

Ms. Ann DiDonato
U.S. EPA Region 3
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Arcadis U.S., Inc.
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Subject:

Quarterly Progress Report: July through September 2019
Precision National Plating Services, Inc.
Clarks Summit, Pennsylvania
Docket No. CERC-03-2012-0031DC

ELECTRONIC MAIL

Dear Ms. DiDonato:

ENVIRONMENT

On behalf of Precision National Plating Services, Inc. (Precision), Arcadis U.S., Inc. (Arcadis) is submitting this progress report to summarize the activities completed between July 1, 2019 and September 30, 2019. This progress report is being submitted in accordance with Section 8.7 of the Administrative Settlement Agreement and Order on Consent (AS) for Removal Response Action (Docket No. CERC-03-2012-0031DC).

Date:
January 31, 2020

Contact:
Lawrence G. Brunt, PE

Phone:
908.526.1000

Email:
Larry.brun@arcadis.com

Our ref:
BB014215.2019.00004

1. Response actions completed and the actions that have been taken toward achieving compliance with the Settlement Agreement:

General

Precision and Arcadis worked closely with the U.S. Environmental Protection Agency (U.S. EPA) from July through September 2019 to do the following:

- Precision performed quarterly surface water monitoring with the U.S. EPA on July 17, 2019 as approved in the RAP.
- Precision performed general site maintenance activities.
- Precision also provided the U.S. EPA and PADEP with available sampling information.

Ongoing Administrative Settlement (AS) Activities

Seep Remediation

- Precision continued the operation of the Seep Shed treatment system.
- The influent and effluent of the Seep Shed Treatment System were sampled on July 17, 2019 for hexavalent chromium and total chromium. The midpoints between the resin beds of the system also were sampled. At the time of sampling, the influent pH was 7.40 su and the temperature was 10.7° C.

- On July 17, 2019, the flow totalizer reading for the Seep Shed Treatment System was 6,531,091 gallons.
- The influent and effluent of the Seep Shed Treatment System were sampled on August 22, 2019 for hexavalent chromium and total chromium. The midpoints between the resin beds of the system were also sampled for hexavalent and total chromium. At the time of sampling, the influent pH was 6.19 su and the temperature was 18.7° C.
- On August 22, 2019, the Seep Shed flow totalizer reading was 6,674,468 gallons.
- The influent and effluent of the Seep Shed Treatment System were sampled on September 20, 2019 for hexavalent chromium and total chromium. The midpoints between the resin beds of the system were also sampled for hexavalent and total chromium. At the time of sampling, the influent pH was 6.9 su and the temperature was 10.4° C.
- On September 20, 2019, the flow totalizer reading for the Seep Shed Treatment System was 6,674,856 gallons.

Lagoon Assessment/Remediation Activities

- Precision continued the operation of the Lagoon Treatment System.
- The influent and system effluent of the Lagoon Treatment System were sampled on July 17, 2019 for hexavalent chromium and TAL metals. The effluent of the lead resin bed was also sampled for hexavalent chromium and total chromium. The pH of the lagoon system influent at the time of sampling was 7.27 su and the temperature was 11.1° C.
- By July 17, 2019, the total volume treated by the Lagoon Treatment System was approximately 34,747,212 gallons.
- The influent and system effluent of the Lagoon Treatment System were sampled on August 22, 2019 for hexavalent chromium and TAL metals. The effluent of the lead resin bed was also sampled for hexavalent chromium and total chromium. The pH of the lagoon system influent at the time of sampling was 6.31 su and the temperature was 25.1° C.
- By August 22, 2019 the total volume treated by the Lagoon Treatment System was 35,556,540 gallons.
- The influent and system effluent of the Lagoon Treatment System were sampled on September 20, 2019 for hexavalent chromium and TAL metals. The effluent of the lead resin bed was also sampled for hexavalent chromium and total chromium. The pH of the lagoon system influent at the time of sampling was 7.1 su and the temperature was 11.0° C.
- By September 20, 2019, the total volume treated by the Lagoon Treatment System was 35,592,193 gallons.

Quarterly Surface Water Monitoring

- As approved in the RAP, quarterly surface water sampling of Ackerly Creek was conducted on July 17, 2019. Samples were analyzed for hexavalent chromium and total chromium. Results were received from TestAmerica Laboratories and validated. A summary of the data is attached.

- On September 20, 2019, Precision submitted a request to the U.S. EPA to reduce the required frequency of surface water monitoring from quarterly to semiannual. Based on the EPA approval of this modification to the AS, Precision did not collect surface water samples from Ackerly Creek in October 2019. The next surface water monitoring event is planned for January 2020.

Semiannual Groundwater Monitoring

- As approved in the RAP, semiannual monitoring of groundwater monitoring wells, residential wells, and seeps had been conducted in April 2019. During that sampling event, several of the monitoring wells near Ackerly Creek which had been used for in situ chemical reduction activities could not be sampled due to the continued presence of excess calcium polysulfide. On July 17, 2019, the wells were inspected again for the presence of chemical; at this time, the chemical had subsided which allowed for sampling of additional wells that could not be sampled in April. Samples from these wells were analyzed for hexavalent chromium and total chromium. Results were received from TestAmerica Laboratories and validated. A summary of the data is attached.

2. Description of all data anticipated, and activities scheduled for the next ninety (90) calendar days:

- Operation of the treatment systems will continue at the site.
- Precision will sample the Lagoon and Seep Shed Treatment systems monthly in October, November, and December 2019. Data is anticipated to be received four weeks after each sampling event.
- Semiannual groundwater sampling of monitoring wells and residential wells as approved in the RAP is scheduled for October 2019.

3. Description of any problems encountered or anticipated:

- None.

4. Any actions taken to prevent or mitigate such problems.

- None.

5. A schedule for completion of such actions:

- Containment and treatment of water in the lagoon will continue as needed.
- Operation of the Seep Shed treatment system will continue as needed.

6. Analytical data received during the reporting period:

- Laboratory data for the July 17, 2019 sampling of the Seep Shed Treatment System and the Lagoon Treatment System were received from TestAmerica Laboratories and validated. A summary of the data is attached.

Hexavalent chromium was not detected above the laboratory method detection limit in the effluent of the Lagoon Treatment System. Total chromium was detected in the effluent at an estimated concentration of 7.7 ug/L, which does not exceed the MCL of 100 ug/L.

Hexavalent chromium was not detected above the laboratory method detection limit in the effluent of the Seep Shed Treatment System. Total chromium was detected at a concentration of 47.0 ug/L which does not exceed the MCL of 100 ug/L.

- Laboratory data for the quarterly surface water samples collected on July 17, 2019 were received from TestAmerica Laboratories and validated. A summary of the data is attached.
- Laboratory data for the groundwater monitoring well samples collected on July 17, 2019 were received from TestAmerica Laboratories and validated. A summary of the data is attached.
- Laboratory data for the August 22, 2019 sampling of the Lagoon and Seep Shed Treatment Systems were received from TestAmerica Laboratories and validated. A summary of the data is attached.

Hexavalent chromium and total chromium were not detected above the laboratory method detection limit in the effluent of the Lagoon Treatment System.

Hexavalent chromium was not detected above the laboratory method detection limit in the effluent of the Seep Shed Treatment System. Total chromium was detected in the effluent at a concentration of 49.1 ug/L, which does not exceed the MCL of 100 ug/L.

- Laboratory data for the September 20, 2019 sampling of the Lagoon Treatment System and the Seep Shed Treatment System were received from TestAmerica Laboratories and validated. A summary of the data is attached.

Hexavalent chromium was not detected above the laboratory method detection limit in the effluent of the Lagoon Treatment System. Total chromium was detected in the effluent at an estimated concentration of 4.2 ug/L, which does not exceed the MCL of 100 ug/L.

Hexavalent chromium was not detected above the laboratory method detection limit in the effluent of the Seep Shed Treatment System. Total chromium was detected in the effluent at a concentration of 114 ug/L, which slightly exceeds the MCL of 100 ug/L. Based on this result, Precision replaced the SIR-300 resin in the Seep Shed Treatment System on October 15, 2019.

7. Modifications to the response action, RAP, and schedule made in accordance with Section XIV of the Settlement Agreement during this reporting period.

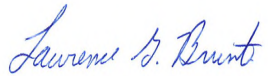
- None.

Ms. Ann DiDonato
U.S. EPA
January 31, 2020

If you have any questions or require additional information, please call me at 908.526.1000.

Sincerely,

Arcadis U.S., Inc.



Lawrence G. Brunt, P.E.
Principal Engineer

Copies:

D. Rood - PADEP

Enclosures

Data Validation Summary

Arcadis U.S., Inc. (Arcadis) performed a level III data validation evaluation of the analytical data collected during the Precision National Plating site investigation. The data evaluation was conducted in accordance with the United States Environmental Protection Agency's (USEPA) Data Validation Functional Guidelines for Evaluating Environmental Analyses, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," dated October 1999, and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," dated October 2004 ("the USEPA Guidance"). The following is a summary of the analytical data review for samples collected and analyzed from July through September 2019. The samples were submitted to TestAmerica Laboratories located in Edison, New Jersey for analysis. The TestAmerica sample delivery groups (SDGs) evaluated for this report include: 460-186869-1, 460-186870-1, 460-186871-1, 460-189676-1, and 460-191885-1.

The samples were analyzed using the following methods:

EPA Method 200.7 for metals
EPA Method 245.1 for mercury
EPA Method 7196A for hexavalent chromium

The data were evaluated based on the following parameters according to the USEPA Guidance for Level III data validation:

- data completeness
- holding times
- blanks
- duplicates and ICP serial dilution
- matrix spike/matrix spike duplicate recoveries (MS/MSD)
- laboratory control spike/laboratory control spike duplicate recoveries (LCS/LCSD)

A review of the laboratory reports revealed no issues which caused the data to be qualified.

The sample temperature, hold times, calibrations, laboratory control samples, duplicates, serial dilutions, and laboratory blanks were all within compliance criteria for all samples.

The following items were noted during the data review:

There was an omission on the chain of custody submitted with SDG 460-186871-1 such that no analyses were selected for sample 460-186871-7 (Lagoon Seep). The laboratory logged in the sample for analysis for hexavalent chromium and total chromium, as indicated on the sample bottles, and notified Arcadis. Arcadis confirmed via email that these were the correct analyses required for the Lagoon Seep sample and the analyses were performed accordingly.

In metals batch 460-635270, which included samples from PNP SDG 460-189676-1, the recovery of iron was lower than the acceptable range in the post-digestion spike analyzed with this batch. However, the concentration of iron in the sample was greater than four times the spike amount, so the percent recovery criteria does not apply. The sample utilized for the MS was not a PNP sample. All of the other QA/QC parameters were in compliance, so the results are not qualified. The laboratory also noted that the recovery of calcium and manganese in the post-digestion spike were low at 83% and 80%, respectively. However, the EPA data evaluation guidelines consider a recovery between 75% and 125% to be acceptable, so there is no need for qualification.

In metals batch 460-642248, which included samples from PNP SDG 460-191885-1, the relative percent difference between the concentration of arsenic in the initial result and the duplicate analysis performed along with the batch was greater than 20%. However, the concentrations of arsenic in the sample and the duplicate were less than the reporting limit and less than five times the method detection limit, so the criteria for comparison becomes the method detection limit. The difference in results is not greater than

Data Validation Summary

the method detection limit. The sample used for the duplicate analysis was not a PNP sample. All of the other QA/QC parameters were in compliance, so the results are not qualified.

In this same metals analysis batch, the recovery of sodium in the matrix spike was low (43%). However, the sample used for the matrix spike was not a PNP sample and the concentration of sodium in that sample was greater than four times the spike concentration. The recovery of sodium was acceptable in the post-digestion spike and all other QC samples, including a MS performed on PNP sample 460-191885-4 (Lagoon Influent). Therefore, the results are not qualified.

Summary of Quality Assurance/Quality Control Evaluation of Data

Based upon the QA/QC review, the project data are valid and available for use in site characterization without qualification.

TREATMENT SYSTEM MONITORING RESULTS

TestAmerica Laboratories, Inc.
Eurofins TestAmerica, Edison

SUMMARY OF ANALYTICAL RESULTS: 460-186871-1

Job Description: Precision National Plating

For:

ARCADIS U.S., Inc

1 Harvard Way

Hillsborough, New Jersey 08844

Client ID	Lagoon Influent			Lagoon Post Lead			Lagoon Effluent			Seep Shed Influent			Seep Shed Mid			Seep Shed Effluent			Lagoon Seep		
Lab Sample ID	460-186871-1			460-186871-2			460-186871-3			460-186871-4			460-186871-5			460-186871-6			460-186871-7		
Sampling Date	07/17/2019 16:45:00			07/17/2019 16:46:00			07/17/2019 16:47:00			07/17/2019 13:00:00			07/17/2019 13:01:00			07/17/2019 13:02:00			07/17/2019 17:35:00		
Matrix	Water			Water			Water			Water			Water			Water			Water		
Unit																					
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 200.7 REV 4.4(UG/L)																					
Aluminum	95.7	U	95.7	NR			95.7	U	95.7	NR			NR			NR			NR		
Antimony	4.1	U	4.1	NR			4.1	U	4.1	NR			NR			NR			NR		
Arsenic	4.2	U	4.2	NR			4.2	U	4.2	NR			NR			NR			NR		
Barium	10.5	U	10.5	NR			11.9	J	10.5	NR			NR			NR			NR		
Beryllium	1.5	U	1.5	NR			1.5	U	1.5	NR			NR			NR			NR		
Cadmium	2.1	U	2.1	NR			2.1	U	2.1	NR			NR			NR			NR		
Calcium	38500		608	NR			64000		608	NR			NR			NR			NR		
Chromium	49.4		5.9	10.1		5.9	7.7	J	5.9	26800		11.8	59.5		5.9	47.0		5.9	2410		5.9
Cobalt	5.5	U	5.5	NR			5.5	U	5.5	NR			NR			NR			NR		
Copper	5.5	U	5.5	NR			5.5	U	5.5	NR			NR			NR			NR		
Iron	265		111	NR			111	U	111	NR			NR			NR			NR		
Lead	3.8	U	3.8	NR			3.8	U	3.8	NR			NR			NR			NR		
Magnesium	3610	J	578	NR			5650		578	NR			NR			NR			NR		
Manganese	273		5.0	NR			2210		5.0	NR			NR			NR			NR		
Nickel	8.7	J	6.3	NR			6.3	U	6.3	NR			NR			NR			NR		
Potassium	461	J	207	NR			271	J	207	NR			NR			NR			NR		
Selenium	4.2	U	4.2	NR			4.2	U	4.2	NR			NR			NR			NR		
Silver	1.3	U	1.3	NR			1.3	U	1.3	NR			NR			NR			NR		
Sodium	23000		846	NR			29400		846	NR			NR			NR			NR		
Thallium	8.7	U	8.7	NR			8.7	U	8.7	NR			NR			NR			NR		
Vanadium	6.0	U	6.0	NR			6.0	U	6.0	NR			NR			NR			NR		
Zinc	12.3	J	5.4	NR			12.2	J	5.4	NR			NR			NR			NR		
WATER BY 245.1(UG/L)																					
Mercury	0.12	U	0.12	NR			0.12	U	0.12	NR			NR			NR			NR		

NR: Not Analyzed

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Lab Contact:

Grace Chang

Project Manager II

(732)593-2579

TestAmerica Laboratories, Inc.
Eurofins TestAmerica, Edison

460-186871-1

Job Description: Precision National

Plating

For:

ARCADIS U.S., Inc

1 Harvard Way

Hillsborough, New Jersey 08844

Client ID	Lagoon Influent			Lagoon Post Lead			Lagoon Effluent			Seep Shed Influent			Seep Shed Mid			Seep Shed Effluent			Lagoon Seep		
Lab Sample ID	460-186871-1			460-186871-2			460-186871-3			460-186871-4			460-186871-5			460-186871-6			460-186871-7		
Sampling Date	07/17/2019 16:45:00			07/17/2019 16:46:00			07/17/2019 16:47:00			07/17/2019 13:00:00			07/17/2019 13:01:00			07/17/2019 13:02:00			07/17/2019 17:35:00		
Matrix	Water			Water			Water			Water			Water			Water			Water		
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 7196A																					
Cr (VI) (ug/l)	27.5		3.0	7.7	J	3.0	3.0	U	3.0	545		15.1	3.0	U	3.0	3.0	U	3.0	169		6.0

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Lab Contact:

Grace Chang

Project Manager II

(732)593-2579

TestAmerica Laboratories, Inc.
Eurofins TestAmerica, Edison

SUMMARY OF ANALYTICAL RESULTS:

460-189676-1

Job Description: Precision National Plating

For:

ARCADIS U.S., Inc

1 Harvard Way

Hillsborough, New Jersey 08844

Client ID	Lagoon Influent			Lagoon Post Lead			Lagoon Effluent			Seep Shed Influent			Seep Shed Mid			Seep Shed Effluent			Lagoon Seep		
Lab Sample ID	460-189676-1			460-189676-2			460-189676-3			460-189676-4			460-189676-5			460-189676-6			460-189676-7		
Sampling Date	08/22/2019 10:40:00			08/22/2019 10:42:00			08/22/2019 10:45:00			08/22/2019 13:15:00			08/22/2019 13:17:00			08/22/2019 13:20:00			08/22/2019 15:30:00		
Matrix	Water			Water			Water			Water			Water			Water			Water		
Unit																					
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 200.7 REV																					
Aluminum	95.7	U	95.7	NR			95.7	U	95.7	NR			NR			NR			NR		
Antimony	4.1	U	4.1	NR			4.1	U	4.1	NR			NR			NR			NR		
Arsenic	4.2	J	4.2	NR			11.3		4.2	NR			NR			NR			NR		
Barium	12.2	J	10.5	NR			15.2	J	10.5	NR			NR			NR			NR		
Beryllium	1.5	U	1.5	NR			1.5	U	1.5	NR			NR			NR			NR		
Cadmium	2.1	U	2.1	NR			2.1	U	2.1	NR			NR			NR			NR		
Calcium	47800		608	NR			54300		608	NR			NR			NR			NR		
Chromium	45.3		5.9	20.3		5.9	5.9	U	5.9	3770		5.9	397		5.9	49.1		5.9	4740		5.9
Cobalt	5.5	U	5.5	NR			5.5	U	5.5	NR			NR			NR			NR		
Copper	5.5	U	5.5	NR			5.5	U	5.5	NR			NR			NR			NR		
Iron	1400		111	NR			111	U	111	NR			NR			NR			NR		
Lead	3.8	U	3.8	NR			3.8	U	3.8	NR			NR			NR			NR		
Magnesium	4610	J	578	NR			5180		578	NR			NR			NR			NR		
Manganese	653		5.0	NR			2750		5.0	NR			NR			NR			NR		
Nickel	7.2	J	6.3	NR			6.3	U	6.3	NR			NR			NR			NR		
Potassium	531	J	207	NR			612	J	207	NR			NR			NR			NR		
Selenium	4.2	U	4.2	NR			4.2	U	4.2	NR			NR			NR			NR		
Silver	1.3	U	1.3	NR			1.3	U	1.3	NR			NR			NR			NR		
Sodium	26000		846	NR			28900		846	NR			NR			NR			NR		
Thallium	8.7	U	8.7	NR			8.7	U	8.7	NR			NR			NR			NR		
Vanadium	6.0	U	6.0	NR			6.0	U	6.0	NR			NR			NR			NR		
Zinc	12.5	J	5.4	NR			8.1	J	5.4	NR			NR			NR			NR		
WATER BY 245.1(UG/L)																					
Mercury	0.12	U	0.12	NR			0.12	U	0.12	NR			NR			NR			NR		

NR: Not Analyzed

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Lab Contact:

Grace Chang

Project Manager II

(732)593-2579

TestAmerica Laboratories, Inc.**Eurofins TestAmerica, Edison****SUMMARY OF ANALYTICAL RESULTS:****460-189676-1****Job Description:** Precision National Plating**For:****ARCADIS U.S., Inc****1 Harvard Way****Hillsborough, New Jersey 08844**

Client ID	Lagoon Influent			Lagoon Post Lead			Lagoon Effluent			Seep Shed Influent			Seep Shed Mid			Seep Shep Effluent			Lagoon Seep		
Lab Sample ID	460-189676-1			460-189676-2			460-189676-3			460-189676-4			460-189676-5			460-189676-6			460-189676-7		
Sampling Date	08/22/2019 10:40:00			08/22/2019 10:42:00			08/22/2019 10:45:00			08/22/2019 13:15:00			08/22/2019 13:17:00			08/22/2019 13:20:00			08/22/2019 15:30:00		
Matrix	Water			Water			Water			Water			Water			Water			Water		
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 7196A																					
Cr (VI) (ug/l)	3.0	U	3.0	3.0	U	3.0	3.0	U	3.0	330		15.1	3.0	U	3.0	3.0	U	3.0	301		15.1

U : Indicates the analyte was analyzed for but not detected.

Lab Contact:

Grace Chang

Project Manager II

(732)593-2579

TestAmerica Laboratories, Inc.
Eurofins TestAmerica, Edison

SUMMARY OF ANALYTICAL

RESULTS: 460-191885-1

Job Description: Precision

National Plating

For:

ARCADIS U.S., Inc

1 Harvard Way

Hillsborough, New Jersey 08844

Client ID	Seep Shed Influent			Seep Shed Mid			Seep Shed Effluent			Lagoon Influent			Lagoon Past lead			Lagoon Effluent			Lagoon Seep		
Lab Sample ID	460-191885-1			460-191885-2			460-191885-3			460-191885-4			460-191885-5			460-191885-6			460-191885-7		
Sampling Date	09/20/2019 15:00:00			09/20/2019 15:01:00			09/20/2019 15:02:00			09/20/2019 14:45:00			09/20/2019 14:46:00			09/20/2019 14:47:00			09/20/2019 14:30:00		
Matrix	Water			Water			Water			Water			Water			Water			Water		
Unit																					
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 200.7 REV 4.4(UG/L)																					
Aluminum	NR			NR			NR			28.7	U	28.7	NR			28.7	U	28.7	NR		
Antimony	NR			NR			NR			2.9	U	2.9	NR			2.9	U	2.9	NR		
Arsenic	NR			NR			NR			5.5		3.3	NR			5.9		3.3	NR		
Barium	NR			NR			NR			15.1	J	14.7	NR			21.1	J	14.7	NR		
Beryllium	NR			NR			NR			0.41	U	0.41	NR			0.41	U	0.41	NR		
Cadmium	NR			NR			NR			0.45	U	0.45	NR			0.45	U	0.45	NR		
Calcium	NR			NR			NR			58100		391	NR			55500		391	NR		
Chromium	3170		1.4	233		1.4	114		1.4	60.9		1.4	27.7		1.4	4.2	J	1.4	13300		1.4
Cobalt	NR			NR			NR			4.4	U	4.4	NR			4.4	U	4.4	NR		
Copper	NR			NR			NR			2.6	U	2.6	NR			2.6	U	2.6	NR		
Iron	NR			NR			NR			1430		26.4	NR			26.4	U	26.4	NR		
Lead	NR			NR			NR			4.2	U	4.2	NR			4.2	U	4.2	NR		
Magnesium	NR			NR			NR			5590		349	NR			5230		349	NR		
Manganese	NR			NR			NR			1120		1.2	NR			1380		1.2	NR		
Nickel	NR			NR			NR			18.0	J	3.4	NR			3.4	U	3.4	NR		
Potassium	NR			NR			NR			553	J	195	NR			624	J	195	NR		
Selenium	NR			NR			NR			4.4	U	4.4	NR			4.4	U	4.4	NR		
Silver	NR			NR			NR			1.4	U	1.4	NR			1.4	U	1.4	NR		
Sodium	NR			NR			NR			33400		241	NR			31900		241	NR		
Thallium	NR			NR			NR			7.0	U	7.0	NR			7.0	U	7.0	NR		
Vanadium	NR			NR			NR			3.2	U	3.2	NR			3.2	U	3.2	NR		
Zinc	NR			NR			NR			25.4	J	4.2	NR			8.3	J	4.2	NR		
WATER BY 245.1(UG/L)																					
Mercury	NR			NR			NR			0.12	U	0.12	NR			0.12	U	0.12	NR		

NR: Not Analyzed

Highlighted Concentrations shown in bold type face exceed limits

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Lab Contact:

Grace Chang

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TestAmerica Laboratories, Inc.
Eurofins TestAmerica, Edison

SUMMARY OF ANALYTICAL

RESULTS:

460-191885-1

Job Description: Precision National

Plating

For:

ARCADIS U.S., Inc

1 Harvard Way

Hillsborough, New Jersey 08844

Client ID	Seep Shed Influent			Seep Shed Mid			Seep Shed Effluent			Lagoon Influent			Lagoon Past lead			Lagoon Effluent			Lagoon Seep		
Lab Sample ID	460-191885-1			460-191885-2			460-191885-3			460-191885-4			460-191885-5			460-191885-6			460-191885-7		
Sampling Date	09/20/2019 15:00:00			09/20/2019 15:01:00			09/20/2019 15:02:00			09/20/2019 14:45:00			09/20/2019 14:46:00			09/20/2019 14:47:00			09/20/2019 14:30:00		
Matrix	Water			Water			Water			Water			Water			Water			Water		
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 7196A																					
Cr (VI) (ug/l)	313		12.0	34.1		3.0	3.0	U	3.0	3.0	U	3.0	3.0	U	3.0	3.0	U	3.0	257		12.0

U : Indicates the analyte was analyzed for but not detected.

Lab Contact:

Grace Chang

Project Manager II

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QUARTERLY SURFACE WATER SAMPLING RESULTS

TestAmerica Laboratories, Inc.
Eurofins TestAmerica, Edison

SUMMARY OF ANALYTICAL
 RESULTS: 460-186870-1
 Job Description: Precision National
 Plating
 For:
 ARCADIS U.S., Inc
 1 Harvard Way
 Hillsborough, New Jersey 08844

Client ID	SW-10			SW-14			SW-14 BC2			SW-14 DE			SW-14G			SW-15			SW-16		
Lab Sample ID	460-186870-1			460-186870-2			460-186870-3			460-186870-4			460-186870-5			460-186870-6			460-186870-7		
Sampling Date	07/17/2019 11:33:00			07/17/2019 11:38:00			07/17/2019 11:50:00			07/17/2019 11:57:00			07/17/2019 12:00:00			07/17/2019 12:04:00			07/17/2019 12:14:00		
Matrix	Water			Water			Water			Water			Water			Water			Water		
Unit																					
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 200.7 REV 4.4(UG/L)																					
Chromium	5.9	U	5.9	5.9	U	5.9	5.9	U	5.9	5.9	U	5.9	5.9	U	5.9	5.9	U	5.9	5.9	U	5.9

U : Indicates the analyte was analyzed for but not detected.

Lab Contact:
 Grace Chang
 Project Manager II
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TestAmerica Laboratories, Inc.
Eurofins TestAmerica, Edison

SUMMARY OF ANALYTICAL

RESULTS: 460-186870-1

Job Description: Precision National

Plating

For:

ARCADIS U.S., Inc

1 Harvard Way

Hillsborough, New Jersey 08844

Client ID	SW-10			SW-14			SW-14 BC2			SW-14 DE			SW-14G			SW-15			SW-16		
Lab Sample ID	460-186870-1			460-186870-2			460-186870-3			460-186870-4			460-186870-5			460-186870-6			460-186870-7		
Sampling Date	07/17/2019 11:33:00			07/17/2019 11:38:00			07/17/2019 11:50:00			07/17/2019 11:57:00			07/17/2019 12:00:00			07/17/2019 12:04:00			07/17/2019 12:14:00		
Matrix	Water			Water			Water			Water			Water			Water			Water		
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 7196A																					
Cr (VI) (ug/l)	4.2	J	3.0	3.0	U	3.0	3.1	J	3.0	3.0	U	3.0	5.4	J	3.0	5.4	J	3.0	3.0	U	3.0

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Lab Contact:

Grace Chang

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SEMIANNUAL MONITORING RESULTS

TestAmerica Laboratories, Inc.
Eurofins TestAmerica, Edison

RESULTS: 460-186869-1
 Job Description: Precision
 National Plating
 For:
 ARCADIS U.S., Inc
 1 Harvard Way
 Hillsborough, New Jersey
 08844

Client ID	MW-9IA			OMW-15			OMW-24			MW-9S			OMW-44			OMW-41			MW-14S		
Lab Sample ID	460-186869-1			460-186869-2			460-186869-3			460-186869-4			460-186869-5			460-186869-6			460-186869-7		
Sampling Date	07/17/2019 10:40:00			07/17/2019 09:15:00			07/17/2019 09:35:00			07/17/2019 10:05:00			07/17/2019 10:20:00			07/17/2019 17:00:00			07/17/2019 09:10:00		
Matrix	Water			Water			Water			Water			Water			Water			Water		
Unit																					
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 200.7 REV 4.4(UG/L)																					
Chromium	119		5.9	5.9	U	5.9	586		5.9	210		5.9	27.8		5.9	232		5.9	376		5.9

U : Indicates the analyte was analyzed for but not detected.

Lab Contact:
 Grace Chang
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TestAmerica Labora
Eurofins TestAmeric

RESULTS: 460-186869-1

Job Description: Precision

National Plating

For:

ARCADIS U.S., Inc

1 Harvard Way

Hillsborough, New Jersey

08844

Client ID	MW-40I			OMW-40			MW-43S		
Lab Sample ID	460-186869-8			460-186869-9			460-186869-10		
Sampling Date	07/17/2019 16:05:00			07/17/2019 11:20:00			07/17/2019 13:15:00		
Matrix	Water			Water			Water		
Unit									
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 200.7 REV 4.4(UG/L)									
Chromium	358		5.9	578		5.9	226		5.9

U : Indicates the analyte was ana

Lab Contact:

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TestAmerica Laboratories, Inc.
Eurofins TestAmerica, Edison

SUMMARY OF ANALYTICAL

RESULTS: 460-186869-1

Job Description: Precision National

Plating

For:

ARCADIS U.S., Inc

1 Harvard Way

Hillsborough, New Jersey 08844

Client ID	MW-9IA			OMW-15			OMW-24			MW-9S			OMW-44			OMW-41		
Lab Sample ID	460-186869-1			460-186869-2			460-186869-3			460-186869-4			460-186869-5			460-186869-6		
Sampling Date	07/17/2019 10:40:00			07/17/2019 09:15:00			07/17/2019 09:35:00			07/17/2019 10:05:00			07/17/2019 10:20:00			07/17/2019 17:00:00		
Matrix	Water			Water			Water			Water			Water			Water		
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 7196A																		
Cr (VI) (ug/l)	101		3.0	3.0	U	3.0	15.1	U	15.1	172		3.0	3.0	U	3.0	88.0		3.0

U : Indicates the analyte was analyzed for but not detected.

Lab Contact:

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TestAmerica Laboratory
Eurofins TestAmerica, Inc.

SUMMARY OF ANALYTICAL

RESULTS: 460-186869-1

Job Description: Precision National

Plating

For:

ARCADIS U.S., Inc

1 Harvard Way

Hillsborough, New Jersey 08844

Client ID	MW-14S			MW-40I			OMW-40			MW-43S		
Lab Sample ID	460-186869-7			460-186869-8			460-186869-9			460-186869-10		
Sampling Date	07/17/2019 09:10:00			07/17/2019 16:05:00			07/17/2019 11:20:00			07/17/2019 13:15:00		
Matrix	Water			Water			Water			Water		
	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
WATER BY 7196A												
Cr (VI) (ug/l)	318		6.0	3.0	U	3.0	446		15.1	90.4		3.0

U : Indicates the analyte was analyzed

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