Global Environmental
Compliance & Sustainability

January 13, 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 62, Fourth Quarter 2016
GM CET – Bedford Facility, IND 006036099, Docket No. RCRA 05-2014-0011
Bedford, Indiana

Please find enclosed the Progress Report 63 (Fourth Quarter 2016) for the Resource Conservation and Recovery Act (RCRA) Corrective Action (CA) project at the GM Castings, Engines, and Transmissions (CET; formerly Powertrain) Bedford 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 First Quarter of 2017 will be submitted on or before April 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

PG/aj/166
Encl.

c.c.: See Attached Distribution List

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Fourth Quarter 2016 Progress Report 63

GM CET – 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
013968 | Report No 403 | January 13 2017

Table of Contents

Table Index

Appendix Index

1. Introduction

This Progress Report is submitted by General Motors LLC (GM) in accordance with the GM Bedford Castings, Engines, Transmissions (CET) 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 fourth calendar quarter of 2016 for the RCRA Corrective Action (CA) Project at the GM CET (formerly Powertrain) – Bedford Facility (Facility) and select surrounding properties (Site), Bedford, Indiana.

The next RCRA progress report covering the first quarter of 2017 will be submitted on or before April 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 December 2016 sampling, the 12-month rolling average concentration of polychlorinated biphenyls (PCBs) in the Spring 018 discharge is 0.13 micrograms per liter (µg/L). Routine monthly sampling was conducted on October 12, November 9, and December 14. An opportunistic sample was collected on October 21, 2016, following a rainfall event of greater than 1 inch in 24-hours. The routine samples collected on October 12, November 9, and December 14, in addition to the October opportunistic sample were non-detect for PCBs.
- The new groundwater water treatment plant (GWTP) collected and treated approximately 7,822,000 gallons of water this past quarter. An estimated 0.12 pounds of PCBs were removed during the fourth quarter of 2016 through collection and treatment of the groundwater and an estimated 0.56 pounds of PCBs for 2016. A summary of the volumes and sample results used for this calculation is provided in Table 2.2.
- The revised Additional Soil Investigation for Unsampled Areas Work Plan was approved by U.S. EPA on March 29, 2016.
    - The finalized work plan was submitted on April 1, 2016.
    - Sampling activities under this plan began July 11, 2016.
    - A memo summarizing the results from the sampling activities is being completed by GHD.
- The fourth quarter 2016 EI CA750 monitoring of static groundwater levels and sampling was completed during the week of December 5, 2016.

- SES continued operation of the temporary construction WTP in support of the Storm Pond dredging operations under a Rule 5 Permit.

    1. Testing of the treated effluent water from the SES temporary WTP was initiated in November 2015 as part of the Pilot Trench construction project.

    2. The SES temporary WTP plant began treating water from the Storm Pond in August 2016 to maintain water levels within the Pond during the wet-dredging portion of the Storm Pond dredging project. The wet-dredging portion of the project was completed in early November 2016.

    3. Upon completion of the wet dredging SES removed the remaining water in the Pond and began dewatering the remaining sediment within the Pond. This water was treated through the SES WTP. In order to maintain the Pond in a dewatered state, SES pumps stormwater from the north and south Pond inlets to the SES WTP for treatment prior to discharge under the Rule 5 permit.

    4. On the evening of Sunday, November 20, 2016 based on observation, from the north Pond inlet, the Plant discovered that an historical plug in one of the process sewers had become partially dislodged during recent Plant storm sewer cleaning activities, resulting in a small amount of process water mixing with storm water. There was no discharge to the creek. The comingled water was rerouted to the plant's process water for treatment. The plug in the process sewer was reinstated. Once the plug was complete and the comingled water was treated through the plant's WTP, SES resumed treating stormwater through their temporary system.

    5. Following the resumption of stormwater treatment through the SES WTP, water was treated in batches to ensure successful treatment. Treated water was stored pending receipt of analytical results. Samples collected from the treated effluent, in December 6, 2016, exceeded the discharge limit so the batched water was returned to the modutank for re-treatment. Samples collected from the effluent on December 9, 2016 also exceeded the discharge limit. Treated stormwater was not discharged to the creek and is being treated through the Plant's process treatment system. Additional description of this problem is described below.

    6. Table 2.3 presents a summary of the sample results from the batch testing, including effluent results for the fourth quarter 2016.

- 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 first quarter of 2017.

- The new GWTP is treating all groundwater from the Pilot Trench and Vault sumps and wet wells.

- 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.

    - Approval of the AOI 8 IM Work Plan with additional U.S. EPA Comments was received on July 1, 2015.

- GHD is currently working on the design and finalizing the Work Plan to be completed within the first quarter 2017.

- Formal monitoring of the East Plant, West Plant and Vault cover systems for the Fourth Quarter was completed on December 22, 2016.
- The Parcels 400, 430, and 431 Excavation and Disposal Remedy was approved with modifications by the U.S. EPA.
  - The plan is anticipated to be reviewed by the property owners and U.S. EPA in the first quarter of 2017.
- The Basis of Design Report (Conceptual Design Report) Stormwater Pond Sediment Remediation; AOI 10 Interim Measure was submitted to U.S. EPA and IDEM on July 4, 2016.
  - GHD received comments from the U.S. EPA regarding the Conceptual Design Report on July 12, 2016. GHD responded to the comments on July 19, 2016.
  - U.S. EPA provided additional comments on the Conceptual Design Report on July 21, 2016, which GM responded to on July 22, 2016.
  - U.S. EPA provided formal approval of the Conceptual Design Report on August 11, 2016.
- The Draft Detailed (100%) Design Report Stormwater Pond Sediment Remediation; AOI 10 Interim Measure was submitted to U.S. EPA and IDEM on December 23, 2016.
- A public meeting to provide an update on the project and address questions and concerns from local residents was held on December 7, 2016. Representatives of U.S. EPA, IDEM, GM and GHD were on hand to discuss the project with residents.
- Conference calls were held with U.S. EPA and IDEM on October 28, and November 17 to discuss items related to the project. A meeting was held with U.S. EPA and IDEM on December 8, 2016 to discuss comments on the RCRA Facility Investigation and to give an update to current project issues related to the Vault gravel underdrain system pump and the Storm Pond dredging delays.
- With the resumption of 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 October 5, 12, 19, and 26; November 2, 9, 16, and 30; and December 7, 14, and 21.
- The RCRA/CERCLA Quarterly Progress Report #62, covering the third quarter of 2016, was submitted to the U.S. EPA and IDEM on October 14, 2016.

3. Summaries of all Problems and Planned Resolutions

- Additional concrete sealing may be completed on a swallet identified upgradient of Spring 018, in what is known as Pool 2. It is thought that a further reduction in surface water infiltration to

the epikarst supplying Spring 018 may provide further stabilization of the PCB detections at the spring. Monthly monitoring continues.

- The 2nd Quarter 2016 Progress Report discussed an issue with the pumps in the Leachate Collection System (LCS) sump. In summary, the pumps in the LCS failed and the riser pipe had become sufficiently corroded to prevent direct replacement pumps from working. A temporary pump has been installed to allow pumping as needed based on manual measurements. During a call on November 17, the necessity of the GUS sump pumping was revisited from a technical basis. GHD will be providing an engineering memorandum to U.S.EPA requesting the GUS sump pumping stop.
- Two issues related to stormwater were encountered during Sediment Removal activities in the Stormwater Pond during the 4th Quarter 2016.

    1. During the dry dredging operation, stormwater entering the pond was diverted to the SES WTP. On November 20, 2016, during routine inspection of the pump for at the northern storm sewer collection point, SES workers noticed the water exhibited a pinkish hue. Facility personnel were notified. At the time of the discovery, the SES WTP had been shut down. While the situation was investigated, stormwater, including the stormwater being stored in the modutanks, were re-routed to the Plant's Process WTP. The Facility was able to identify the source of the pink-tinted water came from an historical cross-sewer plug that was loosened during Facility storm sewer cleaning operations. The plug was re-established and the comingled water was treated by the Facility process WTP during the repair.

        During the approximate two week period while the cross connection was addressed and fixed, a number of rain events have occurred, resulting in the pond having to be flooded in order to contain the accumulating stormwater. During this time, sediment stabilization activities could not occur.

    2. Upon resuming stormwater treatment through the SES WTP, stormwater was treated in batches to ensure the system continued to be in proper working order. The initial testing following resumption of the WTP showed non-detect PCB results for the effluent water. However, elevated PCB concentrations were noted in the influent water. This water was not discharged to the creek. The source of the elevated PCB concentrations is believed to have been caused by the storm sewer cleaning efforts conducted by the Facility. Most of the material was collected during the cleaning activity, prior to entering the pond, but some reached the pond through jetting activities associated with the sewer cleaning and flushing of the lines following a rain event. As the SES WTP was not designed to treat these elevated PCB concentrations, treatment of the stormwater was resumed by the Facility WTP. The concentration of PCBs in the pond has continued to decline since the initial discovery of the elevated PCB results.

    3. Modifications are being made to the SES WTP which address the higher PCB concentrations and increase treatment capacity. During this time, dewatering of the pond under the Rule 5 Permit and sediment stabilization activities have been suspended.

    4. Because of the fine nature of the remaining sediments and their ability to hold onto (and not release water), GM has determined that the bottom cannot be stabilized in place prior too

lining the pond. Sediments will be stabilized enough to remove to the more solid clay below it and taken to the Heritage Landfill for disposal.

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

There were no changes made in the CA during the reporting period.

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.

A public meeting was held on December 7, 2016 at the GHD trailers to the update the public on the status of the clean-up efforts. The next neighborhood/public meeting will be scheduled for June/July 2017. Presentations for 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. All 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 sumps etc.) and construction (e.g., Storm Pond dredging and restoration) remain unchanged. On-Site staffing levels are expected to remain the same as construction work on the Stormwater Pond and GWTP operation continues, although a construction oversight person will not be onsite until dewatering of the pond has allowed resumption of sediment stabilization and removal.

7. Projected Work for the Next Reporting Period

Work anticipated for the next reporting period includes:

- Completing the sediment removal and liner construction in the Stormwater Pond (Area of Interest [AOI] 10).
- Completing repairs to the LCS sump system.

- Completing outstanding responses to comments on documentation and/or finalize reports for the following:
  - AOI 8 Groundwater Source Collection System IM and Design
- Completion of the Pilot Trench Monitoring Plan and Construction Certification Report.
- 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).
- Submission of the CFR 761.61(c) request for disposal for the off-Site fill properties west of the Facility (Parcels 400, 430, and 431).
- Finalizing 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. Small animal burrow holes, likely attributed to moles are present over parts of the East Plant cover system. GHD contacted the liner manufacturers and installation companies and confirmed that the small animals do not burrow deep enough to damage the liner; therefore, there is no immediate risk to the Cover. The vegetation will continue to be monitored.
3. There was evidence of larger burrowing animals, which is believed to be attributed to woodchucks, near EV6 during the fourth quarter 2015 inspection. Indiana Department of Natural Resources (IDNR) has been consulted on identifying, and subsequently live trapping and relocating the animal(s), if necessary. The burrow appears to still be inactive during this quarter's inspection (see Photograph 15).
4. Light erosion was identified again along EV4, EV5, and in ES6. These areas will be monitored and re-seeded again as necessary in the second or third quarter of 2017.
5. There are some erosion ruts along the east side of GM Drive, outside the cover system area adjacent to power poles. This does not appear to be due to any on-Site RCRA activities, but could have an impact on the liner system in the ditch. Work is still to be conducted on power poles in this area by the utility company. Repairs will be addressed after the power pole work is completed.

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 - October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Sample Location:		**Spring 018C**	**Spring 018C**	**Spring 018C**	**Spring 018C**
Sample ID:		**SW-015-10111216-MC-40553**	**SW-015-102116-MC-40462**	**SW-015-110916-MC-40587**	**SW-015-121416-MC-40632**
Sample Date:		**10/12/2016**	**10/21/2016**	**11/9/2016**	**12/14/2016**
Laboratory:		**TestAmerica**	**TestAmerica**	**TestAmerica**	**TestAmerica**
Parameters	**Units**				
PCBs					
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U
Total PCBs	µg/L	ND	ND	ND	ND
Wet					
Total suspended solids (TSS)	µg/L	12000	6200	1100	2400

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 (January 2016 – December 2016) 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 Treated Volume (gallon)	Groundwater Treatment Plant (GWTP) Treated Volume (gallon)	PCB Influent Concentration (µg/L)	Mass PCB Treated (pound)
January 2016	1,840,000	-	1.5 p / 1.2 p	0.021
February 2016	1,296,000	-	5	0.054
March 2016[2]	2,422,000	-	3.8	0.077
April 2016	2,336,000	-	1.1	0.021
May 2016	1,947,000	-	1.4	0.023
June 2016	608,000	-	9.3	0.047
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

Total Estimated Volume of Water Treated, Fourth Quarter 2016 (gallons)	7,822,000
Total Estimated Mass of PCB Treated, Fourth Quarter 2016 (pounds)	0.12
Total Estimated Mass of PCB Treated, Since January 2016 (pounds)	0.56

Notes:

1 Used half of the detection limit value at the associated limit to calculate the mass PCB treated.
2 Influent not sampled March 2016, so used average of previous 12 months inclusive of March 2015.
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, when groundwater sources were shifted to the new GWTP.

Table 2.3

SES WWTP Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216
Sample Location:		SES Modutank Influent	SES WWTP Tag 1	SES WWTP Tag 4	SES WWTP Tag 5	SES WWTP Tag 6	SES WWTP Tag 8
Sample Identification:		WW-216-101016-PB-40552	WW-216-101016-PB-40551	WW-216-101016-PB-40550	WW-216-101016-PB-40549	WW-216-101016-PB-40548	WW-216-101016-PB-40547
Sample Date:		10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Sample Type:							
	Units	**Stormwater Influent to Modutank**	**System Influent From Modutank**	**Sand Filter #2 Effluent**	**Carbon Unit #1 Effluent**	**Carbon Unit #2 Effluent**	**Effluent Post Bag Filter**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.91	0.36	0.39	0.17 J	0.21	0.19 U
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Total PCBs	µg/L	0.91	0.36	0.39	0.17 J	0.21	ND
General Chemistry							
Ethylene glycol	µg/L	--	--	--	--	--	--
Oil and grease (HEM), polar	µg/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 Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216
Sample Location:		SES Modutank Influent	SES Modutank Influent	SES WWTP Tag 1	SES WWTP Tag 3	SES WWTP Tag 6	SES WWTP Tag 7
Sample Identification:		WW-216-102016-PB-40560	WW-216-102016-PB-40561	WW-216-102016-PB-40559	WW-216-102016-PB-40558	WW-216-102016-PB-40556	WW-216-102016-PB-40557
Sample Date:		10/20/2016	10/20/2016	10/20/2016	10/20/2016	10/20/2016	10/20/2016
Sample Type:			Duplicate				
	Units	**Stormwater Influent to Modutank**	**Stormwater Influent to Modutank**	**System Influent From Modutank**	**Sand Filter #1 Effluent**	**Carbon Unit #2 Effluent**	**Carbon Unit #1 Effluent (series)**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	1.8	1.7	0.54	0.23	0.19 U	0.19 U
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Total PCBs	µg/L	1.8	1.7	0.54	0.23	ND	ND
General Chemistry							
Ethylene glycol	µg/L	--	--	--	--	--	--
Oil and grease (HEM), pola	µg/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 Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216
Sample Location:		SES WWTP Tag 8	SES WWTP Tag 1	SES WWTP Tag 1	SES WWTP Tag 1	SES WWTP Tag 3	SES WWTP Tag 3
Sample Identification:		WW-216-102016-PB-40555	WW-216-102716-PB-40569	WW-216-102716-PB-40574	WW-216-102716-PB-40579	WW-216-102716-PB-40568	WW-216-102716-PB-40573
Sample Date:		10/20/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016
Sample Type:							
	Units	**Effluent Post Bag Filter**	**System Influent From Modutank**	**System Influent From Modutank**	**System Influent From Modutank**	**Sand Filter #1 Effluent**	**Sand Filter #1 Effluent**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	0.094 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.094 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.094 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.094 U	0.41	0.40	0.21	0.33	0.42
Aroclor-1248 (PCB-1248)	µg/L	0.094 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.094 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.094 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Total PCBs	µg/L	ND	0.41	0.4	0.21	0.33	0.42
General Chemistry							
Ethylene glycol	µg/L	--	--	--	--	--	--
Oil and grease (HEM), pola	µg/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 Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216
Sample Location:		SES WWTP Tag 3	SES WWTP Tag 6	SES WWTP Tag 6	SES WWTP Tag 6	SES WWTP Tag 7	SES WWTP Tag 7
Sample Identification:		WW-216-102716-PB-40578	WW-216-102716-PB-40566	WW-216-102716-PB-40571	WW-216-102716-PB-40576	WW-216-102716-PB-40567	WW-216-102716-PB-40572
Sample Date:		10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016	10/27/2016
Sample Type:							
	Units	**Sand Filter #1 Effluent**	**Carbon Unit #2 Effluent**	**Carbon Unit #2 Effluent**	**Carbon Unit #2 Effluent**	**Carbon Unit #1 Effluent (series)**	**Carbon Unit #1 Effluent (series)**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.27	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Total PCBs	µg/L	0.27	ND	ND	ND	ND	ND
General Chemistry							
Ethylene glycol	µg/L	--	--	--	--	--	--
Oil and grease (HEM), pola	µg/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 Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216
Sample Location:		SES WWTP Tag 7	SES WWTP Tag 8	SES WWTP Tag 8	SES WWTP Tag 8	SES Modutank Influent	SES WWTP Tag 1
Sample Identification:		WW-216-102716-PB-40577	WW-216-102716-PB-40565	WW-216-102716-PB-40570	WW-216-102716-PB-40575	WW-216-110316-PB-40586	WW-216-110316-PB-40585
Sample Date:		10/27/2016	10/27/2016	10/27/2016	10/27/2016	11/3/2016	11/3/2016
Sample Type:							
	Units	**Carbon Unit #1 Effluent (series)**	**Effluent Post Bag Filter**	**Effluent Post Bag Filter**	**Effluent Post Bag Filter**	**Stormwater Influent to Modutank**	**System Influent From Modutank**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.094 U	0.094 U	0.094 U	0.19 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.094 U	0.094 U	0.094 U	0.19 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.094 U	0.094 U	0.094 U	0.19 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.19 U	0.094 U	0.094 U	0.094 U	7.6	1.1
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.094 U	0.094 U	0.094 U	0.19 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.094 U	0.094 U	0.094 U	0.19 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.094 U	0.094 U	0.094 U	0.19 U	0.19 U
Total PCBs	µg/L	ND	ND	ND	ND	7.6	1.1
General Chemistry							
Ethylene glycol	µg/L	--	--	--	--	--	--
Oil and grease (HEM), pola	µg/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 Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216
Sample Location:		SES WWTP Tag 4	SES WWTP Tag 6	SES WWTP Tag 7	SES WWTP Tag 8	SES WWTP Tag 8	SES Modutank Influent
Sample Identification:		WW-216-110316-PB-40584	WW-216-110316-PB-40582	WW-216-110316-PB-40583	WW-216-110316-PB-40580	WW-216-110316-PB-40581	WW-216-111016-PB-40594
Sample Date:		11/3/2016	11/3/2016	11/3/2016	11/3/2016	11/3/2016	11/10/2016
Sample Type:						Duplicate	
	Units	**Sand Filter #2 Effluent**	**Carbon Unit #2 Effluent**	**Carbon Unit #1 Effluent (series)**	**Effluent Post Bag Filter**	**Effluent Post Bag Filter**	**Stormwater Influent to Modutank**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U	2.1
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.095 U	0.095 U	0.19 U
Total PCBs	µg/L	ND	ND	ND	ND	ND	2.1
General Chemistry							
Ethylene glycol	µg/L	--	--	--	--	--	--
Oil and grease (HEM), pola	µg/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 Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216
Sample Location:		SES WWTP Tag 1	SES WWTP Tag 4	SES WWTP Tag 6	SES WWTP Tag 7	SES WWTP Tag 8	SES WWTP Tag 1
Sample Identification:		WW-216-111016-PB-40593	WW-216-111016-PB-40592	WW-216-111016-PB-40590	WW-216-111016-PB-40591	WW-216-111016-PB-40589	WW-216-111716-PB-40601
Sample Date:		11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/17/2016
Sample Type:							
	Units	**System Influent From Modutank**	**Sand Filter #2 Effluent**	**Carbon Unit #2 Effluent**	**Carbon Unit #1 Effluent (series)**	**Effluent Post Bag Filter**	**System Influent From Modutank**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	2.0	0.79	0.19 U	0.19 U	0.094 U	1.1
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U
Total PCBs	µg/L	2	0.79	ND	ND	ND	1.1
General Chemistry							
Ethylene glycol	µg/L	--	--	--	--	--	--
Oil and grease (HEM), pola	µg/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 Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216
Sample Location:		SES WWTP Tag 4	SES WWTP Tag 6	SES WWTP Tag 7	SES WWTP Tag 8	SES Modutank Influent	SES WWTP Tag 1
Sample Identification:		WW-216-111716-PB-40600	WW-216-111716-PB-40598	WW-216-111716-PB-40599	WW-216-111716-PB-40597	WW-216-112216-PB-40609	WW-216-112216-PB-40608
Sample Date:		11/17/2016	11/17/2016	11/17/2016	11/17/2016	11/22/2016	11/22/2016
Sample Type:							
	Units	**Sand Filter #2 Effluent**	**Carbon Unit #2 Effluent**	**Carbon Unit #1 Effluent (series)**	**Effluent Post Bag Filter**	**Stormwater Influent to Modutank**	**System Influent From Modutank**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	--	--
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	--	--
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	--	--
Aroclor-1242 (PCB-1242)	µg/L	0.88	0.19 U	0.19 U	0.094 U	--	--
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	--	--
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	--	--
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	--	--
Total PCBs	µg/L	0.88	ND	ND	ND	--	--
General Chemistry							
Ethylene glycol	µg/L	--	--	--	--	10000 U	--
Oil and grease (HEM), pola	µg/L	--	--	--	--	6900	4700

Notes:

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Table 2.3

SES WWTP Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216
Sample Location:		SES WWTP Tag 4	SES WWTP Tag 6	SES WWTP Tag 7	SES WWTP Tag 8	SES Modutank Influent	SES WWTP Tag 1
Sample Identification:		WW-216-112216-PB-40607	WW-216-112216-PB-40605	WW-216-112216-PB-40606	WW-216-112216-PB-40604	WW-216-112916-PB-40615	WW-216-112916-PB-40614
Sample Date:		11/22/2016	11/22/2016	11/22/2016	11/22/2016	11/29/2016	11/29/2016
Sample Type:							
	Units	**Sand Filter #2 Effluent**	**Carbon Unit #2 Effluent**	**Carbon Unit #1 Effluent (series)**	**Effluent Post Bag Filter**	**Stormwater Influent to Modutank**	**System Influent From Modutank**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	--	--	--	--	1.9 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	--	--	--	--	1.9 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	--	--	--	--	1.9 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	--	--	--	--	160	41
Aroclor-1248 (PCB-1248)	µg/L	--	--	--	--	1.9 U	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	--	--	--	--	1.9 U	0.19 U
Aroclor-1260 (PCB-1260)	µg/L	--	--	--	--	14	2.8
Total PCBs	µg/L	--	--	--	--	174	43.8
General Chemistry							
Ethylene glycol	µg/L	10000 U	10000 U	10000 U	10000 U	--	--
Oil and grease (HEM), pola	µg/L	4700 U	4700 U	4700 U	4700 U	--	--

Notes:

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

Table 2.3

SES WWTP Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216
Sample Location:		SES WWTP Tag 4	SES WWTP Tag 6	SES WWTP Tag 7	SES WWTP Tag 8	SES Modutank Influent	SES WWTP Tag 1
Sample Identification:		WW-216-112916-PB-40613	WW-216-112916-PB-40611	WW-216-112916-PB-40612	WW-216-112916-PB-40610	WW-216-120616-PB-40622	WW-216-120616-PB-40620
Sample Date:		11/29/2016	11/29/2016	11/29/2016	11/29/2016	12/6/2016	12/6/2016
Sample Type:							
	Units	**Sand Filter #2 Effluent**	**Carbon Unit #2 Effluent**	**Carbon Unit #1 Effluent (series)**	**Effluent Post Bag Filter**	**Stormwater Influent to Modutank**	**System Influent From Modutank**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	1.9 U	0.94 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	1.9 U	0.94 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	1.9 U	0.94 U
Aroclor-1242 (PCB-1242)	µg/L	3.2	0.19 U	0.25	0.094 U	270	110
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	1.9 U	0.94 U
Aroclor-1254 (PCB-1254)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	1.9 U	0.94 U
Aroclor-1260 (PCB-1260)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	28	7.9
Total PCBs	µg/L	3.2	ND	0.25	ND	298	117.9
General Chemistry							
Ethylene glycol	µg/L	--	--	--	--	--	--
Oil and grease (HEM), pola	µg/L	--	--	--	--	--	--

Notes:

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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 Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	P216	P216
Sample Location:		SES WWTP Tag 1	SES WWTP Tag 4	SES WWTP Tag 6	SES WWTP Tag 7	SES WWTP Tag 8	SES WWTP Tag 1
Sample Identification:		WW-216-120616-PB-40621	WW-216-120616-PB-40619	WW-216-120616-PB-40617	WW-216-120616-PB-40618	WW-216-120616-PB-40616	WW-216-120916-PB-40627
Sample Date:		12/6/2016	12/6/2016	12/6/2016	12/6/2016	12/6/2016	12/9/2016
Sample Type:		Duplicate					
	Units	**System Influent From Modutank**	**Sand Filter #2 Effluent**	**Carbon Unit #2 Effluent**	**Carbon Unit #1 Effluent (series)**	**Effluent Post Bag Filter**	**System Influent From Modutank**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	0.94 U	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U
Aroclor-1221 (PCB-1221)	µg/L	0.94 U	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U
Aroclor-1232 (PCB-1232)	µg/L	0.94 U	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U
Aroclor-1242 (PCB-1242)	µg/L	97	17	0.63	1.5	0.094 U	25
Aroclor-1248 (PCB-1248)	µg/L	0.94 U	0.19 U	0.19 U	0.19 U	1.6	0.19 U
Aroclor-1254 (PCB-1254)	µg/L	0.94 U	0.19 U	0.19 U	0.19 U	0.094 U	4.5
Aroclor-1260 (PCB-1260)	µg/L	7.7	1.5	0.27	0.24	0.48	2.0
Total PCBs	µg/L	104.7	18.5	0.9	1.74	2.08	31.5
General Chemistry							
Ethylene glycol	µg/L	--	--	--	--	--	--
Oil and grease (HEM), pola	µg/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 Batch Sampling Results – October/November/December 2016
GM CET Bedford Facility
Bedford, Indiana

Area		P216	P216	P216	P216	216	216
Sample Location:		SES WWTP Tag 4	SES WWTP Tag 6	SES WWTP Tag 7	SES WWTP Tag 8	216-Lake Tank	216-Modutank
Sample Identification:		WW-216-120916-PB-40626	WW-216-120916-PB-40624	WW-216-120916-PB-40625	WW-216-120916-PB-40623	WW-216-121416-PB-40639	WW-216-121416-PB-40638
Sample Date:		12/9/2016	12/9/2016	12/9/2016	12/9/2016	12/14/2016	12/14/2016
Sample Type:							
	Units	**Sand Filter #2 Effluent**	**Carbon Unit #2 Effluent**	**Carbon Unit #1 Effluent (series)**	**Effluent Post Bag Filter**	**Lake Tank**	**Modutank**
Polychlorinated biphenyl (PCBs)							
Aroclor-1016 (PCB-1016)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U	3.8 U
Aroclor-1221 (PCB-1221)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U	3.8 U
Aroclor-1232 (PCB-1232)	µg/L	0.19 U	0.19 U	0.19 U	0.094 U	0.19 U	3.8 U
Aroclor-1242 (PCB-1242)	µg/L	5.0	0.19 U	0.19 U	0.094 U	26	3.8 U
Aroclor-1248 (PCB-1248)	µg/L	0.19 U	0.75	0.44	0.85	0.19 U	660
Aroclor-1254 (PCB-1254)	µg/L	0.97	0.24	0.10 J	0.38	0.19 U	3.8 U
Aroclor-1260 (PCB-1260)	µg/L	0.51	0.13 J	0.19 U	0.19	1.0	74
Total PCBs	µg/L	6.48	1.12 J	0.54 J	1.42	27	734
General Chemistry							
Ethylene glycol	µg/L	--	--	--	--	--	--
Oil and grease (HEM), pola	µg/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.

Appendices

Appendix A
Fourth Quarter 2016 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: 12/21/2016 Weather: sunny

Inspector: Mike Curtis 45 degrees F

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	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	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect EV2	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- 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	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	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect EV4	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION	X		slight erosion	
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect EV5	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION	X		slight 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	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	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		groundhog hole	
		- ROOTING OF TREES				
	Transect EV7	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect EV8	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- 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	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	X		heavy weed growth and some bare spots	
		- EXPPOSURE OF LINER				
		- EROSION				
		- LOCALIZED SETTLEMENT/SLUMPING				
		- PONDING OF WATER/DRAINAGE				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect WV1	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EXPPOSURE 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		DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED			
HARD SURFACE COVER SYSTEMS							
	Transect EA1	- QUALITY OF ASPHALT COVER					
		- PRESENCE OF CRACKING OR DISCOLORATION	X		fill cracks,sealcoat		
	Transect EA2	- QUALITY OF ASPHALT COVER					
		- PRESENCE OF CRACKING OR DISCOLORATION	X		fill cracks,sealcoat		
	Transect WA1	- QUALITY OF ASPHALT COVER					
		- PRESENCE OF CRACKING OR DISCOLORATION	X		fill cracks,sealcoat		
ACCESS ROAD							
	ACCESS ROAD	- EROSION	X		fill with gravel		
		- OBSTRUCTIONS/DEBRIS					
		- POTHOLES	X		fill with gravel		
		- DAMAGE CAUSED BY VEHICULAR TRAFFIC	X		fill with gravel		

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	DATE AND NATURE OF ACTIONS COMPLETED
			NO PROBLEMS	CORRECTIVE ACTION REQUIRED		
SWALE/DRAINAGE DITCHES						
	Transect ES1	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	trees need cut
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES2	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	trees need cut
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES3	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- 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	DATE AND NATURE OF ACTIONS COMPLETED
			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	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES5	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES6	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION	X		slight erosion	
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- 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	DATE AND NATURE OF ACTIONS COMPLETED
			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	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES8	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES9	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				

TABLE D.1

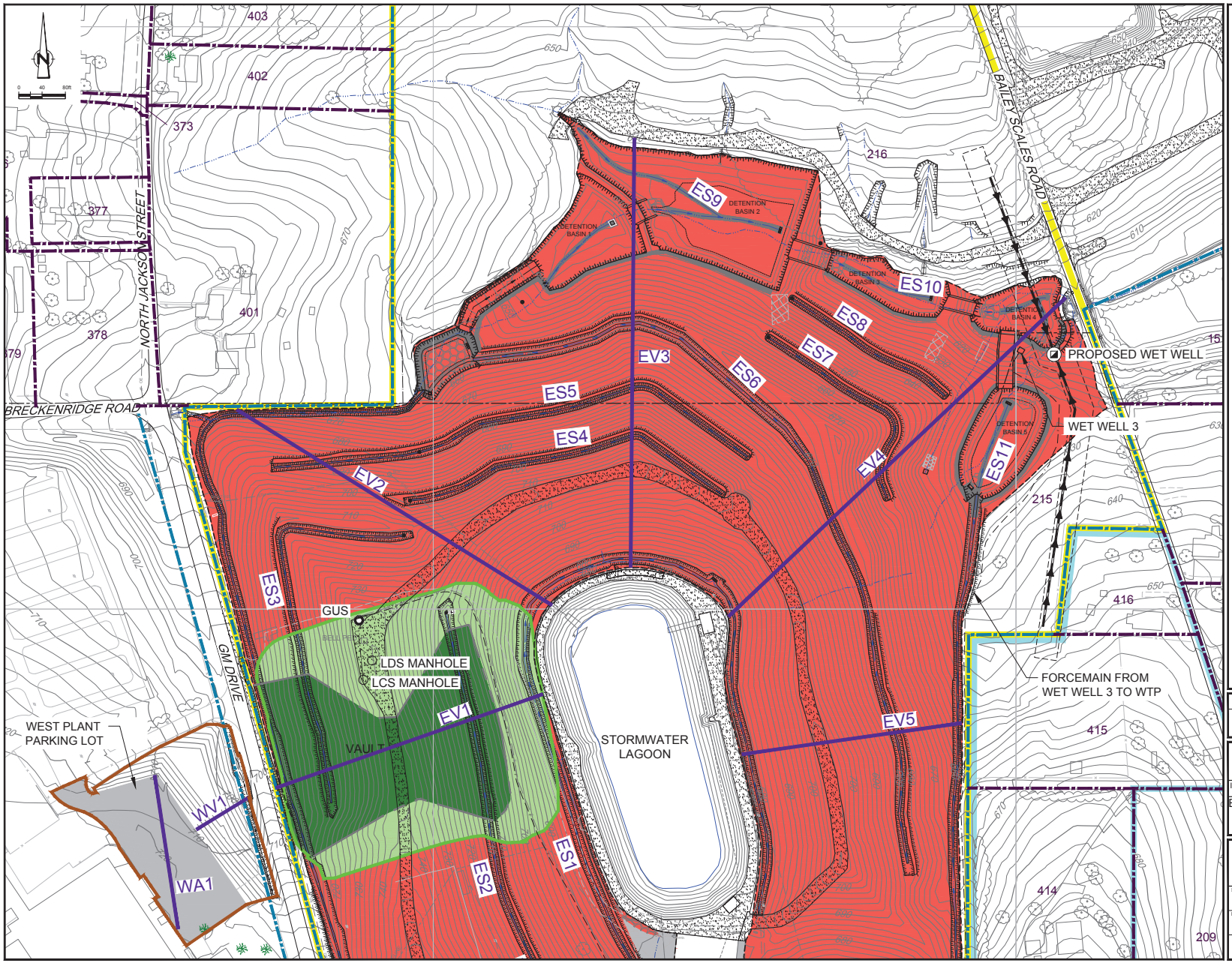
COVER SYSTEMS INSPECTION LOG
CONSTRUCTION CERTIFICATION REPORT EAST PLANT COVER SYSTEM
GM CET BEDFORD FACILITY
BEDFORD, INDIANA

ITEM		TYPES OF PROBLEMS	CHECKED		DETAILED ACTIONS REQUIRED	DATE AND NATURE OF ACTIONS COMPLETED
			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	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES11	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS				
		- ROOTING OF TREES				
	Transect ES12	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- 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	DATE AND NATURE OF ACTIONS COMPLETED
			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	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS	X		mole holes	
		- ROOTING OF TREES				
	Transect ES13	- QUALITY OF VEGETATIVE COVER - LENGTH OF GRASS - DEAD/DYING GRASS - GRASS COVERAGE - NOXIOUS WEEDS	X		heavy weed growth and some bare spots	
		- EROSION				
		- OBSTRUCTIONS				
		- CULVERT/CATCH BASIN - OBSTRUCTIONS - SEDIMENT ACCUMULATION				
		- SIGNS OF BURROWING BY ANIMALS				
		- ROOTING OF TREES				



LEGEND

- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- EXISTING FENCE LINE
- EXISTING RAILROAD TRACKS
- EXISTING DIRT ROADS
- EXISTING ROADS / PAVED AREAS
- EXISTING ELECTRICAL POWER LINE
- EXISTING FORCEMAIN TO TREATMENT FACILITY
- EXISTING OVERHEAD ELECTRICAL POWER LINE
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE GM PROPERTY BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- EXISTING STORM SEWER
- WEST PLANT COVER LIMIT
- VAULT LIMIT
- EAST PLANT COVER LIMIT
- DRAINAGE DITCH
- ASPHALT PAVEMENT AREA
- LOW FLOW CHANNEL
- EAST PLANT AREA
- GM LLC OWNED RESIDENTIAL
- EAST PLANT COVER SYSTEM
- FINAL VAULT COVER SYSTEM AT SURFACE
- FINAL VAULT COVER SYSTEM BURIED BY EAST PLANT AREA COVER SYSTEM
- GRAVEL BED
- PAVED COVER SURFACE
- PROPOSED PILOT TRENCH
- GUS — VAULT GROUNDWATER UNDERDRAIN SYSTEM SUMP
- LDS — LEAK DETECTION SYSTEM SUMP
- LCS — LEACHATE COLLECTION SYSTEM SUMP
- TRANSECT

TRANSECT LABELING

E	EAST PLANT COVER
V	VEGETATIVE COVER
A	ASPHALT COVER
W	WEST PLANT COVER
S	SWALE

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

GM CET BEDFORD FACILITY
BEDFORD, INDIANA

INTERIM OPERATIONS, MAINTENANCE AND MONITORING PLAN
EAST PLANT COVER SYSTEM

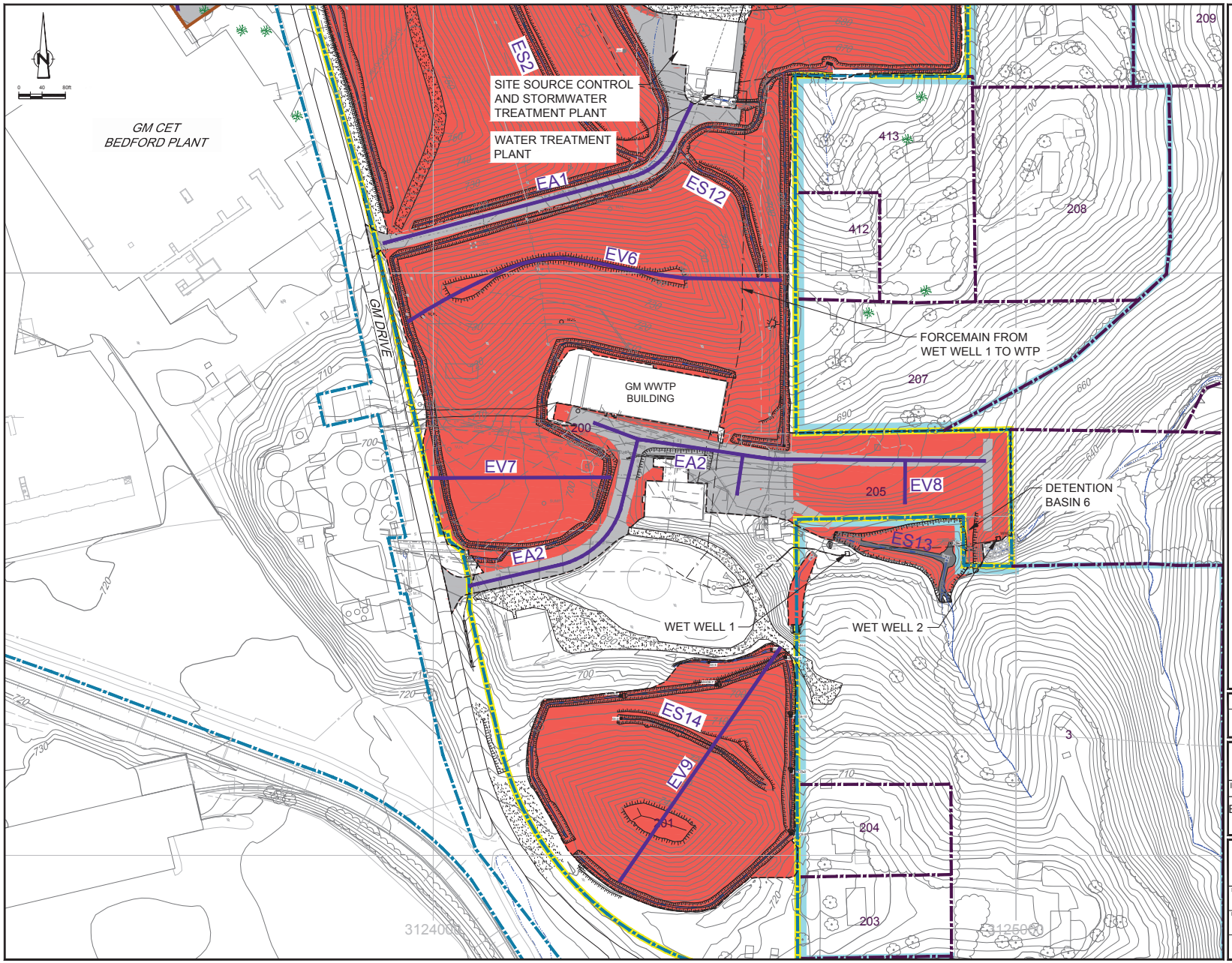
EAST PLANT COVER SYSTEM INSPECTIONS NORTHERN SECTION AND WEST PLANT COVER SYSTEM INSPECTIONS

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:
BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI, APRIL 2001
AND CRA SURVEYS 2002 TO 2008

Project Manager:	Reviewed By:	Date:	
J.M.	P.G.	FEBRUARY 2015	
Scale: 1:80	Project N°: 13968-00	Report N°: 350	Drawing N°: figure D.1

13968-00(350)GN-WA007 FEB 25/2015



LEGEND

- EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)
- EXISTING VEGETATION
- EXISTING BUILDINGS
- EXISTING FENCE LINE
- EXISTING RAILROAD TRACKS
- EXISTING DIRT ROADS
- EXISTING ROADS / PAVED AREAS
- EXISTING ELECTRICAL POWER LINE
- EXISTING FORCEMAIN TO TREATMENT FACILITY
- EXISTING OVERHEAD ELECTRICAL POWER LINE
- APPROXIMATE SURFACE WATER LOCATION
- APPROXIMATE GM PROPERTY BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- EXISTING STORM SEWER
- WEST PLANT COVER LIMIT
- VAULT LIMIT
- EAST PLANT COVER LIMIT
- DRAINAGE DITCH
- ASPHALT PAVEMENT AREA
- LOW FLOW CHANNEL
- EAST PLANT AREA
- GM LLC OWNED RESIDENTIAL
- EAST PLANT COVER SYSTEM
- FINAL VAULT COVER SYSTEM AT SURFACE
- FINAL VAULT COVER SYSTEM BURIED BY EAST PLANT AREA COVER SYSTEM
- GRAVEL BED
- PAVED COVER SURFACE
- PROPOSED PILOT TRENCH
- GUS — VAULT GROUNDWATER UNDERDRAIN SYSTEM SUMP
- LDS — LEAK DETECTION SYSTEM SUMP
- LCS — LEACHATE COLLECTION SYSTEM SUMP
- TRANSECT

TRANSECT LABELING

E	EAST PLANT COVER
V	VEGETATIVE COVER
A	ASPHALT COVER
W	WEST PLANT COVER
S	SWALE

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

GM CET BEDFORD FACILITY
BEDFORD, INDIANA

INTERIM OPERATIONS, MAINTENANCE AND MONITORING PLAN
EAST PLANT COVER SYSTEM

EAST PLANT COVER SYSTEM INSPECTIONS
SOUTHERN SECTION

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:
BASE MAP COMPLETED BY AIR-LAND SURVEYS, FLINT, MI, APRIL 2001
AND CRA SURVEYS 2002 TO 2008

Project Manager:	Reviewed By:	Date:	
J.M.	P.G.	FEBRUARY 2015	
Scale: 1:80	Project N°: 13968-00	Report N°: 350	Drawing N°: figure D.2

13968-00(350)GN-WA007 FEB 25/2015

Photo 1: EV1 Vault Cover System west slope vegetation

Photo 2: EV1 Vault Cover facing west toward pond

Photo 3: Tree at ES2

Photo 4: Patchy vegetative growth at EV2

Photo 5: Vegetative growth along GM Drive, west of ES3 East Plant Area Cover facing west

Photo 6: EV2 East Plant Area Cover facing northwest

Photo 7: Rip-rap erosion at ES6 East Plant Area Cover

Photo 8: EV3 East Plant Area Cover facing north (CH-29D)

Photo 9: Temporary pumping lines in ES1 East Plant Area
Cover at north end of Pond

Photo 10: ES9 East Plant Area Cover

Photo 11: ES9 East Plant Cover System facing east through detention basins

Photo 12: EV4 East Plant Area Cover looking northeast toward ES11 East Plant Area Cover

Photo 13: Looking north along ES11 East Plant Area Cover

Photo 14: Vegetative growth along EV5 East Plant Area facing east, away from pond

Photo 15: Former animal burrow near ES6 East Plant Area Cover

Photo 16: Patchy growth at ES12 East Plant Area Cover

Photo 17: Facing west along EV7 East Plant Cover

Photo 18: East Plant Area Cover System southeast of EV6

Photo 19: ES14 East Plant Area Cover facing south towards EV8 and ES13

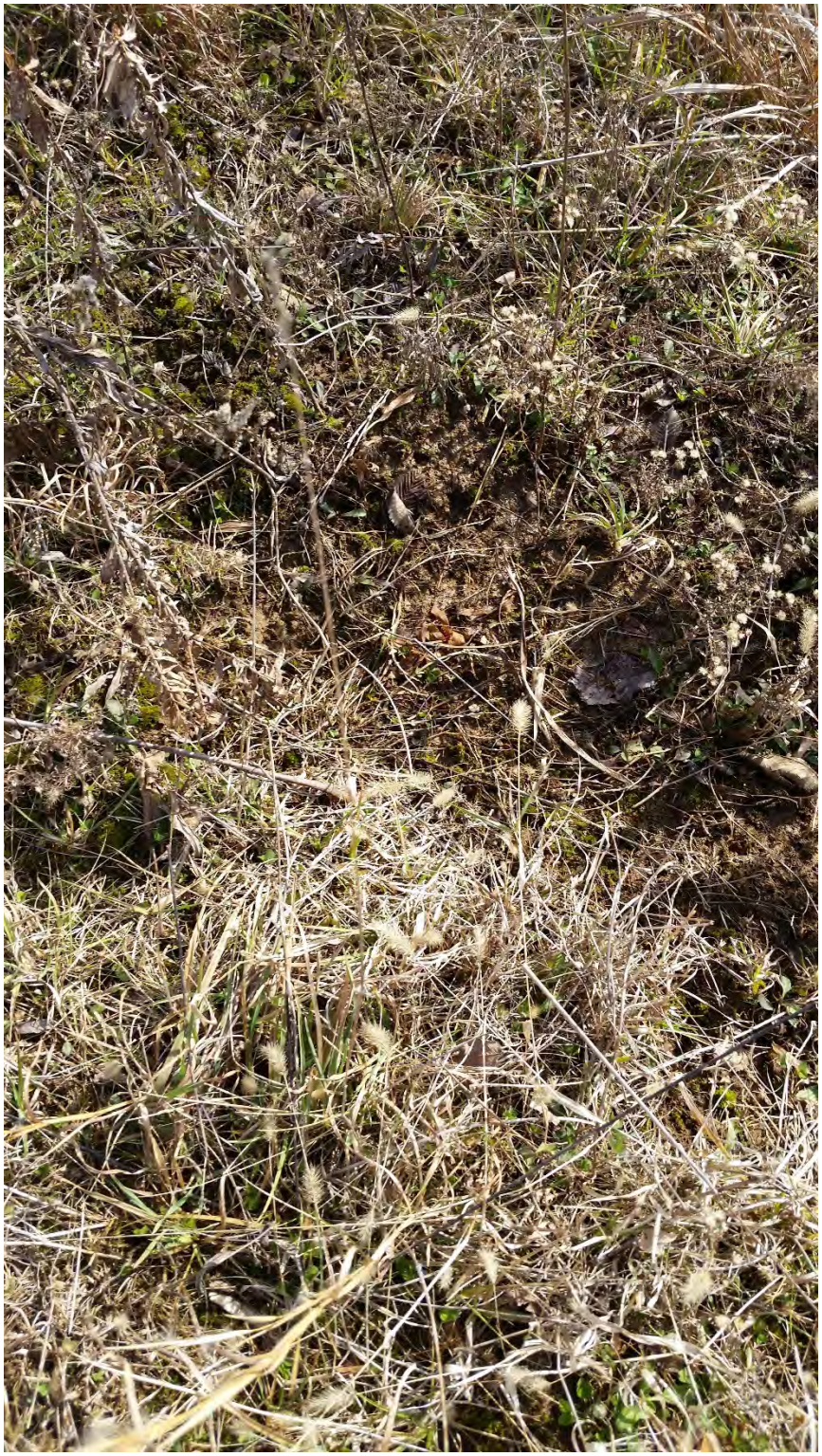


Photo 20: EV9 East Plant Area Cover patchy vegetation.

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