



**Global Environmental
Compliance & Sustainability**

July 12, 2017

Reference No. 013968

Mr. Peter Ramanauskas
Project Manager for IND 0060306099
Waste, Pesticide and Toxins Division
U.S. EPA Region 5
77 West Jackson Blvd. (DW-8J)
Chicago, IL 60604-3590

Dear Mr. Ramanauskas:

Re: RCRA Corrective Action Administrative Order on Consent (AOC)
Progress Report 65, Second Quarter 2017
GM GPS – Bedford Facility, IND 006036099, Docket No. RCRA 05-2014-0011
Bedford, Indiana

Please find enclosed the Progress Report 65 (Second Quarter 2017) for the Resource Conservation and Recovery Act (RCRA) Corrective Action (CA) project at the GM Bedford Global Propulsion Systems (GPS) (formerly Castings, Engines, and Transmissions (CET) and formerly Powertrain) Facility (Facility) at 105 GM Drive in Bedford, Indiana, and select surrounding properties (Site). This report is being submitted in accordance with the Administrative Order on Consent, effective August 4, 2014 (United States Environmental Protection Agency (U.S. EPA) Docket No. RCRA-05-2014-011).

The next RCRA quarterly progress report covering the Third Quarter of 2017 will be submitted on or before October 15, 2017.

Should you have any questions regarding this document, please do not hesitate to contact me at (313) 510-4328.

Yours truly,

General Motors LLC

Cheryl R. Hiatt
Project Manager

YD/aj/165
Encl.

c.c.: See Attached Distribution List

Mr. Ramanauskas

July 12, 2017

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GM Bedford Distribution List

Peter Ramanauskas	U.S. EPA, Region 5
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Chris Myer	IDEM Management
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Lisa LaCouver	GM Bedford Environmental Compliance
Glenn Turchan	GHD Project Director
Bill Steinmann	GHD Project Geologist
Katie Kamm	GHD Project Manager
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Second Quarter 2017 Progress Report 65 Revision 1

GM GPS – Bedford Facility
105 GM Drive
Bedford, Indiana
EPA ID# IND006036099
AOC Docket No. RCRA 05 2014 0011

GHD | 651 Colby Drive Waterloo Ontario N2V 1C2 Canada

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1. Introduction

This Progress Report is submitted by General Motors LLC (GM) in accordance with the GM Bedford Global Propulsion Systems (GPS) Facility Resource Conservation and Recovery Act (RCRA) Administrative Order on Consent (AOC – United States Environmental Protection Agency [U.S. EPA] Docket No. RCRA 05-2014-0011), executed on August 4, 2014. This report covers the period of the second calendar quarter of 2017 for the RCRA Corrective Action (CA) Project at the GM GPS – Bedford Facility (Facility) and select surrounding properties (Site), Bedford, Indiana.

The next RCRA progress report covering the third quarter of 2017 will be submitted on or before October 15, 2017.

2. List of Completed Activities

The following activities took place and the following documents were prepared and distributed during this quarter:

- Results for samples collected from Spring 018 during the quarter are presented in Table 2.1. Sample results for the monthly sampling were previously emailed to U.S. EPA and Indiana Department of Environmental Management (IDEM) as they became available. As of the end of June 2017 sampling, the 12-month rolling average concentration of polychlorinated biphenyls (PCBs) in the Spring 018 discharge is 0.13 micrograms per liter ($\mu\text{g}/\text{L}$). Routine monthly sampling was conducted on April 24, May 10, and June 14. An opportunistic sample was collected on May 1, 2017, following a rainfall event of greater than 1 inch in 24-hours. The routine samples collected on April 24, May 10, and June 14, in addition to the May opportunistic sample were non-detect for PCBs.
- The groundwater water treatment plant (GWTP) collected and treated approximately 9,882,000 gallons of water this past quarter from the Pilot Trench, Vault sumps, and wet wells. An estimated 0.10 pounds of PCBs were removed during the second quarter of 2017 through collection and treatment of the groundwater and an estimated 0.65 pounds of PCBs have been removed over the last 12 months (July 2016 through June 2017). A summary of the volumes and sample results used for this calculation is provided in Table 2.2.
- A Memo summarizing the results of the First Half 2016 EI CA750 Groundwater Monitoring was submitted to U.S. EPA and IDEM on September 13, 2016. U.S. EPA provided a third round of comments on March 2, 2017.
 - On May 8, 2017, GHD submitted a revised Memo incorporating U.S. EPA's comments received September 14, September 30, 2016, and March 2, 2017.
- The Second Half 2016 EI CA 750 Groundwater sampling was conducted on December 5 through 8, 2016. A Memo summarizing the results was compiled and sent to U.S. EPA for review.
 - U.S. EPA provided comments on June 19, 2017.



- GHD provided a response to the comments on June 23, 2017; currently under review by U.S. EPA.
- The First Half 2017 EI CA750 static groundwater levels were completed on March 8 and May 1 through 4, 2017, with sampling completed during the May event. A summary memorandum of the findings groundwater levels and sampling results was submitted on June 30.
- A Request to Terminate Groundwater Collection and Monitoring of the GUS Sump was submitted by GM to U.S. EPA on January 18, 2017, and continues to be under review.
- SES continued operation of the temporary construction WTP in support of the Storm Pond dredging operations under a Rule 5 Permit.
 - Testing of the treated effluent water from the SES temporary WTP was initiated in November 2015 as part of the Pilot Trench construction project.
 - Direct discharge of treated water from the SES temporary WTP continued for the quarter following the upgrades completed in March 2017.
 - Water was treated and sediments removed and stabilized for off-Site disposal through April. The final sediment stabilization work was completed on May 15, 2017.
 - The Pond liner was installed the week of May 16, 17, and 18, 2017.
 - Access stairs at the north and south inlets of the pond were installed June 2.
 - SES commenced demobilizing the temporary WTP the week of June 5, and water treatment at the 2,000 gpm design capacity stormwater treatment plant resumed.
- GM and GHD are currently developing a pilot test interim groundwater monitoring program ("the Pilot Trench") study to collect operational data and monitor the impact of the pilot trench to groundwater. The pilot test interim groundwater monitoring plan is set to be submitted during the third quarter of 2017.
 - Design for the next phase of the perimeter groundwater collection trench will commence before the end of 2017.
- The Area of Interest (AOI) 8 Groundwater Source Collection System Interim Measure was submitted to the U.S. EPA and IDEM on December 31, 2014.
 - GHD revised the AOI 8 IM Work Plan and submitted for U.S. EPA review on April 28, 2017.
 - Purchase orders for the oil extraction equipment have been issued and pricing for the installation has been completed by contractors. Installation is anticipated before the end of the third quarter 2017.
- GHD received additional follow-up comments from U.S. EPA on March 3, 2017 regarding the 2015 Vault Annual Report and the request to suspend pumping of the groundwater undertrain system (GUS) sump.
 - GHD's response to comments Memo was submitted to U.S. EPA on May 30, 2017.
- Formal monitoring of the East Plant, West Plant and Vault cover systems for the Second Quarter was completed on June 22, 2017. Photographic log and inspection sheets of the inspection are in Appendix A.



- The Parcels 400, 430, and 431 Excavation and Disposal Remedy was approved with modifications by the U.S. EPA.
 - The work plan, the TSCA disposal approval permit, property access agreements and deed restriction language are anticipated to be reviewed by the property owners in the third quarter of 2017.
- A public meeting was held at the GHD Site trailer on June 14 to update the public on the Corrective Action activities. The Times Mail ran an article on the meeting on June 15, 2017, and the news show Indiana Newsdesk on Bloomington PBS ran a short clip on the update on June 16, 2017. The next Public meeting to provide an update of the project and address questions and concerns from local residents is scheduled for December, 2017 on a date to be determined.
- The annual update meeting with U.S. EPA and IDEM was held at the GHD Site trailer on June 14. This meeting is used to discuss work completed in the last year, work planned for the next year, as well as discuss any on-going issues.
- Conference calls were held with U.S. EPA and IDEM on April 13, 27, May 11, 25, and June 8, 22, 2017 to discuss items related to the project.
- During daily construction activities related to the Storm Pond dredging project, on-Site construction meetings for the reporting period have been held informally daily and formally on Wednesdays. Formal construction meetings during this quarter were held on April 5, 12, 19, and 26; May 3, 10, 18, and 24; and June 7, 15, 21 and 28.
- The RCRA/CERCLA Quarterly Progress Report #64, covering the first quarter of 2017, was submitted to the U.S. EPA and IDEM on April 14, 2017.

3. Summaries of Problems and Planned Resolutions

- Issue with the pumps in the Leachate Collection System (LCS) sump is being resolved. The pumps in the LCS had failed and the riser pipe had become sufficiently corroded to prevent direct replacement pumps from working. A temporary replacement pump has been installed to allow pumping as needed based on manual measurements. Manual monitoring and pumping of the LCS and GUS system continues and replacement pump installation is scheduled to be completed in August 2017.

4. Summaries of Changes Made in the Corrective Action (CA) During the Reporting Period

The following changes made to the CA during the reporting period.

- Submission of the AOI 8 IM Work Plan Revision 1 on April 28, 2017.
- Substantial completion of the Stormwater Pond liner installation work by the end of the quarter.



5. Community Relations

The telephone number for public contact is 812-277-8956 (Katie Kamm, GHD). Individual meetings can be arranged to discuss project progress with residents as requested. Cheryl Hiatt received two phone calls from Mr. Tug Beal following the public meeting. Through an administrative error, he had not received his invitation to the public meeting and thus missed the meeting. The error in the mailing list merge has been resolved. George Seng of GHD also received a call from Tug Beal regarding the potential issue with fence replacement on his property. Mr. Seng walked the fence line for Mr. Beal and confirmed that the fence installation had been completed correctly.

A public meeting was held on June 14, 2017 at the GHD trailers to update the public on the status of the clean-up efforts. The next neighborhood/public meeting will be scheduled for December 2017. Presentations for the June 2017 meeting and past meetings are posted on the GM website at:

www.bedfordpowertraincorrectiveaction.com

The document repository continues to be located at the Bedford Public Library, with relevant project related documents available on compact disc (CD) in PDF format. Information will be updated periodically, as new documents become available. Data located in the Library repository can also be found on the aforementioned website.

6. Changes in Personnel During the Reporting Period

GHD oversight and SES personnel for on-going maintenance operations (e.g., stormwater and SSC water treatment, wet wells, Vault sums etc.) and construction (e.g., Storm Pond dredging and restoration) remain unchanged. On-Site staffing levels are expected to decrease over the next quarter as SES completes demobilization from the Stormwater Pond construction. GHD management is being restructured with the retirement of Jim McGuigan at the end of June 2017. Katie Kamm will be taking on the role of Project Manager for GHD, and Glenn Turchan will take on a more active role as Project Director as the principle in charge of the project for GHD.

7. Projected Work for the Next Reporting Period

Work anticipated for the next reporting period includes:

- Completing additional pump installations at the LCS sump and GUS sump systems in August 2017.
- Installing AOI8 NAPL Recovery System.
- Submitting a request to revise Monitoring Agreement for Spring 18.
- Initiating design for the next phase of the Perimeter Groundwater Collection Trench.



- Completing outstanding responses to comments on documentation and/or finalize reports for the following:
 - Response to Comments for the RFI Report
 - Pilot Trench Monitoring Plan
 - Construction Certification Report for Storm Pond Cleaning
- Continuing monitoring Spring 018 on a monthly basis and collection of an "opportunistic" sample if weather conditions dictate (a rainfall event of greater than 1 inch in 24-hours).
- Submitting the CFR 761.61(c) request for disposal for the off-Site fill properties west of the Facility (Parcels 400, 430, and 431) and completion of deed restriction language
- Executing the proposed CERCLA Administrative Order on Consent for Removal Action.

8. Copies of Daily Reports, Inspection Reports, Laboratory/Monitoring Data

Table 2.1 presents the quarterly results from Spring 018 sampling. Table 2.2 presents the estimated PCB mass removal for the SSC systems for the past 12 months. Table 2.3 presents the quarterly results from the testing of treated effluent water from the SES temporary WTP.

Appendix A includes the field monitoring forms for the cover system inspections and a photographic log:

1. Weeds or clover growth was noted at most Transects in the East Plant Area and the West Plant Area, which is also typically accompanied by some bare patches.
2. Light erosion was identified again along EV4, EV5, and in ES8. These areas will be filled in, monitored, and re-seeded again, as necessary, in the third quarter of 2017.
3. Some vegetation bare spots were noted on transects EV3, EV4, EV7, ES3, ES4, ES5, ES6, ES7, ES8, ES9 and ES10.
4. Transect EV9 has been mowed and wild flowers have been planted.
5. On the Hard Surface Cover Systems for transects EA1, EA2 and WA1 the cracks have been filled and the seal is coated.

Additional packages of analytical data have been, and will continue to be submitted to U.S. EPA as the validated data becomes available.

Table 2.1

Spring 018 Sampling Results - April/May/June 2017
GM CET Bedford Facility
Bedford, Indiana

Sample Location:	P015	P015	P015	P015	
Sample Identification:	Spring 018C	Spring 018C	Spring 018C	Spring 018C	
Sample Date:	SW-015-042417-MC-40903	SW-015-050117-MC-40911	SW-015-051017-MC-40917	SW-015-061417-MC-40947	
Laboratory:	4/24/2017	5/1/2017	5/10/2017	6/14/2017	
Parameters					
PCBs	ug/L	ug/L	ug/L	ug/L	
Aroclor-1016 (PCB-1016)	0.19 U	0.19 U	0.19 U	0.19 U	
Aroclor-1221 (PCB-1221)	0.19 U	0.19 U	0.19 U	0.19 U	
Aroclor-1232 (PCB-1232)	0.19 U	0.19 U	0.19 U	0.19 U	
Aroclor-1242 (PCB-1242)	0.19 U	0.19 U	0.19 U	0.19 U	
Aroclor-1248 (PCB-1248)	0.19 U	0.19 U	0.19 U	0.19 U	
Aroclor-1254 (PCB-1254)	0.19 U	0.19 U	0.19 U	0.19 U	
Aroclor-1260 (PCB-1260)	0.19 U	0.19 U	0.19 U	0.19 U	
Total PCBs	ND	ND	ND	ND	
Wet					
Total suspended solids (TSS)	ug/L	3200	4100	3600	4000

Notes:

U - Not detected at the associated reporting limit.

J - Estimated concentration.

UJ - Not detected; associated reporting limit is estimated.

ND - Non-Detect for total PCBs

12 month rolling average (May 2016 – June 2017) is 0.13 ug/L PCBs.

Table 2.2

300 gpm Design Capacity Water Treatment System and GWTP PCB Mass Removal Estimate
GM Bedford CET Facility
Bedford, Indiana

	300 gpm Design Capacity System	Groundwater Treatment Plant (GWTP)	PCB Influent Concentration ($\mu\text{g/L}$)	Mass PCB Treated (pound)
	Treated Volume (gallon)	Treated Volume (gallon)		
July 2016	410,000	1,950,000	3.3	0.065
August 2016	-	3,223,000	3.3	0.089
September 2016	-	1,130,000	4.3	0.041
October 2016	-	1,939,000	2.35	0.038
November 2016	-	1,775,000	3.5	0.052
December 2016	-	4,108,000	0.94	0.032
January 2017	-	7,303,000	2.1	0.128
February 2017	-	2,678,000	3.1	0.069
March 2017	-	5,726,000	0.79	0.038
April 2017	-	2,849,000	1.1	0.026
May 2017	-	4,648,000	1.3	0.050
June 2017	-	2,385,000	1.1	0.022
Total Estimated Volume of Water Treated, Second Quarter 2017 (gallons)			9,882,000	
Total Estimated Mass of PCB Treated, Second Quarter 2017 (pounds)			0.10	
Total Estimated Mass of PCB Treated, Since July 2016 (pounds)			0.65	

Notes:

1 Used half of the detection limit value at the associated limit to calculate the mass PCB treated.

P TestAmerica: The %RPD between the primary and confirmation column/detector is >40%.
The lower value has been reported.

The 300 gpm water treatment system did not run after July 11, 2016, when groundwater sources were shifted to the new GWTP.

Table 2.3

SES WWTP Sampling Results – April/May 2017
GM CET Bedford Facility
Bedford, Indiana

Area	P216						
Sample Location:	SES WWTP Tag 1						
Sample Identification:	WW-216-040617-PB-40885	WW-216-041317-PB-40895	WW-216-041917-PB-40901	WW-216-050417-PB-40915	WW-216-051017-PB-40921	WW-216-051017-PB-40921	WW-216-051017-PB-40922
Sample Date:	4/6/2017	4/13/2017	4/19/2017	5/4/2017	5/10/2017	5/10/2017	5/10/2017
Sample Type:	Duplicate						
	General Motors LLC - System Influent From Modutank						
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	ug/L	0.19 U	0.76 U	0.38 U	0.19 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	ug/L	0.19 U	0.76 U	0.38 U	0.19 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	ug/L	0.19 U	0.76 U	0.38 U	0.19 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	ug/L	1.1	1.9	1.6	1.1 JP	0.33	0.34
Aroclor-1248 (PCB-1248)	ug/L	0.19 U	0.76 U	0.38 U	0.19 U	0.19 U	0.19 U
Aroclor-1254 (PCB-1254)	ug/L	0.19 U	0.76 U	0.38 U	0.073 JP	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	ug/L	0.19 U	0.76 U	0.38 U	0.19 U	0.19 U	0.19 U
Total PCBs	ug/L	1.1	1.9	1.6	1.173	0.33	0.34
General Chemistry							
Ethylene glycol	ug/L	--	--	--	--	--	--
Oil and grease (HEM), polar	ug/L	--	--	--	--	--	--

Notes:

U - Not detected at the associated reporting limit.

J - Estimated concentration.

P-TestAmerica: The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

Table 2.3

SES WWTP Sampling Results – April/May 2017
GM CET Bedford Facility
Bedford, Indiana

Area	P216	P216	P216	P216	P216	P216
Sample Location:	SES WWTP Tag 1	SES WWTP Tag 1	SES WWTP Tag 1	SES WWTP Tag 8	SES WWTP Tag 8	SES WWTP Tag 8
Sample Identification:	WW-216-052217-PB-40926	WW-216-053117-PB-40942	WW-216-053117-PB-40943	WW-216-040617-PB-40883	WW-216-041917-PB-40900	WW-216-042617-PB-40906
Sample Date:	5/22/2017	5/31/2017	5/31/2017	4/6/2017	4/19/2017	4/26/2017
Sample Type:	MS/MSD, General Motors LLC - System Influent From Modutank	General Motors LLC - System Influent From Modutank	General Motors LLC - System Influent From Modutank	General Motors LLC - Effluent Post Bag Filter	MS/MSD, General Motors LLC - Effluent Post Bag Filter	General Motors LLC - Effluent Post Bag Filter
Polychlorinated biphenyl (PCBs)						
Aroclor-1016 (PCB-1016)	ug/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U
Aroclor-1221 (PCB-1221)	ug/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U
Aroclor-1232 (PCB-1232)	ug/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U
Aroclor-1242 (PCB-1242)	ug/L	0.69	0.56	0.43	0.095 U	0.095 U
Aroclor-1248 (PCB-1248)	ug/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U
Aroclor-1254 (PCB-1254)	ug/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U
Aroclor-1260 (PCB-1260)	ug/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U
Total PCBs	ug/L	0.69	0.56	0.43	ND	ND
General Chemistry						
Ethylene glycol	ug/L	--	--	--	--	--
Oil and grease (HEM), polar	ug/L	--	--	--	--	--

Notes:

U - Not detected at the associated reporting limit.

J - Estimated concentration.

P-TestAmerica: The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

Table 2.3

SES WWTP Sampling Results – April/May 2017
GM CET Bedford Facility
Bedford, Indiana

Area	P216 SES WWTP Tag 8 WW-216-050417-PB-40914 5/4/2017	P216 SES WWTP Tag 8 WW-216-051017-PB-40920 5/10/2017	P216 SES WWTP Tag 8 WW-216-052217-PB-40925 5/22/2017	P216 SES WWTP Tag 8 WW-216-053117-PB-40941 5/31/2017
Sample Location:	General Motors LLC - Effluent Post Bag Filter	General Motors LLC - Effluent Post Bag Filter	General Motors LLC - Effluent Post Bag Filter	General Motors LLC - Effluent Post Bag Filter
Sample Identification:				
Sample Date:				
Sample Type:				
Polychlorinated biphenyl (PCBs)				
Aroclor-1016 (PCB-1016)	ug/L	0.095 U	0.095 U	0.095 U
Aroclor-1221 (PCB-1221)	ug/L	0.095 U	0.095 U	0.095 U
Aroclor-1232 (PCB-1232)	ug/L	0.095 U	0.095 U	0.095 U
Aroclor-1242 (PCB-1242)	ug/L	0.095 U	0.095 U	0.095 U
Aroclor-1248 (PCB-1248)	ug/L	0.095 U	0.095 U	0.095 U
Aroclor-1254 (PCB-1254)	ug/L	0.095 U	0.095 U	0.095 U
Aroclor-1260 (PCB-1260)	ug/L	0.095 U	0.095 U	0.095 U
Total PCBs	ug/L	ND	ND	ND
General Chemistry				
Ethylene glycol	ug/L	--	--	--
Oil and grease (HEM), polar	ug/L	--	--	--

Notes:

- U - Not detected at the associated reporting limit.
- J - Estimated concentration.
- P-TestAmerica:The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

Appendix A

Second Quarter 2017 Cover System Inspection: Field Logs, Transect Figures, and Photograph Log



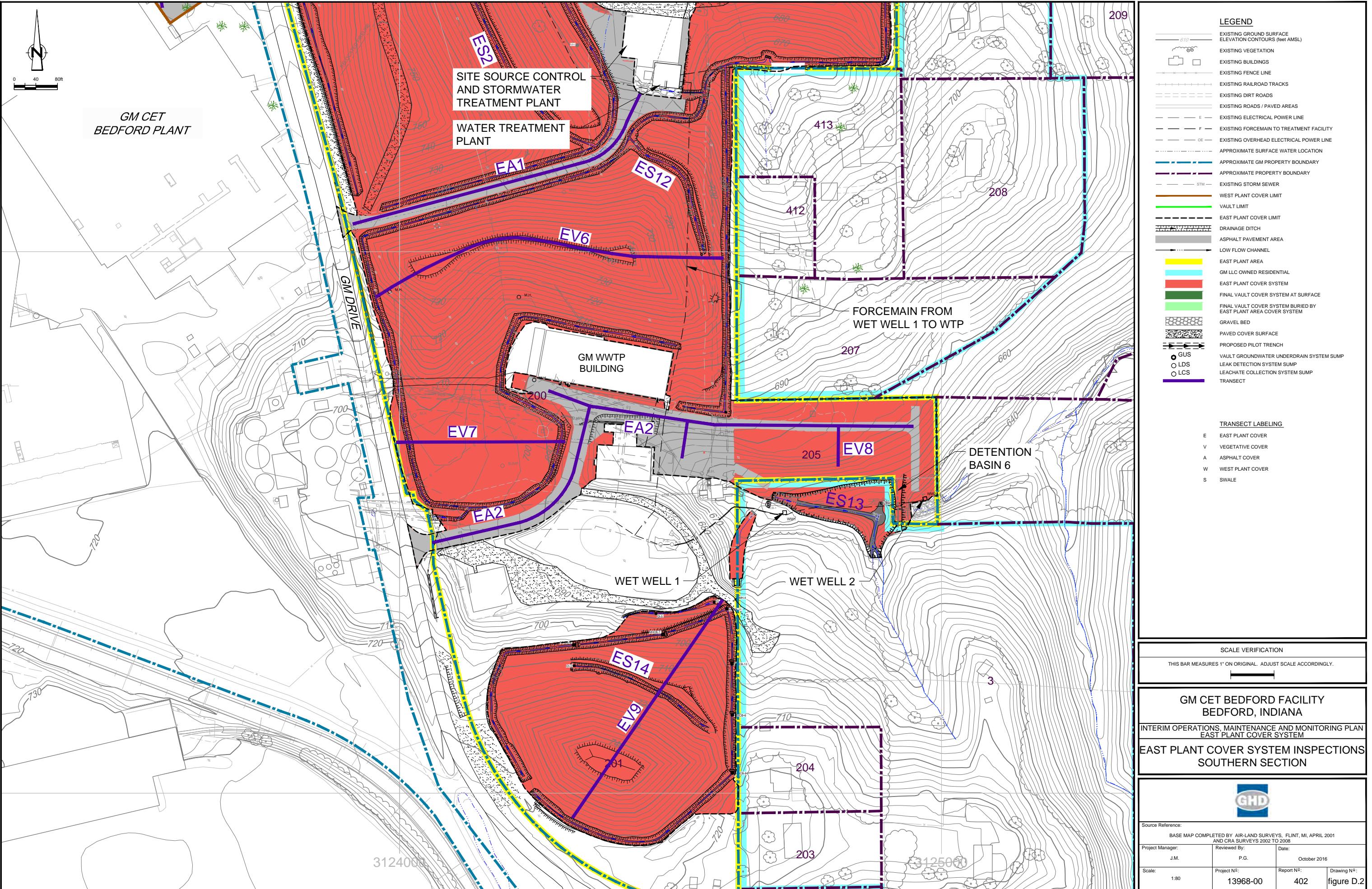


TABLE D.1

COVER SYSTEMS INSPECTION LOG
 CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
 GM CET BEDFORD FACILITY
 BEDFORD, INDIANA

Date of inspection: 6-22-17 Weather: Cloudy
 Inspector: Mike Curtis Temperature: 89°F

ITEM	TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	DATE AND NATURE OF ACTIONS COMPLETED
		NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
VEGETATED SOIL COVER SYSTEM						
Transect EV1	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth	
	- EXPOSURE OF LINER					
	- EROSION					
	- LOCALIZED SETTLEMENT/SLUMPING					
	- PONDING OF WATER/DRAINAGE					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect EV2	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth	
	- EXPOSURE OF LINER					
	- EROSION					
	- LOCALIZED SETTLEMENT/SLUMPING					
	- PONDING OF WATER/DRAINAGE					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					

TABLE D.1

COVER SYSTEMS INSPECTION LOG
 CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
 GM CET BEDFORD FACILITY
 BEDFORD, INDIANA

ITEM	TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	DATE AND NATURE OF ACTIONS COMPLETED
		NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
VEGETATED SOIL COVER SYSTEM (CONTINUED)						
Transect EV3	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth some bare spots	
	- EXPOSURE OF LINER					
	- EROSION					
	- LOCALIZED SETTLEMENT/SLUMPING					
	- PONDING OF WATER/DRAINAGE					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect EV4	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth some bare spots	
	- EXPOSURE OF LINER					
	- EROSION	✓			light erosion	
	- LOCALIZED SETTLEMENT/SLUMPING					
	- PONDING OF WATER/DRAINAGE					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect EV5	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth	
	- EXPOSURE OF LINER					
	- EROSION	✓			light erosion	
	- LOCALIZED SETTLEMENT/SLUMPING					
	- PONDING OF WATER/DRAINAGE					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					

TABLE D.1

COVER SYSTEMS INSPECTION LOG
 CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
 GM CET BEDFORD FACILITY
 BEDFORD, INDIANA

ITEM	TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	DATE AND NATURE OF ACTIONS COMPLETED
		NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
VEGETATED SOIL COVER SYSTEM (CONTINUED)						
Transect EV6	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth	
	- EXPOSURE OF LINER					
	- EROSION					
	- LOCALIZED SETTLEMENT/SLUMPING					
	- PONDING OF WATER/DRAINAGE					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect EV7	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth some bare spots	
	- EXPOSURE OF LINER					
	- EROSION					
	- LOCALIZED SETTLEMENT/SLUMPING					
	- PONDING OF WATER/DRAINAGE					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect EV8	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth	
	- EXPOSURE OF LINER					
	- EROSION					
	- LOCALIZED SETTLEMENT/SLUMPING					
	- PONDING OF WATER/DRAINAGE					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					

TABLE D.1

COVER SYSTEMS INSPECTION LOG
 CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
 GM CET BEDFORD FACILITY
 BEDFORD, INDIANA

ITEM	TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	DATE AND NATURE OF ACTIONS COMPLETED
		NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
VEGETATED SOIL COVER SYSTEM (CONTINUED)						
Transect EV9	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Has been mowed + wild flowers planted	
	- EXPOSURE OF LINER					
	- EROSION					
	- LOCALIZED SETTLEMENT/SLUMPING					
	- PONDING OF WATER/DRAINAGE					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect WV1	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth	
	- EXPOSURE OF LINER					
	- EROSION					
	- LOCALIZED SETTLEMENT/SLUMPING					
	- PONDING OF WATER/DRAINAGE					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					

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GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM	TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	NOTES	DATE AND NATURE OF ACTIONS COMPLETED
		NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
HARD SURFACE COVER SYSTEMS						
	<u>Transect EA1</u>	- QUALITY OF ASPHALT COVER	✓			<i>cracks filled + sealcoated</i>
		- PRESENCE OF CRACKING OR DISCOLORATION				
	<u>Transect EA2</u>	- QUALITY OF ASPHALT COVER	✓			<i>cracks filled + sealcoated</i>
		- PRESENCE OF CRACKING OR DISCOLORATION				
	<u>Transect WA1</u>	- QUALITY OF ASPHALT COVER	✓			<i>cracks filled + sealcoated</i>
		- PRESENCE OF CRACKING OR DISCOLORATION				
ACCESS ROAD						
	<u>ACCESS ROAD</u>	- EROSION	✓			<i>no problem</i>
		- OBSTRUCTIONS/DEBRIS	✓			<i>no problem</i>
		- POTHOLEs	✓			<i>no problem</i>
		- DAMAGE CAUSED BY VEHICULAR TRAFFIC	✓			<i>no problem</i>

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		NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
SWALE/DRAINAGE DITCHES						
Transect ES1	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect ES2	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect ES3	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth Some bare spots	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					

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CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

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		NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
SWALE/DRAINAGE DITCHES (CONTINUED)						
Transect ES4	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth some bare spots	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect ES5	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth some bare spots	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect ES6	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth some bare spots	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION					
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					

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 BEDFORD, INDIANA

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		NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
SWALE/DRAINAGE DITCHES (CONTINUED)						
Transect ES7	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth Some bare spots	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✓			no obstructions	
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth some bare spots	
Transect ES8	- EROSION	✓			light erosion	
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✓			no obstructions	
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth some bare spots	
	- EROSION					
Transect ES9	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✓			no obstructions	
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					

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		NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
SWALE/DRAINAGE DITCHES (CONTINUED)						
Transect ES10	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth some bare spots	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✓			NO obstructions	
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect ES11	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✓			NO obstructions	
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect ES12	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			Heavy weed growth	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✓			NO obstructions	
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					

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		NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
SWALE/DRAINAGE DITCHES (CONTINUED)						
Transect ES13	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			heavy weed growth	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✓			no obstructions	
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					
Transect ES13	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	✓			heavy weed growth	
	- EROSION					
	- OBSTRUCTIONS					
	- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION	✓			no obstructions	
	- SIGNS OF BURROWING BY ANIMALS					
	- ROOTING OF TREES					



Photo 1: EV1 Vault Cover System west slope vegetation.



Cover System Inspection Second Quarter 2017



Photo 2: EV1 Vault Cover facing northeast toward pond



Cover System Inspection Second Quarter 2017



Photo 3: Vegetation at ES2 facing west.



Cover System Inspection Second Quarter 2017



Photo 3: Vegetation growth at EV2



Cover System Inspection Second Quarter 2017



Photo 4: West of ES3 East Plant Area Cover, along GM Drive, facing south.



Cover System Inspection Second Quarter 2017



Photo 5: EV2 East Plant Area Cover facing west



Cover System Inspection Second Quarter 2017



Photo 6: Drainage channel at ES6 East Plant Area Cover facing west.



Cover System Inspection Second Quarter 2017



Photo 7: EV3 East Plant Area Cover facing south.



Cover System Inspection Second Quarter 2017



Photo 8: Vegetation growth on ES1 East Plant Area Cover at south end of Pond.



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Photo 9: ES9 East Plant Area Cover detention basin 2 inlet



Cover System Inspection Second Quarter 2017



Photo 10: ES9 East Plant Cover System facing southwest



Cover System Inspection Second Quarter 2017

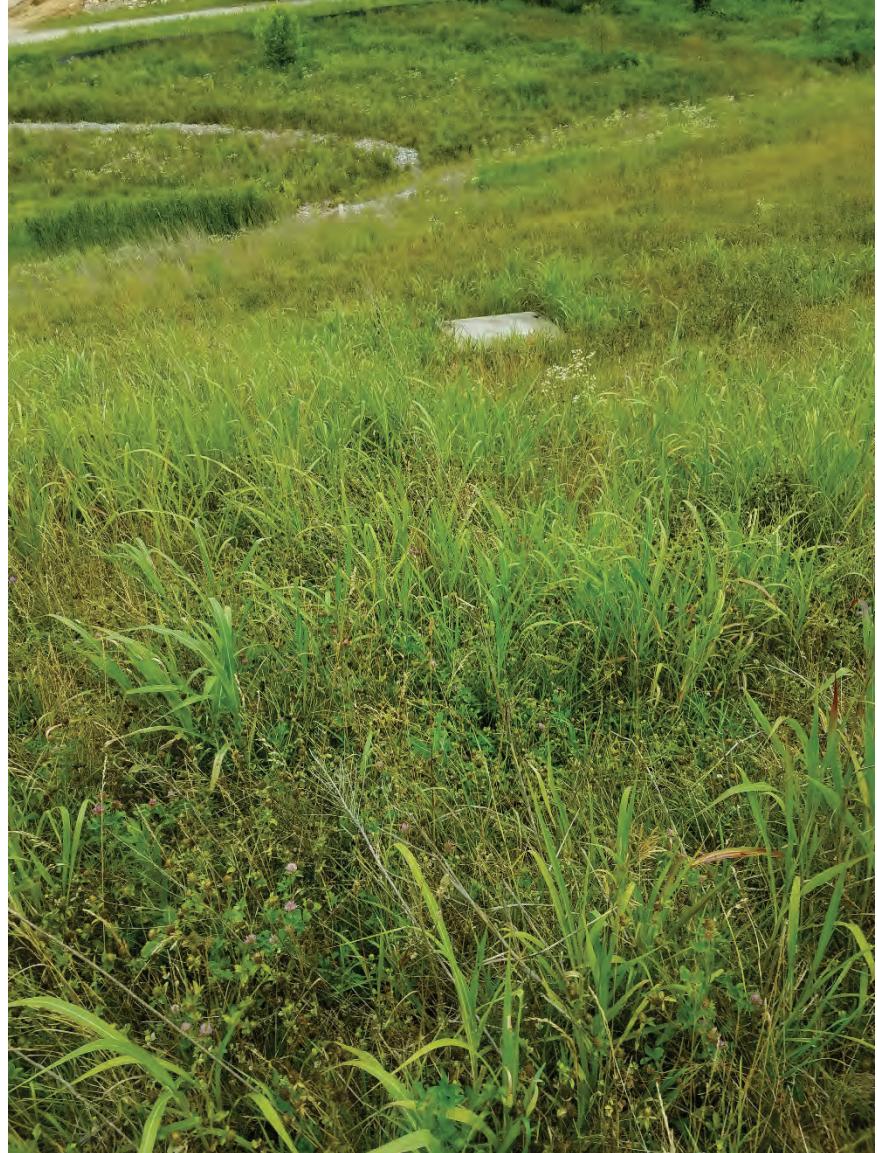


Photo 11: EV4 East Plant Area Cover looking northeast



Cover System Inspection Second Quarter 2017



Photo 12: Vegetation growth southwest of ES2



Cover System Inspection Second Quarter 2017



Photo 13: Vegetative growth along EV5 East Plant Area facing east, away from pond.



Cover System Inspection Second Quarter 2017

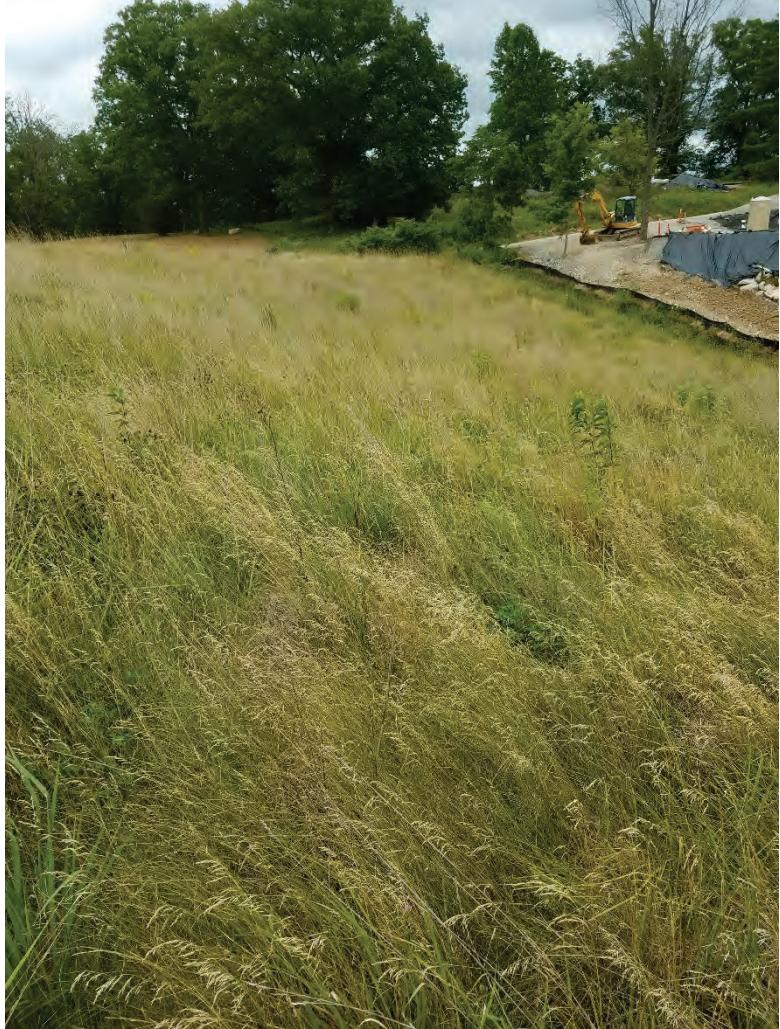


Photo 14: Vegetation growth at ES12 East Plant Area Cover facing Southeast.



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Photo 15: Facing east along EV7 East Plant Cover.



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Photo 16: East Plant Area Cover System southeast of EV6, facing west.



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Photo 17: ES14 East Plant Area Cover patchy vegetation.



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Photo 18: EV9 East Plant Area Cover vegetation growth.



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Photo 19: ES14 East Plant Area Cover vegetation facing west.



Cover System Inspection Second Quarter 2017