



July 18, 2017

Reference No. 012636-T09

Mr. Richard Conforti
Hazardous Waste Section, Resource Management Division
Michigan Department of Environmental Quality
525 W. Allegan (Constitution Hall)
Lansing, Michigan
U.S.A. 48933

Dear Mr. Conforti:

**Re: Supplemental RFI Groundwater Monitoring
Annual Monitoring Report (April 1, 2016 to March 31, 2017)
Coldwater Road Facility, Genesee Township, Michigan
MIR 000 020 743**

This letter, prepared by GHD on behalf of Revitalizing Auto Communities Environmental Response Trust (RACER), presents the Supplemental Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Groundwater Investigation Annual Monitoring Report (AMR) for the former Peregrine Coldwater Road Facility (Site) located at 1245E Coldwater Road in Genesee Township, near Flint, Michigan. The AMR has been prepared for the period of April 1, 2016 to March 31, 2017 in accordance with the "Supplemental RFI Groundwater Investigation Work Plan and Groundwater Monitoring Plan" (Monitoring Plan; Conestoga-Rovers & Associates, September 16, 2013) which was approved by the Michigan Department of Environmental Quality (MDEQ) on October 15, 2013. In addition, this AMR is the last report required pursuant to the Monitoring Plan.

This letter includes the following enclosures:

Figure 1	Groundwater Monitoring Locations
Figure 2	Drift Aquifer Groundwater Contours and March 2017 Groundwater Elevations
Figure 3a/b	Shallow Groundwater Monitoring Results Summary
Figure 4	Deep Groundwater Monitoring Results Summary
Table 1	2016/2017 Groundwater Monitoring Well Network
Table 2	Summary of Water Elevation and Turbidity Readings
Table 3	2016/2017 Shallow Groundwater Results Summary
Table 4	2016/2017 Deep Groundwater Results Summary
Attachment A	Field Data Records
Attachment B	MW-17-13 Area Investigation Results
Attachment C	November 2016 PFAS Sampling Results Summary
Attachment D	Historic Groundwater Analytical Results (December 2010 to April 2017)
Attachment E	Data Validation Report and Laboratory Analytical Results



1. Activities Completed During Monitoring Period

The following activities were completed during this monitoring period:

- Q2-2016 Groundwater Monitoring (June 20 to 21, 2016)
- Q3-2016 Groundwater Monitoring (September 28 and 29, 2016)
- MW-17-13 Area Investigation (October 3, 2016)
- Q4-2016 Groundwater Monitoring (November 28 to 30, 2016)
- November 2016 PFAS Sampling (November 29 to 30, 2016)
- Q1-2017 Comprehensive Groundwater Monitoring (March 28 to 31, 2017)

1.1 Q2-2016 Groundwater Monitoring (June 20 to 21, 2016)

In accordance with the approved Monitoring Plan, the first round of quarterly groundwater monitoring for the 2016/2017 AMR period was completed at eight shallow monitoring wells between June 20 and 21, 2016 (Q2-2016). Table 1 presents a summary of the monitoring well network details and Figure 1 presents the monitoring locations. Location MW-16-10 was also sampled as part of this event on June 30, 2016, as presented in the 2015/2016 AMR, to compensate for the location not be sampled as part of the Q1-2016 event.

Groundwater samples were collected using low flow sampling procedures at the following locations: MW-4-02, MW-17-13, MW-19-13, MW-20-13, PFW-2, PFW-9, and MW-16-10. Samples were collected following the stabilization of field parameters (pH, turbidity, temperature, conductivity, dissolved oxygen, and oxygen reduction potential). In addition, groundwater samples were collected following purging and sufficient recharge at the following locations: B-9, MW-18-13. All samples were analyzed for total/dissolved manganese and lead. The sample from MW-17-13 was also analyzed for total /dissolved iron and arsenic. In accordance with the approved Monitoring Plan, if sampling procedures yielded turbidity readings of 10 NTU or less, total metals analysis was also performed.

Field sampling records have been included in Attachment A and a summary of the groundwater elevations and turbidity readings is presented in Table 2.

1.2 Q3-2016 Groundwater Monitoring (September 28 and 29, 2016)

The second round of quarterly groundwater monitoring for the 2016/2017 AMR period was completed at eight shallow monitoring wells between September 28 and 29, 2016 (Q3-2016). Table 1 presents a summary of the monitoring well network details and Figure 1 presents the monitoring locations.

Groundwater samples were collected using low flow sampling procedures at the following locations: MW-4-02, MW-17-13, MW-19-13, MW-20-13, PFW-2, and PFW-9. Samples were collected following the stabilization of field parameters (pH, turbidity, temperature, conductivity, dissolved oxygen, and oxygen reduction potential). In addition, groundwater samples were collected following purging and sufficient recharge at the following locations: B-9, MW-18-13. All samples were analyzed for total/dissolved



manganese and lead. Location MW-17-13 was also sampled for total/dissolved iron and arsenic. In accordance with the approved Monitoring Plan, if sampling procedures yielded turbidity readings of 10 NTU or less, total metals analysis was also performed.

The field sampling records have been included in Attachment A and a summary of groundwater elevations and turbidity readings is presented in Table 2.

1.3 MW-17-13 Area Investigation (October 3, 2016)

As proposed in a Memorandum to MDEQ, on August 18, 2016, and approved by MDEQ on August 19, 2016 additional investigative activities were completed in the vicinity of MW-17-13 to delineate elevated concentrations of metals (arsenic, iron, and manganese) found in groundwater samples previously collected from monitoring well MW-17-13.

The investigation was completed on October 3, 2016 and the results were summarized in a Memorandum to the MDEQ dated January 19, 2017 as presented in Attachment B.

1.4 Q4-2016 Groundwater Monitoring (November 28 to 30, 2016)

In accordance with the approved Monitoring Plan, as revised, the third round of quarterly groundwater monitoring was completed at eight shallow monitoring wells between November 28 and 30, 2016 (Q4-2016). Sampling was completed in November in order to coordinate sampling with the MDEQ approved Perfluoroalkyl Substances (PFAS) sampling and in coordination with O'Brien & Gere Engineers, Inc. (OBG) sampling of the RACER Former Coldwater Road Landfill. Table 1 presents a summary of the monitoring well network details and Figure 1 presents the monitoring locations.

Groundwater samples were collected at all locations using low flow sampling procedures. Samples were collected following the stabilization of field parameters (pH, turbidity, temperature, conductivity, dissolved oxygen, and oxygen reduction potential). B-9 was sampled in coordination with OBG who also sample B-9 as part of Coldwater Road Landfill Monitoring Program. An attempt was made to purge MW-18-13 to dry; however, the well yield was too high. Stabilization was confirmed via field parameters prior to sampling. All samples were analyzed for dissolved manganese and lead. Location MW-17-13 was also sampled for dissolved iron and arsenic. In accordance with the approved Monitoring Plan, if sampling procedures yielded turbidity readings of 10 NTU or less, total metals analysis was also performed.

The field sampling records have been included in Attachment A and a summary of groundwater elevations and turbidity readings is presented in Table 2.

1.5 November 2016 PFAS Sampling (November 29 to 30, 2016)

In response to MDEQ comments on the 2015/2016 AMR dated July 13, 2016 and subsequent email correspondence, RACER completed PFAS groundwater sampling at select locations at the Former Peregrine, Inc, Coldwater Road Facility in accordance with GHD memorandum to MDEQ dated October 7, 2016 and approved by MDEQ on October 10, 2016.



Sampling was completed on November 29 and 30, 2016 and the results were summarized in a letter to MDEQ dated February 13, 2017 as presented in Attachment C.

1.6 Q1-2017 Comprehensive Groundwater Monitoring (March 28 to 31, 2017)

In accordance with the approved revised Monitoring Plan, the comprehensive groundwater monitoring event was completed at four drift aquifer (deep) monitoring wells and twelve shallow monitoring wells between March 28 and 31, 2017 (Q1 2017). Table 1 presents a summary of the monitoring well network details and Figure 1 presents the monitoring locations.

Groundwater samples were collected using low flow sampling procedures at the following locations: B-27D, MW-4-02, MW-15-10, MW-17-13, MW-19-13, MW-20-13, PFW-1, PFW-2, and PFW-9. Samples were collected following the stabilization of field parameters (pH, turbidity, temperature, conductivity, dissolved oxygen, and oxygen reduction potential). During low flow purge, location MW-17-13 went dry, a sample was collected following sufficient recharge. In addition, groundwater samples were collected following purging and sufficient recharge at the following locations: B-9, MW-1, MW-2, MW-18-13, PFW-4, PFW-10, and PFW-11. An attempt was made to purge MW-18-13 to dry; however, the well yield was too high. Stabilization was confirmed via field parameters prior to sampling. All samples were analyzed for VOCs and dissolved metals. In accordance with the approved Monitoring Plan, if sampling procedures yielded turbidity readings of 10 NTU or less, total metals analysis was also performed.

The field sampling records have been included in Attachment A and a summary of groundwater elevations and turbidity readings is presented in Table 2. Figure 2 presents a summary of the groundwater elevations collected between March 28 and 31, 2017 along with groundwater contours for the drift aquifer.

2. Screening Criteria

Groundwater results were initially screened against the Site-specific background values (BVs). Those constituents exceeding Site-specific BVs were then screened against the following generic risk based cleanup criteria from Part 201 of Michigan's Natural Resources and Environmental Protection Act, Public Act 451, and identified in the MDEQ RRD Cleanup Criteria Requirements for Response Activity R299.44 (Table 1), December 30, 2013, pursuant to 1994 PA 451:

- Nonresidential Drinking Water Aesthetic and Health Based Criteria
- Nonresidential Groundwater Volatilization to Indoor Air Inhalation Criteria
- Residential Drinking Water Aesthetic and Health Based Criteria
- Residential Groundwater Volatilization to Indoor Air Inhalation Criteria
- Ground/Surface Water Interface (GSI) Criteria

Groundwater concentrations are screened against both the more conservative aesthetic drinking water criteria and the health based drinking water criteria for aluminum, iron and manganese.



3. 2016/2017 Groundwater Monitoring Results

3.1 Shallow Groundwater Monitoring Results

Figure 3a and Figure 3b present a summary of the groundwater results for all constituents that exceeded criteria per the screening process described above in Section 2 for quarterly monitoring parameters (both total and dissolved results) in the shallow groundwater since the start of this quarterly monitoring program in March 2014. The shallow groundwater results for the 2016/2017 AMR period are presented in Table 3. A summary of all historic shallow groundwater results is presented in Attachment C-1. A figure summarizing the historic groundwater exceedances is presented in Attachment C-3.

For the 2016/2017 sampling events there were no exceedances of groundwater screening criteria at the locations sampled for VOCs. For the 2016/2017 sampling events metals in groundwater exceeded screening criteria as follows:

- Total and dissolved arsenic exceeded Site-specific BV, Residential and/or Nonresidential Drinking Water Criteria, and GSI Criteria at MW-17-13 in three of four samples; March 30, 2017 excepted
- Dissolved iron exceeded Site-specific BVs and Residential and/or Nonresidential Drinking Water (aesthetic and health based) Criteria at MW-17-13 in three of four samples; March 30, 2017 excepted
- Dissolved manganese exceeded Site-specific BVs and Residential and/or Nonresidential Aesthetic Drinking Water Criteria and Residential Health Based Criteria at B-9, MW-2, MW-17-13, and PFW-2 in nine samples and total manganese at B-9, MW-17-13, MW-2, PFW-2 in seven samples

There were no exceedances of Residential or Nonresidential Groundwater Volatilization to Indoor Air Inhalation Criteria.

GHD completed a reduced data validation of the analytical results and found no significant issues. Copies of the data validation memos and the laboratory analytical report are presented in Attachment E.

3.2 Deep Groundwater Monitoring Results

Figure 4 presents a summary of the groundwater results for all constituents that historically exceeded criteria per the screening process described above in Section 2 (both total and dissolved results) in the deep groundwater since the start of this quarterly monitoring program in March 2014. The deep groundwater results for the 2016/2017 AMR period are presented in Table 4. A summary of all historic deep groundwater results is presented in Attachment C-2. A figure summarizing the historic groundwater exceedances is presented in Attachment C-4.

For the 2016/2017 sampling events there were no exceedances of groundwater screening criteria at the locations sampled for VOCs. For the 2016/2017 sampling events metals in groundwater exceeded screening criteria as follows:

- Dissolved aluminum exceeded Site-specific BV, Residential and/or Nonresidential Drinking Water Criteria (aesthetic and/or health based) at B-27D and MW-15-10 in March 2017
- Total silver exceeded Site-specific BV and GSI Criteria at PFW-1 in March 2017
- Dissolved silver exceeded Site-specific BV and GSI Criteria at B-27D in March 2017



GHD completed a reduced data validation of the analytical results and found no significant issues. Copies of the data validation memos and the laboratory analytical report are presented in Attachment E.

4. Site-Wide Groundwater Monitoring Results

Groundwater quality has remained stable across the Site since the completion of Interim Measures (IM) activities completed prior to 2004 to address soils identified as exceeding generic risk-based industrial criteria: industrial direct contact, particulate soil inhalation, soil volatilization to indoor air inhalation, and infinite source soil inhalation. IM activities included the excavation and off-Site disposal of impacted soils.

In addition, facility operations ceased in 1999 and Building Decommissioning Demolition activities were completed in 2001.

On-going groundwater monitoring has been completed on Site since 2010, following the completion of IMs. Throughout the monitoring program 20 groundwater monitoring wells (16 shallow and 4 deep) have been monitored for VOCs and metals (Total and dissolved; depending on water turbidity). Since 2010, no VOCs have been detected at concentrations exceeding screening criteria; in fact, only 10 detections were recorded above the laboratory reporting limit (between 1.0 and 10 micrograms per liter [µg/L] depending on the constituent). All 10 detections were orders of magnitude below their most stringent screening criteria.

It is noted that concentrations reported in the December 2010 (initial) monitoring event were typically elevated compared to subsequent sampling events. The results from this monitoring event are not considered representative of groundwater quality at the Site and the results were likely related to the long timeframe since the previous sampling event and the need for redevelopment of the wells.

Metal concentrations in deep groundwater have periodically exceeded screening criteria since 2010 as follows:

- Total Silver at MW-16-10 (3/27/2014) and PFW-1 (3/31/2017) exceeded GSI criteria of 0.0002 mg/L at concentrations of 0.00051 mg/L (duplicate sample result of 0.00032 mg/L) and 0.00047 mg/L, respectively. As confirmed via email on December 13, 2012, dissolved inorganics are the most appropriate for use at the Site due to generally turbid groundwater. In addition, corresponding dissolved silver results were both non-detect at 0.0002 mg/L. Finally, GSI is not a relevant pathway for deep groundwater at the Site since no surface water exists on-Site nor adjacent and downgradient from the Site where the deep groundwater (approximately 75 ft below ground surface) could reasonably discharge.
- Dissolved Silver at B-27D (3/31/2017) and MW-15-10 (3/27/2014) exceeded GSI criteria of 0.0002 mg/L at concentrations of 0.0034 mg/L and 0.00025 mg/L, respectively. Total results are not available for these samples as turbidity below 10 NTU were not able to be achieved. However, GSI is not a relevant pathway for deep groundwater at the Site since no surface water exists on-Site nor adjacent and downgradient from the Site where the deep groundwater (approximately 75 ft below ground surface) could reasonably discharge.



- Dissolved Aluminum at B-27D (3/31/2017) and MW-15-10 (4/29/2015 and 3/29/2017) exceeded residential/nonresidential drinking water aesthetic criteria of 0.05 mg/L at concentrations of 1 mg/L, 0.32 mg/L, and 0.27 mg/L. Two of the three results also exceed the residential/nonresidential drinking water health based criteria of 0.3 mg/L. However, dissolved aluminum has not exceeded screening criteria in shallow groundwater at the Site.

Based on the results of the groundwater sampling programs at the Site (including the PFAS sampling presented in Attachment C) there is no evidence that deep groundwater at the Site has been impacted by the former Site operations. In addition, soil at the Site has not been impacted by former Site operation for Silver or Aluminum.

Metal concentrations in shallow groundwater have exceeded screening criteria since 2010 as follows:

- Total/Dissolved Arsenic, Total/Dissolved Manganese, and Dissolved Iron have regularly exceeded screening criteria at MW-17-13. As a result, an additional investigation was complete in the vicinity of the MW-17-13 in October 2016. The results of this investigation are presented in Attachment B. The results of the investigation support the presences of an off-Site source to the south of the Site.
- Dissolved Iron at MW-2 (9/12/2011 and 12/6/2011) exceeded residential/nonresidential drinking water aesthetic based criteria of 0.3 at concentrations of 14 mg/L and 11 mg/L, respectively. Both results also exceed the residential and nonresidential drinking water health based criteria of 2.0 mg/L and 5.6 mg/L, respectively. MW-2 is located interior to the Site with monitoring well PFW-9 located between MW-2 and the nearest property boundary. Dissolved iron has not exceeded screening criteria at PFW-9.
- Total Lead at PFW-4 (9/12/2011 and 5/11/2011) exceeded the residential/nonresidential drinking water criteria of 0.004 mg/L at concentration of 0.013 mg/L and 0.0356 mg/L (duplicate sample result of 0.0358 mg/L), respectively. PFW-4 is located interior to the Site with various monitoring wells located between PFW-4 and the property boundary, all reporting total lead results below screening criteria. In addition, dissolved lead results in samples collected from PFW-4 have not exceeded screening criteria.
- Total/Dissolved Manganese have been regularly detected across the Site above residential/nonresidential drinking water health based criteria of 0.86 mg/L and 2.5 mg/L, respectively and the aesthetic criteria of 0.05 (residential/nonresidential drinking water criteria). The following locations have reported manganese exceedance:
 - Location B-9 (6/21/2016 and 9/26/2016) exceeded criteria at concentrations of 1.2 and 0.75 mg/L (total and dissolved), and 0.59 mg/L (dissolved), respectively. B-9 is located interior to the Site. In addition, both dissolved results were below the residential drinking water health based criteria.
 - Location MW-18-13 (9/17/2015) exceeded criteria at a concentration of 0.57 mg/L (dissolved). Two sampling methods were used during this monitoring event. A sample collected using low flow purging techniques had results of 0.33 mg/L (below criteria) and purging to dry and sampling following sufficient recharge produce the result of 0.57 mg/L. Both results are below the health



based criteria and dissolved manganese was not reported above criteria in any previous or subsequent sampling at this location.

- Both MW-2 and PFW-2 had regular exceedances of both total and dissolved manganese with dissolved concentrations ranging from 1.5 to 2.3 mg/L and 0.81 to 1.8 mg/L, respectively. Both locations are interior to the Site. Perimeter borehole sampling completed in December 2011 did not identify any groundwater present at the property boundary adjacent to either PFW-2 or MW-2. In addition, nearby monitoring wells MW-1 and PWF-9 did not report exceedances of screening criteria.

Based on the results of the groundwater sampling and investigations at the Site there is no evidence that shallow groundwater at the Site has resulted in adverse off-Site impacts to perched groundwater resources by former Site operations. Furthermore deed restrictions will be placed on the property to restrict the property use to non-residential and restrict the use of groundwater as a potable supply.

5. Conclusions and Recommendations

Based on all previous investigations, interim measures, the data collected during the 2016/2017 AMR monitoring period, and throughout the 3 year quarterly monitoring periods as a whole, the following can be concluded:

1. There is no evidence that deep groundwater at the Site has been impacted by former Site operations
2. The groundwater results at MW-17-13 (including additional investigation completed in October 2016) support that impacts at MW-17-13 are not the result of former Site operations and support the presences of an off-Site source to the south of the Site.
3. All shallow groundwater exceedances reported on-Site since the completion of Interim Measures are contained within the Site there is no evidence of off-Site migration.
4. VOCs have not been detected at concentrations exceeding screening criteria in on-Site groundwater (shallow or deep) since prior to completion of interim measure activities in 2004. Furthermore, of the detections since 2004, no VOCs have been detected above their respective laboratory reporting limit.
5. There is no evidence of significant PFAS or related impacts on-Site.

Based on the above conclusions, the following is recommended:

1. The results contained herein be considered a supplement to the 2010 RFI.
2. Properly abandon all monitoring wells.
3. Prepare and submit to MDEQ a draft Declaration of Restrictive Covenant that includes among other provisions, prohibiting uses of the property that are not consistent with the exposure assumptions used to generate the nonresidential cleanup criteria and prohibiting the installation of wells or other devices to extract groundwater.



4. After recording a Declaration of Restrictive Covenant prepare and submit to MDEQ a RCRA Corrective Action Complete with Controls request.

Should you have any questions on the above, please do not hesitate to contact David Favero with RACER or the undersigned.

Sincerely,

GHD

A handwritten signature in blue ink, appearing to read "Michael Tomka", is written over a light blue horizontal line.

Michael R. Tomka, P.E.

RC/jh/25

Encl.

cc: Dave Favero/Grant Trigger, RACER Trust (PDF)
John McCabe/Joe Rogers, MDEQ (PDF)

LEGEND

- FACILITY BOUNDARY
- SHALLOW MONITORING WELL LOCATION (ANNUAL)
- DEEP MONITORING WELL LOCATION (ANNUAL)
- QUARTERLY MONITORING LOCATION
- STORM SEWER LINE
- SANITARY SEWER LINE
- M.H. MANHOLE
- STORM SEWER MONITORING LOCATION

NOTE:
(1) LOCATION PURGED TO DRY AND SAMPLED FOLLOWING SUFFICIENT RECHARGE. ALL OTHER LOCATIONS SAMPLED USING LOW FLOW PROCEDURES.

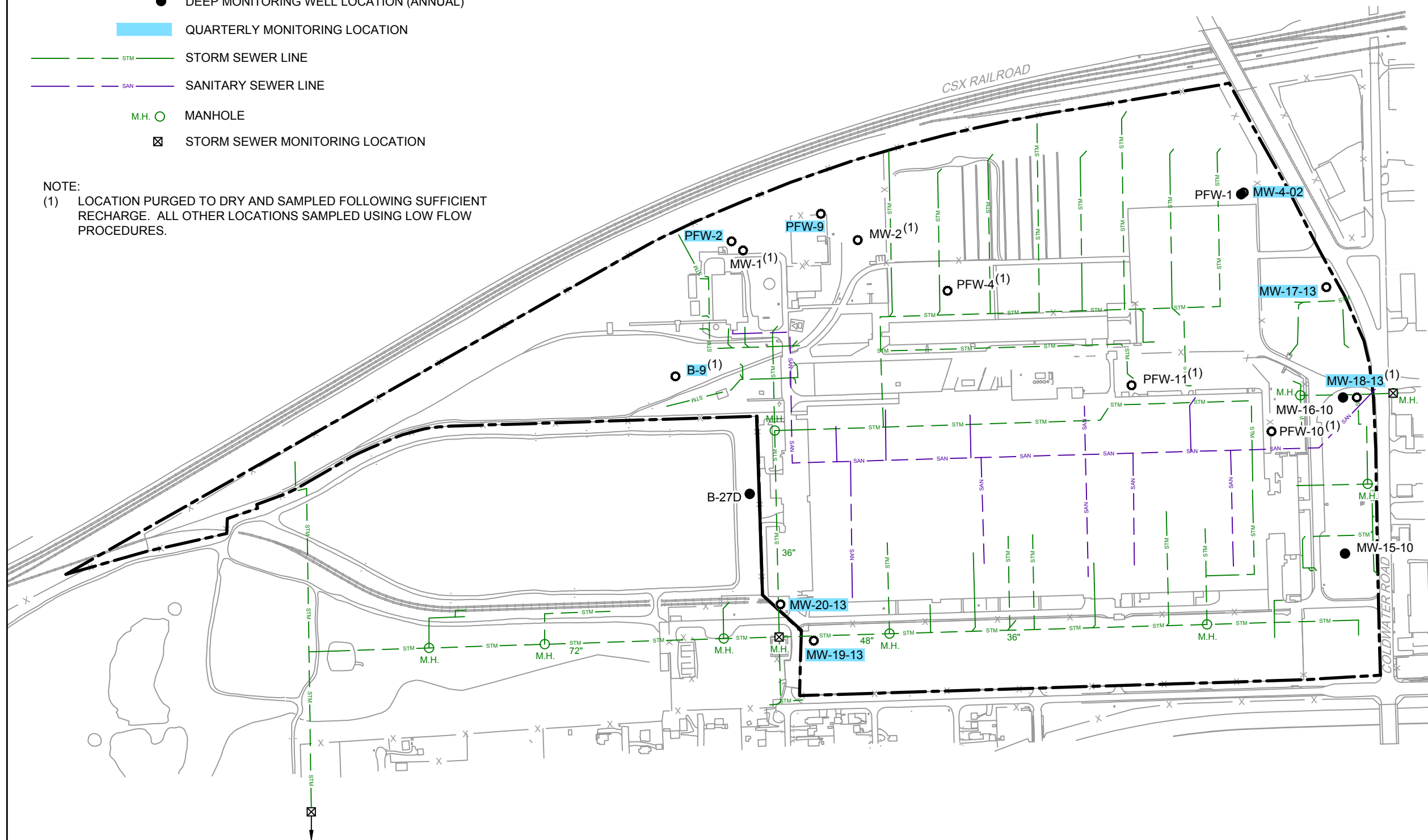
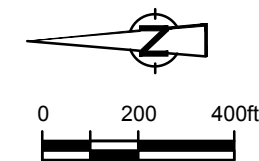


figure 1

GROUNDWATER MONITORING LOCATIONS
FORMER PEREGRINE (US), INC. COLDWATER ROAD FACILITY
Genesee Township, Michigan



NOTE:
THIS DRAWING IS FOR REFERENCE ONLY AND IS NEITHER
COMPLETE NOR TO EXACTING SCALE.

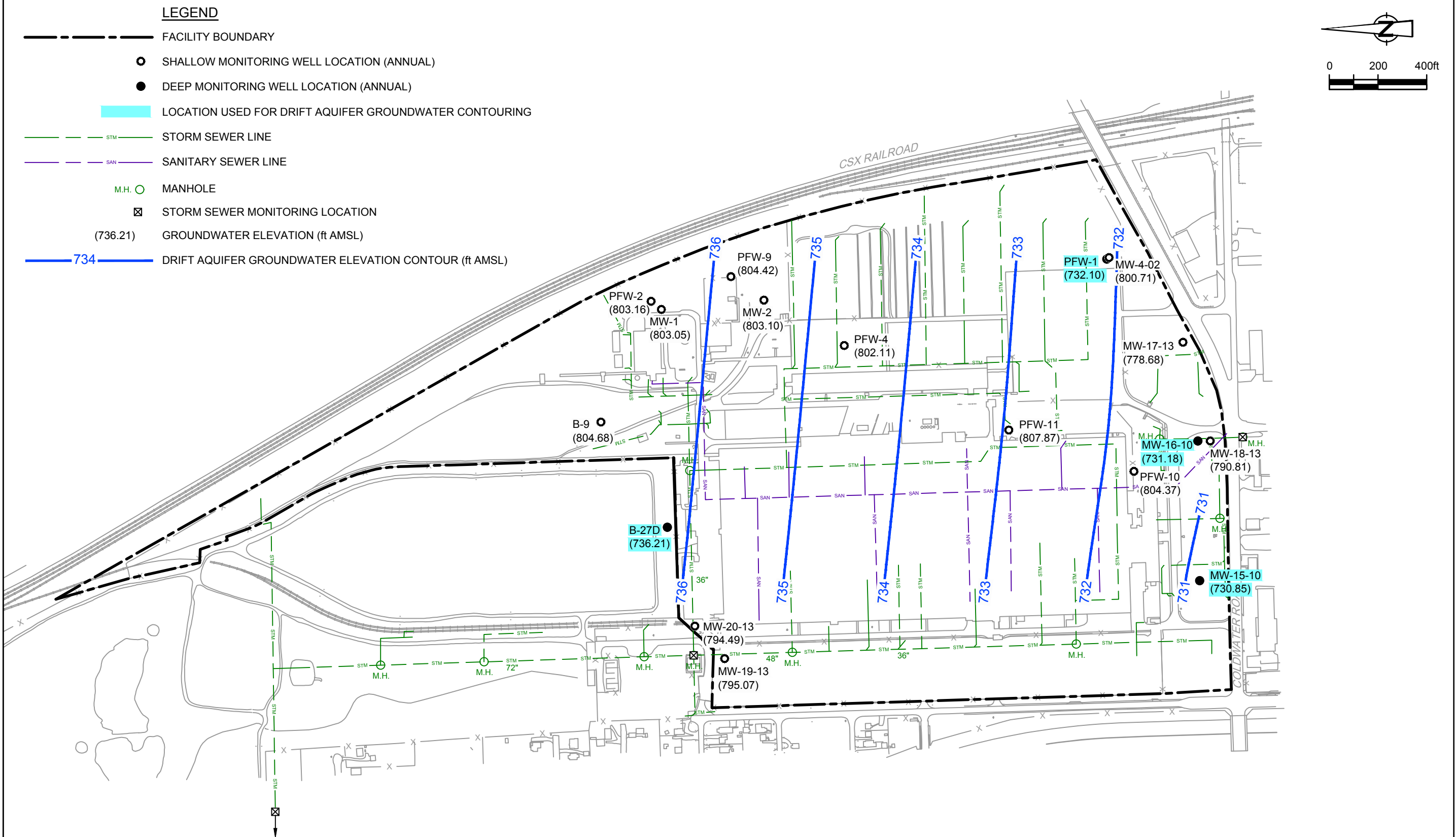
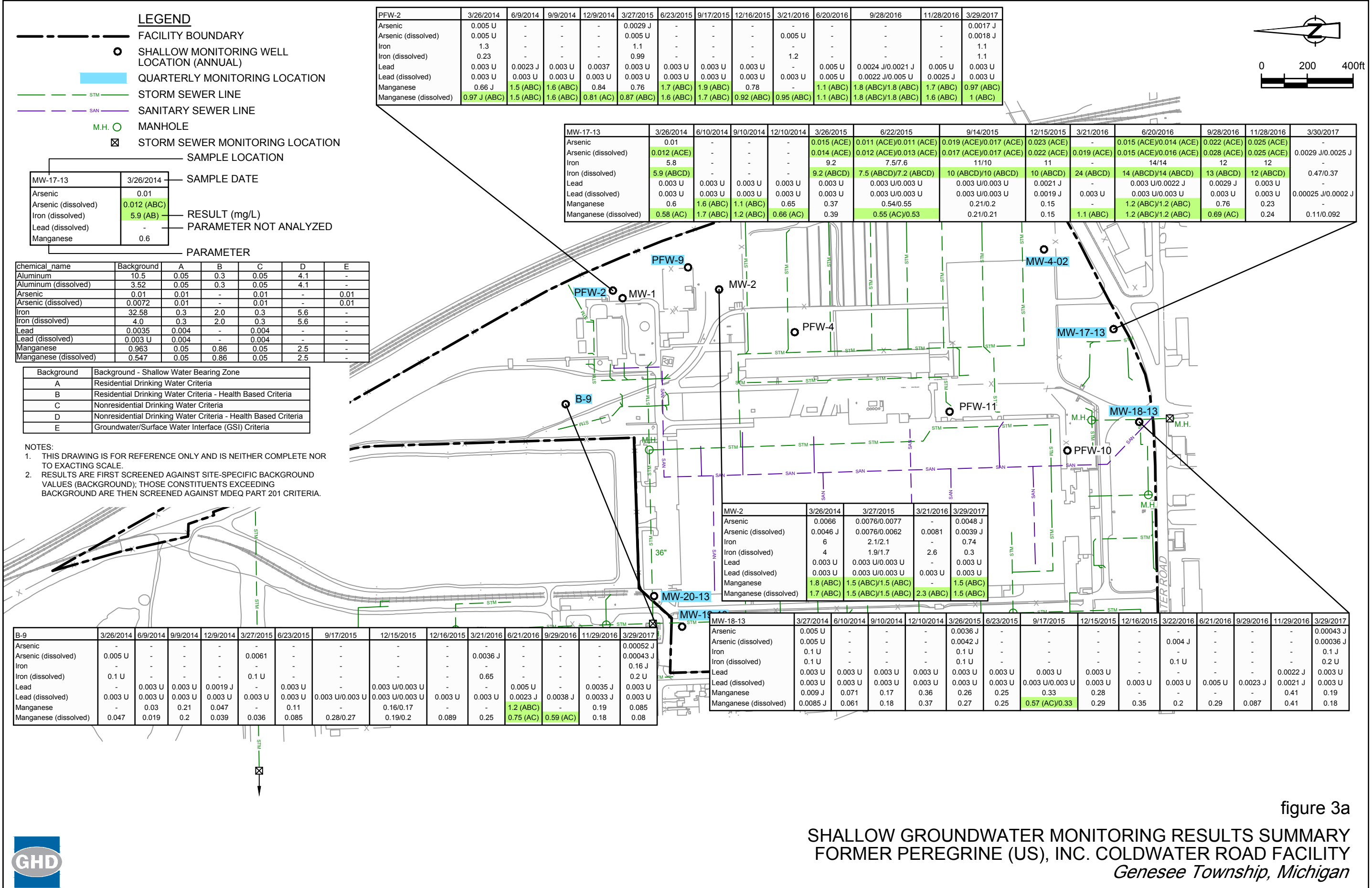


figure 2
 DRIFT AQUIFER CONTOURS AND MARCH 2017 GROUNDWATER ELEVATIONS
 FORMER PEREGRINE (US), INC. COLDWATER ROAD FACILITY
Genesee Township, Michigan



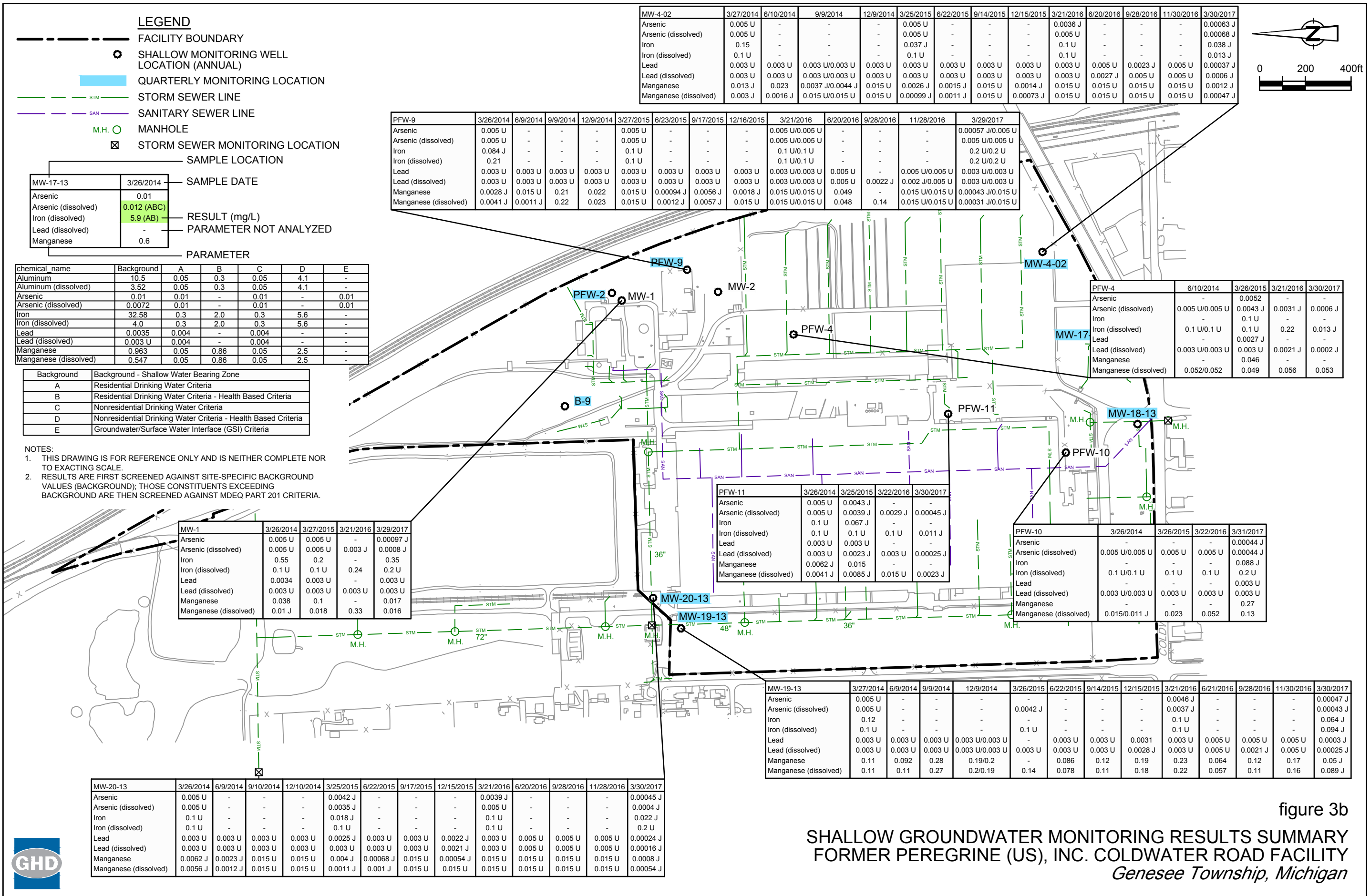


figure 3b
SHALLOW GROUNDWATER MONITORING RESULTS SUMMARY
FORMER PEREGRINE (US), INC. COLDWATER ROAD FACILITY
Genesee Township, Michigan



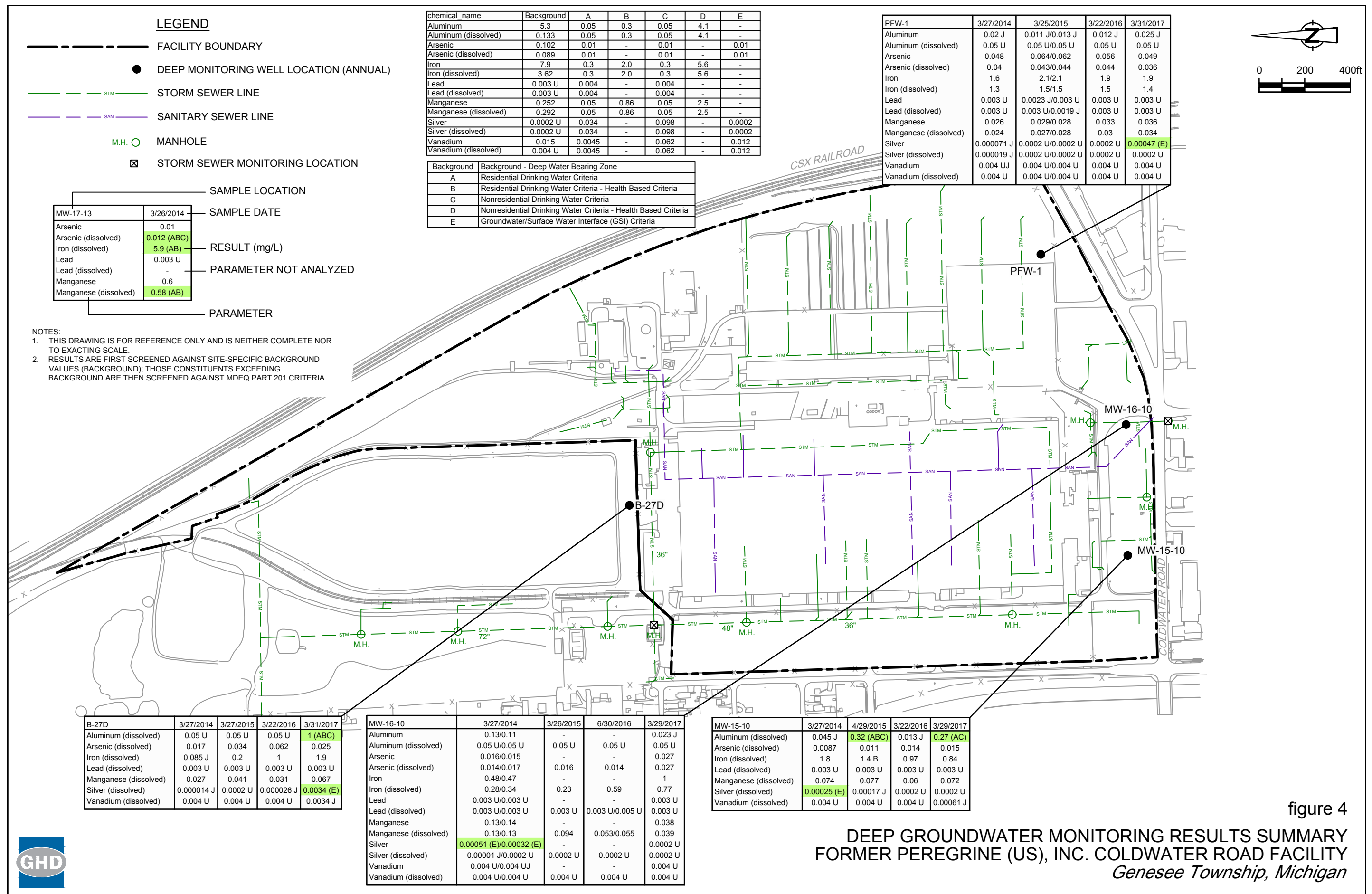


Table 1

**2016/2017 Monitoring Well Network
Former Pergrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan**

Monitoring Well	Screened Interval (ft bgs)	Ground Surface Elevation (ft AMSL)	Top of Casing Elevation (ft AMSL)	Reference Elevation (Top of Riser) (ft AMSL)	Sampling Method⁽¹⁾	Annual Monitoring Event Sampling Parameters (Q1-2017)	Quarterly Monitoring Event Sampling Parameters (Q2-2016, Q3-2016, Q4-2016)
Shallow Water Bearing Unit							
B-9	19 to 24	806.77	808.32	807.67	Purge to Dry	VOCs, Metals	Metals (Lead, Manganese)
MW-1	15 to 25	806.29	806.35	806.08	Purge to Dry	VOCs, Metals	--
MW-2	15 to 25	807.22	806.90	806.90	Purge to Dry	VOCs, Metals	--
MW-4-02	10 to 15	807.93	810.77	810.76	Low Flow Sampling	VOCs, Metals	Metals (Lead, Manganese)
PFW-2	11.9 to 14.4	807.04	809.94	809.43	Low Flow Sampling	VOCs, Metals	Metals (Lead, Manganese)
PFW-4	8.4 to 13.4	808.17	807.72	807.72	Purge to Dry	VOCs, Metals	Metals (Lead, Manganese)
PFW-9	6.7 to 9.2	807.41	810.49	810.05	Low Flow Sampling	VOCs, Metals	Metals (Lead, Manganese)
PFW-10	14.2 to 16.7	808.85	808.48	808.48	Purge to Dry	VOCs, Metals	--
PFW-11	8.1 to 10.6	809.63	809.40	809.40	Purge to Dry	VOCs, Metals	--
MW-17-13	13 to 18	793.08	797.11	796.46	Low Flow Sampling	VOCs, Metals	Metals (Arsenic, Iron, Lead, Manganese)
MW-18-13	2 to 8	792.91	796.42	795.86	Purge to Dry	VOCs, Metals	Metals (Lead, Manganese)
MW-19-13	15 to 20	808.09	808.14	807.85	Low Flow Sampling	VOCs, Metals	Metals (Lead, Manganese)
MW-20-13	15 to 20	807.34	810.81	810.28	Low Flow Sampling	VOCs, Metals	Metals (Lead, Manganese)
Deep Aquifer							
B-27D	77 to 87	810.27	813.15	813.00	Low Flow Sampling	VOCs, Metals	--
MW-15-10	88 to 93	804.89	808.75	808.41	Low Flow Sampling	VOCs, Metals	--
MW-16-10	79 to 84	795.99	799.23	798.90	Low Flow Sampling	VOCs, Metals	--
PFW-1	81.3 to 86.3	807.83	809.78	809.77	Low Flow Sampling	VOCs, Metals	--

Table 2

**Summary of Water Elevation and Turbidity Readings
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan**

Monitoring Well	Q2 2016		Q3 2016		Q4 2017		Q1 2017	
	Turbidity (NTU)	Groundwater Elevation (ft AMSL)	Turbidity (NTU)	Groundwater Elevation (ft AMSL)	Turbidity (NTU)	Groundwater Elevation (ft AMSL)	Turbidity (NTU)	Groundwater Elevation (ft AMSL)
Shallow Water Bearing Unit								
B-9	8.38 ⁽¹⁾	800.33	12.9 ⁽¹⁾	792.03	>10 ⁽²⁾	803.12	7.97 ⁽¹⁾	804.68
MW-1	--	--	--	--	--	--	10.8 ⁽¹⁾	803.05
MW-2	--	--	--	--	--	--	5.34 ⁽¹⁾	803.10
MW-4-02	1.04	801.32	1.22	798.82	1.59	800.36	1.95	800.71
PFW-2	1.33	800.88	0.38	799.78	1.05	802.14	0.61	803.16
PFW-4	--	--	--	--	--	--	22.7 ⁽¹⁾	802.11
PFW-9	0.76	801.55	2.43	800.15	0.74	802.92	0.7	804.42
PFW-10	--	--	--	--	--	--	5.94 ⁽¹⁾	804.37
PFW-11	--	--	--	--	--	--	14.9 ⁽¹⁾	807.87
MW-17-13	4.16	782.15	4.13	780.23	4.22	779.78	56.1 ⁽⁴⁾	778.68
MW-18-13	15.1 ⁽¹⁾	789.67	13.3 ⁽¹⁾	789.59	1.66 ⁽³⁾	791.02	5.38 ⁽³⁾	790.81
MW-19-13	>10	--	1.12	794.70	0.66	794.62	1.89	795.07
MW-20-13	2.44	794.49	0.72	793.77	0.54	793.95	0.97	794.49
Deep Aquifer								
B-27D	--	--	--	--	--	--	289	736.21
MW-15-10	--	--	--	--	--	--	576	730.85
MW-16-10	--	--	--	--	--	--	3	731.18
PFW-1	--	--	--	--	--	--	7.75	732.10

Notes:

- (1) Turbidity reading collected prior to sampling and following purging location to dry.
- (2) Field parameters recorded by OBG. GHD Sample collected following OGB purging.
- (3) Unable to purge to dry (well yield too high); stabilization parameters recorded.
- (4) MW-17-13 went dry during low flow purging; sampled following sufficient recharge.
- Not included in monitoring event.

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Sample Location: Shallow or Deep: Sample ID: Sample Date: Sample Depth:										Shallow B-9 GW-12636-062116-SSH-2816 6/21/2016	Shallow B-9 GW-12636-092916-SSH-3916 9/29/2016	Shallow B-9 GW-12636-112916-SSH-4616 11/29/2016	Shallow B-9 GW-12636-032917-SSH-0917 3/29/2017	Shallow MW-1 GW-12636-032917-SSH-0417 3/29/2017
										-	-	-	-	-
Parameters VOAs	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential Groundwater	Non-Residential Groundwater						
		Background Concentrations - Perched Aquifer	Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria		Health Based Criteria	Volatilization to Indoor Air Inhalation	Volatilization to Indoor Air Inhalation					
		a	b	c	d		e	g	h					
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	-	-	-	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	-	-	-	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	-	-	-	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	-	-	-	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	-	-	-	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	-	-	-	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	-	-	-	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	-	-	-	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	-	-	-	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	-	-	-	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	-	-	-	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	-	-	-	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	-	-	-	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	-	-	-	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	-	-	-	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	-	-	-	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	-	-	-	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	-	-	-	0.01 U	0.01 U
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	-	-	-	0.01 U	0.01 U
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	-	-	-	0.001 U	0.001 U
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	-	-	-	0.001 U	0.001 U
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	-	-	-	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	-	-	-	0.001 U	0.001 U
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	-	-	-	0.005 U	0.005 U
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	-	-	-	0.001 U	0.001 U
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	-	-	-	0.001 U	0.001 U
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	-	-	-	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	-	-	-	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	-	-	-	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	-	-	-	0.001 U	0.0014
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	-	-	-	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	-	-	-	0.001 U	0.001 U
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	-	-	-	0.001 U	0.001 U
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	-	-	-	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.01 U	0.01 U
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	-	-	-	0.001 U	0.001 U
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	-	-	-	0.005 U	0.005 U
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	-	-
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	-	-	-	0.001 U	0.001 U
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	-	-	-	0.001 U	0.001 U
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	-	-	-	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	-	-	-	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	-	-	-	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	-	-	-	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	-	-	-	0.001 U	0.001 U
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	-	-	-	0.001 U	0.001 U
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	0.002 U	0.002 U

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow		Shallow		Shallow		Shallow		Shallow		
Sample Location:		B-9		B-9		B-9		B-9		MW-1		
Sample ID:		GW-12636-062116-SSH-2816		GW-12636-092916-SSH-3916		GW-12636-112916-SSH-4616		GW-12636-032917-SSH-0917		GW-12636-032917-SSH-0417		
Sample Date:		6/21/2016		9/29/2016		11/29/2016		3/29/2017		3/29/2017		
Sample Depth:		-		-		-		-		-		
Parameters	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential Groundwater Volatilization to Indoor Air Inhalation g	Non-Residential Groundwater Volatilization to Indoor Air Inhalation h				
		Background Concentrations - Perched Aquifer a	Aesthetic Criteria b	Health Based Criteria c	Aesthetic Criteria d							Health Based Criteria e
VOAs												
Metals												
Aluminum	mg/L	10.5	0.05	0.3	0.05	4.1	-	-	-	-	0.41	
Aluminum (dissolved)	mg/L	3.52	0.05	0.3	0.05	4.1	-	-	-	-	0.038 J	
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	-	0.002 U	
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	-	0.002 U	
Arsenic	mg/L	0.01	0.01	-	0.01	-	0.01	-	-	-	0.00097 J	
Arsenic (dissolved)	mg/L	0.0072	0.01	-	0.01	-	0.01	-	-	-	0.0008 J	
Barium	mg/L	0.15	2	-	2	-	-	-	-	-	0.054 J	
Barium (dissolved)	mg/L	0.1	2	-	2	-	-	-	-	-	0.055 J	
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	-	0.001 U	
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	-	0.001 U	
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	-	0.001 U	
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	-	0.001 U	
Chromium	mg/L	0.031	0.1	-	0.1	-	-	-	-	-	0.00071 J	
Chromium (dissolved)	mg/L	0.010	0.1	-	0.1	-	-	-	-	-	0.005 U	
Cobalt	mg/L	0.008	0.04	-	0.1	-	0.1	-	-	-	0.0004 J	
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	-	0.00023 J	
Copper	mg/L	0.01	1	-	1	-	-	-	-	-	0.0022 J	
Copper (dissolved)	mg/L	0.0074	1	-	1	-	-	-	-	-	0.0031 J	
Iron	mg/L	32.58	0.3	2.0	0.3	5.6	-	-	-	-	0.35	
Iron (dissolved)	mg/L	4.0	0.3	2.0	0.3	5.6	-	-	-	-	0.2 U	
Lead	mg/L	0.0035	0.004	-	0.004	-	-	-	-	0.005 U	0.003 U	
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	-	0.0023 J	0.003 U	
Manganese	mg/L	0.963	0.05	0.86	0.05	2.5	-	-	-	1.2 ^{bcd}	0.017	
Manganese (dissolved)	mg/L	0.547	0.05	0.86	0.05	2.5	-	-	-	0.75 ^{bd}	0.016	
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	-	0.0002 U	
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	-	0.0002 U	
Nickel	mg/L	0.026	0.1	-	0.1	-	-	-	-	-	0.0042 J	
Nickel (dissolved)	mg/L	0.0185	0.1	-	0.1	-	-	-	-	-	0.0026 J	
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	-	0.00057 J	
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	-	0.00053 J	
Silver	mg/L	0.00053	0.034	-	0.098	-	0.0002	-	-	-	0.0002 U	
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	-	0.0002 U	
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	-	
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	-	0.001 U	
Thallium (dissolved)	mg/L	0.0012	0.002	-	0.002	-	0.0037	-	-	-	0.001 U	
Vanadium	mg/L	0.026	0.0045	-	0.062	-	0.027	-	-	-	0.0014 J	
Vanadium (dissolved)	mg/L	0.0089	0.0045	-	0.062	-	0.027	-	-	-	0.00071 J	
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	-	0.02 U	
Zinc (dissolved)	mg/L	0.051	2.4	-	5	-	-	-	-	-	0.02 U	
Wet												
Conductance, specific	µmhos/cm	-	-	-	-	-	-	-	-	-	-	
Cyanide (amenable)	mg/L	-	0.2	-	0.2	-	-	-	-	-	-	
Cyanide (total)	mg/L	-	0.2	-	0.2	-	0.0052	-	-	-	-	
pH	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	-	
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	
FPARAM												
Conductivity, field	µmhos/cm	-	-	-	-	-	-	-	-	-	2510	
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	3.19	
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	191	
pH, field	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	7.09	
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	10.2	
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	7.97	
Notes:												
U Not detected at the associated reporting limit.												
J Estimated concentration.												
UJ Not detected; associated reporting limit is estimated.												

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

										Shallow MW-2 GW-12636-032917-SSH-0117 3/29/2017	Shallow MW-4-02 GW-12636-062016-SSH-2516 6/20/2016	Shallow MW-4-02 GW-12636-092816-SSH-3216 9/28/2016	Shallow MW-4-02 GW-12636-113016-SSH-5216 11/30/2016	Shallow MW-4-02 GW-12636-033017-SSH-1617 3/30/2017
										-	-	-	-	-
Parameters VOAs	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential Groundwater	Non-Residential Groundwater						
		Background Concentrations - Perched Aquifer	Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria		Health Based Criteria	Volatilization to Indoor Air Inhalation	Volatilization to Indoor Air Inhalation					
		a	b	c	d		e	g	h					
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	0.001 U	-	-	-	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	0.001 U	-	-	-	0.001 U
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	0.001 U	-	-	-	0.001 U
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	0.001 U	-	-	-	0.001 U
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	0.001 U	-	-	-	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	0.001 U	-	-	-	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	0.001 U	-	-	-	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	0.001 U	-	-	-	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	0.001 U	-	-	-	0.001 U
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	0.001 U	-	-	-	0.001 U
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	0.001 U	-	-	-	0.001 U
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	0.001 U	-	-	-	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	0.001 U	-	-	-	0.001 U
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	0.001 U	-	-	-	0.001 U
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	0.001 U	-	-	-	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	0.01 U	-	-	-	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	0.01 U	-	-	-	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	0.01 U	-	-	-	0.01 U
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	0.01 U	-	-	-	0.01 U
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	0.001 U	-	-	-	0.001 U
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	0.001 U	-	-	-	0.001 U
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	0.001 U	-	-	-	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	0.001 U	-	-	-	0.001 U
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	0.005 U	-	-	-	0.005 U
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	0.001 U	-	-	-	0.001 U
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	0.001 U	-	-	-	0.001 U
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	0.001 U	-	-	-	0.001 U
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	0.001 U	-	-	-	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	0.001 U	-	-	-	0.001 U
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	0.001 U	-	-	-	0.001 U
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	0.001 U
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	0.001 U
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	0.001 U	-	-	-	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	0.001 U	-	-	-	0.001 U
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	0.001 U	-	-	-	0.001 U
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	0.001 U	-	-	-	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	0.01 U	-	-	-	0.01 U
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	0.001 U	-	-	-	0.001 U
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	0.005 U	-	-	-	0.005 U
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	-	-
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	0.001 U	-	-	-	0.001 U
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	0.001 U	-	-	-	0.001 U
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	0.001 U	-	-	-	0.001 U
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	0.001 U	-	-	-	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	0.001 U
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	0.001 U	-	-	-	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	0.001 U	-	-	-	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	0.001 U	-	-	-	0.001 U
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	0.001 U	-	-	-	0.001 U
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	0.002 U	-	-	-	0.002 U

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow		Shallow		Shallow		Shallow		Shallow		
Sample Location:		MW-2		MW-4-02		MW-4-02		MW-4-02		MW-4-02		
Sample ID:		GW-12636-032917-SSH-0117		GW-12636-062016-SSH-2516		GW-12636-092816-SSH-3216		GW-12636-113016-SSH-5216		GW-12636-033017-SSH-1617		
Sample Date:		3/29/2017		6/20/2016		9/28/2016		11/30/2016		3/30/2017		
Sample Depth:		-		-		-		-		-		
Parameters	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential Groundwater Volatilization to Indoor Air Inhalation g	Non-Residential Groundwater Volatilization to Indoor Air Inhalation h				
		Background Concentrations - Perched Aquifer a	Aesthetic Criteria b	Health Based Criteria c	Aesthetic Criteria d							Health Based Criteria e
VOAs												
Metals												
Aluminum	mg/L	10.5	0.05	0.3	0.05	4.1	-	-	-	0.041 J	0.015 J	
Aluminum (dissolved)	mg/L	3.52	0.05	0.3	0.05	4.1	-	-	-	0.05 U	0.05 U	
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.0027 U	0.002 U	
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	0.0024	
Arsenic	mg/L	0.01	0.01	-	0.01	-	0.01	-	-	0.0048 J	0.00063 J	
Arsenic (dissolved)	mg/L	0.0072	0.01	-	0.01	-	0.01	-	-	0.0039 J	0.00068 J	
Barium	mg/L	0.15	2	-	2	-	-	-	-	0.22	0.072 J	
Barium (dissolved)	mg/L	0.1	2	-	2	-	-	-	-	0.24	0.077 J	
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	0.001 U	
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	0.001 U	
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.00036 J	0.001 U	
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.001 U	0.001 U	
Chromium	mg/L	0.031	0.1	-	0.1	-	-	-	-	0.00054 J	0.00096 J	
Chromium (dissolved)	mg/L	0.010	0.1	-	0.1	-	-	-	-	0.005 U	0.00092 J	
Cobalt	mg/L	0.008	0.04	-	0.1	-	0.1	-	-	0.028	0.00027 J	
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	0.03	0.00026 J	
Copper	mg/L	0.01	1	-	1	-	-	-	-	0.0031	0.0011 J	
Copper (dissolved)	mg/L	0.0074	1	-	1	-	-	-	-	0.003	0.0017 J	
Iron	mg/L	32.58	0.3	2.0	0.3	5.6	-	-	-	0.74	0.038 J	
Iron (dissolved)	mg/L	4.0	0.3	2.0	0.3	5.6	-	-	-	0.3	0.013 J	
Lead	mg/L	0.0035	0.004	-	0.004	-	-	-	-	0.003 U	0.00037 J	
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	-	0.003 U	0.0006 J	
Manganese	mg/L	0.963	0.05	0.86	0.05	2.5	-	-	-	1.5 ^{bcd}	0.0012 J	
Manganese (dissolved)	mg/L	0.547	0.05	0.86	0.05	2.5	-	-	-	1.5 ^{bcd}	0.00047 J	
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	0.0002 U	
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	0.0002 U	
Nickel	mg/L	0.026	0.1	-	0.1	-	-	-	-	0.012 J	0.00035 J	
Nickel (dissolved)	mg/L	0.0185	0.1	-	0.1	-	-	-	-	0.013 J	0.00056 J	
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.0012 J	0.0013 J	
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.00076 J	0.0015 J	
Silver	mg/L	0.00053	0.034	-	0.098	-	0.0002	-	-	0.0002 U	0.0002 U	
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	0.0002 U	0.0002 U	
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	-	
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	0.00032 J	0.001 U	
Thallium (dissolved)	mg/L	0.0012	0.002	-	0.002	-	0.0037	-	-	0.001 U	0.001 U	
Vanadium	mg/L	0.026	0.0045	-	0.062	-	0.027	-	-	0.00075 J	0.004 U	
Vanadium (dissolved)	mg/L	0.0089	0.0045	-	0.062	-	0.027	-	-	0.004 U	0.004 U	
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	0.037 U	0.02 U	
Zinc (dissolved)	mg/L	0.051	2.4	-	5	-	-	-	-	0.037 U	0.02 U	
Wet												
Conductance, specific	µmhos/cm	-	-	-	-	-	-	-	-	-	-	
Cyanide (amenable)	mg/L	-	0.2	-	0.2	-	-	-	-	-	-	
Cyanide (total)	mg/L	-	0.2	-	0.2	-	0.0052	-	-	-	-	
pH	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	-	
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	
FPARAM												
Conductivity, field	µmhos/cm	-	-	-	-	-	-	-	-	2070	1150	
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	2.39	8.70	
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	223	138	
pH, field	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	6.98	6.89	
Temperature, field	Deg C	-	-	-	-	-	-	-	-	8.70	5.58	
Turbidity, field	NTU	-	-	-	-	-	-	-	-	5.34	1.95	

Notes:
U Not detected at the associated reporting limit.
J Estimated concentration.
UJ Not detected; associated reporting limit is estimated.
GHD 012636Conforti-25-T3-T4

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

										Shallow MW-17-13 GW-12636-062016-SSH-2616 6/20/2016	Shallow MW-17-13 GW-12636-062016-SSH-2716 6/20/2016	Shallow MW-17-13 GW-12636-092816-SSH-3816 9/28/2016	Shallow MW-17-13 GW-12636-112816-SSH-4516 11/28/2016	Shallow MW-17-13 GW-12636-033017-SSH-1017 3/30/2017
										-	(Duplicate)	-	-	-
Parameters VOAs	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential	Non-Residential						
		Background	Aesthetic	Health Based	Aesthetic		Health Based	Groundwater	Groundwater					
		Concentrations - Perched Aquifer a	Criteria b	Criteria c	Criteria d		Criteria e	Volatilization to Indoor Air Inhalation g	Volatilization to Indoor Air Inhalation h					
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	-	-	-	-	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	-	-	-	-	0.001 U
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	-	-	-	-	0.001 U
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	-	-	-	-	0.001 U
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	-	-	-	-	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	-	-	-	-	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	-	-	-	-	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	-	-	-	-	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	-	-	-	-	0.001 U
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	-	-	-	-	0.001 U
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	-	-	-	-	0.001 U
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	-	-	-	-	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	-	-	-	-	0.001 U
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	-	-	-	-	0.001 U
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	-	-	-	-	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	-	-	-	-	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	-	-	-	-	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	-	-	-	-	0.01 U
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	-	-	-	-	0.01 U
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	-	-	-	-	0.001 U
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	-	-	-	-	0.001 U
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	-	-	-	-	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	-	-	-	-	0.001 U
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	-	-	-	-	0.005 U
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	-	-	-	-	0.001 U
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	-	-	-	-	0.001 U
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	-	-	-	-	0.001 U
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	-	-	-	-	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	-	-	-	-	0.001 U
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	-	-	-	-	0.001 U
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.001 U
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.001 U
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	-	-	-	-	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	-	-	-	-	0.001 U
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	-	-	-	-	0.001 U
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	-	-	-	-	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.01 U
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	-	-	-	-	0.001 U
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	-	-	-	-	0.005 U
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	-	-
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	-	-	-	-	0.001 U
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	-	-	-	-	0.001 U
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	-	-	-	-	0.001 U
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	-	-	-	-	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.001 U
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	-	-	-	-	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	-	-	-	-	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	-	-	-	-	0.001 U
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	-	-	-	-	0.001 U
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	-	0.002 U

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow		Shallow		Shallow		Shallow		Shallow	
Sample Location:		MW-17-13		MW-17-13		MW-17-13		MW-17-13		MW-17-13	
Sample ID:		GW-12636-062016-SSH-2616		GW-12636-062016-SSH-2716		GW-12636-092816-SSH-3816		GW-12636-112816-SSH-4516		GW-12636-033017-SSH-1017	
Sample Date:		6/20/2016		6/20/2016		9/28/2016		11/28/2016		3/30/2017	
Sample Depth:		-		-		-		-		-	
		Residential Drinking Water			Non-Residential Drinking Water			Residential Groundwater Volatilization to Indoor Air Inhalation		Non-Residential Groundwater Volatilization to Indoor Air Inhalation	
								(Duplicate)		(Duplicate)	
Parameters	Units	Background Concentrations - Perched Aquifer	Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria	Health Based Criteria	Groundwater/ Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air Inhalation	Non-Residential Groundwater Volatilization to Indoor Air Inhalation		
VOAs		a	b	c	d	e	f	g	h		
Metals											
Aluminum	mg/L	10.5	0.05	0.3	0.05	4.1	-	-	-	-	-
Aluminum (dissolved)	mg/L	3.52	0.05	0.3	0.05	4.1	-	-	-	-	0.038 J
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	-	-
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	-	0.002 U
Arsenic	mg/L	0.01	0.01	-	0.01	-	0.01	-	-	0.015 ^{bdf}	0.014 ^{bdf}
Arsenic (dissolved)	mg/L	0.0072	0.01	-	0.01	-	0.01	-	-	0.022 ^{bdf}	0.025 ^{bdf}
Barium	mg/L	0.15	2	-	2	-	-	-	-	0.015 ^{bdf}	0.016 ^{bdf}
Barium (dissolved)	mg/L	0.1	2	-	2	-	-	-	-	0.028 ^{bdf}	0.025 ^{bdf}
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	-	-
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	-	0.001 U
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	-	-
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	-	0.001 U
Chromium	mg/L	0.031	0.1	-	0.1	-	-	-	-	-	-
Chromium (dissolved)	mg/L	0.010	0.1	-	0.1	-	-	-	-	-	0.005 U
Cobalt	mg/L	0.008	0.04	-	0.1	-	0.1	-	-	-	-
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	-	0.0016 J
Copper	mg/L	0.01	1	-	1	-	-	-	-	-	-
Copper (dissolved)	mg/L	0.0074	1	-	1	-	-	-	-	-	0.0018 J
Iron	mg/L	32.58	0.3	2.0	0.3	5.6	-	-	-	14	14
Iron (dissolved)	mg/L	4.0	0.3	2.0	0.3	5.6	-	-	-	12	12
Lead	mg/L	0.0035	0.004	-	0.004	-	-	-	-	13 ^{bcd}	12 ^{bcd}
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	-	0.003 U	0.003 U
Manganese	mg/L	0.963	0.05	0.86	0.05	2.5	-	-	-	0.0029 J	0.003 U
Manganese (dissolved)	mg/L	0.547	0.05	0.86	0.05	2.5	-	-	-	0.76	0.23
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	1.2 ^{bcd}	1.2 ^{bcd}
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.69 ^{bd}	0.24
Nickel	mg/L	0.026	0.1	-	0.1	-	-	-	-	-	-
Nickel (dissolved)	mg/L	0.0185	0.1	-	0.1	-	-	-	-	-	0.0064 J
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	-	-
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	-	0.00066 J
Silver	mg/L	0.00053	0.034	-	0.098	-	0.0002	-	-	-	-
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	-	0.0002 U
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	-
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	-	-
Thallium (dissolved)	mg/L	0.0012	0.002	-	0.002	-	0.0037	-	-	-	0.001 U
Vanadium	mg/L	0.026	0.0045	-	0.062	-	0.027	-	-	-	-
Vanadium (dissolved)	mg/L	0.0089	0.0045	-	0.062	-	0.027	-	-	-	0.004 U
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	-	-
Zinc (dissolved)	mg/L	0.051	2.4	-	5	-	-	-	-	-	0.02 U
Wet											
Conductance, specific	µmhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	0.2	-	0.2	-	-	-	-	-	-
Cyanide (total)	mg/L	-	0.2	-	0.2	-	0.0052	-	-	-	-
pH	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-
FPARAM											
Conductivity, field	µmhos/cm	-	-	-	-	-	-	-	-	-	1410
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	3.83
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	-55
pH, field	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	7.02
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	10.4
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	33.5

Notes:
U Not detected at the associated reporting limit.
J Estimated concentration.
UJ Not detected; associated reporting limit is estimated.
GHD 012636Conforti-25-T3-T4

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow		Shallow		Shallow		Shallow		Shallow	
Sample Location:		MW-17-13		MW-18-13		MW-18-13		MW-18-13		MW-18-13	
Sample ID:		GW-12636-033017-SSH-1717		GW-12636-062116-SSH-2916		GW-12636-092916-SSH-4016		GW-12636-112916-SSH-4716		GW-12636-032917-SSH-0617	
Sample Date:		3/30/2017		6/21/2016		9/29/2016		11/29/2016		3/29/2017	
Sample Depth:		-		-		-		-		-	
		Residential Drinking Water		Non-Residential Drinking Water		Residential Groundwater		Non-Residential Groundwater		(Duplicate)	
						Volatilization to Indoor Air Inhalation		Volatilization to Indoor Air Inhalation			
						g		h			
Parameters	Units	Background Concentrations - Perched Aquifer	Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria	Health Based Criteria	Groundwater/ Surface Water Interface Criteria	Indoor Air Inhalation	Indoor Air Inhalation		
VOAs		a	b	c	d	e	f				
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	0.01 U	0.01 U
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	0.01 U	0.01 U
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	0.001 U	0.001 U
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	0.001 U	0.001 U
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	0.001 U	0.001 U
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	0.005 U	0.005 U
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	0.001 U	0.001 U
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	0.001 U	0.001 U
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	0.001 U	0.001 U
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	0.001 U	0.001 U
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	0.01 U	0.01 U
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	0.001 U	0.001 U
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	0.005 U	0.005 U
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	0.001 U	0.001 U
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	0.001 U	0.001 U
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	0.001 U	0.001 U
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	0.001 U	0.001 U
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	0.002 U	0.002 U

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow		Shallow		Shallow		Shallow		Shallow	
Sample Location:		MW-17-13		MW-18-13		MW-18-13		MW-18-13		MW-18-13	
Sample ID:		GW-12636-033017-SSH-1717		GW-12636-062116-SSH-2916		GW-12636-092916-SSH-4016		GW-12636-112916-SSH-4716		GW-12636-032917-SSH-0617	
Sample Date:		3/30/2017		6/21/2016		9/29/2016		11/29/2016		3/29/2017	
Sample Depth:		(Duplicate)									
Parameters	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential Groundwater Volatilization to Indoor Air Inhalation g	Non-Residential Groundwater Volatilization to Indoor Air Inhalation h			
		Background Concentrations - Perched Aquifer a	Aesthetic Criteria b	Health Based Criteria c	Aesthetic Criteria d						
Metals											
Aluminum	mg/L	10.5	0.05	0.3	0.05	4.1	-	-	-	-	0.048 J
Aluminum (dissolved)	mg/L	3.52	0.05	0.3	0.05	4.1	-	-	-	0.022 J	0.05 U
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	-	0.002 U
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	0.002 U
Arsenic	mg/L	0.01	0.01	-	0.01	-	0.01	-	-	-	0.00043 J
Arsenic (dissolved)	mg/L	0.0072	0.01	-	0.01	-	0.01	-	-	0.0025 J	0.00036 J
Barium	mg/L	0.15	2	-	2	-	-	-	-	-	0.078 J
Barium (dissolved)	mg/L	0.1	2	-	2	-	-	-	-	0.21	0.081 J
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	-	0.001 U
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	0.001 U
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	-	0.001 U
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.001 U	0.001 U
Chromium	mg/L	0.031	0.1	-	0.1	-	-	-	-	-	0.00033 J
Chromium (dissolved)	mg/L	0.010	0.1	-	0.1	-	-	-	-	0.005 U	0.005 U
Cobalt	mg/L	0.008	0.04	-	0.1	-	0.1	-	-	-	0.0003 J
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	0.0013 J	0.00025 J
Copper	mg/L	0.01	1	-	1	-	-	-	-	-	0.002 U
Copper (dissolved)	mg/L	0.0074	1	-	1	-	-	-	-	0.0014 J	0.002 U
Iron	mg/L	32.58	0.3	2.0	0.3	5.6	-	-	-	-	0.1 J
Iron (dissolved)	mg/L	4.0	0.3	2.0	0.3	5.6	-	-	-	0.37	0.2 U
Lead	mg/L	0.0035	0.004	-	0.004	-	-	-	-	-	0.003 U
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	-	0.0002 J	0.003 U
Manganese	mg/L	0.963	0.05	0.86	0.05	2.5	-	-	-	-	0.19
Manganese (dissolved)	mg/L	0.547	0.05	0.86	0.05	2.5	-	-	-	0.092	0.18
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	-	0.0002 U
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	0.0002 U
Nickel	mg/L	0.026	0.1	-	0.1	-	-	-	-	-	0.0015 J
Nickel (dissolved)	mg/L	0.0185	0.1	-	0.1	-	-	-	-	0.0061 J	0.0014 J
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	-	0.005 U
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.00051 J	0.005 U
Silver	mg/L	0.00053	0.034	-	0.098	-	0.0002	-	-	-	0.0002 U
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	0.0002 U	0.0002 U
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	-
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	-	0.001 U
Thallium (dissolved)	mg/L	0.0012	0.002	-	0.002	-	0.0037	-	-	0.001 U	0.001 U
Vanadium	mg/L	0.026	0.0045	-	0.062	-	0.027	-	-	-	0.004 U
Vanadium (dissolved)	mg/L	0.0089	0.0045	-	0.062	-	0.027	-	-	0.004 U	0.004 U
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	-	0.02 U
Zinc (dissolved)	mg/L	0.051	2.4	-	5	-	-	-	-	0.02 U	0.02 U
Wet											
Conductance, specific	µmhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	0.2	-	0.2	-	-	-	-	-	-
Cyanide (total)	mg/L	-	0.2	-	0.2	-	0.0052	-	-	-	-
pH	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-
FPARAM											
Conductivity, field	µmhos/cm	-	-	-	-	-	-	-	-	1410	1800
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	3.83	7.60
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-55	92
pH, field	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	7.02	7.04
Temperature, field	Deg C	-	-	-	-	-	-	-	-	10.4	8.03
Turbidity, field	NTU	-	-	-	-	-	-	-	-	33.5	5.38

Notes:
U Not detected at the associated reporting limit.
J Estimated concentration.
UJ Not detected; associated reporting limit is estimated.
GHD 012636Conforti-25-T3-T4

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

										Shallow	Shallow	Shallow	Shallow	Shallow
										MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-20-13
										GW-12636-062116-SSH-3016	GW-12636-092816-SSH-3716	GW-12636-113016-SSH-5316	GW-12636-033017-SSH-1217	GW-12636-062016-SSH-2416
										6/21/2016	9/28/2016	11/30/2016	3/30/2017	6/20/2016
										-	-	-	-	-
Parameters VOAs	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential	Non-Residential						
		Background Concentrations - Perched Aquifer a	Aesthetic Criteria b	Health Based Criteria c	Aesthetic Criteria d	Health Based Criteria e	Groundwater Volatilization to Indoor Air Inhalation g	Groundwater Volatilization to Indoor Air Inhalation h						
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	-	-	-	0.001 U	-
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	-	-	-	0.001 U	-
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	-	-	-	0.001 U	-
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	-	-	-	0.001 U	-
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	-	-	-	0.001 U	-
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	-	-	-	0.001 U	-
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	-	-	-	0.001 U	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	-	-	-	0.001 U	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	-	-	-	0.001 U	-
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	-	-	-	0.001 U	-
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	-	-	-	0.001 U	-
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	-	-	-	0.001 U	-
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	-	-	-	0.001 U	-
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	-	-	-	0.001 U	-
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	-	-	-	0.001 U	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	-	-	-	0.01 U	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	-	-	-	0.01 U	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	-	-	-	0.01 U	-
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	-	-	-	0.01 U	-
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	-	-	-	0.001 U	-
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	-	-	-	0.001 U	-
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	-	-	-	0.001 U	-
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	-	-	-	0.001 U	-
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	-	-	-	0.005 U	-
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	-	-	-	0.001 U	-
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	-	-	-	0.001 U	-
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	-	-	-	0.001 U	-
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	-	-	-	0.001 U	-
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	-	-	-	0.001 U	-
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	-	-	-	0.001 U	-
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	-
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	-
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	-	-	-	0.001 U	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	-	-	-	0.001 U	-
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	-	-	-	0.001 U	-
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	-	-	-	0.001 U	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.01 U	-
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	-
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	-	-	-	0.001 U	-
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	-	-	-	0.005 U	-
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	-	-
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	-	-	-	0.001 U	-
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	-	-	-	0.001 U	-
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	-	-	-	0.001 U	-
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	-	-	-	0.001 U	-
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	-
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	-	-	-	0.001 U	-
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	-	-	-	0.001 U	-
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	-	-	-	0.001 U	-
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	-	-	-	0.001 U	-
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	0.002 U	-

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow		Shallow		Shallow		Shallow		Shallow	
Sample Location:		MW-19-13		MW-19-13		MW-19-13		MW-19-13		MW-20-13	
Sample ID:		GW-12636-062116-SSH-3016		GW-12636-092816-SSH-3716		GW-12636-113016-SSH-5316		GW-12636-033017-SSH-1217		GW-12636-062016-SSH-2416	
Sample Date:		6/21/2016		9/28/2016		11/30/2016		3/30/2017		6/20/2016	
Sample Depth:											
		Residential Drinking Water			Non-Residential Drinking Water			Residential Groundwater Volatilization to Indoor Air Inhalation		Non-Residential Groundwater Volatilization to Indoor Air Inhalation	
Parameters	Units	Background Concentrations - Perched Aquifer	Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria	Health Based Criteria	Groundwater/ Surface Water Interface Criteria	Indoor Air Inhalation	Indoor Air Inhalation		
VOAs		a	b	c	d	e	f	g	h		
Metals											
Aluminum	mg/L	10.5	0.05	0.3	0.05	4.1	-	-	-	-	0.033 J
Aluminum (dissolved)	mg/L	3.52	0.05	0.3	0.05	4.1	-	-	-	-	0.038 J
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	-	0.002 U
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	-	0.002 U
Arsenic	mg/L	0.01	0.01	-	0.01	-	0.01	-	-	-	0.00047 J
Arsenic (dissolved)	mg/L	0.0072	0.01	-	0.01	-	0.01	-	-	-	0.00043 J
Barium	mg/L	0.15	2	-	2	-	-	-	-	-	0.14
Barium (dissolved)	mg/L	0.1	2	-	2	-	-	-	-	-	0.14
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	-	0.001 U
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	-	0.001 U
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	-	0.001 U
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	-	0.001 U
Chromium	mg/L	0.031	0.1	-	0.1	-	-	-	-	-	0.005 U
Chromium (dissolved)	mg/L	0.010	0.1	-	0.1	-	-	-	-	-	0.005 U
Cobalt	mg/L	0.008	0.04	-	0.1	-	0.1	-	-	-	0.00013 J
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	-	0.00016 J
Copper	mg/L	0.01	1	-	1	-	-	-	-	-	0.00099 J
Copper (dissolved)	mg/L	0.0074	1	-	1	-	-	-	-	-	0.0044 J
Iron	mg/L	32.58	0.3	2.0	0.3	5.6	-	-	-	-	0.064 J
Iron (dissolved)	mg/L	4.0	0.3	2.0	0.3	5.6	-	-	-	-	0.094 J
Lead	mg/L	0.0035	0.004	-	0.004	-	-	-	-	0.005 U	0.0003 J
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	-	0.005 U	0.00025 J
Manganese	mg/L	0.963	0.05	0.86	0.05	2.5	-	-	-	0.064	0.05 J
Manganese (dissolved)	mg/L	0.547	0.05	0.86	0.05	2.5	-	-	-	0.057	0.089 J
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	-	0.0002 U
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	-	0.0002 U
Nickel	mg/L	0.026	0.1	-	0.1	-	-	-	-	-	0.0012 J
Nickel (dissolved)	mg/L	0.0185	0.1	-	0.1	-	-	-	-	-	0.0014 J
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	-	0.0011 J
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	-	0.0008 J
Silver	mg/L	0.00053	0.034	-	0.098	-	0.0002	-	-	-	0.0002 U
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	-	0.0002 U
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	-
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	-	0.001 U
Thallium (dissolved)	mg/L	0.0012	0.002	-	0.002	-	0.0037	-	-	-	0.001 U
Vanadium	mg/L	0.026	0.0045	-	0.062	-	0.027	-	-	-	0.004 U
Vanadium (dissolved)	mg/L	0.0089	0.0045	-	0.062	-	0.027	-	-	-	0.004 U
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	-	0.021
Zinc (dissolved)	mg/L	0.051	2.4	-	5	-	-	-	-	-	0.022
Wet											
Conductance, specific	µmhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	0.2	-	0.2	-	-	-	-	-	-
Cyanide (total)	mg/L	-	0.2	-	0.2	-	0.0052	-	-	-	-
pH	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-
FPARAM											
Conductivity, field	µmhos/cm	-	-	-	-	-	-	-	-	-	5230
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	1.29
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	265
pH, field	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	7.32
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	7.4
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	1.89

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

										Shallow MW-20-13 GW-12636-092816-SSH-3616 9/28/2016	Shallow MW-20-13 GW-12636-112816-SSH-4416 11/28/2016	Shallow MW-20-13 GW-12636-033017-SSH-1317 3/30/2017	Shallow PFW-2 GW-12636-062016-SSH-2216 6/20/2016	Shallow PFW-2 GW-12636-092816-SSH-3416 9/28/2016
										-	-	-	-	-
Parameters VOAs	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential Groundwater	Non-Residential Groundwater						
		Background Concentrations - Perched Aquifer	Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria		Health Based Criteria	Volatilization to Indoor Air Inhalation	Volatilization to Indoor Air Inhalation					
		a	b	c	d		e	g	h					
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	-	-	0.001 U	-	-
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	-	-	0.001 U	-	-
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	-	-	0.001 U	-	-
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	-	-	0.001 U	-	-
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	-	-	0.001 U	-	-
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	-	-	0.001 U	-	-
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	-	-	0.001 U	-	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	-	-	0.001 U	-	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	-	-	0.001 U	-	-
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	-	-	0.001 U	-	-
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	-	-	0.001 U	-	-
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	-	-	0.001 U	-	-
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	-	-	0.001 U	-	-
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	-	-	0.001 U	-	-
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	-	-	0.001 U	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	-	-	0.01 U	-	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	-	-	0.01 U	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	-	-	0.01 U	-	-
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	-	-	0.01 U	-	-
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	-	-	0.001 U	-	-
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	-	-	0.001 U	-	-
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	-	-	0.001 U	-	-
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	-	-	0.001 U	-	-
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	-	-	0.005 U	-	-
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	-	-	0.001 U	-	-
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	-	-	0.001 U	-	-
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	-	-	0.001 U	-	-
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	-	-	0.001 U	-	-
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	-	-	0.001 U	-	-
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	-	-	0.001 U	-	-
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	0.001 U	-	-
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	0.001 U	-	-
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	-	-	0.001 U	-	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	-	-	0.001 U	-	-
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	-	-	0.001 U	-	-
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	-	-	0.001 U	-	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	-	-	0.01 U	-	-
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	0.001 U	-	-
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	-	-	0.001 U	-	-
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	-	-	0.005 U	-	-
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	-	-
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	-	-	0.001 U	-	-
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	-	-	0.001 U	-	-
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	-	-	0.001 U	-	-
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	-	-	0.001 U	-	-
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	0.001 U	-	-
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	-	-	0.001 U	-	-
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	-	-	0.001 U	-	-
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	-	-	0.001 U	-	-
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	-	-	0.001 U	-	-
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	0.002 U	-	-

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow		Shallow		Shallow		Shallow		Shallow	
Sample Location:		MW-20-13		MW-20-13		MW-20-13		PFW-2		PFW-2	
Sample ID:		GW-12636-092816-SSH-3616		GW-12636-112816-SSH-4416		GW-12636-033017-SSH-1317		GW-12636-062016-SSH-2216		GW-12636-092816-SSH-3416	
Sample Date:		9/28/2016		11/28/2016		3/30/2017		6/20/2016		9/28/2016	
Sample Depth:		-		-		-		-		-	
Parameters	Units	Residential Drinking Water			Non-Residential Drinking Water			Residential Groundwater Volatilization to Indoor Air Inhalation	Non-Residential Groundwater Volatilization to Indoor Air Inhalation		
		Background Concentrations - Perched Aquifer	Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria	Health Based Criteria	Groundwater/ Surface Water Interface Criteria				
VOAs											
Metals											
Aluminum	mg/L	10.5	0.05	0.3	0.05	4.1	-	-	-	0.05 U	-
Aluminum (dissolved)	mg/L	3.52	0.05	0.3	0.05	4.1	-	-	-	0.05 U	-
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	-
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	-
Arsenic	mg/L	0.01	0.01	-	0.01	-	0.01	-	-	0.00045 J	-
Arsenic (dissolved)	mg/L	0.0072	0.01	-	0.01	-	0.01	-	-	0.0004 J	-
Barium	mg/L	0.15	2	-	2	-	-	-	-	0.11	-
Barium (dissolved)	mg/L	0.1	2	-	2	-	-	-	-	0.097 J	-
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	-
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	-
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.001 U	-
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.001 U	-
Chromium	mg/L	0.031	0.1	-	0.1	-	-	-	-	0.0031 J	-
Chromium (dissolved)	mg/L	0.010	0.1	-	0.1	-	-	-	-	0.0028 J	-
Cobalt	mg/L	0.008	0.04	-	0.1	-	0.1	-	-	0.02 U	-
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	0.02 U	-
Copper	mg/L	0.01	1	-	1	-	-	-	-	0.00054 J	-
Copper (dissolved)	mg/L	0.0074	1	-	1	-	-	-	-	0.0016 J	-
Iron	mg/L	32.58	0.3	2.0	0.3	5.6	-	-	-	0.022 J	-
Iron (dissolved)	mg/L	4.0	0.3	2.0	0.3	5.6	-	-	-	0.2 U	-
Lead	mg/L	0.0035	0.004	-	0.004	-	-	-	0.005 U	0.00024 J	0.0024 J
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	0.005 U	0.00016 J	0.0022 J
Manganese	mg/L	0.963	0.05	0.86	0.05	2.5	-	-	0.015 U	0.0008 J	1.1bcd
Manganese (dissolved)	mg/L	0.547	0.05	0.86	0.05	2.5	-	-	0.015 U	0.00054 J	1.1bcd
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	-
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	-
Nickel	mg/L	0.026	0.1	-	0.1	-	-	-	-	0.02 U	-
Nickel (dissolved)	mg/L	0.0185	0.1	-	0.1	-	-	-	-	0.0004 J	-
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.003 J	-
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.0026 J	-
Silver	mg/L	0.00053	0.034	-	0.098	-	0.0002	-	-	0.0002 U	-
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	0.0002 U	-
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	-
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	0.001 U	-
Thallium (dissolved)	mg/L	0.0012	0.002	-	0.002	-	0.0037	-	-	0.001 U	-
Vanadium	mg/L	0.026	0.0045	-	0.062	-	0.027	-	-	0.004 U	-
Vanadium (dissolved)	mg/L	0.0089	0.0045	-	0.062	-	0.027	-	-	0.004 U	-
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	0.02 U	-
Zinc (dissolved)	mg/L	0.051	2.4	-	5	-	-	-	-	0.02 U	-
Wet											
Conductance, specific	µmhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	0.2	-	0.2	-	-	-	-	-	-
Cyanide (total)	mg/L	-	0.2	-	0.2	-	0.0052	-	-	-	-
pH	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-
FPARAM											
Conductivity, field	µmhos/cm	-	-	-	-	-	-	-	-	890	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	11.04	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	258	-
pH, field	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	7.57	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	7.1	-
Turbidity, field	NTU	-	-	-	-	-	-	-	-	0.97	-

Notes:
U Not detected at the associated reporting limit.
J Estimated concentration.
UJ Not detected; associated reporting limit is estimated.

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:										Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:										PFW-2	PFW-2	PFW-2	PFW-4	PFW-9
Sample ID:										GW-12636-092816-SSH-3516	GW-12636-112816-SSH-4116	GW-12636-032917-SSH-0517	GW-12636-033017-SSH-1417	GW-12636-062016-SSH-2316
Sample Date:										9/28/2016	11/28/2016	3/29/2017	3/30/2017	6/20/2016
Sample Depth:										-	-	-	-	-
		Residential Drinking Water			Non-Residential Drinking Water			Residential	Non-Residential					
		Background	Aesthetic	Health Based	Aesthetic	Health Based	Groundwater/	Groundwater	Groundwater					
		Concentrations -	Criteria	Criteria	Criteria	Criteria	Surface Water	Volatilization to	Volatilization to					
		Perched Aquifer					Interface Criteria	Indoor Air	Indoor Air					
Parameters	Units	a	b	c	d	e	f	g	h					
VOAs														
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	-	-	0.001 U	0.001 U	-
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	-	-	0.001 U	0.001 U	-
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	-	-	0.001 U	0.001 U	-
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	-	-	0.001 U	0.001 U	-
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	-	-	0.001 U	0.001 U	-
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	-	-	0.001 U	0.001 U	-
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	-	-	0.001 U	0.001 U	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	-	-	0.001 U	0.001 U	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	-	-	0.001 U	0.001 U	-
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	-	-	0.001 U	0.001 U	-
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	-	-	0.001 U	0.001 U	-
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	-	-	0.001 U	0.001 U	-
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	-	-	0.001 U	0.001 U	-
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	-	-	0.001 U	0.001 U	-
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	-	-	0.001 U	0.001 U	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	-	-	0.01 U	0.01 U	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	-	-	0.01 U	0.01 U	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	-	-	0.01 U	0.01 U	-
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	-	-	0.01 U	0.01 U	-
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	-	-	0.001 U	0.001 U	-
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	-	-	0.001 U	0.001 U	-
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	-	-	0.001 U	0.001 U	-
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	-	-	0.001 U	0.001 U	-
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	-	-	0.005 U	0.005 U	-
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	-	-	0.001 U	0.001 U	-
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	-	-	0.001 U	0.001 U	-
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	-	-	0.001 U	0.001 U	-
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	-	-	0.001 U	0.001 U	-
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	-	-	0.001 U	0.001 U	-
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	-	-	0.001 U	0.001 U	-
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U	-
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U	-
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	-	-	0.001 U	0.001 U	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	-	-	0.001 U	0.001 U	-
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	-	-	0.001 U	0.001 U	-
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	-	-	0.001 U	0.001 U	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	-	-	0.01 U	0.01 U	-
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U	-
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	-	-	0.001 U	0.001 U	-
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	-	-	0.005 U	0.005 U	-
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	-	-
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	-	-	0.001 U	0.001 U	-
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	-	-	0.001 U	0.001 U	-
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	-	-	0.001 U	0.001 U	-
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	-	-	0.001 U	0.001 U	-
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U	-
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	-	-	0.001 U	0.001 U	-
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	-	-	0.001 U	0.001 U	-
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	-	-	0.001 U	0.001 U	-
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	-	-	0.001 U	0.001 U	-
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	0.002 U	0.002 U	-

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow		Shallow		Shallow		Shallow		Shallow	
Sample Location:		PFW-2		PFW-2		PFW-2		PFW-4		PFW-9	
Sample ID:		GW-12636-092816-SSH-3516		GW-12636-112816-SSH-4116		GW-12636-032917-SSH-0517		GW-12636-033017-SSH-1417		GW-12636-062016-SSH-2316	
Sample Date:		9/28/2016		11/28/2016		3/29/2017		3/30/2017		6/20/2016	
Sample Depth:		(Duplicate)									
Parameters	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential Groundwater Volatilization to Indoor Air Inhalation g	Non-Residential Groundwater Volatilization to Indoor Air Inhalation h			
		Background Concentrations - Perched Aquifer a	Aesthetic Criteria b	Health Based Criteria c	Aesthetic Criteria d				Health Based Criteria e		
Metals											
Aluminum	mg/L	10.5	0.05	0.3	0.05	4.1	-	-	-	0.05 U	-
Aluminum (dissolved)	mg/L	3.52	0.05	0.3	0.05	4.1	-	-	-	0.013 J	-
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	-
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	-
Arsenic	mg/L	0.01	0.01	-	0.01	-	0.01	-	-	0.0017 J	-
Arsenic (dissolved)	mg/L	0.0072	0.01	-	0.01	-	0.01	-	-	0.0018 J	-
Barium	mg/L	0.15	2	-	2	-	-	-	-	0.048 J	-
Barium (dissolved)	mg/L	0.1	2	-	2	-	-	-	-	0.048 J	-
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	-
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	-
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.001 U	-
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.001 U	-
Chromium	mg/L	0.031	0.1	-	0.1	-	-	-	-	0.005 U	-
Chromium (dissolved)	mg/L	0.010	0.1	-	0.1	-	-	-	-	0.005 U	-
Cobalt	mg/L	0.008	0.04	-	0.1	-	0.1	-	-	0.0005 J	-
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	0.0005 J	-
Copper	mg/L	0.01	1	-	1	-	-	-	-	0.002 U	-
Copper (dissolved)	mg/L	0.0074	1	-	1	-	-	-	-	0.002 U	-
Iron	mg/L	32.58	0.3	2.0	0.3	5.6	-	-	-	1.1	-
Iron (dissolved)	mg/L	4.0	0.3	2.0	0.3	5.6	-	-	-	1.1	-
Lead	mg/L	0.0035	0.004	-	0.004	-	-	-	0.0021 J	0.003 U	0.005 U
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	0.005 U	0.0025 J	0.003 U
Manganese	mg/L	0.963	0.05	0.86	0.05	2.5	-	-	1.8 ^{bcd}	1.7 ^{bcd}	0.97 ^{bcd}
Manganese (dissolved)	mg/L	0.547	0.05	0.86	0.05	2.5	-	-	1.8 ^{bcd}	1.6 ^{bcd}	1 ^{bcd}
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	-
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	-
Nickel	mg/L	0.026	0.1	-	0.1	-	-	-	-	0.00047 J	-
Nickel (dissolved)	mg/L	0.0185	0.1	-	0.1	-	-	-	-	0.00058 J	-
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.005 U	-
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.005 U	-
Silver	mg/L	0.00053	0.034	-	0.098	-	0.0002	-	-	0.0002 U	-
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	0.0002 U	-
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	-
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	0.001 U	-
Thallium (dissolved)	mg/L	0.0012	0.002	-	0.002	-	0.0037	-	-	0.001 U	-
Vanadium	mg/L	0.026	0.0045	-	0.062	-	0.027	-	-	0.004 U	-
Vanadium (dissolved)	mg/L	0.0089	0.0045	-	0.062	-	0.027	-	-	0.004 U	-
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	0.02 U	-
Zinc (dissolved)	mg/L	0.051	2.4	-	5	-	-	-	-	0.02 U	-
Wet											
Conductance, specific	µmhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	0.2	-	0.2	-	-	-	-	-	-
Cyanide (total)	mg/L	-	0.2	-	0.2	-	0.0052	-	-	-	-
pH	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-
FPARAM											
Conductivity, field	µmhos/cm	-	-	-	-	-	-	-	-	-	2900
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	7.22
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	265
pH, field	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	8.17
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	6.0
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	22.7

Notes:
U Not detected at the associated reporting limit.
J Estimated concentration.
UJ Not detected; associated reporting limit is estimated.

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

										Shallow PFW-9 GW-12636-092816-SSH-3316 9/28/2016	Shallow PFW-9 GW-12636-112816-SSH-4216 11/28/2016	Shallow PFW-9 GW-12636-112816-SSH-4316 11/28/2016	Shallow PFW-9 GW-12636-032917-SSH-0217 3/29/2017	Shallow PFW-9 GW-12636-032917-SSH-0317 3/29/2017	
										-	-	(Duplicate)	-	(Duplicate)	
Parameters VOAs	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential Groundwater	Non-Residential Groundwater							
		Background Concentrations - Perched Aquifer	Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria		Health Based Criteria	Volatilization to Indoor Air Inhalation	Volatilization to Indoor Air Inhalation						
		a	b	c	d		e	g	h						
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	-	-	-	0.001 U	0.001 U	
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	-	-	-	0.001 U	0.001 U	
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	-	-	-	0.001 U	0.001 U	
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	-	-	-	0.001 U	0.001 U	
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	-	-	-	0.001 U	0.001 U	
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	-	-	-	0.001 U	0.001 U	
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	-	-	-	0.001 U	0.001 U	
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	-	-	-	0.001 U	0.001 U	
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	-	-	-	0.001 U	0.001 U	
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	-	-	-	0.001 U	0.001 U	
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	-	-	-	0.001 U	0.001 U	
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	-	-	-	0.001 U	0.001 U	
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	-	-	-	0.001 U	0.001 U	
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	-	-	-	0.001 U	0.001 U	
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	-	-	-	0.001 U	0.001 U	
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	-	-	-	0.01 U	0.01 U	
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	-	-	-	0.01 U	0.01 U	
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	-	-	-	0.01 U	0.01 U	
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	-	-	-	0.01 U	0.01 U	
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	-	-	-	0.001 U	0.001 U	
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	-	-	-	0.001 U	0.001 U	
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	-	-	-	0.001 U	0.001 U	
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	-	-	-	0.001 U	0.001 U	
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	-	-	-	0.005 U	0.005 U	
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	-	-	-	0.001 U	0.001 U	
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	-	-	-	0.001 U	0.001 U	
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	-	-	-	0.001 U	0.001 U	
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	-	-	-	0.001 U	0.001 U	
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	-	-	-	0.001 U	0.001 U	
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	-	-	-	0.001 U	0.001 U	
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U	
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U	
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	-	-	-	0.001 U	0.001 U	
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	-	-	-	0.001 U	0.001 U	
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	-	-	-	0.001 U	0.001 U	
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	-	-	-	0.001 U	0.001 U	
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.01 U	0.01 U	
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U	
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	-	-	-	0.001 U	0.001 U	
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	-	-	-	0.005 U	0.005 U	
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	-	-	
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	-	-	-	0.001 U	0.001 U	
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	-	-	-	0.001 U	0.001 U	
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	-	-	-	0.001 U	0.001 U	
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	-	-	-	0.001 U	0.001 U	
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U	
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	-	-	-	0.001 U	0.001 U	
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	-	-	-	0.001 U	0.001 U	
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	-	-	-	0.001 U	0.001 U	
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	-	-	-	0.001 U	0.001 U	
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	0.002 U	0.002 U	

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow		Shallow		Shallow		Shallow		Shallow		Shallow		
Sample Location:		PFW-9		PFW-9		PFW-9		PFW-9		PFW-9		PFW-9		
Sample ID:		GW-12636-092816-SSH-3316		GW-12636-112816-SSH-4216		GW-12636-112816-SSH-4316		GW-12636-032917-SSH-0217		GW-12636-032917-SSH-0317				
Sample Date:		9/28/2016		11/28/2016		11/28/2016		3/29/2017		3/29/2017				
Sample Depth:		-		-		-		-		-				
Parameters	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential Groundwater Volatilization to Indoor Air Inhalation g	Non-Residential Groundwater Volatilization to Indoor Air Inhalation h						
		Background Concentrations - Perched Aquifer a	Aesthetic Criteria b	Health Based Criteria c	Aesthetic Criteria d				Health Based Criteria e			(Duplicate)	(Duplicate)	(Duplicate)
VOAs														
Metals														
Aluminum	mg/L	10.5	0.05	0.3	0.05	4.1	-	-	-	-	-	0.05 U	0.05 U	
Aluminum (dissolved)	mg/L	3.52	0.05	0.3	0.05	4.1	-	-	-	-	-	0.05 U	0.05 U	
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	-	-	0.0022 U	0.002 U	
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	-	-	0.002 U	0.002 U	
Arsenic	mg/L	0.01	0.01	-	0.01	-	0.01	-	-	-	-	0.00057 J	0.005 U	
Arsenic (dissolved)	mg/L	0.0072	0.01	-	0.01	-	0.01	-	-	-	-	0.005 U	0.005 U	
Barium	mg/L	0.15	2	-	2	-	-	-	-	-	-	0.021 J	0.021 J	
Barium (dissolved)	mg/L	0.1	2	-	2	-	-	-	-	-	-	0.023 J	0.023 J	
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	-	-	0.001 U	0.001 U	
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	-	-	0.001 U	0.001 U	
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	-	-	0.001 U	0.001 U	
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	-	-	0.001 U	0.001 U	
Chromium	mg/L	0.031	0.1	-	0.1	-	-	-	-	-	-	0.00049 J	0.00029 J	
Chromium (dissolved)	mg/L	0.010	0.1	-	0.1	-	-	-	-	-	-	0.00028 J	0.00035 J	
Cobalt	mg/L	0.008	0.04	-	0.1	-	0.1	-	-	-	-	0.00022 J	0.02 U	
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	-	-	0.02 U	0.02 U	
Copper	mg/L	0.01	1	-	1	-	-	-	-	-	-	0.002 U	0.002 U	
Copper (dissolved)	mg/L	0.0074	1	-	1	-	-	-	-	-	-	0.002 U	0.002 U	
Iron	mg/L	32.58	0.3	2.0	0.3	5.6	-	-	-	-	-	0.2 U	0.2 U	
Iron (dissolved)	mg/L	4.0	0.3	2.0	0.3	5.6	-	-	-	-	-	0.2 U	0.2 U	
Lead	mg/L	0.0035	0.004	-	0.004	-	-	-	-	-	0.005 U	0.003 U	0.003 U	
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	-	0.0022 J	0.002 J	0.005 U	0.003 U	
Manganese	mg/L	0.963	0.05	0.86	0.05	2.5	-	-	-	-	0.015 U	0.015 U	0.015 U	
Manganese (dissolved)	mg/L	0.547	0.05	0.86	0.05	2.5	-	-	-	0.14	0.015 U	0.015 U	0.015 U	
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	-	-	0.0002 U	0.0002 U	
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	-	-	0.0002 U	0.0002 U	
Nickel	mg/L	0.026	0.1	-	0.1	-	-	-	-	-	-	0.00035 J	0.02 U	
Nickel (dissolved)	mg/L	0.0185	0.1	-	0.1	-	-	-	-	-	-	0.00086 J	0.02 U	
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	-	-	0.0012 J	0.00069 J	
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	-	-	0.00065 J	0.0006 J	
Silver	mg/L	0.00053	0.034	-	0.098	-	0.0002	-	-	-	-	0.0002 U	0.0002 U	
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	-	-	0.0002 U	0.0002 U	
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	-	-	-	
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	-	-	0.001 U	0.001 U	
Thallium (dissolved)	mg/L	0.0012	0.002	-	0.002	-	0.0037	-	-	-	-	0.001 U	0.001 U	
Vanadium	mg/L	0.026	0.0045	-	0.062	-	0.027	-	-	-	-	0.004 U	0.004 U	
Vanadium (dissolved)	mg/L	0.0089	0.0045	-	0.062	-	0.027	-	-	-	-	0.004 U	0.004 U	
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	-	-	0.02 U	0.02 U	
Zinc (dissolved)	mg/L	0.051	2.4	-	5	-	-	-	-	-	-	0.02 U	0.02 U	
Wet														
Conductance, specific	µmhos/cm	-	-	-	-	-	-	-	-	-	-	-	-	
Cyanide (amenable)	mg/L	-	0.2	-	0.2	-	-	-	-	-	-	-	-	
Cyanide (total)	mg/L	-	0.2	-	0.2	-	0.0052	-	-	-	-	-	-	
pH	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	-	-	-	
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-	-	
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	
FPARAM														
Conductivity, field	µmhos/cm	-	-	-	-	-	-	-	-	-	-	496	496	
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	-	6.01	6.01	
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	-	207	207	
pH, field	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	-	7.57	7.57	
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	6.1	6.1	
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	-	0.7	0.7	
Notes:														
U Not detected at the associated reporting limit.														
J Estimated concentration.														
UJ Not detected; associated reporting limit is estimated.														

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:
Sample Location:
Sample ID:
Sample Date:
Sample Depth:

Shallow
PFW-10
GW-12636-033117-SSH-2017
3/31/2017
Shallow
PFW-11
GW-12636-033017-SSH-1517
3/30/2017

Parameters VOAs	Units	Residential Drinking Water			Non-Residential Drinking Water			Residential	Non-Residential		
		Background	Aesthetic	Health Based	Aesthetic	Health Based	Groundwater/ Surface Water	Groundwater	Groundwater		
		Concentrations - Perched Aquifer						Criteria	Criteria		
		a	b	c	d	e	f	g	h		
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	0.01 U	0.01 U
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	0.01 U	0.01 U
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	0.001 U	0.001 U
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	0.001 U	0.001 U
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	0.001 U	0.001 U
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	0.005 U	0.005 U
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	0.001 U	0.001 U
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	0.001 U	0.001 U
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	0.001 UJ	0.001 U
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	0.001 U	0.001 U
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	0.001 U	0.001 U
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	0.01 U	0.01 U
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	0.001 U	0.001 U
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	0.005 U	0.005 U
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	0.001 U	0.001 U
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	0.001 U	0.001 U
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	0.001 U	0.001 U
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	0.001 U	0.001 U
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	0.002 U	0.002 U

Table 3
2016/2017 Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:
Sample Location:
Sample ID:
Sample Date:
Sample Depth:

Shallow
PFW-10
GW-12636-033117-SSH-2017
3/31/2017
-
Shallow
PFW-11
GW-12636-033017-SSH-1517
3/30/2017
-

Parameters VOAs	Units	Residential Drinking Water			Non-Residential Drinking Water			Residential	Non-Residential		
		Background Concentrations - Perched Aquifer a	Aesthetic Criteria b	Health Based Criteria c	Aesthetic Criteria d	Health Based Criteria e	Groundwater/ Surface Water Interface Criteria f	Groundwater	Groundwater		
								Volatilization to Indoor Air Inhalation g	Volatilization to Indoor Air Inhalation h		
Metals											
Aluminum	mg/L	10.5	0.05	0.3	0.05	4.1	-	-	-	0.031 J	-
Aluminum (dissolved)	mg/L	3.52	0.05	0.3	0.05	4.1	-	-	-	0.05 U	0.05 U
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	-
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	0.002 U
Arsenic	mg/L	0.01	0.01	-	0.01	-	0.01	-	-	0.00044 J	-
Arsenic (dissolved)	mg/L	0.0072	0.01	-	0.01	-	0.01	-	-	0.00044 J	0.00045 J
Barium	mg/L	0.15	2	-	2	-	-	-	-	0.049 J	-
Barium (dissolved)	mg/L	0.1	2	-	2	-	-	-	-	0.048 J	0.034 J
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	-
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	0.001 U
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.00034 J	-
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.001 U	0.001 U
Chromium	mg/L	0.031	0.1	-	0.1	-	-	-	-	0.002 J	-
Chromium (dissolved)	mg/L	0.010	0.1	-	0.1	-	-	-	-	0.00067 J	0.00036 J
Cobalt	mg/L	0.008	0.04	-	0.1	-	0.1	-	-	0.00048 J	-
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	0.00019 J	0.00021 J
Copper	mg/L	0.01	1	-	1	-	-	-	-	0.004 U	-
Copper (dissolved)	mg/L	0.0074	1	-	1	-	-	-	-	0.002 U	0.0012 J
Iron	mg/L	32.58	0.3	2.0	0.3	5.6	-	-	-	0.088 J	-
Iron (dissolved)	mg/L	4.0	0.3	2.0	0.3	5.6	-	-	-	0.2 U	0.011 J
Lead	mg/L	0.0035	0.004	-	0.004	-	-	-	-	0.003 U	-
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	-	0.003 U	0.00025 J
Manganese	mg/L	0.963	0.05	0.86	0.05	2.5	-	-	-	0.27	-
Manganese (dissolved)	mg/L	0.547	0.05	0.86	0.05	2.5	-	-	-	0.13	0.0023 J
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	-
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	0.0002 U
Nickel	mg/L	0.026	0.1	-	0.1	-	-	-	-	0.0052 J	-
Nickel (dissolved)	mg/L	0.0185	0.1	-	0.1	-	-	-	-	0.0039 J	0.0012 J
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.00054 J	-
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.005 U	0.005 U
Silver	mg/L	0.00053	0.034	-	0.098	-	0.0002	-	-	0.0002 U	-
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	0.0002 U	0.0002 U
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	-
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	0.001 U	-
Thallium (dissolved)	mg/L	0.0012	0.002	-	0.002	-	0.0037	-	-	0.001 U	0.001 U
Vanadium	mg/L	0.026	0.0045	-	0.062	-	0.027	-	-	0.004 U	-
Vanadium (dissolved)	mg/L	0.0089	0.0045	-	0.062	-	0.027	-	-	0.004 U	0.004 U
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	0.029 U	-
Zinc (dissolved)	mg/L	0.051	2.4	-	5	-	-	-	-	0.026 U	0.02 U
Wet											
Conductance, specific	µmhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	0.2	-	0.2	-	-	-	-	-	-
Cyanide (total)	mg/L	-	0.2	-	0.2	-	0.0052	-	-	-	-
pH	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-
FPARAM											
Conductivity, field	µmhos/cm	-	-	-	-	-	-	-	-	5260	1900
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	4.20	2.08
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	233	246
pH, field	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	6.66	8.67 ^{bd}
Temperature, field	Deg C	-	-	-	-	-	-	-	-	7.7	6.1
Turbidity, field	NTU	-	-	-	-	-	-	-	-	5.94	14.9

Notes:

- U Not detected at the associated reporting limit.
J Estimated concentration.
UJ Not detected; associated reporting limit is estimated.

Table 4
2016/2017 Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

										Deep B-27D GW-12636-033117-SSH-2117 3/31/2017	Deep MW-15-10 GW-12636-032917-SSH-0817 3/29/2017	Deep MW-16-10 GW-12636-063016-SSH-3116 6/30/2016	Deep MW-16-10 GW-12636-032917-SSH-0717 3/29/2017	Deep PFW-1 GW-12636-033117-SSH-1917 3/31/2017
										-	-	-	-	-
Parameters	Units	Background Concentrations - Drift Aquifer	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air	Non-Residential Groundwater Volatilization to Indoor Air					
			Aesthetic Criteria b	Health Based Criteria c	Aesthetic Criteria d	Health Based Criteria e								
VOAs		a					f	g	h					
1,1,1,2-Tetrachloroethane	mg/L	-	0.077	-	0.32	-	-	15	96	-	-	-	-	-
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,3-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichloropropane	mg/L	-	0.042	-	0.12	-	-	83	180	-	-	-	-	-
1,2,3-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Methylnaphthalene	mg/L	-	0.26	-	0.75	-	0.019	25	25	-	-	-	-	-
2-Phenylbutane (sec-Butylbenzene)	mg/L	-	0.08	-	0.23	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acrylonitrile	mg/L	-	0.0026	-	0.011	-	0.002	34	190	-	-	-	-	-
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromobenzene	mg/L	-	0.018	-	0.05	-	-	180	390	-	-	-	-	-
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 UJ
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cymene (p-Isopropyltoluene)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromomethane	mg/L	-	0.08	-	0.23	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Diisopropyl ether	mg/L	-	0.03	-	0.086	-	-	8	8	-	-	-	-	-
Ethyl ether	mg/L	-	0.01	-	0.01	-	-	61000	61000	-	-	-	-	-
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Hexachloroethane	mg/L	-	0.0073	-	0.021	-	0.0067	27	50	-	-	-	-	-
Iodomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Naphthalene	mg/L	-	0.52	-	1.5	-	0.011	31	31	-	-	-	-	-
N-Butylbenzene	mg/L	-	0.08	-	0.23	-	-	-	-	-	-	-	-	-
N-Propylbenzene	mg/L	-	0.08	-	0.23	-	-	-	-	-	-	-	-	-
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	-	-
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
tert-Amyl methyl ether	mg/L	-	0.19	-	0.19	-	-	260	570	-	-	-	-	-
tert-Butyl alcohol	mg/L	-	3.9	-	11	-	-	1000000	1000000	-	-	-	-	-
tert-Butyl ethyl ether	mg/L	-	0.049	-	0.049	-	-	2900	5600	-	-	-	-	-

Table 4
2016/2017 Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:

Sample Location:

Sample ID:

Sample Date:

Sample Depth:

Deep
B-27D
GW-12636-033117-SSH-2117 3/31/2017
Deep
MW-15-10
GW-12636-032917-SSH-0817 3/29/2017
Deep
MW-16-10
GW-12636-063016-SSH-3116 6/30/2016
Deep
MW-16-10
GW-12636-032917-SSH-0717 3/29/2017
Deep
PFW-1
GW-12636-033117-SSH-1917 3/31/2017

Parameters	Units	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria f	Residential	Non-Residential									
		Background Concentrations - Drift Aquifer a	Aesthetic Criteria b	Health Based Criteria c	Aesthetic Criteria d		Health Based Criteria e	Groundwater Volatilization to Indoor Air g	Groundwater Volatilization to Indoor Air h								
VOAs																	
tert-Butylbenzene	mg/L	-	0.08	-	0.23	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrahydrofuran	mg/L	-	0.095	-	0.27	-	11	6900	16000	-	-	-	-	-	-	-	-
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,4-Dichloro-2-butene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Metals																	
Aluminum	mg/L	5.3	0.05	0.3	0.05	4.1	-	-	-	-	-	-	0.023 J			0.025 J	
Aluminum (dissolved)	mg/L	0.133	0.05	0.3	0.05	4.1	-	-	-	1 ^{bcd}	0.27 ^{bd}	0.05 U	0.05 U			0.05 U	
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	-	-	-	0.002 U			0.002 U	
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	0.002 U	0.00034 J	0.002 U			0.002 U	
Arsenic	mg/L	0.102	0.01	-	0.01	-	0.01	-	-	-	-	-	0.027			0.049	
Arsenic (dissolved)	mg/L	0.089	0.01	-	0.01	-	0.01	-	-	0.025	0.015	0.014	0.027			0.036	
Barium	mg/L	0.47	2	-	2	-	-	-	-	-	-	-	0.43			0.14	
Barium (dissolved)	mg/L	0.553	2	-	2	-	-	-	-	0.21	0.14	0.45	0.46			0.13	
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	-	-	-	0.001 U			0.001 U	
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U			0.001 U	
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	-	-	-	0.001 U			0.001 U	
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U			0.001 U	
Chromium	mg/L	0.007	0.1	-	0.1	-	-	-	-	-	-	-	0.005 U			0.0011 J	
Chromium (dissolved)	mg/L	0.011	0.1	-	0.1	-	-	-	-	0.017	0.00055 J	0.01 U	0.005 U			0.005 U	
Cobalt	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	-	-	-	0.0002 J			0.00045 J	
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	0.0027 J	0.00026 J	0.00027 J	0.00018 J			0.00038 J	
Copper	mg/L	0.015	1	-	1	-	-	-	-	-	-	-	0.002 U			0.002 U	
Copper (dissolved)	mg/L	0.04	1	-	1	-	-	-	-	0.0036 U	0.002 U	0.004 U	0.002 U			0.002 U	
Iron	mg/L	7.9	0.3	2.0	0.3	5.6	-	-	-	-	-	-	1			1.9	
Iron (dissolved)	mg/L	3.62	0.3	2.0	0.3	5.6	-	-	-	1.9	0.84	0.59	0.77			1.4	
Lead	mg/L	0.003	0.004	-	0.004	-	-	-	-	-	-	-	0.003 U			0.003 U	
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	-	0.003 U	0.003 U	0.003 U / 0.005 U	0.003 U			0.003 U	
Manganese	mg/L	0.252	0.05	0.86	0.05	2.5	-	-	-	-	-	-	0.038			0.036	
Manganese (dissolved)	mg/L	0.292	0.05	0.86	0.05	2.5	-	-	-	0.067	0.072	0.053 / 0.055	0.039			0.034	
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	-	-	-	0.0002 U			0.0002 U	
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	0.0002 U	0.0002 U	0.0002 U			0.0002 U	
Molybdenum	mg/L	-	0.073	-	0.21	-	3.2	-	-	-	-	-	-			-	
Molybdenum (dissolved)	mg/L	-	0.073	-	0.21	-	3.2	-	-	-	-	-	-			-	
Nickel	mg/L	0.02	0.1	-	0.1	-	-	-	-	-	-	-	0.00083 J			0.0018 J	
Nickel (dissolved)	mg/L	0.022	0.1	-	0.1	-	-	-	-	0.017 J	0.0014 J	0.02 U	0.00086 J			0.02 U	
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	-	-	-	0.005 U			0.005 U	
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.005 U	0.005 U	0.00051 J	0.005 U			0.005 U	
Silver	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	-	-	-	0.0002 U			0.00047 ^f	
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	0.0034 ^f	0.0002 U	0.0002 U	0.0002 U			0.0002 U	
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	-	-	-			-	
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	-	-	-	0.001 U			0.001 U	
Thallium (dissolved)	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	0.001 U	0.001 U	0.002 U	0.001 U			0.001 U	
Vanadium	mg/L	0.015	0.0045	-	0.062	-	0.027	-	-	-	-	-	0.004 U			0.004 U	
Vanadium (dissolved)	mg/L	0.004	0.0045	-	0.062	-	0.027	-	-	0.0034 J	0.00061 J	0.004 U	0.004 U			0.004 U	
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	-	-	-	0.02 U			0.02 U	
Zinc (dissolved)	mg/L	0.0521	2.4	-	5	-	-	-	-	0.02 U	0.02 U	0.05 U	0.02 U			0.02 U	

Table 4
2016/2017 Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:										Deep	Deep	Deep	Deep	Deep	
Sample Location:										B-27D	MW-15-10	MW-16-10	MW-16-10	PFW-1	
Sample ID:										GW-12636-033117-SSH-2117	GW-12636-032917-SSH-0817	GW-12636-063016-SSH-3116	GW-12636-032917-SSH-0717	GW-12636-033117-SSH-1917	
Sample Date:										3/31/2017	3/29/2017	6/30/2016	3/29/2017	3/31/2017	
Sample Depth:										-	-	-	-	-	
Parameters	Units	Background Concentrations - Drift Aquifer	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air	Non-Residential Groundwater Volatilization to Indoor Air						
			Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria	Health Based Criteria									
VOAs															
General Chemistry															
Conductivity, field	µmhos/cm	-	-	-	-	-	-	-	-	496	391	-	340	1440	
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	1.89	8.68	-	3.81	5.01	
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-70	-35	-	-70	-46	
pH, field	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	7.22	7.38	-	7.33	6.89	
Temperature, field	Deg C	-	-	-	-	-	-	-	-	9.80	11.62	-	11.73	10.4	
Turbidity, field	NTU	-	-	-	-	-	-	-	-	289	576	-	3.0	7.75	

Notes:

U Not detected at the associated reporting limit.

J Estimated concentration.

UJ Not detected; associated reporting limit is estimated.

Attachment A

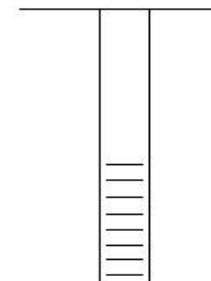
Field Data Records

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 6/20/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: PFW-2
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 16.9
 Measured Well Depth (ft): 16.73
 Depth of Sediment (ft): 0.17

Saturated Screen Length (ft): 2.4
 Depth to Pump Intake (ft)⁽¹⁾: 15.5
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 1.5
 Initial Depth to Water (ft): 8.55

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
8:25	100	8.55									
8:55	100	9.98	1.43	12.67	0.632	1.05	0.34	6.16	91.9	3	2.0
9:00	100	9.99	1.44	12.7	0.632	1.22	0.38	6.15	93.9	3.5	2.3
9:05	100	10.01	1.46	12.84	0.631	1.41	0.41	6.13	98.2	4	2.7
9:10	100	10.03	1.48	12.66	0.633	0.86	0.4	6.13	101.6	4.5	3.0
9:15	100	10.04	1.49	12.77	0.635	1.01	0.43	6.15	103	5	3.3
9:20	100	10.06	1.51	12.76	0.632	1.33	0.4	6.16	104	5.5	3.7
9:21	Sample	Collect GW-12636-062016-SSH-2216									

Notes:

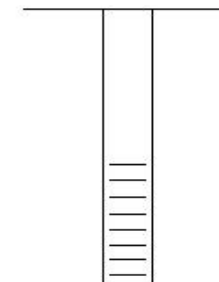
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 6/20/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: PFW-9
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 11.4
 Measured Well Depth (ft): 11.19
 Depth of Sediment (ft): 0.21

Saturated Screen Length (ft): 2.4
 Depth to Pump Intake (ft)⁽¹⁾: 10
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 1.5
 Initial Depth to Water (ft): 8.5

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
9:35	100	8.5									
10:05	100	8.7	0.2	17.84	0.549	1.26	1.41	6.59	93	3	2.0
10:10	100	8.71	0.21	17.64	0.548	0.86	1.4	6.5	97.9	3.5	2.4
10:15	100	8.71	0.21	17.72	0.547	1.42	1.39	6.53	97.3	4	2.7
10:20	100	8.71	0.21	17.82	0.548	0.76	1.38	6.55	97.1	4.5	3.1
10:21	Sample										
	Sample ID:	GW-12636-062016-SSH-2316									

Notes:

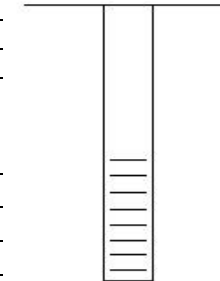
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where r ($r=D/2$) and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 6/20/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: MW-20-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 22.94
 Measured Well Depth (ft): 23.02
 Depth of Sediment (ft): -0.08

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 22
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 15.79

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
10:35	100	15.79									
11:05	100	15.91	0.12	14.11	1.673	2.78	6.99	6.6	105	3	1.0
11:10	100	15.91	0.12	14.22	1.664	0.96	6.92	6.63	103.8	3.5	1.1
11:15	100	15.91	0.12	14.33	1.665	2.48	6.9	6.69	102.8	4	1.3
11:20	100	15.91	0.12	14.38	1.667	2.28	6.96	6.7	102	4.5	1.5
11:25	100	15.91	0.12	14.33	1.665	2.44	6.92	6.71	102.2	5	1.6
11:26	Sample										
Sample ID:	GW-12636-062016-SSH-2416										

Notes:

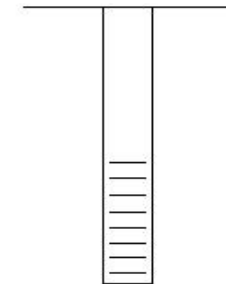
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p / V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 6/20/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: <u>MW-4-02</u>	Saturated Screen Length (ft): <u>4.7</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>16.5</u>
Measurement Point: <u>Top of Riser</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>17.73</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>2.9</u>
Measured Well Depth (ft): <u>17.23</u>	Initial Depth to Water (ft): <u>9.44</u>
Depth of Sediment (ft): <u>0.5</u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
11:50	100	9.44									
12:20	100	12.8	3.36	14.97	1.107	0.98	4.21	6.5	117.1	3	1.0
12:25	100	12.96	3.52	15.02	1.096	0.75	4.56	6.55	113.4	3.5	1.2
12:30	100	13.21	3.77	14.89	1.09	0.86	4.58	6.56	112.9	4	1.4
12:35	100	13.35	3.91	14.87	1.089	1.04	4.6	6.56	112.4	4.5	1.6
12:36	Sample										
	Sample ID:	GW-12636-063016-SSH-2516									

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

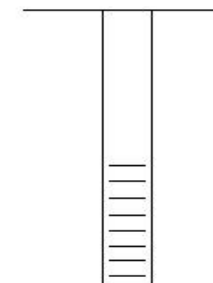
Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 6/20/2016
 Personnel: Steve Hoevemeyer

Monitoring Well Data:

Well No.: MW-17-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 23.18
 Measured Well Depth (ft): 21.65
 Depth of Sediment (ft): 1.53

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 20
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 14.31



Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
12:55	100	14.31									
13:25	100	14.38	0.07	14.5	2.323	4.61	0.38	6.38	95.4	3	1.0
13:30	100	14.39	0.08	14.78	2.321	5.14	0.34	6.42	93	3.5	1.1
13:35	100	14.39	0.08	14.98	2.323	3.62	0.37	6.47	89.6	4	1.3
13:40	100	14.4	0.09	15.04	2.32	4.16	0.34	6.48	89.1	4.5	1.5
13:41	Sample										
Sample ID: GW-12636-062016-SSH-2616											
Duplicate Sample: GW-12636-062016-SSH-2716											

Notes:

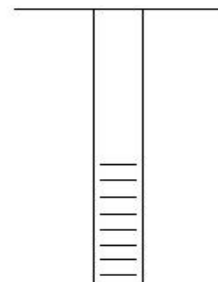
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 6/21/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: B-9
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 30.9
 Measured Well Depth (ft): 25.22
 Depth of Sediment (ft): 5.68

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 24
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 7.34 (06/20/16)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
6/20/2016 Purge to dry (5.5 gal)											
6/21/2016 at 8:25		10.23									
6/21/2016 at 8:35		12.32		11.41	2.101	8.38	4	6.01	140.9		
8:36	Sample										
	Sample ID:	GW-12636-062116-SSH-2816									

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p / V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Project Data:

Date: 6/21/2016
 Personnel: Steve Hoevermeyer

Monitoring Well Data:

Saturated Screen Length (ft):	5.5
Depth to Pump Intake (ft) ⁽¹⁾ :	10.25
Well Diameter, D (in):	2
Well Screen Volume, V _s (L) ⁽²⁾ :	3.4
Initial Depth to Water (ft):	6.19 (6/20/2016)

[illegible]

Notes:

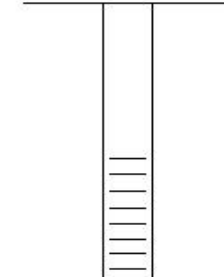
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi r^2 (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi r^2 (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p / V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm $\pm$ 0.005 mS/cm or where conductivity >1 mS/cm $\pm$ 0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 6/21/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: <u>MW-19-13</u>	Saturated Screen Length (ft): <u>5</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>19</u>
Measurement Point: <u>Top of Riser</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>19.75</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>3.1</u>
Measured Well Depth (ft): <u>20.21</u>	Initial Depth to Water (ft): <u>13.15</u>
Depth of Sediment (ft): <u>-0.46</u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
14:30	100	13.15									
15:00	100	13.38	0.23	14.28	6.277	0.82	4.13	7.12	93	3	1.0
15:05	100	13.38	0.23	14.3	6.28	1.12	4.17	7.14	84.1	3.5	1.1
15:10	100	13.39	0.24	14.32	6.278	1.22	4.16	7.15	81.9	4	1.3
15:15	100	13.39	0.24	14.32	6.277	1.12	4.19	7.16	80.4	4.5	1.5
15:16	Sample										
	Sample ID:	GW-12636-092816-SSH-3716									

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

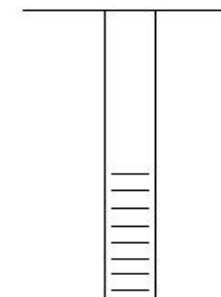
Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 9/28/2016
 Personnel: Steve Hoevemeyer

Monitoring Well Data:

Well No.: MW-4-02
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 17.73
 Measured Well Depth (ft): 17.4
 Depth of Sediment (ft): 0.33

Saturated Screen Length (ft): 4.7
 Depth to Pump Intake (ft)⁽¹⁾: 16.5
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 2.9
 Initial Depth to Water (ft): 11.94



Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁵⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
9:50	100	11.94									
10:20	100	13.8	1.86	13.5	1.019	0.97	4.88	6.56	157.8	3	1.0
10:25	100	14.06	2.12	13.49	1.026	1.12	4.37	6.62	150.5	3.5	1.2
10:30	100	14.29	2.35	13.56	1.031	0.99	4.39	6.69	143.1	4	1.4
10:35	100	14.49	2.55	13.55	1.03	1.22	4.4	6.73	139.8	4.5	1.6
10:40	100	14.55	2.61	13.56	1.028	1.23	4.38	6.75	137.3	5	1.7
10:45	100	14.59	2.65	13.48	1.026	1.22	4.37	6.77	135.2	5.5	1.9
10:46	Sample										
	Sample ID:	GW-12636-092816-SSH-3216									

Notes:

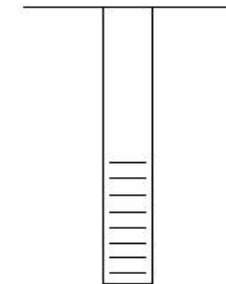
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged= V_p/V_s.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 9/28/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: <u>PFW-9</u>	Saturated Screen Length (ft): <u>2.4</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>10</u>
Measurement Point: <u>Top of Riser</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>11.4</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>1.5</u>
Measured Well Depth (ft): <u>11.21</u>	Initial Depth to Water (ft): <u>9.9</u>
Depth of Sediment (ft): <u>0.19</u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
11:05	100	9.9									
11:35	100	10.67	0.77	15.04	0.74	2.54	5.81	6.9	-15	3	2.0
11:40	100	10.79	0.89	14.99	0.739	2.73	5.76	6.91	-15.2	3.5	2.4
11:45	100	10.88	0.98	14.89	0.738	2.43	5.79	6.91	-15.5	4	2.7
11:46	Sample										
	Sample ID:	GW-12636-092816-SSH-3316									

Notes:

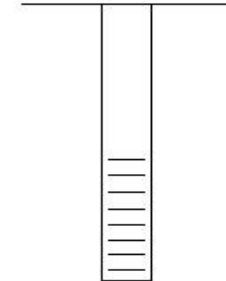
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 9/28/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: <u>PFW-2</u>	Saturated Screen Length (ft): <u>2.4</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>15.82</u>
Measurement Point: <u>Top of Riser</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>16.9</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>1.5</u>
Measured Well Depth (ft): <u>16.78</u>	Initial Depth to Water (ft): <u>9.65</u>
Depth of Sediment (ft): <u>0.12</u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
12:10	100	9.65									
12:40	100	10.68	1.03	12.68	0.751	0.7	3.13	7	-90	3	2.0
12:45	100	10.71	1.06	12.64	0.751	0.4	3.12	7.03	-89.9	3.5	2.3
12:50	100	10.72	1.07	12.63	0.753	0.6	3.15	7.04	-90.5	4	2.7
12:55	100	10.73	1.08	12.58	0.753	0.38	3.13	7.05	-90.2	4.5	3.0
15:56	Sample	Collect GW-12636-092816-SSH-3416									
13:01	Duplicate Sample	Collect GW-12636-092816-SSH-3516									

Notes:

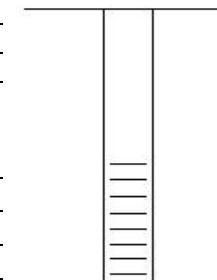
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 9/28/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: MW-20-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 22.94
 Measured Well Depth (ft): 23.11
 Depth of Sediment (ft): -0.17

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 22
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 16.51

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
13:20	100	16.51									
13:50	100	16.78	0.27	11.95	1.236	0.57	8.97	7.23	61.7	3	1.0
13:55	100	16.79	0.28	11.93	1.234	0.96	7.8	7.23	62.4	3.5	1.1
14:00	100	16.79	0.28	11.88	1.232	0.74	7.78	7.24	63.6	4	1.3
14:05	100	16.79	0.28	11.87	1.232	0.72	7.8	7.24	63.9	4.5	1.5
14:06	Sample										
	Sample ID:	GW-12636-092816-SSH-3616									

Notes:

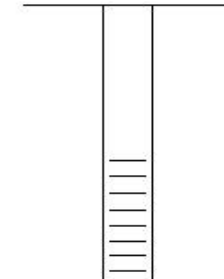
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p / V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 9/28/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: <u>MW-19-13</u>	Saturated Screen Length (ft): <u>5</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>19</u>
Measurement Point: <u>Top of Riser</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>19.75</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>3.1</u>
Measured Well Depth (ft): <u>20.21</u>	Initial Depth to Water (ft): <u>13.15</u>
Depth of Sediment (ft): <u>-0.46</u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
14:30	100	13.15									
15:00	100	13.38	0.23	14.28	6.277	0.82	4.13	7.12	93	3	1.0
15:05	100	13.38	0.23	14.3	6.28	1.12	4.17	7.14	84.1	3.5	1.1
15:10	100	13.39	0.24	14.32	6.278	1.22	4.16	7.15	81.9	4	1.3
15:15	100	13.39	0.24	14.32	6.277	1.12	4.19	7.16	80.4	4.5	1.5
15:16	Sample										
	Sample ID:	GW-12636-092816-SSH-3716									

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

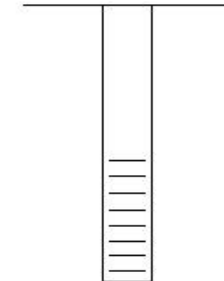
Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 9/28/2016
 Personnel: Steve Hoevemeyer

Monitoring Well Data:

Well No.: MW-17-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 23.18
 Measured Well Depth (ft): 21.74
 Depth of Sediment (ft): 1.44

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 20
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 16.23



Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
15:40	100	16.23									
16:10	100	16.28	0.05	11.22	1.839	4.16	2.57	7.05	-134.6	3	1.0
16:15	100	16.28	0.05	11.27	1.837	3.91	2.49	7.02	-131.1	3.5	1.1
16:20	100	16.29	0.06	11.25	1.835	3.92	2.47	7.01	-130.7	4	1.3
16:25	100	16.29	0.06	11.23	1.833	4.13	2.45	6.99	-129.9	4.5	1.5
16:26	Sample										
Sample ID: GW-12636-092816-SSH-3816											

Notes:

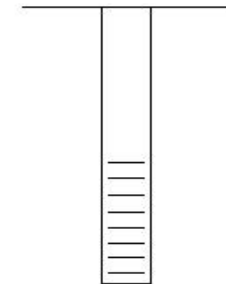
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 9/29/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: B-9
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 30.9
 Measured Well Depth (ft): 25.27
 Depth of Sediment (ft): 5.63

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 24
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 15.64 (09/28/16)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
9/28/2016 Purge to dry (2.5 gal)											
9/29/2016 at 12:15		19.51		10.73	2.089	12.9	8.18	6.26	107.9		
12:16	Sample										
	Sample ID:	GW-12636-092916-SSH-3916									

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p / V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

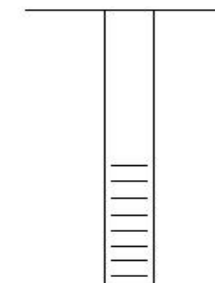
Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 9/28/2016
 Personnel: Steve Hoevemeyer

Monitoring Well Data:

Well No.: MW-18-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Casing
 Constructed Well Depth (ft): 11.51
 Measured Well Depth (ft): 11.43
 Depth of Sediment (ft): 0.08

Saturated Screen Length (ft): 5.5
 Depth to Pump Intake (ft)⁽¹⁾: 10
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.4
 Initial Depth to Water (ft): 6.27



Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm) ⁽⁶⁾	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁵⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
9/28/2016 Purge to dry (3.25 gal)											
9/29/2016 at 12:45		6.27		14.41	2.585	13.3	3.22	6.78	-56.5		
12:46	Sample										
	Sample ID:	GW-12636-092916-SSH-4016									

Notes:

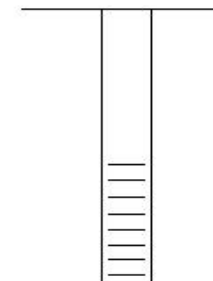
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 11/28/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: <u>PFW-2</u>	Saturated Screen Length (ft): <u>2.4</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>15.82</u>
Measurement Point: <u>Top of Riser</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>16.9</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>1.5</u>
Measured Well Depth (ft): <u>16.78</u>	Initial Depth to Water (ft): <u>7.29</u>
Depth of Sediment (ft): <u>0.12</u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
8:20	100	7.29									
8:50	100	8.25	0.96	11.8	0.7767	1.63	0.67	7.09	-48.9	3	2.0
8:55	100	8.26	0.97	11.85	0.7803	1.06	0.52	7.09	-48.3	3.5	2.3
9:00	100	8.27	0.98	11.92	0.7832	1.04	0.43	7.11	-49.2	4	2.7
9:05	100	8.28	0.99	11.93	0.7839	1.13	0.41	7.1	-48.7	4.5	3.0
9:10	100	8.29	1	11.98	0.784	1.05	0.4	7.1	-48.5	5	3.3
9:11	Sample	Collect GW-12636-112816-SSH-4116									

Notes:

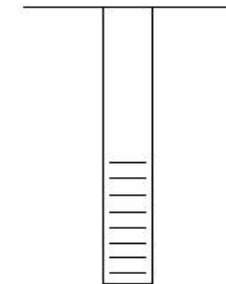
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi(r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 11/28/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: PFW-9
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 11.4
 Measured Well Depth (ft): 11.22
 Depth of Sediment (ft): 0.18
 Saturated Screen Length (ft): 2.4
 Depth to Pump Intake (ft)⁽¹⁾: 10
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 1.5
 Initial Depth to Water (ft): 7.13

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
10:10	100	7.13									
10:40	100	7.4	0.27	11.61	0.6706	0.81	3.07	6.94	60.9	3	2.0
10:45	100	7.42	0.29	11.42	0.6679	0.77	2.68	6.91	85.1	3.5	2.4
10:50	100	7.43	0.3	11.41	0.6687	0.75	2.68	6.91	83.2	4	2.7
10:55	100	7.44	0.31	11.42	0.6669	0.74	2.66	6.9	82.1	4.5	3.1
10:56	Sample										
	Sample ID:	GW-12636-112816-SSH-4216									
11:01	Sample Duplicate										
	Duplicate Sample ID:	GW-12636-112816-SSH-4316									

Notes:

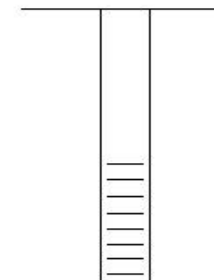
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 11/28/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: MW-20-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 22.94
 Measured Well Depth (ft): 23.1
 Depth of Sediment (ft): -0.16

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 22
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 16.33

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
11:30	100	16.33									
12:00	100	16.61	0.28	12.8	0.9227	0.38	6.25	7.1	62.4	3	1.0
12:05	100	16.62	0.29	12.81	0.9311	0.46	6.27	7.1	62.5	3.5	1.1
12:10	100	16.64	0.31	12.86	0.9304	0.5	6.26	7.1	62.6	4	1.3
12:15	100	16.64	0.31	12.99	0.9352	0.53	6.28	7.1	62.8	4.5	1.5
12:20	100	16.64	0.31	12.98	0.9382	0.54	6.27	7.11	62.7	5	1.6
12:21	Sample										
	Sample ID:	GW-12636-112816-SSH-4416									

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p / V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

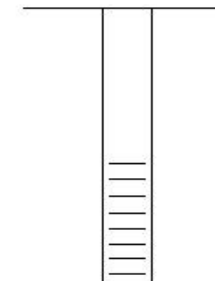
Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 11/28/2016
 Personnel: Steve Hoevemeyer

Monitoring Well Data:

Well No.: MW-17-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 23.18
 Measured Well Depth (ft): 21.75
 Depth of Sediment (ft): 1.43

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 20
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 16.68



Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
12:50	100	16.68									
13:20	100	16.76	0.08	12.08	1.6226	8.27	0.14	6.93	-73.2	3	1.0
13:25	100	16.76	0.08	12.17	1.6108	6.61	0.14	6.92	-70.2	3.5	1.1
13:30	100	16.76	0.08	12.2	1.6033	4.51	0.13	6.91	-68.4	4	1.3
13:35	100	16.76	0.08	12.18	1.6047	4.74	0.13	6.93	-68.2	4.5	1.5
13:40	100	16.76	0.08	12.21	1.6049	4.22	0.12	6.92	-67.9	5	1.6
13:41	Sample										
	Sample ID: GW-12636-112816-SSH-4516										

Notes:

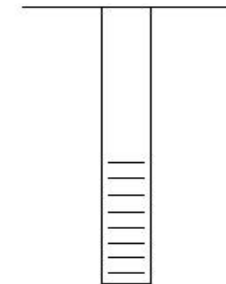
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 11/29/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: B-9
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 30.9
 Measured Well Depth (ft): 25.27
 Depth of Sediment (ft): 5.63

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 24
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 4.55 (11/28/2016)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
11/28/2016 Purge to dry (4 gal)											
11/29/2016 at 15:30											
15:30	Sample										
	Sample ID:	GW-12636-112916-SSH-4616									

Notes:

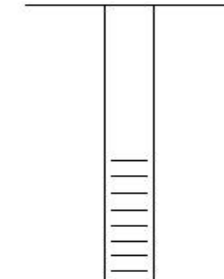
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p / V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 11/29/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: MW-18-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Casing
 Constructed Well Depth (ft): 11.51
 Measured Well Depth (ft): 11.42
 Depth of Sediment (ft): 0.09

Saturated Screen Length (ft): 5.5
 Depth to Pump Intake (ft)⁽¹⁾: 10
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.4
 Initial Depth to Water (ft): 4.84

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
13:45	100	4.84									
14:15	100	5.2		11.92	3.2002	3.94	0.38	7.03	45.5	3	0.9
14:20	100	5.22		11.89	3.2281	1.99	0.35	7.03	44.8	3.5	1.0
14:25	100	5.22		11.89	3.2341	2.09	0.34	7.03	43.8	4	1.2
14:30	100	5.22		11.89	3.2352	1.66	0.34	7.03	43.4	4.5	1.3
14:31	Sample										
	Sample ID: GW-12636-112916-SSH-4716										

Notes:

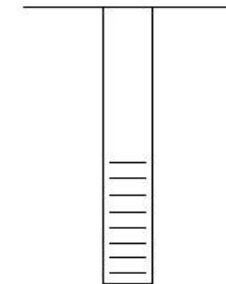
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 11/30/2016
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: <u>MW-4-02</u>	Saturated Screen Length (ft): <u>4.7</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>16.5</u>
Measurement Point: <u>Top of Riser</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>17.73</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>2.9</u>
Measured Well Depth (ft): <u>17.4</u>	Initial Depth to Water (ft): <u>10.4</u>
Depth of Sediment (ft): <u>0.33</u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
9:35	100	10.4									
10:05	100	13.1	2.7	14.29	0.8805	3.36	4.65	6.99	73.5	3	1.0
10:10	100	13.27	2.87	14.31	0.899	2.11	3.96	6.99	70.2	3.5	1.2
10:15	100	13.42	3.02	14.36	0.9095	1.62	3.77	7.01	68.5	4	1.4
10:20	100	13.5	3.1	14.35	0.9048	1.87	3.74	7.01	67.6	4.5	1.6
10:25	100	13.59	3.19	14.36	0.9067	1.59	3.76	7.02	67.1	5	1.7
10:26	Sample										
	Sample ID:	GW-12636-113016-SSH-5316									

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

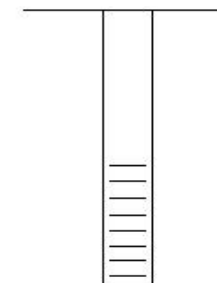
Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y16

Date: 11/30/2016
 Personnel: Steve Hoevemeyer

Monitoring Well Data:

Well No.: MW-19-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 19.75
 Measured Well Depth (ft): 20.18
 Depth of Sediment (ft): -0.43

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 19
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 13.23



Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
10:50	100	13.23									
11:20	100	13.42	0.19	14.16	6.7316	0.83	0.24	6.99	56.1	3	1.0
11:25	100	13.43	0.2	14.13	6.7528	0.64	0.25	6.99	55.7	3.5	1.1
11:30	100	13.43	0.2	14.17	6.7589	0.68	0.24	6.99	55.5	4	1.3
11:35	100	13.44	0.21	14.16	6.7587	0.66	0.25	6.99	55.4	4.5	1.5
11:36	Sample										
	Sample ID:	GW-12636-113016-SSH-5316									

Notes:

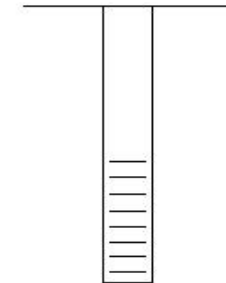
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/29/2017
 Personnel: John York



Monitoring Well Data:

Well No.: MW-2
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 25
 Measured Well Depth (ft): 24.88
 Depth of Sediment (ft): _____

Saturated Screen Length (ft): 10
 Depth to Pump Intake (ft)⁽¹⁾: 23.5
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 6.2
 Initial Depth to Water (ft): 3.8 (3/28/2017)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
3/28/2017 - Purge to dry - 7 gallons											
7:55		6.49									
8:25	100			8.6	2.07	5.29	2.4	7.01	228		
8:30	100			8.7	2.06	5.49	2.42	6.99	227		
8:35	100	14.27		8.7	2.07	5.34	2.39	6.98	223		
8:40	Sample										
	Sample ID:	GW-12636-032917-SSH-0117									

Notes:

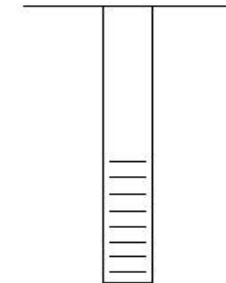
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where r ($r=D/2$) and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/29/2017
 Personnel: John York



Monitoring Well Data:

Well No.: <u>PFW-9</u>	Saturated Screen Length (ft): <u>2.38</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>10.3</u>
Measurement Point: <u>Top of Riser</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>11.4</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>1.5</u>
Measured Well Depth (ft): <u>11.28</u>	Initial Depth to Water (ft): <u>5.63</u>
Depth of Sediment (ft): <u></u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
8:55	100	5.63									
9:25	100	6.04	-0.41	5.8	0.495	1.83	6.2	7.63	202	3	2.0
9:30	100	6.04	-0.41	6	0.494	0.81	6.41	7.59	204	3.5	2.4
9:35	100	6.05	-0.42	6.1	0.496	0.7	6.01	7.57	207	4	2.7
9:35	Sample										
	Sample ID:	GW-12636-032917-SSH-0217									
9:45	Duplicate Sample ID:	GW-12636-032917-SSH-0317									

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

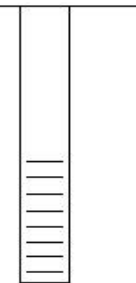
Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/29/2017
 Personnel: John York

Monitoring Well Data:

Well No.: MW-1
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 25
 Measured Well Depth (ft): _____
 Depth of Sediment (ft): _____

Saturated Screen Length (ft): 10
 Depth to Pump Intake (ft)⁽¹⁾: 23.9
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 6.2
 Initial Depth to Water (ft): 3.03 (3/28/2017)



Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
3/28/2017 Purge to dry		3.03									
10:48	100			7.7	0.883	12.3	7.02	7.69	235		
10:50	100			7.8	0.881	10.7	7.18	7.71	235		
10:55	100			8	0.882	10.5	6.79	7.74	235		
11:00	100	12.97		8.1	0.883	10.8	6.64	7.74	236		
11:05	Sample										
	Sample ID:	GW-12636-032917-SSH-0417									

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

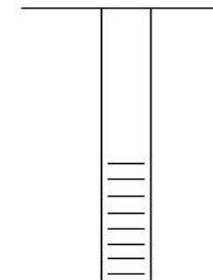
Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/29/2017
 Personnel: Steve Hoevemeyer

Monitoring Well Data:

Well No.: MW-18-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Casing
 Constructed Well Depth (ft): 11.51
 Measured Well Depth (ft): _____
 Depth of Sediment (ft): _____

Saturated Screen Length (ft): 5.49
 Depth to Pump Intake (ft)⁽¹⁾: 10.5
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.4
 Initial Depth to Water (ft): 5.05



Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
10:35		5.05	Purge 2.5 gals prior to readings; unable to purge to dry.								
11:05		5.63		7.87	1.81	7.31	8.11	7.03	87		
11:10		5.64		7.97	1.81	6.34	7.92	7.03	89		
11:15		5.64		8.03	1.8	5.05	7.66	7.04	91		
11:20		5.64		8.02	1.8	5.56	7.61	7.04	92		
11:25		5.65		8.03	1.8	5.38	7.6	7.04	92		
11:26	Sample										
	Sample ID:	GW-12636-032917-SSH-0617									

Notes:

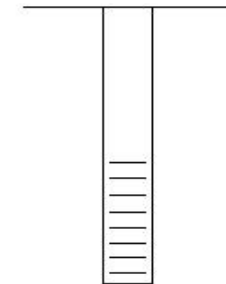
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s .
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/29/2017
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: MW-16-10
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 86.91
 Measured Well Depth (ft): _____
 Depth of Sediment (ft): _____

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 85.9
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 67.72

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
10:20	300	67.72	Purge 8 gals prior to readings; unable to purge to dry.								
12:00	300	77.22	9.5	11.73	0.358	3.78	3.95	7.28	-62	30	9.7
12:05	300	77.22	9.5	11.78	0.344	3.93	3.88	7.31	-69	31.5	10.2
12:10	300	77.22	9.5	11.75	0.341	3.02	3.82	7.32	-70	33	10.7
12:20	300	77.22	9.5	11.73	0.340	3.00	3.81	7.33	-70	36	11.7
12:21	Sample										
Collect GW-12636-032917-SSH-0717											

Notes:

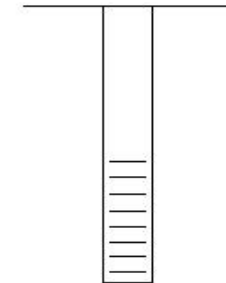
- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/29/2017
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: <u>MW-15-10</u>	Saturated Screen Length (ft): <u>5</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>95</u>
Measurement Point: <u>Top of Casing</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>96.52</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>3.1</u>
Measured Well Depth (ft): _____	Initial Depth to Water (ft): <u>77.56</u>
Depth of Sediment (ft): _____	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
12:40	300	77.56									
13:10	300	86.77	9.21	11.56	0.389	645	9.10	7.35	-24	9.0	2.9
13:15	300	87.35	9.79	11.55	0.390	633	8.71	7.37	-30	10.5	3.4
13:20	300	87.76	10.20	11.61	0.390	588	8.69	7.38	-33	12.0	3.9
13:25	300	87.89	10.33	11.62	0.391	576	8.68	7.38	-35	13.5	4.4
13:30	Sample										
	Collect GW-12636-032917-SSH-0817										

Notes:

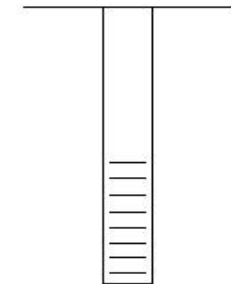
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/28/2017
 Personnel: John York



Monitoring Well Data:

Well No.: B-9
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 24.9
 Measured Well Depth (ft): 25.27
 Depth of Sediment (ft):

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 24.3
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 2.99 (3/28/2017)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
3/28/2017		2.99									
	Purge to dry: Approximately 3.5 gallons										
13:40				9.9	2.5	7.46	3.23	7.13	186		
13:45				10.1	2.5	7.93	3.3	7.12	188		
13:50		11.47		10.2	2.51	7.97	3.19	7.09	191		
13:51	Sample										
	Sample ID:	GW-12636-032917-SSH-0917									

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

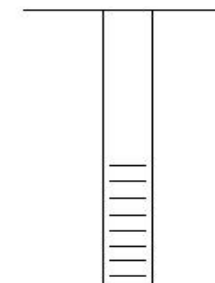
Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/30/2017
 Personnel: John York

Monitoring Well Data:

Well No.: MW-19-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 19.75
 Measured Well Depth (ft): 20.24
 Depth of Sediment (ft):

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 19
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 12.78



Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
8:05	100	12.78									
8:35	100	v	v	7.3	5.24	2.3	1.44	7.31	266	3	1.0
8:40	100	v	v	7.4	5.23	1.78	1.36	7.32	265	3.5	1.1
8:45	100	13.01	0.23	7.4	5.23	1.89	1.29	7.32	265	4	1.3
8:50	Sample										
	Collect GW-12636-033017-SSH-1217										

Notes:

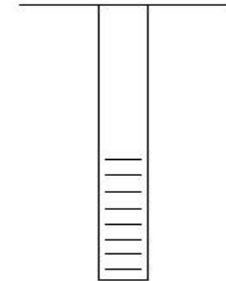
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/30/2017
 Personnel: John York



Monitoring Well Data:

Well No.: MW-20-13
 Vapour PID (ppm): N/A
 Measurement Point: Top of Casing
 Constructed Well Depth (ft): 22.94
 Measured Well Depth (ft): 23.15
 Depth of Sediment (ft):

Saturated Screen Length (ft): 5
 Depth to Pump Intake (ft)⁽¹⁾: 22
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 3.1
 Initial Depth to Water (ft): 15.79

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
9:20	100	15.79									
9:50	100	▼	▼	7	0.862	2.21	11.39	7.7	248	3	1.0
9:55	100	▼	▼	7.2	0.877	3.37	10.82	7.64	251	3.5	1.1
10:00	100	▼	▼	7.1	0.881	1.21	11.3	7.63	253	4	1.3
10:05	100	▼	▼	7	0.885	1.16	11.11	7.58	256	4.5	1.5
10:10	100	16.36	-0.57	7.1	0.89	0.97	11.04	7.57	258	5	1.6
10:11	Sample										
	Sample ID:	GW-12636-033017-SSH-1317									

Notes:

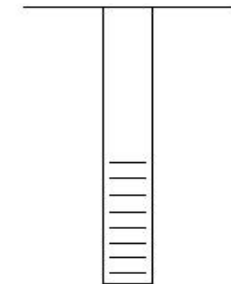
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged = V_p / V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/21/2016
 Personnel: John York



Monitoring Well Data:

Well No.: <u>PFW-4</u>	Saturated Screen Length (ft): <u>5</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>15</u>
Measurement Point: <u>Top of Casing</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>13.4</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>3.1</u>
Measured Well Depth (ft): <u>16.25</u>	Initial Depth to Water (ft): <u>5.61 (6/28/2017)</u>
Depth of Sediment (ft): <u>-2.85 (1)</u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
3/28/2017		5.61									
Purge to Dry: Approximately 1.5 gallons											
10:50	100	7.19									
11:20	100	▼	▼	5.9	2.89	21.4	8.37	8.07	267		
11:25	100	▼	▼	5.9	2.9	21.9	7.97	8.12	266		
11:30	100	▼	▼	6	2.91	24	7.51	8.15	265		
11:35	100	13.3	-7.69	6	2.9	22.7	7.22	8.17	265		
11:36	Sample										
	Sample ID:	GW-12636-033017-SSH-1417									
	(1) Well modified (flushount to stickup)										

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi(r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/30/2017
 Personnel: John York

Monitoring Well Data:

Well No.: PFW-11
 Vapour PID (ppm): N/A
 Measurement Point: Top of Casing
 Constructed Well Depth (ft): 10.6
 Measured Well Depth (ft): 10.12
 Depth of Sediment (ft):

Saturated Screen Length (ft): 2.5
 Depth to Pump Intake (ft)⁽¹⁾: 9.6
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 1.5
 Initial Depth to Water (ft): 1.53 (3/28/2017)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
<i>Precision Required⁽⁵⁾:</i>				±3 %	±0.005 or 0.01⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
3/28/2017		1.53									
	Purge to Dry: approximately 1.5 gallons										
12:00	100	2.06									
12:30	100	v	v	6.1	1.89	29	2.3	8.66	247		
12:35	100	v	v	6.2	1.89	18.9	2.06	8.66	247		
12:40	100	v	v	6.1	1.9	14.9	2.08	8.67	246		
12:45	100	7.82	Well went dry; let recharge and sample								
	Sample ID:	GW-12636-033017-SSH-1517									

Notes:

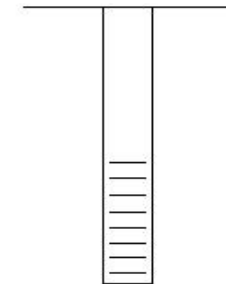
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/30/2017
 Personnel: Steve Hoevemyer



Monitoring Well Data:

Well No.: <u>MW-4-02</u>	Saturated Screen Length (ft): <u>4.83</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>16.5</u>
Measurement Point: <u>Top of Casing</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>17.73</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>3.0</u>
Measured Well Depth (ft): <u>17.38</u>	Initial Depth to Water (ft): <u>10.05</u>
Depth of Sediment (ft): <u> </u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
12:45	100	10.05									
13:15	100	12.3	-2.25	5.56	1.15	2.05	8.71	6.86	137	2	0.7
13:20	100	∇	∇	5.57	1.15	1.75	8.7	6.88	137	2.5	0.8
13:25	100	∇	∇	5.58	1.16	2.13	8.72	6.89	138	3	1.0
13:30	100	12.75	-2.7	5.58	1.15	1.95	8.7	6.89	138	3.5	1.2
13:31	Sample										
	Sample ID:	GW-12636-033017-SSH-1617			MS/MSD						

Notes:

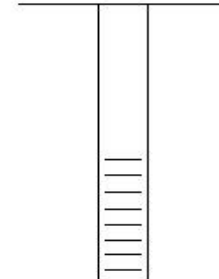
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/30/2017
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: <u>MW-17-13</u>	Saturated Screen Length (ft): <u>5</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>21</u>
Measurement Point: <u>Top of Riser</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>21.18</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>3.1</u>
Measured Well Depth (ft): <u>21.74</u>	Initial Depth to Water (ft): <u>17.78</u>
Depth of Sediment (ft): <u>-0.56</u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾		±10 %	±10 %	±0.1 Units	±10 mV	
13:45	100	17.78									
14:20	100	20.01	-2.23	10.32	1.42	25.5	2.83	6.98	62	2	0.6
14:25	100	20.85	-3.07	10.38	1.42	24.8	3.89	7	-59	2.5	0.8
14:30	100	21.57	-3.79	10.43	1.41	30.6	3.91	7.01	-56	3	1.0
14:35	100	Went Dry		10.4	1.41	33.5	3.93	7.02	-55	3.5	1.1
Return on 3/30/2017 at 14:35 and sample											
	Sample ID:	GW-12636-033017-SSH-1017				56.1					
	Collect Duplicate Sample: GW-12636-033017-SSH-1717										

Notes:

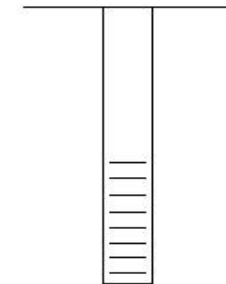
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where $r = (D/2)$ and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/31/2017
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: <u>PFW-1</u>	Saturated Screen Length (ft): <u>5</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>85</u>
Measurement Point: <u>Top of Casing</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>86.3</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>3.1</u>
Measured Well Depth (ft): <u>88.41</u>	Initial Depth to Water (ft): <u>77.67</u>
Depth of Sediment (ft): <u> </u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
8:25	100	77.67									
8:55	100	77.71	-0.04	10.28	1.44	10.5	4.73	6.76	-42	3	1.0
9:00	100	77.71	-0.04	10.39	1.44	7.39	4.94	6.88	-44	3.5	1.1
9:05	100	77.71	-0.04	10.39	1.44	6.87	4.99	6.87	-45	4	1.3
9:10	100	77.71	-0.04	10.4	1.44	7.75	5.01	6.89	-46	4.5	1.5
9:11	Sample										
	Sample ID:	GW-12636-033117-SSH-1917									

Notes:

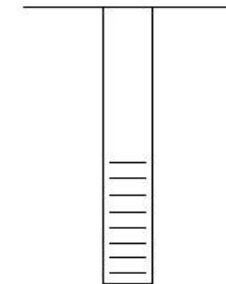
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/31/2017
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: PFW-10
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 16.3
 Measured Well Depth (ft): 16.04
 Depth of Sediment (ft):

Saturated Screen Length (ft): 2.31
 Depth to Pump Intake (ft)⁽¹⁾: 15
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 1.4
 Initial Depth to Water (ft): 4.11 (3/29/2017)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
3/29/2017		4.11									
	Purge to dry: Approximately 2.0 gallons										
9:30		9.64									
10:00		13.7		7.52	5.22	8.5	5	6.67	178		
10:05		13.83		7.68	5.18	7.67	4.24	6.66	211		
10:10		14.06		7.69	5.27	6.46	4.22	6.66	228		
10:15		14.2		7.7	5.28	6.97	4.21	6.66	231		
10:20		14.36		7.7	5.29	5.94	4.2	6.66	233		
10:21	Sample										
	Sample ID:	GW-12636-033117-SSH-2017									

Notes:

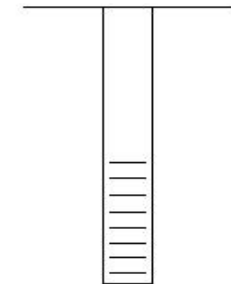
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2)L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi(r^2)L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/31/2017
 Personnel: Steve Hoevemeyer



Monitoring Well Data:

Well No.: <u>B-27D</u>	Saturated Screen Length (ft): <u>8.35</u>
Vapour PID (ppm): <u>N/A</u>	Depth to Pump Intake (ft) ⁽¹⁾ : <u>87</u>
Measurement Point: <u>Top of Casing</u>	Well Diameter, D (in): <u>2</u>
Constructed Well Depth (ft): <u>89.66</u>	Well Screen Volume, V _s (L) ⁽²⁾ : <u>5.2</u>
Measured Well Depth (ft): <u>87.79</u>	Initial Depth to Water (ft): <u>76.79</u>
Depth of Sediment (ft): <u>1.87</u>	

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, V _p (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
11:10	100	76.19									
11:45	100	76.72	-0.53	9.7	0.5	509	2.01	7.23	-62	3.5	0.7
11:50	100	76.72	-0.53	9.75	0.498	368	1.91	7.22	-66	4	0.8
11:55	100	76.73	-0.54	9.75	0.496	309	1.9	7.21	-69	4.5	0.9
12:00	100	76.73	-0.54	9.8	0.496	289	1.89	7.22	-70	5	1.0
12:01	Sample										
	Sample ID:	GW-12636-033117-SSH-2117									

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi * (r^2) * L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi * (r^2) * L * (2.54)^3$, where r and L are in inches
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= V_p/V_s.
- (5) For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

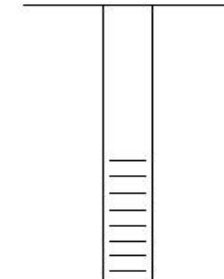
Project Name: RACER Coldwater Rd Industrial Land
 Ref. No.: 012636-T09-001Y17

Date: 3/29/2017
 Personnel: John York

Monitoring Well Data:

Well No.: PFW-2
 Vapour PID (ppm): N/A
 Measurement Point: Top of Riser
 Constructed Well Depth (ft): 16.9
 Measured Well Depth (ft): 16.83
 Depth of Sediment (ft):

Saturated Screen Length (ft): 2.43
 Depth to Pump Intake (ft)⁽¹⁾: 15.82
 Well Diameter, D (in): 2
 Well Screen Volume, V_s (L)⁽²⁾: 1.5
 Initial Depth to Water (ft): 6.27



Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level ⁽³⁾ (ft)	Temperature °C	Conductivity (mS/cm)	Turbidity NTU	DO (mg/L)	pH	ORP (mV)	Volume Purged, Vp (L)	No. of Well Screen Volumes Purged ⁽⁴⁾
Precision Required ⁽⁵⁾ :				±3 %	±0.005 or 0.01 ⁽⁶⁾	±10 %	±10 %	±0.1 Units	±10 mV		
11:30	100	6.27									
12:00	100	▼	▼	7.7	0.673	1.98	2.15	7.62	163	3.5	2.3
12:05	100	▼	▼	7.8	0.673	1.26	1.97	7.61	152	4	2.7
12:10	100	▼	▼	7.9	0.674	1.2	1.84	7.6	140	4.5	3.0
12:15	100	▼	▼	8	0.673	1.36	1.55	7.58	130	5	3.3
12:20	100	▼	▼	8.1	0.668	1.05	1.33	7.57	122	5.5	3.7
12:25	100	▼	▼	8.1	0.675	0.89	1.2	7.57	112	6	4.0
12:30	100	▼	▼	8.2	0.673	0.75	0.8	7.57	104	6.5	4.3
12:35	100	▼	▼	8.4	0.674	0.67	0.76	7.56	96	7	4.7
12:40	100	▼	▼	8.5	0.672	0.72	0.78	7.56	89	7.5	5.0
12:45	100	7.81	-1.54	8.5	0.674	0.61	0.7	7.57	84	8	5.3
12:46	Sample										
	Sample ID:	GW-12636-032917-SSH-0517									

Notes:

- The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For metric units, $V_s = \pi(r^2) \cdot L$ in mL, where r (r=D/2) and L are in cm. For Imperial units, $V_s = \pi(r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches
- The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing), No. of Well Screen Volumes Purged= Vp/Vs.
- For conductivity, the average value of three readings <1 mS/cm ±0.005 mS/cm or where conductivity >1 mS/cm ±0.01 mS/cm.

Attachment B

MW-17-13 Area Investigation Results



Memorandum

January 19, 2017

To: Richard Conforti/MDEQ

Ref. No.: 012636

From: Michael Tomka/Richard Chatfield/kf/92

cc: Joe Rogers, John McCabe/MDEQ
Dave Favero/RACER

Subject: **MW-17-13 Area Investigation Results, RACER Trust, Coldwater Road Industrial Lands
Genesee Township, Michigan**

1. Introduction

Additional groundwater investigation activities were completed in the vicinity of MW-17-13 in accordance with recommendations in the August 18th, 2016 memorandum to the Michigan Department of Environmental Quality (MDEQ) regarding elevated metals concentrations in groundwater samples from monitoring well MW-17-13 at the RACER Trust Coldwater Road Industrial Lands. A groundwater investigation using a Geoprobe® was completed on October 3, 2016. This memorandum summarizes the results of the investigation.

2. Investigation Summary

2.1 Boring Locations

Six Geoprobe® borings (BH1-16, BH2-16, BH3-16, BH4-16, BH5-16, and BH6-16) were advanced on October 3, 2016 in the vicinity of MW-17-13 in an attempt to delineate the saturated sand seam in which MW-17-13 is screened (774.28 to 780.38 feet above mean sea level [ft AMSL]). Two locations were completed on-Site north of Coldwater Road, one location was completed north of Coldwater Road within the road allowance, and three locations were completed south of Coldwater Road within the road allowance. The boring locations are presented on Figure 1. Once completed, all locations were backfilled with soil cuttings and the ground surface was restored to original grade. Boreholes were completed to depths of 30ft below ground surface or 5 ft into native clay; whichever was less. A Right-of-Way permit was received from the Genesee County Road Commission prior to completing the work.

The boring locations were surveyed on October 31, 2016.

2.2 Stratigraphy

Stratigraphy was recorded at all six locations. Stratigraphic logs are presented in Attachment A. At the four locations where water was encountered, a sand seam was identified at or near to the elevation of the sand



seam in which MW-17-13 is screened. Figure 2 and Figure 3 present east/west and north/south cross-sections in the vicinity of MW-17-13, respectively.

2.3 Borehole Water Sampling

Borehole water samples were collected at four of six borehole location (BH1-16, BH2-16, BH5-16, and BH6-16), field filtered, and submitted for laboratory dissolved metals analysis (arsenic, iron, manganese, and lead). Due to high turbidities total metals analysis was not completed. Two of the six locations were dry or did not produce sufficient water to collect a sample; therefore, no water samples were collected. Samples were submitted to TestAmerica Laboratories, Inc. in North Canton, Ohio under chain of custody procedures. The laboratory analytical report is presented in Attachment B.

3. Evaluation

3.1 Borehole Water Sample Results

Dissolved metals (arsenic, iron, lead, and manganese) were detected in all four of the samples collected. A summary of the analytical results is presented on Figure 1.

3.1.1 Dissolved Arsenic

Historic concentrations of dissolved arsenic at MW-17-13 range from 0.012 to 0.028 milligrams per litre (mg/L) across eight unique sampling events. The most recent sampling of MW-17-13 (September 28, 2016) had the highest dissolved arsenic concentration reported at MW-17-13 (0.028 mg/L). Borehole water concentrations at BH1-16 and BH2-16 (located north of Coldwater Road) were 0.018 and 0.012 mg/L, respectively. Borehole water concentrations at BH5-16 and BH6-16 (located south of Coldwater Road) were 0.056 and 0.12 mg/L, respectively.

Historic Site-wide groundwater sampling has not identified arsenic as a Site constituent of concern (COC), other than at location MW-17-13. A summary of recent groundwater monitoring results (2014 to 2016) is presented in Attachment C. It is noted that regional groundwater analyses completed by the MDEQ, Michigan Department of Community Health (MDCH), and the U. S. Geological Survey (USGS) have identified naturally occurring arsenic concentration within groundwaters throughout Genesee County above the MDEQ residential drinking water criterion of 0.01 mg/L¹.

A generally increasing trend in dissolved arsenic concentrations observed at MW-17-13 and both borehole water results from south of Coldwater Road having significantly higher results than the results north of Coldwater Road support an off-Site source of arsenic.

3.1.2 Dissolved Iron

Historic concentrations of dissolved iron at MW-17-13 range from 5.9 to 24 mg/L across eight unique sampling events. In general, dissolved iron concentrations show an increasing trend over the 4 year of monitoring data. Borehole water concentrations at BH1-16 and BH2-16 (located north of Coldwater Road)

¹ USGS, October 2000. Arsenic in Ground Water in Genesee County, Michigan, USGS Fact Sheet FS-127-00



reported 19.0 and 7.6 mg/L, respectively. Borehole water concentrations at BH5-16 and BH6-16 (located south of Coldwater Road) were 93.0 and 150 mg/L, respectively.

Historic Site-wide groundwater sampling has not identified iron as a Site COC, other than at location MW-17-13.

A generally increasing trend in dissolved iron concentrations observed at MW-17-13 and both borehole water results from south of Coldwater Road reporting significantly higher results than the results north of Coldwater Road support an off-Site source of iron.

3.1.3 Dissolved Manganese

Historic concentrations of dissolved manganese at MW-17-13 range from 0.15 to 1.7 mg/L across eight unique sampling events. In general, dissolved manganese concentrations at MW-17-13 remain consistent although variable over the 4 year of monitoring data. Borehole water concentrations at BH1-16 and BH2-16 (located north of Coldwater Road) were 2.8 and 6.3 mg/L, respectively. Borehole water concentrations at BH5-16 and BH6-16 (located south of Coldwater Road) were 3.4 and 2.4 mg/L, respectively.

Historic Site-wide groundwater sampling has identified manganese as a Site COC.

No discernable trend in dissolved manganese concentrations observed at MW-17-13 and all borehole water results from south and north of Coldwater Road reporting similar dissolved manganese concentrations support the presence of consistent manganese concentrations in groundwater both on- and off-Site.

3.1.4 Dissolved Lead

Historic concentrations of dissolved lead at MW-17-13 have been non-detect at a reporting limit of 0.003 mg/L or estimated below this reporting limit, across eight unique sampling events. Borehole water concentrations at BH1-16 and BH2-16 (located north of Coldwater Road) were 0.020 and 0.0036 mg/L, respectively. Borehole water concentrations at BH5-16 and BH6-16 (located south of Coldwater Road) were 0.071 and 0.053 mg/L, respectively.

Historic Site-wide groundwater sampling has identified lead as a Site COC; however, with historical results at MW-17-13 at/or below the reporting limit over the previous 4 years of groundwater monitoring, dissolved lead has not been a COC at MW-17-13. In addition, both borehole water results from south of Coldwater Road having higher results than the results to the north of Coldwater Road support an off-site source of lead.

3.2 Groundwater Observations

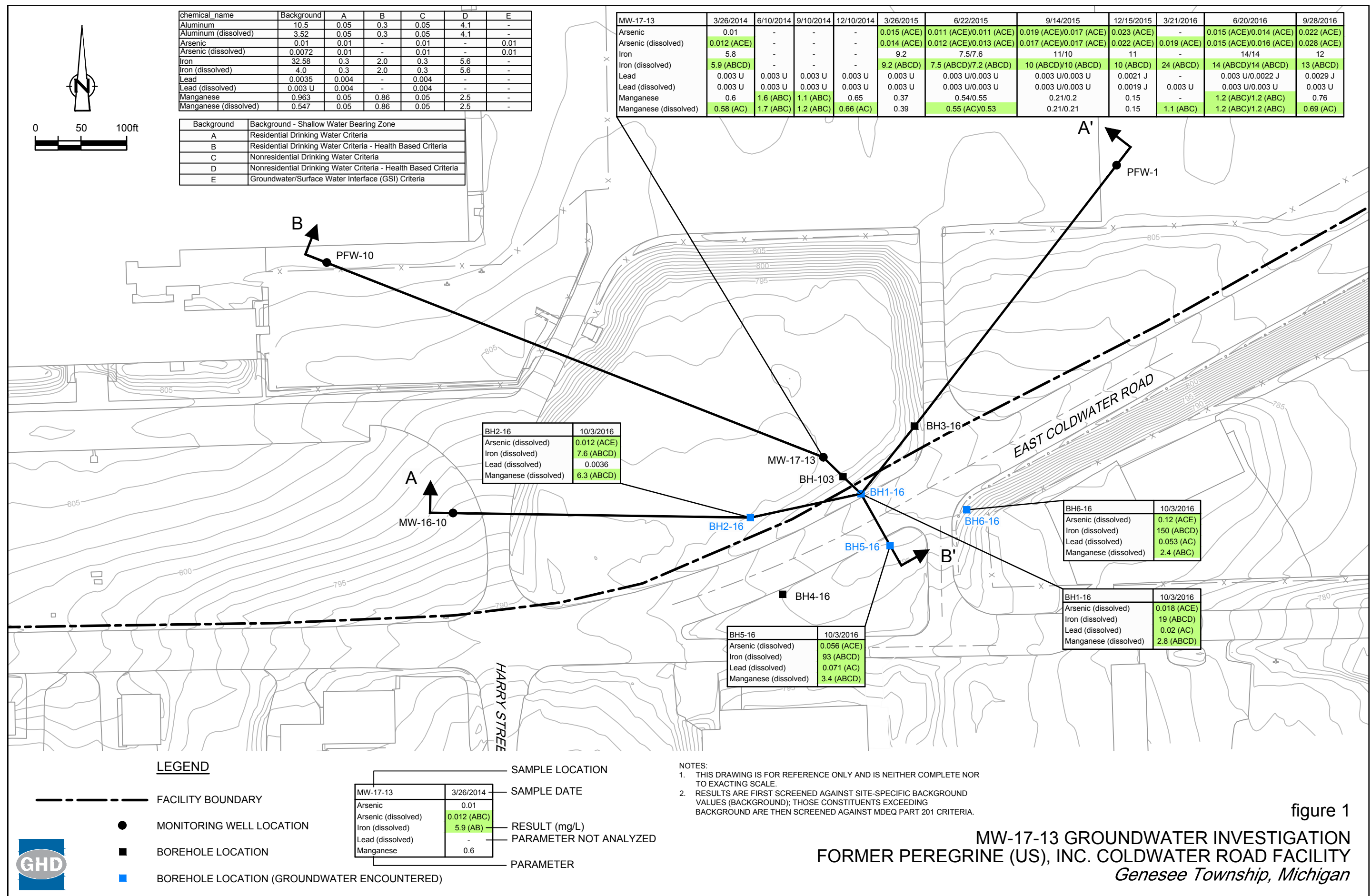
Shallow perched groundwater exists across the Site in limited and discontinuous sand seams. No distinct groundwater flow is anticipated within these zones. As presented in the borehole logs, shallow perched groundwater was encountered in four of six boreholes completed. Locations where groundwater was encountered are presented on Figure 1. Consistent with previous Site investigations shallow groundwater flow at in the vicinity of MW-17-13 is limited due to the discontinuous and perched conditions.

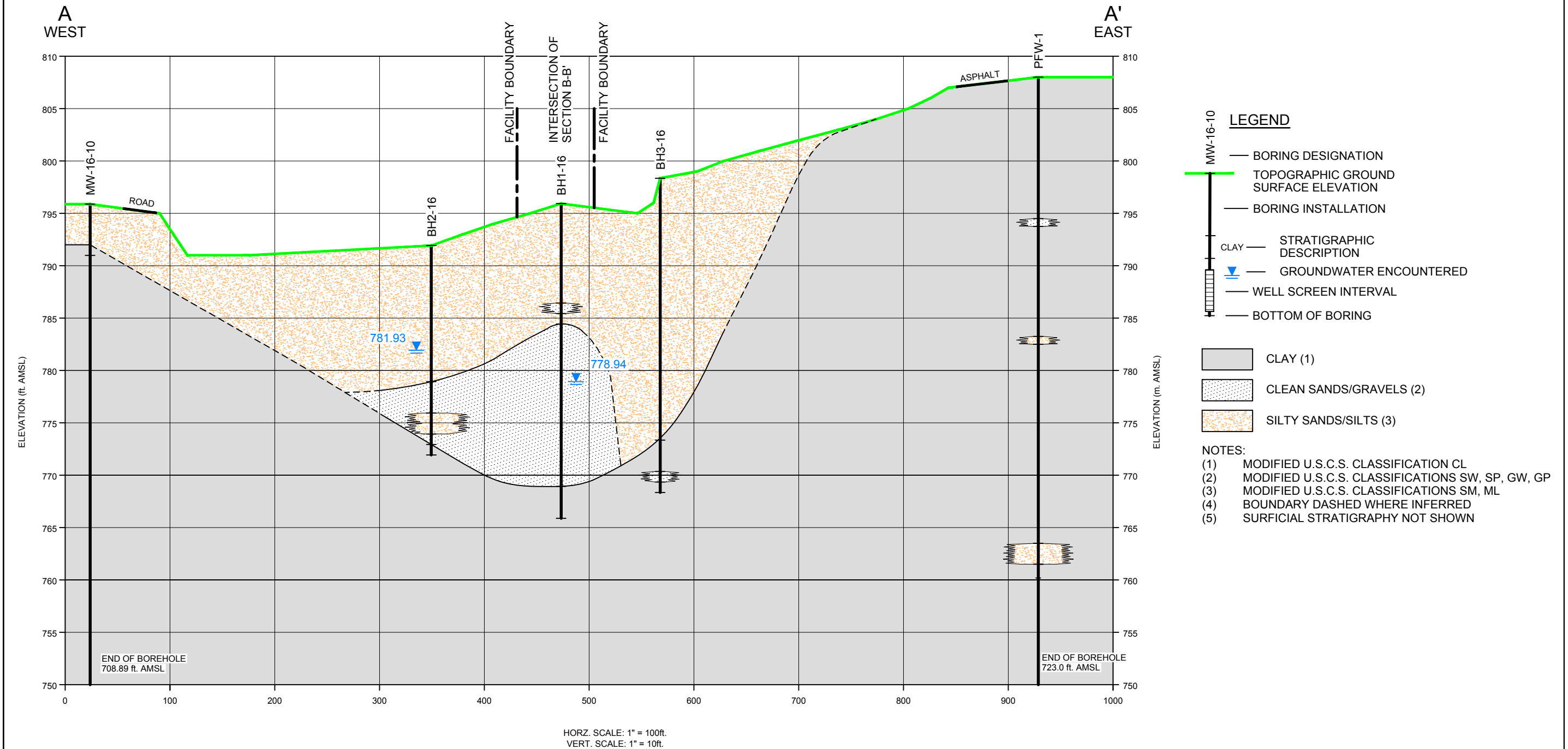


4. Conclusions

The following conclusions can be made based on an evaluation of the available data:

- 1) Off-site borehole water concentrations of dissolved arsenic, iron and lead are higher than those observed on-Site in both borehole water and historic groundwater samples.
- 2) Groundwater concentrations of dissolved arsenic and iron have been increasing at MW-17-13 since the well installation in 2013.
- 3) Historic Site-wide groundwater monitoring has not identified arsenic or iron as Site COCs.
- 4) Naturally occurring arsenic, within groundwater throughout Genesee County, has been detected above the MDEQ residential drinking water criterion of 0.01 mg/L.
- 5) Shallow groundwater flow in the vicinity of MW-17-13 is limited due to the discontinuous and perched conditions.





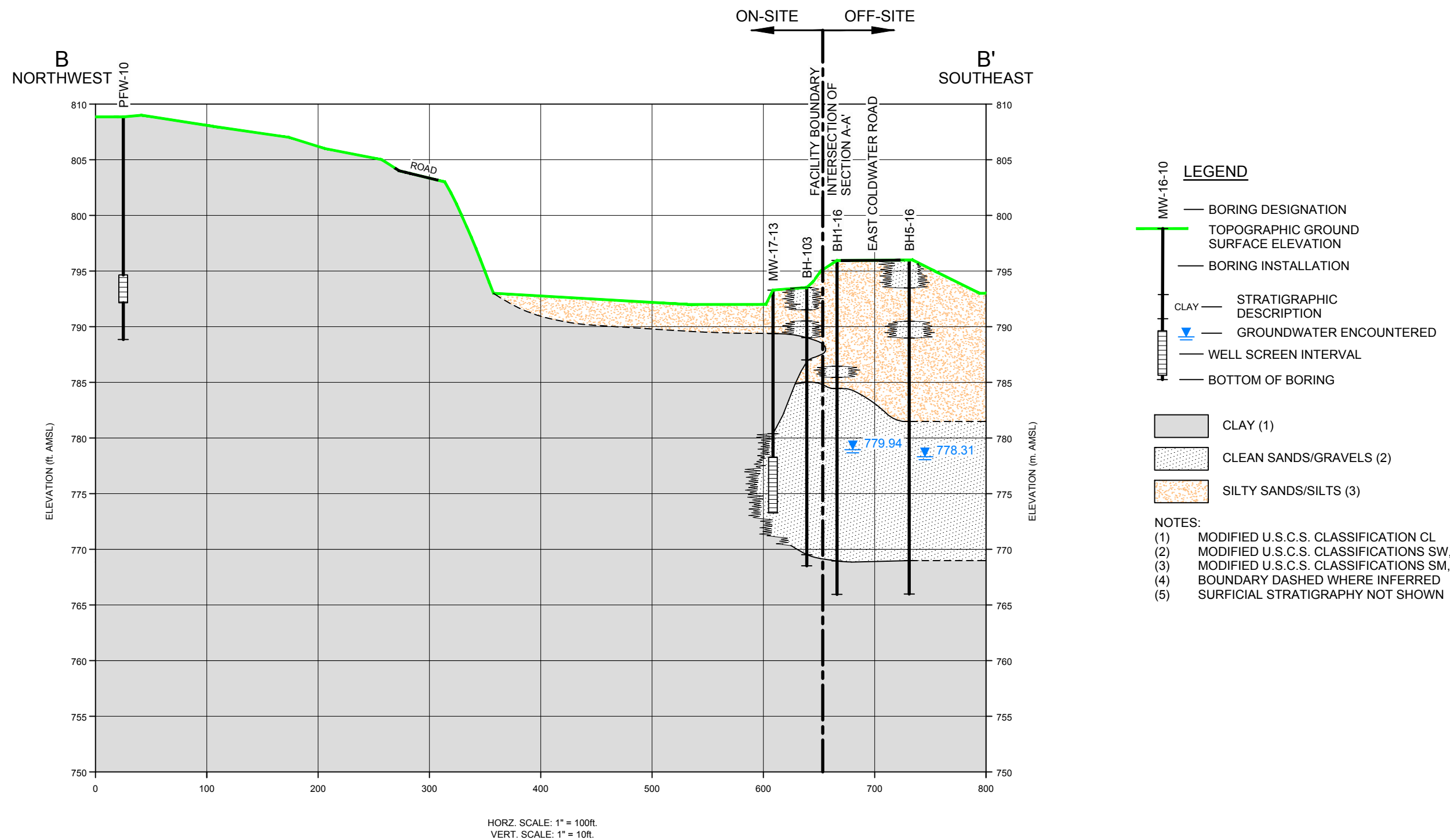


figure 3
 GEOLOGIC CROSS-SECTION B-B'
 MW-17-13 GROUNDWATER INVESTIGATION
 FORMER PEREGRINE (US), INC. COLDWATER ROAD FACILITY
 Genesee Township, Michigan



Attachment A

Stratigraphic Logs



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: COLDWATER ROAD INDUSTRIAL LANDS

HOLE DESIGNATION: BH1-16

PROJECT NUMBER: 12636

DATE COMPLETED: 3 October 2016

CLIENT: RACER TRUST

DRILLING METHOD: Geoprobe

LOCATION: Genesee Township, MI

FIELD PERSONNEL: S. Hoevenmeyer

COORDINATE SYSTEM:: SPCS MI S NAD 83/ NAVD 88, US Survey Feet

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	'N' VALUE	
	NORTHING: 580487.7 EASTING: 13306649.83	GROUND SURFACE	795.94					
	Topsoil, vegetation	795.19						
2	SM - SILTY SAND, silt, fine to medium grained sand, moist, trace fine gravel, brown	793.94						
4	ML - SILT, clay, trace fine grained sand and gravel, medium plasticity, grey, moist							
6								
8	SM - SILTY SAND, soft, grey, trace gravel	788.94						
	- woody debris at 9.0ft BGS							
10	SW - SAND (well graded), trace silt, moist	786.44						
	ML - SILT (gray), clay, trace sand and gravel (mottled brown)	785.44						
12	SW - SAND (well graded), trace silt, trace gravel, tan	784.44						
14	SP - SAND (poorly graded), medium gravel, gray	782.94						
16								
18	- wet (at 778.94 ft AMSL) at 17.0ft BGS							
20	- brown, wet at 19.5ft BGS							
22								
24	- trace gravel at 24.0ft BGS							
26								
28	CL - CLAY, silty, trace sand, gray	768.94						
30	END OF BOREHOLE @ 30.0ft BGS	765.94						
32	NOTES: - Groundwater sampled from temporary screen at 26 ft bgs. Sample GW-12636-100316-SSH-4116.							
34	- Borehole abandoned same day using bentonite and native soil cuttings.							

Backfilled with bentonite and native soil cuttings

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇ 10/3/2016

OVERBURDEN LOG 12636 GEOPROBES (OCT 2016).GPJ CRA CORP.GDT 13/1/17



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: COLDWATER ROAD INDUSTRIAL LANDS

HOLE DESIGNATION: BH2-16

PROJECT NUMBER: 12636

DATE COMPLETED: 3 October 2016

CLIENT: RACER TRUST

DRILLING METHOD: Geoprobe

LOCATION: Genesee Township, MI

FIELD PERSONNEL: S. Hoevemeyer

COORDINATE SYSTEM:: SPCS MI S NAD 83/ NAVD 88, US Survey Feet

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	'N' VALUE	
	NORTHING: 580461.69 EASTING: 13306528.75	GROUND SURFACE 791.93						
	Topsoil, vegetation	791.27						
2	SM - SILTY SAND, trace gravel, dry, hard, brown							
4	ML - SILT, clay, little sand, mottled brown/gray, medium plasticity	787.93						
6	- small 2-inch sand seams at 6.0ft BGS							
8	ML - SILT, clay, trace sand and gravel, moist, soft	783.93						
10	SM - SILTY SAND, wet, brown to tan, fine to medium grained, trace gravel	781.93						
12								
14	SP - SAND (poorly graded), gray, wet, fine to medium grained, trace silt	778.93						
16	SM - SILTY SAND, wet, trace gravel, brown/tan	775.93						
18	GW - GRAVEL (well graded), sand, trace silt, wet	773.93						
		772.93						
20	CL - CLAY, silty, trace sand/gravel, moist	771.93						
	END OF BOREHOLE @ 20.0ft BGS							
22	NOTES: - Groundwater sampled from temporary screen. Sample GW-12636-100316-SSH-4216.							
24	- Borehole abandoned same day using bentonite and native soil cuttings.							
26								
28								
30								
32								
34								

Backfilled with bentonite and native soil cuttings

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 12636 GEOPROBES (OCT 2016).GPJ CRA CORP.GDT 13/1/17



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: COLDWATER ROAD INDUSTRIAL LANDS

HOLE DESIGNATION: BH3-16

PROJECT NUMBER: 12636

DATE COMPLETED: 3 October 2016

CLIENT: RACER TRUST

DRILLING METHOD: Geoprobe

LOCATION: Genesee Township, MI

FIELD PERSONNEL: S. Hoevemeyer

COORDINATE SYSTEM:: SPCS MI S NAD 83/ NAVD 88, US Survey Feet

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	'N' VALUE	
	NORTHING: 580561.75 EASTING: 13306708.56	GROUND SURFACE	798.36					
	Topsoil, vegetation	797.86						
2	GW - GRAVEL, sand, fine to medium grained, trace silt, dry	796.36						
4	SM - SILTY SAND, mottled brown/gray, hard, dry							
	- trace gravel, brown, moist at 4.0ft BGS							
6								
8	- trace gravel, gray, moist at 8.0ft BGS							
10								
12	- black and red spots of color at 12.0ft BGS							
14								
16	- trace gravel, trace clay, mottled brown/gray, hard, dry at 16.0ft BGS							
18								
20	- trace gravel, trace clay, brown, dry at 20.0ft BGS							
22								
24								
26	CL - CLAY, silty, trace sand and gravel, gray, moist	773.36						
28	SP - SAND (poorly graded), trace silt, fine to medium grained, moist to wet	770.36						
	CL - CLAY, silty, gray, moist	769.36						
30	END OF BOREHOLE @ 30.0ft BGS	768.36						
32	NOTES: - Borehole abandoned same day using bentonite and native soil cuttings.							
34								

Backfilled with
bentonite and
native soil
cuttings

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 12636 GEOPROBES (OCT 2016).GPJ CRA CORP.GDT 13/1/17



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: COLDWATER ROAD INDUSTRIAL LANDS

HOLE DESIGNATION: BH4-16

PROJECT NUMBER: 12636

DATE COMPLETED: 3 October 2016

CLIENT: RACER TRUST

DRILLING METHOD: Geoprobe

LOCATION: Genesee Township, MI

FIELD PERSONNEL: S. Hoevemeyer

COORDINATE SYSTEM:: SPCS MI S NAD 83/ NAVD 88, US Survey Feet

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	'N' VALUE	
	NORTHING: 580377.7 EASTING: 13306564	GROUND SURFACE	793.81					
	Topsoil, vegetation	793.15						
2	FILL - gravel, sandy	791.81						
4	SM - SILTY SAND, trace gravel, fine to medium grained, mottled brown/gray, hard, dry							
6	- moist, more sand, less silt at 6.0ft BGS							
8	- more silty, with trace clay at 8.0ft BGS							
10	- trace clay and gravel, brown, dry at 10.0ft BGS							
12	CL - CLAY, silty, trace gravel, medium plasticity, gray, dry	781.81						
14								
16								
18								
20	END OF BOREHOLE @ 20.0ft BGS	773.81						
22	NOTES: - Borehole abandoned same day using bentonite and native soil cuttings.							
24								
26								
28								
30								
32								
34								

Backfilled with bentonite and native soil cuttings

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 12636 GEOPROBES (OCT 2016).GPJ CRA CORP.GDT 13/1/17



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: COLDWATER ROAD INDUSTRIAL LANDS

HOLE DESIGNATION: BH5-16

PROJECT NUMBER: 12636

DATE COMPLETED: 3 October 2016

CLIENT: RACER TRUST

DRILLING METHOD: Geoprobe

LOCATION: Genesee Township, MI

FIELD PERSONNEL: S. Hoevenmeyer

COORDINATE SYSTEM:: SPCS MI S NAD 83/ NAVD 88, US Survey Feet

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	'N' VALUE	
	NORTHING: 580431.1 EASTING: 13306681.59	GROUND SURFACE	795.97					
	Topsoil, vegetation	795.31						
2	FILL - gravel, sand, dry	793.47						
4	SM - SILTY SAND, trace gravel, gray, dry	790.47						
6	SP - SAND (poorly graded), trace silt and gravel, dark almost black, dry	788.97						
8	ML - SILT, trace sand and gravel, mottled brown/gray, hard, dry							
10								
12								
14								
16	SP - SAND (poorly graded), trace silt, fine grained, gray, wet to moist - wet (at 779.97 ft AMSL) at 16.0ft BGS	781.47						
18	SW - SAND (well graded), sand with gravel, brown, wet	777.97						
20								
22								
24	- gray, wet at 23.0ft BGS							
26								
28	CL - CLAY, silty, trace sand, medium plasticity, gray, moist	768.97						
30	END OF BOREHOLE @ 30.0ft BGS	765.97						
32	NOTES: - Groundwater sampled from temporary screen at 26 ft bgs. Sample GW-12636-100316-SSH-4316.							
34	- Borehole abandoned same day using bentonite and native soil cuttings.							

Backfilled with bentonite and native soil cuttings

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇ 10/3/2016

OVERBURDEN LOG 12636 GEOPROBES (OCT 2016).GPJ CRA CORP.GDT 13/1/17



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: COLDWATER ROAD INDUSTRIAL LANDS

HOLE DESIGNATION: BH6-16

PROJECT NUMBER: 12636

DATE COMPLETED: 3 October 2016

CLIENT: RACER TRUST

DRILLING METHOD: Geoprobe

LOCATION: Genesee Township, MI

FIELD PERSONNEL: S. Hoevenmeyer

COORDINATE SYSTEM:: SPCS MI S NAD 83/ NAVD 88, US Survey Feet

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft AMSL	BOREHOLE	SAMPLE				
				NUMBER	INTERVAL	REC (ft)	'N' VALUE	
	NORTHING: 580470.21 EASTING: 13306765.4	GROUND SURFACE	796.53					
	Topsoil, vegetation	796.03						
2	FILL - gravel, sand	794.03						
4	SM - SILTY SAND, fine grained, mottled brown/gray, firm, moist							
6								
8	ML - SILT, trace gravel, little sand (fine grained), soft, moist	789.53						
10								
12	SP - SAND (poorly graded), trace silt and gravel, fine to medium grained, dry	786.53						
14								
16	SM - SILTY SAND, trace clay and gravel, gray, firm, dry	783.53						
18								
20	SP - SAND (poorly graded), trace silt, gray, moist to wet	781.53						
22								
24	SM - SILTY SAND, fine grained, gray, moist to wet	779.53						
26								
28	SP - SAND (poorly graded), trace silt, brown/tan, wet	778.53						
30								
32	CL - CLAY, silty, trace gravel, medium plasticity, gray, moist	773.53						
34								
	END OF BOREHOLE @ 30.0ft BGS	766.53						
	NOTES: - Groundwater sampled from temporary screen at 23 ft bgs. Sample GW-12636-100316-SSH-4416. - Borehole abandoned same day using bentonite and native soil cuttings.							

Backfilled with bentonite and native soil cuttings

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 12636 GEOPROBES (OCT 2016).GPJ CRA CORP.GDT 13/1/17

STRATIGRAPHY LOG (OVERBURDEN)

PAGE ____ OF ____

PROJECT NAME _____
 PROJECT NUMBER 12636
 CLIENT _____
 LOCATION _____

DRILLING CONTRACTOR _____
 DRILLER _____
 SURFACE ELEVATION _____
 WEATHER (A.M.) _____
 (P.M.) _____

HOLE DESIGNATION BH103
 DATE/TIME STARTED 12/5/11
 DATE/TIME COMPLETED _____
 DRILLING METHOD _____
 CRA SUPERVISOR _____

STRATIGRAPHIC INTERVALS (DEPTHS IN ft/m BGS)			SAMPLE DESCRIPTION	SAMPLE DETAILS										SAMPLER	INTERVAL	P / F ID (ppm)	CHEMICAL	ANALYSIS	GRAIN SIZE					
FROM	TO	AT		SAMPLER	SAMPLER	SAMPLER	PENETRATION RECORD SPLIT SPOON BLOWS (RECORD N-VALUES & RECOVERIES)						SAMPLER							INTERVAL	P / F ID (ppm)	CHEMICAL	ANALYSIS	GRAIN SIZE
							6"	6"	6"	6"	N	R												
0		2.5	topsoil																					
2.5		2	SP-sand (f.11), fine grained, poorly graded trace fine gravel, brown, dry																					
2		3	SM-silty sand, trace fine gravel, fine grained brown moist to dry (f.11)																					
3		4.5	SP-sand (f.11)																					
4.5		6.5	CL-silty clay, organics, grey to black trace fine sand + gravel, moist to dry																					
6.5		8.5	SM-silty sand, fine grained, trace gravel grey, moist to dry																					
8.5		10.5	SW-sand, fine to med grained, trace silt, trace fine gravel, dry, light brown																					
10.5			GP-gravel sand, trace silt, med grained, moist																					
	12		wet, grey brown																					
	18		18' tan, wet																					
18		20																						
20		24	SW-sand, grey, med grained, well graded wet, trace gravel																					
24		25	CL-sand, clay, grey moist, low plasticity																					
NOTES AND COMMENTS			DEPTH OF BOREHOLE CAVING _____ DEPTH OF FIRST GROUNDWATER ENCOUNTER _____ TOPSOIL THICKNESS _____ WATER LEVEL IN OPEN BOREHOLE ON COMPLETION _____, AFTER _____ HOURS _____ COMPLETION DETAILS: _____ NOTE: FOR EACH SPLIT-SPOON SAMPLE, RECORD BLOW COUNTS, N-VALUE, SAMPLE RECOVERY LENGTH, AND SAMPLE INTERVAL. NOTES: collect H ₂ O sample at 1520, screen set at 14'-18' bgs, turb. 31 NTUs																					



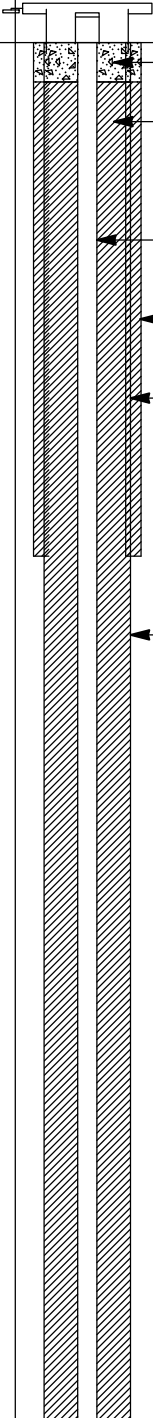


STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 3

PROJECT NAME: FORMER PEREGRINE FACILITY
PROJECT NUMBER: 012636
CLIENT: MOTORS LIQUIDATION COMPANY
LOCATION: GENESEE TOWNSHIP, MICHIGAN

HOLE DESIGNATION: MW-16-10
DATE COMPLETED: November 24, 2010
DRILLING METHOD: ROTASONIC
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
								
	TOPSOIL	0.30	CONCRETE					
2	SP-SAND (FILL), fine grained, poorly graded, trace fine gravel, brown, moist	2.20	CEMENT/BENTONITE GROUT	1RS		100		0.1
4	SW-SAND (FILL), fine and medium sand, trace fine gravel, well graded, brown, moist	4.90	2" PVC WELL CASING					
6	CL-SILTY CLAY (FILL), some fine and medium sand, trace fine gravel, mottled, weathered, trace oxidation, brown, moist		10" BOREHOLE					
8			7" STEEL CASING					
10		11.00		2RS		100		0.0
12	CL-SILTY CLAY (native), trace fine sand, trace medium grained sand, low to medium plasticity, gray, moist							
14			6" BOREHOLE					
16	- some silty sand at 16.5ft BGS							
18								
20								
22				3RS		100		0.0
24								
26								
28								
30								
32				4RS		100		0.1
34								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 12636.GPJ CRA_CORP.SPANISH.GDT 12/2/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NAME: FORMER PEREGRINE FACILITY
PROJECT NUMBER: 012636
CLIENT: MOTORS LIQUIDATION COMPANY
LOCATION: GENESEE TOWNSHIP, MICHIGAN

HOLE DESIGNATION: MW-16-10
DATE COMPLETED: November 24, 2010
DRILLING METHOD: ROTASONIC
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
36								
38								
40								
42				5RS		100		0.1
44								
46								
48	- trace medium sand at 47.2ft BGS							
50								
52				6RS		100		0.0
54								
56								
58								
60								
62				7RS		100		0.0
64								
66	- slight increase in sand content at 66.0ft BGS	66.30						
	SP-SAND, fine grained, poorly graded, some silt, compact, brown/gray, moist	67.00						
68	SM-SILTY SAND, trace fine sand, compact, moist to wet							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 12636.GPJ CRA_CORP.SPANISH.GDT 12/2/10



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 3 of 3

PROJECT NAME: FORMER PEREGRINE FACILITY
PROJECT NUMBER: 012636
CLIENT: MOTORS LIQUIDATION COMPANY
LOCATION: GENESEE TOWNSHIP, MICHIGAN

HOLE DESIGNATION: MW-16-10
DATE COMPLETED: November 24, 2010
DRILLING METHOD: ROTOSONIC
FIELD PERSONNEL: B. WILLIAMS

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
72	- wet at 72.0ft BGS			8RS		100		0.0
74								
76								
78								
80								
82				9RS		100		0.0
84	CL-SILTY CLAY, trace fine sand, soft, medium plasticity, gray, moist	84.00						
86								
87	END OF BOREHOLE @ 87.0ft BGS	87.00						
88								
90								
92								
94								
96								
98								
100								
102								
104								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 12636.GPJ CRA_CORP-SPANISH.GDT 12/2/10

WELL DETAILS
Screened Interval:
79.00 to 84.00ft BGS
Length: 5ft
Diameter: 2in
Slot Size: 0.010
Material: PVC
Seal:
76.70 to 77.00ft BGS
Material: BENTONITE CHIPS
Sand Pack:
77.00 to 85.00ft BGS
Material: SAND



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: FORMER PEREGRINE FACILITY
PROJECT NUMBER: 012636
CLIENT: MOTORS LIQUIDATION COMPANY
LOCATION: GENESEE TOWNSHIP, MICHIGAN

HOLE DESIGNATION: MW-17-13
DATE COMPLETED: October 24, 2013
DRILLING METHOD: GEOPROBE
FIELD PERSONNEL: E. MICKELSON

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
	NORTHING: 580506.51 EASTING: 13306624.38	TOP OF CASING 797.11 TOP OF RISER 796.46 GROUND SURFACE 793.28						
	TOPSOIL, vegetation	793.08	CONCRETE					
2	ML-SILT, few fine sand, compact, fine grained, brown, moist		BENTONITE CHIPS	1GP		10		0.1
4	CL-SILTY CLAY, trace fine sand, firm, low plasticity, dark gray, moist	789.38	8-1/2" BOREHOLE					0.2
6	- increase in sand content, soft, organic rich at 4.8ft BGS		2" PVC WELL CASING	2GP		85		0.0
8	- trace fine gravel, light brown to light gray, mottling at 6.2ft BGS							0.1
10								0.2
12	- trace roots from 11.4 to 11.7ft BGS			3GP		75		0.1
14	SP-SAND, trace silt, few fine gravel, compact, fine to medium grained, brown, wet	780.38	SAND PACK					0.2
16			2" PVC WELL SCREEN	4GP		75		0.0
18	- no gravel, fine grained, wet from 17.2 to 18.0ft BGS		NATURAL COLLAPSE					
20	- no gravel, fine grained, wet at 18.5ft BGS	774.28						
	SM-SILTY SAND, compact, fine grained, gray, wet	773.28						
	END OF BOREHOLE @ 20.0ft BGS							
22								
24								
26								
28								
30								
32								
34								

WELL DETAILS

Screened interval:

780.28 to 775.28ft

13.00 to 18.00ft BGS

Length: 5ft

Diameter: 2in

Slot Size: 0.010

Material: PVC

Seal:

792.28 to 782.28ft

1.00 to 11.00ft BGS

Material: BENTONITE CHIPS

Sand Pack:

782.28 to 775.28ft

11.00 to 18.00ft BGS

Material: SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 012636-WI.GPJ CRA CORP.GDT 6/9/14



LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME PEREGRINE FLINT
 LOCATION FLINT, MICHIGAN
 CONTRACTOR STEARNS DRILLING CO
 DRILLING METHOD 4.25" HSA

BORING NO. PFW-1
 SHEET NO. 1 OF 7
 PROJECT NO. 4036.05
 INSTALLATION 3-13-97
 SURFACE ELEV. 99.6
 BOREHOLE DIA. 8 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.
INTERVAL		RECOVERY		PID	DEPTH		
NO.	TYPE	N	IN				
1	SS	17	16	0.6		/// Asphalt, broken. Fill: well-graded sand with gravel, little silt, little clay, brown, wet. SANDY LEAN CLAY (CL), little fine to coarse sand, few fine to coarse gravel, slightly plastic, brown 10YR 4/3 with some mottling to grayish brown and yellowish brown, moist, (hard Pp > 4.5) (Glacial Till).	
2	SS	15	18	0		As above (CL), very stiff from 2 to 2.5 ft.	
3	SS	16	24	0			
					5	As above (CL), fractured, very stiff (Pp=3.4) below 5.7 feet.	
4	SS	15	24	0		As above (CL), becoming mottled brown, dark grayish brown and dark gray 10YR 4/1 - 4/2.	
5	SS	22	24	0		As above (CL), wet at sand partings @ 8.5' and 9.1', brown, trace fractures.	
6	SS	16	24	0	10		

GENERAL NOTES				WATER LEVEL OBSERVATIONS			
DATE STARTED	12 MAR 97			WHILE DRILLING	▽	78.0 ft. bgl	
DATE COMPLETED	13 MAR 97			AT COMPLETION	▽		
RIG	CME 750 ATV			AFTER DRILLING			
CREW CHIEF	R. BENNETT			CAVE-IN: DATE/TIME		DEPTH	
LOGGED	DPR	CHECKED	LPL	WATER: DATE/TIME		DEPTH	

LOG OF TEST BORING						BORING NO.	PFW-1	
F-203 (R 01-87)						SHEET NO.	2 OF 7	
PROJECT NAME						PEREGRINE FLINT	PROJECT NO.	4036.05
LOCATION						FLINT, MICHIGAN	INSTALLATION	3-13-97
CONTRACTOR						STEARNS DRILLING CO	SURFACE ELEV.	99.6
DRILLING METHOD						4.25" HSA	BOREHOLE DIA.	8 IN.
SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.	
INTERVAL NO.	TYPE	RECOVERY N	IN	PID	DEPTH			
7	SS	15	24			As above (CL), stiff to very stiff, (Pp = 1.6 to 2.7).		
					15	As above (CL). WELL-GRADED SAND WITH SILT (SW), fine to medium, trace gravel, few clay, brown 10YR 4/3, moist, pieces of clay till. SANDY LEAN CLAY (CL), some fine to coarse sand, few fine to coarse gravel, slightly plastic, brown 10YR 4/3, moist, stiff to very stiff (Glacial Till).		
8	SS	15	24	0		As above (CL), hard (Pp > 4).		
					20	As above (CL).		
9	SS	19	24	0		LEAN CLAY (CL), gradational areas of		



LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. PFW-1
SHEET NO. 3 OF 7
PROJECT NO. 4036.05
INSTALLATION 3-13-97
SURFACE ELEV. 99.6
BOREHOLE DIA. 8 IN.

PROJECT NAME PEREGRINE FLINT
LOCATION FLINT, MICHIGAN
CONTRACTOR STEARNS DRILLING CO
DRILLING METHOD 4.25" HSA

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.
INTERVAL		RECOVERY		PID	DEPTH		
NO.	TYPE	N	IN				
10	SS	40	24	0	25	clayey silt and sandy silt, slightly plastic, mottled brown, dark yellowish brown, and brownish gray, hard, fractured, friable, (Glacial Till). SILTY SAND (SM), fine, brown, wet.	
					30	LEAN CLAY (CL), slightly plastic, brown with dark yellowish brown and black precipitate along fractures, mostly dark grayish brown below 29.6', moist to wet along silt partings, very hard, faint lamination (Glaciolacustrine).	



LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME PEREGRINE FLINT
LOCATION FLINT, MICHIGAN
CONTRACTOR STEARNS DRILLING CO
DRILLING METHOD 4.25" HSA

BORING NO. PFW-1
SHEET NO. 4 OF 7
PROJECT NO. 4036.05
INSTALLATION 3-13-97
SURFACE ELEV. 99.6
BOREHOLE DIA. 8 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.	
INTERVAL		RECOVERY		PID	DEPTH			
NO.	TYPE	N	IN					
11	SS	20	0			As above (CL), gray 10YR 5/1 (based on cuttings).		
12	SS	17	24	0.6		As above (CL), wet along silt partings, very stiff (Pp = 3.2 to 3.7).		
						SILT (ML), grading from above clay, nonplastic, gray 10YR 5/1, moist, very stiff.		

F-203 (R 01-87)

BORING NO. PFW-1
SHEET NO. 5 **OF** 7
PROJECT NO. 4036.05
INSTALLATION 3-13-97
SURFACE ELEV. 99.6
BOREHOLE DIA. 8 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.	
INTERVAL		RECOVERY		PID	DEPTH			
NO.	TYPE	N	IN					
13	SS	14	24	0.3	50	LEAN CLAY (CL), trace fine gravel, trace fine to coarse sand, medium plastic, gray 10YR 5/1, moist, very stiff (Pp = 2.3 to 2.7), faint lamination (Glaciolacustrine).		
					55			
					60			

LOG OF TEST BORING						BORING NO. <u>PFW-1</u>	
F-203 (R 01-87)						SHEET NO. <u>6</u> OF <u>7</u>	
PROJECT NAME <u>PEREGRINE FLINT</u>						PROJECT NO. <u>4036.05</u>	
LOCATION <u>FLINT, MICHIGAN</u>						INSTALLATION <u>3-13-97</u>	
CONTRACTOR <u>STEARNS DRILLING CO</u>						SURFACE ELEV. <u>99.6</u>	
DRILLING METHOD <u>4.25" HSA</u>						BOREHOLE DIA. <u>8 IN.</u>	
SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	
INTERVAL NO.	TYPE	RECOVERY N	IN	PID	DEPTH		
14	SS	16	24	0.2		As above (CL), abundant silt partings.	
					65		
					70		
						<--- Drillers note change in resistance @ 71 feet.	
15	SS	88	18			POORLY-GRADED SAND (SP), fine, trace silt, light gray 10YR 7/1, moist to dry, faint stratification.	
					75		

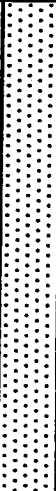


LOG OF TEST BORING

F-203 (R 01-87)

BORING NO. PFW-1
SHEET NO. 7 OF 7
PROJECT NO. 4036.05
INSTALLATION 3-13-97
SURFACE ELEV. 99.6
BOREHOLE DIA. 8 IN.

PROJECT NAME PEREGRINE FLINT
LOCATION FLINT, MICHIGAN
CONTRACTOR STEARNS DRILLING CO
DRILLING METHOD 4.25" HSA

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.
INTERVAL		RECOVERY		PID	DEPTH		
NO.	TYPE	N	IN				
16	SS	23	18			As above (SP), some medium sand, gray 10YR 6/1, wet.	
					80		
17	SS	40	24			As above (SP), mostly medium grained.	
					85	LEAN CLAY (CL). End of boring at 85 feet.	

**ENVIRONMENTAL AUDIT REPORT:
PRIVILEGED DOCUMENT**

LOG OF TEST BORING F-203 (R 01-87) BORING NO. <u>PFW-10</u> SHEET NO. <u>1</u> OF <u>2</u> PROJECT NO. <u>4036.05</u> INSTALLATION <u>3-20-97</u> SURFACE ELEV. <u>100.5</u> BOREHOLE DIA. <u>8 IN.</u>						
PROJECT NAME <u>PEREGRINE FLINT</u> LOCATION <u>FLINT, MICHIGAN</u> CONTRACTOR <u>STEARNS DRILLING CO</u> DRILLING METHOD <u>4.25" HSA</u>						
SAMPLING NOTES						
INTERVAL		RECOVERY		PID	VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.
NO.	TYPE	N	IN	DEPTH		
1	SS	11	15	0.1	Asphalt. Fill: fine to medium sand, little coarse gravel, dark yellowish brown, moist to wet. SANDY LEAN CLAY (CL), some fine to coarse sand, few fine to coarse gravel, slightly plastic, brown 10YR 4/3 with some gray mottling along fractures, moist, hard (Pp > 4.5) (Glacial Till).	
2	SS	12	20	0.2	As above (CL), very dark gray 10YR 3/1 to olive brown 2.5Y 3/6 to grayish brown 10YR 4/2, stiff to very stiff (Pp = 1.5 to 2.5).	
3	SS	18	24	0	As above (CL), brown 10YR 4/3, hard (Pp = 4.4) below 5 feet.	
4	SS	29	24	0	As above (CL), less gray mottling below 7 feet.	
5	SS	29	24	0	As above (CL), (Pp = 4.0 to 4.5), fracture from 9.2 to 9.8 ft.	
6	SS	24	24	0	As above (CL), fracture 11.5 to 11.8'.	
GENERAL NOTES						
DATE STARTED <u>20 MAR 97</u> DATE COMPLETED <u>20 MAR 97</u> RIG <u>CME LC 60</u> CREW CHIEF <u>M. HEFFERAN</u> LOGGED <u>DPR</u> CHECKED <u>LPL</u> WATER LEVEL OBSERVATIONS WHILE DRILLING ∇ <u>13.8 ft. bgl</u> AT COMPLETION ∇ _____ AFTER DRILLING _____ CAVE-IN: DATE/TIME _____ DEPTH _____ WATER: DATE/TIME _____ DEPTH _____						



LOG OF TEST BORING

F-203 (R 01-87)

PROJECT NAME PEREGRINE FLINT
LOCATION FLINT, MICHIGAN
CONTRACTOR STEARNS DRILLING CO
DRILLING METHOD 4.25" HSA

BORING NO. PFW-10
SHEET NO. 2 OF 2
PROJECT NO. 4036.05
INSTALLATION 3-20-97
SURFACE ELEV. 100.5
BOREHOLE DIA. 8 IN.

SAMPLING NOTES						VISUAL CLASSIFICATION AND GENERAL OBSERVATIONS	GENERAL WELL CONSTRUCT.
INTERVAL		RECOVERY		PID	DEPTH		
NO.	TYPE	N	IN				
7	SS	24	22	0		As above (CL), areas of dark grayish brown below 12.2 ft, very stiff (Pp = 2.5 to 3.5).	
8	SS	19	24	0	▽	<--- Wet sand parting at 13.8 feet.	
					15	As above (CL), dark gray 10YR 4/1, stiff (Pp = 1.7).	
9	SS	14	24	0		As above (CL).	
10	SS	13	24	0		As above (CL).	
					20	End of boring at 20 feet.	

Attachment B

Laboratory Analytical Report

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-70333-1

Client Project/Site: 12636, RACER Peregrine

For:

GHD Services Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Rawa Fleisher



Authorized for release by:

10/10/2016 1:37:18 PM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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QC Sample Results	13
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Case Narrative

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Job ID: 240-70333-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative 240-70333-1

Comments

No additional comments.

Receipt

The samples were received on 10/4/2016 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

Metals

Method(s) 200.7 Rev 4.4, 6010B: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: GW-12636-100316-SSH-4116 (240-70333-1), GW-12636-100316-SSH-4216 (240-70333-2), GW-12636-100316-SSH-4316 (240-70333-3) and GW-12636-100316-SSH-4416 (240-70333-4). The continuing calibration blanks and method blanks may not support the lower PQL.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-70333-1	GW-12636-100316-SSH-4116	Water	10/03/16 09:00	10/04/16 09:30
240-70333-2	GW-12636-100316-SSH-4216	Water	10/03/16 09:45	10/04/16 09:30
240-70333-3	GW-12636-100316-SSH-4316	Water	10/03/16 12:25	10/04/16 09:30
240-70333-4	GW-12636-100316-SSH-4416	Water	10/03/16 14:00	10/04/16 09:30

Detection Summary

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Client Sample ID: GW-12636-100316-SSH-4116

Lab Sample ID: 240-70333-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	18		5.0	3.3	ug/L	1		6010B	Dissolved
Iron	19000		100	25	ug/L	1		6010B	Dissolved
Manganese	2800		15	5.1	ug/L	1		6010B	Dissolved
Lead	20		3.0	1.9	ug/L	1		6010B	Dissolved

Client Sample ID: GW-12636-100316-SSH-4216

Lab Sample ID: 240-70333-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	12		5.0	3.3	ug/L	1		6010B	Dissolved
Iron	7600		100	25	ug/L	1		6010B	Dissolved
Manganese	6300		15	5.1	ug/L	1		6010B	Dissolved
Lead	3.6		3.0	1.9	ug/L	1		6010B	Dissolved

Client Sample ID: GW-12636-100316-SSH-4316

Lab Sample ID: 240-70333-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	56		5.0	3.3	ug/L	1		6010B	Dissolved
Iron	93000		100	25	ug/L	1		6010B	Dissolved
Manganese	3400		15	5.1	ug/L	1		6010B	Dissolved
Lead	71		3.0	1.9	ug/L	1		6010B	Dissolved

Client Sample ID: GW-12636-100316-SSH-4416

Lab Sample ID: 240-70333-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	120		5.0	3.3	ug/L	1		6010B	Dissolved
Iron	150000		100	25	ug/L	1		6010B	Dissolved
Manganese	2400		15	5.1	ug/L	1		6010B	Dissolved
Lead	53		3.0	1.9	ug/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Method: 6010B - Metals (ICP) - Dissolved

Client Sample ID: GW-12636-100316-SSH-4116

Date Collected: 10/03/16 09:00

Date Received: 10/04/16 09:30

Lab Sample ID: 240-70333-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	18		5.0	3.3	ug/L		10/05/16 14:00	10/06/16 19:35	1
Iron	19000		100	25	ug/L		10/05/16 14:00	10/06/16 19:35	1
Manganese	2800		15	5.1	ug/L		10/05/16 14:00	10/06/16 19:35	1
Lead	20		3.0	1.9	ug/L		10/05/16 14:00	10/06/16 19:35	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Method: 6010B - Metals (ICP) - Dissolved

Client Sample ID: GW-12636-100316-SSH-4216

Date Collected: 10/03/16 09:45

Date Received: 10/04/16 09:30

Lab Sample ID: 240-70333-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	12		5.0	3.3	ug/L		10/05/16 14:00	10/06/16 19:40	1
Iron	7600		100	25	ug/L		10/05/16 14:00	10/06/16 19:40	1
Manganese	6300		15	5.1	ug/L		10/05/16 14:00	10/06/16 19:40	1
Lead	3.6		3.0	1.9	ug/L		10/05/16 14:00	10/06/16 19:40	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Method: 6010B - Metals (ICP) - Dissolved

Client Sample ID: GW-12636-100316-SSH-4316

Date Collected: 10/03/16 12:25

Date Received: 10/04/16 09:30

Lab Sample ID: 240-70333-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	56		5.0	3.3	ug/L		10/05/16 14:00	10/06/16 19:44	1
Iron	93000		100	25	ug/L		10/05/16 14:00	10/06/16 19:44	1
Manganese	3400		15	5.1	ug/L		10/05/16 14:00	10/06/16 19:44	1
Lead	71		3.0	1.9	ug/L		10/05/16 14:00	10/06/16 19:44	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Method: 6010B - Metals (ICP) - Dissolved

Client Sample ID: GW-12636-100316-SSH-4416

Date Collected: 10/03/16 14:00

Date Received: 10/04/16 09:30

Lab Sample ID: 240-70333-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	120		5.0	3.3	ug/L		10/05/16 14:00	10/06/16 19:49	1
Iron	150000		100	25	ug/L		10/05/16 14:00	10/06/16 19:49	1
Manganese	2400		15	5.1	ug/L		10/05/16 14:00	10/06/16 19:49	1
Lead	53		3.0	1.9	ug/L		10/05/16 14:00	10/06/16 19:49	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Metals

Prep Batch: 249966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-70333-1	GW-12636-100316-SSH-4116	Dissolved	Water	3005A	
240-70333-2	GW-12636-100316-SSH-4216	Dissolved	Water	3005A	
240-70333-3	GW-12636-100316-SSH-4316	Dissolved	Water	3005A	
240-70333-4	GW-12636-100316-SSH-4416	Dissolved	Water	3005A	
MB 240-249966/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 240-249966/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 250164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-70333-1	GW-12636-100316-SSH-4116	Dissolved	Water	6010B	249966
240-70333-2	GW-12636-100316-SSH-4216	Dissolved	Water	6010B	249966
240-70333-3	GW-12636-100316-SSH-4316	Dissolved	Water	6010B	249966
240-70333-4	GW-12636-100316-SSH-4416	Dissolved	Water	6010B	249966
MB 240-249966/1-A	Method Blank	Total Recoverable	Water	6010B	249966
LCS 240-249966/2-A	Lab Control Sample	Total Recoverable	Water	6010B	249966

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 240-249966/1-A
Matrix: Water
Analysis Batch: 250164

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 249966

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.0	U	5.0	3.3	ug/L		10/05/16 14:00	10/06/16 10:42	1
Iron	100	U	100	25	ug/L		10/05/16 14:00	10/06/16 10:42	1
Manganese	15	U	15	5.1	ug/L		10/05/16 14:00	10/06/16 10:42	1
Lead	3.0	U	3.0	1.9	ug/L		10/05/16 14:00	10/06/16 10:42	1

Lab Sample ID: LCS 240-249966/2-A
Matrix: Water
Analysis Batch: 250164

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 249966

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2000	2070		ug/L		104	80 - 120
Iron	1000	1030		ug/L		103	80 - 120
Manganese	500	522		ug/L		104	80 - 120
Lead	500	487		ug/L		97	80 - 120

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Client Sample ID: GW-12636-100316-SSH-4116

Date Collected: 10/03/16 09:00

Date Received: 10/04/16 09:30

Lab Sample ID: 240-70333-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			249966	10/05/16 14:00	AJC	TAL CAN
Dissolved	Analysis	6010B		1	250164	10/06/16 19:35	KLC	TAL CAN

Client Sample ID: GW-12636-100316-SSH-4216

Date Collected: 10/03/16 09:45

Date Received: 10/04/16 09:30

Lab Sample ID: 240-70333-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			249966	10/05/16 14:00	AJC	TAL CAN
Dissolved	Analysis	6010B		1	250164	10/06/16 19:40	KLC	TAL CAN

Client Sample ID: GW-12636-100316-SSH-4316

Date Collected: 10/03/16 12:25

Date Received: 10/04/16 09:30

Lab Sample ID: 240-70333-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			249966	10/05/16 14:00	AJC	TAL CAN
Dissolved	Analysis	6010B		1	250164	10/06/16 19:44	KLC	TAL CAN

Client Sample ID: GW-12636-100316-SSH-4416

Date Collected: 10/03/16 14:00

Date Received: 10/04/16 09:30

Lab Sample ID: 240-70333-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			249966	10/05/16 14:00	AJC	TAL CAN
Dissolved	Analysis	6010B		1	250164	10/06/16 19:49	KLC	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: GHD Services Inc.
Project/Site: 12636, RACER Peregrine

TestAmerica Job ID: 240-70333-1

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14 *
California	State Program	9	2927	04-30-17
Connecticut	State Program	1	PH-0590	12-31-17
Florida	NELAP	4	E87225	06-30-17
Illinois	NELAP	5	200004	07-31-17
Kansas	NELAP	7	E-10336	01-31-17
Kentucky (UST)	State Program	4	58	02-23-17
Kentucky (VW)	State Program	4	98016	12-31-16 *
Minnesota	NELAP	5	039-999-348	12-31-16 *
Minnesota (Petrofund)	State Program	1	3506	07-31-17
Nevada	State Program	9	OH-000482008A	07-31-17
New Jersey	NELAP	2	OH001	06-30-17
New York	NELAP	2	10975	03-31-17
Ohio VAP	State Program	5	CL0024	09-14-17
Oregon	NELAP	10	4062	02-23-17
Pennsylvania	NELAP	3	68-00340	08-31-17
Texas	NELAP	6	T104704517-15-5	08-31-17
USDA	Federal		P330-13-00319	11-26-16 *
Virginia	NELAP	3	460175	09-14-17
Washington	State Program	10	C971	01-12-17
West Virginia DEP	State Program	3	210	12-31-16 *
Wisconsin	State Program	5	999518190	08-31-17

* Certification renewal pending - certification considered valid.

TestAmerica Canton

TestAmerica Canton Sample Receipt Form/Narrative		Login # : <u>70333</u>
Canton Facility		
Client <u>GHD</u>	Site Name _____	Cooler unpacked by: <u>[Signature]</u>
Cooler Received on <u>10/4/16</u>	Opened on <u>10/4/16</u>	
FedEx: 1 st Grd. Exp. <u>UPS</u>	FAS Stetson	Client Drop Off TestAmerica Courier Other _____
Receipt After-hours: Drop-off Date/Time _____		Storage Location _____
TestAmerica Cooler # _____	Foam Box ☒ Client Cooler ☒ Box _____	Other _____
Packing material used: <u>Bubble Wrap</u> Foam Plastic Bag None Other _____		
COOLANT: <u>Wet Ice</u> Blue Ice Dry Ice Water None		
1. Cooler temperature upon receipt ☐ See Multiple Cooler Form IR GUN# IR-8 (CF +0.4 °C) Observed Cooler Temp. <u>1.2</u> °C Corrected Cooler Temp. <u>1.4</u> °C IR GUN #36 (CF +1.3 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C		
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity <u>1</u> Yes ☒ No ☐ -Were custody seals on the outside of the cooler(s) signed & dated? Yes ☒ No ☐ NA ☐ -Were custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes ☒ No ☐		
3. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐		
4. Did custody papers accompany the sample(s)? Yes ☒ No ☐		
5. Were the custody papers relinquished & signed in the appropriate place? Yes ☒ No ☐		
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes ☒ No ☐		
7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐		
8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐		
9. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐		
10. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐		
11. Are these work share samples? Yes ☒ No ☐ If yes, Questions 11-15 have been checked at the originating laboratory.		
11. Were sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐ pH Strip Lot# <u>HC574756</u>		
12. Were VOAs on the COC? Yes ☒ No ☐ NA ☐		
13. Were air bubbles >6 mm in any VOA vials? Yes ☒ No ☐ NA ☐		
14. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes ☒ No ☐		
15. Was a LL Hg or Me Hg trip blank present? Yes ☒ No ☐		
Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____		
Concerning _____		

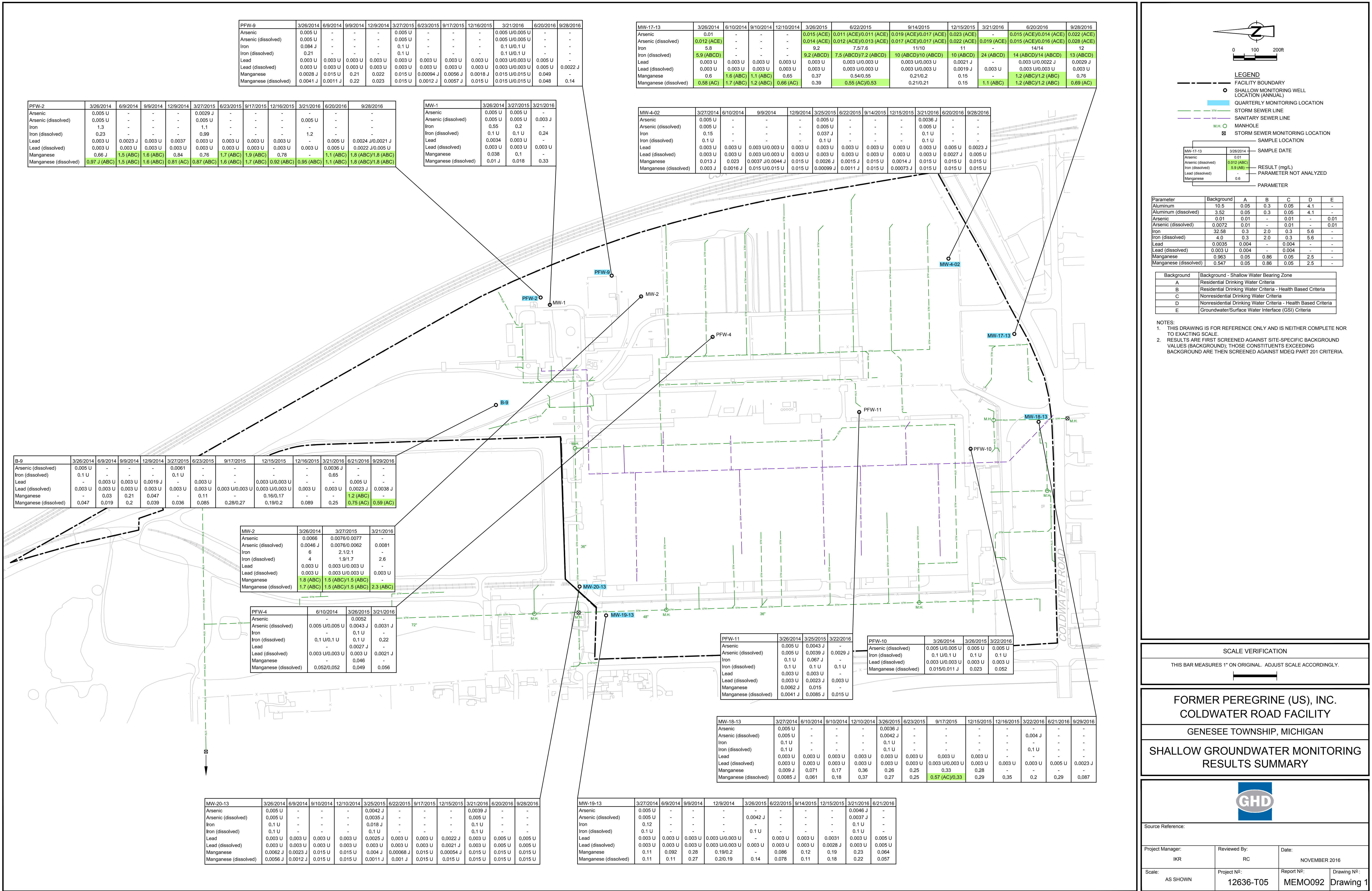
14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES _____ _____ _____ _____ _____ _____ _____ _____ _____ _____	Samples processed by: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
15. SAMPLE CONDITION Sample(s) _____ were received after the recommended holding time had expired. Sample(s) _____ were received in a broken container. Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)	
16. SAMPLE PRESERVATION Sample(s) _____ were further preserved in the laboratory. Time preserved: _____ Preservative(s) added/Lot number(s): _____	

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u>	<u>Preservative</u>	<u>Lot #</u>
			<u>pH</u>	<u>Added (mls)</u>	
GW-12636-100316-SSH-4116	240-70333-A-1	Plastic 500ml - w/ Nitric - Dis.	<2		
GW-12636-100316-SSH-4216	240-70333-A-2	Plastic 500ml - w/ Nitric - Dis.	<2		
GW-12636-100316-SSH-4316	240-70333-A-3	Plastic 500ml - w/ Nitric - Dis.	<2		
GW-12636-100316-SSH-4416	240-70333-A-4	Plastic 500ml - w/ Nitric - Dis.	<2		

Attachment C

Summary of Groundwater Monitoring Results



Attachment C

November 2016 PFAS Sampling Results Summary



February 13, 2017

Reference No. 012636

Mr. Rich Conforti
MDEQ, OWMRP
P.O. Box 30241
Lansing, Michigan
U.S.A. 48909-7741

Dear Mr. Conforti:

**Re: November 2016 PFAS Sampling Results Summary
RACER Former Peregrine, Inc., Coldwater Road Facility, Genesee Township, Michigan
MID 000 020 743**

On behalf of Revitalizing Auto Communities Environmental Response Trust (RACER), the following presents a summary of the Per and Polyfluoroalkyl Substances (PFAS) sampling complete in November 2016 at the former Peregrine Coldwater Road Facility (Site) located at 1245 E Coldwater Road in Genesee Township, near Flint, Michigan.

Sampling was completed in response to a request from the Michigan Department of Environmental Quality (MDEQ) received on July 13, 2016. One of the uses of PFAS is chrome plating operations which historically took place at the Site. Sampling was completed in accordance with the MDEQ approved sampling plan dated October 7, 2016.

1. Site Background

Former chrome plating operations were performed at the Site in the northwest portion of the Site from approximately 1953 through 1987, as presented on Figure 1. A smaller zinc plating line was also present toward the south portion of the facility. There were 13 chrome plating lines and 2 zinc plating lines. A number of these plating lines had collection sumps associated with them. Spent plating solutions were generated which variously contained chrome, zinc, copper, acid, alkali, cyanide, and potentially PFAS as a demisting agent. Plating solutions were recycled through the plating system, which included a variety of solution regeneration activities that occurred at the filtration and treatment area located in the basement. Spent plating solutions were pumped to the Waste Water Treatment Plant (WWTP) for treatment. The WWTP is located off-Site to the northwest of the Site at the Former Coldwater Road WWTP. The resultant WWTP sludges were stored in associated sludge drying beds. The sludge drying beds were active until June 1987 when plating operations were discontinued, and discharge from the WWTP was re-routed to the sanitary sewer system. As part of the closure activities of the drying beds, a monofill landfill was constructed and closed to the North of the Site at the RACER Former Coldwater Road Landfill (Landfill).

The facility was decommissioned and demolished between November 1999 and January 2001. Since the demolition of the facility, the Site has been leased and used for materials storage and management. Since



demolition, numerous soil and groundwater sampling activities have been undertaken to evaluate the presence of hazardous substances on-Site. To date no unacceptable exposures have been identified.

2. Sampling Event Summary

In accordance with the October 7, 2016 sampling plan, PFAS sampling was completed on November 29 and 30, 2016. Sampling was complete in coordination with the O'Brien & Gere Engineers, Inc.(OBG); OBG is the consultant overseeing remedial efforts at the Landfill and WWTP, on behalf of RACER. Coordination between the sites was completed in order to fully evaluate the extent of impacts, if any, across the entire former Facility. Sampling was completed as a combined team of GHD and OBG staff in an effort to minimize the variation in sampling processes between the sites.

Four groundwater samples were collected from four existing monitoring wells at the Site (shallow: MW-4-02, MW-18-13, MW-19-13 and deep: MW-16-10). Shallow groundwater samples were collected using standard low flow procedures. Deep groundwater samples were collected using standard volumetric purging procedures. A peristaltic pump (for shallow wells) and a stainless steel inertial pump (for deep wells) were used for purging and sampling. Only new HDPE and silicon tubing was used in the sampling process. The pumps utilized for the PFAS sampling were selected as they did not contain Teflon, LDPE, or Viton components (common sources of PFAS sample interference). The sampling procedures were intended to prevent sampling method contamination of groundwater samples. The following Quality Control Samples were collected and submitted for analysis: two rinse/equipment blanks (one of each sampling method), one field blank, and one duplicate (per site).

MDEQ was on-Site on November 29, 2016 to observe sampling procedures and to collect a split sample of the Landfill Sump D and a rinse blank of the low flow sampling equipment.

All GHD samples were submitted to TestAmerica Laboratories, Inc in West Sacramento, California for Method 537 (modified) analyses; a list of sample parameters analyzed is presented on Figure 1.

Purging records for the four wells located on the Site along with completed PFAS sampling checklists are presented in Attachment A. The results of sampling completed at the Landfill are discussed under separate cover.

3. Screening Values/Criteria

As part of the evaluation of PFAS results, the following screening criteria will be used for comparison:

1. MDEQ Generic Cleanup Criteria Proposed Rule Revisions (September 29, 2016), Residential Drinking Water Criteria for PFOA (89 ng/L) and PFOS (80 ng/L).
2. MDEQ Generic Cleanup Criteria Proposed Rule Revisions (September 29, 2016), Nonresidential Drinking Water Criteria for PFOA (280 ng/L) and PFOS (660 ng/L).



MDEQ Groundwater/Surface water interface criteria were not evaluated for the Site as there are no surface water features with reasonable proximity of the Site. No screening criteria are available for the remaining PFAS parameters analyzed.

4. Results and Discussion

A summary of the sampling results are present in Table 1 and a summary of detections is presented on Figure 1. The data validation report, along with the laboratory analytical report, is presented in Attachment B.

Three shallow (perched) groundwater samples were collected from Site wells:

- At MW-4-02, 3 of the 18 parameters analyzed were detected; however, all detections were below the screening criteria.
- At MW-18-13, 6 of the 18 parameters analyzed were detected; however all detections were below the screening criteria.
- At MW-19-13, 9 of the 18 parameters analyzed were detected; however all detections were below the screening criteria.

Although PFAS are present in the shallow groundwater at the Site, all detections were reported below applicable screening criteria and sample locations were selected to bias sample towards locations where elevated concentrations would have been anticipated.

One deep (drift aquifer) groundwater sample was collected on-Site at MW-16-10; a duplicate sample was also collected at this location. Only 1 of the 18 parameters analyzed was detected and only in one of the two samples. In addition, the result was qualified as estimated as the result was below the laboratory reporting limit.

5. Conclusions and Recommendations

The following can be concluded based on the results of the PFAS sampling:

1. No PFAS were detected on-Site above screening criteria.
2. No impacts to deep groundwater at the downgradient property boundary were observed.
3. Shallow groundwater concentrations at the Site are stable as plating operations ceased in 1987.
4. Sampling methods did not contribute to concentrations of PFAs detected at the Site.
5. Sampling locations were selected to evaluate locations most likely to contribute to off-Site contaminant migration.



Based on the conclusions of the PFAS sampling at the Site, no further evaluation of PFAS at the Site is recommended.

Should you have any questions on the above, please do not hesitate to contact us.

Sincerely,

GHD

A handwritten signature in blue ink, appearing to read "Michael Tomka", is written over a faint, light blue circular background.

Michael R. Tomka, P.E.

RC/kf/24

Encl.

cc: Dave Favero/Grant Trigger, RACER
Joe Rogers/ John McCabe, MDEQ

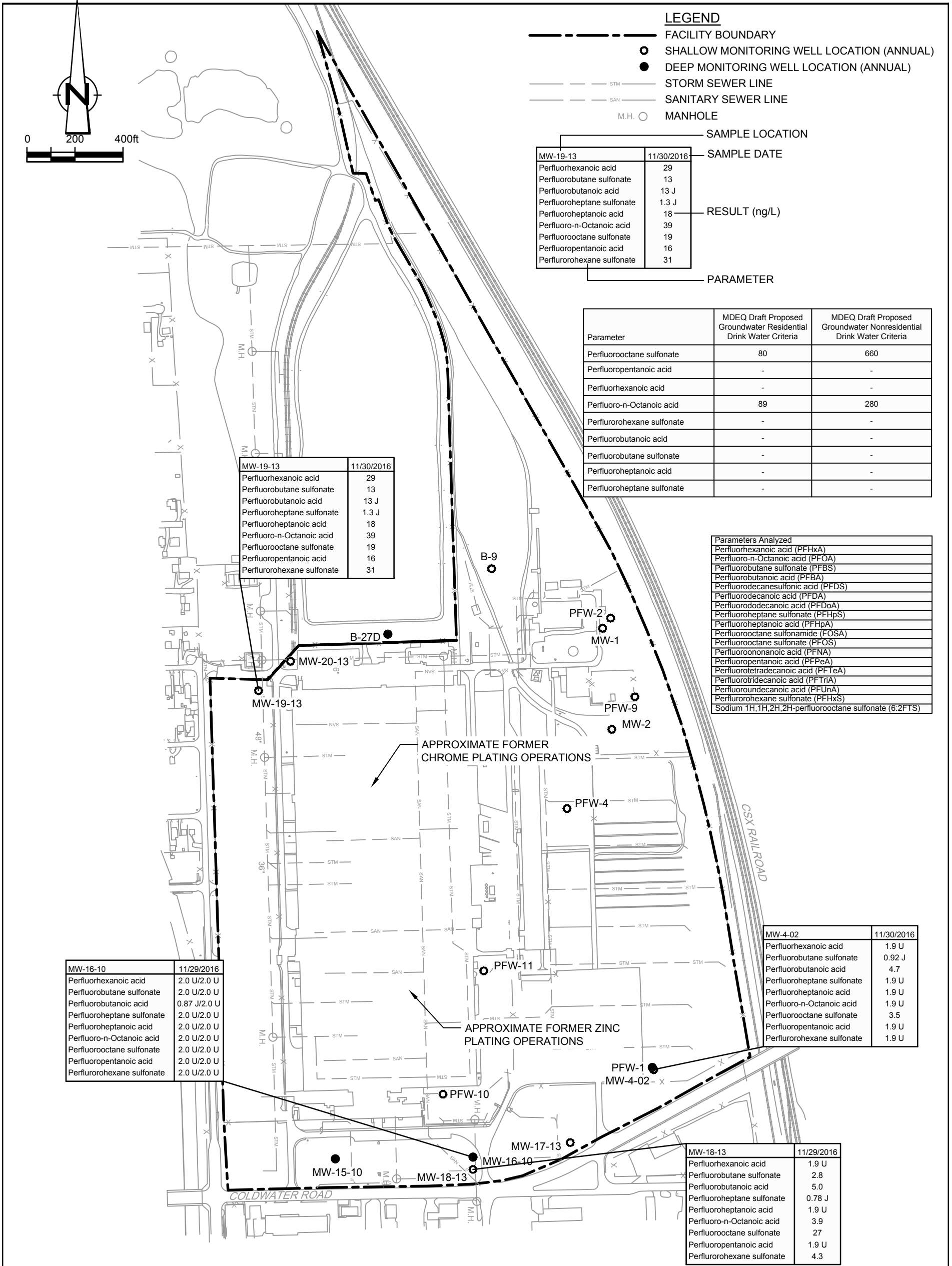


figure 1

GROUNDWATER MONITORING PFAS DETECTION SUMMARY
FORMER PEREGRINE (US), INC. COLDWATER ROAD FACILITY
Genesee Township, Michigan



NOTE:
THIS DRAWING IS FOR REFERENCE ONLY AND IS NEITHER
COMPLETE NOR TO EXACTING SCALE.

Table 1

Analytical Results Summary - PFAS Sampling
Former Peregrine (US), Inc. Coldwater Road Facility
Genesee Township, Michigan

Sample Location:		MDEQ Draft	MDEQ Draft	MW-4-02	MW-16-10	MW-16-10	MW-18-13	MW-19-13
Sample ID:		Proposed	Proposed	GW-12636-113016-SSH-5216	GW-12636-112916-SSH-4916	GW-12636-112916-SSH-5016	GW-12636-112916-SSH-4716	GW-12636-113016-SSH-5316
Sample Date:		Groundwater	Groundwater	11/30/2016	11/29/2016	11/29/2016	11/29/2016	11/30/2016
Parameters	Units	Residential Drink Water Criteria	Nonresidential Drink Water Criteria			(Duplicate)		
Perfluorhexanoic acid	ng/L	-	-	1.9 U	2.0 U	2.0 U	1.9 U	29
Perfluorobutane sulfonate	ng/L	-	-	0.92 J	2.0 U	2.0 U	2.8	13
Perfluorobutanoic acid	ng/L	-	-	4.7	2.0 U	0.87 J	5.0	13 J
Perfluorodecanesulfonic acid	ng/L	-	-	1.9 U	2.0 U	2.0 U	1.9 U	1.9 U
Perfluorodecanoic acid	ng/L	-	-	1.9 U	2.0 U	2.0 U	1.9 U	1.9 U
Perfluorododecanoic acid	ng/L	-	-	1.9 U	2.0 U	2.0 U	1.9 U	1.9 U
Perfluoroheptane sulfonate	ng/L	-	-	1.9 U	2.0 U	2.0 U	0.78 J	1.3 J
Perfluoroheptanoic acid	ng/L	-	-	1.9 U	2.0 U	2.0 U	1.9 U	18
Perfluoro-n-Octanoic acid	ng/L	89	280	1.9 U	2.0 U	2.0 U	3.9	39
Perfluorooctane sulfonamide	ng/L	-	-	1.9 UJ	2.0 UJ	2.0 UJ	1.9 UJ	1.9 UJ
Perfluorooctane sulfonate	ng/L	80	660	3.5	2.0 U	2.0 U	27	19
Perfluorooxononanoic acid	ng/L	-	-	1.9 U	2.0 U	2.0 U	1.9 U	1.9 U
Perfluoropentanoic acid	ng/L	-	-	1.9 U	2.0 U	2.0 U	1.9 U	16
Perfluorotetradecanoic acid	ng/L	-	-	1.9 U	2.0 U	2.0 U	1.9 U	1.9 U
Perfluorotridecanoic acid	ng/L	-	-	1.9 U	2.0 U	2.0 U	1.9 U	1.9 U
Perfluoroundecanoic acid	ng/L	-	-	1.9 U	2.0 U	2.0 U	1.9 U	1.9 U
Perfluorohexane sulfonate	ng/L	-	-	1.9 U	2.0 U	2.0 U	4.3	31
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	19 U	20 U	20 U	19 U	19 U
Total PFOA and PFOS	ng/L	-	-	3.5	2.0 U	2.0 U	30.9	58

Footnotes:

- U - Not detected at the associated reporting limit.
J - Estimated concentration.
UJ - Not detected; associated reporting limit is estimated.

Attachment A

DISS & Totals

Project Data:

Project Name: Former Project / Coldwater Ri Date: _____
Ref. No.: 12636 Personnel: _____

Date: 1/29/16

Personnel:

S. Howmeyer

Monitoring Well Data:

Well No: M.W/60-10

Vapour PID (ppm):

Measurement Points:

Constructed Well Depth (m/ft):

Measured Well Depth (m/ft):

Depth of Sediment: (m/ft):

Saturated Screen Length (m/ft):

Depth to Pump Intake (m./ft.): 4.5' from bottom

Well Diameter, D (cm/IN):

Well Screen Volume, V_s (L)⁽¹²⁾:

Initial Depth to Water (m/ft):

[illegible]

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.52 metres (5-foot) screen length (L). For Imperial units, $V_s = \pi r^2 (L) (2.54)^3$, where r and L are in inches. For metric units, $V_s = \pi r^2 (L)$ in m³, where r (r=D/2) and L are in m.
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p/V_s .
- (5) For conductivity, the average value of three readings $< 1 \text{ mS/cm} \pm 0.005 \text{ mS/cm}$ or where conductivity $> 1 \text{ mS/cm} \pm 0.01 \text{ mS/cm}$.

pump rate 150 ml/min

PFCs

DIJS & T

Project Data:

Date: 11/30/16

Ref. No.: 12636

Personnel:

S. Hovumeye

Monitoring Well Data:

Well No.: MW.1913

Vapour PID (ppm):

Measurement Point:

Constructed Well Depth (m/ft):

Measured Well Depth (m/ft):

Depth of Sediment: (m/ft):

Saturated Screen Length (m/ft):

Depth to Pump Intake (in ~~10~~¹³)

Well Diameter, D (cm/in):

Well Screen Volume, V_w (L)⁽²⁾:

Initial Depth to Water (m/ft):

Notes:

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 0.6 m (2 ft) above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 1.82 metres (5-foot) screen length (L). For Imperial units, $V_s = \pi \cdot (r^2) \cdot L \cdot (2.54)^3$, where r and L are in inches. For metric units, $V_s = \pi \cdot (r^2) \cdot L$ in m³, where r (r=D/2) and L are in m.
- (3) The drawdown from the initial water level should not exceed 0.1 m (0.3 ft). The pumping rate should not exceed 600 mL/min.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged = V_p / V_s .
- (5) For conductivity, the average value of three readings <1 mS/cm ± 0.005 mS/cm or where conductivity >1 mS/cm ± 0.01 mS/cm.

PFLS

DESS + Totals

ms/msd

PFCs Sampling Checklist

Date: 11/29/16

GHD only

Weather (temp./precipitation): 40s, cloudy, windy Site Name: Former Peregrine/Coldwater Rd

Field Clothing and PPE: See below

- ☒ No clothing or boots containing Gore-Tex™
- ☒ All safety boots made from polyurethane and PVC
- ☒ No materials containing Tyvek®
- ☒ Field crew has not used fabric softener on clothing
- ☒ Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- ☒ Field crew has not applied unauthorized sunscreen or insect repellent

Field Equipment:

- ☐ No Teflon® or LDPE containing materials on-site
- ☒ All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- ☒ No waterproof field books on-site
- ☒ No plastic clipboards, binders, or spiral hard cover notebooks on-site
- ☒ No adhesives (Post-It Notes) on-site

- ☒ Coolers filled with regular ice only. No chemical (blue) ice packs in possession

Sample Containers:

- ☒ All sample containers made of HDPE or polypropylene
- ☒ Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- ☐ Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- ☐ "PFC-free" water on-site for decontamination of sample equipment. No other water sources to be used.
- ☐ Alconox and Liquinox to be used as decontamination materials

Food Considerations:

- ☒ No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area

If any applicable boxes cannot be checked, the Field Lead shall describe the noncompliance issues below and work with field personnel to address noncompliance issues prior to commencement of that day's work. Corrective action shall include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

Field Clothing: not sure on all unauthorized materials on site visitors

Field Equipment: LDPE tubing has been used to sample MWS in the past

Equipment Decon: only water onsite at time was regular DI water

Field Lead Name: Steve Hoenemeyer

Field Lead Signature: Steve Hoenemeyer Time: 0830

PFCs Sampling Checklist

Date: 11/30/16

Weather (temp./precipitation): 40s, mix sun/clouds Site Name: Former Peregrine / Coldwater Rd

Field Clothing and PPE:

- ☒ No clothing or boots containing Gore-Tex™
- ☒ All safety boots made from polyurethane and PVC
- ☒ No materials containing Tyvek®
- ☒ Field crew has not used fabric softener on clothing
- ☒ Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- ☒ Field crew has not applied unauthorized sunscreen or insect repellent

Field Equipment:

- ☐ No Teflon® or LDPE containing materials on-site
- ☒ All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- ☒ No waterproof field books on-site
- ☒ No plastic clipboards, binders, or spiral hard cover notebooks on-site
- ☒ No adhesives (Post-It Notes) on-site

- ☒ Coolers filled with regular ice only. No chemical (blue) ice packs in possession

Sample Containers:

- ☒ All sample containers made of HDPE or polypropylene
- ☒ Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- ☐ Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- ☐ "PFC-free" water on-site for decontamination of sample equipment. No other water sources to be used.
- ☐ Alconox and Liquinox to be used as decontamination materials

Food Considerations:

- ☒ No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area

If any applicable boxes cannot be checked, the Field Lead shall describe the noncompliance issues below and work with field personnel to address noncompliance issues prior to commencement of that day's work. Corrective action shall include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

Clothing: washed 4 times prior to initial wearing - 100% cotton
Equipment Decon: used all new tubing in all MWs
Food: Other companies using site may have other food products

Field Lead Name: Steve Horeneyer

Field Lead Signature: [Signature] Time: 0730

Attachment B



Memorandum

January 26, 2017

To: Mike Tomka

Ref. No.: 012636-T09-03Y16

From: *TLB*
Nancy Bergstrom/tl/174/Det

Tel: 734-453-5123

Subject: Analytical Results and Full Validation
PFC Groundwater Sampling
Racer-Peregrine Site
Genesee County, Michigan
November 2016

1. Introduction

This document details a validation of analytical results for groundwater samples collected in support of the PFC Groundwater Sampling at the Racer-Peregrine Site during November 2016. Samples were submitted to TestAmerica Laboratories, Inc., located in West Sacramento, California. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, calibration data, blank data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spike (MS) samples and field quality assurance/quality control (QA/QC) samples. The assessment of analytical and in-house data included checks for: data consistency (by observing comparability of duplicate analyses), adherence to accuracy and precision criteria, and transmittal errors.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

- i) "Quality Assurance Project Plan (QAPP) for the RCRA Facility Investigation (RFI) at Former Peregrine (US), Inc. Coldwater Road Facility" May 15, 2000
- ii) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", United States Environmental Protection Agency (USEPA) 540/R-99-008, October 1999

Item ii) will subsequently be referred to as the "Guidelines" in this Memorandum.

2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.



All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (4 +/- 2°C).

3. Initial Calibration - Organic Analyses

3.1 LC/MS

To quantify perfluorinated hydrocarbons (PFC) of interest in samples, calibration of the LC/MS over a specific concentration range must be performed. Initially, a calibration curve consisting of a minimum of five concentration levels containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range. Linearity of the calibration curve and instrument sensitivity are evaluated against the following criteria:

- i) For average response factor (RFa), the relative standard deviation (RSD) for all compounds quantitated by isotope dilution must be <35% for the curve to be valid
- ii) For average response factor (RFa), the relative standard deviation (RSD) for all compounds quantitated by internal standard must be <50% for the curve to be valid

The initial calibration data for PFCs were reviewed. All compounds met the above criteria for sensitivity and linearity.

4. Continuing Calibration - Organic Analyses

4.1 LC/MS

To ensure that instrument calibration for PFC analyses is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed at the beginning of a run, the end of a run, and after every ten samples.

The following criteria were employed to evaluate continuing calibration data:

- i) The recovery for the CCV standards must be equal to or within 60-140% for all compounds quantitated by isotope dilution and equal to or within 50-150% for all compounds quantitated by internal standard
- ii) The recovery of the isotope dilution analytes (IDA) must be equal to or within 50-150%

Calibration standards were analyzed at the required frequency, and the results met the above criteria for instrument sensitivity and stability.

5. Laboratory Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.



5.1 Organic Analyses

Table 4 presents the qualified sample results due to analyte concentrations in the method blanks. All remaining method blanks were non-detect or method blank detections were associated with investigative samples that reported non-detect concentrations.

6. Isotope Dilution Analytes (IDA)

IDA data were evaluated for all PFC sample analyses.

6.1 Organics Analyses

IDAs are isotopically labeled analogs of the analytes of interest added to the investigative and QC samples at the time of extraction. All results are then calculated as a ratio of the IDA responses.

The IDA recovery results for each sample were evaluated against the following criteria:

- i) IDA recoveries must be within 25-150%

The recovery of IDA 13C8 FOSA was below the acceptance limits in all investigative and field QA/QC samples. In addition, the IDA 13C4 PFBA was recovered below the acceptance criteria in one investigative sample. Table 5 presents the qualified sample data due to outlying IDA recoveries. All remaining PFC IDA recoveries met the above criteria or outlying recoveries did not result in qualification.

7. Laboratory Control Sample Analyses

LCS and/or laboratory control sample duplicates (LCSD) are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects. The relative percent difference (RPD) of the LCS/LCSD recoveries is used to evaluate analytical precision.

For this study, LCS/LCSD were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

7.1 Organic Analyses

The LCS/LCSD contained all compounds of interest. The LCS recovery of one PFC exceeded the percent recovery criteria for one LCS. This analyte was not detected in the associated investigative samples and qualification was not required. All remaining LCS recoveries and RPDs were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

8. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.



MS/MSD analyses were performed as specified in Table 1.

8.1 Organic Analyses

The MS/MSD samples were spiked with all compounds of interest. The MS/MSD recoveries of one PFC exceeded the percent recovery criteria for one MS/MSD sample. This analyte was not detected in the associated investigative sample and qualification was not required. All remaining percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

9. Field QA/QC Samples

The field QA/QC consisted of one field blank sample, one rinse blank sample, and one equipment blank sample.

9.1 Field, Rinse and Equipment Blank Sample Analysis

To assess field decontamination procedures, ambient conditions at the site, and cleanliness of sample containers, one field blank, one rinse blank and one equipment blank were submitted for analysis, as identified in Table 1. Perfluorotetradecanoic acid was detected in all blank samples, but all perfluorotetradecanoic acid detections in investigative samples were previously qualified due to method blank contamination. Further qualification of the investigative sample data was not required. All remaining results were non-detect for the analytes of interest.

9.2 Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, one field duplicate sample set was collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value for water samples.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

10. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL were qualified as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the RL in Table 2.



11. Target Compound Identification

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to the identification criteria established by the methods. The organic compounds reported adhered to the specified identification criteria.

12. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Table 1

Sample Collection and Analysis Summary
PFC Groundwater Sampling
Racer - Peregrine Site
Genesee County, Michigan
November 2016

Analysis/Parameters

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	PFC	Comments
TA-WS SDG No.: 240-66232-1						
GW-12636-112916-SSH-4716	MW-18-13	Water	11/29/2016	14:31	X	
RE-12636-112916-SSH-4816	-	Water	11/29/2016	15:00	X	RB
GW-12636-112916-SSH-4916	MW-16-10	Water	11/29/2016	16:01	X	
GW-12636-112916-SSH-5016	MW-16-10	Water	11/29/2016	16:05	X	FD (MW-16-10)
W-12636-113016-SSH-5116	-	Water	11/30/2016	09:00	X	FB
GW-12636-113016-SSH-5216	MW-4-02	Water	11/30/2016	10:26	X	MS/MSD
GW-12636-113016-SSH-5316	MW-19-13	Water	11/30/2016	11:36	X	
EQUIPMENT BLANK -1	-	Water	11/29/2016	11:30	X	EB

Notes:

- RB - Rinse Blank
- FD - Field Duplicate sample of sample in parenthesis
- FB - Field Blank
- EB - Equipment Blank
- MS/MSD - Matrix Spike/Matrix Spike Duplicate
- PFC - Perfluorinated Hydrocarbons
- TA-WS - TestAmerica Laboratories, Inc. - West Sacramento, California
- SDG - Sample Delivery Group

Table 2

Validated Analytical Summary Results
PFC Groundwater Sampling
RACER-Peregrine Site
Genesee County, Michigan
November 2016

Location ID:	MW-4-02	MW-16-10	MW-16-10	MW-18-13
Sample Name:	GW-12636-113016-SSH-5216	GW-12636-112916-SSH-4916	GW-12636-112916-SSH-5016	GW-12636-112916-SSH-4716
Sample Date:	11/30/2016	11/29/2016	11/29/2016	11/29/2016
Depth:	--	--	--	--
Parameters	Duplicate			
Semivolatile Organic Compounds				
Perfluorhexanoic acid	1.9 U	2.0 U	2.0 U	1.9 U
Perfluoro-n-Octanoic acid	1.9 U	2.0 U	2.0 U	3.9
Perfluorobutane sulfonate	0.92 J	2.0 U	2.0 U	2.8
Perfluorobutanoic acid	4.7	2.0 U	0.87 J	5.0
Perfluorodecanesulfonic acid	1.9 U	2.0 U	2.0 U	1.9 U
Perfluorodecanoic acid	1.9 U	2.0 U	2.0 U	1.9 U
Perfluorododecanoic acid	1.9 U	2.0 U	2.0 U	1.9 U
Perfluoroheptane sulfonate	1.9 U	2.0 U	2.0 U	0.78 J
Perfluoroheptanoic acid	1.9 U	2.0 U	2.0 U	1.9 U
Perfluorooctane sulfonamide	1.9 UJ	2.0 UJ	2.0 UJ	1.9 UJ
Perfluorooctane sulfonate	3.5	2.0 U	2.0 U	27
Perfluorononanoic acid	1.9 U	2.0 U	2.0 U	1.9 U
Perfluoropentanoic acid	1.9 U	2.0 U	2.0 U	1.9 U
Perfluorotetradecanoic acid	1.9 U	2.0 U	2.0 U	1.9 U
Perfluorotridecanoic acid	1.9 U	2.0 U	2.0 U	1.9 U
Perfluoroundecanoic acid	1.9 U	2.0 U	2.0 U	1.9 U
Perfluorohexane sulfonate	1.9 U	2.0 U	2.0 U	4.3
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	19 U	20 U	20 U	19 U

Table 2

Validated Analytical Summary Results
PFC Groundwater Sampling
RACER-Peregrine Site
Genesee County, Michigan
November 2016

Location ID:	MW-19-13	
Sample Name:	GW-12636-113016-SSH-5316	
Sample Date:	11/30/2016	
Depth:	--	
Parameters		
Semivolatile Organic Compounds		
Perfluorhexanoic acid	ng/L	29
Perfluoro-n-Octanoic acid	ng/L	39
Perfluorobutane sulfonate	ng/L	13
Perfluorobutanoic acid	ng/L	13 J
Perfluorodecanesulfonic acid	ng/L	1.9 U
Perfluorodecanoic acid	ng/L	1.9 U
Perfluorododecanoic acid	ng/L	1.9 U
Perfluoroheptane sulfonate	ng/L	1.9 U
Perfluoroheptanoic acid	ng/L	1.3 J
Perfluorooctane sulfonamide	ng/L	18
Perfluorooctane sulfonate	ng/L	1.9 UJ
Perfluorononanoic acid	ng/L	19
Perfluoropentanoic acid	ng/L	1.9 U
Perfluorotetradecanoic acid	ng/L	16
Perfluorotridecanoic acid	ng/L	1.9 U
Perfluoroundecanoic acid	ng/L	1.9 U
Perfluorohexane sulfonate	ng/L	31
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	19 U

Notes:

U - Not detected at the associated reporting limit
J - Estimated concentration
UJ - Not detected; associated reporting limit is estimated

Table 3

Analytical Methods
PFC Groundwater Sampling
Racer - Peregrine Site
Genesee County, Michigan
November 2016

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
PFC	EPA 537 (Modified)	Water	7	40

Notes:

PFC - Perfluorinated Hydrocarbons

Method References:

EPA-MCAWW - "Methods for Chemical Analysis of Water and Waste," EPA-600/4-79-020, revised March 1983, with subsequent revisions

Table 4

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
PFC Groundwater Sampling
Racer - Peregrine Site
Genesee County, Michigan
November 2016

Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result	Sample ID	Original Result	Qualified Result	Units
PFC	Perfluorotetradecanoic acid	12/22/2016	0.560 J	GW-12636-113016-SSH-5216	0.65 JB	1.9 U	ng/L
PFC	Perfluorotetradecanoic acid	12/22/2016	0.610 J	GW-12636-112916-SSH-4716	0.60 JB	1.9 U	ng/L
				RE-12636-112916-SSH-4816	0.31 JB	1.8 U	ng/L
				GW-12636-112916-SSH-4916	0.42 JB	2.0 U	ng/L
				GW-12636-112916-SSH-5016	0.50 JB	2.0 U	ng/L
				GW-12636-113016-SSH-5316	0.54 JB	1.9 U	ng/L
				EQUIPMENT BLANK -1	0.60 JB	1.9 U	ng/L
PFC	Perfluorotetradecanoic acid	12/22/2016	0.541 J	W-12636-113016-SSH-5116	0.87 JB	1.9 U	ng/L

Notes:

- PFC - Perfluorinated Hydrocarbons
 U - Not detected at the associated reporting limit
 J - Estimated concentration
 B - Laboratory qualifier - result detected in associated method blank

Table 5

Qualified Sample Data Due to Outlying Isotope Dilution Analyte Recoveries
PFC Groundwater Sampling
Racer - Peregrine Site
Genesee County, Michigan
November 2016

Parameter	Sample ID	IDA	IDA % Recovery	Control Limits % Recovery	Analyte	Qualified Result	Units
PFC	GW-12636-112916-SSH-4716	13C8 FOSA	7	25-150	Perfluorooctane Sulfonamide	1.9 UJ	ng/L
PFC	RE-12636-112916-SSH-4816	13C8 FOSA	4	25-150	Perfluorooctane Sulfonamide	1.8 UJ	ng/L
PFC	GW-12636-112916-SSH-4916	13C8 FOSA	6	25-150	Perfluorooctane Sulfonamide	2.0 UJ	ng/L
PFC	GW-12636-112916-SSH-5016	13C8 FOSA	11	25-150	Perfluorooctane Sulfonamide	2.0 UJ	ng/L
PFC	W-12636-113016-SSH-5116	13C8 FOSA	8	25-150	Perfluorooctane Sulfonamide	1.9 UJ	ng/L
PFC	GW-12636-113016-SSH-5216	13C8 FOSA	4	25-150	Perfluorooctane Sulfonamide	1.9 UJ	ng/L
PFC	GW-12636-113016-SSH-5316	13C8 FOSA	5	25-150	Perfluorooctane Sulfonamide	1.9 UJ	ng/L
PFC	EQUIPMENT BLANK -1	13C8 FOSA	3	25-150	Perfluorooctane Sulfonamide	1.9 UJ	ng/L
PFC	GW-12636-113016-SSH-5316	13C4 PFBA	14	25-150	Perfluorobutanoic Acid	13 J	ng/L

Notes:

- J - Estimated concentration
- UJ - Not detected; associated reporting limit is estimated
- PFC - Perfluorinated Hydrocarbons
- IDA - Isotope Dilution Analyte

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Sacramento

880 Riverside Parkway

West Sacramento, CA 95605

Tel: (916)373-5600

TestAmerica Job ID: 320-24062-1

Client Project/Site: PFCs

For:

GHD Services Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Rawa Fleisher



Authorized for release by:

12/29/2016 3:08:54 PM

Jill Kellmann, Manager of Project Management

(916)374-4402

jill.kellmann@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Job ID: 320-24062-1

Laboratory: TestAmerica Sacramento

Narrative

Receipt

The samples were received on 12/1/2016 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.9° C.

LCMS

Method(s) 537 (modified): The following samples were diluted due to the nature of the sample matrix: (320-23933-B-1-A), (320-23933-B-1-B MS) and (320-23933-B-1-C MSD). Elevated reporting limits (RLs) are provided.

Method(s) 537 (modified): Due to the high concentration of Perfluorobutanoic acid (PFBA), Perfluoroheptanoic acid (PFHpA), Perfluorohexanoic acid (PFHxA) and Perfluorooctanesulfonic acid (PFOS), 6:2FTS, Perfluorohexanesulfonic acid (PFHxS) and Perfluoropentanoic acid (PFPeA), the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 320-140894 and analytical batch 320-143551 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 537 (modified): Preparation batch 320-140698 was inadvertently extracted without M2-6:2FTS which is required to be added separately. As a result, 6:2FTS can not be quantitated. 320-24062-6 was re-extracted with all IDAs included; however, the Matrix Spike (MS) / Matrix Spike Duplicate (MSD) could not be re-extracted due to limited sample. GW-12636-113016-SSH-5216 (320-24062-6), GW-12636-113016-SSH-5216 (320-24062-6[MS]), GW-12636-113016-SSH-5216 (320-24062-6[MSD]), (LCS 320-140698/2-A) and (MB 320-140698/1-A)

Method(s) 537 (modified): The laboratory control sample (LCS), matrix spike (MS) and matrix spike duplicate (MSD) for preparation batch 320-140698 and analytical batch 320-143551 recovered outside control limits for the following analytes: Perfluorotetradecanoic acid (PFTeA). These analytes were biased high in the LCS, MS, MSD and were below the reporting limit (RL) in the associated samples; therefore, the data have been reported.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following samples is below the method recommended limit: GW-12636-112916-SSH-4716 (320-24062-1), RE-12636-112916-SSH-4816 (320-24062-2), GW-12636-112916-SSH-4916 (320-24062-3), GW-12636-112916-SSH-5016 (320-24062-4), W-12636-113016-SSH-5116 (320-24062-5), GW-12636-113016-SSH-5216 (320-24062-6), GW-12636-113016-SSH-5216 (320-24062-6[MS]), GW-12636-113016-SSH-5216 (320-24062-6[MSD]), GW-12636-113016-SSH-5316 (320-24062-7), EQUIPMENT BLANK -1 (320-24062-8), (LCS 320-140894/2-A), (LCSD 320-141114/3-A), (MB 320-140894/1-A), (320-23933-B-1-A), (320-23933-B-1-B MS) and (320-23933-B-1-C MSD). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s). All detection limits are below the lower calibration.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method(s) 3535: Due to the excessive amount of sediment in sample containers the aqueous portion of these samples was decanted to new containers prior to spiking and extraction. GW-12636-112916-SSH-4916 (320-24062-3) and GW-12636-112916-SSH-5016 (320-24062-4)

Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-141114.

Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with this sample. As there were no additional bottles for the MS/MSD, the original batch contains the MS/MSD but were not fortified with the add on spikes.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Client Sample ID: GW-12636-112916-SSH-4716

Lab Sample ID: 320-24062-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.0		1.9	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.9		1.9	0.71	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.60	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.8		1.9	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	4.3		1.9	0.82	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.78	J	1.9	0.67	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	27		1.9	1.2	ng/L	1		537 (modified)	Total/NA

Client Sample ID: RE-12636-112916-SSH-4816

Lab Sample ID: 320-24062-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.31	J B	1.8	0.18	ng/L	1		537 (modified)	Total/NA

Client Sample ID: GW-12636-112916-SSH-4916

Lab Sample ID: 320-24062-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.42	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA

Client Sample ID: GW-12636-112916-SSH-5016

Lab Sample ID: 320-24062-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.87	J	2.0	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.50	J B	2.0	0.20	ng/L	1		537 (modified)	Total/NA

Client Sample ID: W-12636-113016-SSH-5116

Lab Sample ID: 320-24062-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.87	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA

Client Sample ID: GW-12636-113016-SSH-5216

Lab Sample ID: 320-24062-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.7		1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.65	J F1 B *	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.92	J	1.9	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		1.9	1.2	ng/L	1		537 (modified)	Total/NA

Client Sample ID: GW-12636-113016-SSH-5316

Lab Sample ID: 320-24062-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	13		1.9	0.44	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	16		1.9	0.95	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	29		1.9	0.76	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	18		1.9	0.77	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	39		1.9	0.72	ng/L	1		537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.54	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	13		1.9	0.88	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	31		1.9	0.84	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	1.3	J	1.9	0.69	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Detection Summary

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Client Sample ID: GW-12636-113016-SSH-5316 (Continued)

Lab Sample ID: 320-24062-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	19		1.9	1.2	ng/L	1		537 (modified)	Total/NA

Client Sample ID: EQUIPMENT BLANK -1

Lab Sample ID: 320-24062-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorotetradecanoic acid (PFTeA)	0.60	J B	1.9	0.19	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Client Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Client Sample ID: GW-12636-112916-SSH-4716

Lab Sample ID: 320-24062-1

Date Collected: 11/29/16 14:31

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	5.0		1.9	0.43	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.93	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.74	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.76	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorooctanoic acid (PFOA)	3.9		1.9	0.71	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.62	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.71	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.55	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.52	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorotetradecanoic acid (PFTeA)	0.60	J B	1.9	0.19	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorobutanesulfonic acid (PFBS)	2.8		1.9	0.87	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorohexanesulfonic acid (PFHxS)	4.3		1.9	0.82	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.78	J	1.9	0.67	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorooctanesulfonic acid (PFOS)	27		1.9	1.2	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.1	ng/L		12/06/16 17:40	12/22/16 11:38	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.9	0.60	ng/L		12/06/16 17:40	12/22/16 11:38	1
6:2FTS	ND		19	3.6	ng/L		12/06/16 17:40	12/22/16 11:38	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	7	*	25 - 150	12/06/16 17:40	12/22/16 11:38	1
13C4 PFBA	29		25 - 150	12/06/16 17:40	12/22/16 11:38	1
13C2 PFHxA	96		25 - 150	12/06/16 17:40	12/22/16 11:38	1
13C4 PFOA	103		25 - 150	12/06/16 17:40	12/22/16 11:38	1
13C5 PFNA	97		25 - 150	12/06/16 17:40	12/22/16 11:38	1
13C2 PFDA	93		25 - 150	12/06/16 17:40	12/22/16 11:38	1
13C2 PFUnA	99		25 - 150	12/06/16 17:40	12/22/16 11:38	1
13C2 PFDoA	102		25 - 150	12/06/16 17:40	12/22/16 11:38	1
18O2 PFHxS	119		25 - 150	12/06/16 17:40	12/22/16 11:38	1
13C4 PFOS	133		25 - 150	12/06/16 17:40	12/22/16 11:38	1
13C4-PFHpA	107		25 - 150	12/06/16 17:40	12/22/16 11:38	1
13C5 PFPeA	77		25 - 150	12/06/16 17:40	12/22/16 11:38	1
M2-6:2FTS	128		25 - 150	12/06/16 17:40	12/22/16 11:38	1

Client Sample ID: RE-12636-112916-SSH-4816

Lab Sample ID: 320-24062-2

Date Collected: 11/29/16 15:00

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.8	0.41	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.89	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.71	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.72	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.67	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.59	ng/L		12/06/16 17:40	12/22/16 11:46	1

TestAmerica Sacramento

Client Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Client Sample ID: RE-12636-112916-SSH-4816

Lab Sample ID: 320-24062-2

Date Collected: 11/29/16 15:00

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorodecanoic acid (PFDA)	ND		1.8	0.40	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.67	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.53	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.8	0.50	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluorotetradecanoic acid (PFTeA)	0.31	J B	1.8	0.18	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.83	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.8	0.78	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.64	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	1.1	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	1.1	ng/L		12/06/16 17:40	12/22/16 11:46	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.8	0.57	ng/L		12/06/16 17:40	12/22/16 11:46	1
6:2FTS	ND		18	3.4	ng/L		12/06/16 17:40	12/22/16 11:46	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	4	*	25 - 150	12/06/16 17:40	12/22/16 11:46	1
13C4 PFBA	56		25 - 150	12/06/16 17:40	12/22/16 11:46	1
13C2 PFHxA	49		25 - 150	12/06/16 17:40	12/22/16 11:46	1
13C4 PFOA	56		25 - 150	12/06/16 17:40	12/22/16 11:46	1
13C5 PFNA	59		25 - 150	12/06/16 17:40	12/22/16 11:46	1
13C2 PFDA	75		25 - 150	12/06/16 17:40	12/22/16 11:46	1
13C2 PFUnA	97		25 - 150	12/06/16 17:40	12/22/16 11:46	1
13C2 PFDoA	109		25 - 150	12/06/16 17:40	12/22/16 11:46	1
18O2 PFHxS	133		25 - 150	12/06/16 17:40	12/22/16 11:46	1
13C4 PFOS	141		25 - 150	12/06/16 17:40	12/22/16 11:46	1
13C4-PFHpA	50		25 - 150	12/06/16 17:40	12/22/16 11:46	1
13C5 PFPeA	59		25 - 150	12/06/16 17:40	12/22/16 11:46	1
M2-6:2FTS	142		25 - 150	12/06/16 17:40	12/22/16 11:46	1

Client Sample ID: GW-12636-112916-SSH-4916

Lab Sample ID: 320-24062-3

Date Collected: 11/29/16 16:01

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.45	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.98	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.78	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.79	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.74	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.74	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorotetradecanoic acid (PFTeA)	0.42	J B	2.0	0.20	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.91	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.86	ng/L		12/06/16 17:40	12/22/16 11:53	1

TestAmerica Sacramento

Client Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Client Sample ID: GW-12636-112916-SSH-4916

Lab Sample ID: 320-24062-3

Date Collected: 11/29/16 16:01

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	1.3	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		12/06/16 17:40	12/22/16 11:53	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.63	ng/L		12/06/16 17:40	12/22/16 11:53	1
6:2FTS	ND		20	3.8	ng/L		12/06/16 17:40	12/22/16 11:53	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	6	*	25 - 150				12/06/16 17:40	12/22/16 11:53	1
13C4 PFBA	52		25 - 150				12/06/16 17:40	12/22/16 11:53	1
13C2 PFHxA	120		25 - 150				12/06/16 17:40	12/22/16 11:53	1
13C4 PFOA	118		25 - 150				12/06/16 17:40	12/22/16 11:53	1
13C5 PFNA	123		25 - 150				12/06/16 17:40	12/22/16 11:53	1
13C2 PFDA	131		25 - 150				12/06/16 17:40	12/22/16 11:53	1
13C2 PFUnA	132		25 - 150				12/06/16 17:40	12/22/16 11:53	1
13C2 PFDoA	127		25 - 150				12/06/16 17:40	12/22/16 11:53	1
18O2 PFHxS	132		25 - 150				12/06/16 17:40	12/22/16 11:53	1
13C4 PFOS	139		25 - 150				12/06/16 17:40	12/22/16 11:53	1
13C4-PFHxA	124		25 - 150				12/06/16 17:40	12/22/16 11:53	1
13C5 PFPeA	110		25 - 150				12/06/16 17:40	12/22/16 11:53	1
M2-6:2FTS	130		25 - 150				12/06/16 17:40	12/22/16 11:53	1

Client Sample ID: GW-12636-112916-SSH-5016

Lab Sample ID: 320-24062-4

Date Collected: 11/29/16 16:05

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.87	J	2.0	0.45	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.97	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.77	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.79	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.73	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.64	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.43	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.73	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.57	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.54	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorotetradecanoic acid (PFTeA)	0.50	J B	2.0	0.20	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.90	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.85	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.70	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	1.3	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		12/06/16 17:40	12/22/16 12:01	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.63	ng/L		12/06/16 17:40	12/22/16 12:01	1
6:2FTS	ND		20	3.7	ng/L		12/06/16 17:40	12/22/16 12:01	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	11	*	25 - 150				12/06/16 17:40	12/22/16 12:01	1
13C4 PFBA	52		25 - 150				12/06/16 17:40	12/22/16 12:01	1

TestAmerica Sacramento

Client Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Client Sample ID: GW-12636-112916-SSH-5016

Lab Sample ID: 320-24062-4

Date Collected: 11/29/16 16:05

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	120		25 - 150	12/06/16 17:40	12/22/16 12:01	1
13C4 PFOA	119		25 - 150	12/06/16 17:40	12/22/16 12:01	1
13C5 PFNA	121		25 - 150	12/06/16 17:40	12/22/16 12:01	1
13C2 PFDA	128		25 - 150	12/06/16 17:40	12/22/16 12:01	1
13C2 PFUnA	126		25 - 150	12/06/16 17:40	12/22/16 12:01	1
13C2 PFDoA	116		25 - 150	12/06/16 17:40	12/22/16 12:01	1
18O2 PFHxS	125		25 - 150	12/06/16 17:40	12/22/16 12:01	1
13C4 PFOS	130		25 - 150	12/06/16 17:40	12/22/16 12:01	1
13C4-PFHpA	122		25 - 150	12/06/16 17:40	12/22/16 12:01	1
13C5 PFPeA	110		25 - 150	12/06/16 17:40	12/22/16 12:01	1
M2-6:2FTS	131		25 - 150	12/06/16 17:40	12/22/16 12:01	1

Client Sample ID: W-12636-113016-SSH-5116

Lab Sample ID: 320-24062-5

Date Collected: 11/30/16 09:00

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9	0.43	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.93	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.74	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.76	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.71	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.62	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.71	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.55	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.52	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorotetradecanoic acid (PFTeA)	0.87	J B	1.9	0.19	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.87	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.82	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.67	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	1.2	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.1	ng/L		12/07/16 17:31	12/22/16 13:23	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.9	0.60	ng/L		12/07/16 17:31	12/22/16 13:23	1
6:2FTS	ND		19	3.6	ng/L		12/07/16 17:31	12/22/16 13:23	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	8	*	25 - 150				12/07/16 17:31	12/22/16 13:23	1
13C4 PFBA	26		25 - 150				12/07/16 17:31	12/22/16 13:23	1
13C2 PFHxA	25		25 - 150				12/07/16 17:31	12/22/16 13:23	1
13C4 PFOA	34		25 - 150				12/07/16 17:31	12/22/16 13:23	1
13C5 PFNA	40		25 - 150				12/07/16 17:31	12/22/16 13:23	1
13C2 PFDA	50		25 - 150				12/07/16 17:31	12/22/16 13:23	1
13C2 PFUnA	62		25 - 150				12/07/16 17:31	12/22/16 13:23	1
13C2 PFDoA	74		25 - 150				12/07/16 17:31	12/22/16 13:23	1
18O2 PFHxS	115		25 - 150				12/07/16 17:31	12/22/16 13:23	1
13C4 PFOS	118		25 - 150				12/07/16 17:31	12/22/16 13:23	1
13C4-PFHpA	30		25 - 150				12/07/16 17:31	12/22/16 13:23	1

TestAmerica Sacramento

Client Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Client Sample ID: W-12636-113016-SSH-5116

Lab Sample ID: 320-24062-5

Date Collected: 11/30/16 09:00

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	27		25 - 150	12/07/16 17:31	12/22/16 13:23	1
M2-6:2FTS	106		25 - 150	12/07/16 17:31	12/22/16 13:23	1

Client Sample ID: GW-12636-113016-SSH-5216

Lab Sample ID: 320-24062-6

Date Collected: 11/30/16 10:26

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	4.7		1.9	0.44	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.94	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.75	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.76	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.71	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.62	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.71	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorotetradecanoic acid (PFTeA)	0.65	J F1 B *	1.9	0.19	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorobutanesulfonic acid (PFBS)	0.92	J	1.9	0.87	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.83	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.68	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorooctanesulfonic acid (PFOS)	3.5		1.9	1.2	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		12/05/16 19:37	12/22/16 10:08	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.9	0.61	ng/L		12/05/16 19:37	12/22/16 10:08	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	4	*	25 - 150	12/05/16 19:37	12/22/16 10:08	1
13C4 PFBA	27		25 - 150	12/05/16 19:37	12/22/16 10:08	1
13C2 PFHxA	88		25 - 150	12/05/16 19:37	12/22/16 10:08	1
13C4 PFOA	104		25 - 150	12/05/16 19:37	12/22/16 10:08	1
13C5 PFNA	111		25 - 150	12/05/16 19:37	12/22/16 10:08	1
13C2 PFDA	111		25 - 150	12/05/16 19:37	12/22/16 10:08	1
13C2 PFUnA	125		25 - 150	12/05/16 19:37	12/22/16 10:08	1
13C2 PFDoA	115		25 - 150	12/05/16 19:37	12/22/16 10:08	1
18O2 PFHxS	115		25 - 150	12/05/16 19:37	12/22/16 10:08	1
13C4 PFOS	130		25 - 150	12/05/16 19:37	12/22/16 10:08	1
13C4-PFHpA	103		25 - 150	12/05/16 19:37	12/22/16 10:08	1
13C5 PFPeA	71		25 - 150	12/05/16 19:37	12/22/16 10:08	1

Method: 537 (modified) - Perfluorinated Hydrocarbons - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
6:2FTS	ND		19	3.5	ng/L		12/07/16 17:31	12/22/16 13:31	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
M2-6:2FTS	153	*	25 - 150				12/07/16 17:31	12/22/16 13:31	1

TestAmerica Sacramento

Client Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Client Sample ID: GW-12636-113016-SSH-5316

Lab Sample ID: 320-24062-7

Date Collected: 11/30/16 11:36

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	13		1.9	0.44	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluoropentanoic acid (PFPeA)	16		1.9	0.95	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorohexanoic acid (PFHxA)	29		1.9	0.76	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluoroheptanoic acid (PFHpA)	18		1.9	0.77	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorooctanoic acid (PFOA)	39		1.9	0.72	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.72	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorotetradecanoic acid (PFTeA)	0.54	J B	1.9	0.19	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorobutanesulfonic acid (PFBS)	13		1.9	0.88	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorohexanesulfonic acid (PFHxS)	31		1.9	0.84	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.3	J	1.9	0.69	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorooctanesulfonic acid (PFOS)	19		1.9	1.2	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		12/06/16 17:40	12/22/16 12:08	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.9	0.61	ng/L		12/06/16 17:40	12/22/16 12:08	1
6:2FTS	ND		19	3.7	ng/L		12/06/16 17:40	12/22/16 12:08	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	5	*	25 - 150	12/06/16 17:40	12/22/16 12:08	1
13C4 PFBA	14	*	25 - 150	12/06/16 17:40	12/22/16 12:08	1
13C2 PFHxA	76		25 - 150	12/06/16 17:40	12/22/16 12:08	1
13C4 PFOA	97		25 - 150	12/06/16 17:40	12/22/16 12:08	1
13C5 PFNA	110		25 - 150	12/06/16 17:40	12/22/16 12:08	1
13C2 PFDA	118		25 - 150	12/06/16 17:40	12/22/16 12:08	1
13C2 PFUnA	126		25 - 150	12/06/16 17:40	12/22/16 12:08	1
13C2 PFDoA	121		25 - 150	12/06/16 17:40	12/22/16 12:08	1
18O2 PFHxS	105		25 - 150	12/06/16 17:40	12/22/16 12:08	1
13C4 PFOS	128		25 - 150	12/06/16 17:40	12/22/16 12:08	1
13C4-PFHpa	90		25 - 150	12/06/16 17:40	12/22/16 12:08	1
13C5 PFPeA	44		25 - 150	12/06/16 17:40	12/22/16 12:08	1
M2-6:2FTS	132		25 - 150	12/06/16 17:40	12/22/16 12:08	1

Client Sample ID: EQUIPMENT BLANK -1

Lab Sample ID: 320-24062-8

Date Collected: 11/29/16 11:30

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9	0.44	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.95	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.75	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.77	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.72	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.63	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.42	ng/L		12/06/16 17:40	12/22/16 12:46	1

TestAmerica Sacramento

Client Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Client Sample ID: EQUIPMENT BLANK -1

Lab Sample ID: 320-24062-8

Date Collected: 11/29/16 11:30

Matrix: Water

Date Received: 12/01/16 09:50

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	ND		1.9	0.72	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.56	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorotridecanoic Acid (PFTriA)	ND		1.9	0.53	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorotetradecanoic acid (PFTeA)	0.60	J B	1.9	0.19	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.88	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorohexanesulfonic acid (PFHxS)	ND		1.9	0.83	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.68	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	1.2	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	1.2	ng/L		12/06/16 17:40	12/22/16 12:46	1
Perfluorooctane Sulfonamide (FOSA)	ND		1.9	0.61	ng/L		12/06/16 17:40	12/22/16 12:46	1
6:2FTS	ND		19	3.7	ng/L		12/06/16 17:40	12/22/16 12:46	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 FOSA	3	*	25 - 150				12/06/16 17:40	12/22/16 12:46	1
13C4 PFBA	66		25 - 150				12/06/16 17:40	12/22/16 12:46	1
13C2 PFHxA	114		25 - 150				12/06/16 17:40	12/22/16 12:46	1
13C4 PFOA	114		25 - 150				12/06/16 17:40	12/22/16 12:46	1
13C5 PFNA	131		25 - 150				12/06/16 17:40	12/22/16 12:46	1
13C2 PFDA	140		25 - 150				12/06/16 17:40	12/22/16 12:46	1
13C2 PFUnA	140		25 - 150				12/06/16 17:40	12/22/16 12:46	1
13C2 PFDoA	124		25 - 150				12/06/16 17:40	12/22/16 12:46	1
18O2 PFHxS	126		25 - 150				12/06/16 17:40	12/22/16 12:46	1
13C4 PFOS	129		25 - 150				12/06/16 17:40	12/22/16 12:46	1
13C4-PFHpA	124		25 - 150				12/06/16 17:40	12/22/16 12:46	1
13C5 PFPeA	114		25 - 150				12/06/16 17:40	12/22/16 12:46	1
M2-6:2FTS	103		25 - 150				12/06/16 17:40	12/22/16 12:46	1

TestAmerica Sacramento

Isotope Dilution Summary

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Method: 537 (modified) - Perfluorinated Hydrocarbons

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	3C8 FOS/ (25-150)	3C4 PFB/ (25-150)	3C2 PFHx (25-150)	3C4 PFO/ (25-150)	3C5 PFNA/ (25-150)	3C2 PFD/ (25-150)	3C2 PFUn (25-150)	3C2 PFDa (25-150)
320-24062-1	GW-12636-112916-SSH-4716	7 *	29	96	103	97	93	99	102
320-24062-2	RE-12636-112916-SSH-4816	4 *	56	49	56	59	75	97	109
320-24062-3	GW-12636-112916-SSH-4916	6 *	52	120	118	123	131	132	127
320-24062-4	GW-12636-112916-SSH-5016	11 *	52	120	119	121	128	126	116
320-24062-5	W-12636-113016-SSH-5116	8 *	26	25	34	40	50	62	74
320-24062-6 - RE	GW-12636-113016-SSH-5216								
320-24062-6	GW-12636-113016-SSH-5216	4 *	27	88	104	111	111	125	115
320-24062-6 MS	GW-12636-113016-SSH-5216	3 *	28	95	104	105	108	110	114
320-24062-6 MSD	GW-12636-113016-SSH-5216	3 *	26	86	96	100	101	99	104
320-24062-7	GW-12636-113016-SSH-5316	5 *	14 *	76	97	110	118	126	121
320-24062-8	EQUIPMENT BLANK -1	3 *	66	114	114	131	140	140	124
LCS 320-140698/2-A	Lab Control Sample	62	126	118	125	125	135	129	125
LCS 320-140894/2-A	Lab Control Sample	10 *	133	128	135	134	141	137	128
LCS 320-141114/2-A	Lab Control Sample	30	131	121	133	137	140	138	128
LCSD 320-141114/3-A	Lab Control Sample Dup	18 *	128	122	132	135	141	137	133
MB 320-140698/1-A	Method Blank	75	132	123	133	137	144	142	138
MB 320-140894/1-A	Method Blank	13 *	136	126	137	134	145	138	130
MB 320-141114/1-A	Method Blank	25	113	106	119	121	121	119	108

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	3O2 PFHx (25-150)	3C4 PFO/ (25-150)	3C4-PFHp (25-150)	3C5 PFPe (25-150)	12-6:2FTS (25-150)
320-24062-1	GW-12636-112916-SSH-4716	119	133	107	77	128
320-24062-2	RE-12636-112916-SSH-4816	133	141	50	59	142
320-24062-3	GW-12636-112916-SSH-4916	132	139	124	110	130
320-24062-4	GW-12636-112916-SSH-5016	125	130	122	110	131
320-24062-5	W-12636-113016-SSH-5116	115	118	30	27	106
320-24062-6 - RE	GW-12636-113016-SSH-5216					153 *
320-24062-6	GW-12636-113016-SSH-5216	115	130	103	71	
320-24062-6 MS	GW-12636-113016-SSH-5216	117	131	104	73	
320-24062-6 MSD	GW-12636-113016-SSH-5216	108	123	97	69	
320-24062-7	GW-12636-113016-SSH-5316	105	128	90	44	132
320-24062-8	EQUIPMENT BLANK -1	126	129	124	114	103
LCS 320-140698/2-A	Lab Control Sample	122	129	123	129	
LCS 320-140894/2-A	Lab Control Sample	132	142	129	135	117
LCS 320-141114/2-A	Lab Control Sample	128	136	132	134	110
LCSD 320-141114/3-A	Lab Control Sample Dup	128	135	128	134	114
MB 320-140698/1-A	Method Blank	128	135	131	136	
MB 320-140894/1-A	Method Blank	130	138	131	139	118
MB 320-141114/1-A	Method Blank	116	116	122	116	96

Surrogate Legend

13C8 FOSA = 13C8 FOSA
13C4 PFBA = 13C4 PFBA
13C2 PFHxA = 13C2 PFHxA
13C4 PFOA = 13C4 PFOA
13C5 PFNA = 13C5 PFNA
13C2 PFDA = 13C2 PFDA
13C2 PFUnA = 13C2 PFUnA
13C2 PFDa = 13C2 PFDa

TestAmerica Sacramento

Isotope Dilution Summary

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

18O2 PFHxS = 18O2 PFHxS
13C4 PFOS = 13C4 PFOS
13C4-PFHpA = 13C4-PFHpA
13C5 PFPeA = 13C5 PFPeA
M2-6:2FTS = M2-6:2FTS

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QC Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Method: 537 (modified) - Perfluorinated Hydrocarbons

Lab Sample ID: MB 320-140698/1-A

Matrix: Water

Analysis Batch: 143551

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 140698

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.46	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.99	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.79	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.75	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.75	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorotetradecanoic acid (PFTeA)	0.560	J	2.0	0.20	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.92	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.87	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	1.3	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		12/05/16 19:37	12/22/16 09:53	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.64	ng/L		12/05/16 19:37	12/22/16 09:53	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	75		25 - 150	12/05/16 19:37	12/22/16 09:53	1
13C4 PFBA	132		25 - 150	12/05/16 19:37	12/22/16 09:53	1
13C2 PFHxA	123		25 - 150	12/05/16 19:37	12/22/16 09:53	1
13C4 PFOA	133		25 - 150	12/05/16 19:37	12/22/16 09:53	1
13C5 PFNA	137		25 - 150	12/05/16 19:37	12/22/16 09:53	1
13C2 PFDA	144		25 - 150	12/05/16 19:37	12/22/16 09:53	1
13C2 PFUnA	142		25 - 150	12/05/16 19:37	12/22/16 09:53	1
13C2 PFDoA	138		25 - 150	12/05/16 19:37	12/22/16 09:53	1
18O2 PFHxS	128		25 - 150	12/05/16 19:37	12/22/16 09:53	1
13C4 PFOS	135		25 - 150	12/05/16 19:37	12/22/16 09:53	1
13C4-PFHpA	131		25 - 150	12/05/16 19:37	12/22/16 09:53	1
13C5 PFPeA	136		25 - 150	12/05/16 19:37	12/22/16 09:53	1

Lab Sample ID: LCS 320-140698/2-A

Matrix: Water

Analysis Batch: 143551

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 140698

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	44.2		ng/L		111	74 - 138
Perfluoropentanoic acid (PFPeA)	40.0	42.2		ng/L		106	69 - 134
Perfluorohexanoic acid (PFHxA)	40.0	41.9		ng/L		105	70 - 136
Perfluoroheptanoic acid (PFHpA)	40.0	41.7		ng/L		104	63 - 135
Perfluorooctanoic acid (PFOA)	40.0	40.3		ng/L		101	63 - 141
Perfluorononanoic acid (PFNA)	40.0	42.4		ng/L		106	71 - 140
Perfluorodecanoic acid (PFDA)	40.0	38.9		ng/L		97	66 - 141
Perfluoroundecanoic acid (PFUnA)	40.0	41.1		ng/L		103	68 - 139
Perfluorododecanoic acid (PFDoA)	40.0	39.6		ng/L		99	71 - 139

TestAmerica Sacramento

QC Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 320-140698/2-A

Matrix: Water

Analysis Batch: 143551

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 140698

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorotridecanoic Acid (PFTriA)	40.0	45.9		ng/L		115	51 - 139
Perfluorotetradecanoic acid (PFTeA)	40.0	55.0	*	ng/L		138	47 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	44.3		ng/L		125	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	36.4	38.0		ng/L		104	58 - 138
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	42.1		ng/L		111	32 - 170
Perfluorooctanesulfonic acid (PFOS)	37.1	38.4		ng/L		103	47 - 162
Perfluorodecanesulfonic acid (PFDS)	38.6	39.7		ng/L		103	35 - 157
Perfluorooctane Sulfonamide (FOSA)	40.0	39.5		ng/L		99	59 - 163

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C8 FOSA	62		25 - 150
13C4 PFBA	126		25 - 150
13C2 PFHxA	118		25 - 150
13C4 PFOA	125		25 - 150
13C5 PFNA	125		25 - 150
13C2 PFDA	135		25 - 150
13C2 PFUnA	129		25 - 150
13C2 PFDoA	125		25 - 150
18O2 PFHxS	122		25 - 150
13C4 PFOS	129		25 - 150
13C4-PFHpA	123		25 - 150
13C5 PFPeA	129		25 - 150

Lab Sample ID: 320-24062-6 MS

Matrix: Water

Analysis Batch: 143551

Client Sample ID: GW-12636-113016-SSH-5216

Prep Type: Total/NA

Prep Batch: 140698

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	4.7		39.0	42.0		ng/L		96	74 - 138
Perfluoropentanoic acid (PFPeA)	ND		39.0	38.4		ng/L		98	69 - 134
Perfluorohexanoic acid (PFHxA)	ND		39.0	42.8		ng/L		110	70 - 136
Perfluoroheptanoic acid (PFHpA)	ND		39.0	42.1		ng/L		108	63 - 135
Perfluorooctanoic acid (PFOA)	ND		39.0	39.5		ng/L		101	63 - 141
Perfluorononanoic acid (PFNA)	ND		39.0	41.7		ng/L		107	71 - 140
Perfluorodecanoic acid (PFDA)	ND		39.0	40.0		ng/L		102	66 - 141
Perfluoroundecanoic acid (PFUnA)	ND		39.0	39.8		ng/L		102	68 - 139
Perfluorododecanoic acid (PFDoA)	ND		39.0	39.5		ng/L		101	71 - 139
Perfluorotridecanoic Acid (PFTriA)	ND		39.0	48.0		ng/L		123	51 - 139
Perfluorotetradecanoic acid (PFTeA)	0.65	J F1 B *	39.0	64.9	F1	ng/L		164	47 - 130

TestAmerica Sacramento

QC Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: 320-24062-6 MS

Matrix: Water

Analysis Batch: 143551

Client Sample ID: GW-12636-113016-SSH-5216

Prep Type: Total/NA

Prep Batch: 140698

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanesulfonic acid (PFBS)	0.92	J	34.5	34.4		ng/L		97	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	ND		35.5	36.7		ng/L		103	58 - 138
Perfluoroheptanesulfonic Acid (PFHpS)	ND		37.2	39.5		ng/L		106	32 - 170
Perfluorooctanesulfonic acid (PFOS)	3.5		36.2	42.0		ng/L		106	47 - 162
Perfluorodecanesulfonic acid (PFDS)	ND		37.6	40.0		ng/L		106	35 - 157
Perfluorooctane Sulfonamide (FOSA)	ND		39.0	38.8		ng/L		99	59 - 163
MS MS									
Isotope Dilution	%Recovery	Qualifier	Limits						
13C8 FOSA	3	*	25 - 150						
13C4 PFBA	28		25 - 150						
13C2 PFHxA	95		25 - 150						
13C4 PFOA	104		25 - 150						
13C5 PFNA	105		25 - 150						
13C2 PFDA	108		25 - 150						
13C2 PFUnA	110		25 - 150						
13C2 PFDoA	114		25 - 150						
18O2 PFHxS	117		25 - 150						
13C4 PFOS	131		25 - 150						
13C4-PFHpA	104		25 - 150						
13C5 PFPeA	73		25 - 150						

Lab Sample ID: 320-24062-6 MSD

Matrix: Water

Analysis Batch: 143551

Client Sample ID: GW-12636-113016-SSH-5216

Prep Type: Total/NA

Prep Batch: 140698

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Perfluorobutanoic acid (PFBA)	4.7		38.1	43.6		ng/L		102	74 - 138	4	30
Perfluoropentanoic acid (PFPeA)	ND		38.1	38.8		ng/L		102	69 - 134	1	30
Perfluorohexanoic acid (PFHxA)	ND		38.1	41.4		ng/L		109	70 - 136	3	30
Perfluoroheptanoic acid (PFHpA)	ND		38.1	41.5		ng/L		109	63 - 135	1	30
Perfluorooctanoic acid (PFOA)	ND		38.1	41.8		ng/L		110	63 - 141	6	30
Perfluorononanoic acid (PFNA)	ND		38.1	41.8		ng/L		110	71 - 140	0	30
Perfluorodecanoic acid (PFDA)	ND		38.1	40.4		ng/L		106	66 - 141	1	30
Perfluoroundecanoic acid (PFUnA)	ND		38.1	41.3		ng/L		108	68 - 139	4	30
Perfluorododecanoic acid (PFDoA)	ND		38.1	41.0		ng/L		107	71 - 139	4	30
Perfluorotridecanoic Acid (PFTriA)	ND		38.1	48.3		ng/L		127	51 - 139	0	30
Perfluorotetradecanoic acid (PFTeA)	0.65	J F1 B *	38.1	66.2	F1	ng/L		172	47 - 130	2	30
Perfluorobutanesulfonic acid (PFBS)	0.92	J	33.7	35.1		ng/L		101	55 - 147	2	30
Perfluorohexanesulfonic acid (PFHxS)	ND		34.7	37.3		ng/L		108	58 - 138	2	30

TestAmerica Sacramento

QC Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: 320-24062-6 MSD

Matrix: Water

Analysis Batch: 143551

Client Sample ID: GW-12636-113016-SSH-5216

Prep Type: Total/NA

Prep Batch: 140698

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluoroheptanesulfonic Acid (PFHpS)	ND		36.3	40.0		ng/L		110	32 - 170	1	30
Perfluorooctanesulfonic acid (PFOS)	3.5		35.4	42.2		ng/L		109	47 - 162	1	30
Perfluorodecanesulfonic acid (PFDS)	ND		36.7	41.0		ng/L		111	35 - 157	2	30
Perfluorooctane Sulfonamide (FOSA)	ND		38.1	41.0		ng/L		108	59 - 163	6	30

Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits
13C8 FOSA	3	*	25 - 150
13C4 PFBA	26		25 - 150
13C2 PFHxA	86		25 - 150
13C4 PFOA	96		25 - 150
13C5 PFNA	100		25 - 150
13C2 PFDA	101		25 - 150
13C2 PFUnA	99		25 - 150
13C2 PFDoA	104		25 - 150
18O2 PFHxS	108		25 - 150
13C4 PFOS	123		25 - 150
13C4-PFHpA	97		25 - 150
13C5 PFPeA	69		25 - 150

Lab Sample ID: MB 320-140894/1-A

Matrix: Water

Analysis Batch: 143551

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 140894

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.46	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.99	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.79	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.75	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.75	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorotetradecanoic acid (PFTeA)	0.610	J	2.0	0.20	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.92	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.87	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	1.3	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		12/06/16 17:40	12/22/16 11:01	1
Perfluorooctane Sulfonamide (FOSA)	ND		2.0	0.64	ng/L		12/06/16 17:40	12/22/16 11:01	1
6:2FTS	ND		20	3.8	ng/L		12/06/16 17:40	12/22/16 11:01	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	13	*	25 - 150	12/06/16 17:40	12/22/16 11:01	1

TestAmerica Sacramento

QC Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: MB 320-140894/1-A

Matrix: Water

Analysis Batch: 143551

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 140894

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	136		25 - 150	12/06/16 17:40	12/22/16 11:01	1
13C2 PFHxA	126		25 - 150	12/06/16 17:40	12/22/16 11:01	1
13C4 PFOA	137		25 - 150	12/06/16 17:40	12/22/16 11:01	1
13C5 PFNA	134		25 - 150	12/06/16 17:40	12/22/16 11:01	1
13C2 PFDA	145		25 - 150	12/06/16 17:40	12/22/16 11:01	1
13C2 PFUnA	138		25 - 150	12/06/16 17:40	12/22/16 11:01	1
13C2 PFDoA	130		25 - 150	12/06/16 17:40	12/22/16 11:01	1
18O2 PFHxS	130		25 - 150	12/06/16 17:40	12/22/16 11:01	1
13C4 PFOS	138		25 - 150	12/06/16 17:40	12/22/16 11:01	1
13C4-PFHpA	131		25 - 150	12/06/16 17:40	12/22/16 11:01	1
13C5 PFPeA	139		25 - 150	12/06/16 17:40	12/22/16 11:01	1
M2-6:2FTS	118		25 - 150	12/06/16 17:40	12/22/16 11:01	1

Lab Sample ID: LCS 320-140894/2-A

Matrix: Water

Analysis Batch: 143551

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 140894

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	39.0		ng/L		97	74 - 138
Perfluoropentanoic acid (PFPeA)	40.0	37.2		ng/L		93	69 - 134
Perfluorohexanoic acid (PFHxA)	40.0	35.8		ng/L		89	70 - 136
Perfluoroheptanoic acid (PFHpA)	40.0	37.0		ng/L		92	63 - 135
Perfluorooctanoic acid (PFOA)	40.0	35.8		ng/L		90	63 - 141
Perfluorononanoic acid (PFNA)	40.0	37.0		ng/L		92	71 - 140
Perfluorodecanoic acid (PFDA)	40.0	35.5		ng/L		89	66 - 141
Perfluoroundecanoic acid (PFUnA)	40.0	32.7		ng/L		82	68 - 139
Perfluorododecanoic acid (PFDoA)	40.0	35.0		ng/L		87	71 - 139
Perfluorotridecanoic Acid (PFTriA)	40.0	34.9		ng/L		87	51 - 139
Perfluorotetradecanoic acid (PFTeA)	40.0	48.2		ng/L		121	47 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	39.1		ng/L		111	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.3		ng/L		91	58 - 138
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	35.5		ng/L		93	32 - 170
Perfluorooctanesulfonic acid (PFOS)	37.1	34.2		ng/L		92	47 - 162
Perfluorodecanesulfonic acid (PFDS)	38.6	33.9		ng/L		88	35 - 157
Perfluorooctane Sulfonamide (FOSA)	40.0	36.1		ng/L		90	59 - 163
6:2FTS	37.9	40.9		ng/L		108	60 - 140

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C8 FOSA	10	*	25 - 150
13C4 PFBA	133		25 - 150
13C2 PFHxA	128		25 - 150

TestAmerica Sacramento

QC Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCS 320-140894/2-A

Matrix: Water

Analysis Batch: 143551

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 140894

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C4 PFOA	135		25 - 150
13C5 PFNA	134		25 - 150
13C2 PFDA	141		25 - 150
13C2 PFUnA	137		25 - 150
13C2 PFDoA	128		25 - 150
18O2 PFHxS	132		25 - 150
13C4 PFOS	142		25 - 150
13C4-PFHpA	129		25 - 150
13C5 PFPeA	135		25 - 150
M2-6:2FTS	117		25 - 150

Lab Sample ID: MB 320-141114/1-A

Matrix: Water

Analysis Batch: 143551

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 141114

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	ND		2.0	0.46	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.99	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.79	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.80	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.75	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.65	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.44	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	0.75	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.58	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorotridecanoic Acid (PFTriA)	ND		2.0	0.55	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorotetradecanoic acid (PFTeA)	0.541	J	2.0	0.20	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.92	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorohexanesulfonic acid (PFHxS)	ND		2.0	0.87	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.71	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	1.3	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	1.2	ng/L		12/07/16 17:31	12/22/16 13:01	1
Perfluorooctane Sulfonamide (FOSA)	1.43	J	2.0	0.64	ng/L		12/07/16 17:31	12/22/16 13:01	1
6:2FTS	ND		20	3.8	ng/L		12/07/16 17:31	12/22/16 13:01	1

Isotope Dilution	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C8 FOSA	25		25 - 150	12/07/16 17:31	12/22/16 13:01	1
13C4 PFBA	113		25 - 150	12/07/16 17:31	12/22/16 13:01	1
13C2 PFHxA	106		25 - 150	12/07/16 17:31	12/22/16 13:01	1
13C4 PFOA	119		25 - 150	12/07/16 17:31	12/22/16 13:01	1
13C5 PFNA	121		25 - 150	12/07/16 17:31	12/22/16 13:01	1
13C2 PFDA	121		25 - 150	12/07/16 17:31	12/22/16 13:01	1
13C2 PFUnA	119		25 - 150	12/07/16 17:31	12/22/16 13:01	1
13C2 PFDoA	108		25 - 150	12/07/16 17:31	12/22/16 13:01	1
18O2 PFHxS	116		25 - 150	12/07/16 17:31	12/22/16 13:01	1
13C4 PFOS	116		25 - 150	12/07/16 17:31	12/22/16 13:01	1
13C4-PFHpA	122		25 - 150	12/07/16 17:31	12/22/16 13:01	1
13C5 PFPeA	116		25 - 150	12/07/16 17:31	12/22/16 13:01	1

TestAmerica Sacramento

QC Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: MB 320-141114/1-A

Matrix: Water

Analysis Batch: 143551

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 141114

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2FTS	96		25 - 150	12/07/16 17:31	12/22/16 13:01	1

Lab Sample ID: LCS 320-141114/2-A

Matrix: Water

Analysis Batch: 143551

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 141114

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	39.8		ng/L		99	74 - 138
Perfluoropentanoic acid (PFPeA)	40.0	36.7		ng/L		92	69 - 134
Perfluorohexanoic acid (PFHxA)	40.0	37.8		ng/L		95	70 - 136
Perfluoroheptanoic acid (PFHpA)	40.0	37.3		ng/L		93	63 - 135
Perfluorooctanoic acid (PFOA)	40.0	35.9		ng/L		90	63 - 141
Perfluorononanoic acid (PFNA)	40.0	36.4		ng/L		91	71 - 140
Perfluorodecanoic acid (PFDA)	40.0	37.3		ng/L		93	66 - 141
Perfluoroundecanoic acid (PFUnA)	40.0	32.4		ng/L		81	68 - 139
Perfluorododecanoic acid (PFDoA)	40.0	35.1		ng/L		88	71 - 139
Perfluorotridecanoic Acid (PFTriA)	40.0	38.3		ng/L		96	51 - 139
Perfluorotetradecanoic acid (PFTeA)	40.0	44.5		ng/L		111	47 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	39.6		ng/L		112	55 - 147
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.1		ng/L		91	58 - 138
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	35.5		ng/L		93	32 - 170
Perfluorooctanesulfonic acid (PFOS)	37.1	34.3		ng/L		92	47 - 162
Perfluorodecanesulfonic acid (PFDS)	38.6	33.5		ng/L		87	35 - 157
Perfluorooctane Sulfonamide (FOSA)	40.0	35.9		ng/L		90	59 - 163
6:2FTS	37.9	45.7		ng/L		121	60 - 140

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C8 FOSA	30		25 - 150
13C4 PFBA	131		25 - 150
13C2 PFHxA	121		25 - 150
13C4 PFOA	133		25 - 150
13C5 PFNA	137		25 - 150
13C2 PFDA	140		25 - 150
13C2 PFUnA	138		25 - 150
13C2 PFDoA	128		25 - 150
18O2 PFHxS	128		25 - 150
13C4 PFOS	136		25 - 150
13C4-PFHpA	132		25 - 150
13C5 PFPeA	134		25 - 150
M2-6:2FTS	110		25 - 150

TestAmerica Sacramento

QC Sample Results

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Method: 537 (modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: LCSD 320-141114/3-A

Matrix: Water

Analysis Batch: 143551

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 141114

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	44.6		ng/L		111	74 - 138	11	30
Perfluoropentanoic acid (PFPeA)	40.0	41.2		ng/L		103	69 - 134	11	30
Perfluorohexanoic acid (PFHxA)	40.0	41.7		ng/L		104	70 - 136	10	30
Perfluoroheptanoic acid (PFHpA)	40.0	42.3		ng/L		106	63 - 135	13	30
Perfluorooctanoic acid (PFOA)	40.0	40.5		ng/L		101	63 - 141	12	30
Perfluorononanoic acid (PFNA)	40.0	41.7		ng/L		104	71 - 140	13	30
Perfluorodecanoic acid (PFDA)	40.0	40.7		ng/L		102	66 - 141	9	30
Perfluoroundecanoic acid (PFUnA)	40.0	37.5		ng/L		94	68 - 139	15	30
Perfluorododecanoic acid (PFDoA)	40.0	39.6		ng/L		99	71 - 139	12	30
Perfluorotridecanoic Acid (PFTriA)	40.0	43.0		ng/L		107	51 - 139	12	30
Perfluorotetradecanoic acid (PFTeA)	40.0	52.0		ng/L		130	47 - 130	15	30
Perfluorobutanesulfonic acid (PFBS)	35.4	43.7		ng/L		123	55 - 147	10	30
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.9		ng/L		101	58 - 138	11	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.8		ng/L		104	32 - 170	11	30
Perfluorooctanesulfonic acid (PFOS)	37.1	38.5		ng/L		104	47 - 162	12	30
Perfluorodecanesulfonic acid (PFDS)	38.6	39.3		ng/L		102	35 - 157	16	30
Perfluorooctane Sulfonamide (FOSA)	40.0	39.7		ng/L		99	59 - 163	10	30
6:2FTS	37.9	39.2		ng/L		103	60 - 140	15	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	LCSD Limits
13C8 FOSA	18	*	25 - 150
13C4 PFBA	128		25 - 150
13C2 PFHxA	122		25 - 150
13C4 PFOA	132		25 - 150
13C5 PFNA	135		25 - 150
13C2 PFDA	141		25 - 150
13C2 PFUnA	137		25 - 150
13C2 PFDoA	133		25 - 150
18O2 PFHxS	128		25 - 150
13C4 PFOS	135		25 - 150
13C4-PFHpA	128		25 - 150
13C5 PFPeA	134		25 - 150
M2-6:2FTS	114		25 - 150

TestAmerica Sacramento

QC Association Summary

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

LCMS

Prep Batch: 140698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-24062-6	GW-12636-113016-SSH-5216	Total/NA	Water	3535	
MB 320-140698/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-140698/2-A	Lab Control Sample	Total/NA	Water	3535	
320-24062-6 MS	GW-12636-113016-SSH-5216	Total/NA	Water	3535	
320-24062-6 MSD	GW-12636-113016-SSH-5216	Total/NA	Water	3535	

Prep Batch: 140894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-24062-1	GW-12636-112916-SSH-4716	Total/NA	Water	3535	
320-24062-2	RE-12636-112916-SSH-4816	Total/NA	Water	3535	
320-24062-3	GW-12636-112916-SSH-4916	Total/NA	Water	3535	
320-24062-4	GW-12636-112916-SSH-5016	Total/NA	Water	3535	
320-24062-7	GW-12636-113016-SSH-5316	Total/NA	Water	3535	
320-24062-8	EQUIPMENT BLANK -1	Total/NA	Water	3535	
MB 320-140894/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-140894/2-A	Lab Control Sample	Total/NA	Water	3535	

Prep Batch: 141114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-24062-5	W-12636-113016-SSH-5116	Total/NA	Water	3535	
320-24062-6 - RE	GW-12636-113016-SSH-5216	Total/NA	Water	3535	
MB 320-141114/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-141114/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-141114/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 143551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-24062-1	GW-12636-112916-SSH-4716	Total/NA	Water	537 (modified)	140894
320-24062-2	RE-12636-112916-SSH-4816	Total/NA	Water	537 (modified)	140894
320-24062-3	GW-12636-112916-SSH-4916	Total/NA	Water	537 (modified)	140894
320-24062-4	GW-12636-112916-SSH-5016	Total/NA	Water	537 (modified)	140894
320-24062-5	W-12636-113016-SSH-5116	Total/NA	Water	537 (modified)	141114
320-24062-6	GW-12636-113016-SSH-5216	Total/NA	Water	537 (modified)	140698
320-24062-6 - RE	GW-12636-113016-SSH-5216	Total/NA	Water	537 (modified)	141114
320-24062-7	GW-12636-113016-SSH-5316	Total/NA	Water	537 (modified)	140894
320-24062-8	EQUIPMENT BLANK -1	Total/NA	Water	537 (modified)	140894
MB 320-140698/1-A	Method Blank	Total/NA	Water	537 (modified)	140698
MB 320-140894/1-A	Method Blank	Total/NA	Water	537 (modified)	140894
MB 320-141114/1-A	Method Blank	Total/NA	Water	537 (modified)	141114
LCS 320-140698/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	140698
LCS 320-140894/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	140894
LCS 320-141114/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	141114
LCSD 320-141114/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	141114
320-24062-6 MS	GW-12636-113016-SSH-5216	Total/NA	Water	537 (modified)	140698
320-24062-6 MSD	GW-12636-113016-SSH-5216	Total/NA	Water	537 (modified)	140698

TestAmerica Sacramento

Lab Chronicle

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Client Sample ID: GW-12636-112916-SSH-4716

Date Collected: 11/29/16 14:31

Date Received: 12/01/16 09:50

Lab Sample ID: 320-24062-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			264.7 mL	0.5 mL	140894	12/06/16 17:40	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			143551	12/22/16 11:38	SBC	TAL SAC

Client Sample ID: RE-12636-112916-SSH-4816

Date Collected: 11/29/16 15:00

Date Received: 12/01/16 09:50

Lab Sample ID: 320-24062-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			277.8 mL	0.5 mL	140894	12/06/16 17:40	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			143551	12/22/16 11:46	SBC	TAL SAC

Client Sample ID: GW-12636-112916-SSH-4916

Date Collected: 11/29/16 16:01

Date Received: 12/01/16 09:50

Lab Sample ID: 320-24062-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			252.6 mL	0.5 mL	140894	12/06/16 17:40	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			143551	12/22/16 11:53	SBC	TAL SAC

Client Sample ID: GW-12636-112916-SSH-5016

Date Collected: 11/29/16 16:05

Date Received: 12/01/16 09:50

Lab Sample ID: 320-24062-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			255.1 mL	0.5 mL	140894	12/06/16 17:40	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			143551	12/22/16 12:01	SBC	TAL SAC

Client Sample ID: W-12636-113016-SSH-5116

Date Collected: 11/30/16 09:00

Date Received: 12/01/16 09:50

Lab Sample ID: 320-24062-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			264.7 mL	0.5 mL	141114	12/07/16 17:31	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			143551	12/22/16 13:23	SBC	TAL SAC

Client Sample ID: GW-12636-113016-SSH-5216

Date Collected: 11/30/16 10:26

Date Received: 12/01/16 09:50

Lab Sample ID: 320-24062-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.3 mL	0.5 mL	140698	12/05/16 19:37	JER	TAL SAC
Total/NA	Analysis	537 (modified)		1			143551	12/22/16 10:08	SBC	TAL SAC

TestAmerica Sacramento

Lab Chronicle

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Client Sample ID: GW-12636-113016-SSH-5216

Lab Sample ID: 320-24062-6

Date Collected: 11/30/16 10:26

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	RE		269.5 mL	0.5 mL	141114	12/07/16 17:31	VPM	TAL SAC
Total/NA	Analysis	537 (modified)	RE	1			143551	12/22/16 13:31	SBC	TAL SAC

Client Sample ID: GW-12636-113016-SSH-5316

Lab Sample ID: 320-24062-7

Date Collected: 11/30/16 11:36

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260 mL	0.5 mL	140894	12/06/16 17:40	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			143551	12/22/16 12:08	SBC	TAL SAC

Client Sample ID: EQUIPMENT BLANK -1

Lab Sample ID: 320-24062-8

Date Collected: 11/29/16 11:30

Matrix: Water

Date Received: 12/01/16 09:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260.6 mL	0.5 mL	140894	12/06/16 17:40	VPM	TAL SAC
Total/NA	Analysis	537 (modified)		1			143551	12/22/16 12:46	SBC	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Certification Summary

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Laboratory: TestAmerica Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-17
Alaska (UST)	State Program	10	UST-055	12-18-17
Arizona	State Program	9	AZ0708	08-11-17
Arkansas DEQ	State Program	6	88-0691	06-17-17
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-17
Florida	NELAP	4	E87570	06-30-17
Hawaii	State Program	9	N/A	01-31-17
Illinois	NELAP	5	200060	03-17-17
Kansas	NELAP	7	E-10375	10-31-17
Louisiana	NELAP	6	30612	06-30-17
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-17
New Jersey	NELAP	2	CA005	06-30-17
New York	NELAP	2	11666	04-01-17
Oregon	NELAP	10	4040	01-29-17
Pennsylvania	NELAP	3	68-01272	03-31-17
Texas	NELAP	6	T104704399	07-31-17
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-17
Virginia	NELAP	3	460278	03-14-17
Washington	State Program	10	C581	05-05-17
West Virginia (DW)	State Program	3	9930C	12-31-16 *
Wyoming	State Program	8	8TMS-L	01-29-17

* Certification renewal pending - certification considered valid.

TestAmerica Sacramento

Method Summary

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: GHD Services Inc.
Project/Site: PFCs

TestAmerica Job ID: 320-24062-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-24062-1	GW-12636-112916-SSH-4716	Water	11/29/16 14:31	12/01/16 09:50
320-24062-2	RE-12636-112916-SSH-4816	Water	11/29/16 15:00	12/01/16 09:50
320-24062-3	GW-12636-112916-SSH-4916	Water	11/29/16 16:01	12/01/16 09:50
320-24062-4	GW-12636-112916-SSH-5016	Water	11/29/16 16:05	12/01/16 09:50
320-24062-5	W-12636-113016-SSH-5116	Water	11/30/16 09:00	12/01/16 09:50
320-24062-6	GW-12636-113016-SSH-5216	Water	11/30/16 10:26	12/01/16 09:50
320-24062-7	GW-12636-113016-SSH-5316	Water	11/30/16 11:36	12/01/16 09:50
320-24062-8	EQUIPMENT BLANK -1	Water	11/29/16 11:30	12/01/16 09:50

Chain of Custody Record

167065

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (07/13)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Company Name: GHD		Project Manager: M. Tomka		Site Contact: R. Chaffield		COC No: 167065	
Address: 4416 N. Sheldon Rd Ste 200		Tel/Fax: 519 884 0510		Lab Contact: Pat Abe		Date: 11/29/16	
City/State/Zip: Plymouth MI 48170		Analysis Turnaround Time		Carrier: FedEx		2 of 2 COCs	
Phone: 734 1453 15123		☒ CALENDAR DAYS ☐ WORKING DAYS		For Lab Use Only:		Sampler: Hoevenmeyer	
Fax:		TAT if different from Below		Walk-in Client:		Lab Sampling:	
Project Name: Former Peregrine		☒ 2 weeks		Job / SDG No.:		Sample Specific Notes:	
Site: SS03 12636-2710		☐ 1 week		Perform MS / MSD (Y / N)		MS / MSD	
P O #		☐ 2 days		Filtered Sample (Y / N)		320-24062 Chain of Custody	
		☐ 1 day		Matrix		Barcode	
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	# of Cont.	Sample Specific Notes		
GW-12636-112916-SSH-4716	11/29/16	1431	G	2			
RE-12636-112916-SSH-4816		1500	G	2			
GW-12636-112916-SSH-4916		1601	G	2			
GW-12636-112916-SSH-5016		1605	G	2			
GW-12636-113016-SSH-5116	11/30/16	0900	G	2			
GW-12636-113016-SSH-5216		1026	G	4			
GW-12636-113016-SSH-5316		1136	G	2			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☒ Unknown							
Special Instructions/QC Requirements & Comments: PFAS / PFOS							
Custody Seal No: 667915		Cooler Temp. (°C): 2.8		Obs'd: 1.7		Therm ID No.: 12	
Relinquished by: AT. A. Man		Company: GHD		Received by: 6-2-2-Ed		Company: TAWs	
Relinquished by:		Date/Time: 11/30/16 1600		Received by:		Date/Time: 12/1/16 0950	
Relinquished by:		Date/Time:		Received in Laboratory by:		Date/Time:	

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 320-24062-1

Login Number: 24062

List Source: TestAmerica Sacramento

List Number: 1

Creator: Kellmann, Jill

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	66749
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Attachment D
Historic Groundwater Analytical Results
(December 2010 to April 2017)

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow		Shallow		Shallow		Shallow		Shallow		Shallow		Shallow	
Sample Location:		B-9		B-9		B-9		B-9		B-9		B-9		B-9	
Sample ID:		GW-12636-091411-JY-015		B-9-6/21/1995-N-LB		B-9-8/31/1995-N-LB		B-9-2/9/1996-N-LB		B-9-6/19/1996-N-LB		B-9-8/21/1996-N-LB		B-9-11/13/1996-N-LB	
Sample Date:		9/14/2011		6/21/1995		8/31/1995		2/9/1996		6/19/1996		8/21/1996		11/13/1996	
Sample Depth:		(8.66-13.19) in BGS		-		-		-		-		-		-	
Parameters	Units	Background Concentrations - Perched Aquifer	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air	Non-Residential Groundwater Volatilization to Indoor Air						
			Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria	Health Based Criteria									
VOAs		a	b	c	d	e	f	g	h						
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	0.001 U	-	-	-	-	-
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	0.001 UJ	-	-	-	-	-
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	0.001 U	-	-	-	-	-
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	0.001 U	-	-	-	-	-
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	0.001 U	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	0.001 U	-	-	-	-	-
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	0.001 U	-	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	0.001 UJ	-	-	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	0.001 U	-	-	-	-	-
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	0.001 U	-	-	-	-	-
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	0.001 U	-	-	-	-	-
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	0.001 U	-	-	-	-	-
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	0.001 U	-	-	-	-	-
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	0.001 U	-	-	-	-	-
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	0.001 U	-	-	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	0.01 U	-	-	-	-	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	0.01 U	-	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	0.01 U	-	-	-	-	-
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	0.01 U	-	-	-	-	-
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	0.001 U	-	-	-	-	-
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	0.001 U	-	-	-	-	-
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	0.001 U	-	-	-	-	-
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	0.001 UJ	-	-	-	-	-
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	0.005 U	-	-	-	-	-
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	0.001 U	-	-	-	-	-
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	0.001 U	-	-	-	-	-
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	0.001 UJ	-	-	-	-	-
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	0.001 U	-	-	-	-	-
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	0.001 U	-	-	-	-	-
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	0.001 U	-	-	-	-	-
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	-	-
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	-	-
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	0.001 U	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	0.001 UJ	-	-	-	-	-
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	0.001 U	-	-	-	-	-
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	0.001 U	-	-	-	-	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	0.01 U	-	-	-	-	-
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	-	-
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	0.005 U	-	-	-	-	-
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	0.005 U	-	-	-	-	-
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	-	-	-
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	0.001 U	-	-	-	-	-
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	0.001 U	-	-	-	-	-
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	0.001 U	-	-	-	-	-
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	0.001 U	-	-	-	-	-
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	-	-
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	0.001 U	-	-	-	-	-
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	0.001 U	-	-	-	-	-
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	0.001 U	-	-	-	-	-
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	0.001 U	-	-	-	-	-
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	0.002 U	-	-	-	-	-
SVOAs															
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	0.73	-	2.1	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	0.12	-	0.47	-	0.005	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	0.073	-	0.21	-	0.011	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	0.37	-	1	-	0.38	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	0.0077	-	0.032	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	1.8	-	5.2	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	0.045	-	0.13	-	0.018	490	1100	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	0.26	-	0.75	-	0.019	25	25	-	-	-	-	-	-
2-Methylphenol	mg/L	-	0.37	-	1	-	0.03	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow				Shallow				Shallow				Shallow				Shallow			
Sample Location:		B-9				B-9				B-9				B-9				B-9			
Sample ID:		GW-12636-091411-JY-015				B-9-6/21/1995-N-LB				B-9-8/31/1995-N-LB				B-9-2/9/1996-N-LB				B-9-6/19/1996-N-LB			
Sample Date:		9/14/2011				6/21/1995				8/31/1995				2/9/1996				6/19/1996			
Sample Depth:		(8.66-13.19) in BGS				-				-				-				-			
Parameters	Units	Background Concentrations - Perched Aquifer	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air	Non-Residential Groundwater Volatilization to Indoor Air												
			Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria	Health Based Criteria															
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	0.02	-	0.058	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	0.0011	-	0.0043	-	0.0003	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	0.02	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	0.15	-	0.42	-	0.0074	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	0.37	-	1	-	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	1.3	-	3.8	-	0.038	4.2	4.2	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	0.052	-	0.15	-	-	3.9	3.9	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	0.043	-	0.043	-	-	0.043	0.043	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	0.0021	-	0.0085	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	0.005	-	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	0.0015	-	0.0015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	0.001	-	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	0.001	-	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	0.002	-	0.0083	-	0.001	38	210	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	0.006	-	0.006	-	0.025	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	1.2	-	2.7	-	0.067	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	0.085	-	0.35	-	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	0.0016	-	0.0016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	0.002	-	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	0.004	10	10	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	5.5	-	16	-	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	73	-	210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	0.88	-	2.5	-	0.0097	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	0.13	-	0.38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	0.21	-	0.21	-	0.0016	0.21	0.21	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	0.88	-	2	-	0.012	2	2	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	0.001	-	0.001	-	0.0002	0.44	3	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	0.015	-	0.042	-	0.000053	1.6	3.2	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	0.05	-	0.05	-	-	0.13	0.42	-	-	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	0.0073	-	0.021	-	0.0067	27	50	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	0.002	-	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	0.77	-	3.1	-	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	0.52	-	1.5	-	0.011	31	31	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	0.0034	-	0.0096	-	0.18	280	550	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	0.005	-	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	0.27	-	1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	0.001	-	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	0.052	-	0.15	-	0.002	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	4.4	-	13	-	0.45	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	0.14	-	0.14	-	-	0.14	0.14	-	-	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow		Shallow		Shallow		Shallow		Shallow		Shallow		Shallow	
Sample Location:		B-9		B-9		B-9		B-9		B-9		B-9		B-9	
Sample ID:		GW-12636-091411-JY-015		B-9-6/21/1995-N-LB		B-9-8/31/1995-N-LB		B-9-2/9/1996-N-LB		B-9-6/19/1996-N-LB		B-9-8/21/1996-N-LB		B-9-11/13/1996-N-LB	
Sample Date:		9/14/2011		6/21/1995		8/31/1995		2/9/1996		6/19/1996		8/21/1996		11/13/1996	
Sample Depth:		(8.66-13.19) in BGS		-		-		-		-		-		-	
Parameters	Units	Background Concentrations - Perched Aquifer	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air	Non-Residential Groundwater Volatilization to Indoor Air						
			Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria	Health Based Criteria									
Metals															
Aluminum	mg/L	10.5	0.05	0.3	0.05	4.1	-	-	-	0.022 J	-	-	-	-	-
Aluminum (dissolved)	mg/L	3.52	0.05	0.3	0.05	4.1	-	-	-	-	-	-	-	-	-
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	-	-	-	-	-
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	-	-	-	-	-	-
Arsenic	mg/L	0.01	0.01	-	0.01	-	0.01	-	-	0.005 U	-	-	-	-	-
Arsenic (dissolved)	mg/L	0.0072	0.01	-	0.01	-	0.01	-	-	-	-	-	-	-	-
Barium	mg/L	0.15	2	-	2	-	-	-	-	0.011 J	-	-	-	-	-
Barium (dissolved)	mg/L	0.1	2	-	2	-	-	-	-	-	-	-	-	-	-
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	-	-	-	-	-
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	-	-	-	-	-	-
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.001 U	-	-	-	-	-
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	-	-	-	-	-	-
Chromium	mg/L	0.031	0.1	-	0.1	-	-	-	-	0.005 U	-	-	-	-	-
Chromium (dissolved)	mg/L	0.010	0.1	-	0.1	-	-	-	-	-	0.02 U	0.037	0.02 U	0.02 U	0.02 U
Cobalt	mg/L	0.008	0.04	-	0.1	-	0.1	-	-	0.01	-	-	-	-	-
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	-	-	-	-	-	-
Copper	mg/L	0.01	1	-	1	-	-	-	-	0.002 U	-	-	-	-	-
Copper (dissolved)	mg/L	0.0074	1	-	1	-	-	-	-	-	0.02 U	0.043	0.02 U	0.02 U	0.02 U
Iron	mg/L	32.58	0.3	2.0	0.3	5.6	-	-	-	0.27	-	-	-	-	-
Iron (dissolved)	mg/L	4.0	0.3	2.0	0.3	5.6	-	-	-	-	-	-	-	-	-
Lead	mg/L	0.0035	0.004	-	0.004	-	-	-	-	0.003 U	-	-	-	-	-
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	-	-	-	-	-	-	-
Manganese	mg/L	0.963	0.05	0.86	0.05	2.5	-	-	-	6.8 J bcde	-	-	-	-	-
Manganese (dissolved)	mg/L	0.547	0.05	0.86	0.05	2.5	-	-	-	-	-	-	-	-	-
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	-	-	-	-	-
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	-	-	-	-	-	-
Nickel	mg/L	0.026	0.1	-	0.1	-	-	-	-	0.066	-	-	-	-	-
Nickel (dissolved)	mg/L	0.0185	0.1	-	0.1	-	-	-	-	-	0.03 U	0.04 U	0.04 U	0.02 U	0.02 U
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.005 U	-	-	-	-	-
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	-	-	-	-	-	-
Silver	mg/L	0.00053	0.034	-	0.098	-	0.0002	-	-	0.0002 U	-	-	-	-	-
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	-	-	-	-	-	-
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	0.001 U	-	-	-	-	-
Thallium (dissolved)	mg/L	0.0012	0.002	-	0.002	-	0.0037	-	-	-	-	-	-	-	-
Vanadium	mg/L	0.026	0.0045	-	0.062	-	0.027	-	-	0.004 U	-	-	-	-	-
Vanadium (dissolved)	mg/L	0.0089	0.0045	-	0.062	-	0.027	-	-	-	-	-	-	-	-
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	0.02 U	-	-	-	-	-
Zinc (dissolved)	mg/L	0.051	2.4	-	5	-	-	-	-	-	0.02 U	0.02 U	0.02 U	0.02 U	0.04
Pesticides															
Aroclor-1016 (PCB-1016)	mg/L	-	0.0005	-	0.0005	-	0.0002	0.045	0.045	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	0.0005	-	0.0005	-	0.0002	0.045	0.045	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	0.0005	-	0.0005	-	0.0002	0.045	0.045	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	0.0005	-	0.0005	-	0.0002	0.045	0.045	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	0.0005	-	0.0005	-	0.0002	0.045	0.045	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	0.0005	-	0.0005	-	0.0002	0.045	0.045	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	0.0005	-	0.0005	-	0.0002	0.045	0.045	-	-	-	-	-	-
Total PCBs	mg/L	-	0.0005	-	0.0005	-	0.0002	0.045	0.045	-	-	-	-	-	-
Wet															
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	2400	1829	2860	2550	2310
Cyanide (amenable)	mg/L	-	0.2	-	0.2	-	-	-	-	0.0050 U	-	-	-	-	-
Cyanide (total)	mg/L	-	0.2	-	0.2	-	0.0052	-	-	0.0050 U	-	-	-	-	-
pH	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	7.7	7.7	7.3	6.8	8
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	14.6	14.8	8	11.5	16.4
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	3.5	3.9	3.1	2.1	2.3
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	0.034	0.01 U	0.01 U	0.1 U	0.005 U

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:										Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:										B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:										GW-12636-091411-JY-015	B-9-6/21/1995-N-LB	B-9-8/31/1995-N-LB	B-9-2/9/1996-N-LB	B-9-6/19/1996-N-LB	B-9-8/21/1996-N-LB	B-9-11/13/1996-N-LB
Sample Date:										9/14/2011	6/21/1995	8/31/1995	2/9/1996	6/19/1996	8/21/1996	11/13/1996
Sample Depth:										(8.66-13.19) in BGS	-	-	-	-	-	-
Parameters	Units	Background Concentrations - Perched Aquifer	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air	Non-Residential Groundwater Volatilization to Indoor Air							
			Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria	Health Based Criteria										
FPARAM																
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, field	s.u.	-	6.5 - 8.5	-	6.5 - 8.5	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Footnotes:

U Not detected at the associated reporting limit.

J Estimated concentration.

UJ Not detected; associated reporting limit is estimated.

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:	B-9-5/6/1997-N-LB	B-9-11/6/1997-N-LB	B-9-5/4/1998-N-LB	B-9-4/26/1999-N-LB	B-9-11/5/1999-N-LB	B-9-4/26/2000-N-LB	B-9-12/8/2000-N-LB	B-9-5/16/2001-N-LB	B-9-10/17/2001-N-LB	B-9-5/16/2002-N-LB	B-9-6/4/2003-N-LB	B-9-6/30/2004-N-LB	B-9-12/9/2004-N-LB	B-9-6/8/2005-N-LB	B-9-12/7/2005-N-LB
Sample Date:	5/6/1997	11/6/1997	5/4/1998	4/26/1999	11/5/1999	4/26/2000	12/8/2000	5/16/2001	10/17/2001	5/16/2002	6/4/2003	6/30/2004	12/9/2004	6/8/2005	12/7/2005
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units														
VOAs															
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane (Methyl bromide)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform (Trichloromethane)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane (Methyl chloride)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopropyl benzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert butyl ether (MTBE)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylene chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane (CFC-11)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trifluorotrichloroethane (CFC-113)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes (total)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SVOAs															
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:	B-9-5/6/1997-N-LB	B-9-11/6/1997-N-LB	B-9-5/4/1998-N-LB	B-9-4/26/1999-N-LB	B-9-11/5/1999-N-LB	B-9-4/26/2000-N-LB	B-9-12/8/2000-N-LB	B-9-5/16/2001-N-LB	B-9-10/17/2001-N-LB	B-9-5/16/2002-N-LB	B-9-6/4/2003-N-LB	B-9-6/30/2004-N-LB	B-9-12/9/2004-N-LB	B-9-6/8/2005-N-LB	B-9-12/7/2005-N-LB
Sample Date:	5/6/1997	11/6/1997	5/4/1998	4/26/1999	11/5/1999	4/26/2000	12/8/2000	5/16/2001	10/17/2001	5/16/2002	6/4/2003	6/30/2004	12/9/2004	6/8/2005	12/7/2005
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units														
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooxonanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:	B-9-5/6/1997-N-LB	B-9-11/6/1997-N-LB	B-9-5/4/1998-N-LB	B-9-4/26/1999-N-LB	B-9-11/5/1999-N-LB	B-9-4/26/2000-N-LB	B-9-12/8/2000-N-LB	B-9-5/16/2001-N-LB	B-9-10/17/2001-N-LB	B-9-5/16/2002-N-LB	B-9-6/4/2003-N-LB	B-9-6/30/2004-N-LB	B-9-12/9/2004-N-LB	B-9-6/8/2005-N-LB	B-9-12/7/2005-N-LB
Sample Date:	5/6/1997	11/6/1997	5/4/1998	4/26/1999	11/5/1999	4/26/2000	12/8/2000	5/16/2001	10/17/2001	5/16/2002	6/4/2003	6/30/2004	12/9/2004	6/8/2005	12/7/2005
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units														
Metals															
Aluminum	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aluminum (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium (dissolved)	mg/L	0.01 U	0.01 U	0.01	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U	0.005 U	0.005 U	0.006	0.011
Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper (dissolved)	mg/L	0.01 U	0.01 U	0.01	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005 U	0.008	0.005 U	0.006	0.005
Iron	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron (dissolved)	mg/L	-	0.65	-	-	0.61	-	0.05	-	0.94	-	-	-	0.57	0.32
Lead	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese (dissolved)	mg/L	-	0.741 ^{bd}	-	-	1.28 ^{bcd}	-	-	-	-	-	-	-	0.248	0.701 ^{bd}
Mercury	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel (dissolved)	mg/L	0.051	0.183 ^{bd}	0.018	0.019	0.02	0.012	0.046	0.007	0.008	0.007	0.015	0.019	0.011	0.012
Selenium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium (dissolved)	mg/L	-	-	-	-	47.1	-	69.5	-	66	-	-	-	55.9	58.5
Thallium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc (dissolved)	mg/L	0.02	0.04	0.04	0.02	0.03	0.03	0.01 U	0.01	0.02	0.01	0.013	0.028	0.019	0.04
Pesticides															
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wet															
Conductance, specific	umhos/cm	2600	2800	2400	1860	2340	2780	2400	1070	2130	2470	2690	2379	2480	2830
Cyanide (amenable)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (total)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	s.u.	6.8	6.5	6.6	7.7	6.8	7.6	7.6	7.4	7.5	7.2	6.8	6.9	5.9 ^{bd}	8.6 ^{bd}
Temperature, field	Deg C	10	11	14.5	12.2	15.4	9.5	7.8	12.6	10.8	11.6	10.7	12.7	11.4	11.9
Total organic carbon (TOC)	mg/L	3	2	3	4	2.5	5.5	5	4.8	4	1.9	2.2	3.8	3	5
Total organic halides (TOX)	mg/L	0.1 U	0.1 U	0.005 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	0.1 U	0.057	-	0.03 U	0.03 U

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:	B-9-5/6/1997-N-LB	B-9-11/6/1997-N-LB	B-9-5/4/1998-N-LB	B-9-4/26/1999-N-LB	B-9-11/5/1999-N-LB	B-9-4/26/2000-N-LB	B-9-12/8/2000-N-LB	B-9-5/16/2001-N-LB	B-9-10/17/2001-N-LB	B-9-5/16/2002-N-LB	B-9-6/4/2003-N-LB	B-9-6/30/2004-N-LB	B-9-12/9/2004-N-LB	B-9-6/8/2005-N-LB	B-9-12/7/2005-N-LB
Sample Date:	5/6/1997	11/6/1997	5/4/1998	4/26/1999	11/5/1999	4/26/2000	12/8/2000	5/16/2001	10/17/2001	5/16/2002	6/4/2003	6/30/2004	12/9/2004	6/8/2005	12/7/2005
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units														
FPARAM															
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH, field	s.u.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte														

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:	B-9-6/29/2006-N-LB	B-9-11/30/2006-N-LB	B-9-6/5/2007-N-LB	B-9-11/16/2007-N-LB	B-9-7/2/2008-N-LB	B-9 Dup.-11/20/2008-FD-LB	B-9-11/20/2008-N-LB	B-9-6/25/2009-N-LB	B-9-11/16/2009-N-LB	GW-12636-120310-BW-019	GW-12636-051111-SSH-104	GW-12636-120711-JY-415	GW-12636-032614-SSH-1404
Sample Date:	6/29/2006	11/30/2006	6/5/2007	11/16/2007	7/2/2008	11/20/2008	11/20/2008	6/25/2009	11/16/2009	12/3/2010	5/11/2011	12/7/2011	3/26/2014
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-	-	-
	(Duplicate)												
Parameters	Units												
VOAs													
1,1,1-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	0.005 U	0.005 U	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	-	-	-	-	-	-	-	0.001 UJ	0.001 U	0.001 U	0.001 U
1,2-Dibromomethane (Ethylene dibromide)	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	-	-	-	-	-	-	-	0.025 U	0.025 U	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	-	-	-	-	-	-	-	0.05 U	0.05 U	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	-	-	-	-	-	-	-	0.05 U	0.05 U	0.01 U	0.01 U
Acetone	mg/L	-	-	-	-	-	-	-	-	0.025 U	0.025 U	0.01 U	0.01 U
Benzene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	-	-	-	-	-	-	-	0.001 UJ	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L	-	-	-	-	-	-	-	-	0.005 U	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Isopropyl benzene	mg/L	-	-	-	-	-	-	-	-	0.005 U	0.005 U	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	-	-	-	-	-	-	-	0.005 U	0.005 U	0.005 U	0.001 U
Methylene chloride	mg/L	-	-	-	-	-	-	-	-	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	mg/L	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)	mg/L	-	-	-	-	-	-	-	-	0.002 U	0.002 U	0.002 U	0.002 U
SVOAs													
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:	B-9-6/29/2006-N-LB	B-9-11/30/2006-N-LB	B-9-6/5/2007-N-LB	B-9-11/16/2007-N-LB	B-9-7/2/2008-N-LB	B-9 Dup.-11/20/2008-FD-LB	B-9-11/20/2008-N-LB	B-9-6/25/2009-N-LB	B-9-11/16/2009-N-LB	GW-12636-120310-BW-019	GW-12636-051111-SSH-104	GW-12636-120711-JY-415	GW-12636-032614-SSH-1404
Sample Date:	6/29/2006	11/30/2006	6/5/2007	11/16/2007	7/2/2008	11/20/2008	11/20/2008	6/25/2009	11/16/2009	12/3/2010	5/11/2011	12/7/2011	3/26/2014
Sample Depth:	-	-	-	-	-	(Duplicate)	-	-	-	-	-	-	-
Parameters	Units												
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooxononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:														
Sample ID:		B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample Date:		B-9-6/29/2006-N-LB	B-9-11/30/2006-N-LB	B-9-6/5/2007-N-LB	B-9-11/16/2007-N-LB	B-9-7/2/2008-N-LB	B-9 Dup.-11/20/2008-FD-LB	B-9-11/20/2008-N-LB	B-9-6/25/2009-N-LB	B-9-11/16/2009-N-LB	GW-12636-120310-BW-019	GW-12636-051111-SSH-104	GW-12636-120711-JY-415	GW-12636-032614-SSH-1404
Sample Depth:		6/29/2006	11/30/2006	6/5/2007	11/16/2007	7/2/2008	11/20/2008	11/20/2008	6/25/2009	11/16/2009	12/3/2010	5/11/2011	12/7/2011	3/26/2014
		-	-	-	-	-	-	-	-	-	-	-	-	-
							(Duplicate)							
Parameters	Units													
Metals														
Aluminum	mg/L	-	-	-	-	-	-	-	-	-	0.704	0.268	0.083	-
Aluminum (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.05 U
Antimony	mg/L	-	-	-	-	-	-	-	-	-	0.00023 J	0.002 U	0.002 U	-
Antimony (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.00017 J
Arsenic	mg/L	-	-	-	-	-	-	-	-	-	0.0033 J	0.005 U	0.005 U	-
Arsenic (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.005 U
Barium	mg/L	-	-	-	-	-	-	-	-	-	0.0173 J	0.0101 J	0.011 J	-
Barium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.0087 J
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	-
Beryllium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.001 U
Cadmium	mg/L	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	-
Cadmium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.001 U
Chromium	mg/L	-	-	-	-	-	-	-	-	-	0.005 U	0.005 U	0.005 U	-
Chromium (dissolved)	mg/L	0.006	0.005 U	0.012	0.002	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	-	-	0.005 U
Cobalt	mg/L	-	-	-	-	-	-	-	-	-	0.0019 J	0.0022 J	0.0024 J	-
Cobalt (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.007 U
Copper	mg/L	-	-	-	-	-	-	-	-	-	0.0031	0.002 U	0.002 U	-
Copper (dissolved)	mg/L	0.006	0.006	0.006	0.006	0.004	0.001 U	0.001 U	0.001 U	0.004 U	-	-	-	0.00085 J
Iron	mg/L	-	-	-	-	-	-	-	-	-	1.01	0.302	0.14	-
Iron (dissolved)	mg/L	0.39	-	0.32	-	0.78	-	-	0.059	-	-	-	-	0.1 U
Lead	mg/L	-	-	-	-	-	-	-	-	-	0.003 U	0.003 U	0.003 U	-
Lead (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.003 U
Manganese	mg/L	-	-	-	-	-	-	-	-	-	0.391	0.211	0.31	-
Manganese (dissolved)	mg/L	0.33	-	1.9 ^{bcd}	-	0.812 ^{bd}	-	-	0.173	-	-	-	-	0.047
Mercury	mg/L	-	-	-	-	-	-	-	-	-	0.0002 UJ	0.0002 U	0.0002 U	-
Mercury (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.0002 U
Nickel	mg/L	-	-	-	-	-	-	-	-	-	0.0072 J	0.0035 J	0.0047 J	-
Nickel (dissolved)	mg/L	0.013	0.005 U	0.024	0.024	0.013	0.013	0.013	0.005 U	0.016	-	-	-	0.0043 J
Selenium	mg/L	-	-	-	-	-	-	-	-	-	0.005 U	0.005 U	0.005 U	-
Selenium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.005 U
Silver	mg/L	-	-	-	-	-	-	-	-	-	0.0002 U	0.0002 U	0.0002 U	-
Silver (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.000024 J
Sodium (dissolved)	mg/L	63.6	-	67.3	-	64.2	-	-	65.3	-	-	-	-	-
Thallium	mg/L	-	-	-	-	-	-	-	-	-	0.001 U	0.001 U	0.001 U	-
Thallium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.001 U
Vanadium	mg/L	-	-	-	-	-	-	-	-	-	0.0012 J	0.004 U	0.004 U	-
Vanadium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.004 U
Zinc	mg/L	-	-	-	-	-	-	-	-	-	0.0211 U	0.02 U	0.02 U	-
Zinc (dissolved)	mg/L	0.019	0.014	0.021	0.018	0.019	0.005 U	0.005 U	0.005 U	0.008	-	-	-	0.02 U
Pesticides														
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Wet														
Conductance, specific	umhos/cm	2820	2830	2770	3000	3060	3280	3290	2700	3030	-	-	-	-
Cyanide (amenable)	mg/L	-	-	-	-	-	-	-	-	-	0.010 U	0.010 U	0.0050 U	0.0050 U
Cyanide (total)	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.0050 U	-
pH	s.u.	6.8	7.2	6.7	6.7	6.4 ^{bd}	6.4 ^{bd}	6.4 ^{bd}	6.7	6.7	-	-	-	-
Temperature, field	Deg C	12.4	12.5	11	9.4	19.7	8.1	8.1	19.8	12.7	-	-	-	-
Total organic carbon (TOC)	mg/L	1.9	2.7	2.1	2	1.8	2	2.2	1.6	3	-	-	-	-
Total organic halides (TOX)	mg/L	0.03 U	0.0367	0.03 U	0.0274	0.0364	0.127	0.0159	0.03 U	0.0841	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:	B-9-6/29/2006-N-LB	B-9-11/30/2006-N-LB	B-9-6/5/2007-N-LB	B-9-11/16/2007-N-LB	B-9-7/2/2008-N-LB	B-9 Dup.-11/20/2008-FD-LB	B-9-11/20/2008-N-LB	B-9-6/25/2009-N-LB	B-9-11/16/2009-N-LB	GW-12636-120310-BW-019	GW-12636-0511111-SSH-104	GW-12636-120711-JY-415	GW-12636-032614-SSH-1404
Sample Date:	6/29/2006	11/30/2006	6/5/2007	11/16/2007	7/2/2008	11/20/2008	11/20/2008	6/25/2009	11/16/2009	12/3/2010	5/11/2011	12/7/2011	3/26/2014
Sample Depth:	-	-	-	-	-	(Duplicate)	-	-	-	-	-	-	-
Parameters	Units												
FPARAM													
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	-	-	-
pH, field	s.u.	-	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	-	-	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte												

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:	GW-12636-060914-SSH-1420	GW-12636-090914-SSH-1428	GW-120914-12636-SSH-1439	GW-12636-032715-SSH-15014	GW-12636-062315-SSH-1535	GW-12636-091715-SSH-1544	GW-12636-091715-SSH-1549	GW-12636-121515-SSH-1552	GW-12636-121515-SSH-1553	GW-12636-121615-SSH-1559	GW-12636-032116-SSH-1016
Sample Date:	6/9/2014	9/9/2014	12/9/2014	3/27/2015	6/23/2015	9/17/2015	9/17/2015	12/15/2015	12/15/2015	12/16/2015	3/21/2016
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
(Duplicate)											
Parameters	Units										
VOAs											
1,1,1-Trichloroethane	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,1,2-Trichloroethane	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,1-Dichloroethane	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,1-Dichloroethene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,2-Dichlorobenzene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,2-Dichloroethane	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,2-Dichloropropane	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,3-Dichlorobenzene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
1,4-Dichlorobenzene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	-	-	0.01 U	-	-	-	-	-	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	-	-	0.01 U	-	-	-	-	-	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	-	-	0.01 U	-	-	-	-	-	0.01 U
Acetone	mg/L	-	-	-	0.0016 J	-	-	-	-	-	0.01 U
Benzene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Bromodichloromethane	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Bromoform	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Carbon disulfide	mg/L	-	-	-	0.005 U	-	-	-	-	-	0.005 U
Carbon tetrachloride	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Chlorobenzene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Chloroethane	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Chloroform (Trichloromethane)	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
cis-1,2-Dichloroethene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
cis-1,3-Dichloropropene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Cyclohexane	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Dibromochloromethane	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Ethylbenzene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Isopropyl benzene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	0.01 U	-	-	-	-	-	0.01 U
Methyl cyclohexane	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Methylene chloride	mg/L	-	-	-	0.005 U	-	-	-	-	-	0.005 U
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Tetrachloroethene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Toluene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
trans-1,2-Dichloroethene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Trichloroethene	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Vinyl chloride	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Xylenes (total)	mg/L	-	-	-	0.002 U	-	-	-	-	-	0.002 U
SVOAs											
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:	GW-12636-060914-SSH-1420	GW-12636-090914-SSH-1428	GW-120914-12636-SSH-1439	GW-12636-032715-SSH-15014	GW-12636-062315-SSH-1535	GW-12636-091715-SSH-1544	GW-12636-091715-SSH-1549	GW-12636-121515-SSH-1552	GW-12636-121515-SSH-1553	GW-12636-121615-SSH-1559	GW-12636-032116-SSH-1016
Sample Date:	6/9/2014	9/9/2014	12/9/2014	3/27/2015	6/23/2015	9/17/2015	9/17/2015	12/15/2015	12/15/2015	12/16/2015	3/21/2016
Sample Depth:	-	-	-	-	-	-	-	-	(Duplicate)	-	-
Parameters	Units										
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:	GW-12636-060914-SSH-1420	GW-12636-090914-SSH-1428	GW-120914-12636-SSH-1439	GW-12636-032715-SSH-15014	GW-12636-062315-SSH-1535	GW-12636-091715-SSH-1544	GW-12636-091715-SSH-1549	GW-12636-121515-SSH-1552	GW-12636-121515-SSH-1553	GW-12636-121615-SSH-1559	GW-12636-032116-SSH-1016
Sample Date:	6/9/2014	9/9/2014	12/9/2014	3/27/2015	6/23/2015	9/17/2015	9/17/2015	12/15/2015	12/15/2015	12/16/2015	3/21/2016
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
(Duplicate)											
Parameters	Units										
Metals											
Aluminum	mg/L	-	-	-	-	-	-	-	-	-	-
Aluminum (dissolved)	mg/L	-	-	-	0.05 U	-	-	-	-	-	0.48
Antimony	mg/L	-	-	-	-	-	-	-	-	-	-
Antimony (dissolved)	mg/L	-	-	-	0.00073 J	-	-	-	-	-	0.00021 J
Arsenic	mg/L	-	-	-	-	-	-	-	-	-	-
Arsenic (dissolved)	mg/L	-	-	-	0.0061	-	-	-	-	-	0.0036 J
Barium	mg/L	-	-	-	-	-	-	-	-	-	-
Barium (dissolved)	mg/L	-	-	-	0.01 J	-	-	-	-	-	0.013 J
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	-
Beryllium (dissolved)	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Cadmium	mg/L	-	-	-	-	-	-	-	-	-	-
Cadmium (dissolved)	mg/L	-	-	-	0.0005 J	-	-	-	-	-	0.00054 J
Chromium	mg/L	-	-	-	-	-	-	-	-	-	-
Chromium (dissolved)	mg/L	-	-	-	0.005 U	-	-	-	-	-	0.0016 J
Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-
Cobalt (dissolved)	mg/L	-	-	-	0.007 U	-	-	-	-	-	0.0019 J
Copper	mg/L	-	-	-	-	-	-	-	-	-	-
Copper (dissolved)	mg/L	-	-	-	0.00089 J	-	-	-	-	-	0.0021 U
Iron	mg/L	-	-	-	-	-	-	-	-	-	-
Iron (dissolved)	mg/L	-	-	-	0.1 U	-	-	-	-	-	0.65
Lead	mg/L	0.003 U	0.003 U	0.0019 J	-	0.003 U	-	-	0.003 U	-	-
Lead (dissolved)	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	mg/L	0.03	0.21	0.047	-	0.11	-	0.16	0.17	-	-
Manganese (dissolved)	mg/L	0.019	0.2	0.039	0.036	0.085	0.28	0.27	0.19	0.2	0.089
Mercury	mg/L	-	-	-	-	-	-	-	-	-	-
Mercury (dissolved)	mg/L	-	-	-	0.0002 U	-	-	-	-	-	0.0002 U
Nickel	mg/L	-	-	-	-	-	-	-	-	-	-
Nickel (dissolved)	mg/L	-	-	-	0.004 J	-	-	-	-	-	0.0066 J
Selenium	mg/L	-	-	-	-	-	-	-	-	-	-
Selenium (dissolved)	mg/L	-	-	-	0.005 U	-	-	-	-	-	0.005 U
Silver	mg/L	-	-	-	-	-	-	-	-	-	-
Silver (dissolved)	mg/L	-	-	-	0.0002 U	-	-	-	-	-	0.0002 U
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	-	-	-	-	-	-	-	-	-
Thallium (dissolved)	mg/L	-	-	-	0.001 U	-	-	-	-	-	0.001 U
Vanadium	mg/L	-	-	-	-	-	-	-	-	-	-
Vanadium (dissolved)	mg/L	-	-	-	0.004 U	-	-	-	-	-	0.004 U
Zinc	mg/L	-	-	-	-	-	-	-	-	-	-
Zinc (dissolved)	mg/L	-	-	-	0.02 U	-	-	-	-	-	0.02 U
Pesticides											
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-
Wet											
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	-	-	0.0050 U	-	-	-	-	-	-
Cyanide (total)	mg/L	-	-	-	-	-	-	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9	B-9
Sample ID:	GW-12636-060914-SSH-1420	GW-12636-090914-SSH-1428	GW-120914-12636-SSH-1439	GW-12636-032715-SSH-15014	GW-12636-062315-SSH-1535	GW-12636-091715-SSH-1544	GW-12636-091715-SSH-1549	GW-12636-121515-SSH-1552	GW-12636-121515-SSH-1553	GW-12636-121615-SSH-1559	GW-12636-032116-SSH-1016
Sample Date:	6/9/2014	9/9/2014	12/9/2014	3/27/2015	6/23/2015	9/17/2015	9/17/2015	12/15/2015	12/15/2015	12/16/2015	3/21/2016
Sample Depth:	-	-	-	-	-	-	-	-	(Duplicate)	-	-
Parameters	Units										
<i>FPARAM</i>											
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	-
pH, field	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte										

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1
Sample ID:	GW-12636-062116-SSH-2816	GW-12636-092916-SSH-3916	GW-12636-112916-SSH-4616	GW-12636-032917-SSH-0917	GW-12636-091211-JY-005	MW-1 MW-1	W-111496-BM-008	GW-12636-120210-BW-011	GW-12636-051311-SSH-110	GW-12636-120711-JY-414	GW-12636-032614-SSH-1407	GW-12636-032715-SSH-15017
Sample Date:	6/21/2016	9/29/2016	11/29/2016	3/29/2017	9/12/2011	11/14/1996	11/14/1996	12/2/2010	5/13/2011	12/7/2011	3/26/2014	3/27/2015
Sample Depth:	-	-	-	-	(4.41-10.72) in BGS	-	-	-	-	-	-	-
							(other)					
Parameters	Units											
VOAs												
1,1,1-Trichloroethane	mg/L	-	-	-	0.001 U	0.001 U	U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	-	-	-	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.005 U	0.005 UJ	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 UJ	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	-	-	0.01 U	0.01 U	-	0.05 U	0.025 U	0.025 U	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	-	-	0.01 U	0.01 U	-	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	-	-	0.01 U	0.01 U	-	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
Acetone	mg/L	-	-	-	0.01 U	0.01 U	-	0.1 U	0.025 U	0.025 U	0.01 U	0.01 U
Benzene	mg/L	-	-	-	0.001 U	0.001 U	-	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	-	-	0.001 U	0.001 UJ	U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L	-	-	-	0.005 U	0.005 U	-	0.05 U	0.005 U	0.005 UJ	0.005 U	0.005 U
Carbon tetrachloride	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	-	-	0.001 U	0.001 U	U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	-	-	-	0.001 U	0.001 U	-	0.005	0.00023 J	0.001 U	0.001 U	0.00043 J
cis-1,3-Dichloropropene	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropyl benzene	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.005 U	0.005 U	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	0.01 U	0.01 U	-	-	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	-	-	0.001 U	0.005 U	-	-	0.005 U	0.005 U	0.001 U	0.001 U
Methylene chloride	mg/L	-	-	-	0.005 U	0.005 U	-	0.005 U	0.005 U	0.005 UJ	0.005 U	0.005 U
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	mg/L	-	-	-	0.001 U	0.001 U	U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	mg/L	-	-	-	0.001 U	0.001 U	0.0006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	-	-	-	0.001 U	0.001 U	0.0017	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	mg/L	-	-	-	0.001 U	0.001 U	0.0048	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 U	0.001 UJ	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	mg/L	-	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)	mg/L	-	-	-	0.002 U	0.002 U	-	0.003 U	0.002 U	0.002 U	0.002 U	0.002 U
SVOAs												
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1
Sample ID:	GW-12636-062116-SSH-2816	GW-12636-092916-SSH-3916	GW-12636-112916-SSH-4616	GW-12636-032917-SSH-0917	GW-12636-091211-JY-005	MW-1 MW-1	W-111496-BM-008	GW-12636-120210-BW-011	GW-12636-051311-SSH-110	GW-12636-120711-JY-414	GW-12636-032614-SSH-1407	GW-12636-032715-SSH-15017
Sample Date:	6/21/2016	9/29/2016	11/29/2016	3/29/2017	9/12/2011	11/14/1996	11/14/1996	12/2/2010	5/13/2011	12/7/2011	3/26/2014	3/27/2015
Sample Depth:	-	-	-	-	(4.41-10.72) in BGS	-	(other)	-	-	-	-	-
Parameters	Units											
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:		B-9	B-9	B-9	B-9	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1
Sample ID:		GW-12636-062116-SSH-2816	GW-12636-092916-SSH-3916	GW-12636-112916-SSH-4616	GW-12636-032917-SSH-0917	GW-12636-091211-JY-005	MW-1 MW-1	W-111496-BM-008	GW-12636-120210-BW-011	GW-12636-051311-SSH-110	GW-12636-120711-JY-414	GW-12636-032614-SSH-1407	GW-12636-032715-SSH-15017
Sample Date:		6/21/2016	9/29/2016	11/29/2016	3/29/2017	9/12/2011	11/14/1996	11/14/1996	12/2/2010	5/13/2011	12/7/2011	3/26/2014	3/27/2015
Sample Depth:		-	-	-	-	(4.41-10.72) in BGS	-	-	-	-	-	-	-
								(other)					
Parameters	Units												
Metals													
Aluminum	mg/L	-	-	-	0.13	0.32	-	-	1.85	0.633	0.11	0.41	0.16
Aluminum (dissolved)	mg/L	-	-	-	0.019 J	-	-	-	-	-	-	0.05 U	0.05 U
Antimony	mg/L	-	-	-	0.002 U	0.002 U	-	-	0.00036 J	0.002 U	0.002 U	0.00089 J	0.00049 J
Antimony (dissolved)	mg/L	-	-	-	0.002 U	-	-	-	-	-	-	0.00032 J	0.00024 J
Arsenic	mg/L	-	-	-	0.00052 J	0.005 U	U	-	0.0094	0.005 U	0.0065	0.005 U	0.005 U
Arsenic (dissolved)	mg/L	-	-	-	0.00043 J	-	-	-	-	-	-	0.005 U	0.005 U
Barium	mg/L	-	-	-	0.011 J	0.045 J	U	-	0.0566 J	0.0445 J	0.053 J	0.041 J	0.02 J
Barium (dissolved)	mg/L	-	-	-	0.011 J	-	-	-	-	-	-	0.058 J	0.021 J
Beryllium	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium (dissolved)	mg/L	-	-	-	0.001 U	-	-	-	-	-	-	0.001 U	0.001 U
Cadmium	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium (dissolved)	mg/L	-	-	-	0.001 U	-	-	-	-	-	-	0.001 U	0.001 U
Chromium	mg/L	-	-	-	0.00026 J	0.005 U	-	-	0.0035 J	0.005 U	0.005 U	0.005 U	0.005 U
Chromium (dissolved)	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	0.005 U	0.005 U
Cobalt	mg/L	-	-	-	0.00035 J	0.0029 J	-	-	0.0032 J	0.007 U	0.007 U	0.007 U	0.007 U
Cobalt (dissolved)	mg/L	-	-	-	0.00028 J	-	-	-	-	-	-	0.007 U	0.007 U
Copper	mg/L	-	-	-	0.002 U	0.004	U	-	0.028	0.0083	0.0043	0.007	0.003
Copper (dissolved)	mg/L	-	-	-	0.0023	-	-	-	-	-	-	0.0015 J	0.0027
Iron	mg/L	-	-	-	0.16 J	1.2	-	-	3.59	0.857	0.24	0.55	0.2
Iron (dissolved)	mg/L	-	-	-	0.2 U	-	-	-	-	-	-	0.1 U	0.1 U
Lead	mg/L	0.005 U	-	0.0035 J	0.003 U	0.0033	U	-	0.0142 ^{bd}	0.0033	0.003 U	0.0034	0.003 U
Lead (dissolved)	mg/L	0.0023 J	0.0038 J	0.0033 J	0.003 U	-	-	-	-	-	-	0.003 U	0.003 U
Manganese	mg/L	1.2 ^{bcd}	-	0.19	0.085	0.4	-	-	0.164	0.0567	0.025	0.038	0.1
Manganese (dissolved)	mg/L	0.75 ^{bd}	0.59 ^{bd}	0.18	0.08	-	-	-	-	-	-	0.01 J	0.018
Mercury	mg/L	-	-	-	0.0002 U	0.0002 U	-	-	0.0002 UJ	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Mercury (dissolved)	mg/L	-	-	-	0.0002 U	-	-	-	-	-	-	0.0002 U	0.0002 U
Nickel	mg/L	-	-	-	0.0042 J	0.02 U	-	-	0.0116 J	0.0037 J	0.02 U	0.0014 J	0.0014 J
Nickel (dissolved)	mg/L	-	-	-	0.0046 J	-	-	-	-	-	-	0.02 U	0.02 U
Selenium	mg/L	-	-	-	0.00057 J	0.005 U	U	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Selenium (dissolved)	mg/L	-	-	-	0.00053 J	-	-	-	-	-	-	0.005 U	0.005 U
Silver	mg/L	-	-	-	0.0002 U	0.0002 U	-	-	0.0002 U	0.0002 U	0.0002 U	0.000018 J	0.0002 U
Silver (dissolved)	mg/L	-	-	-	0.0002 U	-	-	-	-	-	-	0.0002 U	0.0002 U
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	-	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium (dissolved)	mg/L	-	-	-	0.001 U	-	-	-	-	-	-	0.001 U	0.001 U
Vanadium	mg/L	-	-	-	0.004 U	0.004 U	-	-	0.0043	0.004 U	0.0027 J	0.004 U	0.0062
Vanadium (dissolved)	mg/L	-	-	-	0.004 U	-	-	-	-	-	-	0.004 U	0.004
Zinc	mg/L	-	-	-	0.02 U	0.042	U	-	0.196 J	0.0809	0.029 U	0.055	0.016 J
Zinc (dissolved)	mg/L	-	-	-	0.02 U	-	-	-	-	-	-	0.0089 J	0.02 U
Pesticides													
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	0.0002 U	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	0.0002 U	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	0.0004 U	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	0.0002 U	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	0.0002 U	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	0.0002 U	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	0.0002 U	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	0.0002 U	-	-	-	-	-
Wet													
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	-	-	-	0.0050 U	-	-	0.010 U	0.010 U	0.0050 U	0.0050 U	0.0050 U
Cyanide (total)	mg/L	-	-	-	-	0.0050 U	-	-	-	-	0.0050 U	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	B-9	B-9	B-9	B-9	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1	MW-1
Sample ID:	GW-12636-062116-SSH-2816	GW-12636-092916-SSH-3916	GW-12636-112916-SSH-4616	GW-12636-032917-SSH-0917	GW-12636-091211-JY-005	MW-1	W-111496-BM-008	GW-12636-120210-BW-011	GW-12636-051311-SSH-110	GW-12636-120711-JY-414	GW-12636-032614-SSH-1407	GW-12636-032715-SSH-15017
Sample Date:	6/21/2016	9/29/2016	11/29/2016	3/29/2017	9/12/2011	11/14/1996	11/14/1996	12/2/2010	5/13/2011	12/7/2011	3/26/2014	3/27/2015
Sample Depth:	-	-	-	-	(4.41-10.72) in BGS	-	(other)	-	-	-	-	-
Parameters	Units											
<i>FPARAM</i>												
Conductivity, field	umhos/cm	-	-	-	2510	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	3.19	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	191	-	-	-	-	-	-	-
pH, field	s.u.	-	-	-	7.09	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	10.2	-	-	-	-	-	-	-
Turbidity, field	NTU	-	-	-	7.97	-	-	-	-	-	-	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte											

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-1	MW-1	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2
Sample ID:	GW-12636-032116-SSH-0216	GW-12636-032917-SSH-0417	GW-12636-091211-JY-003	MW-2	W-8692-111496-SF-011	GW-12636-120310-BW-014	GW-12636-051311-SSH-113	GW-12636-120611-JY-409	GW-12636-032614-SSH-1405	GW-12636-032715-SSH-15019	GW-12636-032715-SSH-15020	GW-12636-032116-SSH-0816
Sample Date:	3/21/2016	3/29/2017	9/12/2011	11/14/1996	11/14/1996	12/3/2010	5/13/2011	12/6/2011	3/26/2014	3/27/2015	3/27/2015	3/21/2016
Sample Depth:	-	-	(4.54-12.84) in BGS	-	-	-	-	-	-	-	-	-
					(other)						(Duplicate)	
Parameters	Units											
VOAs												
1,1,1-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	-	-	0.005 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.001 U	0.001 U	0.001 U	-	-	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.01 U	0.01 U	0.01 U	-	0.05 U	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	0.01 U	0.01 U	0.01 U	-	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.01 U	0.01 U	0.01 U	-	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	mg/L	0.01 U	0.01 U	0.01 U	-	0.1 U	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzene	mg/L	0.001 U	0.001 U	0.001 U	-	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	0.001 U	0.001 U	0.001 UJ	U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L	0.005 U	0.005 U	0.005 U	-	0.05 U	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	0.001 U	0.001 U	0.001 U	U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	0.00066 J	0.0014	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropyl benzene	mg/L	0.001 U	0.001 U	0.001 U	-	-	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	0.01 U	0.01 U	0.01 U	-	-	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	mg/L	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	0.001 U	0.001 U	0.005 U	-	-	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U
Methylene chloride	mg/L	0.005 U	0.005 U	0.005 U	-	0.005 U	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.0005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	mg/L	0.001 U	0.001 U	0.001 U	0.0007	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.0044	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	mg/L	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)	mg/L	0.002 U	0.002 U	0.002 U	-	0.003 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
SVOAs												
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	0.05 U	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	0.02 U	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-1	MW-1	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2
Sample ID:	GW-12636-032116-SSH-0216	GW-12636-032917-SSH-0417	GW-12636-091211-JY-003	MW-2	W-8692-111496-SF-011	GW-12636-120310-BW-014	GW-12636-051311-SSH-113	GW-12636-120611-JY-409	GW-12636-032614-SSH-1405	GW-12636-032715-SSH-15019	GW-12636-032715-SSH-15020	GW-12636-032116-SSH-0816
Sample Date:	3/21/2016	3/29/2017	9/12/2011	11/14/1996	11/14/1996	12/3/2010	5/13/2011	12/6/2011	3/26/2014	3/27/2015	3/27/2015	3/21/2016
Sample Depth:	-	-	(4.54-12.84) in BGS	-	(other)	-	-	-	-	-	(Duplicate)	-
Parameters	Units											
2-Nitroaniline	mg/L	-	-	-	-	0.02 U	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	0.0018	0.005 U	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	0.02 U	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	0.02 U	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	0.02 U	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	0.02 U	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	0.02 U	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	0.02 U	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	0.00016	0.005 U	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	0.0007	0.005 U	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	0.00014	0.005 U	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	0.00017	0.005 U	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	0.02 U	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooxononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	0.0006	0.005 U	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	0.005 U	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	
Sample Location:	MW-1	MW-1	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	
Sample ID:	GW-12636-032116-SSH-0216	GW-12636-032917-SSH-0417	GW-12636-091211-JY-003	MW-2	W-8692-111496-SF-011	GW-12636-120310-BW-014	GW-12636-051311-SSH-113	GW-12636-032614-SSH-1405	GW-12636-032715-SSH-15019	GW-12636-032715-SSH-15020	GW-12636-032116-SSH-0816		
Sample Date:	3/21/2016	3/29/2017	9/12/2011	11/14/1996	11/14/1996	12/3/2010	5/13/2011	12/6/2011	3/26/2014	3/27/2015	3/27/2015	3/21/2016	
Sample Depth:	-	-	(4.54-12.84) in BGS	-	(other)	-	-	-	-	-	(Duplicate)	-	
Parameters	Units												
Metals													
Aluminum	mg/L	-	0.41	0.036 J	-	-	0.508	0.213	0.051	0.05 U	0.036 J	0.037 J	-
Aluminum (dissolved)	mg/L	0.1	0.038 J	0.05 U	-	-	-	-	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Antimony	mg/L	-	0.002 U	0.002 U	-	-	0.002 U	0.002 U	0.002 U	0.00084 J	0.00062 J	0.00063 J	-
Antimony (dissolved)	mg/L	0.00021 J	0.002 U	0.002 U	-	-	-	-	0.002 U	0.00054 J	0.00055 J	0.00055 J	0.00019 J
Arsenic	mg/L	-	0.00097 J	0.01	U	-	0.0279 ^{bdf}	0.0046 J	0.005 U	0.0066	0.0076	0.0077	-
Arsenic (dissolved)	mg/L	0.003 J	0.0008 J	0.0075	-	0.005 U	-	-	0.005 U	0.0046 J	0.0076	0.0062	0.0081
Barium	mg/L	-	0.054 J	0.22	0.54	-	0.279	0.0515 J	0.23	0.31	0.23	0.22	-
Barium (dissolved)	mg/L	0.036 J	0.055 J	0.23	-	0.2 U	-	-	0.23	0.29	0.22	0.22	0.15
Beryllium	mg/L	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Beryllium (dissolved)	mg/L	0.001 U	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	mg/L	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.00071 J	0.00039 J	0.0005 J	-
Cadmium (dissolved)	mg/L	0.001 U	0.001 U	0.001 U	-	0.0005 U	-	-	0.001 U	0.001 U	0.00033 J	0.0004 J	0.0005 J
Chromium	mg/L	-	0.00071 J	0.005 U	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-
Chromium (dissolved)	mg/L	0.00079 J	0.005 U	0.005 U	-	0.05 U	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.0014 J
Cobalt	mg/L	-	0.0004 J	0.0023 J	-	-	0.0056 J	0.0024 J	0.0076	0.014	0.0088	0.0086	-
Cobalt (dissolved)	mg/L	0.0023 J	0.00023 J	0.0059 J	-	-	-	-	0.0072	0.011	0.0093	0.0088	0.013
Copper	mg/L	-	0.0022 J	0.00044 J	U	-	0.0041	0.0026 U	0.002 U	0.0034	0.0031	0.0031	-
Copper (dissolved)	mg/L	0.0052 U	0.0031 J	0.00056 J	-	0.025 U	-	-	0.002 U	0.0024	0.0019 J	0.0025	0.002 U
Iron	mg/L	-	0.35	16	-	-	24.8	8.27	12	6	2.1	2.1	-
Iron (dissolved)	mg/L	0.24	0.2 U	14 ^{bcd}	-	-	-	-	11 ^{bcd}	4	1.9	1.7	2.6
Lead	mg/L	-	0.003 U	0.003 U	U	-	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	-
Lead (dissolved)	mg/L	0.003 U	0.003 U	0.003 U	-	0.003 U	-	-	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	mg/L	-	0.017	2.5 ^{bcd}	-	-	2.12 ^{bcd}	0.541	2.6 ^{bcd}	1.8 ^{bcd}	1.5 ^{bcd}	1.5 ^{bcd}	-
Manganese (dissolved)	mg/L	0.33	0.016	2.7 ^{bcd}	-	-	-	-	2.6 ^{bcd}	1.7 ^{bcd}	1.5 ^{bcd}	1.5 ^{bcd}	2.3 ^{bcd}
Mercury	mg/L	-	0.0002 U	0.0002 U	-	-	0.0002 UJ	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-
Mercury (dissolved)	mg/L	0.0002 U	0.0002 U	0.0002 U	-	0.0002 U	-	-	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Nickel	mg/L	-	0.0028 J	0.02 U	-	-	0.02 U	0.02 U	0.02 U	0.058	0.0067 J	0.0065 J	-
Nickel (dissolved)	mg/L	0.0042 J	0.0026 J	0.02 U	-	-	-	-	0.02 U	0.0093 J	0.0066 J	0.007 J	0.0056 J
Selenium	mg/L	-	0.00057 J	0.005 U	U	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-
Selenium (dissolved)	mg/L	0.005 U	0.005 U	0.005 U	-	0.0095 ^f	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Silver	mg/L	-	0.0002 U	0.0002 U	-	-	0.0002 U	0.0002 U	0.0002 U	0.000015 J	0.0002 U	0.0002 U	-
Silver (dissolved)	mg/L	0.0002 U	0.0002 U	0.0002 U	-	0.0005 U	-	-	0.0002 U	0.000009 J	0.0002 U	0.0002 U	0.0002 U
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.00042 J	0.00025 J	0.00023 J	-
Thallium (dissolved)	mg/L	0.0001 J	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U	0.00023 J	0.00022 J	0.00013 J
Vanadium	mg/L	-	0.0014 J	0.004 U	-	-	0.0014 J	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	-
Vanadium (dissolved)	mg/L	0.004 U	0.00071 J	0.004 U	-	-	-	-	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Zinc	mg/L	-	0.02 U	0.0082 J	U	-	0.043 J	0.0351 U	0.017 J	0.11	0.027	0.026	-
Zinc (dissolved)	mg/L	0.02 U	0.02 U	0.02 U	-	0.02 U	-	-	0.011 J	0.05	0.024	0.024	0.02 U
Pesticides													
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Wet													
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	-	0.0050 U	-	-	0.010 U	0.010 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	-
Cyanide (total)	mg/L	-	-	0.0050 U	-	-	-	-	0.0050 U	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:		MW-1	MW-1	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2	MW-2
Sample ID:		GW-12636-032116-SSH-0216	GW-12636-032917-SSH-0417	GW-12636-091211-JY-003	MW-2	W-8692-111496-SF-011	GW-12636-120310-BW-014	GW-12636-051311-SSH-113	GW-12636-120611-JY-409	GW-12636-032614-SSH-1405	GW-12636-032715-SSH-15019	GW-12636-032715-SSH-15020	GW-12636-032116-SSH-0816
Sample Date:		3/21/2016	3/29/2017	9/12/2011	11/14/1996	11/14/1996	12/3/2010	5/13/2011	12/6/2011	3/26/2014	3/27/2015	3/27/2015	3/21/2016
Sample Depth:		-	-	(4.54-12.84) in BGS	-	(other)	-	-	-	-	-	(Duplicate)	-
Parameters	Units												
FPARAM													
Conductivity, field	umhos/cm	-	883	-	-	-	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	6.64	-	-	-	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	236	-	-	-	-	-	-	-	-	-	-
pH, field	s.u.	-	7.74	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	8.1	-	-	-	-	-	-	-	-	-	-
Turbidity, field	NTU	-	10.8	-	-	-	-	-	-	-	-	-	-
Footnotes:													
	U	Not detected											
	J	Estimated concentration											
	UJ	Not detected											

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-2	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02
Sample ID:	GW-12636-032917-SSH-0117	GW-12636-091311-JY-009	GW-12636-112910-BW-001	GW-12636-051111-SSH-101	GW-12636-120511-JY-403	GW-12636-120511-JY-404	GW-12636-032714-SSH-1413	GW-12636-061014-SSH-1428	GW-12636-090914-SSH-1431	GW-12636-090914-SSH-1432	GW-120914-12636-SSH-1440	
Sample Date:	3/29/2017	9/13/2011	11/29/2010	5/11/2011	12/5/2011	12/5/2011	3/27/2014	6/10/2014	9/9/2014	9/9/2014	12/9/2014	
Sample Depth:	-	(11.91-13.17) in BGS	-	-	-	(Duplicate)	-	-	-	(Duplicate)	-	
Parameters	Units											
VOAs												
1,1,1-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,1,2,2-Tetrachloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,1,2-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,1-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,1-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,2,4-Trichlorobenzene	mg/L	0.001 U	0.001 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,2,4-Trimethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,2-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,2-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,2-Dichloropropane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,3,5-Trimethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,3-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
1,4-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.01 U	0.01 U	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	-	-	-	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	0.01 U	0.01 U	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.01 U	0.01 U	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	-	-	-	-
Acetone	mg/L	0.01 U	0.01 U	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	-	-	-	-
Benzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Bromodichloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Bromoform	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Bromomethane (Methyl bromide)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Carbon disulfide	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0022 J	-	-	-	-
Carbon tetrachloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Chlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Chloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Chloroform (Trichloromethane)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Chloromethane (Methyl chloride)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
cis-1,2-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
cis-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Cyclohexane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Dibromochloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Dichlorodifluoromethane (CFC-12)	mg/L	0.001 U	0.001 UJ	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Ethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Isopropyl benzene	mg/L	0.001 U	0.001 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	-	-	-	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	-	-	-
Methyl cyclohexane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Methyl tert butyl ether (MTBE)	mg/L	0.001 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	-	-	-	-
Methylene chloride	mg/L	0.005 U	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U	0.005 U	-	-	-	-
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Tetrachloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Toluene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
trans-1,2-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
trans-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Trichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Trichlorofluoromethane (CFC-11)	mg/L	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Trifluorotrichloroethane (CFC-113)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Vinyl chloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Xylenes (total)	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	-	-	-	-
SVOAs												
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-2	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02
Sample ID:	GW-12636-032917-SSH-0117	GW-12636-091311-JY-009	GW-12636-112910-BW-001	GW-12636-051111-SSH-101	GW-12636-120511-JY-403	GW-12636-120511-JY-404	GW-12636-032714-SSH-1413	GW-12636-061014-SSH-1428	GW-12636-090914-SSH-1431	GW-12636-090914-SSH-1432	GW-120914-12636-SSH-1440
Sample Date:	3/29/2017	9/13/2011	11/29/2010	5/11/2011	12/5/2011	12/5/2011	3/27/2014	6/10/2014	9/9/2014	9/9/2014	12/9/2014
Sample Depth:	-	(11.91-13.17) in BGS	-	-	-	(Duplicate)	-	-	-	(Duplicate)	-
Parameters	Units										
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooxonanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:		MW-2	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02
Sample ID:		GW-12636-032917-SSH-0117	GW-12636-091311-JY-009	GW-12636-112910-BW-001	GW-12636-051111-SSH-101	GW-12636-120511-JY-403	GW-12636-120511-JY-404	GW-12636-032714-SSH-1413	GW-12636-061014-SSH-1428	GW-12636-090914-SSH-1431	GW-12636-090914-SSH-1432	GW-120914-12636-SSH-1440
Sample Date:		3/29/2017	9/13/2011	11/29/2010	5/11/2011	12/5/2011	12/5/2011	3/27/2014	6/10/2014	9/9/2014	9/9/2014	12/9/2014
Sample Depth:		-	(11.91-13.17) in BGS	-	-	-	(Duplicate)	-	-	-	(Duplicate)	-
Parameters	Units											
Metals												
Aluminum	mg/L	0.041 J	0.05 U	0.157 J	0.101 J	0.05 U	0.05 U	0.079	-	-	-	-
Aluminum (dissolved)	mg/L	0.05 U	-	-	-	-	-	0.0094 J	-	-	-	-
Antimony	mg/L	0.0027 U	0.002 U	0.00035 J	0.002 U	0.002 U	0.002 U	0.002 U	-	-	-	-
Antimony (dissolved)	mg/L	0.002 U	-	-	-	-	-	0.002 U	-	-	-	-
Arsenic	mg/L	0.0048 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	-	-	-
Arsenic (dissolved)	mg/L	0.0039 J	-	-	-	-	-	0.005 U	-	-	-	-
Barium	mg/L	0.22	0.11	0.119	0.105	0.11	0.11	0.074 J	-	-	-	-
Barium (dissolved)	mg/L	0.24	-	-	-	-	-	0.071 J	-	-	-	-
Beryllium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Beryllium (dissolved)	mg/L	0.001 U	-	-	-	-	-	0.001 U	-	-	-	-
Cadmium	mg/L	0.00036 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Cadmium (dissolved)	mg/L	0.001 U	-	-	-	-	-	0.001 U	-	-	-	-
Chromium	mg/L	0.00054 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	-	-	-
Chromium (dissolved)	mg/L	0.005 U	-	-	-	-	-	0.005 U	-	-	-	-
Cobalt	mg/L	0.028	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	-	-	-	-
Cobalt (dissolved)	mg/L	0.03	-	-	-	-	-	0.007 U	-	-	-	-
Copper	mg/L	0.0031	0.002 U	0.0025 U	0.002 U	0.002 U	0.002 U	0.002 U	-	-	-	-
Copper (dissolved)	mg/L	0.003	-	-	-	-	-	0.002 U	-	-	-	-
Iron	mg/L	0.74	0.1 U	1.41	0.101	0.1 U	0.1 U	0.15	-	-	-	-
Iron (dissolved)	mg/L	0.3	-	-	-	-	-	0.1 U	-	-	-	-
Lead	mg/L	0.003 U	0.003 U	0.0063 ^{bd}	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	mg/L	0.003 U	-	-	-	-	-	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	mg/L	1.5 ^{bcd}	0.023 J	0.426	0.0418	0.01 J	0.01 J	0.013 J	0.023	0.0037 J	0.0044 J	0.015 U
Manganese (dissolved)	mg/L	1.5 ^{bcd}	-	-	-	-	-	0.003 J	0.0016 J	0.015 U	0.015 U	0.015 U
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 UJ	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-	-	-	-
Mercury (dissolved)	mg/L	0.0002 U	-	-	-	-	-	0.0002 U	-	-	-	-
Nickel	mg/L	0.012 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	-	-	-	-
Nickel (dissolved)	mg/L	0.013 J	-	-	-	-	-	0.02 U	-	-	-	-
Selenium	mg/L	0.0012 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	-	-	-
Selenium (dissolved)	mg/L	0.00076 J	-	-	-	-	-	0.005 U	-	-	-	-
Silver	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.000016 J	-	-	-	-
Silver (dissolved)	mg/L	0.0002 U	-	-	-	-	-	0.000009 J	-	-	-	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	0.00032 J	0.0015 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-
Thallium (dissolved)	mg/L	0.001 U	-	-	-	-	-	0.001 U	-	-	-	-
Vanadium	mg/L	0.00075 J	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 UJ	-	-	-	-
Vanadium (dissolved)	mg/L	0.004 U	-	-	-	-	-	0.004 U	-	-	-	-
Zinc	mg/L	0.037 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0053 J	0.02 U	-	-	-	-
Zinc (dissolved)	mg/L	0.037 U	-	-	-	-	-	0.0052 J	-	-	-	-
Pesticides												
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-	-
Wet												
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	0.0050 U	0.010 U	0.010 U	0.0050 U	0.0050 U	0.0050 U	-	-	-	-
Cyanide (total)	mg/L	-	0.0050 U	-	-	0.0050 U	0.0050 U	-	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-2	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02
Sample ID:	GW-12636-032917-SSH-0117	GW-12636-091311-JY-009	GW-12636-112910-BW-001	GW-12636-051111-SSH-101	GW-12636-120511-JY-403	GW-12636-120511-JY-404	GW-12636-032714-SSH-1413	GW-12636-061014-SSH-1428	GW-12636-090914-SSH-1431	GW-12636-090914-SSH-1432	GW-120914-12636-SSH-1440
Sample Date:	3/29/2017	9/13/2011	11/29/2010	5/11/2011	12/5/2011	12/5/2011	3/27/2014	6/10/2014	9/9/2014	9/9/2014	12/9/2014
Sample Depth:	-	(11.91-13.17) in BGS	-	-	-	(Duplicate)	-	-	-	(Duplicate)	-
Parameters	Units										
FPARAM											
Conductivity, field	umhos/cm	2070	-	-	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	2.39	-	-	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	223	-	-	-	-	-	-	-	-	-
pH, field	s.u.	6.98	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	8.70	-	-	-	-	-	-	-	-	-
Turbidity, field	NTU	5.34	-	-	-	-	-	-	-	-	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte										

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-17-13
Sample ID:	GW-12636-032515-SSH-15003	GW-12636-062215-SSH-1531	GW-12636-091415-SSH-1540	GW-12636-121515-SSH-1555	GW-12636-032116-SSH-0516	GW-12636-062016-SSH-2516	GW-12636-092816-SSH-3216	GW-12636-113016-SSH-5216	GW-12636-033017-SSH-1617	GW-12636-032614-SSH-1410	GW-12636-061014-SSH-1429
Sample Date:	3/25/2015	6/22/2015	9/14/2015	12/15/2015	3/21/2016	6/20/2016	9/28/2016	11/30/2016	3/30/2017	3/26/2014	6/10/2014
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units										
VOAs											
1,1,1-Trichloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U	0.01 U
Acetone	mg/L	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U	0.01 U
Benzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Bromodichloromethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Bromoform	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Carbon disulfide	mg/L	0.005 U	-	-	-	0.005 U	-	-	-	0.005 U	0.005 U
Carbon tetrachloride	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Chlorobenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Chloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Cyclohexane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Dibromochloromethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Ethylbenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Isopropyl benzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U	0.01 U
Methyl cyclohexane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Methylene chloride	mg/L	0.005 U	-	-	-	0.005 U	-	-	-	0.005 U	0.005 U
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Tetrachloroethene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Toluene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Trichloroethene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Vinyl chloride	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U
Xylenes (total)	mg/L	0.002 U	-	-	-	0.002 U	-	-	-	0.002 U	0.002 U
SVOAs											
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-17-13
Sample ID:	GW-12636-032515-SSH-15003	GW-12636-062215-SSH-1531	GW-12636-091415-SSH-1540	GW-12636-121515-SSH-1555	GW-12636-032116-SSH-0516	GW-12636-062016-SSH-2516	GW-12636-092816-SSH-3216	GW-12636-113016-SSH-5216	GW-12636-033017-SSH-1617	GW-12636-032614-SSH-1410	GW-12636-061014-SSH-1429
Sample Date:	3/25/2015	6/22/2015	9/14/2015	12/15/2015	3/21/2016	6/20/2016	9/28/2016	11/30/2016	3/30/2017	3/26/2014	6/10/2014
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units										
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	0.92 J	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	4.7	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	1.9 UJ	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	3.5	-	-	-
Perfluorooonanoic acid	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	1.9 U	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	19 U	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:		MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-17-13	MW-17-13
Sample ID:		GW-12636-032515-SSH-15003	GW-12636-062215-SSH-1531	GW-12636-091415-SSH-1540	GW-12636-121515-SSH-1555	GW-12636-032116-SSH-0516	GW-12636-062016-SSH-2516	GW-12636-092816-SSH-3216	GW-12636-113016-SSH-5216	GW-12636-033017-SSH-1617	GW-12636-032614-SSH-1410	GW-12636-061014-SSH-1429
Sample Date:		3/25/2015	6/22/2015	9/14/2015	12/15/2015	3/21/2016	6/20/2016	9/28/2016	11/30/2016	3/30/2017	3/26/2014	6/10/2014
Sample Depth:		-	-	-	-	-	-	-	-	-	-	-
Parameters	Units											
Metals												
Aluminum	mg/L	0.023 J	-	-	-	0.011 J	-	-	-	0.015 J	0.088	-
Aluminum (dissolved)	mg/L	0.05 U	-	-	-	0.05 U	-	-	-	0.05 U	0.05 U	-
Antimony	mg/L	0.002 U	-	-	-	0.00017 J	-	-	-	0.002 U	0.00077 J	-
Antimony (dissolved)	mg/L	0.002 U	-	-	-	0.002 U	-	-	-	0.0024	0.00083 J	-
Arsenic	mg/L	0.005 U	-	-	-	0.0036 J	-	-	-	0.00063 J	0.01	-
Arsenic (dissolved)	mg/L	0.005 U	-	-	-	0.005 U	-	-	-	0.00068 J	0.012 ^{bdf}	-
Barium	mg/L	0.077 J	-	-	-	0.075 J	-	-	-	0.072 J	0.15	-
Barium (dissolved)	mg/L	0.077 J	-	-	-	0.075 J	-	-	-	0.077 J	0.15	-
Beryllium	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Beryllium (dissolved)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Cadmium	mg/L	0.00035 J	-	-	-	0.00029 J	-	-	-	0.001 U	0.001 U	-
Cadmium (dissolved)	mg/L	0.0004 J	-	-	-	0.00029 J	-	-	-	0.001 U	0.001 U	-
Chromium	mg/L	0.0016 J	-	-	-	0.0015 J	-	-	-	0.00096 J	0.005 U	-
Chromium (dissolved)	mg/L	0.0014 J	-	-	-	0.0013 J	-	-	-	0.00092 J	0.005 U	-
Cobalt	mg/L	0.007 U	-	-	-	0.007 U	-	-	-	0.00027 J	0.007 U	-
Cobalt (dissolved)	mg/L	0.007 U	-	-	-	0.007 U	-	-	-	0.00026 J	0.007 U	-
Copper	mg/L	0.002 U	-	-	-	0.002 U	-	-	-	0.0011 J	0.0026	-
Copper (dissolved)	mg/L	0.002 U	-	-	-	0.002 U	-	-	-	0.0017 J	0.00093 J	-
Iron	mg/L	0.037 J	-	-	-	0.1 U	-	-	-	0.038 J	5.8	-
Iron (dissolved)	mg/L	0.1 U	-	-	-	0.1 U	-	-	-	0.013 J	5.9 ^{bcd}	-
Lead	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.005 U	0.0023 J	0.005 U	0.00037 J	0.003 U	0.003 U
Lead (dissolved)	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0027 J	0.005 U	0.005 U	0.0006 J	0.003 U	0.003 U
Manganese	mg/L	0.0026 J	0.0015 J	0.015 U	0.0014 J	0.015 U	0.015 U	0.015 U	0.015 U	0.0012 J	0.6	1.6 ^{bcd}
Manganese (dissolved)	mg/L	0.00099 J	0.0011 J	0.015 U	0.00073 J	0.015 U	0.015 U	0.015 U	0.015 U	0.00047 J	0.59 ^{bd}	1.7 ^{bcd}
Mercury	mg/L	0.0002 U	-	-	-	0.0002 U	-	-	-	0.0002 U	0.0002 U	-
Mercury (dissolved)	mg/L	0.0002 U	-	-	-	0.0002 U	-	-	-	0.0002 U	0.0002 U	-
Nickel	mg/L	0.02 U	-	-	-	0.00086 J	-	-	-	0.00035 J	0.0033 J	-
Nickel (dissolved)	mg/L	0.0025 J	-	-	-	0.0018 J	-	-	-	0.00056 J	0.0039 J	-
Selenium	mg/L	0.005 U	-	-	-	0.005 U	-	-	-	0.0013 J	0.005 U	-
Selenium (dissolved)	mg/L	0.005 U	-	-	-	0.005 U	-	-	-	0.0015 J	0.005 U	-
Silver	mg/L	0.0002 U	-	-	-	0.0002 U	-	-	-	0.0002 U	0.000023 J	-
Silver (dissolved)	mg/L	0.0002 U	-	-	-	0.000021 J	-	-	-	0.0002 U	0.000018 J	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	0.001 U	-	-	-	0.000088 J	-	-	-	0.001 U	0.001 U	-
Thallium (dissolved)	mg/L	0.001 U	-	-	-	0.00011 J	-	-	-	0.001 U	0.001 U	-
Vanadium	mg/L	0.004 U	-	-	-	0.004 U	-	-	-	0.004 U	0.004 U	-
Vanadium (dissolved)	mg/L	0.004 U	-	-	-	0.004 U	-	-	-	0.004 U	0.004 U	-
Zinc	mg/L	0.02 U	-	-	-	0.02 U	-	-	-	0.02 U	0.007 J	-
Zinc (dissolved)	mg/L	0.02 U	-	-	-	0.02 U	-	-	-	0.02 U	0.0087 J	-
Pesticides												
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-	-
Wet												
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	0.0050 U	-	-	-	-	-	-	-	-	0.0050 U	-
Cyanide (total)	mg/L	-	-	-	-	-	-	-	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-4-02	MW-17-13
Sample ID:	GW-12636-032515-SSH-15003	GW-12636-062215-SSH-1531	GW-12636-091415-SSH-1540	GW-12636-121515-SSH-1555	GW-12636-032116-SSH-0516	GW-12636-062016-SSH-2516	GW-12636-092816-SSH-3216	GW-12636-113016-SSH-5216	GW-12636-033017-SSH-1617	GW-12636-032614-SSH-1410	GW-12636-061014-SSH-1429
Sample Date:	3/25/2015	6/22/2015	9/14/2015	12/15/2015	3/21/2016	6/20/2016	9/28/2016	11/30/2016	3/30/2017	3/26/2014	6/10/2014
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units										
<i>FPARAM</i>											
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	1150	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	8.70	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	138	-	-
pH, field	s.u.	-	-	-	-	-	-	-	6.89	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	5.58	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	1.95	-	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte										

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13
Sample ID:	GW-12636-091014-SSH-1435	GW-121014-12636-SSH-1444	GW-12636-032615-SSH-15009	GW-12636-062215-SSH-1533	GW-12636-062215-SSH-1534	GW-12636-091415-SSH-1541	GW-12636-091415-SSH-1541	GW-12636-091415-SSH-1542	GW-12636-121515-SSH-1556	GW-12636-032116-SSH-0616	GW-12636-062016-SSH-2616	GW-12636-062016-SSH-2716
Sample Date:	9/10/2014	12/10/2014	3/26/2015	6/22/2015	6/22/2015	9/14/2015	9/14/2015	9/14/2015	12/15/2015	3/21/2016	6/20/2016	6/20/2016
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-	-
					(Duplicate)			(Duplicate)				(Duplicate)
Parameters	Units											
VOAs												
1,1,1-Trichloroethane	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,1,2-Trichloroethane	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,1-Dichloroethane	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,1-Dichloroethene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,2,4-Trichlorobenzene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,2,4-Trimethylbenzene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,2-Dichlorobenzene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,2-Dichloroethane	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,2-Dichloropropane	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,3,5-Trimethylbenzene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,3-Dichlorobenzene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
1,4-Dichlorobenzene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	-	0.01 U	-	-	-	-	-	0.01 U	-	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	-	0.01 U	-	-	-	-	-	0.01 U	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	-	0.01 U	-	-	-	-	-	0.01 U	-	-
Acetone	mg/L	-	-	0.01 U	-	-	-	-	-	0.01 U	-	-
Benzene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Bromodichloromethane	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Bromoform	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Bromomethane (Methyl bromide)	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Carbon disulfide	mg/L	-	-	0.005 U	-	-	-	-	-	0.005 U	-	-
Carbon tetrachloride	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Chlorobenzene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Chloroethane	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Chloroform (Trichloromethane)	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Chloromethane (Methyl chloride)	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
cis-1,2-Dichloroethene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
cis-1,3-Dichloropropene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Cyclohexane	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Dibromochloromethane	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Ethylbenzene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Isopropyl benzene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	0.01 U	-	-	-	-	-	0.01 U	-	-
Methyl cyclohexane	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Methyl tert butyl ether (MTBE)	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Methylene chloride	mg/L	-	-	0.005 U	-	-	-	-	-	0.005 U	-	-
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Tetrachloroethene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Toluene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
trans-1,2-Dichloroethene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
trans-1,3-Dichloropropene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Trichloroethene	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Trichlorofluoromethane (CFC-11)	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Trifluorotrichloroethane (CFC-113)	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Vinyl chloride	mg/L	-	-	0.001 U	-	-	-	-	-	0.001 U	-	-
Xylenes (total)	mg/L	-	-	0.002 U	-	-	-	-	-	0.002 U	-	-
SVOAs												
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13
Sample ID:	GW-12636-091014-SSH-1435	GW-121014-12636-SSH-1444	GW-12636-032615-SSH-15009	GW-12636-062215-SSH-1533	GW-12636-062215-SSH-1534	GW-12636-091415-SSH-1541	GW-12636-091415-SSH-1542	GW-12636-121515-SSH-1556	GW-12636-032116-SSH-0616	GW-12636-062016-SSH-2616	GW-12636-062016-SSH-2716
Sample Date:	9/10/2014	12/10/2014	3/26/2015	6/22/2015	6/22/2015	9/14/2015	9/14/2015	12/15/2015	3/21/2016	6/20/2016	6/20/2016
Sample Depth:	-	-	-	-	(Duplicate)	-	(Duplicate)	-	-	-	(Duplicate)
Parameters	Units										
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooonanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13
Sample ID:	GW-12636-091014-SSH-1435	GW-121014-12636-SSH-1444	GW-12636-032615-SSH-15009	GW-12636-062215-SSH-1533	GW-12636-062215-SSH-1534	GW-12636-091415-SSH-1541	GW-12636-091415-SSH-1542	GW-12636-121515-SSH-1556	GW-12636-032116-SSH-0616	GW-12636-062016-SSH-2616	GW-12636-062016-SSH-2716
Sample Date:	9/10/2014	12/10/2014	3/26/2015	6/22/2015	6/22/2015	9/14/2015	9/14/2015	12/15/2015	3/21/2016	6/20/2016	6/20/2016
Sample Depth:	-	-	-	-	(Duplicate)	-	(Duplicate)	-	-	-	(Duplicate)
Parameters	Units										
Metals											
Aluminum	mg/L	-	-	0.011 J	-	-	-	-	-	-	-
Aluminum (dissolved)	mg/L	-	-	0.05 U	-	-	-	-	0.028 J	-	-
Antimony	mg/L	-	-	0.00024 J	-	-	-	-	-	-	-
Antimony (dissolved)	mg/L	-	-	0.002 U	-	-	-	-	0.00017 J	-	-
Arsenic	mg/L	-	-	0.015 ^{bdf}	0.011 ^{bdf}	0.011 ^{bdf}	0.019 ^{bdf}	0.017 ^{bdf}	0.023 ^{bdf}	0.015 ^{bdf}	0.014 ^{bdf}
Arsenic (dissolved)	mg/L	-	-	0.014 ^{bdf}	0.012 ^{bdf}	0.013 ^{bdf}	0.017 ^{bdf}	0.017 ^{bdf}	0.022 ^{bdf}	0.019 ^{bdf}	0.016 ^{bdf}
Barium	mg/L	-	-	0.16	-	-	-	-	-	-	-
Barium (dissolved)	mg/L	-	-	0.16	-	-	-	-	0.21	-	-
Beryllium	mg/L	-	-	0.001 U	-	-	-	-	-	-	-
Beryllium (dissolved)	mg/L	-	-	0.001 U	-	-	-	-	0.001 U	-	-
Cadmium	mg/L	-	-	0.00018 J	-	-	-	-	-	-	-
Cadmium (dissolved)	mg/L	-	-	0.001 U	-	-	-	-	0.00045 J	-	-
Chromium	mg/L	-	-	0.005 U	-	-	-	-	-	-	-
Chromium (dissolved)	mg/L	-	-	0.005 U	-	-	-	-	0.0018 J	-	-
Cobalt	mg/L	-	-	0.0011 J	-	-	-	-	-	-	-
Cobalt (dissolved)	mg/L	-	-	0.00089 J	-	-	-	-	0.0048 J	-	-
Copper	mg/L	-	-	0.002 U	-	-	-	-	-	-	-
Copper (dissolved)	mg/L	-	-	0.002 U	-	-	-	-	0.021	-	-
Iron	mg/L	-	-	9.2	7.5	7.6	11	10	11	-	14
Iron (dissolved)	mg/L	-	-	9.2 ^{bcde}	7.5 ^{bcde}	7.2 ^{bcde}	10 ^{bcde}	10 ^{bcde}	10 ^{bcde}	24 ^{bcde}	14 ^{bcde}
Lead	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0021 J	-	0.0022 J
Lead (dissolved)	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0019 J	0.003 U	0.003 U
Manganese	mg/L	1.1 ^{bcd}	0.65	0.37	0.54	0.55	0.21	0.2	0.15	-	1.2 ^{bcd}
Manganese (dissolved)	mg/L	1.2 ^{bcd}	0.66 ^{bd}	0.39	0.55 ^{bd}	0.53	0.21	0.21	0.15	1.1 ^{bcd}	1.2 ^{bcd}
Mercury	mg/L	-	-	0.0002 U	-	-	-	-	-	-	-
Mercury (dissolved)	mg/L	-	-	0.0002 U	-	-	-	-	0.0002 U	-	-
Nickel	mg/L	-	-	0.0017 J	-	-	-	-	-	-	-
Nickel (dissolved)	mg/L	-	-	0.002 J	-	-	-	-	0.0081 J	-	-
Selenium	mg/L	-	-	0.005 U	-	-	-	-	-	-	-
Selenium (dissolved)	mg/L	-	-	0.005 U	-	-	-	-	0.005 U	-	-
Silver	mg/L	-	-	0.0002 U	-	-	-	-	-	-	-
Silver (dissolved)	mg/L	-	-	0.0002 U	-	-	-	-	0.0002 U	-	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	-	0.001 U	-	-	-	-	-	-	-
Thallium (dissolved)	mg/L	-	-	0.001 U	-	-	-	-	0.001 U	-	-
Vanadium	mg/L	-	-	0.004 U	-	-	-	-	-	-	-
Vanadium (dissolved)	mg/L	-	-	0.004 U	-	-	-	-	0.004 U	-	-
Zinc	mg/L	-	-	0.02 U	-	-	-	-	-	-	-
Zinc (dissolved)	mg/L	-	-	0.02 U	-	-	-	-	0.02 U	-	-
Pesticides											
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-
Wet											
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	-	0.0050 U	-	-	-	-	-	-	-
Cyanide (total)	mg/L	-	-	-	-	-	-	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-17-13
Sample ID:	GW-12636-091014-SSH-1435	GW-121014-12636-SSH-1444	GW-12636-032615-SSH-15009	GW-12636-062215-SSH-1533	GW-12636-062215-SSH-1534	GW-12636-091415-SSH-1541	GW-12636-091415-SSH-1542	GW-12636-121515-SSH-1556	GW-12636-032116-SSH-0616	GW-12636-062016-SSH-2616	GW-12636-062016-SSH-2716
Sample Date:	9/10/2014	12/10/2014	3/26/2015	6/22/2015	6/22/2015	9/14/2015	9/14/2015	12/15/2015	3/21/2016	6/20/2016	6/20/2016
Sample Depth:	-	-	-	-	(Duplicate)	-	(Duplicate)	-	-	-	(Duplicate)
Parameters	Units										
<i>FPARAM</i>											
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	-
pH, field	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte										

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13
Sample ID:	GW-12636-092816-SSH-3816	GW-12636-112816-SSH-4516	GW-12636-033017-SSH-1017	GW-12636-033017-SSH-1717	GW-12636-061014-SSH-1415	GW-12636-061014-SSH-1430	GW-12636-091014-SSH-1436	GW-121014-12636-SSH-1445	GW-12636-032615-SSH-15007	GW-12636-062315-SSH-1538	GW-12636-091715-SSH-1545
Sample Date:	9/28/2016	11/28/2016	3/30/2017	3/30/2017	3/27/2014	6/10/2014	9/10/2014	12/10/2014	3/26/2015	6/23/2015	9/17/2015
Sample Depth:	-	-	-	(Duplicate)	-	-	-	-	-	-	-
Parameters	Units										
VOAs											
1,1,1-Trichloroethane	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,1,2-Trichloroethane	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,1-Dichloroethane	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,1-Dichloroethene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2,4-Trichlorobenzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2,4-Trimethylbenzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2-Dichlorobenzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2-Dichloroethane	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2-Dichloropropane	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,3,5-Trimethylbenzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,3-Dichlorobenzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,4-Dichlorobenzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	-	0.01 U	0.01 U	0.01 U	-	-	-	0.01 U	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	-	0.01 U	0.01 U	0.01 U	-	-	-	0.01 U	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	-	0.01 U	0.01 U	0.01 U	-	-	-	0.01 U	-
Acetone	mg/L	-	-	0.01 U	0.01 U	0.01 U	-	-	-	0.01 U	-
Benzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Bromodichloromethane	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Bromoform	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Bromomethane (Methyl bromide)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Carbon disulfide	mg/L	-	-	0.005 U	0.005 U	0.003 J	-	-	-	0.005 U	-
Carbon tetrachloride	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Chlorobenzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Chloroethane	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Chloroform (Trichloromethane)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Chloromethane (Methyl chloride)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
cis-1,2-Dichloroethene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
cis-1,3-Dichloropropene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Cyclohexane	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Dibromochloromethane	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Ethylbenzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Isopropyl benzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	0.01 U	0.01 U	0.01 U	-	-	-	0.01 U	-
Methyl cyclohexane	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Methyl tert butyl ether (MTBE)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Methylene chloride	mg/L	-	-	0.005 U	0.005 U	0.005 U	-	-	-	0.005 U	-
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Tetrachloroethene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Toluene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
trans-1,2-Dichloroethene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
trans-1,3-Dichloropropene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Trichloroethene	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Trichlorofluoromethane (CFC-11)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Trifluorotrichloroethane (CFC-113)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Vinyl chloride	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Xylenes (total)	mg/L	-	-	0.002 U	0.002 U	0.002 U	-	-	-	0.002 U	-
SVOAs											
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13
Sample ID:	GW-12636-092816-SSH-3816	GW-12636-112816-SSH-4516	GW-12636-033017-SSH-1017	GW-12636-033017-SSH-1717	GW-12636-032714-SSH-1415	GW-12636-061014-SSH-1430	GW-12636-091014-SSH-1436	GW-121014-12636-SSH-1445	GW-12636-032615-SSH-15007	GW-12636-062315-SSH-1538	GW-12636-091715-SSH-1545
Sample Date:	9/28/2016	11/28/2016	3/30/2017	3/30/2017	3/27/2014	6/10/2014	9/10/2014	12/10/2014	3/26/2015	6/23/2015	9/17/2015
Sample Depth:	-	-	-	(Duplicate)	-	-	-	-	-	-	-
Parameters	Units										
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13
Sample ID:	GW-12636-092816-SSH-3816	GW-12636-112816-SSH-4516	GW-12636-033017-SSH-1017	GW-12636-033017-SSH-1717	GW-12636-032714-SSH-1415	GW-12636-061014-SSH-1430	GW-12636-091014-SSH-1436	GW-121014-12636-SSH-1445	GW-12636-032615-SSH-15007	GW-12636-062315-SSH-1538	GW-12636-091715-SSH-1545
Sample Date:	9/28/2016	11/28/2016	3/30/2017	3/30/2017	3/27/2014	6/10/2014	9/10/2014	12/10/2014	3/26/2015	6/23/2015	9/17/2015
Sample Depth:	-	-	-	(Duplicate)	-	-	-	-	-	-	-
Parameters	Units										
Metals											
Aluminum	mg/L	-	-	-	-	0.014 J	-	-	-	0.05 U	-
Aluminum (dissolved)	mg/L	-	-	0.038 J	0.022 J	0.05 U	-	-	-	0.05 U	-
Antimony	mg/L	-	-	-	-	0.002 U	-	-	-	0.002 U	-
Antimony (dissolved)	mg/L	-	-	0.002 U	0.002 U	0.002 U	-	-	-	0.002 U	-
Arsenic	mg/L	0.022 ^{bdf}	0.025 ^{bdf}	-	-	0.005 U	-	-	-	0.0036 J	-
Arsenic (dissolved)	mg/L	0.028 ^{bdf}	0.025 ^{bdf}	0.0029 J	0.0025 J	0.005 U	-	-	-	0.0042 J	-
Barium	mg/L	-	-	-	-	0.089 J	-	-	-	0.17	-
Barium (dissolved)	mg/L	-	-	0.21	0.21	0.094 J	-	-	-	0.18	-
Beryllium	mg/L	-	-	-	-	0.001 U	-	-	-	0.001 U	-
Beryllium (dissolved)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Cadmium	mg/L	-	-	-	-	0.001 U	-	-	-	0.00032 J	-
Cadmium (dissolved)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.00024 J	-
Chromium	mg/L	-	-	-	-	0.005 U	-	-	-	0.005 U	-
Chromium (dissolved)	mg/L	-	-	0.005 U	0.005 U	0.005 U	-	-	-	0.005 U	-
Cobalt	mg/L	-	-	-	-	0.007 U	-	-	-	0.007 U	-
Cobalt (dissolved)	mg/L	-	-	0.0016 J	0.0013 J	0.007 U	-	-	-	0.007 U	-
Copper	mg/L	-	-	-	-	0.002 U	-	-	-	0.002 U	-
Copper (dissolved)	mg/L	-	-	0.0018 J	0.0014 J	0.002 U	-	-	-	0.002 U	-
Iron	mg/L	12	12	-	-	0.1 U	-	-	-	0.1 U	-
Iron (dissolved)	mg/L	13 ^{bcde}	12 ^{bcde}	0.47	0.37	0.1 U	-	-	-	0.1 U	-
Lead	mg/L	0.0029 J	0.003 U	-	-	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	mg/L	0.003 U	0.003 U	0.00025 J	0.0002 J	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	mg/L	0.76	0.23	-	-	0.009 J	0.071	0.17	0.36	0.26	0.33
Manganese (dissolved)	mg/L	0.69 ^{bd}	0.24	0.11	0.092	0.0085 J	0.061	0.18	0.37	0.27	0.33
Mercury	mg/L	-	-	-	-	0.0002 U	-	-	-	0.0002 U	-
Mercury (dissolved)	mg/L	-	-	0.0002 U	0.0002 U	0.0002 U	-	-	-	0.0002 U	-
Nickel	mg/L	-	-	-	-	0.02 U	-	-	-	0.0017 J	-
Nickel (dissolved)	mg/L	-	-	0.0064 J	0.0061 J	0.02 U	-	-	-	0.0025 J	-
Selenium	mg/L	-	-	-	-	0.005 U	-	-	-	0.005 U	-
Selenium (dissolved)	mg/L	-	-	0.00066 J	0.00051 J	0.005 U	-	-	-	0.005 U	-
Silver	mg/L	-	-	-	-	0.000019 J	-	-	-	0.0002 U	-
Silver (dissolved)	mg/L	-	-	0.0002 U	0.0002 U	0.00001 J	-	-	-	0.0002 U	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	-	-	-	0.001 U	-	-	-	0.001 U	-
Thallium (dissolved)	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Vanadium	mg/L	-	-	-	-	0.004 U	-	-	-	0.004 U	-
Vanadium (dissolved)	mg/L	-	-	0.004 U	0.004 U	0.004 U	-	-	-	0.004 U	-
Zinc	mg/L	-	-	-	-	0.02 U	-	-	-	0.02 U	-
Zinc (dissolved)	mg/L	-	-	0.02 U	0.02 U	0.02 U	-	-	-	0.02 U	-
Pesticides											
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-
Wet											
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	-	-	-	0.0050 U	-	-	-	0.0050 U	-
Cyanide (total)	mg/L	-	-	-	-	-	-	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-17-13	MW-17-13	MW-17-13	MW-17-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13
Sample ID:	GW-12636-092816-SSH-3816	GW-12636-112816-SSH-4516	GW-12636-033017-SSH-1017	GW-12636-033017-SSH-1717	GW-12636-032714-SSH-1415	GW-12636-061014-SSH-1430	GW-12636-091014-SSH-1436	GW-121014-12636-SSH-1445	GW-12636-032615-SSH-15007	GW-12636-062315-SSH-1538	GW-12636-091715-SSH-1545
Sample Date:	9/28/2016	11/28/2016	3/30/2017	3/30/2017	3/27/2014	6/10/2014	9/10/2014	12/10/2014	3/26/2015	6/23/2015	9/17/2015
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
				(Duplicate)							
Parameters	Units										
<i>FPARAM</i>											
Conductivity, field	umhos/cm	-	-	1410	1410	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	3.83	3.83	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-55	-55	-	-	-	-	-	-
pH, field	s.u.	-	-	7.02	7.02	-	-	-	-	-	-
Temperature, field	Deg C	-	-	10.4	10.4	-	-	-	-	-	-
Turbidity, field	NTU	-	-	33.5	33.5	-	-	-	-	-	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte										

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-19-13	MW-19-13
Sample ID:	GW-12636-091715-SSH-1550	GW-12636-121515-SSH-1551	GW-12636-121615-SSH-1558	GW-12636-032216-SSH-1516	GW-12636-062116-SSH-2916	GW-12636-092916-SSH-4016	GW-12636-112916-SSH-4716	GW-12636-032917-SSH-0617	GW-12636-032714-SSH-1414	GW-12636-060914-SSH-1424	GW-12636-090914-SSH-1433
Sample Date:	9/17/2015	12/15/2015	12/16/2015	3/22/2016	6/21/2016	9/29/2016	11/29/2016	3/29/2017	3/27/2014	6/9/2014	9/9/2014
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units										
VOAs											
1,1,1-Trichloroethane	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,1,2-Trichloroethane	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,1-Dichloroethane	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,1-Dichloroethene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,2,4-Trichlorobenzene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,2,4-Trimethylbenzene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,2-Dichlorobenzene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,2-Dichloroethane	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,2-Dichloropropane	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,3,5-Trimethylbenzene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,3-Dichlorobenzene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
1,4-Dichlorobenzene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	-	-	0.01 U	-	-	-	0.01 U	0.01 U	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	-	-	0.01 U	-	-	-	0.01 U	0.01 U	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	-	-	0.01 U	-	-	-	0.01 U	0.01 U	-
Acetone	mg/L	-	-	-	0.01 U	-	-	-	0.01 U	0.01 U	-
Benzene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Bromodichloromethane	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Bromoform	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Bromomethane (Methyl bromide)	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Carbon disulfide	mg/L	-	-	-	0.005 U	-	-	-	0.005 U	0.005 U	-
Carbon tetrachloride	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Chlorobenzene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Chloroethane	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Chloroform (Trichloromethane)	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Chloromethane (Methyl chloride)	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
cis-1,2-Dichloroethene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
cis-1,3-Dichloropropene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Cyclohexane	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Dibromochloromethane	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Ethylbenzene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Isopropyl benzene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	0.01 U	-	-	-	0.01 U	0.01 U	-
Methyl cyclohexane	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Methyl tert butyl ether (MTBE)	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Methylene chloride	mg/L	-	-	-	0.005 U	-	-	-	0.005 U	0.005 U	-
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Tetrachloroethene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Toluene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
trans-1,2-Dichloroethene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
trans-1,3-Dichloropropene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Trichloroethene	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Trichlorofluoromethane (CFC-11)	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Trifluorotrichloroethane (CFC-113)	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Vinyl chloride	mg/L	-	-	-	0.001 U	-	-	-	0.001 U	0.001 U	-
Xylenes (total)	mg/L	-	-	-	0.002 U	-	-	-	0.002 U	0.002 U	-
SVOAs											
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-19-13	MW-19-13
Sample ID:	GW-12636-091715-SSH-1550	GW-12636-121515-SSH-1551	GW-12636-121615-SSH-1558	GW-12636-032216-SSH-1516	GW-12636-062116-SSH-2916	GW-12636-092916-SSH-4016	GW-12636-112916-SSH-4716	GW-12636-032917-SSH-0617	GW-12636-032714-SSH-1414	GW-12636-060914-SSH-1424	GW-12636-090914-SSH-1433
Sample Date:	9/17/2015	12/15/2015	12/16/2015	3/22/2016	6/21/2016	9/29/2016	11/29/2016	3/29/2017	3/27/2014	6/9/2014	9/9/2014
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units										
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid	ng/L	-	-	-	-	-	1.9 U	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	2.8	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	5.0	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	1.9 U	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	1.9 U	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	1.9 U	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	0.78 J	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	1.9 U	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	3.9	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	1.9 UJ	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	27	-	-	-	-
Perfluorooxonanoic acid	ng/L	-	-	-	-	-	1.9 U	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	1.9 U	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	1.9 U	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	1.9 U	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	1.9 U	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	4.3	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	19 U	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-19-13	MW-19-13
Sample ID:	GW-12636-091715-SSH-1550	GW-12636-121515-SSH-1551	GW-12636-121615-SSH-1558	GW-12636-032216-SSH-1516	GW-12636-062116-SSH-2916	GW-12636-092916-SSH-4016	GW-12636-112916-SSH-4716	GW-12636-032917-SSH-0617	GW-12636-032714-SSH-1414	GW-12636-060914-SSH-1424	GW-12636-090914-SSH-1433
Sample Date:	9/17/2015	12/15/2015	12/16/2015	3/22/2016	6/21/2016	9/29/2016	11/29/2016	3/29/2017	3/27/2014	6/9/2014	9/9/2014
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units										
Metals											
Aluminum	mg/L	-	-	-	-	-	-	0.048 J	0.054	-	-
Aluminum (dissolved)	mg/L	-	-	-	0.05 U	-	-	0.05 U	0.05 U	-	-
Antimony	mg/L	-	-	-	-	-	-	0.002 U	0.002 U	-	-
Antimony (dissolved)	mg/L	-	-	-	0.002 U	-	-	0.002 U	0.002 U	-	-
Arsenic	mg/L	-	-	-	-	-	-	0.00043 J	0.005 U	-	-
Arsenic (dissolved)	mg/L	-	-	-	0.004 J	-	-	0.00036 J	0.005 U	-	-
Barium	mg/L	-	-	-	-	-	-	0.078 J	0.1	-	-
Barium (dissolved)	mg/L	-	-	-	0.098 J	-	-	0.081 J	0.11	-	-
Beryllium	mg/L	-	-	-	-	-	-	0.001 U	0.001 U	-	-
Beryllium (dissolved)	mg/L	-	-	-	0.001 U	-	-	0.001 U	0.001 U	-	-
Cadmium	mg/L	-	-	-	-	-	-	0.001 U	0.001 U	-	-
Cadmium (dissolved)	mg/L	-	-	-	0.00029 J	-	-	0.001 U	0.001 U	-	-
Chromium	mg/L	-	-	-	-	-	-	0.00033 J	0.005 U	-	-
Chromium (dissolved)	mg/L	-	-	-	0.00086 J	-	-	0.005 U	0.005 U	-	-
Cobalt	mg/L	-	-	-	-	-	-	0.0003 J	0.007 U	-	-
Cobalt (dissolved)	mg/L	-	-	-	0.007 U	-	-	0.00025 J	0.007 U	-	-
Copper	mg/L	-	-	-	-	-	-	0.002 U	0.002 U	-	-
Copper (dissolved)	mg/L	-	-	-	0.0016 J	-	-	0.002 U	0.002 U	-	-
Iron	mg/L	-	-	-	-	-	-	0.1 J	0.12	-	-
Iron (dissolved)	mg/L	-	-	-	0.1 U	-	-	0.2 U	0.1 U	-	-
Lead	mg/L	-	0.003 U	-	-	-	0.0022 J	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.005 U	0.0023 J	0.0021 J	0.003 U	0.003 U	0.003 U
Manganese	mg/L	-	0.28	-	-	-	0.41	0.19	0.11	0.092	0.28
Manganese (dissolved)	mg/L	0.57 ^{bd}	0.29	0.35	0.2	0.29	0.087	0.41	0.18	0.11	0.27
Mercury	mg/L	-	-	-	-	-	-	0.0002 U	0.0002 U	-	-
Mercury (dissolved)	mg/L	-	-	-	0.0002 U	-	-	0.0002 U	0.0002 U	-	-
Nickel	mg/L	-	-	-	-	-	-	0.0015 J	0.02 U	-	-
Nickel (dissolved)	mg/L	-	-	-	0.0026 J	-	-	0.0014 J	0.02 U	-	-
Selenium	mg/L	-	-	-	-	-	-	0.005 U	0.005 U	-	-
Selenium (dissolved)	mg/L	-	-	-	0.005 U	-	-	0.005 U	0.005 U	-	-
Silver	mg/L	-	-	-	-	-	-	0.0002 U	0.000024 J	-	-
Silver (dissolved)	mg/L	-	-	-	0.0002 U	-	-	0.0002 U	0.000027 J	-	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	-	-	-	-	-	0.001 U	0.001 U	-	-
Thallium (dissolved)	mg/L	-	-	-	0.001 U	-	-	0.001 U	0.001 U	-	-
Vanadium	mg/L	-	-	-	-	-	-	0.004 U	0.004 U	-	-
Vanadium (dissolved)	mg/L	-	-	-	0.004 U	-	-	0.004 U	0.004 U	-	-
Zinc	mg/L	-	-	-	-	-	-	0.02 U	0.0072 J	-	-
Zinc (dissolved)	mg/L	-	-	-	0.02 U	-	-	0.02 U	0.0069 J	-	-
Pesticides											
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-
Wet											
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	-	-	-	-	-	-	0.0050 U	-	-
Cyanide (total)	mg/L	-	-	-	-	-	-	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-18-13	MW-19-13	MW-19-13	MW-19-13
Sample ID:	GW-12636-091715-SSH-1550	GW-12636-121515-SSH-1551	GW-12636-121615-SSH-1558	GW-12636-032216-SSH-1516	GW-12636-062116-SSH-2916	GW-12636-092916-SSH-4016	GW-12636-112916-SSH-4716	GW-12636-032917-SSH-0617	GW-12636-032714-SSH-1414	GW-12636-060914-SSH-1424	GW-12636-090914-SSH-1433
Sample Date:	9/17/2015	12/15/2015	12/16/2015	3/22/2016	6/21/2016	9/29/2016	11/29/2016	3/29/2017	3/27/2014	6/9/2014	9/9/2014
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units										
<i>FPARAM</i>											
Conductivity, field	umhos/cm	-	-	-	-	-	-	1800	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	7.60	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	92	-	-	-
pH, field	s.u.	-	-	-	-	-	-	7.04	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	8.03	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	5.38	-	-	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte										

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13
Sample ID:	GW-120914-12636-SSH-1441	GW-120914-12636-SSH-1442	GW-12636-032615-SSH-15012	GW-12636-062215-SSH-1532	GW-12636-091415-SSH-1543	GW-12636-121515-SSH-1557	GW-12636-032116-SSH-1116	GW-12636-062116-SSH-3016	GW-12636-092816-SSH-3716	GW-12636-113016-SSH-5316	GW-12636-033017-SSH-1217
Sample Date:	12/9/2014	12/9/2014	3/26/2015	6/22/2015	9/14/2015	12/15/2015	3/21/2016	6/21/2016	9/28/2016	11/30/2016	3/30/2017
Sample Depth:	-	(Duplicate)	-	-	-	-	-	-	-	-	-
Parameters	Units										
VOAs											
1,1,1-Trichloroethane	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,1,2-Trichloroethane	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,1-Dichloroethane	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,1-Dichloroethene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,2-Dichlorobenzene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,2-Dichloroethane	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,2-Dichloropropane	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,3-Dichlorobenzene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
1,4-Dichlorobenzene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	-	0.01 U	-	-	-	0.01 U	-	-	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	-	0.01 U	-	-	-	0.01 U	-	-	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	-	0.01 U	-	-	-	0.01 U	-	-	0.01 U
Acetone	mg/L	-	-	0.01 U	-	-	-	0.01 U	-	-	0.01 U
Benzene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Bromodichloromethane	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Bromoform	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Carbon disulfide	mg/L	-	-	0.005 U	-	-	-	0.005 U	-	-	0.005 U
Carbon tetrachloride	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Chlorobenzene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Chloroethane	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Chloroform (Trichloromethane)	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
cis-1,2-Dichloroethene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
cis-1,3-Dichloropropene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Cyclohexane	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Dibromochloromethane	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Ethylbenzene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Isopropyl benzene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	0.01 U	-	-	-	0.01 U	-	-	0.01 U
Methyl cyclohexane	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Methylene chloride	mg/L	-	-	0.005 U	-	-	-	0.005 U	-	-	0.005 U
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Tetrachloroethene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Toluene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
trans-1,2-Dichloroethene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Trichloroethene	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Vinyl chloride	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Xylenes (total)	mg/L	-	-	0.002 U	-	-	-	0.002 U	-	-	0.002 U
SVOAs											
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13
Sample ID:	GW-120914-12636-SSH-1441	GW-120914-12636-SSH-1442	GW-12636-032615-SSH-15012	GW-12636-062215-SSH-1532	GW-12636-091415-SSH-1543	GW-12636-121515-SSH-1557	GW-12636-032116-SSH-1116	GW-12636-062116-SSH-3016	GW-12636-092816-SSH-3716	GW-12636-113016-SSH-5316	GW-12636-033017-SSH-1217
Sample Date:	12/9/2014	12/9/2014	3/26/2015	6/22/2015	9/14/2015	12/15/2015	3/21/2016	6/21/2016	9/28/2016	11/30/2016	3/30/2017
Sample Depth:	-	(Duplicate)	-	-	-	-	-	-	-	-	-
Parameters	Units										
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	29	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	13	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	13 J	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	1.9 U	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	1.9 U	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	1.9 U	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	1.3 J	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	18	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	39	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	1.9 UJ	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	19	-
Perfluorooxononanoic acid	ng/L	-	-	-	-	-	-	-	-	1.9 U	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	16	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	1.9 U	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	1.9 U	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	1.9 U	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	31	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	19 U	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13
Sample ID:	GW-120914-12636-SSH-1441	GW-120914-12636-SSH-1442	GW-12636-032615-SSH-15012	GW-12636-062215-SSH-1532	GW-12636-091415-SSH-1543	GW-12636-121515-SSH-1557	GW-12636-032116-SSH-1116	GW-12636-062116-SSH-3016	GW-12636-092816-SSH-3716	GW-12636-113016-SSH-5316	GW-12636-033017-SSH-1217
Sample Date:	12/9/2014	12/9/2014	3/26/2015	6/22/2015	9/14/2015	12/15/2015	3/21/2016	6/21/2016	9/28/2016	11/30/2016	3/30/2017
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
		(Duplicate)									
Parameters	Units										
Metals											
Aluminum	mg/L	-	-	-	-	-	0.05 U	-	-	-	0.033 J
Aluminum (dissolved)	mg/L	-	-	0.05 U	-	-	0.05 U	-	-	-	0.038 J
Antimony	mg/L	-	-	-	-	-	0.002 U	-	-	-	0.002 U
Antimony (dissolved)	mg/L	-	-	0.00024 J	-	-	0.002 U	-	-	-	0.002 U
Arsenic	mg/L	-	-	-	-	-	0.0046 J	-	-	-	0.00047 J
Arsenic (dissolved)	mg/L	-	-	0.0042 J	-	-	0.0037 J	-	-	-	0.00043 J
Barium	mg/L	-	-	-	-	-	0.13	-	-	-	0.14
Barium (dissolved)	mg/L	-	-	0.12	-	-	0.13	-	-	-	0.14
Beryllium	mg/L	-	-	-	-	-	0.001 U	-	-	-	0.001 U
Beryllium (dissolved)	mg/L	-	-	0.001 U	-	-	0.001 U	-	-	-	0.001 U
Cadmium	mg/L	-	-	-	-	-	0.001 U	-	-	-	0.001 U
Cadmium (dissolved)	mg/L	-	-	0.001 U	-	-	0.00024 J	-	-	-	0.001 U
Chromium	mg/L	-	-	-	-	-	0.0013 J	-	-	-	0.005 U
Chromium (dissolved)	mg/L	-	-	0.005 U	-	-	0.0011 J	-	-	-	0.005 U
Cobalt	mg/L	-	-	-	-	-	0.007 U	-	-	-	0.00013 J
Cobalt (dissolved)	mg/L	-	-	0.007 U	-	-	0.007 U	-	-	-	0.00016 J
Copper	mg/L	-	-	-	-	-	0.002 U	-	-	-	0.00099 J
Copper (dissolved)	mg/L	-	-	0.002 U	-	-	0.0032 U	-	-	-	0.0044 J
Iron	mg/L	-	-	-	-	-	0.1 U	-	-	-	0.064 J
Iron (dissolved)	mg/L	-	-	0.1 U	-	-	0.1 U	-	-	-	0.094 J
Lead	mg/L	0.003 U	0.003 U	-	0.003 U	0.003 U	0.0031	0.003 U	0.005 U	0.005 U	0.0003 J
Lead (dissolved)	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0028 J	0.003 U	0.005 U	0.0021 J	0.00025 J
Manganese	mg/L	0.19	0.2	-	0.086	0.12	0.19	0.23	0.064	0.12	0.17
Manganese (dissolved)	mg/L	0.2	0.19	0.14	0.078	0.11	0.18	0.22	0.057	0.11	0.16
Mercury	mg/L	-	-	-	-	-	-	0.0002 U	-	-	0.0002 U
Mercury (dissolved)	mg/L	-	-	0.0002 U	-	-	-	0.000093 J	-	-	0.0002 U
Nickel	mg/L	-	-	-	-	-	-	0.0032 J	-	-	0.0012 J
Nickel (dissolved)	mg/L	-	-	0.013 J	-	-	-	0.0035 J	-	-	0.0014 J
Selenium	mg/L	-	-	-	-	-	-	0.005 U	-	-	0.0011 J
Selenium (dissolved)	mg/L	-	-	0.005 U	-	-	-	0.005 U	-	-	0.0008 J
Silver	mg/L	-	-	-	-	-	-	0.0002 U	-	-	0.0002 U
Silver (dissolved)	mg/L	-	-	0.0002 U	-	-	-	0.0002 U	-	-	0.0002 U
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	-	-	-	-	-	0.001 U	-	-	0.001 U
Thallium (dissolved)	mg/L	-	-	0.001 U	-	-	-	0.001 U	-	-	0.001 U
Vanadium	mg/L	-	-	-	-	-	-	0.004 U	-	-	0.004 U
Vanadium (dissolved)	mg/L	-	-	0.004 U	-	-	-	0.004 U	-	-	0.004 U
Zinc	mg/L	-	-	-	-	-	-	0.02 U	-	-	0.021
Zinc (dissolved)	mg/L	-	-	0.016 J	-	-	-	0.02 U	-	-	0.022
Pesticides											
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-
Wet											
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	-	0.0050 U	-	-	-	-	-	-	-
Cyanide (total)	mg/L	-	-	-	-	-	-	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13	MW-19-13
Sample ID:	GW-120914-12636-SSH-1441	GW-120914-12636-SSH-1442	GW-12636-032615-SSH-15012	GW-12636-062215-SSH-1532	GW-12636-091415-SSH-1543	GW-12636-121515-SSH-1557	GW-12636-032116-SSH-1116	GW-12636-062116-SSH-3016	GW-12636-092816-SSH-3716	GW-12636-113016-SSH-5316	GW-12636-033017-SSH-1217
Sample Date:	12/9/2014	12/9/2014	3/26/2015	6/22/2015	9/14/2015	12/15/2015	3/21/2016	6/21/2016	9/28/2016	11/30/2016	3/30/2017
Sample Depth:	-	- (Duplicate)	-	-	-	-	-	-	-	-	-
Parameters	Units										
<i>FPARAM</i>											
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	-	-	5230
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	1.29
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	265
pH, field	s.u.	-	-	-	-	-	-	-	-	-	7.32
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	7.4
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	1.89
Footnotes:	U Not detecte J Estimated c UJ Not detecte										

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13
Sample ID:	GW-12636-032614-SSH-1409	GW-12636-060914-SSH-1423	GW-12636-091014-SSH-1434	GW-121014-12636-SSH-1443	GW-12636-032515-SSH-15002	GW-12636-062215-SSH-1530	GW-12636-091715-SSH-1546	GW-12636-121515-SSH-1554	GW-12636-032116-SSH-0716	GW-12636-062016-SSH-2416	GW-12636-092816-SSH-3616
Sample Date:	3/26/2014	6/9/2014	9/10/2014	12/10/2014	3/25/2015	6/22/2015	9/17/2015	12/15/2015	3/21/2016	6/20/2016	9/28/2016
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units										
VOAs											
1,1,1-Trichloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,1,2,2-Tetrachloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,1,2-Trichloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,1-Dichloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,1-Dichloroethene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,2,4-Trichlorobenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,2,4-Trimethylbenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,2-Dichlorobenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,2-Dichloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,2-Dichloropropane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,3,5-Trimethylbenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,3-Dichlorobenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
1,4-Dichlorobenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U	-
Acetone	mg/L	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U	-
Benzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Bromodichloromethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Bromoform	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Bromomethane (Methyl bromide)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Carbon disulfide	mg/L	0.0035 J	-	-	-	0.005 U	-	-	-	0.005 U	-
Carbon tetrachloride	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Chlorobenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Chloroethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Chloroform (Trichloromethane)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Chloromethane (Methyl chloride)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
cis-1,2-Dichloroethene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
cis-1,3-Dichloropropene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Cyclohexane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Dibromochloromethane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Dichlorodifluoromethane (CFC-12)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Ethylbenzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Isopropyl benzene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U	-
Methyl cyclohexane	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Methyl tert butyl ether (MTBE)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Methylene chloride	mg/L	0.005 U	-	-	-	0.005 U	-	-	-	0.005 U	-
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Tetrachloroethene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Toluene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
trans-1,2-Dichloroethene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
trans-1,3-Dichloropropene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Trichloroethene	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Trichlorofluoromethane (CFC-11)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Trifluorotrichloroethane (CFC-113)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Vinyl chloride	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Xylenes (total)	mg/L	0.002 U	-	-	-	0.002 U	-	-	-	0.002 U	-
SVOAs											
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13
Sample ID:	GW-12636-032614-SSH-1409	GW-12636-060914-SSH-1423	GW-12636-091014-SSH-1434	GW-121014-12636-SSH-1443	GW-12636-032515-SSH-15002	GW-12636-062215-SSH-1530	GW-12636-091715-SSH-1546	GW-12636-121515-SSH-1554	GW-12636-032116-SSH-0716	GW-12636-062016-SSH-2416	GW-12636-092816-SSH-3616
Sample Date:	3/26/2014	6/9/2014	9/10/2014	12/10/2014	3/25/2015	6/22/2015	9/17/2015	12/15/2015	3/21/2016	6/20/2016	9/28/2016
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units										
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13
Sample ID:	GW-12636-032614-SSH-1409	GW-12636-060914-SSH-1423	GW-12636-091014-SSH-1434	GW-121014-12636-SSH-1443	GW-12636-032515-SSH-15002	GW-12636-062215-SSH-1530	GW-12636-091715-SSH-1546	GW-12636-121515-SSH-1554	GW-12636-032116-SSH-0716	GW-12636-062016-SSH-2416	GW-12636-092816-SSH-3616
Sample Date:	3/26/2014	6/9/2014	9/10/2014	12/10/2014	3/25/2015	6/22/2015	9/17/2015	12/15/2015	3/21/2016	6/20/2016	9/28/2016
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units										
Metals											
Aluminum	mg/L	0.05 U	-	-	-	0.011 J	-	-	-	0.012 J	-
Aluminum (dissolved)	mg/L	0.05 U	-	-	-	0.05 U	-	-	-	0.05 U	-
Antimony	mg/L	0.00012 J	-	-	-	0.002 U	-	-	-	0.002 U	-
Antimony (dissolved)	mg/L	0.002 U	-	-	-	0.002 U	-	-	-	0.002 U	-
Arsenic	mg/L	0.005 U	-	-	-	0.0042 J	-	-	-	0.0039 J	-
Arsenic (dissolved)	mg/L	0.005 U	-	-	-	0.0035 J	-	-	-	0.005 U	-
Barium	mg/L	0.18	-	-	-	0.13	-	-	-	0.073 J	-
Barium (dissolved)	mg/L	0.17	-	-	-	0.12	-	-	-	0.076 J	-
Beryllium	mg/L	0.001 U	-	-	-	0.00014 J	-	-	-	0.001 U	-
Beryllium (dissolved)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Cadmium	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Cadmium (dissolved)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Chromium	mg/L	0.0028 J	-	-	-	0.0021 J	-	-	-	0.0037 J	-
Chromium (dissolved)	mg/L	0.0028 J	-	-	-	0.0016 J	-	-	-	0.0039 J	-
Cobalt	mg/L	0.007 U	-	-	-	0.007 U	-	-	-	0.007 U	-
Cobalt (dissolved)	mg/L	0.007 U	-	-	-	0.007 U	-	-	-	0.007 U	-
Copper	mg/L	0.0003 J	-	-	-	0.002 U	-	-	-	0.002 U	-
Copper (dissolved)	mg/L	0.00052 J	-	-	-	0.00082 J	-	-	-	0.002 U	-
Iron	mg/L	0.1 U	-	-	-	0.018 J	-	-	-	0.1 U	-
Iron (dissolved)	mg/L	0.1 U	-	-	-	0.1 U	-	-	-	0.1 U	-
Lead	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.0025 J	0.003 U	0.003 U	0.0022 J	0.003 U	0.005 U
Lead (dissolved)	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0021 J	0.003 U	0.005 U
Manganese	mg/L	0.0062 J	0.0023 J	0.015 U	0.015 U	0.004 J	0.00068 J	0.015 U	0.00054 J	0.015 U	0.015 U
Manganese (dissolved)	mg/L	0.0056 J	0.0012 J	0.015 U	0.015 U	0.0011 J	0.001 J	0.015 U	0.015 U	0.015 U	0.015 U
Mercury	mg/L	0.0002 U	-	-	-	0.0002 U	-	-	-	0.0002 U	-
Mercury (dissolved)	mg/L	0.0002 U	-	-	-	0.0002 U	-	-	-	0.0002 U	-
Nickel	mg/L	0.02 U	-	-	-	0.00093 J	-	-	-	0.00087 J	-
Nickel (dissolved)	mg/L	0.02 U	-	-	-	0.0017 J	-	-	-	0.02 U	-
Selenium	mg/L	0.005 U	-	-	-	0.005 U	-	-	-	0.005 U	-
Selenium (dissolved)	mg/L	0.005 U	-	-	-	0.005 U	-	-	-	0.005 U	-
Silver	mg/L	0.0002 U	-	-	-	0.0002 U	-	-	-	0.0002 U	-
Silver (dissolved)	mg/L	0.0002 U	-	-	-	0.0002 U	-	-	-	0.0002 U	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Thallium (dissolved)	mg/L	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U	-
Vanadium	mg/L	0.004 U	-	-	-	0.004 U	-	-	-	0.004 U	-
Vanadium (dissolved)	mg/L	0.004 U	-	-	-	0.004 U	-	-	-	0.004 U	-
Zinc	mg/L	0.02 U	-	-	-	0.02 U	-	-	-	0.02 U	-
Zinc (dissolved)	mg/L	0.02 U	-	-	-	0.02 U	-	-	-	0.02 U	-
Pesticides											
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-
Wet											
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	0.0050 U	-	-	-	0.0050 U	-	-	-	-	-
Cyanide (total)	mg/L	-	-	-	-	-	-	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13	MW-20-13
Sample ID:	GW-12636-032614-SSH-1409	GW-12636-060914-SSH-1423	GW-12636-091014-SSH-1434	GW-121014-12636-SSH-1443	GW-12636-032515-SSH-15002	GW-12636-062215-SSH-1530	GW-12636-091715-SSH-1546	GW-12636-121515-SSH-1554	GW-12636-032116-SSH-0716	GW-12636-062016-SSH-2416	GW-12636-092816-SSH-3616
Sample Date:	3/26/2014	6/9/2014	9/10/2014	12/10/2014	3/25/2015	6/22/2015	9/17/2015	12/15/2015	3/21/2016	6/20/2016	9/28/2016
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
Parameters	Units										
<i>FPARAM</i>											
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	-
pH, field	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte										

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-20-13	MW-20-13	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2
Sample ID:	GW-12636-112816-SSH-4416	GW-12636-033017-SSH-1317	GW-12636-091211-JY-004	PFW-2	PFW-2D	GW-12636-120310-BW-012	GW-12636-120310-BW-013	GW-12636-051311-SSH-111	GW-12636-120611-JY-411	GW-12636-032614-SSH-1408	GW-12636-060914-SSH-1421	GW-12636-090914-SSH-1429
Sample Date:	11/28/2016	3/30/2017	9/12/2011	4/1/1997	4/1/1997	12/3/2010	12/3/2010	5/13/2011	12/6/2011	3/26/2014	6/9/2014	9/9/2014
Sample Depth:	-	-	(8.19-9.38) in BGS	-	(Duplicate)	-	(Duplicate)	-	-	-	-	-
Parameters	Units											
VOAs												
1,1,1-Trichloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
1,1,2,2-Tetrachloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
1,1,2-Trichloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
1,1-Dichloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
1,1-Dichloroethene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
1,2,4-Trichlorobenzene	mg/L	-	0.001 U	0.001 U	-	-	0.005 U	0.005 U	0.005 UJ	0.001 U	0.001 U	-
1,2,4-Trimethylbenzene	mg/L	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.001 U	0.001 U	-	-	0.001 UJ	0.001 UJ	0.001 U	0.001 U	0.001 U	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,2-Dichlorobenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,2-Dichloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,2-Dichloropropane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,3,5-Trimethylbenzene	mg/L	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,3-Dichlorobenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,4-Dichlorobenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	0.01 U	0.01 U	-	-	0.025 U	0.025 U	0.025 U	0.01 U	0.01 U	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	0.01 U	0.01 U	-	-	-	-	-	-
2-Hexanone	mg/L	-	0.01 U	0.01 U	-	-	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	0.01 U	0.01 U	-	-	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U	-
Acetone	mg/L	-	0.01 U	0.01 U	-	-	0.025 U	0.025 U	0.025 U	0.01 U	0.01 U	-
Benzene	mg/L	-	0.001 U	0.001 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Bromodichloromethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Bromoform	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Bromomethane (Methyl bromide)	mg/L	-	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	-
Carbon disulfide	mg/L	-	0.005 U	0.005 U	-	-	0.005 U	0.005 U	0.005 UJ	0.005 U	0.003 J	-
Carbon tetrachloride	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Chlorobenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Chloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Chloroform (Trichloromethane)	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Chloromethane (Methyl chloride)	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
cis-1,2-Dichloroethene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
cis-1,3-Dichloropropene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Cyclohexane	mg/L	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Dibromochloromethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Ethylbenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Isopropyl benzene	mg/L	-	0.001 U	0.001 U	-	-	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	-
m&p-Xylenes	mg/L	-	-	-	0.003 U	0.003 U	-	-	-	-	-	-
Methyl acetate	mg/L	-	0.01 U	0.01 U	-	-	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-
Methyl cyclohexane	mg/L	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Methyl tert butyl ether (MTBE)	mg/L	-	0.001 U	0.005 U	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	-
Methylene chloride	mg/L	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U	-
o-Xylene	mg/L	-	-	-	0.003 U	0.003 U	-	-	-	-	-	-
Styrene	mg/L	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Tetrachloroethene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Toluene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
trans-1,2-Dichloroethene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
trans-1,3-Dichloropropene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Trichloroethene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Trichlorofluoromethane (CFC-11)	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	-
Trifluorotrichloroethane (CFC-113)	mg/L	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Vinyl chloride	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Xylenes (total)	mg/L	-	0.002 U	0.002 U	-	-	0.002 U	0.002 U	0.002 U	0.002 U	-	-
SVOAs												
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-20-13	MW-20-13	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2
Sample ID:	GW-12636-112816-SSH-4416	GW-12636-033017-SSH-1317	GW-12636-091211-JY-004	PFW-2	PFW-2D	GW-12636-120310-BW-012	GW-12636-120310-BW-013	GW-12636-051311-SSH-111	GW-12636-120611-JY-411	GW-12636-032614-SSH-1408	GW-12636-060914-SSH-1421	GW-12636-090914-SSH-1429
Sample Date:	11/28/2016	3/30/2017	9/12/2011	4/1/1997	4/1/1997	12/3/2010	12/3/2010	5/13/2011	12/6/2011	3/26/2014	6/9/2014	9/9/2014
Sample Depth:	-	-	(8.19-9.38) in BGS	-	(Duplicate)	-	(Duplicate)	-	-	-	-	-
Parameters	Units											
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooonanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	0.005 U	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-20-13	MW-20-13	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2
Sample ID:	GW-12636-112816-SSH-4416	GW-12636-033017-SSH-1317	GW-12636-091211-JY-004	PFW-2	PFW-2D	GW-12636-120310-BW-012	GW-12636-120310-BW-013	GW-12636-051311-SSH-111	GW-12636-120611-JY-411	GW-12636-032614-SSH-1408	GW-12636-060914-SSH-1421	GW-12636-090914-SSH-1429
Sample Date:	11/28/2016	3/30/2017	9/12/2011	4/1/1997	4/1/1997	12/3/2010	12/3/2010	5/13/2011	12/6/2011	3/26/2014	6/9/2014	9/9/2014
Sample Depth:	-	-	(8.19-9.38) in BGS	-	(Duplicate)	-	(Duplicate)	-	-	-	-	-
Parameters	Units											
Metals												
Aluminum	mg/L	-	0.05 U	0.022 J	-	-	0.2 U	0.2 U	0.2 U	0.05 U	0.37	-
Aluminum (dissolved)	mg/L	-	0.05 U	-	-	-	-	-	-	-	0.05 U	-
Antimony	mg/L	-	0.002 U	0.002 U	-	-	0.002 U	0.002 U	0.002 U	0.002 U	0.00019 J	-
Antimony (dissolved)	mg/L	-	0.002 U	-	-	-	-	-	-	-	0.002 U	-
Arsenic	mg/L	-	0.00045 J	0.005 U	0.005 U	0.005 U	0.0032 J	0.005 U	0.005 U	0.005 U	0.005 U	-
Arsenic (dissolved)	mg/L	-	0.0004 J	-	-	-	-	-	-	-	0.005 U	-
Barium	mg/L	-	0.11	0.056 J	0.61	0.61	0.0585 J	0.0574 J	0.0473 J	0.046 J	0.042 J	-
Barium (dissolved)	mg/L	-	0.097 J	-	-	-	-	-	-	-	0.037 J	-
Beryllium	mg/L	-	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Beryllium (dissolved)	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-
Cadmium	mg/L	-	0.001 U	0.001 U	0.0005 U	0.0005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Cadmium (dissolved)	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-
Chromium	mg/L	-	0.0031 J	0.005 U	0.05 U	0.05 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-
Chromium (dissolved)	mg/L	-	0.0028 J	-	-	-	-	-	-	-	0.005 U	-
Cobalt	mg/L	-	0.02 U	0.007 U	-	-	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	-
Cobalt (dissolved)	mg/L	-	0.02 U	-	-	-	-	-	-	-	0.007 U	-
Copper	mg/L	-	0.00054 J	0.0003 J	0.025 U	0.025 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002	-
Copper (dissolved)	mg/L	-	0.0016 J	-	-	-	-	-	-	-	0.00025 J	-
Iron	mg/L	-	0.022 J	0.97	-	-	0.701	0.684	0.541	0.36	1.3	-
Iron (dissolved)	mg/L	-	0.2 U	-	-	-	-	-	-	-	0.23	-
Lead	mg/L	0.005 U	0.00024 J	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.0023 J
Lead (dissolved)	mg/L	0.005 U	0.00016 J	-	-	-	-	-	-	-	0.003 U	0.003 U
Manganese	mg/L	0.015 U	0.0008 J	1.4 ^{bcd}	-	-	0.963	0.91	0.581	0.54	0.66 J	1.5 ^{bcd}
Manganese (dissolved)	mg/L	0.015 U	0.00054 J	-	-	-	-	-	-	-	0.97 J ^{bcd}	1.5 ^{bcd}
Mercury	mg/L	-	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-
Mercury (dissolved)	mg/L	-	0.0002 U	-	-	-	-	-	-	-	0.0002 U	-
Nickel	mg/L	-	0.02 U	0.02 U	-	-	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	-
Nickel (dissolved)	mg/L	-	0.0004 J	-	-	-	-	-	-	-	0.02 U	-
Selenium	mg/L	-	0.003 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-
Selenium (dissolved)	mg/L	-	0.0026 J	-	-	-	-	-	-	-	0.005 U	-
Silver	mg/L	-	0.0002 U	0.0002 U	0.0005 U	0.0005 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-
Silver (dissolved)	mg/L	-	0.0002 U	-	-	-	-	-	-	-	0.0002 U	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	0.001 U	0.0023 U	-	-	0.001 U	0.001 U	0.001 U	0.00042 J	0.001 U	-
Thallium (dissolved)	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-
Vanadium	mg/L	-	0.004 U	0.004 U	-	-	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	-
Vanadium (dissolved)	mg/L	-	0.004 U	-	-	-	-	-	-	-	0.004 U	-
Zinc	mg/L	-	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.01 J	-
Zinc (dissolved)	mg/L	-	0.02 U	-	-	-	-	-	-	-	0.02 U	-
Pesticides												
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-	-
Wet												
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	-	0.0050 U	-	-	0.010 U	0.010 U	0.010 U	0.0050 U	0.0050 U	-
Cyanide (total)	mg/L	-	-	0.0050 U	-	-	-	-	-	0.0050 U	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	MW-20-13	MW-20-13	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2
Sample ID:	GW-12636-112816-SSH-4416	GW-12636-033017-SSH-1317	GW-12636-091211-JY-004	PFW-2	PFW-2D	GW-12636-120310-BW-012	GW-12636-120310-BW-013	GW-12636-051311-SSH-111	GW-12636-120611-JY-411	GW-12636-032614-SSH-1408	GW-12636-060914-SSH-1421	GW-12636-090914-SSH-1429
Sample Date:	11/28/2016	3/30/2017	9/12/2011	4/1/1997	4/1/1997	12/3/2010	12/3/2010	5/13/2011	12/6/2011	3/26/2014	6/9/2014	9/9/2014
Sample Depth:	-	-	(8.19-9.38) in BGS	-	(Duplicate)	-	(Duplicate)	-	-	-	-	-
Parameters	Units											
<i>FPARAM</i>												
Conductivity, field	umhos/cm	-	890	-	-	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	11.04	-	-	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	258	-	-	-	-	-	-	-	-	-
pH, field	s.u.	-	7.57	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	7.1	-	-	-	-	-	-	-	-	-
Turbidity, field	NTU	-	0.97	-	-	-	-	-	-	-	-	-
Footnotes:	U Not detecte											
	J Estimated c											
	UJ Not detecte											

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2
Sample ID:	GW-120914-12636-SSH-1437	GW-12636-032715-SSH-15016	GW-12636-062315-SSH-1536	GW-12636-091715-SSH-1547	GW-12636-121615-SSH-1560	GW-12636-032116-SSH-0116	GW-12636-062016-SSH-2216	GW-12636-092816-SSH-3416	GW-12636-092816-SSH-3516	GW-12636-112816-SSH-4116	GW-12636-032917-SSH-0517
Sample Date:	12/9/2014	3/27/2015	6/23/2015	9/17/2015	12/16/2015	3/21/2016	6/20/2016	9/28/2016	9/28/2016	11/28/2016	3/29/2017
Sample Depth:	-	-	-	-	-	-	-	-	-	(Duplicate)	-
Parameters	Units										
VOAs											
1,1,1-Trichloroethane	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,1,2-Trichloroethane	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,1-Dichloroethane	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,1-Dichloroethene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,2-Dichlorobenzene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,2-Dichloroethane	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,2-Dichloropropane	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,3-Dichlorobenzene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
1,4-Dichlorobenzene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U
Acetone	mg/L	-	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U
Benzene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Bromodichloromethane	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Bromoform	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Carbon disulfide	mg/L	-	0.005 U	-	-	-	0.005 U	-	-	-	0.005 U
Carbon tetrachloride	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Chlorobenzene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Chloroethane	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Chloroform (Trichloromethane)	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
cis-1,2-Dichloroethene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
cis-1,3-Dichloropropene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Cyclohexane	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Dibromochloromethane	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Ethylbenzene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Isopropyl benzene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	0.01 U	-	-	-	0.01 U	-	-	-	0.01 U
Methyl cyclohexane	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Methylene chloride	mg/L	-	0.005 U	-	-	-	0.005 U	-	-	-	0.005 U
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Tetrachloroethene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Toluene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
trans-1,2-Dichloroethene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
trans-1,3-Dichloropropene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Trichloroethene	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Vinyl chloride	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Xylenes (total)	mg/L	-	0.002 U	-	-	-	0.002 U	-	-	-	0.002 U
SVOAs											
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2
Sample ID:	GW-120914-12636-SSH-1437	GW-12636-032715-SSH-15016	GW-12636-062315-SSH-1536	GW-12636-091715-SSH-1547	GW-12636-121615-SSH-1560	GW-12636-032116-SSH-0116	GW-12636-062016-SSH-2216	GW-12636-092816-SSH-3416	GW-12636-092816-SSH-3516	GW-12636-112816-SSH-4116	GW-12636-032917-SSH-0517
Sample Date:	12/9/2014	3/27/2015	6/23/2015	9/17/2015	12/16/2015	3/21/2016	6/20/2016	9/28/2016	9/28/2016	11/28/2016	3/29/2017
Sample Depth:	-	-	-	-	-	-	-	-	(Duplicate)	-	-
Parameters	Units										
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooxononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2
Sample ID:	GW-120914-12636-SSH-1437	GW-12636-032715-SSH-15016	GW-12636-062315-SSH-1536	GW-12636-091715-SSH-1547	GW-12636-121615-SSH-1560	GW-12636-032116-SSH-0116	GW-12636-062016-SSH-2216	GW-12636-092816-SSH-3416	GW-12636-092816-SSH-3516	GW-12636-112816-SSH-4116	GW-12636-032917-SSH-0517
Sample Date:	12/9/2014	3/27/2015	6/23/2015	9/17/2015	12/16/2015	3/21/2016	6/20/2016	9/28/2016	9/28/2016	11/28/2016	3/29/2017
Sample Depth:	-	-	-	-	-	-	-	-	-	-	-
									(Duplicate)		
Parameters	Units										
Metals											
Aluminum	mg/L	-	0.018 J	-	-	-	-	-	-	-	0.05 U
Aluminum (dissolved)	mg/L	-	0.05 U	-	-	-	0.021 J	-	-	-	0.013 J
Antimony	mg/L	-	0.00055 J	-	-	-	-	-	-	-	0.002 U
Antimony (dissolved)	mg/L	-	0.002 U	-	-	-	0.00019 J	-	-	-	0.002 U
Arsenic	mg/L	-	0.0029 J	-	-	-	-	-	-	-	0.0017 J
Arsenic (dissolved)	mg/L	-	0.005 U	-	-	-	0.005 U	-	-	-	0.0018 J
Barium	mg/L	-	0.047 J	-	-	-	-	-	-	-	0.048 J
Barium (dissolved)	mg/L	-	0.047 J	-	-	-	0.05 J	-	-	-	0.048 J
Beryllium	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U
Beryllium (dissolved)	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Cadmium	mg/L	-	0.00019 J	-	-	-	-	-	-	-	0.001 U
Cadmium (dissolved)	mg/L	-	0.001 U	-	-	-	0.001 U	-	-	-	0.001 U
Chromium	mg/L	-	0.005 U	-	-	-	-	-	-	-	0.005 U
Chromium (dissolved)	mg/L	-	0.005 U	-	-	-	0.0011 J	-	-	-	0.005 U
Cobalt	mg/L	-	0.007 U	-	-	-	-	-	-	-	0.0005 J
Cobalt (dissolved)	mg/L	-	0.00061 J	-	-	-	0.007 U	-	-	-	0.0005 J
Copper	mg/L	-	0.002 U	-	-	-	-	-	-	-	0.002 U
Copper (dissolved)	mg/L	-	0.002 U	-	-	-	0.002 U	-	-	-	0.002 U
Iron	mg/L	-	1.1	-	-	-	-	-	-	-	1.1
Iron (dissolved)	mg/L	-	0.99	-	-	-	1.2	-	-	-	1.1
Lead	mg/L	0.0037	0.003 U	0.003 U	0.003 U	0.003 U	-	0.005 U	0.0024 J	0.0021 J	0.005 U
Lead (dissolved)	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.005 U	0.0022 J	0.005 U	0.0025 J
Manganese	mg/L	0.84	0.76	1.7 ^{bcd}	1.9 ^{bcd}	0.78	-	1.1 ^{bcd}	1.8 ^{bcd}	1.8 ^{bcd}	1.7 ^{bcd}
Manganese (dissolved)	mg/L	0.81 ^{bd}	0.87 ^{bcd}	1.6 ^{bcd}	1.7 ^{bcd}	0.92 ^{bcd}	0.95 ^{bcd}	1.1 ^{bcd}	1.8 ^{bcd}	1.8 ^{bcd}	1 ^{bcd}
Mercury	mg/L	-	0.0002 U	-	-	-	-	-	-	-	0.0002 U
Mercury (dissolved)	mg/L	-	0.0002 U	-	-	-	0.0002 U	-	-	-	0.0002 U
Nickel	mg/L	-	0.02 U	-	-	-	-	-	-	-	0.00047 J
Nickel (dissolved)	mg/L	-	0.02 U	-	-	-	0.0018 J	-	-	-	0.00058 J
Selenium	mg/L	-	0.005 U	-	-	-	-	-	-	-	0.005 U
Selenium (dissolved)	mg/L	-	0.005 U	-	-	-	0.005 U	-	-	-	0.005 U
Silver	mg/L	-	0.0002 U	-	-	-	-	-	-	-	0.0002 U
Silver (dissolved)	mg/L	-	0.0002 U	-	-	-	0.00004 J	-	-	-	0.0002 U
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U
Thallium (dissolved)	mg/L	-	0.001 U	-	-	-	0.00011 J	-	-	-	0.001 U
Vanadium	mg/L	-	0.0037 J	-	-	-	-	-	-	-	0.004 U
Vanadium (dissolved)	mg/L	-	0.0027 J	-	-	-	0.004 U	-	-	-	0.004 U
Zinc	mg/L	-	0.02 U	-	-	-	-	-	-	-	0.02 U
Zinc (dissolved)	mg/L	-	0.02 U	-	-	-	0.02 U	-	-	-	0.02 U
Pesticides											
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-
Wet											
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	0.0050 U	-	-	-	-	-	-	-	-
Cyanide (total)	mg/L	-	-	-	-	-	-	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2	PFW-2
Sample ID:	GW-120914-12636-SSH-1437	GW-12636-032715-SSH-15016	GW-12636-062315-SSH-1536	GW-12636-091715-SSH-1547	GW-12636-121615-SSH-1560	GW-12636-032116-SSH-0116	GW-12636-062016-SSH-2216	GW-12636-092816-SSH-3416	GW-12636-092816-SSH-3516	GW-12636-112816-SSH-4116	GW-12636-032917-SSH-0517
Sample Date:	12/9/2014	3/27/2015	6/23/2015	9/17/2015	12/16/2015	3/21/2016	6/20/2016	9/28/2016	9/28/2016	11/28/2016	3/29/2017
Sample Depth:	-	-	-	-	-	-	-	-	(Duplicate)	-	-
Parameters	Units										
<i>FPARAM</i>											
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	-
pH, field	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte										

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-9	PFW-9	PFW-9
Sample ID:	GW-12636-091211-JY-002	PFW-4	GW-12636-051111-SSH-102	GW-12636-051111-SSH-103	GW-12636-061014-SSH-1425	GW-12636-061014-SSH-1426	GW-12636-032615-SSH-15006	GW-12636-032116-SSH-0916	GW-12636-033017-SSH-1417	GW-12636-091211-JY-006	PFW-9	PFW-9	W-12636-060700-KMV-506
Sample Date:	9/12/2011	4/1/1997	5/11/2011	5/11/2011	6/10/2014	6/10/2014	3/26/2015	3/26/2015	3/21/2016	3/30/2017	9/12/2011	4/1/1997	6/7/2000
Sample Depth:	(4.51-9.01) in BGS	-	-	(Duplicate)	-	(Duplicate)	-	-	-	-	(8.76-8.91) in BGS	-	-
Parameters	Units												
VOAs													
1,1,1-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,1,2,2-Tetrachloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,1,2-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,1-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,1-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,2,4-Trichlorobenzene	mg/L	0.001 U	-	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
1,2,4-Trimethylbenzene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
1,2-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,2-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,2-Dichloropropane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,3,5-Trimethylbenzene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
1,3-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,4-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.0025 J	-	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	-
2-Chloroethyl vinyl ether	mg/L	-	0.01 U	-	-	-	-	-	-	-	-	0.01 U	-
2-Hexanone	mg/L	0.01 U	-	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.0013 J	-	0.00087 J	0.0009 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	-
Acetone	mg/L	0.012	-	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	-
Benzene	mg/L	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	-
Bromodichloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Bromoform	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Bromomethane (Methyl bromide)	mg/L	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	-
Carbon disulfide	mg/L	0.005 U	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	-
Carbon tetrachloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Chlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Chloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Chloroform (Trichloromethane)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Chloromethane (Methyl chloride)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
cis-1,2-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
cis-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Cyclohexane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
Dibromochloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Dichlorodifluoromethane (CFC-12)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Ethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Isopropyl benzene	mg/L	0.001 U	-	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
m&p-Xylenes	mg/L	-	0.003 U	-	-	-	-	-	-	-	-	0.003 U	-
Methyl acetate	mg/L	0.01 U	-	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	-
Methyl cyclohexane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
Methyl tert butyl ether (MTBE)	mg/L	0.005 U	-	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	-	-
Methylene chloride	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-
o-Xylene	mg/L	-	0.003 U	-	-	-	-	-	-	-	-	0.003 U	-
Styrene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
Tetrachloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Toluene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
trans-1,2-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
trans-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Trichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Trichlorofluoromethane (CFC-11)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Trifluorotrichloroethane (CFC-113)	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
Vinyl chloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Xylenes (total)	mg/L	0.002 U	-	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	-	-
SVOAs													
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-9	PFW-9
Sample ID:	GW-12636-091211-JY-002	PFW-4	GW-12636-051111-SSH-102	GW-12636-051111-SSH-103	GW-12636-061014-SSH-1425	GW-12636-061014-SSH-1426	GW-12636-032615-SSH-15006	GW-12636-032116-SSH-0916	GW-12636-033017-SSH-1417	GW-12636-091211-JY-006	PFW-9	W-12636-060700-KMV-506
Sample Date:	9/12/2011	4/1/1997	5/11/2011	5/11/2011	6/10/2014	6/10/2014	3/26/2015	3/21/2016	3/30/2017	9/12/2011	4/1/1997	6/7/2000
Sample Depth:	(4.51-9.01) in BGS	-	-	(Duplicate)	-	(Duplicate)	-	-	-	(8.76-8.91) in BGS	-	-
Parameters	Units											
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-9	PFW-9
Sample ID:	GW-12636-091211-JY-002	PFW-4	GW-12636-051111-SSH-102	GW-12636-051111-SSH-103	GW-12636-061014-SSH-1425	GW-12636-061014-SSH-1426	GW-12636-032615-SSH-15006	GW-12636-032116-SSH-0916	GW-12636-033017-SSH-1417	GW-12636-091211-JY-006	PFW-9	W-12636-060700-KMV-506
Sample Date:	9/12/2011	4/1/1997	5/11/2011	5/11/2011	6/10/2014	6/10/2014	3/26/2015	3/21/2016	3/30/2017	9/12/2011	4/1/1997	6/7/2000
Sample Depth:	(4.51-9.01) in BGS	-	-	(Duplicate)	-	(Duplicate)	-	-	-	(8.76-8.91) in BGS	-	-
Parameters	Units											
Metals												
Aluminum	mg/L	0.4	-	3.76	3.87	-	-	0.038 J	-	-	0.05 U	-
Aluminum (dissolved)	mg/L	0.073	-	-	-	0.017 J	0.018 J	0.012 J	0.13	0.05 U	-	-
Antimony	mg/L	0.002 U	-	0.0022	0.0021	-	-	0.00021 J	-	-	0.002 U	-
Antimony (dissolved)	mg/L	0.002 U	-	-	-	0.00087 J	0.00079 J	0.00017 J	0.00016 J	0.002 U	-	-
Arsenic	mg/L	0.0044 J	0.005 U	0.0034 J	0.0035 J	-	-	0.0052	-	-	0.0033 J	0.005 U
Arsenic (dissolved)	mg/L	0.0034 J	-	-	-	0.005 U	0.005 U	0.0043 J	0.0031 J	0.0006 J	-	-
Barium	mg/L	0.012 J	1.6	0.0318 J	0.0321 J	-	-	0.024 J	-	-	0.05 J	0.97
Barium (dissolved)	mg/L	0.0084 J	-	-	-	0.024 J	0.024 J	0.024 J	0.058 J	0.11	-	-
Beryllium	mg/L	0.001 U	-	0.001 U	0.001 U	-	-	0.001 U	-	-	0.001 U	-
Beryllium (dissolved)	mg/L	0.001 U	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
Cadmium	mg/L	0.001 U	0.0005 U	0.00066 J	0.001 U	-	-	0.001 U	-	-	0.001 U	0.0005 U
Cadmium (dissolved)	mg/L	0.001 U	-	-	-	0.001 U	0.001 U	0.001 U	0.00017 J	0.001 U	-	-
Chromium	mg/L	0.005 U	0.05 U	0.0163	0.0164	-	-	0.005 U	-	-	0.005 U	0.05 U
Chromium (dissolved)	mg/L	0.005 U	-	-	-	0.005 U	0.005 U	0.005 U	0.0011 J	0.005 U	-	-
Cobalt	mg/L	0.007 U	-	0.0022 J	0.0024 J	-	-	0.007 U	-	-	0.002 J	-
Cobalt (dissolved)	mg/L	0.007 U	-	-	-	0.007 U	0.007 U	0.007 U	0.007 U	0.02 U	-	-
Copper	mg/L	0.028	0.025 U	0.0267	0.0269	-	-	0.0023 U	-	-	0.0004 J	0.025 U
Copper (dissolved)	mg/L	0.0028	-	-	-	0.0051 U	0.0049 U	0.002 U	0.0026 U	0.0018 J	-	-
Iron	mg/L	0.66	-	5.62	5.71	-	-	0.1 U	-	-	2	-
Iron (dissolved)	mg/L	0.1 U	-	-	-	0.1 U	0.1 U	0.1 U	0.22	0.013 J	-	-
Lead	mg/L	0.013 ^{bd}	0.003 U	0.0356 ^{bd}	0.0358 ^{bd}	-	-	0.0027 J	-	-	0.003 U	0.009 ^{bd}
Lead (dissolved)	mg/L	0.003 U	-	-	-	0.003 U	0.003 U	0.003 U	0.0021 J	0.0002 J	-	0.003 U
Manganese	mg/L	0.031	-	0.0962	0.0982	-	-	0.046	-	-	0.41	-
Manganese (dissolved)	mg/L	0.017	-	-	-	0.052	0.052	0.049	0.056	0.053	-	-
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-	-	0.0002 U	-	-	0.0002 U	0.0002 U
Mercury (dissolved)	mg/L	0.0002 U	-	-	-	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-	-
Nickel	mg/L	0.02 U	-	0.0085 J	0.0086 J	-	-	0.02 U	-	-	0.02 U	-
Nickel (dissolved)	mg/L	0.02 U	-	-	-	0.02 U	0.0059 J	0.00098 J	0.0031 J	0.00075 J	-	-
Selenium	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	-	-	0.005 U	-	-	0.005 U	0.005 U
Selenium (dissolved)	mg/L	0.005 U	-	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.00051 J	-	-
Silver	mg/L	0.0002 U	0.0005 U	0.0002 U	0.0002 U	-	-	0.0002 U	-	-	0.0002 U	0.0005 U
Silver (dissolved)	mg/L	0.0002 U	-	-	-	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	0.001 U	-	0.001 U	0.001 U	-	-	0.001 U	-	-	0.001 U	-
Thallium (dissolved)	mg/L	0.001 U	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
Vanadium	mg/L	0.0025 J	-	0.0108	0.0111	-	-	0.004 U	-	-	0.004 U	-
Vanadium (dissolved)	mg/L	0.0014 J	-	-	-	0.004 U	0.004 U	0.004 U	0.004 U	0.00095 J	-	-
Zinc	mg/L	0.025	0.02	0.186	0.2	-	-	0.02 U	-	-	0.02 U	0.02 U
Zinc (dissolved)	mg/L	0.02 U	-	-	-	0.0058 J	0.0088 J	0.02 U	0.02 U	0.02 U	-	-
Pesticides												
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-	-
Wet												
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	0.0050 U	-	0.010 U	0.010 U	0.0050 U	0.0050 U	0.0050 U	-	-	0.0050 U	-
Cyanide (total)	mg/L	0.0058 ^t	-	-	-	0.0050 U	0.0050 U	-	-	-	0.0050 U	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-4	PFW-9	PFW-9	PFW-9
Sample ID:	GW-12636-091211-JY-002	PFW-4	GW-12636-051111-SSH-102	GW-12636-051111-SSH-103	GW-12636-061014-SSH-1425	GW-12636-061014-SSH-1426	GW-12636-032615-SSH-15006	GW-12636-032116-SSH-0916	GW-12636-033017-SSH-1417	GW-12636-033017-SSH-1417	GW-12636-091211-JY-006	PFW-9	W-12636-060700-KMV-506
Sample Date:	9/12/2011	4/1/1997	5/11/2011	5/11/2011	6/10/2014	6/10/2014	3/26/2015	3/21/2016	3/30/2017	3/30/2017	9/12/2011	4/1/1997	6/7/2000
Sample Depth:	(4.51-9.01) in BGS	-	-	(Duplicate)	-	(Duplicate)	-	-	-	-	(8.76-8.91) in BGS	-	-
Parameters	Units												
FPARAM													
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	-	2900	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	7.22	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	265	-	-	-
pH, field	s.u.	-	-	-	-	-	-	-	-	8.17	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	6.0	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	-	22.7	-	-	-
Footnotes:													
	U Not detecte												
	J Estimated c												
	UJ Not detecte												

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9
Sample ID:	GW-12636-101702-DD-007	GW-12636-120210-BW-008	GW-12636-120210-BW-009	GW-12636-051311-SSH-112	GW-12636-120611-JY-410	GW-12636-032614-SSH-1406	GW-12636-060914-SSH-1422	GW-12636-090914-SSH-1430	GW-120914-12636-SSH-1438	GW-12636-032715-SSH-15018	GW-12636-062315-SSH-1537	
Sample Date:	10/17/2002	12/2/2010	12/2/2010	5/13/2011	12/6/2011	3/26/2014	6/9/2014	9/9/2014	12/9/2014	3/27/2015	6/23/2015	
Sample Depth:	-	-	(Duplicate)	-	-	-	-	-	-	-	-	
Parameters	Units											
VOAs												
1,1,1-Trichloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,1,2,2-Tetrachloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,1,2-Trichloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,1-Dichloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,1-Dichloroethene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2,4-Trichlorobenzene	mg/L	-	0.005 U	0.005 U	0.005 UJ	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2,4-Trimethylbenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.001 UJ	0.001 UJ	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2-Dichlorobenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2-Dichloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,2-Dichloropropane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,3,5-Trimethylbenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,3-Dichlorobenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
1,4-Dichlorobenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	0.025 U	0.025 U	0.025 U	0.01 U	0.01 U	-	-	-	0.01 U	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U	-	-	-	0.01 U	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U	-	-	-	0.01 U	-
Acetone	mg/L	-	0.025 U	0.025 U	0.025 U	0.01 U	0.01 U	-	-	-	0.0017 J	-
Benzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Bromodichloromethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Bromoform	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Bromomethane (Methyl bromide)	mg/L	-	0.001 UJ	0.001 UJ	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Carbon disulfide	mg/L	-	0.005 U	0.005 U	0.005 UJ	0.005 U	0.005 U	-	-	-	0.005 U	-
Carbon tetrachloride	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Chlorobenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Chloroethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Chloroform (Trichloromethane)	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Chloromethane (Methyl chloride)	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
cis-1,2-Dichloroethene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
cis-1,3-Dichloropropene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Cyclohexane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Dibromochloromethane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Ethylbenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Isopropyl benzene	mg/L	-	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	-	-	-	0.001 U	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	-	-	0.01 U	-
Methyl cyclohexane	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Methyl tert butyl ether (MTBE)	mg/L	-	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	-	-	-	0.001 U	-
Methylene chloride	mg/L	-	0.005 U	0.005 U	0.005 UJ	0.005 U	0.005 U	-	-	-	0.005 U	-
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Tetrachloroethene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Toluene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
trans-1,2-Dichloroethene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
trans-1,3-Dichloropropene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Trichloroethene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Trichlorofluoromethane (CFC-11)	mg/L	-	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	-	-	-	0.001 U	-
Trifluorotrichloroethane (CFC-113)	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Vinyl chloride	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	-
Xylenes (total)	mg/L	-	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	-	-	-	0.002 U	-
SVOAs												
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9
Sample ID:	GW-12636-101702-DD-007	GW-12636-120210-BW-008	GW-12636-120210-BW-009	GW-12636-051311-SSH-112	GW-12636-120611-JY-410	GW-12636-032614-SSH-1406	GW-12636-060914-SSH-1422	GW-12636-090914-SSH-1430	GW-120914-12636-SSH-1438	GW-12636-032715-SSH-15018	GW-12636-062315-SSH-1537
Sample Date:	10/17/2002	12/2/2010	12/2/2010	5/13/2011	12/6/2011	3/26/2014	6/9/2014	9/9/2014	12/9/2014	3/27/2015	6/23/2015
Sample Depth:	-	-	(Duplicate)	-	-	-	-	-	-	-	-
Parameters	Units										
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooxonanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9
Sample ID:	GW-12636-101702-DD-007	GW-12636-120210-BW-008	GW-12636-120210-BW-009	GW-12636-051311-SSH-112	GW-12636-120611-JY-410	GW-12636-032614-SSH-1406	GW-12636-060914-SSH-1422	GW-12636-090914-SSH-1430	GW-120914-12636-SSH-1438	GW-12636-032715-SSH-15018	GW-12636-062315-SSH-1537
Sample Date:	10/17/2002	12/2/2010	12/2/2010	5/13/2011	12/6/2011	3/26/2014	6/9/2014	9/9/2014	12/9/2014	3/27/2015	6/23/2015
Sample Depth:	-	-	(Duplicate)	-	-	-	-	-	-	-	-
Parameters	Units										
Metals											
Aluminum	mg/L	-	1.3 J	0.524 J	0.2 U	0.05 U	0.05 U	-	-	-	0.05 U
Aluminum (dissolved)	mg/L	-	-	-	-	-	0.05 U	-	-	-	0.05 U
Antimony	mg/L	-	0.00036 J	0.00026 J	0.002 U	0.002 U	0.00021 J	-	-	-	0.00023 J
Antimony (dissolved)	mg/L	-	-	-	-	-	0.00017 J	-	-	-	0.00016 J
Arsenic	mg/L	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	-	-	0.005 U
Arsenic (dissolved)	mg/L	-	-	-	-	-	0.005 U	-	-	-	0.005 U
Barium	mg/L	-	0.0367 J	0.0343 J	0.0193 J	0.037 J	0.013 J	-	-	-	0.036 J
Barium (dissolved)	mg/L	-	-	-	-	-	0.021 J	-	-	-	0.036 J
Beryllium	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U
Beryllium (dissolved)	mg/L	-	-	-	-	-	0.001 U	-	-	-	0.001 U
Cadmium	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U
Cadmium (dissolved)	mg/L	-	-	-	-	-	0.001 U	-	-	-	0.001 U
Chromium	mg/L	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	-	-	0.005 U
Chromium (dissolved)	mg/L	-	-	-	-	-	0.005 U	-	-	-	0.005 U
Cobalt	mg/L	-	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	-	-	-	0.007 U
Cobalt (dissolved)	mg/L	-	-	-	-	-	0.007 U	-	-	-	0.007 U
Copper	mg/L	-	0.0075 J	0.0035 J	0.002 U	0.002 U	0.0021	-	-	-	0.00081 J
Copper (dissolved)	mg/L	-	-	-	-	-	0.00062 J	-	-	-	0.0011 J
Iron	mg/L	-	7.78 J	2.93 J	0.232	0.089 J	0.084 J	-	-	-	0.1 U
Iron (dissolved)	mg/L	-	-	-	-	-	0.21	-	-	-	0.1 U
Lead	mg/L	-	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	mg/L	0.003 U	-	-	-	-	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	mg/L	-	0.0519 J	0.0208 J	0.008 J	0.015 U	0.0028 J	0.015 U	0.21	0.022	0.015 U
Manganese (dissolved)	mg/L	-	-	-	-	-	0.0041 J	0.0011 J	0.22	0.023	0.015 U
Mercury	mg/L	-	0.0002 UJ	0.0002 UJ	0.0002 U	0.0002 U	0.0002 U	-	-	-	0.0002 U
Mercury (dissolved)	mg/L	-	-	-	-	-	0.0002 U	-	-	-	0.0002 U
Nickel	mg/L	-	0.0034 J	0.02 U	0.02 U	0.02 U	0.02 U	-	-	-	0.02 U
Nickel (dissolved)	mg/L	-	-	-	-	-	0.02 U	-	-	-	0.0008 J
Selenium	mg/L	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	-	-	0.005 U
Selenium (dissolved)	mg/L	-	-	-	-	-	0.005 U	-	-	-	0.005 U
Silver	mg/L	-	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-	-	-	0.0002 U
Silver (dissolved)	mg/L	-	-	-	-	-	0.0002 U	-	-	-	0.0002 U
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	0.001 U	0.001 U	0.001 U	0.00054 J	0.001 U	-	-	-	0.001 U
Thallium (dissolved)	mg/L	-	-	-	-	-	0.001 U	-	-	-	0.001 U
Vanadium	mg/L	-	0.0015 J	0.004 U	0.004 U	0.004 U	0.004 U	-	-	-	0.0031 J
Vanadium (dissolved)	mg/L	-	-	-	-	-	0.004 U	-	-	-	0.0055
Zinc	mg/L	-	0.0546 J	0.0218 UJ	0.02 U	0.02 U	0.0059 J	-	-	-	0.02 U
Zinc (dissolved)	mg/L	-	-	-	-	-	0.02 U	-	-	-	0.02 U
Pesticides											
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-
Wet											
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	0.010 U	0.010 U	0.010 U	0.0050 U	0.0050 U	-	-	0.0050 U	-
Cyanide (total)	mg/L	-	-	-	-	0.0050 U	-	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9
Sample ID:	GW-12636-101702-DD-007	GW-12636-120210-BW-008	GW-12636-120210-BW-009	GW-12636-051311-SSH-112	GW-12636-120611-JY-410	GW-12636-032614-SSH-1406	GW-12636-060914-SSH-1422	GW-12636-090914-SSH-1430	GW-120914-12636-SSH-1438	GW-12636-032715-SSH-15018	GW-12636-062315-SSH-1537
Sample Date:	10/17/2002	12/2/2010	12/2/2010	5/13/2011	12/6/2011	3/26/2014	6/9/2014	9/9/2014	12/9/2014	3/27/2015	6/23/2015
Sample Depth:	-	-	(Duplicate)	-	-	-	-	-	-	-	-
Parameters	Units										
<i>FPARAM</i>											
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	-
pH, field	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	-
Footnotes:	U Not detecte										
	J Estimated c										
	UJ Not detecte										

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-10
Sample ID:	GW-12636-091715-SSH-1548	GW-12636-121615-SSH-1561	GW-12636-032116-SSH-0316	GW-12636-032116-SSH-0416	GW-12636-062016-SSH-2316	GW-12636-092816-SSH-3316	GW-12636-112816-SSH-4216	GW-12636-112816-SSH-4316	GW-12636-032917-SSH-0217	GW-12636-032917-SSH-0317	GW-12636-091311-JY-008
Sample Date:	9/17/2015	12/16/2015	3/21/2016	3/21/2016	6/20/2016	9/28/2016	11/28/2016	11/28/2016	3/29/2017	3/29/2017	9/13/2011
Sample Depth:	-	-	-	(Duplicate)	-	-	-	(Duplicate)	-	(Duplicate)	(3.87-8.11) in BGS
Parameters	Units										
VOAs											
1,1,1-Trichloroethane	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	-	0.01 U	0.01 U	-	-	-	-	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	-	0.01 U	0.01 U	-	-	-	-	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	-	0.01 U	0.01 U	-	-	-	-	0.01 U	0.01 U
Acetone	mg/L	-	-	0.01 U	0.01 U	-	-	-	-	0.01 U	0.01 U
Benzene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Bromodichloromethane	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Bromoform	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Carbon disulfide	mg/L	-	-	0.005 U	0.005 U	-	-	-	-	0.005 U	0.005 U
Carbon tetrachloride	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Chlorobenzene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Chloroethane	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Cyclohexane	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Dibromochloromethane	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 UJ
Ethylbenzene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Isopropyl benzene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	0.01 U	0.01 U	-	-	-	-	0.01 U	0.01 U
Methyl cyclohexane	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.005 U
Methylene chloride	mg/L	-	-	0.005 U	0.005 U	-	-	-	-	0.005 U	0.005 U
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Tetrachloroethene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Toluene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Trichloroethene	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Vinyl chloride	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Xylenes (total)	mg/L	-	-	0.002 U	0.002 U	-	-	-	-	0.002 U	0.002 U
SVOAs											
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-10
Sample ID:	GW-12636-091715-SSH-1548	GW-12636-121615-SSH-1561	GW-12636-032116-SSH-0316	GW-12636-032116-SSH-0416	GW-12636-062016-SSH-2316	GW-12636-092816-SSH-3316	GW-12636-112816-SSH-4216	GW-12636-112816-SSH-4316	GW-12636-032917-SSH-0217	GW-12636-032917-SSH-0317	GW-12636-091311-JY-008
Sample Date:	9/17/2015	12/16/2015	3/21/2016	3/21/2016	6/20/2016	9/28/2016	11/28/2016	11/28/2016	3/29/2017	3/29/2017	9/13/2011
Sample Depth:	-	-	-	(Duplicate)	-	-	-	(Duplicate)	-	(Duplicate)	(3.87-8.11) in BGS
Parameters	Units										
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorooxonanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-10
Sample ID:	GW-12636-091715-SSH-1548	GW-12636-121615-SSH-1561	GW-12636-032116-SSH-0316	GW-12636-032116-SSH-0416	GW-12636-062016-SSH-2316	GW-12636-092816-SSH-3316	GW-12636-112816-SSH-4216	GW-12636-112816-SSH-4316	GW-12636-032917-SSH-0217	GW-12636-032917-SSH-0317	GW-12636-091311-JY-008
Sample Date:	9/17/2015	12/16/2015	3/21/2016	3/21/2016	6/20/2016	9/28/2016	11/28/2016	11/28/2016	3/29/2017	3/29/2017	9/13/2011
Sample Depth:	-	-	-	(Duplicate)	-	-	-	(Duplicate)	-	(Duplicate)	(3.87-8.11) in BGS
Parameters	Units										
Metals											
Aluminum	mg/L	-	-	0.05 U	0.05 U	-	-	-	-	0.05 U	0.05 U
Aluminum (dissolved)	mg/L	-	-	0.05 U	0.05 U	-	-	-	-	0.05 U	-
Antimony	mg/L	-	-	0.002 U	0.002 U	-	-	-	-	0.0022 U	0.002 U
Antimony (dissolved)	mg/L	-	-	0.002 U	0.002 U	-	-	-	-	0.002 U	-
Arsenic	mg/L	-	-	0.005 U	0.005 U	-	-	-	-	0.00057 J	0.005 U
Arsenic (dissolved)	mg/L	-	-	0.005 U	0.005 U	-	-	-	-	0.005 U	-
Barium	mg/L	-	-	0.02 J	0.021 J	-	-	-	-	0.021 J	0.045 J
Barium (dissolved)	mg/L	-	-	0.021 J	0.021 J	-	-	-	-	0.023 J	-
Beryllium	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Beryllium (dissolved)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	-
Cadmium	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U
Cadmium (dissolved)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	-
Chromium	mg/L	-	-	0.005 U	0.00077 J	-	-	-	-	0.00049 J	0.005 U
Chromium (dissolved)	mg/L	-	-	0.00064 J	0.0009 J	-	-	-	-	0.00028 J	-
Cobalt	mg/L	-	-	0.007 U	0.007 U	-	-	-	-	0.00022 J	0.007 U
Cobalt (dissolved)	mg/L	-	-	0.007 U	0.007 U	-	-	-	-	0.02 U	-
Copper	mg/L	-	-	0.002 U	0.002 U	-	-	-	-	0.002 U	0.002 U
Copper (dissolved)	mg/L	-	-	0.002 U	0.002 U	-	-	-	-	0.002 U	-
Iron	mg/L	-	-	0.1 U	0.1 U	-	-	-	-	0.2 U	0.1 U
Iron (dissolved)	mg/L	-	-	0.1 U	0.1 U	-	-	-	-	0.2 U	-
Lead	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.005 U	-	0.005 U	0.005 U	0.003 U	0.003 U
Lead (dissolved)	mg/L	0.003 U	0.003 U	0.003 U	0.003 U	0.005 U	0.0022 J	0.002 J	0.005 U	0.003 U	-
Manganese	mg/L	0.0056 J	0.0018 J	0.015 U	0.015 U	0.049	-	0.015 U	0.015 U	0.00043 J	0.047
Manganese (dissolved)	mg/L	0.0057 J	0.015 U	0.015 U	0.015 U	0.048	0.14	0.015 U	0.015 U	0.00031 J	-
Mercury	mg/L	-	-	0.0002 U	0.0002 U	-	-	-	-	0.0002 U	0.0002 U
Mercury (dissolved)	mg/L	-	-	0.0002 U	0.0002 U	-	-	-	-	0.0002 U	-
Nickel	mg/L	-	-	0.0011 J	0.02 U	-	-	-	-	0.00035 J	0.02 U
Nickel (dissolved)	mg/L	-	-	0.0013 J	0.0008 J	-	-	-	-	0.00086 J	-
Selenium	mg/L	-	-	0.005 U	0.005 U	-	-	-	-	0.0012 J	0.005 U
Selenium (dissolved)	mg/L	-	-	0.005 U	0.005 U	-	-	-	-	0.00065 J	-
Silver	mg/L	-	-	0.0002 U	0.0002 U	-	-	-	-	0.0002 U	0.0002 U
Silver (dissolved)	mg/L	-	-	0.0002 U	0.0002 U	-	-	-	-	0.0002 U	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	0.0015 U
Thallium (dissolved)	mg/L	-	-	0.001 U	0.001 U	-	-	-	-	0.001 U	-
Vanadium	mg/L	-	-	0.004 U	0.004 U	-	-	-	-	0.004 U	0.004 U
Vanadium (dissolved)	mg/L	-	-	0.004 U	0.004 U	-	-	-	-	0.004 U	-
Zinc	mg/L	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	0.02 U
Zinc (dissolved)	mg/L	-	-	0.02 U	0.02 U	-	-	-	-	0.02 U	-
Pesticides											
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-
Wet											
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	-	-	-	-	-	-	-	-	0.0050 U
Cyanide (total)	mg/L	-	-	-	-	-	-	-	-	-	0.0050 U
pH	s.u.	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-9	PFW-10
Sample ID:	GW-12636-091715-SSH-1548	GW-12636-121615-SSH-1561	GW-12636-032116-SSH-0316	GW-12636-032116-SSH-0416	GW-12636-062016-SSH-2316	GW-12636-092816-SSH-3316	GW-12636-112816-SSH-4216	GW-12636-112816-SSH-4316	GW-12636-032917-SSH-0217	GW-12636-032917-SSH-0317	GW-12636-091311-JY-008
Sample Date:	9/17/2015	12/16/2015	3/21/2016	3/21/2016	6/20/2016	9/28/2016	11/28/2016	11/28/2016	3/29/2017	3/29/2017	9/13/2011
Sample Depth:	-	-	-	(Duplicate)	-	-	-	(Duplicate)	-	(Duplicate)	(3.87-8.11) in BGS
Parameters	Units										
<i>FPARAM</i>											
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	496	496	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	6.01	6.01	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	207	207	-
pH, field	s.u.	-	-	-	-	-	-	-	7.57	7.57	-
Temperature, field	Deg C	-	-	-	-	-	-	-	6.1	6.1	-
Turbidity, field	NTU	-	-	-	-	-	-	-	0.7	0.7	-
Footnotes:	U Not detecte J Estimated c UJ Not detecte										

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-11	PFW-11
Sample ID:	PFW-10	GW-12636-101702-DD-006	GW-12636-120310-BW-018	GW-12636-051311-SSH-114	GW-12636-120611-JY-407	GW-12636-032614-SSH-1401	GW-12636-032614-SSH-1402	GW-12636-032615-SSH-15011	GW-12636-032216-SSH-1416	GW-12636-091311-SSH-2017	GW-12636-091311-JY-012	GW-12636-091311-JY-012	PFW-11
Sample Date:	3/31/1997	10/17/2002	12/3/2010	5/13/2011	12/6/2011	3/26/2014	3/26/2014	3/26/2015	3/22/2016	3/31/2017	9/13/2011	9/13/2011	4/1/1997
Sample Depth:	-	-	-	-	-	-	(Duplicate)	-	-	-	(2.18-2.18) in BGS	-	-
Parameters	Units												
VOAs													
1,1,1-Trichloroethane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	-	-	0.005 U	0.005 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,2,4-Trimethylbenzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	-	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,2-Dichlorobenzene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
1,3-Dichlorobenzene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	-	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-
2-Chloroethyl vinyl ether	mg/L	0.01 U	-	-	-	-	-	-	-	-	-	-	0.01 U
2-Hexanone	mg/L	-	-	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	-	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-
Acetone	mg/L	-	-	0.0092 J	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-
Benzene	mg/L	0.005 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U
Bromodichloromethane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	0.001 U	-	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L	-	-	0.005 U	0.005 UJ	0.00015 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-
Carbon tetrachloride	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Dibromochloromethane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U
Ethylbenzene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropyl benzene	mg/L	-	-	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
m&p-Xylenes	mg/L	0.003 U	-	-	-	-	-	-	-	-	-	-	0.003 U
Methyl acetate	mg/L	-	-	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-
Methyl cyclohexane	mg/L	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Methyl tert butyl ether (MTBE)	mg/L	-	-	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	-
Methylene chloride	mg/L	0.005 U	-	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	mg/L	0.003 U	-	-	-	-	-	-	-	-	-	-	0.003 U
Styrene	mg/L	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Tetrachloroethene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	mg/L	0.001 U	-	0.00062 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	0.001 U	-	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Vinyl chloride	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)	mg/L	-	-	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	-
SVOAs													
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-11
Sample ID:	PFW-10	GW-12636-101702-DD-006	GW-12636-120310-BW-018	GW-12636-051311-SSH-114	GW-12636-120611-JY-407	GW-12636-032614-SSH-1401	GW-12636-032614-SSH-1402	GW-12636-032615-SSH-15011	GW-12636-032216-SSH-1416	GW-12636-033117-SSH-2017	GW-12636-091311-JY-012	PFW-11
Sample Date:	3/31/1997	10/17/2002	12/3/2010	5/13/2011	12/6/2011	3/26/2014	3/26/2014	3/26/2015	3/22/2016	3/31/2017	9/13/2011	PFW-11
Sample Depth:	-	-	-	-	-	-	(Duplicate)	-	-	-	(2.18-2.18) in BGS	PFW-11
Parameters	Units											
2-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooonanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
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Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-11	PFW-11
Sample ID:	PFW-10	GW-12636-101702-DD-006	GW-12636-120310-BW-018	GW-12636-051311-SSH-114	GW-12636-120611-JY-407	GW-12636-032614-SSH-1401	GW-12636-032614-SSH-1402	GW-12636-032615-SSH-15011	GW-12636-032216-SSH-1416	GW-12636-033117-SSH-2017	GW-12636-091311-JY-012	PFW-11	PFW-11
Sample Date:	3/31/1997	10/17/2002	12/3/2010	5/13/2011	12/6/2011	3/26/2014	3/26/2014	3/26/2015	3/22/2016	3/31/2017	9/13/2011	PFW-11	PFW-11
Sample Depth:	-	-	-	-	-	-	(Duplicate)	-	-	-	(2.18-2.18) in BGS	-	4/1/1997
Parameters	Units												
Metals													
Aluminum	mg/L	-	-	0.2 U	0.2 U	0.05 U	-	-	-	-	0.031 J	0.031 J	-
Aluminum (dissolved)	mg/L	-	-	-	-	-	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	-	-
Antimony	mg/L	-	-	0.002 U	0.002 U	0.00016 J	-	-	-	-	0.002 U	-	-
Antimony (dissolved)	mg/L	-	-	-	-	-	0.00027 J	0.00021 J	0.00033 J	0.002 U	0.002 U	-	-
Arsenic	mg/L	0.005 U	-	0.005 U	0.005 U	0.005 U	-	-	-	-	0.00044 J	0.005 U	0.005 U
Arsenic (dissolved)	mg/L	-	-	-	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.00044 J	-	-
Barium	mg/L	2.6 ^{bd}	-	0.0458 J	0.0465 J	0.046 J	-	-	-	-	0.049 J	0.069 J	1.1
Barium (dissolved)	mg/L	-	0.0565	-	-	-	0.021 J	0.021 J	0.034 J	0.048 J	0.048 J	-	-
Beryllium	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U	-
Beryllium (dissolved)	mg/L	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
Cadmium	mg/L	0.0005 U	-	0.001 U	0.001 U	0.001 U	-	-	-	-	0.00034 J	0.001 U	0.0006
Cadmium (dissolved)	mg/L	-	-	-	-	-	0.001 U	0.001 U	0.00045 J	0.00082 J	0.001 U	-	-
Chromium	mg/L	0.05 U	-	0.005 U	0.005 U	0.005 U	-	-	-	-	0.002 J	0.005 U	0.05 U
Chromium (dissolved)	mg/L	-	-	-	-	-	0.005 U	0.005 U	0.005 U	0.0015 J	0.00067 J	-	-
Cobalt	mg/L	-	-	0.007 U	0.007 U	0.007 U	-	-	-	-	0.00048 J	0.007 U	-
Cobalt (dissolved)	mg/L	-	-	-	-	-	0.007 U	0.007 U	0.007 U	0.007 U	0.00019 J	-	-
Copper	mg/L	0.025 U	-	0.002 U	0.002 U	0.002 U	-	-	-	-	0.004 U	0.002 U	0.025 U
Copper (dissolved)	mg/L	-	-	-	-	-	0.0049	0.0037	0.0069	0.0035	0.002 U	-	-
Iron	mg/L	-	-	0.1 U	0.1 U	0.1 U	-	-	-	-	0.088 J	0.1 U	-
Iron (dissolved)	mg/L	-	-	-	-	-	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U	-	-
Lead	mg/L	0.004	-	0.003 U	0.003 U	0.003 U	-	-	-	-	0.003 U	0.003 U	0.003 U
Lead (dissolved)	mg/L	-	-	-	-	-	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	-	-
Manganese	mg/L	-	-	0.16	0.0719	0.024	-	-	-	-	0.27	0.055 J	-
Manganese (dissolved)	mg/L	-	-	-	-	-	0.015	0.011 J	0.023	0.052	0.13	-	-
Mercury	mg/L	0.0002 U	-	0.0002 UJ	0.0002 U	0.0002 U	-	-	-	-	0.0002 U	0.0002 U	0.0002 U
Mercury (dissolved)	mg/L	-	-	-	-	-	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-	-	-
Nickel	mg/L	-	-	0.0036 J	0.02 U	0.02 U	-	-	-	-	0.0052 J	0.02 U	-
Nickel (dissolved)	mg/L	-	-	-	-	-	0.02 U	0.02 U	0.0037 J	0.0048 J	0.0039 J	-	-
Selenium	mg/L	0.005 U	-	0.005 U	0.005 U	0.005 U	-	-	-	-	0.00054 J	0.005 U	0.005 U
Selenium (dissolved)	mg/L	-	-	-	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	-
Silver	mg/L	0.0005 U	-	0.0002 U	0.0002 U	0.0002 U	-	-	-	-	0.0002 U	0.0002 U	0.0005 U
Silver (dissolved)	mg/L	-	-	-	-	-	0.000017 J	0.000018 J	0.0002 U	0.0002 U	0.0002 U	-	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	-	0.001 U	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U	-
Thallium (dissolved)	mg/L	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
Vanadium	mg/L	-	-	0.004 U	0.004 U	0.004 U	-	-	-	-	0.004 U	0.004 U	-
Vanadium (dissolved)	mg/L	-	-	-	-	-	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	-	-
Zinc	mg/L	0.05	-	0.02 U	0.02 U	0.012 J	-	-	-	-	0.029 U	0.02 U	0.02 U
Zinc (dissolved)	mg/L	-	-	-	-	-	0.017 J	0.016 J	0.032	0.059 U	0.026 U	-	-
Pesticides													
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Wet													
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	-	0.010 U	0.010 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	-	-	0.0050 U	-
Cyanide (total)	mg/L	-	-	-	-	0.0050 U	-	-	-	-	-	0.0050 U	-
pH	s.u.	-	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow

Sample Location:	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-10	PFW-11	PFW-11
Sample ID:	PFW-10	GW-12636-101702-DD-006	GW-12636-120310-BW-018	GW-12636-051311-SSH-114	GW-12636-120611-JY-407	GW-12636-032614-SSH-1401	GW-12636-032614-SSH-1402	GW-12636-032615-SSH-15011	GW-12636-032216-SSH-1416	GW-12636-033117-SSH-2017	GW-12636-091311-JY-012	GW-12636-091311-JY-012	PFW-11
Sample Date:	3/31/1997	10/17/2002	12/3/2010	5/13/2011	12/6/2011	3/26/2014	3/26/2014	3/26/2015	3/22/2016	3/31/2017	9/13/2011	9/13/2011	4/1/1997
Sample Depth:	-	-	-	-	-	-	(Duplicate)	-	-	-	-	(2.18-2.18) in BGS	-

Parameters	Units
FPARAM	
Conductivity, field	umhos/cm
Dissolved oxygen (DO), field	mg/L
Oxidation reduction potential (ORP), field	millivolts
pH, field	s.u.
Temperature, field	Deg C
Turbidity, field	NTU

U Not detecte
J Estimated c
UJ Not detecte

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-11	PFW-11	PFW-11	PFW-11	PFW-11	PFW-11	PFW-11	PFW-11
Sample ID:	GW-12636-120210-BW-010	GW-12636-051311-SSH-115	GW-12636-120611-JY-408	GW-12636-032614-SSH-1403	GW-12636-032515-SSH-15001	GW-12636-032216-SSH-1316	GW-12636-033017-SSH-1517	
Sample Date:	12/2/2010	5/13/2011	12/6/2011	3/26/2014	3/25/2015	3/22/2016	3/30/2017	
Sample Depth:	-	-	-	-	-	-	-	
Parameters	Units							
VOAs								
1,1,1-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trichlorobenzene	mg/L	0.005 U	0.005 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-
2-Hexanone	mg/L	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	mg/L	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Benzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromodichloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromochloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dichlorodifluoromethane (CFC-12)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropyl benzene	mg/L	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-
Methyl acetate	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	mg/L	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
o-Xylene	mg/L	-	-	-	-	-	-	-
Styrene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrachloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trifluorotrichloroethane (CFC-113)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
SVOAs								
1,2,4-Trichlorobenzene	mg/L	-	-	-	-	-	-	-
2,2'-Oxybis(2-chloropropane) (bis(2-Chloroisopropyl) ether)	mg/L	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	mg/L	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	mg/L	-	-	-	-	-	-	-
2,4-Dichlorophenol	mg/L	-	-	-	-	-	-	-
2,4-Dimethylphenol	mg/L	-	-	-	-	-	-	-
2,4-Dinitrophenol	mg/L	-	-	-	-	-	-	-
2,4-Dinitrotoluene	mg/L	-	-	-	-	-	-	-
2,6-Dinitrotoluene	mg/L	-	-	-	-	-	-	-
2-Chloronaphthalene	mg/L	-	-	-	-	-	-	-
2-Chlorophenol	mg/L	-	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-
2-Methylphenol	mg/L	-	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:	PFW-11	PFW-11	PFW-11	PFW-11	PFW-11	PFW-11	PFW-11
Sample ID:	GW-12636-120210-BW-010	GW-12636-051311-SSH-115	GW-12636-120611-JY-408	GW-12636-032614-SSH-1403	GW-12636-032515-SSH-15001	GW-12636-032216-SSH-1316	GW-12636-033017-SSH-1517
Sample Date:	12/2/2010	5/13/2011	12/6/2011	3/26/2014	3/25/2015	3/22/2016	3/30/2017
Sample Depth:	-	-	-	-	-	-	-
Parameters	Units						
2-Nitroaniline	mg/L	-	-	-	-	-	-
2-Nitrophenol	mg/L	-	-	-	-	-	-
3,3'-Dichlorobenzidine	mg/L	-	-	-	-	-	-
3-Nitroaniline	mg/L	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	mg/L	-	-	-	-	-	-
4-Bromophenyl phenyl ether	mg/L	-	-	-	-	-	-
4-Chloro-3-methylphenol	mg/L	-	-	-	-	-	-
4-Chloroaniline	mg/L	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/L	-	-	-	-	-	-
4-Methylphenol	mg/L	-	-	-	-	-	-
4-Nitroaniline	mg/L	-	-	-	-	-	-
4-Nitrophenol	mg/L	-	-	-	-	-	-
Acenaphthene	mg/L	-	-	-	-	-	-
Acenaphthylene	mg/L	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-
Benzo(a)anthracene	mg/L	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/L	-	-	-	-	-	-
Benzo(g,h,i)perylene	mg/L	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/L	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	mg/L	-	-	-	-	-	-
bis(2-Chloroethyl)ether	mg/L	-	-	-	-	-	-
bis(2-Ethylhexyl)phthalate (DEHP)	mg/L	-	-	-	-	-	-
Butyl benzylphthalate (BBP)	mg/L	-	-	-	-	-	-
Carbazole	mg/L	-	-	-	-	-	-
Chrysene	mg/L	-	-	-	-	-	-
Dibenz(a,h)anthracene	mg/L	-	-	-	-	-	-
Dibenzofuran	mg/L	-	-	-	-	-	-
Diethyl phthalate	mg/L	-	-	-	-	-	-
Dimethyl phthalate	mg/L	-	-	-	-	-	-
Di-n-butylphthalate (DBP)	mg/L	-	-	-	-	-	-
Di-n-octyl phthalate (DnOP)	mg/L	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-
Fluorene	mg/L	-	-	-	-	-	-
Hexachlorobenzene	mg/L	-	-	-	-	-	-
Hexachlorobutadiene	mg/L	-	-	-	-	-	-
Hexachlorocyclopentadiene	mg/L	-	-	-	-	-	-
Hexachloroethane	mg/L	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/L	-	-	-	-	-	-
Isophorone	mg/L	-	-	-	-	-	-
Naphthalene	mg/L	-	-	-	-	-	-
Nitrobenzene	mg/L	-	-	-	-	-	-
N-Nitrosodi-n-propylamine	mg/L	-	-	-	-	-	-
N-Nitrosodiphenylamine	mg/L	-	-	-	-	-	-
Pentachlorophenol	mg/L	-	-	-	-	-	-
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-
Perfluorooonanoic acid	ng/L	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-
Phenol	mg/L	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:		PFW-11	PFW-11	PFW-11	PFW-11	PFW-11	PFW-11	PFW-11
Sample ID:		GW-12636-120210-BW-010	GW-12636-051311-SSH-115	GW-12636-120611-JY-408	GW-12636-032614-SSH-1403	GW-12636-032515-SSH-15001	GW-12636-032216-SSH-1316	GW-12636-033017-SSH-1517
Sample Date:		12/2/2010	5/13/2011	12/6/2011	3/26/2014	3/25/2015	3/22/2016	3/30/2017
Sample Depth:		-	-	-	-	-	-	-
Parameters	Units							
Metals								
Aluminum	mg/L	1.57	0.172 J	0.077	0.05 U	0.059	-	-
Aluminum (dissolved)	mg/L	-	-	-	0.05 U	0.05 U	0.013 J	0.05 U
Antimony	mg/L	0.00046 J	0.002 U	0.00027 J	0.00021 J	0.002 U	-	-
Antimony (dissolved)	mg/L	-	-	-	0.00016 J	0.002 U	0.002 U	0.002 U
Arsenic	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.0043 J	-	-
Arsenic (dissolved)	mg/L	-	-	-	0.005 U	0.0039 J	0.0029 J	0.00045 J
Barium	mg/L	0.0726 J	0.0793 J	0.073 J	0.052 J	0.044 J	-	-
Barium (dissolved)	mg/L	-	-	-	0.054 J	0.042 J	0.036 J	0.034 J
Beryllium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
Beryllium (dissolved)	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-
Cadmium (dissolved)	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U
Chromium	mg/L	0.0053	0.005 U	0.005 U	0.005 U	0.0012 J	-	-
Chromium (dissolved)	mg/L	-	-	-	0.005 U	0.0011 J	0.005 U	0.00036 J
Cobalt	mg/L	0.0017 J	0.007 U	0.007 U	0.007 U	0.007 U	-	-
Cobalt (dissolved)	mg/L	-	-	-	0.007 U	0.00098 J	0.007 U	0.00021 J
Copper	mg/L	0.0135	0.0048	0.0044	0.0008 J	0.0019 J	-	-
Copper (dissolved)	mg/L	-	-	-	0.0012 J	0.0017 J	0.0016 J	0.0012 J
Iron	mg/L	2.73	0.202	0.096 J	0.1 U	0.067 J	-	-
Iron (dissolved)	mg/L	-	-	-	0.1 U	0.1 U	0.1 U	0.011 J
Lead	mg/L	0.0125 ^{bd}	0.003 U	0.003 U	0.003 U	0.003 U	-	-
Lead (dissolved)	mg/L	-	-	-	0.003 U	0.0023 J	0.003 U	0.00025 J
Manganese	mg/L	0.056	0.0317	0.012 J	0.0062 J	0.015	-	-
Manganese (dissolved)	mg/L	-	-	-	0.0041 J	0.0085 J	0.015 U	0.0023 J
Mercury	mg/L	0.0002 UJ	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-	-
Mercury (dissolved)	mg/L	-	-	-	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Nickel	mg/L	0.006 J	0.02 U	0.02 U	0.02 U	0.02 U	-	-
Nickel (dissolved)	mg/L	-	-	-	0.02 U	0.0023 J	0.0014 J	0.0012 J
Selenium	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	-
Selenium (dissolved)	mg/L	-	-	-	0.005 U	0.005 U	0.005 U	0.005 U
Silver	mg/L	0.0002 U	0.0002 U	0.0002 U	0.000011 J	0.0002 U	-	-
Silver (dissolved)	mg/L	-	-	-	0.000014 J	0.0002 U	0.0002 U	0.0002 U
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-
Thallium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.00018 J	-	-
Thallium (dissolved)	mg/L	-	-	-	0.001 U	0.00024 J	0.001 U	0.001 U
Vanadium	mg/L	0.0032 J	0.004 U	0.004 U	0.004 U	0.004 U	-	-
Vanadium (dissolved)	mg/L	-	-	-	0.004 U	0.004 U	0.004 U	0.004 U
Zinc	mg/L	0.0563 J	0.02 U	0.022	0.02 U	0.013 J	-	-
Zinc (dissolved)	mg/L	-	-	-	0.0059 J	0.02 U	0.02 U	0.02 U
Pesticides								
Aroclor-1016 (PCB-1016)	mg/L	-	-	-	-	-	-	-
Aroclor-1221 (PCB-1221)	mg/L	-	-	-	-	-	-	-
Aroclor-1232 (PCB-1232)	mg/L	-	-	-	-	-	-	-
Aroclor-1242 (PCB-1242)	mg/L	-	-	-	-	-	-	-
Aroclor-1248 (PCB-1248)	mg/L	-	-	-	-	-	-	-
Aroclor-1254 (PCB-1254)	mg/L	-	-	-	-	-	-	-
Aroclor-1260 (PCB-1260)	mg/L	-	-	-	-	-	-	-
Total PCBs	mg/L	-	-	-	-	-	-	-
Wet								
Conductance, specific	umhos/cm	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	0.010 U	0.010 U	0.0050 U	0.0050 U	0.0050 U	-	-
Cyanide (total)	mg/L	-	-	0.0050 U	-	-	-	-
pH	s.u.	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-

Attachment D-1

Historic Shallow Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Sample Location:		PFW-11	PFW-11	PFW-11	PFW-11	PFW-11	PFW-11	PFW-11
Sample ID:		GW-12636-120210-BW-010	GW-12636-051311-SSH-115	GW-12636-120611-JY-408	GW-12636-032614-SSH-1403	GW-12636-032515-SSH-15001	GW-12636-032216-SSH-1316	GW-12636-033017-SSH-1517
Sample Date:		12/2/2010	5/13/2011	12/6/2011	3/26/2014	3/25/2015	3/22/2016	3/30/2017
Sample Depth:		-	-	-	-	-	-	-
Parameters	Units							
<i>FPARAM</i>								
Conductivity, field	umhos/cm	-	-	-	-	-	-	1900
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	2.08
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	246
pH, field	s.u.	-	-	-	-	-	-	8.67 ^{bd}
Temperature, field	Deg C	-	-	-	-	-	-	6.1
Turbidity, field	NTU	-	-	-	-	-	-	14.9
Footnotes:	U Not detecte J Estimated c UJ Not detecte							

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

										Deep B-27D	Deep B-27D	Deep B-27D	Deep B-27D	Deep B-27D	Deep B-27D	Deep B-27D
										GW-12636-091411-JY-018 9/14/2011 (77.89-78.54) in BGS	B-27D-12/8/2005-N-LB 12/8/2005	B-27D-6/27/2006-N-LB 6/27/2006	B-27D-11/30/2006-N-LB 11/30/2006	B-27D-6/8/2007-N-LB 6/8/2007	B-27D-11/15/2007-N-LB 11/15/2007	B-27D-6/26/2008-N-LB 6/26/2008
Parameters	Units	Background Concentrations - Drift Aquifer	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air	Non-Residential Groundwater Volatilization to Indoor Air							
			Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria	Health Based Criteria										
VOAs		a	b	c	d	e	f	g	h							
1,1,1,2-Tetrachloroethane	mg/L	-	0.077	-	0.32	-	-	15	96	-	-	-	-	-	-	-
1,1,1-Trichloroethane	mg/L	-	0.2	-	0.2	-	0.089	660	1300	0.001 U	-	-	-	-	-	-
1,1,2,2-Tetrachloroethane	mg/L	-	0.0085	-	0.035	-	0.078	12	77	0.001 UJ	-	-	-	-	-	-
1,1,2-Trichloroethane	mg/L	-	0.005	-	0.005	-	0.33	17	110	0.001 U	-	-	-	-	-	-
1,1-Dichloroethane	mg/L	-	0.88	-	2.5	-	0.74	1000	2300	0.001 U	-	-	-	-	-	-
1,1-Dichloroethene	mg/L	-	0.007	-	0.007	-	0.13	0.2	1.3	0.001 U	-	-	-	-	-	-
1,2,3-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichloropropane	mg/L	-	0.042	-	0.12	-	-	83	180	-	-	-	-	-	-	-
1,2,3-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/L	-	0.07	-	0.07	-	0.099	300	300	0.001 U	-	-	-	-	-	-
1,2,4-Trimethylbenzene	mg/L	-	0.063	-	0.063	-	0.017	56	56	0.001 U	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	0.0002	-	0.0002	-	-	0.22	1.2	0.001 UJ	-	-	-	-	-	-
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	0.00005	-	0.00005	-	0.0057	2.4	15	0.001 U	-	-	-	-	-	-
1,2-Dichlorobenzene	mg/L	-	0.6	-	0.6	-	0.013	160	160	0.001 U	-	-	-	-	-	-
1,2-Dichloroethane	mg/L	-	0.005	-	0.005	-	0.36	9.6	59	0.001 U	-	-	-	-	-	-
1,2-Dichloropropane	mg/L	-	0.005	-	0.005	-	0.23	16	36	0.001 U	-	-	-	-	-	-
1,3,5-Trimethylbenzene	mg/L	-	0.072	-	0.072	-	0.045	61	61	0.001 U	-	-	-	-	-	-
1,3-Dichlorobenzene	mg/L	-	0.0066	-	0.019	-	0.028	18	41	0.001 U	-	-	-	-	-	-
1,4-Dichlorobenzene	mg/L	-	0.075	-	0.075	-	0.017	16	74	0.001 U	-	-	-	-	-	-
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	13	-	38	-	2.2	240000	240000	0.01 U	-	-	-	-	-	-
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	1	-	2.9	-	-	4200	8700	0.01 U	-	-	-	-	-	-
2-Methylnaphthalene	mg/L	-	0.26	-	0.75	-	0.019	25	25	-	-	-	-	-	-	-
2-Phenylbutane (sec-Butylbenzene)	mg/L	-	0.08	-	0.23	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	1.8	-	5.2	-	-	20000	20000	0.01 U	-	-	-	-	-	-
Acetone	mg/L	-	0.73	-	2.1	-	1.7	1000000	1000000	0.01 U	-	-	-	-	-	-
Acrylonitrile	mg/L	-	0.0026	-	0.011	-	0.002	34	190	-	-	-	-	-	-	-
Benzene	mg/L	-	0.005	-	0.005	-	0.2	5.6	35	0.001 U	-	-	-	-	-	-
Bromobenzene	mg/L	-	0.018	-	0.05	-	-	180	390	-	-	-	-	-	-	-
Bromodichloromethane	mg/L	-	0.08	-	0.08	-	-	4.8	37	0.001 U	-	-	-	-	-	-
Bromoform	mg/L	-	0.08	-	0.08	-	-	470	3100	0.001 U	-	-	-	-	-	-
Bromomethane (Methyl bromide)	mg/L	-	0.01	-	0.029	-	0.035	4	9	0.001 UJ	-	-	-	-	-	-
Carbon disulfide	mg/L	-	0.8	-	2.3	-	-	250	550	0.005 U	-	-	-	-	-	-
Carbon tetrachloride	mg/L	-	0.005	-	0.005	-	0.045	0.37	2.4	0.001 U	-	-	-	-	-	-
Chlorobenzene	mg/L	-	0.1	-	0.1	-	0.025	210	470	0.001 U	-	-	-	-	-	-
Chlorobromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	mg/L	-	0.43	-	1.7	-	1.1	5700	5700	0.001 UJ	-	-	-	-	-	-
Chloroform (Trichloromethane)	mg/L	-	0.08	-	0.08	-	0.35	28	180	0.001 U	-	-	-	-	-	-
Chloromethane (Methyl chloride)	mg/L	-	0.26	-	1.1	-	-	8.6	45	0.001 U	-	-	-	-	-	-
cis-1,2-Dichloroethene	mg/L	-	0.07	-	0.07	-	0.62	93	210	0.001 U	-	-	-	-	-	-
cis-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	-	-	-
Cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	-	-	-
Cymene (p-Isopropyltoluene)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	mg/L	-	0.08	-	0.08	-	-	14	110	0.001 U	-	-	-	-	-	-
Dibromomethane	mg/L	-	0.08	-	0.23	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	1.7	-	4.8	-	-	220	300	0.001 UJ	-	-	-	-	-	-
Diisopropyl ether	mg/L	-	0.03	-	0.086	-	-	8	8	-	-	-	-	-	-	-
Ethyl ether	mg/L	-	0.01	-	0.01	-	-	61000	61000	-	-	-	-	-	-	-
Ethylbenzene	mg/L	-	0.074	-	0.074	-	0.018	110	170	0.001 U	-	-	-	-	-	-
Hexachloroethane	mg/L	-	0.0073	-	0.021	-	0.0067	27	50	-	-	-	-	-	-	-
Iodomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopropyl benzene	mg/L	-	0.8	-	2.3	-	0.028	56	56	0.001 U	-	-	-	-	-	-
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	-	-	-	-	-	0.01 U	-	-	-	-	-	-
Methyl cyclohexane	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	-	-	-
Methyl tert butyl ether (MTBE)	mg/L	-	0.04	-	0.04	-	7.1	47000	47000	0.005 U	-	-	-	-	-	-
Methylene chloride	mg/L	-	0.005	-	0.005	-	1.5	220	1400	0.005 U	-	-	-	-	-	-
Naphthalene	mg/L	-	0.52	-	1.5	-	0.011	31	31	-	-	-	-	-	-	-
N-Butylbenzene	mg/L	-	0.08	-	0.23	-	-	-	-	-	-	-	-	-	-	-
N-Propylbenzene	mg/L	-	0.08	-	0.23	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	mg/L	-	0.28	-	0.28	-	0.041	190	190	-	-	-	-	-	-	-
Styrene	mg/L	-	0.1	-	0.1	-	0.08	170	310	0.001 U	-	-	-	-	-	-
tert-Amyl methyl ether	mg/L	-	0.19	-	0.19	-	-	260	570	-	-	-	-	-	-	-
tert-Butyl alcohol	mg/L	-	3.9	-	11	-	-	1000000	1000000	-	-	-	-	-	-	-
tert-Butyl ethyl ether	mg/L	-	0.049	-	0.049	-	-	2900	5600	-	-	-	-	-	-	-
tert-Butylbenzene	mg/L	-	0.08	-	0.23	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	mg/L	-	0.005	-	0.005	-	0.06	25	170	0.001 U	-	-	-	-	-	-
Tetrahydrofuran	mg/L	-	0.095	-	0.27	-	11	6900	16000	-	-	-	-	-	-	-
Toluene	mg/L	-	0.79	-	0.79	-	0.27	530	530	0.001 U	-	-	-	-	-	-
trans-1,2-Dichloroethene	mg/L	-	0.1	-	0.1	-	1.5	85	200	0.001 U	-	-	-	-	-	-
trans-1,3-Dichloropropene	mg/L	-	-	-	-	-	-	-	-	0.001 U	-	-	-	-	-	-
trans-1,4-Dichloro-2-butene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	mg/L	-	0.005	-	0.005	-	0.2	2.2	4.9	0.001 U	-	-	-	-	-	-
Trichlorofluoromethane (CFC-11)	mg/L	-	2.6	-	7.3	-	-	1100	1100	0.001 U	-	-	-	-	-	-

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

											Deep B-27D GW-12636-091411-JY-018 9/14/2011 (77.89-78.54) in BGS	Deep B-27D B-27D~12/8/2005~N~LB 12/8/2005 -	Deep B-27D B-27D~6/27/2006~N~LB 6/27/2006 -	Deep B-27D B-27D~11/30/2006~N~LB 11/30/2006 -	Deep B-27D B-27D~6/8/2007~N~LB 6/8/2007 -	Deep B-27D B-27D~11/15/2007~N~LB 11/15/2007 -	Deep B-27D B-27D~6/26/2008~N~LB 6/26/2008 -
		Background Concentrations - Drift Aquifer	Residential Drinking Water		Non-Residential Drinking Water		Groundwater/ Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air	Non-Residential Groundwater Volatilization to Indoor Air								
Parameters	Units		Aesthetic Criteria	Health Based Criteria	Aesthetic Criteria	Health Based Criteria											
Trifluorotrichloroethane (CFC-113)	mg/L	-	170	-	170	-	0.032	170	170	0.001 U	-	-	-	-	-	-	-
Vinyl chloride	mg/L	-	0.002	-	0.002	-	0.013	1.1	13	0.001 U	-	-	-	-	-	-	-
Xylenes (total)	mg/L	-	0.28	-	0.28	-	0.041	190	190	0.002 U	-	-	-	-	-	-	-
SVOAs																	
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooxononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																	
Aluminum	mg/L	5.3	0.05	0.3	0.05	4.1	-	-	-	0.76	-	-	-	-	-	-	-
Aluminum (dissolved)	mg/L	0.133	0.05	0.3	0.05	4.1	-	-	-	0.072	-	-	-	-	-	-	-
Antimony	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	-	-	-	-	-	-	-
Antimony (dissolved)	mg/L	0.002	0.006	-	0.006	-	0.13	-	-	0.002 U	-	-	-	-	-	-	-
Arsenic	mg/L	0.102	0.01	-	0.01	-	0.01	-	-	0.044	-	-	-	-	-	-	-
Arsenic (dissolved)	mg/L	0.089	0.01	-	0.01	-	0.01	-	-	0.045	-	-	-	-	-	-	-
Barium	mg/L	0.47	2	-	2	-	-	-	-	0.18	-	-	-	-	-	-	-
Barium (dissolved)	mg/L	0.553	2	-	2	-	-	-	-	0.18	-	-	-	-	-	-	-
Beryllium	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	-	-	-	-	-	-	-
Beryllium (dissolved)	mg/L	0.001	0.004	-	0.004	-	-	-	-	0.001 U	-	-	-	-	-	-	-
Cadmium	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.001 U	-	-	-	-	-	-	-
Cadmium (dissolved)	mg/L	0.001	0.005	-	0.005	-	-	-	-	0.001 U	-	-	-	-	-	-	-
Chromium	mg/L	0.007	0.1	-	0.1	-	-	-	-	0.005 U	-	-	-	-	-	-	-
Chromium (dissolved)	mg/L	0.011	0.1	-	0.1	-	-	-	-	0.005 U	0.009	0.006	0.005 U	0.009	0.002	0.005 U	-
Cobalt	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	0.007 U	-	-	-	-	-	-	-
Cobalt (dissolved)	mg/L	0.007	0.04	-	0.1	-	0.1	-	-	0.007 U	-	-	-	-	-	-	-
Copper	mg/L	0.015	1	-	1	-	-	-	-	0.002 U	-	-	-	-	-	-	-
Copper (dissolved)	mg/L	0.04	1	-	1	-	-	-	-	0.002 U	0.004 U	0.004 U	0.004 U	0.002	0.001	0.001 U	-
Iron	mg/L	7.9	0.3	2.0	0.3	5.6	-	-	-	1.9	-	-	-	-	-	-	-
Iron (dissolved)	mg/L	3.62	0.3	2.0	0.3	5.6	-	-	-	1.1	0.24	1.05	-	1.52	-	0.3	-
Lead	mg/L	0.003	0.004	-	0.004	-	-	-	-	0.003 U	-	-	-	-	-	-	-
Lead (dissolved)	mg/L	0.003	0.004	-	0.004	-	-	-	-	0.003 U	-	-	-	-	-	-	-
Manganese	mg/L	0.252	0.05	0.86	0.05	2.5	-	-	-	0.037 J	-	-	-	-	-	-	-
Manganese (dissolved)	mg/L	0.292	0.05	0.86	0.05	2.5	-	-	-	0.028	0.14	0.11	-	0.058	-	0.059	-
Mercury	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	-	-	-	-	-	-	-
Mercury (dissolved)	mg/L	0.0002	0.002	-	0.002	-	0.0000013	0.056	0.056	0.0002 U	-	-	-	-	-	-	-
Molybdenum	mg/L	-	0.073	-	0.21	-	3.2	-	-	-	-	-	-	-	-	-	-
Molybdenum (dissolved)	mg/L	-	0.073	-	0.21	-	3.2	-	-	-	-	-	-	-	-	-	-
Nickel	mg/L	0.02	0.1	-	0.1	-	-	-	-	0.02 U	-	-	-	-	-	-	-
Nickel (dissolved)	mg/L	0.022	0.1	-	0.1	-	-	-	-	0.02 U	0.006	0.007	0.005 U	0.003	0.005	0.005 U	-
Selenium	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.005 U	-	-	-	-	-	-	-
Selenium (dissolved)	mg/L	0.005	0.05	-	0.05	-	0.005	-	-	0.005 U	-	-	-	-	-	-	-
Silver	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	0.0002 U	-	-	-	-	-	-	-
Silver (dissolved)	mg/L	0.0002	0.034	-	0.098	-	0.0002	-	-	0.0002 U	-	-	-	-	-	-	-
Sodium (dissolved)	mg/L	-	230	-	350	-	-	-	-	-	34.2	32.3	-	36.3	-	33.9	-
Thallium	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	0.001 U	-	-	-	-	-	-	-
Thallium (dissolved)	mg/L	0.001	0.002	-	0.002	-	0.0037	-	-	0.0017 U	-	-	-	-	-	-	-
Vanadium	mg/L	0.015	0.0045	-	0.062	-	0.027	-	-	0.004 U	-	-	-	-	-	-	-
Vanadium (dissolved)	mg/L	0.004	0.0045	-	0.062	-	0.027	-	-	0.004 U	-	-	-	-	-	-	-
Zinc	mg/L	0.039	2.4	-	5	-	-	-	-	0.02 U	-	-	-	-	-	-	-
Zinc (dissolved)	mg/L	0.0521	2.4	-	5	-	-	-	-	0.02 U	0.01 U	0.006	0.006	0.036	0.032	0.005 U	-
Wet																	
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	714	644	540	628	649	659	-
Cyanide (amenable)	mg/L	-	0.2	-	0.2	-	-	-	-	0.0050 U	-	-	-	-	-	-	-
Cyanide (total)	mg/L	-	0.2	-	0.2	-	0.0052	-	-	0.0050 U	-	-	-	-	-	-	-

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep
Sample Location:	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D
Sample ID:	B-27D~11/21/2008~N~LB	B-27D~6/25/2009~N~LB	B-27D~11/18/2009~N~LB	GW-12636-120310-BW-017	GW-12636-051211-SSH-108	GW-12636-120811-JY-423	GW-12636-032714-SSH-1416	GW-12636-032715-SSH-15013	GW-12636-032216-SSH-1816	GW-12636-033117-SSH-2117	GW-12636-091311-JY-011	GW-12636-091311-JY-013	
Sample Date:	11/21/2008	6/25/2009	11/18/2009	12/3/2010	5/12/2011	12/8/2011	3/27/2014	3/27/2015	3/22/2016	3/31/2017	9/13/2011	9/13/2011	
Sample Depth:	-	-	-	-	-	-	-	-	-	-	(78.13-83.12) in BGS		(78.13-83.12) in BGS
													(Duplicate)
Parameters	Units												
VOAs													
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,3-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/L	-	-	-	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	-	-	-	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	-	-	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	-	-	-	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Phenylbutane (sec-Butylbenzene)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	-	-	-	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	mg/L	-	-	-	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acrylonitrile	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	-	-	-	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L	-	-	-	0.005 U	0.005 U	0.005 U	0.0036 J	0.005 U	0.005 U	0.00015 J	0.00014 J	
Carbon tetrachloride	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0012	0.00085 J
Chloromethane (Methyl chloride)	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cymene (p-Isopropyltoluene)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 UJ	0.001 UJ
Diisopropyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Ethyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Iodomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Isopropyl benzene	mg/L	-	-	-	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	-	-	-	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	-	-	-	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.005 U	0.005 U	0.005 U
Methylene chloride	mg/L	-	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
N-Butylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
N-Propylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Styrene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
tert-Amyl methyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
tert-Butyl alcohol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
tert-Butyl ethyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
tert-Butylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrahydrofuran	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,4-Dichloro-2-butene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep
Sample Location:	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D
Sample ID:	B-27D~11/21/2008~N~LB	B-27D~6/25/2009~N~LB	B-27D~11/18/2009~N~LB	GW-12636-120310-BW-017	GW-12636-051211-SSH-108	GW-12636-120811-JY-423	GW-12636-032714-SSH-1416	GW-12636-032715-SSH-15013	GW-12636-032216-SSH-1816	GW-12636-033117-SSH-2117	GW-12636-091311-JY-011	GW-12636-091311-JY-013
Sample Date:	11/21/2008	6/25/2009	11/18/2009	12/3/2010	5/12/2011	12/8/2011	3/27/2014	3/27/2015	3/22/2016	3/31/2017	9/13/2011	9/13/2011
Sample Depth:	-	-	-	-	-	-	-	-	-	-	(78.13-83.12) in BGS	(78.13-83.12) in BGS (Duplicate)
Parameters	Units											
Trifluorotrichloroethane (CFC-113)	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)	mg/L	-	-	-	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
SVOAs												
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorooxononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-	-
Metals												
Aluminum	mg/L	-	-	-	15.1 ^{bcd}	1.05	1.5	-	-	-	0.11	0.08
Aluminum (dissolved)	mg/L	-	-	-	-	-	0.05 U	0.05 U	0.05 U	1 ^{bcd}	0.029 J	0.02 J
Antimony	mg/L	-	-	-	0.00049 J	0.002 U	0.002 U	-	-	-	0.002 U	0.002 U
Antimony (dissolved)	mg/L	-	-	-	-	-	0.002 U	0.00057 J	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic	mg/L	-	-	-	0.0644	0.0454	0.053	-	-	-	0.0061	0.0054
Arsenic (dissolved)	mg/L	-	-	-	-	-	0.052	0.017	0.034	0.062	0.0087	0.0084
Barium	mg/L	-	-	-	0.28	0.195	0.2	-	-	-	0.16	0.16
Barium (dissolved)	mg/L	-	-	-	-	-	0.19	0.17	0.2	0.18	0.21	0.16
Beryllium	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	0.001 U
Beryllium (dissolved)	mg/L	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	0.001 U
Cadmium (dissolved)	mg/L	-	-	-	-	-	0.001 U	0.001 U	0.001 U	0.00014 J	0.001 U	0.001 U
Chromium	mg/L	-	-	-	0.033	0.005 U	0.014	-	-	-	0.005 U	0.005 U
Chromium (dissolved)	mg/L	0.005 U	0.005 U	0.005 U	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.017	0.005 U
Cobalt	mg/L	-	-	-	0.0127	0.007 U	0.0027 J	-	-	-	0.007 U	0.007 U
Cobalt (dissolved)	mg/L	-	-	-	-	-	0.007 U	0.007 U	0.007 U	0.007 U	0.0027 J	0.007 U
Copper	mg/L	-	-	-	0.0258	0.0025 U	0.0031	-	-	-	0.002 U	0.002 U
Copper (dissolved)	mg/L	0.001 U	0.001	0.004 U	-	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0036 U	0.002 U
Iron	mg/L	-	-	-	27.9 ^{bcd}	2.82	3.8	-	-	-	1.9	1.9
Iron (dissolved)	mg/L	-	2.03	-	-	-	1	0.085 J	0.2	1	1.9	1.7
Lead	mg/L	-	-	-	0.0123 ^{bd}	0.003 U	0.003 U	-	-	-	0.003 U	0.003 U
Lead (dissolved)	mg/L	-	-	-	-	-	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Manganese	mg/L	-	-	-	0.584 ^{bd}	0.0637	0.09	-	-	-	0.11 J	0.11 J
Manganese (dissolved)	mg/L	-	0.052	-	-	-	0.033	0.027	0.041	0.031	0.067	0.11
Mercury	mg/L	-	-	-	0.0002 UJ	0.0002 U	0.0002 U	-	-	-	0.0002 U	0.0002 U
Mercury (dissolved)	mg/L	-	-	-	-	-	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	mg/L	-	-	-	-	-	-	-	-	-	-	-
Molybdenum (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-
Nickel	mg/L	-	-	-	0.0328	0.02 U	0.015 J	-	-	-	0.02 U	0.02 U
Nickel (dissolved)	mg/L	0.005 U	0.005 U	0.005 U	-	-	0.005 J	0.02 U	0.02 U	0.02 U	0.017 J	0.02 U
Selenium	mg/L	-	-	-	0.005 U	0.005 U	0.005 U	-	-	-	0.005 U	0.005 U
Selenium (dissolved)	mg/L	-	-	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Silver	mg/L	-	-	-	0.0002 U	0.0002 U	0.0002 U	-	-	-	0.0002 U	0.0002 U
Silver (dissolved)	mg/L	-	-	-	-	-	0.0002 U	0.000014 J	0.0002 U	0.000026 J	0.0034 ^f	0.0002 U
Sodium (dissolved)	mg/L	-	37.2	-	-	-	-	-	-	-	-	-
Thallium	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	-	-	-	0.001 U	0.001 U
Thallium (dissolved)	mg/L	-	-	-	-	-	0.001 U	0.001 U	0.00021 J	0.001 U	0.001 U	0.001 U
Vanadium	mg/L	-	-	-	0.0403 ^{bf}	0.004 U	0.0052	-	-	-	0.004 U	0.004 U
Vanadium (dissolved)	mg/L	-	-	-	-	-	0.004 U	0.004 U	0.004 U	0.004 U	0.0034 J	0.004 U
Zinc	mg/L	-	-	-	0.105 J	0.0209 U	0.028	-	-	-	0.02 U	0.02 U
Zinc (dissolved)	mg/L	0.005 U	0.005 U	0.005 U	-	-	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Wet												
Conductance, specific	umhos/cm	667	651	653	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	-	-	0.010 U	0.010 U	0.0050 U	0.0050 U	0.0050 U	-	0.0050 U	0.0050 U
Cyanide (total)	mg/L	-	-	-	-	-	0.0050 U	-	-	-	0.0050 U	0.0050 U

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep
Sample Location:	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	B-27D	MW-15-10	MW-15-10
Sample ID:	B-27D-11/21/2008-N-LB	B-27D-6/25/2009-N-LB	B-27D-11/18/2009-N-LB	GW-12636-120310-BW-017	GW-12636-051211-SSH-108	GW-12636-120811-JY-423	GW-12636-032714-SSH-1416	GW-12636-032715-SSH-15013	GW-12636-032216-SSH-1816	GW-12636-033117-SSH-2117	GW-12636-091311-JY-011	GW-12636-091311-JY-013	GW-12636-091311-JY-013
Sample Date:	11/21/2008	6/25/2009	11/18/2009	12/3/2010	5/12/2011	12/8/2011	3/27/2014	3/27/2015	3/22/2016	3/31/2017	9/13/2011	9/13/2011	9/13/2011
Sample Depth:	-	-	-	-	-	-	-	-	-	-	(78.13-83.12) in BGS	(78.13-83.12) in BGS	(Duplicate)

Parameters	Units												
pH	s.u.	6.8	6.8	7.3	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	6.6	16.5	11.2	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	1.3	1 U	2	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	0.03 U	0.03 U	0.03 U	-	-	-	-	-	-	-	-	-

FPARAM													
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	-	-	496	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	-	-	1.89	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-	-	-70	-	-
pH, field	s.u.	-	-	-	-	-	-	-	-	-	7.22	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	9.80	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	-	-	289	-	-

Footnotes:

U Not detecte
J Estimated c
UJ Not detecte

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep
Sample Location:	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10
Sample ID:	GW-12636-120210-BW-004	GW-12636-120210-BW-004	GW-12636-051411-SSH-118	GW-12636-120711-JY-417	GW-12636-032714-SSH-1417	W-12636-042915-SSH-1521	GW-12636-032216-SSH-1716	GW-12636-032917-SSH-0817	GW-12636-091411-JY-014	GW-12636-120210-BW-005	GW-12636-120210-BW-005	GW-12636-051411-SSH-119	GW-12636-051411-SSH-120
Sample Date:	12/2/2010	12/2/2010	5/14/2011	12/7/2011	3/27/2014	4/29/2015	3/22/2016	3/29/2017	9/14/2011	12/2/2010	12/2/2010	5/14/2011	5/14/2011
Sample Depth:	-	-	-	-	-	-	-	-	(18.21-72.11) in BGS	-	-	-	-
	(other)	(other)								(other)	(other)		(Duplicate)
Parameters	Units												
VOAs													
1,1,1,2-Tetrachloroethane	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
1,1,1-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,3-Trichlorobenzene	mg/L	-	0.005 U	-	-	-	-	-	-	-	0.005 U	-	-
1,2,3-Trichloropropane	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
1,2,3-Trimethylbenzene	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
1,2,4-Trichlorobenzene	mg/L	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.005 U	0.005 U	0.005 U
1,2,4-Trimethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.005 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.025 U	0.005 U	0.00072 J	0.01 U	0.013	0.01 U	0.01 U	0.01 U	0.0012 J	0.005 U	0.00066 J	0.00066 J
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	0.05 U	0.005 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.005 U	0.05 U	0.05 U
2-Methylnaphthalene	mg/L	-	0.005 U X	-	-	-	-	-	-	-	0.005 U X	-	-
2-Phenylbutane (sec-Butylbenzene)	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.05 U	0.005 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.05 U	0.005 U	0.05 U	0.05 U
Acetone	mg/L	0.0025 J	0.02 U	0.025 U	0.01 U	0.01 U	0.0019 J	0.01 U	0.01 U	0.0038 J	0.006 J	0.02 U	0.025 U
Acrylonitrile	mg/L	-	0.005 U Z	-	-	-	-	-	-	-	0.005 U Z	-	-
Benzene	mg/L	0.001 U	0.001 U	0.00024 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromobenzene	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
Bromodichloromethane	mg/L	0.001 U	0.001 U	0.0022	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0022	0.0022
Bromoform	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.005 U	0.001 U	0.001 U
Carbon disulfide	mg/L	0.005 U	0.001 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.00074 J	0.005 U	0.001 U	0.00029 J	0.00029 J
Carbon tetrachloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobromomethane	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
Chloroethane	mg/L	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.005 U	0.001 U	0.001 U
Chloroform (Trichloromethane)	mg/L	0.00079 J	0.001 U	0.006	0.00061 J	0.001 U	0.001 U	0.001 U	0.001 U	0.00055 J	0.001 U	0.01	0.0099
Chloromethane (Methyl chloride)	mg/L	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U	0.001 U
Cymene (p-Isopropyltoluene)	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
Dibromochloromethane	mg/L	0.001 U	0.001 U	0.0012	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.00097 J	0.00094 J
Dibromomethane	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
Dichlorodifluoromethane (CFC-12)	mg/L	0.001 UJ	0.005 U 5	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 UJ	0.005 U 5	0.001 U	0.001 U
Diisopropyl ether	mg/L	-	0.005 U	-	-	-	-	-	-	-	0.005 U	-	-
Ethyl ether	mg/L	-	0.005 U	-	-	-	-	-	-	-	0.005 U	-	-
Ethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Hexachloroethane	mg/L	-	0.005 U	-	-	-	-	-	-	-	0.005 U	-	-
Iodomethane	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
Isopropyl benzene	mg/L	0.005 U	0.001 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U	0.005 U	0.005 U
m&p-Xylenes	mg/L	-	0.002 U	-	-	-	-	-	-	-	0.002 U	-	-
Methyl acetate	mg/L	0.01 U	-	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	0.01 U	0.01 U
Methyl cyclohexane	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	0.005 U	0.001 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.005 U	0.005 U	0.001 U	0.005 U	0.005 U
Methylene chloride	mg/L	0.005 UJ	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U
Naphthalene	mg/L	-	0.005 U X	-	-	-	-	-	-	-	0.005 U X	-	-
N-Butylbenzene	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
N-Propylbenzene	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
o-Xylene	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
Styrene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
tert-Amyl methyl ether	mg/L	-	0.005 U	-	-	-	-	-	-	-	0.005 U	-	-
tert-Butyl alcohol	mg/L	-	0.05 U	-	-	-	-	-	-	-	0.05 U	-	-
tert-Butyl ethyl ether	mg/L	-	0.005 U	-	-	-	-	-	-	-	0.005 U	-	-
tert-Butylbenzene	mg/L	-	0.001 U	-	-	-	-	-	-	-	0.001 U	-	-
Tetrachloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrahydrofuran	mg/L	-	0.005 U	-	-	-	-	-	-	-	0.005 U	-	-
Toluene	mg/L	0.001 U	0.001 U	0.00018 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,4-Dichloro-2-butene	mg/L	-	0.005 U Z	-	-	-	-	-	-	-	0.005 U Z	-	-
Trichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep
Sample Location:	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10
Sample ID:	GW-12636-120210-BW-004	MW-15-10	GW-12636-051411-SSH-118	GW-12636-120711-JY-417	GW-12636-032714-SSH-1417	W-12636-042915-SSH-1521	GW-12636-032216-SSH-1716	GW-12636-032917-SSH-0817	GW-12636-091411-JY-014	GW-12636-120210-BW-005	MW-16-10	GW-12636-051411-SSH-119	GW-12636-051411-SSH-120
Sample Date:	12/2/2010	12/2/2010	5/14/2011	12/7/2011	3/27/2014	4/29/2015	3/22/2016	3/29/2017	9/14/2011	12/2/2010	12/2/2010	5/14/2011	5/14/2011
Sample Depth:	-	-	-	-	-	-	-	-	(18.21-72.11) in BGS	-	-	-	(Duplicate)
	(other)										(other)		
Parameters	Units												
Trifluorotrichloroethane (CFC-113)	mg/L	0.001 U	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	0.001 U
Vinyl chloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)	mg/L	0.002 U	-	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
SVOAs													
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooxononanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-	-	-	-	-
Metals													
Aluminum	mg/L	3.19	-	3.74	0.098	-	-	-	0.13	27.6 ^{bcd}	-	0.397	0.314
Aluminum (dissolved)	mg/L	0.2 U	-	-	0.05 U	0.045 J	0.32 ^{bcd}	0.013 J	0.27 ^{bd}	0.05 U	0.2 U	-	-
Antimony	mg/L	0.00022 J	0.001 U	0.00039 J	0.002 U	-	-	-	-	0.002 U	0.00078 J	-	0.00023 J
Antimony (dissolved)	mg/L	0.002 U	-	-	0.002 U	0.002 U	0.00099 JB	0.00016 J	0.002 U	0.002 U	0.00035 J	0.001 U	-
Arsenic	mg/L	0.0192	0.017	0.0044 J	0.0071	-	-	-	-	0.0072	0.0304	-	0.0059
Arsenic (dissolved)	mg/L	0.0193	-	-	0.0047 J	0.0087	0.011	0.014	0.015	0.0079	0.0086	0.0061	-
Barium	mg/L	0.132	0.12	0.118	0.2	-	-	-	-	0.23	0.33	-	0.205
Barium (dissolved)	mg/L	0.119	-	-	0.2	0.15	0.12 B	0.13	0.14	0.23	0.159	0.14	-
Beryllium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U	-	0.001 U
Beryllium (dissolved)	mg/L	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-
Cadmium	mg/L	0.001 U	0.0002 U	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U	-	0.001 U
Cadmium (dissolved)	mg/L	0.001 U	-	-	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 U	-
Chromium	mg/L	0.0049 J	0.004	0.007	0.005 U	-	-	-	-	0.005 U	0.0535	-	0.005 U
Chromium (dissolved)	mg/L	0.005 U	-	-	0.005 U	0.005 U	0.0012 JB	0.00079 J	0.00055 J	0.005 U	0.005 U	0.001	-
Cobalt	mg/L	0.0019 J	0.015 U	0.0025 J	0.007 U	-	-	-	-	0.007 U	0.0209	-	0.007 U
Cobalt (dissolved)	mg/L	0.007 U	-	-	0.007 U	0.007 U	0.007 U	0.007 U	0.00026 J	0.007 U	0.007 U	0.015 U	-
Copper	mg/L	0.0033	0.0024	0.0055	0.002 U	-	-	-	-	0.002 U	0.0351	-	0.002 U
Copper (dissolved)	mg/L	0.002 U	-	-	0.002 U	0.002 U	0.0033 B	0.002 U	0.002 U	0.002 U	0.002 U	0.001 U	-
Iron	mg/L	4.29	3.1	4.47	2.4	-	-	-	-	0.31	50.1 ^{bcd}	-	0.657
Iron (dissolved)	mg/L	0.259	-	-	2.1	1.8	1.4 B	0.97	0.84	0.3	0.188	0.02 U	-
Lead	mg/L	0.003 U	0.0012	0.0024 J	0.003 U	-	-	-	-	0.003 U	0.0205 ^{bd}	-	0.003 U
Lead (dissolved)	mg/L	0.003 U	-	-	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.001 U	-
Manganese	mg/L	0.153	0.14	0.133	0.13	-	-	-	-	0.13	1.3 ^{bcd}	-	0.112
Manganese (dissolved)	mg/L	0.103	-	-	0.12	0.074	0.077	0.06	0.072	0.13	0.0809	0.063	-
Mercury	mg/L	0.0002 UJ	0.0002 U	0.0002 U	0.0002 U	-	-	-	-	0.00019 J	0.0002 UJ	-	0.0002 U
Mercury (dissolved)	mg/L	0.0002 U	-	-	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-
Molybdenum	mg/L	-	0.025 U	-	-	-	-	-	-	-	-	-	-
Molybdenum (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	0.025 U	-
Nickel	mg/L	0.0052 J	0.004	0.0051 J	0.02 U	-	-	-	-	0.02 U	0.0473	-	0.02 U
Nickel (dissolved)	mg/L	0.02 U	-	-	0.02 U	0.02 U	0.0049 J	0.0025 J	0.0014 J	0.02 U	0.02 U	0.002 U	-
Selenium	mg/L	0.005 U	0.001 U	0.005 U	0.005 U	-	-	-	-	0.005 U	0.005 U	-	0.005 U
Selenium (dissolved)	mg/L	0.005 U	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	-
Silver	mg/L	0.0002 U	0.0002 U	0.0002 U	0.000083 J	-	-	-	-	0.00036 U	0.0002 U	-	0.0002 U
Silver (dissolved)	mg/L	0.0002 U	-	-	0.0002 U	0.00025 ^f	0.00017 J	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	0.001 U	0.002 U	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U	-	0.001 U
Thallium (dissolved)	mg/L	0.001 U	-	-	0.00016 J	0.001 U	0.00027 J	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	-
Vanadium	mg/L	0.008	0.0055	0.0094	0.00065 J	-	-	-	-	0.004 U	0.0705 ^{bdf}	-	0.004 U
Vanadium (dissolved)	mg/L	0.004 U	-	-	0.004 U	0.004 U	0.004 U	0.004 U	0.00061 J	0.004 U	0.004 U	0.002 U	-
Zinc	mg/L	0.02 U	0.01 U	0.0329 U	0.02 U	-	-	-	-	0.02 U	0.121 J	-	0.02 U
Zinc (dissolved)	mg/L	0.02 U	-	-	0.02 U	0.0073 J	0.02	0.02 U	0.02 U	0.02 U	0.02 U	0.01 U	-
Wet													
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	0.010 U	-	0.010 U	0.0050 U	0.0050 U	0.0050 U	-	-	0.0050 U	0.010 U	-	0.010 U
Cyanide (total)	mg/L	-	-	-	0.0050 U	-	-	-	-	0.0050 U	-	-	-

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□
Sample Location:		MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-15-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10
Sample ID:		GW-12636-120210-BW-004	MW-15-10	GW-12636-051411-SSH-118	GW-12636-120711-JY-417	GW-12636-032714-SSH-1417	W-12636-042915-SSH-1521	GW-12636-032216-SSH-1716	GW-12636-032917-SSH-0817	GW-12636-091411-JY-014	GW-12636-120210-BW-005	MW-16-10	GW-12636-051411-SSH-119	GW-12636-051411-SSH-120
Sample Date:		12/2/2010	12/2/2010	5/14/2011	12/7/2011	3/27/2014	4/29/2015	3/22/2016	3/29/2017	9/14/2011	12/2/2010	12/2/2010	5/14/2011	5/14/2011
Sample Depth:		-	-	-	-	-	-	-	-	(18.21-72.11) in BGS	-	-	-	-
			(other)									(other)		(Duplicate)
Parameters	Units													
pH	s.u.	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-
FPARAM														
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	391	-	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	8.68	-	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-35	-	-	-	-	-
pH, field	s.u.	-	-	-	-	-	-	-	7.38	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	11.62	-	-	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	576	-	-	-	-	-
Footnotes:														
	U Not detecte													
	J Estimated c													
	UJ Not detecte													

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep
Sample Location:	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	PFW-1	PFW-1	PFW-1	PFW-1
Sample ID:	GW-12636-120711-JY-416	GW-12636-032714-SSH-1418	GW-12636-032714-SSH-1419	GW-12636-032615-SSH-15008	GW-12636-063016-SSH-3116	GW-12636-112916-SSH-4916	GW-12636-112916-SSH-5016	GW-12636-032917-SSH-0717	GW-12636-091311-JY-010	PFW-1	PFW-1	GW-12636-100802-DD-001	GW-12636-100802-DD-002
Sample Date:	12/7/2011	3/27/2014	3/27/2014	3/26/2015	6/30/2016	11/29/2016	11/29/2016	3/29/2017	9/13/2011	4/1/1997	10/8/2002	10/8/2002	10/8/2002
Sample Depth:	-	-	-	-	-	-	-	-	(79.02-79.04) in BGS	-	-	-	-
			(Duplicate)				(Duplicate)						
Parameters	Units												
VOAs													
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,3-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trichloropropane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	-
1,3-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-	-	0.01 U	-	-
2-Hexanone	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	0.01 U	0.01 U
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
2-Phenylbutane (sec-Butylbenzene)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	0.01 U	0.01 U
Acetone	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	0.01 U	0.01 U
Acrylonitrile	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U	0.001 U
Bromobenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L	0.001 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	-	0.001 U	0.001 U
Carbon tetrachloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U
Chloroform (Trichloromethane)	mg/L	0.00057 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U
cis-1,2-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U	0.0005 U
cis-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U
Cymene (p-Isopropyltoluene)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U
Diisopropyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Ethyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Iodomethane	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Isopropyl benzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-	-	0.003 U	-	-
Methyl acetate	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	-	0.01 U	0.01 U
Methyl cyclohexane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.005 U	-	0.005 U	0.005 U
Methylene chloride	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U
Naphthalene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
N-Butylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
N-Propylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	mg/L	-	-	-	-	-	-	-	-	-	0.003 U	-	-
Styrene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	0.001 U	0.001 U
tert-Amyl methyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
tert-Butyl alcohol	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
tert-Butyl ethyl ether	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
tert-Butylbenzene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrahydrofuran	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 U	0.0005 U
trans-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,4-Dichloro-2-butene	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep
Sample Location:	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	PFW-1	PFW-1	PFW-1	PFW-1
Sample ID:	GW-12636-120711-JY-416	GW-12636-032714-SSH-1418	GW-12636-032714-SSH-1419	GW-12636-032615-SSH-15008	GW-12636-063016-SSH-3116	GW-12636-112916-SSH-4916	GW-12636-112916-SSH-5016	GW-12636-032917-SSH-0717	GW-12636-091311-JY-010	GW-12636-100802-DD-001	GW-12636-100802-DD-002		
Sample Date:	12/7/2011	3/27/2014	3/27/2014	3/26/2015	6/30/2016	11/29/2016	11/29/2016	3/29/2017	9/13/2011	4/1/1997	10/8/2002	10/8/2002	
Sample Depth:	-	-	-	-	-	-	-	-	(79.02-79.04) in BGS	-	-	-	-
	(Duplicate)		(Duplicate)				(Duplicate)						
Parameters	Units												
Trifluorotrichloroethane (CFC-113)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 U	-	0.001 U	0.001 U
Vinyl chloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	-	-	0.002 U	0.002 U	-	0.001 U	0.001 U
SVOAs													
Perfluorhexanoic acid	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	2.0 U	0.87 J	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	2.0 UJ	2.0 UJ	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluorooxononanoic acid	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	2.0 U	2.0 U	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	20 U	20 U	-	-	-	-	-
Metals													
Aluminum	mg/L	0.028 J	0.13	0.11	-	-	-	-	0.023 J	0.05 U	-	-	-
Aluminum (dissolved)	mg/L	-	0.05 U	0.05 U	0.05 U	0.05 U	-	-	0.05 U	0.05 U	-	-	-
Antimony	mg/L	0.002 U	0.002 U	0.002 U	-	-	-	-	0.002 U	0.002 U	-	-	-
Antimony (dissolved)	mg/L	-	0.002 U	0.002 U	0.00071 J	0.00034 J	-	-	0.002 U	0.002 U	-	-	-
Arsenic	mg/L	0.0099	0.016	0.015	-	-	-	-	0.027	0.062	0.04	-	-
Arsenic (dissolved)	mg/L	-	0.014	0.017	0.016	0.014	-	-	0.027	0.044	-	-	-
Barium	mg/L	0.31	0.47	0.48	-	-	-	-	0.43	0.14	0.55	-	-
Barium (dissolved)	mg/L	-	0.44	0.48	0.48	0.45	-	-	0.46	0.13	-	-	-
Beryllium	mg/L	0.001 U	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U	-	-	-
Beryllium (dissolved)	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 U	-	-	-
Cadmium	mg/L	0.001 U	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U	0.0005 U	-	-
Cadmium (dissolved)	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	-	-	0.001 U	0.001 U	-	-	-
Chromium	mg/L	0.005 U	0.005 U	0.005 U	-	-	-	-	0.005 U	0.005 U	0.05 U	-	-
Chromium (dissolved)	mg/L	-	0.005 U	0.005 U	0.005 U	0.01 U	-	-	0.005 U	0.005 U	-	-	-
Cobalt	mg/L	0.007 U	0.007 U	0.007 U	-	-	-	-	0.0002 J	0.007 U	-	-	-
Cobalt (dissolved)	mg/L	-	0.007 U	0.007 U	0.007 U	0.00027 J	-	-	0.00018 J	0.007 U	-	-	-
Copper	mg/L	0.002 U	-	0.002 U	-	-	-	-	0.002 U	0.002 U	0.025 U	-	-
Copper (dissolved)	mg/L	-	0.002 U	0.002 U	0.002 U	0.004 U	-	-	0.002 U	0.002 U	-	-	-
Iron	mg/L	1.8	0.48	0.47	-	-	-	-	1	2	-	-	-
Iron (dissolved)	mg/L	-	0.28	0.34	0.23	0.59	-	-	0.77	1.4	-	-	-
Lead	mg/L	0.003 U	0.003 U	0.003 U	-	-	-	-	0.003 U	0.003 U	0.003 U	-	-
Lead (dissolved)	mg/L	-	0.003 U	0.003 U	0.003 U	0.003 U / 0.005 U	-	-	0.003 U	0.003 U	-	0.003 U	0.003 U
Manganese	mg/L	0.13	0.13	0.14	-	-	-	-	0.038	0.026 J	-	-	-
Manganese (dissolved)	mg/L	-	0.13	0.13	0.094	0.053 / 0.055	-	-	0.039	0.025	-	-	-
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U	-	-	-	-	0.0002 U	0.0002 U	0.0002 U	-	-
Mercury (dissolved)	mg/L	-	0.0002 U	0.0002 U	0.0002 U	0.0002 U	-	-	0.0002 U	0.0002 U	-	-	-
Molybdenum	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Molybdenum (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	mg/L	0.02 U	0.02 U	0.02 U	-	-	-	-	0.00083 J	0.02 U	-	-	-
Nickel (dissolved)	mg/L	-	0.02 U	0.02 U	0.003 J	0.02 U	-	-	0.00086 J	0.02 U	-	-	-
Selenium	mg/L	0.005 U	0.005 U	0.005 U	-	-	-	-	0.005 U	0.005 U	0.005 U	-	-
Selenium (dissolved)	mg/L	-	0.005 U	0.005 U	0.005 U	0.00051 J	-	-	0.005 U	0.005 U	-	-	-
Silver	mg/L	0.0002 U	0.00051 ¹	0.00032 ¹	-	-	-	-	0.0002 U	0.0002 U	0.0005 U	-	-
Silver (dissolved)	mg/L	-	0.00001 J	0.0002 U	0.0002 U	0.0002 U	-	-	0.0002 U	0.0002 U	-	-	-
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/L	0.001 U	0.001 U	0.001 U	-	-	-	-	0.001 U	0.001 U	-	-	-
Thallium (dissolved)	mg/L	-	0.001 U	0.001 U	0.00026 J	0.002 U	-	-	0.001 U	0.001 U	-	-	-
Vanadium	mg/L	0.004 U	0.004 U	0.004 UJ	-	-	-	-	0.004 U	0.004 U	-	-	-
Vanadium (dissolved)	mg/L	-	0.004 U	0.004 U	0.004 U	0.004 U	-	-	0.004 U	0.004 U	-	-	-
Zinc	mg/L	0.02 U	0.02 U	0.0064 J	-	-	-	-	0.02 U	0.02 U	0.02 U	-	-
Zinc (dissolved)	mg/L	-	0.02 U	0.02 U	0.02 U	0.05 U	-	-	0.02 U	0.02 U	-	-	-
Wet													
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	0.0050 U	0.0050 U	0.0050 U	0.0050 U	-	-	-	-	0.0050 U	-	-	-
Cyanide (total)	mg/L	0.0050 U	-	-	-	-	-	-	-	0.0050 U	-	-	-

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:		Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□	Deep□
Sample Location:		MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	MW-16-10	PFW-1	PFW-1	PFW-1	PFW-1
Sample ID:		GW-12636-120711-JY-416	GW-12636-032714-SSH-1418	GW-12636-032714-SSH-1419	GW-12636-032615-SSH-15008	GW-12636-063016-SSH-3116	GW-12636-112916-SSH-4916	GW-12636-112916-SSH-5016	GW-12636-032917-SSH-0717	GW-12636-091311-JY-010	PFW-1	GW-12636-100802-DD-001	GW-12636-100802-DD-002
Sample Date:		12/7/2011	3/27/2014	3/27/2014	3/26/2015	6/30/2016	11/29/2016	11/29/2016	3/29/2017	9/13/2011	4/1/1997	10/8/2002	10/8/2002
Sample Depth:		-	-	(Duplicate)	-	-	-	(Duplicate)	-	(79.02-79.04) in BGS	-	-	-
Parameters	Units												
pH	s.u.	-	-	-	-	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-
FPARAM													
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	340	-	-	-	-
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	3.81	-	-	-	-
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-70	-	-	-	-
pH, field	s.u.	-	-	-	-	-	-	-	7.33	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	11.73	-	-	-	-
Turbidity, field	NTU	-	-	-	-	-	-	-	3.0	-	-	-	-
Footnotes:	U Not detecte												
	J Estimated c												
	UJ Not detecte												

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep
Sample Location:	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1
Sample ID:	GW-12636-100902-DD-003	GW-12636-120210-BW-006	GW-12636-051311-SSH-116	GW-12636-120511-JY-402	GW-12636-032714-SSH-1412	GW-12636-032515-SSH-15004	GW-12636-032515-SSH-15005	GW-12636-032216-SSH-1616	GW-12636-033117-SSH-1917
Sample Date:	10/9/2002	12/2/2010	5/13/2011	12/5/2011	3/27/2014	3/25/2015	3/25/2015	3/22/2016	3/31/2017
Sample Depth:	-	-	-	-	-	-	-	-	-
	(Duplicate)								
Parameters	Units								
VOAs									
1,1,1,2-Tetrachloroethane	mg/L	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-Trichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,1-Dichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,3-Trichlorobenzene	mg/L	-	-	-	-	-	-	-	-
1,2,3-Trichloropropane	mg/L	-	-	-	-	-	-	-	-
1,2,3-Trimethylbenzene	mg/L	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/L	0.001 U	0.005 U	0.005 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2,4-Trimethylbenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane (Ethylene dibromide)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloroethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dichloropropane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,4-Dichlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	0.01 U	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Chloroethyl vinyl ether	mg/L	-	-	-	-	-	-	-	-
2-Hexanone	mg/L	0.01 U	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
2-Methylnaphthalene	mg/L	-	-	-	-	-	-	-	-
2-Phenylbutane (sec-Butylbenzene)	mg/L	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	mg/L	0.01 U	0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acetone	mg/L	0.01 U	0.025 U	0.025 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Acrylonitrile	mg/L	-	-	-	-	-	-	-	-
Benzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromobenzene	mg/L	-	-	-	-	-	-	-	-
Bromodichloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromoform	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Bromomethane (Methyl bromide)	mg/L	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	mg/L	0.001 U	0.005 U	0.005 UJ	0.005 U	0.0026 J	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chlorobromomethane	mg/L	-	-	-	-	-	-	-	-
Chloroethane	mg/L	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 UJ
Chloroform (Trichloromethane)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloromethane (Methyl chloride)	mg/L	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	mg/L	0.0005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cyclohexane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cymene (p-Isopropyltoluene)	mg/L	-	-	-	-	-	-	-	-
Dibromochloromethane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Dibromomethane	mg/L	-	-	-	-	-	-	-	-
Dichlorodifluoromethane (CFC-12)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Diisopropyl ether	mg/L	-	-	-	-	-	-	-	-
Ethyl ether	mg/L	-	-	-	-	-	-	-	-
Ethylbenzene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Hexachloroethane	mg/L	-	-	-	-	-	-	-	-
Iodomethane	mg/L	-	-	-	-	-	-	-	-
Isopropyl benzene	mg/L	0.001 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
m&p-Xylenes	mg/L	-	-	-	-	-	-	-	-
Methyl acetate	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Methyl cyclohexane	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert butyl ether (MTBE)	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	mg/L	0.001 U	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Naphthalene	mg/L	-	-	-	-	-	-	-	-
N-Butylbenzene	mg/L	-	-	-	-	-	-	-	-
N-Propylbenzene	mg/L	-	-	-	-	-	-	-	-
o-Xylene	mg/L	-	-	-	-	-	-	-	-
Styrene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
tert-Amyl methyl ether	mg/L	-	-	-	-	-	-	-	-
tert-Butyl alcohol	mg/L	-	-	-	-	-	-	-	-
tert-Butyl ethyl ether	mg/L	-	-	-	-	-	-	-	-
tert-Butylbenzene	mg/L	-	-	-	-	-	-	-	-
Tetrachloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Tetrahydrofuran	mg/L	-	-	-	-	-	-	-	-
Toluene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,2-Dichloroethene	mg/L	0.0005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,3-Dichloropropene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
trans-1,4-Dichloro-2-butene	mg/L	-	-	-	-	-	-	-	-
Trichloroethene	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichlorofluoromethane (CFC-11)	mg/L	0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep
Sample Location:	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1
Sample ID:	GW-12636-100902-DD-003	GW-12636-120210-BW-006	GW-12636-051311-SSH-116	GW-12636-120511-JY-402	GW-12636-032714-SSH-1412	GW-12636-032515-SSH-15004	GW-12636-032515-SSH-15005	GW-12636-032216-SSH-1616	GW-12636-033117-SSH-1917
Sample Date:	10/9/2002	12/2/2010	5/13/2011	12/5/2011	3/27/2014	3/25/2015	3/25/2015	3/22/2016	3/31/2017
Sample Depth:	-	-	-	-	-	-	(Duplicate)	-	-
Parameters	Units								
Trifluorotrichloroethane (CFC-113)	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vinyl chloride	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes (total)	mg/L	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
SVOAs									
Perfluorhexanoic acid	ng/L	-	-	-	-	-	-	-	-
Perfluorobutane sulfonate	ng/L	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	ng/L	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	ng/L	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	ng/L	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	ng/L	-	-	-	-	-	-	-	-
Perfluoroheptane sulfonate	ng/L	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	ng/L	-	-	-	-	-	-	-	-
Perfluoro-n-Octanoic acid	ng/L	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	ng/L	-	-	-	-	-	-	-	-
Perfluorooctane sulfonate	ng/L	-	-	-	-	-	-	-	-
Perfluorooonanoic acid	ng/L	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	ng/L	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	ng/L	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	ng/L	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	ng/L	-	-	-	-	-	-	-	-
Perfluorohexane sulfonate	ng/L	-	-	-	-	-	-	-	-
Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	ng/L	-	-	-	-	-	-	-	-
Metals									
Aluminum	mg/L	-	0.2 U	0.2 U	0.022 J	0.02 J	0.011 J	0.013 J	0.025 J
Aluminum (dissolved)	mg/L	-	-	-	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Antimony	mg/L	-	0.00029 J	0.002 U	0.00014 J	0.00082 J	0.002 U	0.00028 J	0.002 U
Antimony (dissolved)	mg/L	-	-	-	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Arsenic	mg/L	-	0.489 ^{bdf}	0.0596	0.079	0.048	0.064	0.062	0.049
Arsenic (dissolved)	mg/L	-	-	-	0.033	0.04	0.043	0.044	0.036
Barium	mg/L	-	0.201	0.154	0.15	0.13	0.14	0.14	0.14
Barium (dissolved)	mg/L	-	-	-	0.14	0.13	0.14	0.14	0.13
Beryllium	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium (dissolved)	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.00027 J	0.00032 J	0.00028 J
Cadmium (dissolved)	mg/L	-	-	-	0.001 U	0.001 U	0.00044 J	0.00036 J	0.00034 J
Chromium	mg/L	-	0.005 U	0.005 U	0.005 U	0.005 U	0.00071 J	0.0014 J	0.0012 J
Chromium (dissolved)	mg/L	-	-	-	0.005 U	0.005 U	0.00081 J	0.0012 J	0.005 U
Cobalt	mg/L	-	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.00045 J
Cobalt (dissolved)	mg/L	-	-	-	0.007 U	0.007 U	0.007 U	0.007 U	0.00038 J
Copper	mg/L	-	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Copper (dissolved)	mg/L	-	-	-	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron	mg/L	-	17 ^{bcdie}	1.83	2.7	1.6	2.1	1.9	1.9
Iron (dissolved)	mg/L	-	-	-	1.1	1.3	1.5	1.5	1.4
Lead	mg/L	-	0.003 U	0.003 U	0.003 U	0.003 U	0.0023 J	0.003 U	0.003 U
Lead (dissolved)	mg/L	0.003 U	-	-	0.003 U	0.003 U	0.003 U	0.0019 J	0.003 U
Manganese	mg/L	-	0.06	0.0334	0.036	0.026	0.029	0.028	0.036
Manganese (dissolved)	mg/L	-	-	-	0.031	0.024	0.027	0.028	0.03
Mercury	mg/L	-	0.0002 UJ	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Mercury (dissolved)	mg/L	-	-	-	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	mg/L	-	-	-	-	-	-	-	-
Molybdenum (dissolved)	mg/L	-	-	-	-	-	-	-	-
Nickel	mg/L	-	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0016 J	0.0018 J
Nickel (dissolved)	mg/L	-	-	-	0.02 U	0.02 U	0.02 U	0.0024 J	0.0014 J
Selenium	mg/L	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Selenium (dissolved)	mg/L	-	-	-	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Silver	mg/L	-	0.0002 U	0.0002 U	0.0001 J	0.000071 J	0.0002 U	0.0002 U	0.0002 U
Silver (dissolved)	mg/L	-	-	-	0.0002 U	0.00019 J	0.0002 U	0.0002 U	0.0002 U
Sodium (dissolved)	mg/L	-	-	-	-	-	-	-	-
Thallium	mg/L	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium (dissolved)	mg/L	-	-	-	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Vanadium	mg/L	-	0.004 U	0.004 U	0.004 U	0.004 UJ	0.004 U	0.004 U	0.004 U
Vanadium (dissolved)	mg/L	-	-	-	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Zinc	mg/L	-	0.02 U	0.02 U	0.0071 J	0.0089 J	0.02 U	0.02 U	0.02 U
Zinc (dissolved)	mg/L	-	-	-	0.02 U	0.007 J	0.02 U	0.02 U	0.02 U
Wet									
Conductance, specific	umhos/cm	-	-	-	-	-	-	-	-
Cyanide (amenable)	mg/L	-	0.010 U	0.010 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Cyanide (total)	mg/L	-	-	-	0.0050 U	-	-	-	-

Historic Deep Groundwater Results Summary
Former Peregrine (US) Inc. Coldwater Road Facility
Genesee Township, Michigan

Shallow_or_Deep:	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep	Deep
Sample Location:	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1	PFW-1
Sample ID:	GW-12636-100902-DD-003	GW-12636-120210-BW-006	GW-12636-051311-SSH-116	GW-12636-120511-JY-402	GW-12636-032714-SSH-1412	GW-12636-032515-SSH-15004	GW-12636-032515-SSH-15005	GW-12636-032216-SSH-1616	GW-12636-033117-SSH-1917
Sample Date:	10/9/2002	12/2/2010	5/13/2011	12/5/2011	3/27/2014	3/25/2015	3/25/2015	3/22/2016	3/31/2017
Sample Depth:	-	-	-	-	-	-	(Duplicate)	-	-
Parameters	Units								
pH	S.u.	-	-	-	-	-	-	-	-
Temperature, field	Deg C	-	-	-	-	-	-	-	-
Total organic carbon (TOC)	mg/L	-	-	-	-	-	-	-	-
Total organic halides (TOX)	mg/L	-	-	-	-	-	-	-	-
FPARAM									
Conductivity, field	umhos/cm	-	-	-	-	-	-	-	1440
Dissolved oxygen (DO), field	mg/L	-	-	-	-	-	-	-	5.01
Oxidation reduction potential (ORP), field	millivolts	-	-	-	-	-	-	-	-46
pH, field	S.u.	-	-	-	-	-	-	-	6.89
Temperature, field	Deg C	-	-	-	-	-	-	-	10.4
Turbidity, field	NTU	-	-	-	-	-	-	-	7.75
Footnotes:	U Not detecte J Estimated c UJ Not detecte								

LEGEND

- FACILITY BOUNDARY
- SHALLOW MONITORING WELL LOCATION (ANNUAL)
- QUARTERLY MONITORING LOCATION
- STORM SEWER LINE
- SANITARY SEWER LINE
- M.H. MANHOLE
- STORM SEWER MONITORING LOCATION

SAMPLE LOCATION		SAMPLE DATE	
MW-17-13	3/26/2014	Arsenic	0.01
		Arsenic (dissolved)	0.012 (ABC)
		Iron (dissolved)	5.9 (AB)
		Lead	0.003 U
		Lead (dissolved)	-
		Manganese	0.6
		Manganese (dissolved)	0.58 (AB)
PARAMETER		RESULT (mg/L)	
		PARAMETER NOT ANALYZED	

Chemical Name	Background	A	B	C
Arsenic	0.01	0.01	0.01	0.01
Arsenic (dissolved)	0.0072	0.01	0.01	0.01
Iron	32.58	0.3 (2.0)	0.3 (5.6)	-
Iron (dissolved)	4	0.3 (2.0)	0.3 (5.6)	-
Lead	0.0035	0.004	0.004	-
Lead (dissolved)	0.003 U	0.004	0.004	-
Manganese	0.963	0.05 (0.86)	0.05 (2.5)	-
Manganese (dissolved)	0.547	0.05 (0.86)	0.05 (2.5)	-

Background	Background - Shallow Water Bearing Zone
A	Residential Drinking Water Criteria (Health Based Criteria)
B	Nonresidential Drinking Water Criteria (Health Based Criteria)
C	Groundwater/Surface Water Interface (GSI) Criteria

- NOTES:
- THIS DRAWING IS FOR REFERENCE ONLY AND IS NEITHER COMPLETE NOR TO EXACTING SCALE.
 - MANGANESE AND IRON ARE SCREENED AGAINST RESIDENTIAL/NONRESIDENTIAL AESTHETIC DRINKING WATER CRITERIA BUT MAY BE BELOW THE NONRESIDENTIAL HEALTH BASED DRINKING WATER CRITERIA.

MW-1	12/2/2010	5/13/2011	9/12/2011	12/7/2011	3/26/2014
Arsenic	0.0094	0.005 U	0.005 U	0.0065	0.005 U
Arsenic (dissolved)	-	-	-	-	0.005 U
Iron	3.59	0.857	1.2	0.24	0.55
Iron (dissolved)	-	-	-	-	0.1 U
Lead	0.0142 (AB)	0.0033	0.0033	0.003 U	0.0034
Lead (dissolved)	-	-	-	-	0.003 U
Manganese	0.164	0.0567	0.4	0.025	0.038
Manganese (dissolved)	-	-	-	-	0.01 J

B-9	12/3/2010	5/11/2011	9/14/2011	12/7/2011	3/26/2014
Arsenic	0.0033 J	0.005 U	0.005 U	0.005 U	-
Arsenic (dissolved)	-	-	-	-	0.005 U
Iron	1.01	0.302	0.27	0.14	-
Iron (dissolved)	-	-	-	-	0.1 U
Lead	0.003 U	0.003 U	0.003 U	0.003 U	-
Lead (dissolved)	-	-	-	-	0.003 U
Manganese	0.391	0.211	6.8 J (AB)	0.31	-
Manganese (dissolved)	-	-	-	-	0.047

MW-2	12/3/2010	5/13/2011	9/12/2011	12/6/2011	3/26/2014
Arsenic	0.0279 (ABC)	0.0046 J	0.01	0.005 U	0.0066
Arsenic (dissolved)	-	-	0.0075	0.005 U	0.0046 J
Iron	24.8	8.27	16	12	6
Iron (dissolved)	-	-	14 (AB)	11 (AB)	4
Lead	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	-	-	0.003 U	0.003 U	0.003 U
Manganese	2.12 (AB)	0.541	2.5 (AB)	2.6 (AB)	1.8 (AB)
Manganese (dissolved)	-	-	2.7 (AB)	2.6 (AB)	1.7 (AB)

MW-20-13	3/26/2014	MW-19-13	3/27/2014
Arsenic	0.005 U	Arsenic	0.005 U
Arsenic (dissolved)	0.005 U	Arsenic (dissolved)	0.005 U
Iron	0.1 U	Iron	0.12
Iron (dissolved)	0.1 U	Iron (dissolved)	0.1 U
Lead	0.003 U	Lead	0.003 U
Lead (dissolved)	0.003 U	Lead (dissolved)	0.003 U
Manganese	0.0062 J	Manganese	0.11
Manganese (dissolved)	0.0056 J	Manganese (dissolved)	0.11

PFW-2	12/3/2010	5/13/2011	9/12/2011	12/6/2011	3/26/2014
Arsenic	0.0032 J/0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Arsenic (dissolved)	-	-	-	-	0.005 U
Iron	0.701/0.684	0.541	0.97	0.36	1.3
Iron (dissolved)	-	-	-	-	0.23
Lead	0.003 U/0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	-	-	-	-	0.003 U
Manganese	0.963/0.91	0.581	1.4 (AB)	0.54	0.66 J
Manganese (dissolved)	-	-	-	-	0.97 J (AB)

PFW-9	12/2/2010	5/13/2011	9/12/2011	12/6/2011	3/26/2014
Arsenic	0.005 U/0.005 U	0.005 U	0.0033 J	0.005 U	0.005 U
Arsenic (dissolved)	-	-	-	-	0.005 U
Iron	7.78 J/2.93 J	0.232	2	0.089 J	0.084 J
Iron (dissolved)	-	-	-	-	0.21
Lead	0.003 U/0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	-	-	-	-	0.003 U
Manganese	0.0519 J/0.0208 J	0.008 J	0.41	0.015 U	0.0028 J
Manganese (dissolved)	-	-	-	-	0.0041 J

MW-4-02	5/11/2011	9/13/2011	12/5/2011	3/27/2014
Arsenic	0.005 U	0.005 U	0.005 U/0.005 U	0.005 U
Arsenic (dissolved)	-	-	-	0.005 U
Iron	0.101	0.1 U	0.1 U/0.1 U	0.15
Iron (dissolved)	-	-	-	0.1 U
Lead	0.003 U	0.003 U	0.003 U/0.003 U	0.003 U
Lead (dissolved)	-	-	-	0.003 U
Manganese	0.0418	0.023 J	0.01 J/0.01 J	0.013 J
Manganese (dissolved)	-	-	-	0.003 J

MW-17-13	3/26/2014
Arsenic	0.01
Arsenic (dissolved)	0.012 (ABC)
Iron	5.8
Iron (dissolved)	5.9 (AB)
Lead	0.003 U
Lead (dissolved)	0.003 U
Manganese	0.6
Manganese (dissolved)	0.58 (AB)

MW-18-13	3/27/2014
Arsenic	0.005 U
Arsenic (dissolved)	0.005 U
Iron	0.1 U
Iron (dissolved)	0.1 U
Lead	0.003 U
Lead (dissolved)	0.003 U
Manganese	0.009 J
Manganese (dissolved)	0.0085 J

PFW-10	12/3/2010	5/13/2011	9/13/2011	12/6/2011	3/26/2014
Arsenic	0.005 U	0.005 U	0.005 U	0.005 U	-
Arsenic (dissolved)	-	-	-	-	0.005 U/0.005 U
Iron	0.1 U	0.1 U	0.1 U	0.1 U	-
Iron (dissolved)	-	-	-	-	0.1 U/0.1 U
Lead	0.003 U	0.003 U	0.003 U	0.003 U	-
Lead (dissolved)	-	-	-	-	0.003 U/0.003 U
Manganese	0.16	0.0719	0.047	0.024	-
Manganese (dissolved)	-	-	-	-	0.015/0.011 J

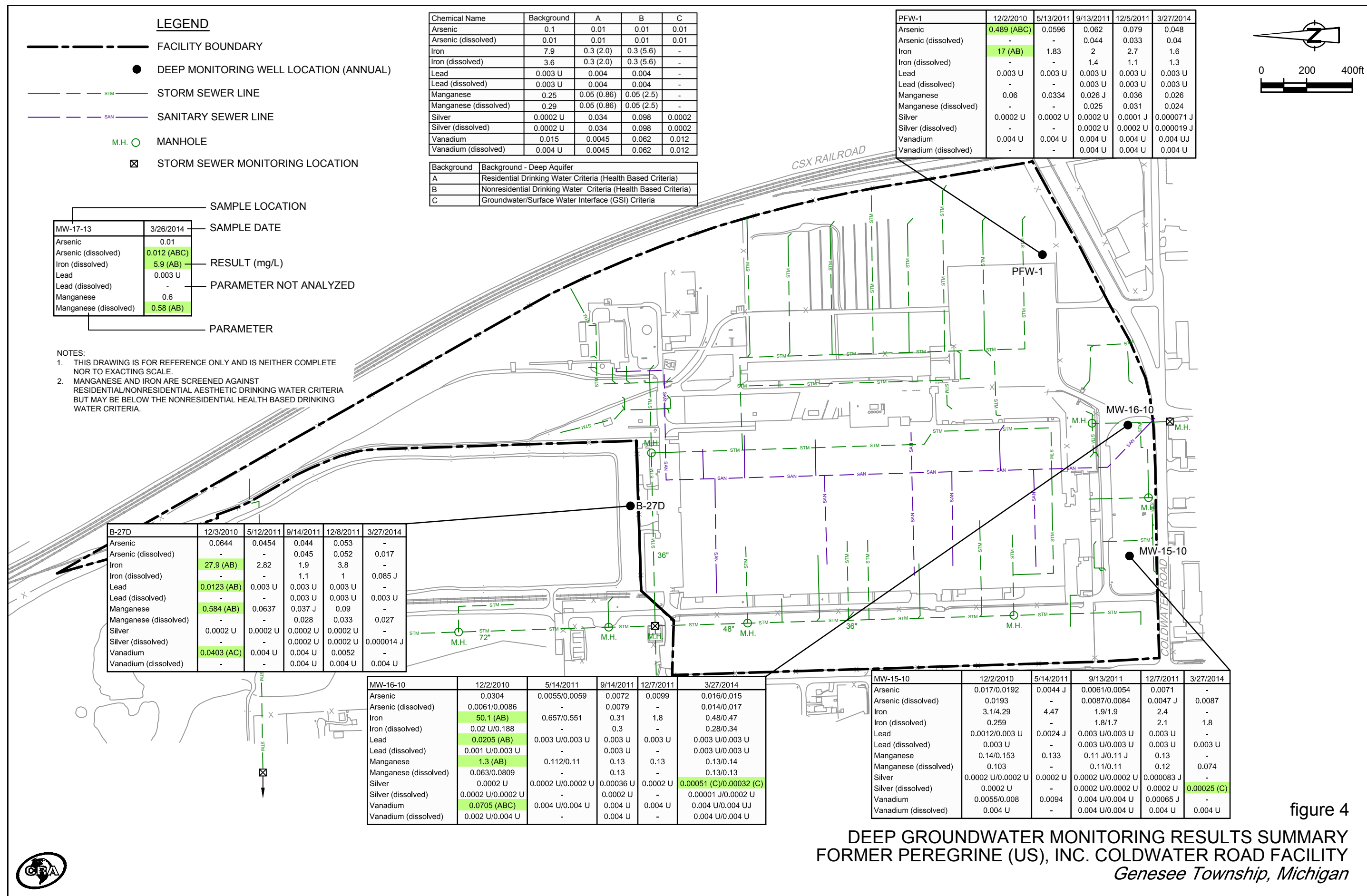
PFW-11	12/2/2010	5/13/2011	9/13/2011	12/6/2011	3/26/2014
Arsenic	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Arsenic (dissolved)	-	-	-	-	0.005 U
Iron	2.73	0.202	0.1 U	0.096 J	0.1 U
Iron (dissolved)	-	-	-	-	0.1 U
Lead	0.0125 (AB)	0.003 U	0.003 U	0.003 U	0.003 U
Lead (dissolved)	-	-	-	-	0.003 U
Manganese	0.056	0.0317	0.055 J	0.012 J	0.0062 J
Manganese (dissolved)	-	-	-	-	0.0041 J

PFW-4	5/11/2011	9/12/2011
Arsenic	0.0034 J/0.0035 J	0.0044 J
Arsenic (dissolved)	-	0.0034 J
Iron	5.62/5.71	0.66
Iron (dissolved)	-	0.1 U
Lead	0.0356 (AB)/0.0358 (AB)	0.013 (AB)
Lead (dissolved)	-	0.003 U
Manganese	0.0962/0.0982	0.031
Manganese (dissolved)	-	0.017

figure 3

SHALLOW GROUNDWATER MONITORING RESULTS SUMMARY FORMER PEREGRINE (US), INC. COLDWATER ROAD FACILITY Genesee Township, Michigan





Attachment E

Data Validation Report and Laboratory Analytical Results



Memorandum

April 20, 2017

To: Mike Tomka Ref. No.: 012636-T09-003Y17

From: Nancy Bergstrom/tl/175/Det *NMB* Tel: 734-453-5123

CC: Richard Chatfield

**Subject: Analytical Results and Reduced Validation
Groundwater Monitoring
Racer-Peregrine Site
Genesee County, Michigan
March 2017**

1. Introduction

This document details a reduced validation of analytical results for groundwater samples collected in support of the Groundwater Monitoring at the Racer-Peregrine Site during March 2017. Samples were submitted to TestAmerica Laboratories, Inc. located in North Canton, Ohio. A sample collection and analysis summary is presented in Table 1. The validated analytical results are summarized in Table 2. A summary of the analytical methodology is presented in Table 3.

Standard GHD report deliverables were submitted by the laboratory. The final results and supporting quality assurance/quality control (QA/QC) data were assessed. Evaluation of the data was based on information obtained from the chain of custody forms, finished report forms, method blank data, recovery data from surrogate spikes/laboratory control samples (LCS)/matrix spikes (MS) and field QA/QC samples.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 3 and applicable guidance from the documents entitled:

- i) "Quality Assurance Project Plan (QAPP) for the RCRA Facility Investigation (RFI) at Former Peregrine (US), Inc. Coldwater Road Facility", May 15, 2000
- ii) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", United States Environmental Protection Agency (USEPA) 540/R-99-008, October 1999
- iii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", USEPA 540/R-94-013, February 1994

Items ii) and iii) will subsequently be referred to as the "Guidelines" in this Memorandum.



2. Sample Holding Time and Preservation

The sample holding time criteria for the analyses are summarized in Table 3. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (4 +/- 2°C).

3. Laboratory Method Blank Analyses

Method blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures.

For this study, laboratory method blanks were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.

Table 4 presents the qualified sample results due to analyte detections in the method blanks. All remaining method blank results were non-detect or yielded detections that did not warrant qualification (associated results were either non-detect or significantly greater than the method blank detections).

4. Surrogate Spike Recoveries - Organic Analyses

In accordance with the methods employed, all samples, blanks, and QC samples analyzed for organics are spiked with surrogate compounds prior to sample analysis. Surrogate recoveries provide a means to evaluate the effects of laboratory performance on individual sample matrices.

All samples submitted for volatile organic compound (VOC) determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Surrogate recoveries were assessed against laboratory control limits. All surrogate recoveries were within the laboratory control limits.

5. Laboratory Control Sample (LCS) Analyses

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS were analyzed at a minimum frequency of 1 per 20 investigative samples and/or 1 per analytical batch.



Organic Analyses

The LCS contained all compounds of interest. Table 5 presents the qualified sample results due to outlying LCS results. All remaining LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy.

Inorganic Analyses

The LCS contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries were within the control limits, demonstrating acceptable analytical accuracy.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analyses

To evaluate the effects of sample matrices on the preparation process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The RPD between the MS and MSD is used to assess analytical precision.

MS/MSD analyses were performed as specified in Table 1.

Organic Analyses

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision.

Inorganic Analyses

The MS/MSD samples were spiked with the analytes of interest, and the results were evaluated using the "Guidelines". All percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

7. Field QA/QC Samples

The field QA/QC consisted of three trip blank samples and two field duplicate sample sets.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, three trip blanks were submitted to the laboratory for VOC analysis. Chlorobenzene was detected in the trip blank samples. However, chlorobenzene was not detected in any of the associated samples; therefore, no qualification of data was necessary. All remaining results were non-detect for the compounds of interest.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, two field duplicate samples were collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 percent for water samples. If the reported concentration in either the



investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one times the RL value for water samples.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

8. Analyte Reporting

The laboratory reported detected results down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL were reported as estimated (J) in Table 2 unless qualified otherwise in this memorandum. Non-detect results were presented as non-detect at the RL in Table 2.

9. Additional Quality Control Concerns

The metals analyses were evaluated for discrepancies between the total and dissolved results. Samples with dissolved analyte results reported higher than total analyte results were assessed. Table 6 presents the data qualified for a significant discrepancy between total and dissolved analyte results.

10. Conclusion

Based on the assessment detailed in the foregoing, the data summarized in Table 2 are acceptable with the specific qualifications noted herein.

Table 1

**Sample Collection and Analysis Summary
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017**

Sample Identification	Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	Analysis/Parameters			Comments
					TCL VOC	Total TAL Metals	Dissolved TAL Metals	
TA-NC SDG No.: 240-77462-1								
GW-12636-032917-SSH-0117	MW-2	Water	03/29/2017	08:35	X	X	X	MS/MSD-P
GW-12636-032917-SSH-0217	PFW-9	Water	03/29/2017	09:35	X	X	X	
GW-12636-032917-SSH-0317	PFW-9	Water	03/29/2017	09:45	X	X	X	FD (PFW-9)
GW-12636-032917-SSH-0417	MW-1	Water	03/29/2017	11:00	X	X	X	
GW-12636-032917-SSH-0517	PFW-2	Water	03/29/2017	12:45	X	X	X	
GW-12636-032917-SSH-0617	MW-18-13	Water	03/29/2017	11:26	X	X	X	
GW-12636-032917-SSH-0717	MW-16-10	Water	03/29/2017	12:21	X	X	X	
GW-12636-032917-SSH-0817	MW-15-10	Water	03/29/2017	13:26	X	--	X	
GW-12636-032917-SSH-0917	B-9	Water	03/29/2017	13:50	X	X	X	
TB-12636-032917-SSH-1117	--	Water	03/29/2017	13:55	X	--	--	TB
TA-NC SDG No.: 240-77501-1								
GW-12636-033017-SSH-1017	MW-17-13	Water	03/30/2017	14:35	X	--	X	
GW-12636-033017-SSH-1217	MW-19-13	Water	03/30/2017	08:45	X	X	X	
GW-12636-033017-SSH-1317	MW-20-13	Water	03/30/2017	10:10	X	X	X	
GW-12636-033017-SSH-1417	PFW-4	Water	03/30/2017	11:35	X	--	X	
GW-12636-033017-SSH-1517	PFW-11	Water	03/30/2017	12:45	X	--	X	
GW-12636-033017-SSH-1617	MW-4-02	Water	03/30/2017	13:31	X	X	X	MS/MSD
GW-12636-033017-SSH-1717	MW-17-13	Water	03/30/2017	14:40	X	--	X	FD (MW-17-13)
TB-12636-033017-SSH-1817	--	Water	03/30/2017	14:45	X	--	--	TB
TA-NC SDG No.: 240-77562-1								
GW-12636-033117-SSH-1917	PFW-1	Water	03/31/2017	09:01	X	X	X	
GW-12636-033117-SSH-2017	PFW-10	Water	03/31/2017	10:21	X	X	X	
GW-12636-033117-SSH-2117	B-27D	Water	03/31/2017	12:06	X	--	X	
TB-12636-033117-SSH-2217	--	Water	03/31/2017	12:20	X	--	--	TB

Table 1

**Sample Collection and Analysis Summary
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017**

					<u>Analysis/Parameters</u>				
Sample Identification		Location	Matrix	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	TCL VOC	Total TAL Metals	Dissolved TAL Metals	Comments
Notes:									
FD	- Field Duplicate sample of sample in parenthesis								
TB	- Trip Blank								
MS/MSD	- Matrix Spike/Matrix Spike Duplicate								
MS/MSD-P	- Matrix Spike/Matrix Spike Duplicate (Partial parameters)								
TCL	- Target Compound List								
VOC	- Volatile Organic Compounds								
TAL	- Target Analyte List								
TA-NC	- TestAmerica Laboratories, Inc. - North Canton, Ohio								
SDG	- Sample Delivery Group								

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	B-9	B-27D	MW-1	MW-2
Sample Name:	GW-12636-032917-SSH-0917	GW-12636-033117-SSH-2117	GW-12636-032917-SSH-0417	GW-12636-032917-SSH-0117
Sample Date:	03/29/2017	03/31/2017	03/29/2017	03/29/2017
Depth:	--	--	--	--
Parameters	Unit			
Volatile Organic Compounds				
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	10 U	10 U	10 U
2-Hexanone	µg/L	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	10 U	10 U	10 U
Acetone	µg/L	10 U	10 U	10 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.4	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U
Cyclohexane	µg/L	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U
Methyl acetate	µg/L	10 U	10 U	10 U
Methyl cyclohexane	µg/L	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	5.0 U	5.0 U	5.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	B-9	B-27D	MW-1	MW-2
Sample Name:	GW-12636-032917-SSH-0917	GW-12636-033117-SSH-2117	GW-12636-032917-SSH-0417	GW-12636-032917-SSH-0117
Sample Date:	03/29/2017	03/31/2017	03/29/2017	03/29/2017
Depth:	--	--	--	--
Parameters	Unit			
Toluene	µg/L	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	B-9	B-27D	MW-1	MW-2
Sample Name:	GW-12636-032917-SSH-0917	GW-12636-033117-SSH-2117	GW-12636-032917-SSH-0417	GW-12636-032917-SSH-0117
Sample Date:	03/29/2017	03/31/2017	03/29/2017	03/29/2017
Depth:	--	--	--	--
Parameters	Unit			
Volatile Organic Compounds				
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	2.0 U	2.0 U	2.0 U
Metals				
Aluminum	µg/L	130	410	41 J
Aluminum (dissolved)	µg/L	19 J	1000	38 J
Antimony	µg/L	2.0 U	--	2.7 U
Antimony (dissolved)	µg/L	2.0 U	2.0 U	2.0 U
Arsenic	µg/L	0.52 J	--	0.97 J
Arsenic (dissolved)	µg/L	0.43 J	25	0.80 J
Barium	µg/L	11 J	--	54 J
Barium (dissolved)	µg/L	11 J	210	55 J
Beryllium	µg/L	1.0 U	--	1.0 U
Beryllium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	1.0 U	--	0.36 J
Cadmium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U
Chromium	µg/L	0.26 J	--	0.71 J
Chromium (dissolved)	µg/L	5.0 U	17	5.0 U
Cobalt	µg/L	0.35 J	--	28
Cobalt (dissolved)	µg/L	0.28 J	2.7 J	0.23 J
Copper	µg/L	2.0 U	--	3.1
Copper (dissolved)	µg/L	2.3	3.6 U	3.0
Iron	µg/L	160 J	--	740
Iron (dissolved)	µg/L	200 U	1900	300
Lead	µg/L	3.0 U	--	3.0 U
Lead (dissolved)	µg/L	3.0 U	3.0 U	3.0 U
Manganese	µg/L	85	--	1500
Manganese (dissolved)	µg/L	80	67	1500
Mercury	µg/L	0.20 U	--	0.20 U
Mercury (dissolved)	µg/L	0.20 U	0.20 U	0.20 U
Nickel	µg/L	4.2 J	--	12 J
Nickel (dissolved)	µg/L	4.6 J	17 J	13 J
Selenium	µg/L	0.57 J	--	1.2 J
Selenium (dissolved)	µg/L	0.53 J	5.0 U	0.76 J
Silver	µg/L	0.20 U	--	0.20 U
Silver (dissolved)	µg/L	0.20 U	3.4	0.20 U
Thallium	µg/L	1.0 U	--	0.32 J
Thallium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U
Vanadium	µg/L	4.0 U	--	0.75 J

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	B-9	B-27D	MW-1	MW-2
Sample Name:	GW-12636-032917-SSH-0917	GW-12636-033117-SSH-2117	GW-12636-032917-SSH-0417	GW-12636-032917-SSH-0117
Sample Date:	03/29/2017	03/31/2017	03/29/2017	03/29/2017
Depth:	--	--	--	--
Parameters	Unit			
Metals				
Vanadium (dissolved)	µg/L	4.0 U	3.4 J	0.71 J
Zinc	µg/L	20 U	--	4.0 U
Zinc (dissolved)	µg/L	20 U	20 U	37 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	MW-4-02	MW-15-10	MW-16-10	MW-17-13
Sample Name:	GW-12636-033017-SSH-1617	GW-12636-032917-SSH-0817	GW-12636-032917-SSH-0717	GW-12636-033017-SSH-1017
Sample Date:	03/30/2017	03/29/2017	03/29/2017	03/30/2017
Depth:	--	--	--	--

Parameters	Unit

Volatile Organic Compounds

1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	10 U	10 U	10 U	10 U
2-Hexanone	µg/L	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	10 U	10 U	10 U	10 U
Acetone	µg/L	10 U	10 U	10 U	10 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl acetate	µg/L	10 U	10 U	10 U	10 U
Methyl cyclohexane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	MW-4-02	MW-15-10	MW-16-10	MW-17-13
Sample Name:	GW-12636-033017-SSH-1617	GW-12636-032917-SSH-0817	GW-12636-032917-SSH-0717	GW-12636-033017-SSH-1017
Sample Date:	03/30/2017	03/29/2017	03/29/2017	03/30/2017
Depth:	--	--	--	--
Parameters	Unit			
Toluene	µg/L	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	MW-4-02	MW-15-10	MW-16-10	MW-17-13
Sample Name:	GW-12636-033017-SSH-1617	GW-12636-032917-SSH-0817	GW-12636-032917-SSH-0717	GW-12636-033017-SSH-1017
Sample Date:	03/30/2017	03/29/2017	03/29/2017	03/30/2017
Depth:	--	--	--	--

Parameters	Unit				
Volatile Organic Compounds					
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U
Metals					
Aluminum	µg/L	15 J	--	23 J	--
Aluminum (dissolved)	µg/L	50 U	270	50 U	38 J
Antimony	µg/L	2.0 U	--	2.0 U	--
Antimony (dissolved)	µg/L	2.4	2.0 U	2.0 U	2.0 U
Arsenic	µg/L	0.63 J	--	27	--
Arsenic (dissolved)	µg/L	0.68 J	15	27	2.9 J
Barium	µg/L	72 J	--	430	--
Barium (dissolved)	µg/L	77 J	140	460	210
Beryllium	µg/L	1.0 U	--	1.0 U	--
Beryllium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	1.0 U	--	1.0 U	--
Cadmium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chromium	µg/L	0.96 J	--	5.0 U	--
Chromium (dissolved)	µg/L	0.92 J	0.55 J	5.0 U	5.0 U
Cobalt	µg/L	0.27 J	--	0.20 J	--
Cobalt (dissolved)	µg/L	0.26 J	0.26 J	0.18 J	1.6 J
Copper	µg/L	1.1 J	--	2.0 U	--
Copper (dissolved)	µg/L	1.7 J	2.0 U	2.0 U	1.8 J
Iron	µg/L	38 J	--	1000	--
Iron (dissolved)	µg/L	13 J	840	770	470
Lead	µg/L	0.37 J	--	3.0 U	--
Lead (dissolved)	µg/L	0.60 J	3.0 U	3.0 U	0.25 J
Manganese	µg/L	1.2 J	--	38	--
Manganese (dissolved)	µg/L	0.47 J	72	39	110
Mercury	µg/L	0.20 U	--	0.20 U	--
Mercury (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	0.35 J	--	0.83 J	--
Nickel (dissolved)	µg/L	0.56 J	1.4 J	0.86 J	6.4 J
Selenium	µg/L	1.3 J	--	5.0 U	--
Selenium (dissolved)	µg/L	1.5 J	5.0 U	5.0 U	0.66 J
Silver	µg/L	0.20 U	--	0.20 U	--
Silver (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Thallium	µg/L	1.0 U	--	1.0 U	--
Thallium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vanadium	µg/L	4.0 U	--	4.0 U	--

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	MW-4-02	MW-15-10	MW-16-10	MW-17-13
Sample Name:	GW-12636-033017-SSH-1617	GW-12636-032917-SSH-0817	GW-12636-032917-SSH-0717	GW-12636-033017-SSH-1017
Sample Date:	03/30/2017	03/29/2017	03/29/2017	03/30/2017
Depth:	--	--	--	--
Parameters	Unit			
Metals				
Vanadium (dissolved)	µg/L	4.0 U	0.61 J	4.0 U
Zinc	µg/L	20 U	--	--
Zinc (dissolved)	µg/L	20 U	20 U	20 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	MW-17-13	MW-18-13	MW-19-13	MW-20-13
Sample Name:	GW-12636-033017-SSH-1717	GW-12636-032917-SSH-0617	GW-12636-033017-SSH-1217	GW-12636-033017-SSH-1317
Sample Date:	03/30/2017	03/29/2017	03/30/2017	03/30/2017
Depth:	--	--	--	--
	Duplicate			
Parameters	Unit			
Volatile Organic Compounds				
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	10 U	10 U	10 U
2-Hexanone	µg/L	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	10 U	10 U	10 U
Acetone	µg/L	10 U	10 U	10 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U
Cyclohexane	µg/L	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U
Methyl acetate	µg/L	10 U	10 U	10 U
Methyl cyclohexane	µg/L	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	5.0 U	5.0 U	5.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	MW-17-13	MW-18-13	MW-19-13	MW-20-13
Sample Name:	GW-12636-033017-SSH-1717	GW-12636-032917-SSH-0617	GW-12636-033017-SSH-1217	GW-12636-033017-SSH-1317
Sample Date:	03/30/2017	03/29/2017	03/30/2017	03/30/2017
Depth:	--	--	--	--
	Duplicate			
Parameters	Unit			
Toluene	µg/L	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	MW-17-13	MW-18-13	MW-19-13	MW-20-13
Sample Name:	GW-12636-033017-SSH-1717	GW-12636-032917-SSH-0617	GW-12636-033017-SSH-1217	GW-12636-033017-SSH-1317
Sample Date:	03/30/2017	03/29/2017	03/30/2017	03/30/2017
Depth:	--	--	--	--
	Duplicate			
Parameters	Unit			
Volatile Organic Compounds				
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	2.0 U	2.0 U	2.0 U
Metals				
Aluminum	µg/L	--	48 J	33 J
Aluminum (dissolved)	µg/L	22 J	50 U	38 J
Antimony	µg/L	--	2.0 U	2.0 U
Antimony (dissolved)	µg/L	2.0 U	2.0 U	2.0 U
Arsenic	µg/L	--	0.43 J	0.47 J
Arsenic (dissolved)	µg/L	2.5 J	0.36 J	0.43 J
Barium	µg/L	--	78 J	140
Barium (dissolved)	µg/L	210	81 J	140
Beryllium	µg/L	--	1.0 U	1.0 U
Beryllium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	--	1.0 U	1.0 U
Cadmium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U
Chromium	µg/L	--	0.33 J	5.0 U
Chromium (dissolved)	µg/L	5.0 U	5.0 U	5.0 U
Cobalt	µg/L	--	0.30 J	0.13 J
Cobalt (dissolved)	µg/L	1.3 J	0.25 J	0.16 J
Copper	µg/L	--	2.0 U	0.99 J
Copper (dissolved)	µg/L	1.4 J	2.0 U	4.4 J
Iron	µg/L	--	100 J	64 J
Iron (dissolved)	µg/L	370	200 U	94 J
Lead	µg/L	--	3.0 U	0.30 J
Lead (dissolved)	µg/L	0.20 J	3.0 U	0.25 J
Manganese	µg/L	--	190	50 J
Manganese (dissolved)	µg/L	92	180	89 J
Mercury	µg/L	--	0.20 U	0.20 U
Mercury (dissolved)	µg/L	0.20 U	0.20 U	0.20 U
Nickel	µg/L	--	1.5 J	1.2 J
Nickel (dissolved)	µg/L	6.1 J	1.4 J	1.4 J
Selenium	µg/L	--	5.0 U	1.1 J
Selenium (dissolved)	µg/L	0.51 J	5.0 U	0.80 J
Silver	µg/L	--	0.20 U	0.20 U
Silver (dissolved)	µg/L	0.20 U	0.20 U	0.20 U
Thallium	µg/L	--	1.0 U	1.0 U
Thallium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U
Vanadium	µg/L	--	4.0 U	4.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	MW-17-13	MW-18-13	MW-19-13	MW-20-13
Sample Name:	GW-12636-033017-SSH-1717	GW-12636-032917-SSH-0617	GW-12636-033017-SSH-1217	GW-12636-033017-SSH-1317
Sample Date:	03/30/2017	03/29/2017	03/30/2017	03/30/2017
Depth:	--	--	--	--
	Duplicate			
Parameters	Unit			
Metals				
Vanadium (dissolved)	µg/L	4.0 U	4.0 U	4.0 U
Zinc	µg/L	--	21	20 U
Zinc (dissolved)	µg/L	20 U	22	20 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	PFW-1	PFW-2	PFW-4	PFW-9
Sample Name:	GW-12636-033117-SSH-1917	GW-12636-032917-SSH-0517	GW-12636-033017-SSH-1417	GW-12636-032917-SSH-0217
Sample Date:	03/31/2017	03/29/2017	03/30/2017	03/29/2017
Depth:	--	--	--	--
Parameters	Unit			
Volatile Organic Compounds				
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	10 U	10 U	10 U
2-Hexanone	µg/L	10 U	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	10 U	10 U	10 U
Acetone	µg/L	10 U	10 U	10 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U
Cyclohexane	µg/L	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U
Isopropyl benzene	µg/L	1.0 U	1.0 U	1.0 U
Methyl acetate	µg/L	10 U	10 U	10 U
Methyl cyclohexane	µg/L	1.0 U	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	5.0 U	5.0 U	5.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	PFW-1	PFW-2	PFW-4	PFW-9
Sample Name:	GW-12636-033117-SSH-1917	GW-12636-032917-SSH-0517	GW-12636-033017-SSH-1417	GW-12636-032917-SSH-0217
Sample Date:	03/31/2017	03/29/2017	03/30/2017	03/29/2017
Depth:	--	--	--	--
Parameters	Unit			
Toluene	µg/L	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	PFW-1	PFW-2	PFW-4	PFW-9
Sample Name:	GW-12636-033117-SSH-1917	GW-12636-032917-SSH-0517	GW-12636-033017-SSH-1417	GW-12636-032917-SSH-0217
Sample Date:	03/31/2017	03/29/2017	03/30/2017	03/29/2017
Depth:	--	--	--	--

Parameters	Unit				
Volatile Organic Compounds					
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U
Metals					
Aluminum	µg/L	25 J	50 U	--	50 U
Aluminum (dissolved)	µg/L	50 U	13 J	50 U	50 U
Antimony	µg/L	2.0 U	2.0 U	--	2.2 U
Antimony (dissolved)	µg/L	2.0 U	2.0 U	2.0 U	2.0 U
Arsenic	µg/L	49	1.7 J	--	0.57 J
Arsenic (dissolved)	µg/L	36	1.8 J	0.60 J	5.0 U
Barium	µg/L	140	48 J	--	21 J
Barium (dissolved)	µg/L	130	48 J	110	23 J
Beryllium	µg/L	1.0 U	1.0 U	--	1.0 U
Beryllium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	µg/L	1.0 U	1.0 U	--	1.0 U
Cadmium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Chromium	µg/L	1.1 J	5.0 U	--	0.49 J
Chromium (dissolved)	µg/L	5.0 U	5.0 U	5.0 U	0.28 J
Cobalt	µg/L	0.45 J	0.50 J	--	0.22 J
Cobalt (dissolved)	µg/L	0.38 J	0.50 J	20 U	20 U
Copper	µg/L	2.0 U	2.0 U	--	2.0 U
Copper (dissolved)	µg/L	2.0 U	2.0 U	1.8 J	2.0 U
Iron	µg/L	1900	1100	--	200 U
Iron (dissolved)	µg/L	1400	1100	13 J	200 U
Lead	µg/L	3.0 U	3.0 U	--	3.0 U
Lead (dissolved)	µg/L	3.0 U	3.0 U	0.20 J	3.0 U
Manganese	µg/L	36	970	--	0.43 J
Manganese (dissolved)	µg/L	34	1000	53	0.31 J
Mercury	µg/L	0.20 U	0.20 U	--	0.20 U
Mercury (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Nickel	µg/L	1.8 J	0.47 J	--	0.35 J
Nickel (dissolved)	µg/L	20 U	0.58 J	0.75 J	0.86 J
Selenium	µg/L	5.0 U	5.0 U	--	1.2 J
Selenium (dissolved)	µg/L	5.0 U	5.0 U	0.51 J	0.65 J
Silver	µg/L	0.47	0.20 U	--	0.20 U
Silver (dissolved)	µg/L	0.20 U	0.20 U	0.20 U	0.20 U
Thallium	µg/L	1.0 U	1.0 U	--	1.0 U
Thallium (dissolved)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vanadium	µg/L	4.0 U	4.0 U	--	4.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	PFW-1	PFW-2	PFW-4	PFW-9
Sample Name:	GW-12636-033117-SSH-1917	GW-12636-032917-SSH-0517	GW-12636-033017-SSH-1417	GW-12636-032917-SSH-0217
Sample Date:	03/31/2017	03/29/2017	03/30/2017	03/29/2017
Depth:	--	--	--	--
Parameters	Unit			
Metals				
Vanadium (dissolved)	µg/L	4.0 U	0.95 J	4.0 U
Zinc	µg/L	20 U	--	20 U
Zinc (dissolved)	µg/L	20 U	20 U	20 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	PFW-9	PFW-10	PFW-11
Sample Name:	GW-12636-032917-SSH-0317	GW-12636-033117-SSH-2017	GW-12636-033017-SSH-1517
Sample Date:	03/29/2017	03/31/2017	03/30/2017
Depth:	--	--	--
	Duplicate		
Parameters	Unit		
Volatile Organic Compounds			
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	10 U	10 U
2-Hexanone	µg/L	10 U	10 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	10 U	10 U
Acetone	µg/L	10 U	10 U
Benzene	µg/L	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U
Carbon disulfide	µg/L	5.0 U	5.0 U
Carbon tetrachloride	µg/L	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U
Cyclohexane	µg/L	1.0 U	1.0 U
Dibromochloromethane	µg/L	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U
Isopropyl benzene	µg/L	1.0 U	1.0 U
Methyl acetate	µg/L	10 U	10 U
Methyl cyclohexane	µg/L	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	µg/L	1.0 U	1.0 U
Methylene chloride	µg/L	5.0 U	5.0 U
Styrene	µg/L	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	PFW-9	PFW-10	PFW-11
Sample Name:	GW-12636-032917-SSH-0317	GW-12636-033117-SSH-2017	GW-12636-033017-SSH-1517
Sample Date:	03/29/2017	03/31/2017	03/30/2017
Depth:	--	--	--
	Duplicate		
Parameters	Unit		
Toluene	µg/L	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	PFW-9	PFW-10	PFW-11
Sample Name:	GW-12636-032917-SSH-0317	GW-12636-033117-SSH-2017	GW-12636-033017-SSH-1517
Sample Date:	03/29/2017	03/31/2017	03/30/2017
Depth:	--	--	--
	Duplicate		
Parameters	Unit		
Volatile Organic Compounds			
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U
Trifluorotrichloroethane (CFC-113)	µg/L	1.0 U	1.0 U
Vinyl chloride	µg/L	1.0 U	1.0 U
Xylenes (total)	µg/L	2.0 U	2.0 U
Metals			
Aluminum	µg/L	50 U	31 J
Aluminum (dissolved)	µg/L	50 U	50 U
Antimony	µg/L	2.0 U	2.0 U
Antimony (dissolved)	µg/L	2.0 U	2.0 U
Arsenic	µg/L	5.0 U	0.44 J
Arsenic (dissolved)	µg/L	5.0 U	0.44 J
Barium	µg/L	21 J	49 J
Barium (dissolved)	µg/L	23 J	48 J
Beryllium	µg/L	1.0 U	1.0 U
Beryllium (dissolved)	µg/L	1.0 U	1.0 U
Cadmium	µg/L	1.0 U	0.34 J
Cadmium (dissolved)	µg/L	1.0 U	1.0 U
Chromium	µg/L	0.29 J	2.0 J
Chromium (dissolved)	µg/L	0.35 J	0.67 J
Cobalt	µg/L	20 U	0.48 J
Cobalt (dissolved)	µg/L	20 U	0.19 J
Copper	µg/L	2.0 U	4.0 U
Copper (dissolved)	µg/L	2.0 U	2.0 U
Iron	µg/L	200 U	88 J
Iron (dissolved)	µg/L	200 U	200 U
Lead	µg/L	3.0 U	3.0 U
Lead (dissolved)	µg/L	3.0 U	3.0 U
Manganese	µg/L	15 U	270
Manganese (dissolved)	µg/L	15 U	130
Mercury	µg/L	0.20 U	0.20 U
Mercury (dissolved)	µg/L	0.20 U	0.20 U
Nickel	µg/L	20 U	5.2 J
Nickel (dissolved)	µg/L	20 U	3.9 J
Selenium	µg/L	0.69 J	0.54 J
Selenium (dissolved)	µg/L	0.60 J	5.0 U
Silver	µg/L	0.20 U	0.20 U
Silver (dissolved)	µg/L	0.20 U	0.20 U
Thallium	µg/L	1.0 U	1.0 U
Thallium (dissolved)	µg/L	1.0 U	1.0 U
Vanadium	µg/L	4.0 U	4.0 U

Table 2

Validated Analytical Summary Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Location ID:	PFW-9	PFW-10	PFW-11
Sample Name:	GW-12636-032917-SSH-0317	GW-12636-033117-SSH-2017	GW-12636-033017-SSH-1517
Sample Date:	03/29/2017	03/31/2017	03/30/2017
Depth:	--	--	--
	Duplicate		
Parameters	Unit		
Metals			
Vanadium (dissolved)	µg/L	4.0 U	4.0 U
Zinc	µg/L	20 U	--
Zinc (dissolved)	µg/L	20 U	20 U

Notes:

U - Not detected at the associated reporting limit

J - Estimated concentration

UJ - Not detected; associated reporting limit is estimated

Table 3
Analytical Methods
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Parameter	Method	Matrix	Holding Time	
			Collection to Extraction (Days)	Collection or Extraction to Analysis (Days)
TCL VOC	SW-846 8260B	Water	-	14
Total and Dissolved TAL Metals (except Mercury)	SW-846 6020	Water	-	180
Total and Dissolved Mercury	SW-846 7470A	Water	-	28

Notes:

Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, Third Edition, 1986, with subsequent revisions
TCL - Target Compound List
VOC - Volatile Organic Compounds
TAL - Target Analyte List

Table 4

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result	Sample ID	Original Result	Qualified Result	Units
TAL Metals	Antimony	04/03/2017	0.788 J	GW-12636-032917-SSH-0117	2.7 B	2.7 U	µg/L
				GW-12636-032917-SSH-0217	2.2 B	2.2 U	µg/L
				GW-12636-032917-SSH-0317	0.94 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0417	0.85 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0517	0.61 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0617	0.59 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0717	0.45 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0917	0.63 JB	2.0 U	µg/L
TAL Metals	Antimony (dissolved)	04/03/2017	0.788 J	GW-12636-032917-SSH-0117	1.1 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0217	0.35 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0317	0.29 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0417	0.48 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0617	0.28 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0717	0.44 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0817	0.41 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0917	0.40 JB	2.0 U	µg/L
TAL Metals	Copper	04/03/2017	0.383 J	GW-12636-032917-SSH-0217	0.78 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0317	0.52 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0617	1.4 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0917	0.47 JB	2.0 U	µg/L
TAL Metals	Copper (dissolved)	04/03/2017	0.383 J	GW-12636-032917-SSH-0217	1.8 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0317	1.0 JB	2.0 U	µg/L
				GW-12636-032917-SSH-0617	0.83 JB	2.0 U	µg/L
TAL Metals	Iron	04/03/2017	12.7 J	GW-12636-032917-SSH-0217	16 JB	200 U	µg/L
				GW-12636-032917-SSH-0317	6.1 JB	200 U	µg/L
TAL Metals	Iron (dissolved)	04/03/2017	12.7 J	GW-12636-032917-SSH-0317	5.5 JB	200 U	µg/L
				GW-12636-032917-SSH-0417	42 JB	200 U	µg/L
				GW-12636-032917-SSH-0617	23 JB	200 U	µg/L
				GW-12636-032917-SSH-0917	27 JB	200 U	µg/L

Table 4

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result	Sample ID	Original Result	Qualified Result	Units
TAL Metals	Lead	04/03/2017	0.664 J	GW-12636-032917-SSH-0117	1.4 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0217	0.60 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0317	0.35 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0417	0.68 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0517	0.36 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0617	0.44 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0717	0.28 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0917	0.42 JB	3.0 U	µg/L
TAL Metals	Lead (dissolved)	04/03/2017	0.664 J	GW-12636-032917-SSH-0117	0.29 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0217	0.20 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0317	0.17 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0417	0.22 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0517	0.16 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0717	0.21 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0817	0.33 JB	3.0 U	µg/L
				GW-12636-032917-SSH-0917	0.24 JB	3.0 U	µg/L
TAL Metals	Zinc	04/03/2017	7.73 J	GW-12636-032917-SSH-0117	37 B	37 U	µg/L
				GW-12636-032917-SSH-0417	7.7 JB	20 U	µg/L
TAL Metals	Zinc (dissolved)	04/03/2017	7.73 J	GW-12636-032917-SSH-0117	37 B	37 U	µg/L
TAL Metals	Antimony	04/04/2017	4.69	GW-12636-033117-SSH-1917	1.2 JB	2.0 U	µg/L
				GW-12636-033117-SSH-2017	0.92 JB	2.0 U	µg/L
TAL Metals	Antimony (dissolved)	04/04/2017	4.69	GW-12636-033117-SSH-1917	0.97 JB	2.0 U	µg/L
				GW-12636-033117-SSH-2017	0.88 JB	2.0 U	µg/L
				GW-12636-033117-SSH-2117	0.86 JB	2.0 U	µg/L
TAL Metals	Copper	04/04/2017	0.797 J	GW-12636-033117-SSH-1917	1.2 JB	2.0 U	µg/L
				GW-12636-033117-SSH-2017	4.0 B	4.0 U	µg/L

Table 4

Qualified Sample Results Due to Analyte Concentrations in the Method Blanks
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Parameter	Analyte	Analysis Date (mm/dd/yyyy)	Blank Result	Sample ID	Original Result	Qualified Result	Units
TAL Metals	Copper (dissolved)	04/04/2017	0.797 J	GW-12636-033117-SSH-1917	0.55 JB	2.0 U	µg/L
				GW-12636-033117-SSH-2017	3.0 B	3.0 U	µg/L
				GW-12636-033117-SSH-2117	3.6 B	3.6 U	µg/L
TAL Metals	Iron (dissolved)	04/04/2017	14.5 J	GW-12636-033117-SSH-2017	12 JB	200 U	µg/L
TAL Metals	Lead	04/04/2017	0.259 J	GW-12636-033117-SSH-1917	0.55 JB	3.0 U	µg/L
				GW-12636-033117-SSH-2017	0.73 JB	3.0 U	µg/L
TAL Metals	Lead (dissolved)	04/04/2017	0.259 J	GW-12636-033117-SSH-2017	0.18 JB	3.0 U	µg/L
				GW-12636-033117-SSH-2117	1.0 JB	3.0 U	µg/L
TAL Metals	Nickel (dissolved)	04/04/2017	0.302 J	GW-12636-033117-SSH-1917	0.91 JB	20 U	µg/L
TAL Metals	Silver	04/04/2017	0.0820 J	GW-12636-033117-SSH-2017	0.031 JB	0.20 U	µg/L
TAL Metals	Zinc	04/04/2017	7.44 J	GW-12636-033117-SSH-1917	7.9 JB	20 U	µg/L
				GW-12636-033117-SSH-2017	29 B	29 U	µg/L
TAL Metals	Zinc (dissolved)	04/04/2017	7.44 J	GW-12636-033117-SSH-2017	26 B	26 U	µg/L
				GW-12636-033117-SSH-2117	16 JB	20 U	µg/L
TAL Metals	Antimony	04/05/2017	0.360 J	GW-12636-033017-SSH-1617	1.7 JB	2.0 U	µg/L
TAL Metals	Antimony (dissolved)	04/05/2017	0.360 J	GW-12636-033017-SSH-1017	0.60 JB	2.0 U	µg/L
				GW-12636-033017-SSH-1217	0.32 JB	2.0 U	µg/L
				GW-12636-033017-SSH-1417	0.43 JB	2.0 U	µg/L
				GW-12636-033017-SSH-1717	0.41 JB	2.0 U	µg/L

Notes:

- U - Not detected at the associated reporting limit
- J - Estimated concentration
- B - Laboratory qualifier - result detected in associated method blank
- TAL - Target Analyte List

Table 5

Qualified Sample Results Due to Outlying Laboratory Control Sample Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Parameter	Analyte	LCS Date (mm/dd/yyyy)	LCS % Recovery	Control Limits % Recovery	Associated Sample ID	Qualified Results	Units
TCL VOC	Chloroethane	04/07/2017	12	24-147	GW-12636-033117-SSH-1917	1.0 UJ	µg/L
					GW-12636-033117-SSH-2017	1.0 UJ	µg/L
					GW-12636-033117-SSH-2117	1.0 UJ	µg/L

Notes:

- LCS - Laboratory Control Sample
- UJ - Not detected; associated reporting limit is estimated
- TCL - Target Compound List
- VOC - Volatile Organic Compounds

Table 6

Qualified Sample Data Due to Discrepancies Between Total and Dissolved Results
Groundwater Monitoring
Racer - Peregrine Site
Genesee County, Michigan
March 2017

Parameter	Sample ID	Analyte	%D	Criteria (percent)	Qualified Total Result	Qualified Dissolved Result	Units
TAL Metals	GW-12636-032917-SSH-0417	Copper	41	20	2.2 J	3.1 J	µg/L
TAL Metals	GW-12636-033017-SSH-1217	Copper	344	20	0.99 J	4.4 J	µg/L
TAL Metals	GW-12636-033017-SSH-1217	Iron	47	20	64 J	94 J	µg/L
TAL Metals	GW-12636-033017-SSH-1217	Manganese	78	20	50 J	89 J	µg/L

Notes:

- %D - Percent Difference
- J - Estimated concentration
- TAL - Target Analyte List