UPSTREAM PARCELS REMOVAL ACTION WORK PLAN ADDENDUM NO. 5

GENERAL MOTORS POWERTRAIN BEDFORD FACILITY BEDFORD, INDIANA

Prepared for:

General Motors Corporation

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LIST OF ACRONYMS/SHORT FORMS

AAQMP - Ambient Air Quality Monitoring Plan

AOC - Administrative Order on Consent (Docket No. VW-03-C-747)

CA - Corrective Action

CERCLA - Comprehensive Environmental Response, Compensation, and

Liability Act

CRA - Conestoga-Rovers & Associates, Inc.
Facility - GM Powertrain Bedford Plant
GM - General Motors Corporation
HASP - Health and Safety Plan

IDEM - Indiana Department of Environmental Management

mg/kg - Milligram per Kilogram

NPDES - National Pollutant Discharge Elimination System

PCBs - Polychlorinated Biphenyls

PUF - Polyurethane Foam

QAPP - Quality Assurance Project Plan

RA - Removal Action

RCRA - Resource Conservation and Recovery Act

RFI - RCRA Facility Investigation SAP - Sampling and Analysis Plan

SOW - Scope of Work μg/L - Microgram per Liter

U.S. EPA - United States Environmental Protection Agency

WMP - Waste Management Plan
Work Plan - Lower Quarry Work Plan
WWTP - Wastewater Treatment Plant

1.0 INTRODUCTION

This Upstream Parcels Removal Action Work Plan: Addendum No. 5 (Work Plan) presents the Scope of Work (SOW) to be completed for the Removal Action (RA) activities at the Lower Quarry which is located on Parcels 11 and 12 on Bailey's Branch Creek, near the General Motors Corporation (GM) Powertrain Bedford Plant (Facility) located in Bedford, Indiana. Conestoga-Rovers & Associates, Inc. (CRA) has prepared this Work Plan on behalf of GM in accordance with the RA activities being conducted under the Administrative Order on Consent (Docket Number V-W-'03-C-747) (AOC) between United States Environmental Protection Agency (U.S. EPA) and GM.

The location of the Lower Quarry is presented on Figure 1.1. A Site Plan for the Lower Quarry is presented on Figure 1.2, and an aerial photograph of the Lower Quarry is presented on Figure 1.3.

1.1 GENERAL

The purpose of this Work Plan is to present an overview of the current conditions and to provide specific information related to the implementation of the Work Plan for the Lower Quarry. Further details on the procedure to be followed can be found in the approved Upstream Parcels Removal Action Work Plan (CRA, July 2003, as amended). The Work Plan summarizes the information obtained during Lower Quarry investigation activities conducted as part of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) and RA.

1.2 WORK PLAN ORGANIZATION

The remainder of this Work Plan is organized as follows:

Section 2.0 - Review of Existing Conditions

This section presents a description of the Lower Quarry and a review of previous investigations that have formed the basis for this Work Plan.

Section 3.0 - Work Plan Scope of Work

This section presents a description of the SOW for the work to be completed under this Work Plan.

Section 4.0 - Approvals

This section outlines the approval requirements for construction within the flood plain as well as other approval requirements.

Section 5.0 - Reporting

This section presents the reporting activities required under the Work Plan.

Section 6.0 - Project Team

This section presents the Project Team and organizational structure for implementation of the activities required under the Work Plan.

Section 7.0 - Project Schedule

This section presents the schedule for implementation of the activities required under the Work Plan.

The existing Site-specific Health and Safety Plan (HASP), Sampling and Analysis Plan (SAP), Waste Management Plan (WMP), and an Ambient Air Quality Monitoring Plan (AAQMP) provided in the approved Upstream Parcels Removal Action Work Plan will apply to activities completed under this Work Plan.

The existing Quality Assurance Project Plan (QAPP) (CRA, August 13, 2003) for the RCRA Corrective Action (CA) activities will apply to all sampling and analysis activities at the Lower Quarry.

2.0 REVIEW OF EXISTING CONDITIONS

2.1 <u>LOWER QUARRY AREA DESCRIPTION</u>

2.1.1 PHYSICAL SETTING

Parcels 11 and 12 are included in the Upstream Parcels for the purpose of the RA, and are located in the area surrounding Bailey's Branch Creek. Bailey's Branch Creek flows from the south, generally northward from the Upstream Parcels and discharges to Pleasant Run. Pleasant Run subsequently discharges to Salt Creek.

The Upstream Parcels border Bailey's Branch Creek and two of its tributaries along steep sided ravines. In this area, the ravine is generally 20-30 feet in vertical relief. Along this length, the creek has a bedrock bottom with scattered sediment deposits. Bedrock can generally be found approximately 1 to 2 feet below the ground surface on the ravine side slopes.

The Lower Quarry is an abandoned quarry located east of Bailey's Branch Creek, on Parcels 11 and 12 near the Bedford Facility. A second quarry (Upper Quarry) is located east of the Lower Quarry. The Upper Quarry does not require the completion of any RA activities. The approximate parcel boundary between parcels 11 and 12 runs east - west through the northern section of the Lower Quarry.

2.1.2 LAND USE

Parcels 11 and 12 are owned by GM.

2.1.3 UPSTREAM PARCELS HYDROLOGIC SETTING

Bailey's Branch Creek receives flow from a number of unnamed ditches and drains located in the vicinity of the Upstream Parcels. Discharge sources to these drains and Bailey's Branch Creek include a National Pollutant Discharge Elimination System (NPDES) permitted discharge from the GM Bedford Facility, surface water drainage from surrounding upland area, and groundwater discharges from bedrock outcrop formations. The discharge from the GM Bedford Facility is an ongoing contribution to the creek's discharge. Flows from the surrounding upland areas and groundwater discharge are generally tied to storm events and are intermittent in nature.

Both the Lower and Upper Quarry contain surface water. The water elevation in the Upper Quarry is significantly higher than the water elevation in the Lower Quarry, indicating that a poor hydraulic connection exists between the two quarries. A small section of floodplain separates the Lower Quarry from Bailey's Branch Creek. This floodplain isolates the Lower Quarry from creek flow under low flow events. The creek and Lower Quarry are connected by surface water during flooding events. The Upper Quarry is at a significantly higher elevation than the creek and is isolated from all creek surface water flow, including flood events.

2.2 LOWER QUARRY CHARACTERIZATION ACTIVITIES

Surficial soil and sediment sampling has been completed within the floodplain areas of the Upstream Parcels, including Parcels 11 and 12. Sediment and surface water samples have been collected within the quarries. Figure 2.1 identifies the sampling locations in the Lower Quarry.

PCBs were identified at varying concentrations across the Lower Quarry. Polychlorinated biphenyls (PCBs) were detected in sediment samples at concentrations ranging from 0.160 to 7.740 milligram per kilogram (mg/kg) in the Lower Quarry. The sediment cleanup criteria was exceeded at sample locations SD-100701-SK-007, -1430, -1431, and SD-52604-DS-2397. PCBs were detected in surface water samples at concentrations ranging from 0.18 to 0.48 microgram per Liter (μg/L).

The PCB data for the Lower Quarry is presented in Tables 2.1 and 2.2 for sediment and surface water, respectively.

All delineation sample analysis and data validation has been completed in accordance with the approved QAPP.

2.3 <u>CLEANUP CRITERIA</u>

The cleanup criterion selected by U.S. EPA in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) AOC for floodplain soils along Pleasant Run, Bailey's Branch and designated tributaries is 1.8 mg/kg total PCBs, based on the Indiana Department of Environmental Management (IDEM) default residential cleanup criteria for unrestricted use (IDEM, February 2001). The 1.8 mg/kg criterion is also consistent with the Site-specific risk-based cleanup criterion. Cleanup criteria of

 $1\,\mathrm{mg/kg}$ PCBs will be utilized for sediment in the Lower Quarry consistent with the AOC.

3.0 WORK PLAN SCOPE OF WORK

General procedures to be followed for the set-up and implementation of work in any areas governed by the approved Upstream Parcels Removal Action Work Plan, are described therein, and are not restated herein. Following review of the Work Plan by the U.S. EPA the Work Plan field activities will be initiated. These activities include:

- utility locates;
- mobilization of construction facilities, material, equipment, and personnel necessary to perform the work;
- provision and maintenance of construction facilities and temporary controls;
- Lower Quarry preparation including:
 - construction of access roads,
 - clearing and grubbing of existing vegetation (as required), and
 - work zone identification;
- implementation of environmental and sediment erosion controls;
- implementation of a Site-specific Health and Safety Plan;
- implementation of storm water controls;
- sediment excavation, handling, and backfilling including:
 - excavation of all sediment exceeding the criteria outlined in the AOC in the Lower Quarry,
 - loading for transportation to the staging area at the GM Facility pending off-Site disposal to a U.S. EPA approved off-Site disposal facility,
 - layout of verification sampling grid,
 - collection of soil verification samples for PCBs (where residual soils remain),
 - additional excavation/verification sampling, as necessary, to meet the cleanup goal, and
 - backfilling/grading, and restoration of excavated areas, as required, with appropriate material;
- removal of miscellaneous debris (e.g., tree stumps, rocks), and staging and/or disposal at appropriate off-Site facilities (as required);
- fugitive air emissions monitoring;
- ambient air quality monitoring;
- water management;
- Work Plan closeout activities including:

- cleanup/restoration of support areas,
- restoration of excavation areas,
- final decontamination of construction equipment and temporary facilities, and
- management of waste waters;
- demobilization of temporary facilities and equipment from the Lower Quarry; and
- monitoring of establishment of vegetation in restored areas.

Those items listed above for the Lower Quarry, which will differ in their implementation, or require additional discussion, as compared to the procedures identified in the approved Upstream Parcels Removal Action Work Plan are described in the following subsections.

3.1 PROPERTY ACCESS

GM owns Parcels 11 and 12. No access issues to the Lower Quarry exist.

3.2 STORMWATER CONTROL

Although it is anticipated that this Work Plan will be conducted during a dry weather period, appropriate storm water controls will be utilized in the event a storm event occurs.

If the excavation of the adjacent creek area has been completed, and the area verified clean, a berm will be constructed to the west of the Lower Quarry to isolate the Lower Quarry excavation area and minimize potential cross-contamination of PCBs between the creek channel and the Lower Quarry during storm events. The location of the proposed berm will be finalized in the field. A conceptual berm alignment, based on the current excavation limits for the creek area is presented in Figure 3.1.

3.3 SOIL AND SEDIMENT EXCAVATION, HANDLING AND BACKFILLING

3.3.1 LOWER QUARRY PREPARATION

A berm may be constructed to the west of the Lower Quarry to isolate the excavation area and to prevent cross-contamination of PCBs between the creek channel and the Lower Quarry as discussed in Section 3.1

Surface water, which is approximately 6-inches to 1-foot deep in the Lower Quarry will be pumped from the Lower Quarry, and will be processed through bag filters to remove suspended sediments. The water will then be pumped to the one million gallon tank for treatment by Facility wastewater treatment Plant (WWTP). Used bag filters will be disposed with the excavated soil and sediment from the Lower Quarry.

3.3.2 SOIL/SEDIMENT EXCAVATION AND VERIFICATION SAMPLING

Soil in the floodplain between the current limit of the RA activities in the adjacent creek and the Lower Quarry will be completed in accordance with the approved Upstream Parcels Removal Action Work Plan.

Sediment excavation within the Lower Quarry will proceed according to the following requirements:

- i) to the extent possible, an excavator shall be used to pull the sediment to the high point in the quarry and held to allow sediment to drain before loading the trucks;
- ii) the drained sediment will be transferred to the staging pad and vacuumed to remove any remaining sediment;
- iii) the remaining rock will washed consistent with procedures outlined in the approved Upstream Parcels Removal Action Work Plan; and
- iv) the quarry will be continuously dewatered throughout cleaning activities and collected water treated by the Facility WWTP.

Following the excavation of soil and sediment, verification sampling will be completed unless bedrock has been encountered. The strategy and sequencing for verification sampling of the excavated areas will follow the procedures identified in the approved Upstream Parcels Removal Action Work Plan. Figure 3.2 identifies the proposed verification grids.

3.3.3 BACKFILLING/FINAL GRADING

Excavations in the floodplain will be backfilled with clean fill from an off-Site source. Fill material will be characterized consistent with the approved Upstream Parcels Removal Action Work Plan. Fill material will be placed in excavations to below the pre-existing grade and compacted using appropriate compaction equipment as directed by CRA's representative. The remaining thickness will be backfilled with 6 inches of topsoil to act as substrate to facilitate re-establishment of vegetation. The final grading will be consistent with pre-existing grades to match the existing grades outside the limits of excavations, and promote appropriate surface water drainage. Following completion of backfilling activities, the berm will be removed and the disturbed areas will be restored with vegetation once RA activities have been completed. Appropriate erosion controls will be utilized until the vegetation has been established to provide erosion control.

Following backfilling, restoration activities will be completed as soon as practical utilizing appropriate species. However, some restoration activities, such as some re-seeding may need to be completed in the appropriate season (to promote/allow growth). No restoration of the open water area of the Lower Quarry is anticipated. Mitigation for the wetland in this area will be included in the mitigation area to be constructed on Parcel 39.

4.0 <u>APPROVALS</u>

The Lower Quarry has been designated as a regulated wetland based on delineation activities completed for the Site. Wetland mitigation for impacted wetlands will be completed on Parcel 39. The design for the wetland mitigation is being developed under separate cover. All other approval requirements were addressed as part of the approved Upstream Parcels Removal Action Work Plan.

5.0 <u>REPORTING</u>

The reporting requirements including construction meetings, monthly progress reports, and preparation of a Final Construction Certification Report as outlined in the approved Upstream Parcels Removal Action Work Plan will be followed. Lower Quarry RA activities will be added as part of each of these reporting activities.

6.0 PROJECT TEAM

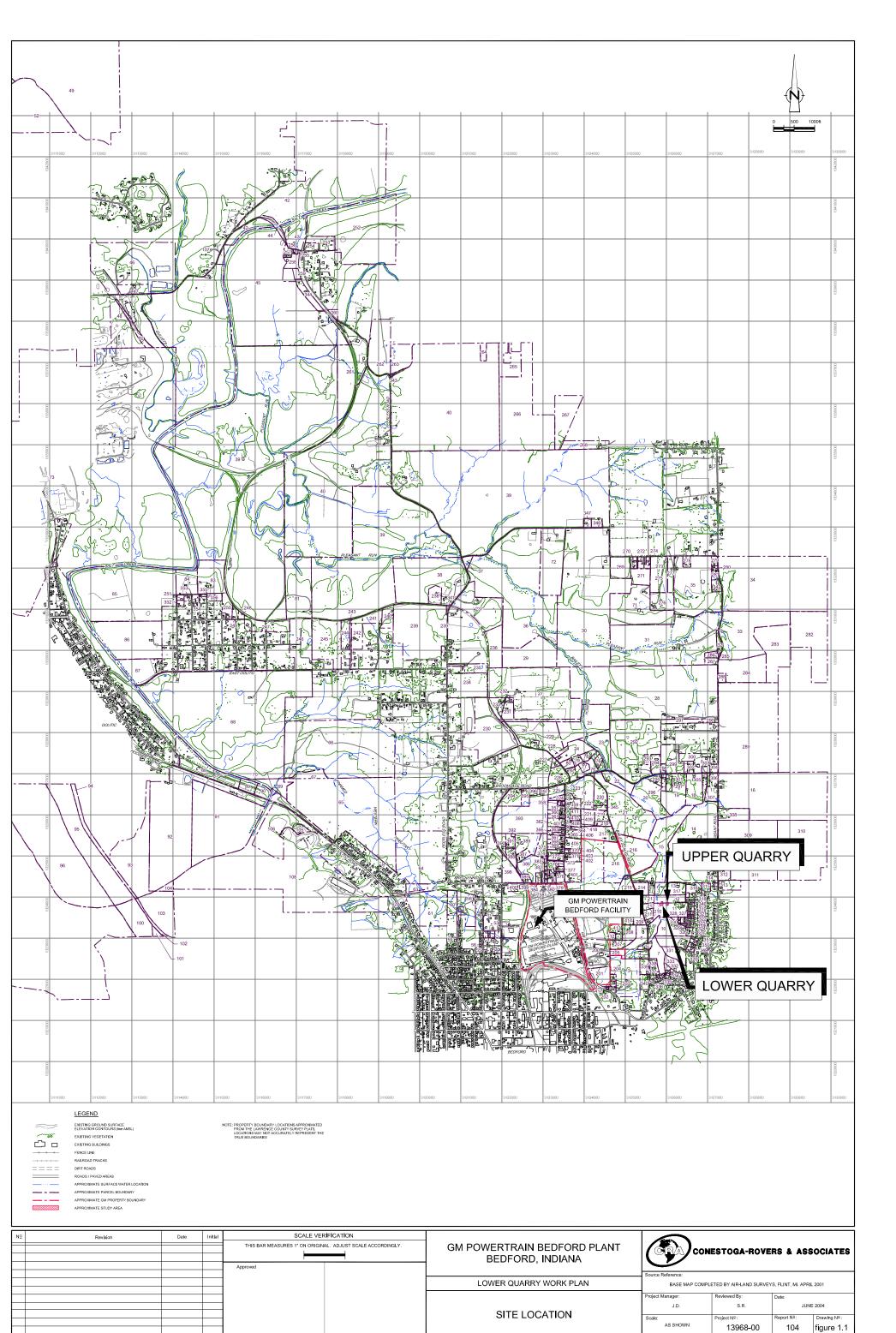
A generalized Project Team organization chart is presented in the approved Upstream Parcels Removal Action Work Plan. Activities completed under this addendum will be completed utilizing the project organization identified therein.

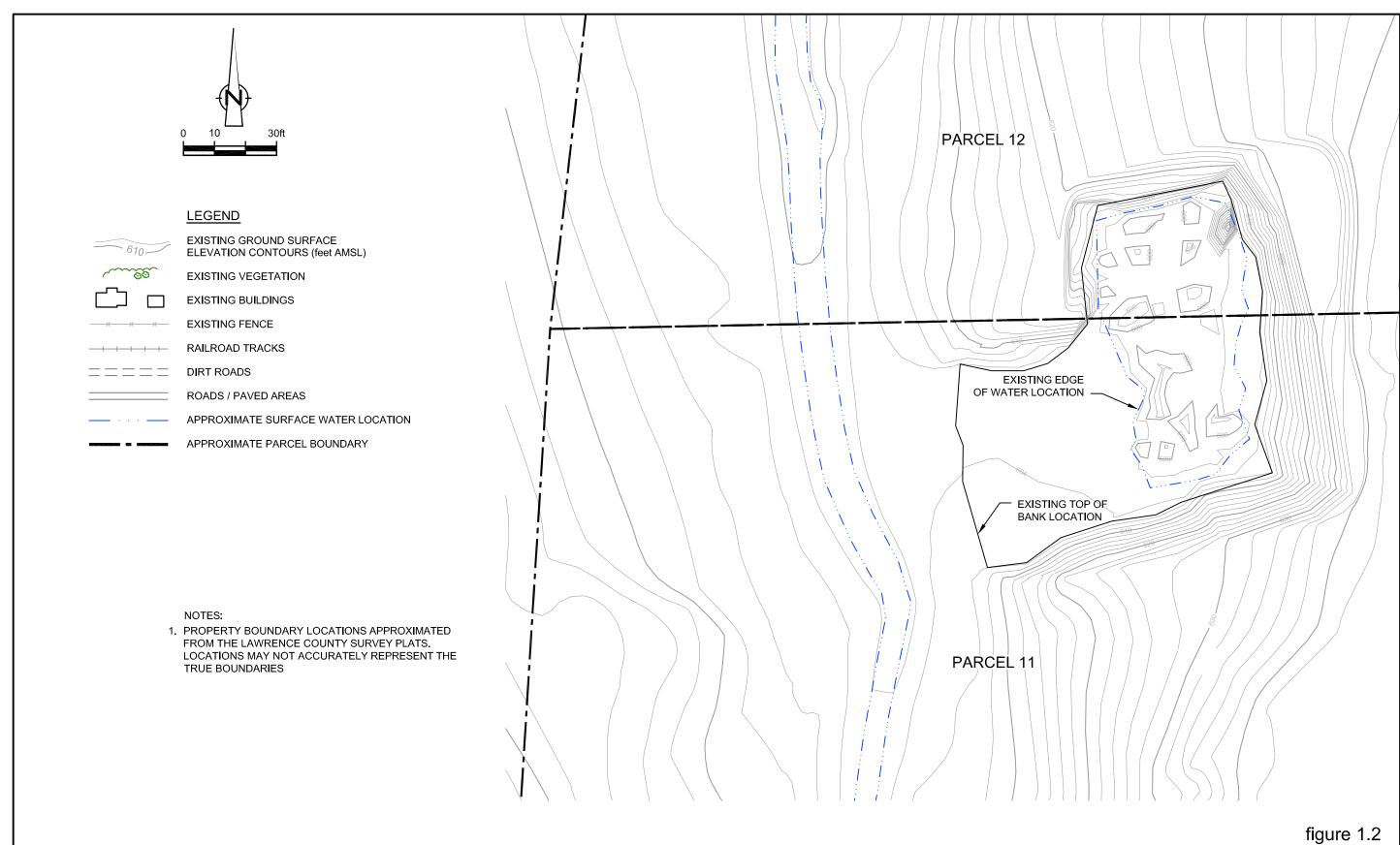
7.0 PROJECT SCHEDULE

A Project Schedule for the Lower Quarry is presented on Figure 7.1. The Schedule presents project tasks in a sequence that will expeditiously implement the Lower Quarry Work Plan activities once initiated. These activities will be scheduled to occur during an anticipated dry weather period.

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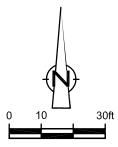
13







LOWER QUARRY SITE PLAN GM POWERTRAIN BEDFORD PLANT Bedford, Indiana



LEGEND

610

EXISTING GROUND SURFACE ELEVATION CONTOURS (feet AMSL)

EXISTING VEGETATION

___ E

EXISTING BUILDINGS

EXISTING FENCE

RAILROAD TRACKS

====

DIRT ROADS

ROADS / PAVED AREAS

APPROXIMATE SURFACE WATER LOCATION

APPROXIMATE PARCEL BOUNDARY

NOTES:

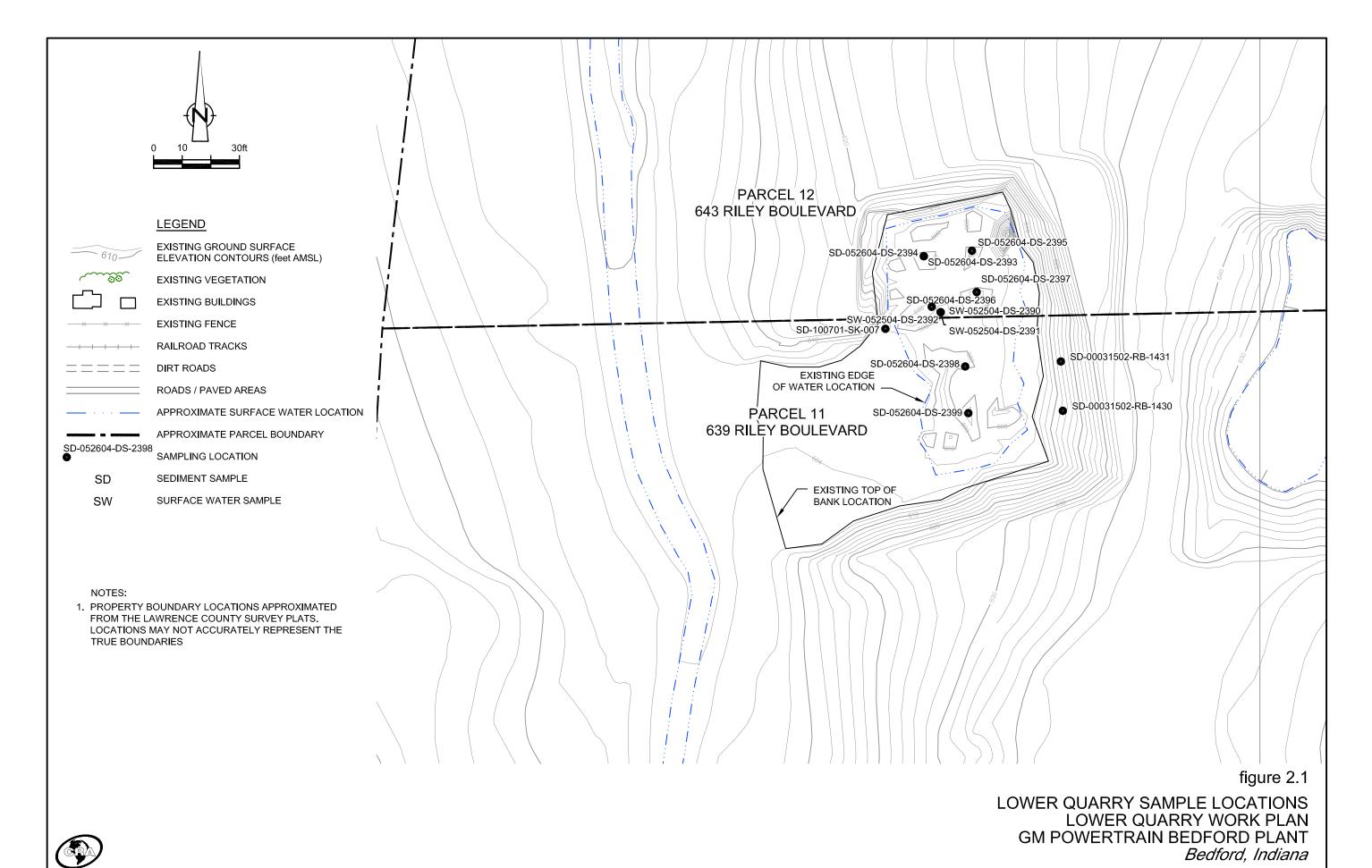
 PROPERTY BOUNDARY LOCATIONS APPROXIMATED FROM THE LAWRENCE COUNTY SURVEY PLATS. LOCATIONS MAY NOT ACCURATELY REPRESENT THE TRUE BOUNDARIES

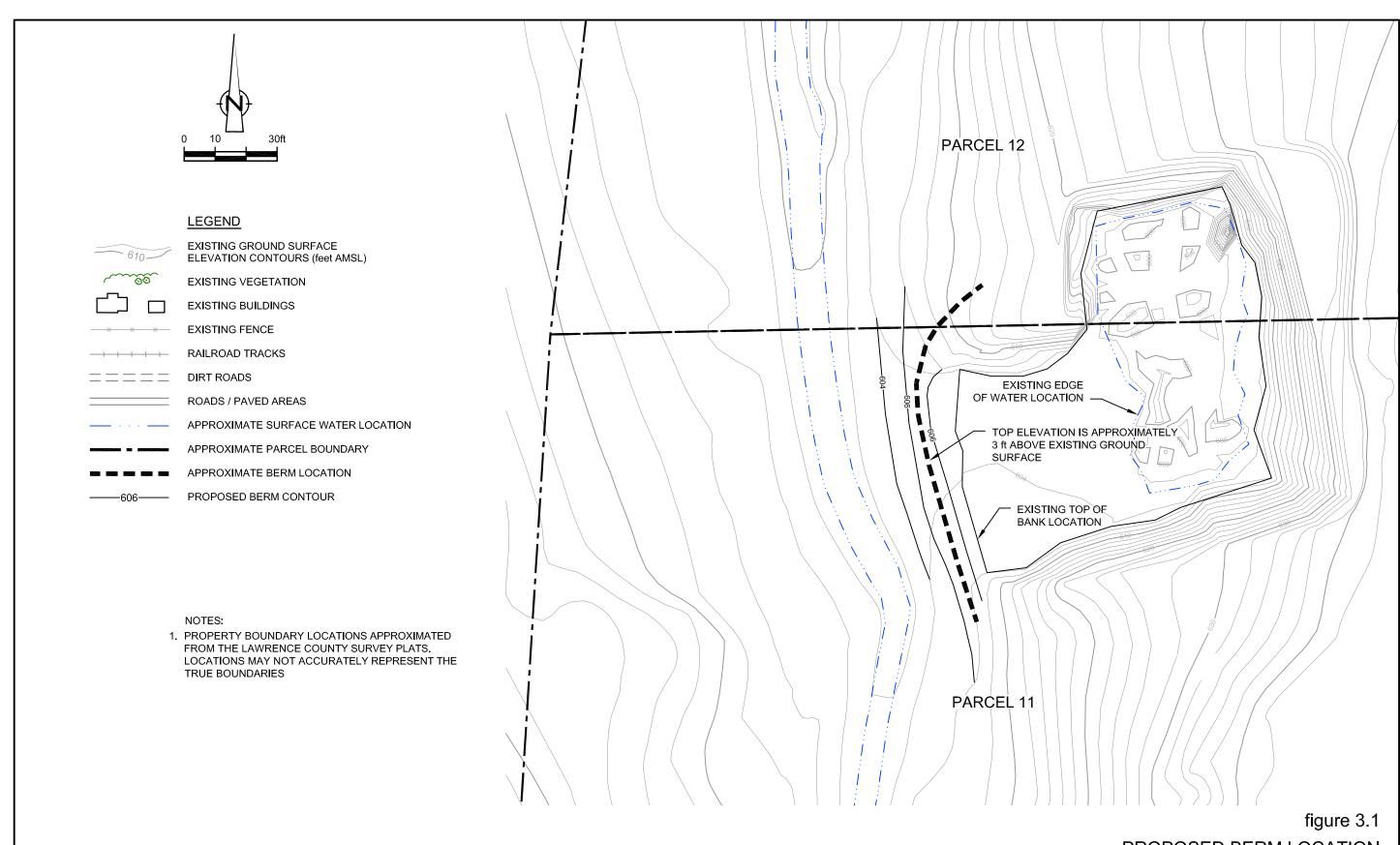


figure 1.3

LOWER QUARRY AERIAL PHOTOGRAPH LOWER QUARRY WORK PLAN GM POWERTRAIN BEDFORD PLANT Bedford, Indiana

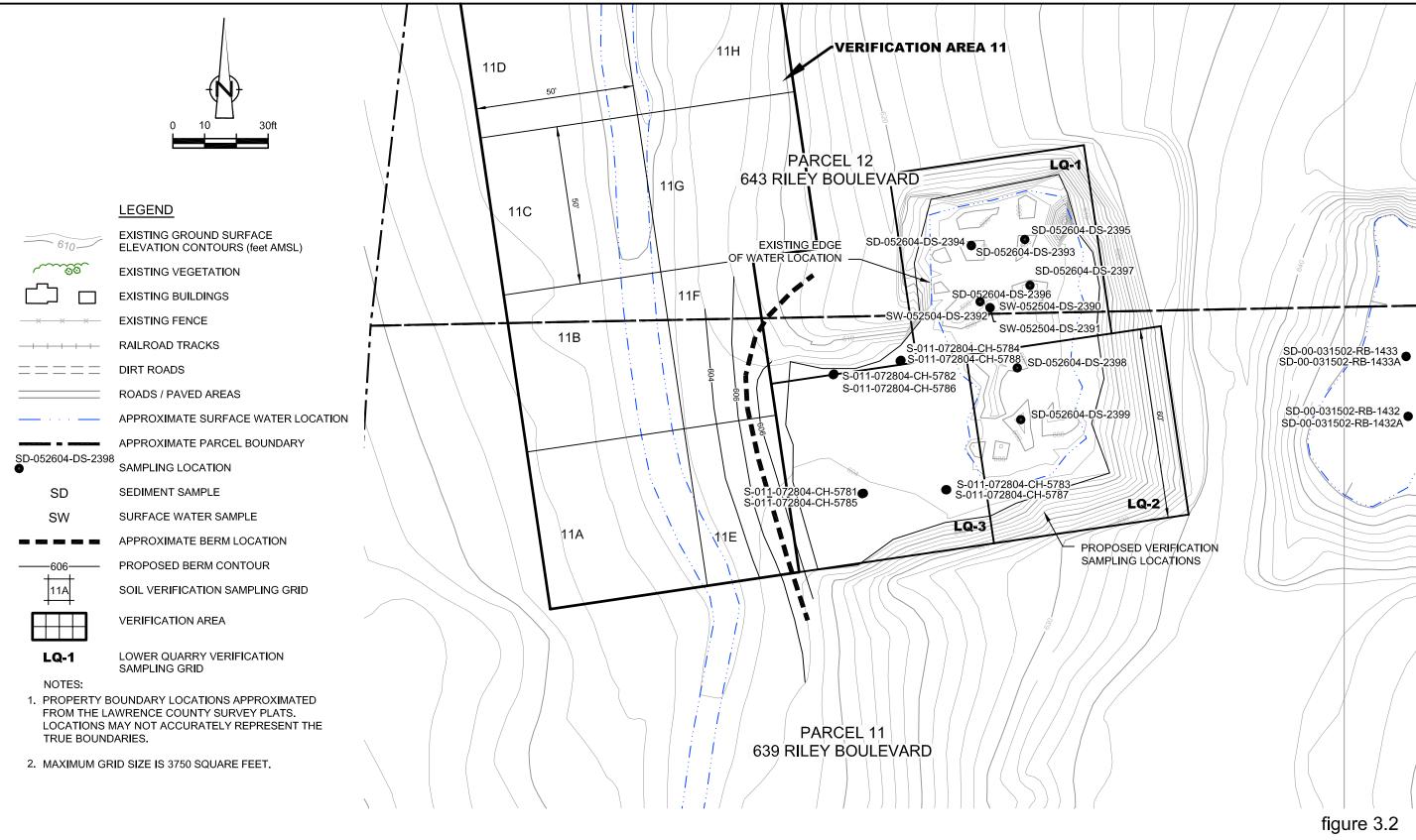








PROPOSED BERM LOCATION LOWER QUARRY WORK PLAN GM POWERTRAIN BEDFORD PLANT Bedford, Indiana





LIMITS OF EXCAVATION/VERIFICATION SAMPLING LOCATIONS LOWER QUARRY WORK PLAN

GM POWERTRAIN BEDFORD PLANT

Bedford, Indiana

ACTIVITY	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8
SITE MOBILIZATION · · · · · · · · · · · · · · · · · · ·								
EXCAVATION····································								
RESTORATION								
DEMOBILIZATION · · · · · · · · · · · · · · · · · · ·								

NOTES

SCHEDULE FOR IMPLEMENTATION AND COMPLETION IS DEPENDENT UPON THE FOLLOWING FACTORS:

- a) INCLEMENT WEATHER CONDITIONS DURING EXCAVATION WORK (e.g. RAIN, SEVERE WEATHER).
- b) PLANTING ACTIVITIES MAY CONTINUE BEYOND THE REFERENCED SCHEDULE, AS REQUIRED.
- c) IF PCB IMPACTED SPRING IS ENCOUNTERED, ADDITIONAL TIME WILL BE REQUIRED FOR CONTROL AND MONITORING.
- d) DOES NOT INCLUDE POST-CONSTRUCTION MONITORING, IF REQUIRED.
- e) SCHEDULE IS BASED ON COMPLETING ACTIVITIES SEQUENTIALLY. ACTIVITIES ON EACH PARCEL MAY BE CONDUCTED CONCURRENTLY TO REDUCE SCHEDULE TIME.

LEGEND

CONTINUOUS ACTIVITYMAJOR MILESTONE

figure 7.1

PROJECT SCHEDULE LOWER QUARRY WORK PLAN GM POWERTRAIN BEDFORD PLANT Bedford, Indiana



TABLE 2.1 Page 1 of 2

ANALYTICAL RESULTS SUMMARY LOWER QUARRY - SEDIMENT (UNVALIDATED) GM POWERTRAIN BEDFORD FACILITY BEDFORD, INDIANA

Sample Location: Sample ID: Sample Date: Sample Depth:		1430 SD-00-031502-RB-1430 3/15/2002 (0-0.83)	1430 SD-00-031502-RB-1430A 3/15/2002 (0.83-1.67)	1430 SD-00-031502-RB-1430B 3/15/2002 (0-0.83) Duplicate	1431 SD-00-031502-RB-1431 3/15/2002 (0-0.83)	1431 SD-00-RB-1431A 3/15/2002 (0.83-1.67)	SD-100701-SK-007 SD-100701-SK-007 10/07/2001 (0-0.33)
202	Units						
PCBs							
Aroclor-1016 (PCB-1016)	ug/kg	ND (1400)	ND (64)	ND (1400)	ND (960)	ND (850)	ND (1300)
Aroclor-1221 (PCB-1221)	ug/kg	7500	230	4500	5100	6600	ND (1300)
Aroclor-1232 (PCB-1232)	ug/kg	ND (1400)	ND (64)	ND (1400)	ND (960)	ND (850)	ND (1300)
Aroclor-1242 (PCB-1242)	ug/kg	ND (1400)	ND (64)	ND (1400)	ND (960)	ND (850)	ND (1300)
Aroclor-1248 (PCB-1248)	ug/kg	1300 J	34 J	700 J	890 J	840 J	1700
Aroclor-1254 (PCB-1254)	ug/kg	ND (1400)	ND (64)	ND (1400)	ND (960)	ND (850)	ND (1300)
Aroclor-1260 (PCB-1260)	ug/kg	ND (1400)	ND (64)	ND (1400)	ND (960)	ND (850)	ND (1300)
General Chemistry							
Total Solids	%	23.9	51.9	24.1	17.3	38.7	12.4

TABLE 2.1 Page 2 of 2

ANALYTICAL RESULTS SUMMARY LOWER QUARRY - SEDIMENT (UNVALIDATED) GM POWERTRAIN BEDFORD FACILITY BEDFORD, INDIANA

Sample Location: Sample ID: Sample Date: Sample Depth:		2393 SO-052604-DS-2393 5/26/2004 (0-0.5)	2393 SO-052604-DS-2394 5/26/2004 (0-0.5) Duplicate	2395 SO-052604-DS-2395 5/26/2004 (0-0.5)	2396 SO-052604-DS-2396 5/26/2004 (0-0.5)	2397 SO-052604-DS-2397 5/26/2004 (0-0.5)	2398 SO-052604-DS-2398 5/26/2004 (0-0.5)	2399 SO-052604-DS-2399 5/26/2004 (0-0.5)
	Units							
PCBs								
Aroclor-1016 (PCB-1016)	ug/kg	ND (65)	ND (130)	ND (67)	ND (71)	ND (94)	ND (83)	ND (79)
Aroclor-1221 (PCB-1221)	ug/kg	ND (65)	ND (130)	ND (67)	ND (71)	ND (94)	ND (83)	ND (79)
Aroclor-1232 (PCB-1232)	ug/kg	ND (65)	320	440	930	1100	320	160
Aroclor-1242 (PCB-1242)	ug/kg	ND (65)	ND (130)	ND (67)	ND (71)	ND (94)	ND (83)	ND (79)
Aroclor-1248 (PCB-1248)	ug/kg	160	ND (130)	ND (67)	ND (71)	ND (94)	ND (83)	ND (79)
Aroclor-1254 (PCB-1254)	ug/kg	ND (65)	ND (130)	ND (67)	ND (71)	ND (94)	ND (83)	ND (79)
Aroclor-1260 (PCB-1260)	ug/kg	ND (65)	ND (130)	ND (67)	ND (71)	ND (94)	ND (83)	ND (79)
General Chemistry								
Total Solids	%	50.5	51.4	49.5	46.4	35.2	39.6	41.7

TABLE 2.2Page 1 of 1

ANALYTICAL RESULTS SUMMARY LOWER QUARRY - SURFACE WATER (UNVALIDATED) GM POWERTRAIN BEDFORD FACILITY BEDFORD, INDIANA

Sample Location:		2390	2390	2392
Sample ID:		SW-052504-DS-2390	SW-052504-DS-2391	SW-052504-DS-2392
Sample Date:		5/26/2004	5/26/2004	5/26/2004
	Units			
PCBs	unus			
FCBS				
Aroclor-1016 (PCB-1016)	ug/L	ND (0.20)	ND (0.20)	ND (0.20)
Aroclor-1221 (PCB-1221)	ug/L	ND (0.20)	ND (0.20)	ND (0.20)
Aroclor-1232 (PCB-1232)	ug/L	ND (0.40)	ND (0.40)	ND (0.40)
Aroclor-1242 (PCB-1242)	ug/L	ND (0.20)	ND (0.20)	ND (0.20)
Aroclor-1248 (PCB-1248)	ug/L	0.48	0.37	0.18 J
Aroclor-1254 (PCB-1254)	ug/L	ND (0.20)	ND (0.20)	ND (0.20)
Aroclor-1260 (PCB-1260)	ug/L	ND (0.20)	ND (0.20)	ND (0.20)