN-ICV	CN-ICV	09:22	2			X
CN-ICB	CN-ICB	09:22	1			X
CN-LLC	NA	09:22	1			X
PB17H22PB1	NA	09:22	1			X
LCS17H22SW1	NA	09:22	2			X
LCS17H28CS2	NA	09:22	1			X
LCS17H28CS3	NA	09:22	1			X
Z	Z	09:22	1			
PB17H24PB2	NA	09:22	1			
Z	Z	09:22	1			
Z	Z	09:22	1			
Z	Z	09:22	1			
CN-CCV	CN-CCV	09:56	2			X
CN-CCB	CN-CCB	09:56	1			X
Z	Z	09:56	1			
Z	Z	09:56	1			
Z	Z	09:56	1			
Z	Z	09:56	1			
Z	Z	09:56	1			
Z	Z	09:56	1			
CN-CCV2	CN-CCV2	10:31	2			X
CN-CCB2	CN-CCB2	10:31	1			X
CN-CCV3	CN-CCV3	11:07	2			X
CN-CCB3	CN-CCB3	11:07	1			X
LCS17H22SW3	NA	11:07	1			
619322S-L R	B3BJV2MS	11:07	1			X
PB17H22PB1	NA	11:07	1			
CN-CCV4	CN-CCV4	13:49	2			X
CN-CCB4	CN-CCB4	13:49	1			X
619322AS	B3BJV2AS	13:49	1			X
CN-CCV5	CN-CCV5	13:49	2			X
CN-CCB5	CN-CCB5	13:49	1			X

Analysis Run Log

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Analytical Batch: 20170828-A005
 Analysis Method: Cyanide 9014

SDG: 619322, 619698
 SRR: 59883, 60203, 60217, 60230, 60240
 Instrument: Konelab

Case: CHPRC, 15EC043B
 Project: 20859.01.00X
 Start Date: 08/23/2017
 End Date: 08/23/2017

Lab Sample ID	Client Sample ID	Time	DF	ATT CC NN	TT CC NN
CN-0	CN-0	08:53	1	X	
CN-0.005	CN-0.005	08:53	1	X	
CN-0.01	CN-0.01	08:53	1	X	
CN-0.05	CN-0.05	08:53	1	X	
CN-0.1	CN-0.1	08:53	1	X	
CN-0.25	CN-0.25	08:53	1	X	
CN-0.5	CN-0.5	08:53	1	X	
CN-ICV2	NA	09:22	2	X	
CN-ICB2	NA	09:22	1	X	
CN-LLC	NA	09:22	1	X	
CN-CCV	CN-CCV	09:56	2	X	
CN-CCB	CN-CCB	09:56	1	X	
Z	Z	09:56	1		
Z	Z	09:56	1		
Z	Z	09:56	1		
CN-CCV2	CN-CCV2	10:31	2	X	
CN-CCB2	CN-CCB2	10:31	1	X	
Z	Z	10:31	1		
Z	Z	10:31	1		
Z	Z	10:31	1		
619444-F	B3BJT6	10:31	1	X	
619445-F	B3BJT7	10:31	1	X	
Z	Z	10:31	1		
619447-F	B3BJT9	10:31	1	X	
619448-F	B3BJV8	10:31	1	X	
619449-F	B3BJV9	10:31	1	X	
619452-F	B3BCW4	10:31	1	X	
CN-CCV3	CN-CCV3	11:07	2	X	
CN-CCB3	CN-CCB3	11:07	1	X	
619453-F	B3BJW0	11:07	1	X	
619599-F	B3BD63	11:07	1	X	
619600-F	B3BD64	11:07	1	X	
619601-F	B3BD67	11:07	1	X	
619602-F	B3BD68	11:07	1	X	
Z	Z	11:07	1		
CN-CCV4	CN-CCV4	13:49	2	X	
CN-CCB4	CN-CCB4	13:49	1	X	
Z	Z	13:49	1		
619446F-R	B3BJT8	13:49	1	X	
CN-CCV5	CN-CCV5	13:49	2	X	
CN-CCB5	CN-CCB5	13:49	1	X	

September 20, 2017

Analysis Run Log

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Analytical Batch: 20170901-A003
 Analysis Method: Amenable Cyanide

SDG: 619322, 619698
 SRR: 59883, 60203, 60217, 60230, 60240
 Instrument:

Case: CHPRC, 15EC043B
 Project: 20859.01.00X
 Start Date: 08/24/2017
 End Date: 08/24/2017

Lab Sample ID	Client Sample ID	Time	DF	A	T	C	C	C	N	N	N
PB17H24PB2	NA	00:00	1	X							
619446-CL	B3BJT8	00:00	1	X							
619447-CL	B3BJT9	00:00	1	X							
619452-CL	B3BCW4	00:00	1	X							
619453-CL	B3BJW0	00:00	1	X							
619599-CL	B3BD63	00:00	1	X							
619600-CL	B3BD64	00:00	1	X							
619601-CL	B3BD67	00:00	1	X							
619602-CL	B3BD68	00:00	1	X							
619695-CL	B3BD36	00:00	1	X							
619695D-CL	B3BD36D	00:00	1	X							
619696-CL	B3BD51	00:00	1	X							
619697-CL	B3BD53	00:00	1	X							
Z	Z	00:00	1								
Z	Z	00:00	1								
Z	Z	00:00	1								
619701-CL	B3BD40	00:00	1	X							

Analysis Run Log

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others
Analytical Batch: 20170828-A007
Analysis Method: Cyanide 9012

SDG: 619322, 619698
SRR: 59883, 60203, 60217, 60230, 60240
Instrument: Konelab

Case: CHPRC, 15EC043B
Project: 20859.01.00X
Start Date: 08/24/2017
End Date: 08/24/2017

Lab Sample ID	Client Sample ID	Time	DF	A	T	C	C	T
				N	N	N	N	N
CN-0	CN-0	10:18	1					X
CN-0.005	CN-0.005	10:18	1					X
CN-0.01	CN-0.01	10:18	1					X
CN-0.05	CN-0.05	10:18	1					X
CN-0.1	CN-0.1	10:18	1					X
CN-0.25	CN-0.25	10:18	1					X
CN-0.5	CN-0.5	10:18	1					X
CN-ICV	CN-ICV	13:43	2					X
CN-ICB	CN-ICB	13:43	1					X
CN-LLC	NA	13:43	1					
PB17H24PB1	NA	13:43	1					X
LCS17H25CS1	NA	13:43	2					
LCS17H25CS2	NA	13:43	1					X
LCS17H28CS3	NA	13:43	1					X
PB17H24PB2	NA	13:44	1					X
Z	Z	13:44	1					
Z	Z	13:44	1					
Z	Z	13:44	1					
Z	Z	13:44	1					
CN-CCV	CN-CCV	14:15	2					X
CN-CCB	CN-CCB	14:15	1					X
Z	Z	14:15	1					
Z	Z	14:15	1					
Z	Z	14:15	1					
Z	Z	14:15	1					
Z	Z	14:15	1					
Z	Z	14:15	1					
Z	Z	14:15	1					
Z	Z	14:15	1					
LLC-R	NA	14:15	1					X
LCS17H24CS1	NA	14:15	2					X
CN-CCV2	CN-CCV2	14:51	2					X
CN-CCB2	CN-CCB2	14:51	1					X
Z	Z	14:51	1					
Z	Z	14:51	1					
Z	Z	14:51	1					
Z	Z	14:51	1					
Z	Z	14:51	1					
LCSL-R	NA	14:51	1					
CN-CCV3	CN-CCV3	14:51	2					X
CN-CCB3	CN-CCB3	14:51	1					X
Z	Z	15:28	5					
Z	Z	15:28	5					
Z	Z	15:28	5					
Z	Z	15:28	5					
Z	Z	15:28	1					
CN-CCV4	CN-CCV4	15:53	2					X
CN-CCB4	CN-CCB4	15:53	1					X

SOUTHWEST RESEARCH INSTITUTE
 WetChem Report Form XII
 September 20, 2017

Analysis Run Log

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Analytical Batch: 20170828-A008
 Analysis Method: Cyanide 9014

SDG: 619322, 619698
 SRR: 59883, 60203, 60217, 60230, 60240
 Instrument: Konelab

Case: CHPRC, 15EC043B
 Project: 20859.01.00X
 Start Date: 08/25/2017
 End Date: 08/25/2017

Lab Sample ID	Client Sample ID	Time	DF	ATT	CC	CC	CC	TT	NN	NN
CN-0	CN-0	09:27	1	X						
CN-0.005	CN-0.005	09:27	1	X						
CN-0.01	CN-0.01	09:27	1	X						
CN-0.05	CN-0.05	09:27	1	X						
CN-0.1	CN-0.1	09:27	1	X						
CN-0.25	CN-0.25	09:27	1	X						
CN-0.5	CN-0.5	09:28	1	X						
CN-ICV3	NA	10:44	2	X						
CN-ICB3	NA	10:44	1	X						
CN-LLC	NA	10:44	1	X						
CN-CCV	CN-CCV	12:44	2	X						
CN-CCB	CN-CCB	12:44	1	X						
Z	Z	13:44	1							
Z	Z	13:44	1							
Z	Z	13:44	1							
619696-F	B3BD51	13:44	1	X						
CN-CCV2	CN-CCV2	13:44	2	X						
CN-CCB2	CN-CCB2	13:44	1	X						
619697-F	B3BD53	13:44	1	X						
Z	Z	13:44	1							
Z	Z	13:44	1							
619701-F	B3BD40	13:44	1	X						
Z	Z	14:46	1							
Z	Z	14:46	1							
CN-CCV3	CN-CCV3	14:46	2	X						
CN-CCB3	CN-CCB3	14:46	1	X						
619695-F	B3BD36	14:46	1	X						
619695D-F	B3BD36D	14:46	1	X						
619695-F S	B3BD36MS	15:23	1	X						
Z	Z	15:23	1							
Z	Z	15:23	1							
Z	Z	15:23	1							
CN-CCV4	CN-CCV4	15:23	2	X						
CN-CCB4	CN-CCB4	15:23	1	X						

September 20, 2017

Analysis Run Log

Client: CH2M Hill Plateau Remediation Company
 Task Order: 170810-17 + 3 others
 Analytical Batch: 20170828-A009
 Analysis Method: Cyanide 9012

SDG: 619322, 619698
 SRR: 59883, 60203, 60217, 60230, 60240
 Instrument: Konelab

Case: CHPRC, 15EC043B
 Project: 20859.01.00X
 Start Date: 08/25/2017
 End Date: 08/25/2017

Lab Sample ID	Client Sample ID	Time	DF	A	T	C	C	T
				N	N	N	N	N
CN-0	CN-0	09:27	1					X
CN-0.005	CN-0.005	09:27	1					X
CN-0.01	CN-0.01	09:27	1					X
CN-0.05	CN-0.05	09:27	1					X
CN-0.1	CN-0.1	09:27	1					X
CN-0.25	CN-0.25	09:27	1					X
CN-0.5	CN-0.5	09:28	1					X
CN-ICV	CN-ICV	10:44	2					X
CN-ICB	CN-ICB	10:44	1					X
CN-LLC	NA	10:44	1					X
PB17H25PB1	NA	10:44	1					X
LCS17H25CS1	NA	10:44	2					X
LCSH	NA	10:44	1					X
LCSL	NA	10:44	1					X
Z	Z	10:44	1					
Z	Z	10:44	1					
Z	Z	10:44	1					
619696	B3BD51	10:44	1					X
619697	B3BD53	10:44	1					X
CN-CCV	CN-CCV	12:44	2					X
CN-CCB	CN-CCB	12:44	1					X
Z	Z	12:44	1					
Z	Z	12:44	1					
619695	B3BD36	12:44	5					X
619695D	B3BD36D	12:44	5					X
619695S	B3BD36MS	12:44	5					X
619701	B3BD40	13:44	5					X
CN-CCV2	CN-CCV2	13:44	2					X
CN-CCB2	CN-CCB2	13:44	1					X
Z	Z	14:46	1					
Z	Z	14:46	1					
Z	Z	14:46	1					
Z	Z	14:46	1					
CN-CCV3	CN-CCV3	14:46	2					X
CN-CCB3	CN-CCB3	14:46	1					X
Z	Z	15:23	1					
CN-CCV4	CN-CCV4	15:23	2					X
CN-CCB4	CN-CCB4	15:23	1					X

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WetChem Report - Form XVIII

September 29, 2017

Preparation/Digestion Summary

Client: CH2M Hill Plateau Remediation Company
Task Order: 170810-17 + 3 others

SDG: 619322
SRR: 60203, 60217, 60230, 60240

Case: CHPRC
Project: 20859.01.00X

Prep Batch	Method	Preparation Date
20170828-P001	CN prep	08/18/2017
20170828-P004	CN prep	08/25/2017

Digestion Log

Southwest Research Institute
San Antonio, Texas 78228

Batch: 20170828-P001 (Ver. 1)
Status: CONSUMED

Client(s): CH2M Hill Plateau Remediation Company
 Task Order(s): 170810-17, 170811-14, 170815-1
 SDG(s): 619322
 Project(s): 20859.01.00X
 Method(s): CN prep (TAP: 01-0406-134)
 Matrix(s): Water
 Reagent(s): (CN) 2.5M MgCl2 #196-02-WCS13, (CN) 0.25N NaOH #11-01-WCS14, (CN) H2SO4 #76373
 Pipette(s): 5000-R, 1000-2, 200-M
 Heating Device: MIDI-STIL Temperature (C): 125C
 Time In: 08/18/2017 08:38:00 Time Out: NA

Sample Identification	Client Identification	Initial Volume (mL)	Final Volume (mL)
PB17H18PB1	NA	50	50
LCS17H18CS1 ①	NA	50	50
LCS17H28CS2 ②	NA	50	50
LCS17H28CS3 ③	NA	50	50
619322	B3BJV2	50	50
619322D	B3BJV2	50	50
619322S	B3BJV2	50	50
619323	B3BJV3	50	50
619442	B3BJT4	50	50
619443	B3BJT5	50	50
619444	B3BJT6	50	50
619445	B3BJT7	50	50
619446	B3BJT8	50	50
619447	B3BJT9	50	50
619448	B3BJV8	50	50
619449	B3BJV9	50	50
619452	B3BCW4	50	50
619453	B3BJW0	50	50
619599	B3BD63	50	50
619600	B3BD64	50	50
619601	B3BD67	50	50
619602	B3BD68	50	50

- ① spiked 50 mL of Cl# 83495 Total Cyanide (Lot# P261-502, Source: ERA, Exp: 07/31/2019)
 ② spiked 0.250 mL of 11-02-WCS14 (Lot# 83333, Source: ERA, Exp: 02/01/2018)
 ③ spiked 0.025 mL of 11-02-WCS14 (Lot# 83333, Source: ERA, Exp: 02/01/2018)

Comments:

All samples had a pH >12, negative KI, negative Lead Acetate
 pH #208515
 KI #85038
 Lead Acetate #85205

distillation start: 9:45 a.m.
 stop: 11:15 a.m.

second distillation start: 3:00 p.m.
 stop: 4:30 p.m.

Prepared by: HERRERA, JUDY

Date: 08/18/2017

Reviewed by: MOKEN, JAMES

Date: 09/08/2017

Disposal Int/Date/Loc: JM / 09/08/2017 / NA - Consumed

Digestion Log

Southwest Research Institute
San Antonio, Texas 78228

Batch: 20170828-P004 (Ver. 1)
Status: CONSUMED

Client(s): CH2M Hill Plateau Remediation Company
 Task Order(s): 170816-3, 170816-4
 SDG(s): 619322, 619698
 Project(s): 20859.01.00X
 Method(s): CN prep (TAP: 01-0406-134)
 Matrix(s): Water
 Reagent(s): (CN) 2.5M MgCl2 #196-02-WCS13, (CN) 0.25N NaOH #20-02WCS14, (CN) H2SO4 #76373, 0.35M Calcium Hypochlorite #16-01-WCS14, 0.1N Sodium Arsenite #20-02-WCS14
 Pipette(s): 5000-R, 1000-2, 200-M
 Heating Device: MIDI-STIL Temperature (C): 125C
 Time In: 08/25/2017 08:15:00 Time Out: NA

Sample Identification	Client Identification	Initial Volume (mL)	Final Volume (mL)
PB17H25PB1	NA	50	50
LCS17H25CS1 ①	NA	50	50
LCS17H25CS2 ②	NA	50	50
LCS17H25CS3 ③	NA	50	50
619695	B3BD36	50	50
619695D	B3BD36	50	50
619695S ③	B3BD36	50	50
619696	B3BD51	50	50
619697	B3BD53	50	50
619701	B3BD40	50	50
619698	B3BD73	50	50
619698D	B3BD73	50	50
619698S ③	B3BD73	50	50
619699	B3BD77	50	50
619698S-CL ③	B3BD73	50	50

- ① spiked 50 mL of Cl# 83495 Total Cyanide (Lot# P261-502, Source: ERA, Exp: 07/31/2019)
 ② spiked 0.250 mL of 11-02-WCS14 (Lot# 83333, Source: ERA, Exp: 02/01/2018)
 ③ spiked 0.025 mL of 11-02-WCS14 (Lot# 83333, Source: ERA, Exp: 02/01/2018)

Comments:
KI# 85038

distillation start: 9:00 a.m.
stop: 10:30 a.m.

second distillation start: 14:00
stop: 15:30

Prepared by: HERRERA, JUDY

Date: 08/25/2017

Reviewed by: MOKEN, JAMES

Date: 09/08/2017

Disposal Int/Date/Loc: JM / 09/08/2017 / NA - Consumed

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