

SECTION B

GENERAL FACILITY DESCRIPTION

R 299.9504(a)(c) AND 40 CFR 270.14(b)(1)

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B-1 Facility Location

(40 CFR 270.14(11)(i))

EQ Detroit, Inc. (EQD) property is located at 1923 Frederick Street in the City of Detroit, Wayne County, Michigan. The subject site is located near the intersection of Michigan Interstates 75 and 94, and is bordered on the south by Farnsworth Street, to the east by St. Aubin Street, to the north by Ferry Street and to the west by the Grand Trunk and Western Railroad. A municipal waste incinerator is located on the northwest side about 1/2 mile from the facility. A vacant cold storage building is located north of the facility. On the east and south, the facility is surrounded by vacant residential lots, urban agriculture, and abandoned residential buildings. The location of EQD is shown on the USGS Site Plan, **Sheet A-0**.

The area immediately adjacent to the facility is primarily commercial and industrial. The facility is located in the City of Detroit which has a population of approximately 650,000 people. There are an estimated 500 people living within one mile of the site. The nearest residential homes are located 0.25 miles to the east.

No environmentally sensitive areas such as wetlands, streams or ponds are located on or around the subject property. No endangered flora or fauna have been identified on the site.

Water supply and sewerage disposal for this facility is provided by the City of Detroit and the Great Lakes Water Authority (GLWA). Stormwater from the site is collected at the interceptor sewer for discharge to the City of Detroit Wastewater Treatment Plant which is now GLWA.

Current operations associated with the facility are limited to the buildings described herein, which are all located North of Frederick Street. Access to the facility is made from Kirby Street through a guarded checkpoint, which is staffed 24 hours per day. Currently all vehicles and persons entering the site pass through security located in the Waste Acceptance Building (**Sheet A-2 Facility Drawing**)

The facility physical address and phone number is:

EQ Detroit, Inc.
1923 Frederick Street
Detroit, MI 48211
(313) 347-1300.

The facility contact person is:

Raymond Landsberg (General Manager)
(313) 347-1300 (Office)

B-2 Facility Function

EQD is a hazardous and non-hazardous waste treatment facility located in Detroit, Wayne County Michigan. The facility operates 24-hours per day, seven days per week, and employs approximately 80 personnel.

The EQD operations include receiving, storage, and treatment of hazardous wastes permitted by the MDEQ under the facility operating license and the USEPA under a Resource Conservation and Recovery Act (RCRA) permit (MID 980 991 566). The routine operations and work areas include:

- Waste receiving and Quality Control (QC);
- Waste loading and unloading;
- Reagent unloading and tank storage;
- Waste storage in tanks;
- Waste treatment in tanks;
- Container staging/storage; and
- Shipment of wastes off-site to treatment, storage, and disposal facilities (TSDFs).

Non-hazardous wastes are managed in accordance with the Solid Waste Processing and Transfer Facility Operating License issued under Part 115 of Act 451 of 1994, the Natural Resources and Environmental Protection Act (NREPA).

B-2a Wastes Identification and Classification

The waste types acceptable for treatment and storage at the facility are defined in **Table C-4**. Chemical and Physical Properties of Waste and Debris to be Handled are found in **Section C** the Waste Analysis Plan

B-2b Description of Waste Management Units/Container Storage Areas.

EQD is a liquid and solid hazardous waste storage and treatment facility. Containerized wastes may be staged/stored on-site before and after treatment in one of the following areas:

- Container Storage Area
- Container Staging Area
- Chemical Fixation Building
- North Container Storage Pad
- Corrosive Container Pad
- Chemical Precipitation Container Pad
- De-pack Area
- Rail Area

Bulk wastes are placed directly into the waste treatment tanks/vaults and mixed, with modifiers for deactivation, neutralization, chemical oxidation, and chemical reduction or stabilization reagents, as required for the specific wastes being treated. Bulk wastes may also be transshipped as needed.

Tanks/vaults will be decontaminated if changed from the storage/treatment of listed wastes to characteristic wastes. Decontamination consists of water washing and/or dry decontaminating the tank/vault. Dry decontamination is the process of scrapping the vaults with the excavator until all residuals have been removed. The rinse waters and/or dry decontamination material is directed to a listed batch tank (containing a compatible waste). The decontamination step is noted on the Operation Log for the tank receiving the rinse waters and/or dry decontamination material.

Drainage trenches/sumps exist within each storage/treatment area to contain and control liquid runoff. Containers are handled by removing the tops or bungs and emptying the contents with a vacuum truck or pump. Containers may also be managed directly into one of the treatment tanks using a forklift.

The following are descriptions of the operations performed in these areas:

B-2b(i) Main Treatment Building

The Main Treatment Building is located in the center of the site, houses the physical-chemical treatment system. This area contains supplies, such as drums and chemicals. There are treatment tanks, storage tanks, and raw materials tanks in this area. The Main Treatment Building accepts and processes hazardous and non-hazardous wastewater containing heavy metals, "pressable" sludge, and oily wastes. Also located within the southeast portion of the Main Treatment Building is the Corrosive (Acid/Base) Treatment Area/Container Storage Area. EQD Laboratory Services is located along the south side of the Main Treatment Building. This area uses and stores a wide variety of lab chemicals as well as compressed nitrogen, oxygen, argon, and helium gas cylinders. A maintenance area with three service bays is located on the east side of the Main Treatment Building. This operation uses and stores lubricating greases and oils, and other various automotive fluids.

B-2b(ii) Process Building

The Process Building is located north of the Main Treatment Building. This building does not process, treat or store hazardous waste.

B-2b(iii) Container Staging Area

Containerized waste streams arriving for processing and destined for the EQD facility will arrive at the EQD Container Staging Area. In this area, the drums will be off-loaded and appropriate representative samples will be collected. Those drums which are destined for EQD and meet waste acceptance criteria will be stored on the EQD Container Staging Area. Incompatible waste is segregated as per DOT and 40 CFR 264 Appendix 5 segregation criteria. The entire floor area has an impervious epoxy coating that is compatible with the types of waste handled by EQD. Drums are stored and clearly marked in numbered aisles with spacing every two feet for access and drum inspection.

Containerized waste which meets the waste acceptance criteria will be processed at EQD and the rejected containerized wastes which do not meet the waste acceptance standards will be loaded back into the transporter trucks to be returned to the generator.

Containers are stored throughout the facility in designated areas. These areas are defined in Section D. Incompatible wastes are separated as per DOT and 40 CFR 264 Appendix 5 Segregation Criteria.

B-2b(iv) Chemical Fixation Building

The Chemical Fixation facility is located north of the Main Treatment Building. The facility operations are housed within a pre-engineered metal structure that is attached to treatment/storage tanks/vaults. The active portions (i.e. vaults, pugmill) are fully enclosed within the building.

EQD's Chemical Fixation Building utilizes a waste treatment technique commonly referred to as a pozzolanic stabilization. This technique relies on materials rich in stabilization and fixation agents to provide a solid stabilized mass when mixed with wastes. The most commonly utilized materials in EQD's process are soluble silicates, lime, CKD, fly ash and Portland Cement.

B-2b(vi) Bulking and Consolidation

EQD receives waste in a variety of container sizes, for example, small glass or plastic bottles, pails, drums, totes, boxes and cubic yard sacks. EQD may elect to consolidate these containers as a means to more efficiently manage these wastes for further processing or preparation for shipment to a permitted off-site treatment/disposal facility. Bulking/Consolidation may include the transfer of the smaller containers (e.g. one-gallon jugs) into larger containers, such as drums or totes. Drums may be pumped using vacuum trucks/tankers. Solid waste like cubic yard sacks may be dumped directly into roll-off/dump trailers for processing or shipment to an off-site treatment/disposal facility.

Containerized waste that are bulked and consolidated are subject to the same compatibility and waste code evaluation as wastes that are mixed into treatment tanks.

Bulking and consolidation of waste can only occur once the combining wastes have been properly sampled and tested for compatibility prior to mixing per the methods outline in the Waste Analysis Plan (WAP).

Sheet A-2 Facility Drawing shows the location of all buildings and waste management units.

B-3 Structural Description and Facility Preparedness

EQD occupies 15 acres of land. Approximately 45 percent of the property is covered by buildings or concrete.

Frederick Street divides the facility into north and south sections. The site structures are presented on **A-2 Facility Drawing**. The following is a description of features present on the site:

1. The general management offices which are situated along the north side of Frederick Street are located in one-story concrete block structure housing administrative and support personnel. Entrance doors are located along the north side of the building. No hazardous wastes or materials are stored in these offices.

2. The Main Treatment Building is located north of the general offices and is bordered by a continuous curbed concrete roadway. The area occupies the majority of the two-story concrete block building with concrete flooring. Entrance doors are located on all sides of the building. The treatment area contains wastewater treatment and reactor tanks, reagent tanks, control office, plate frame filter press, sumps, pumps and piping, some of which is overhead. Treatment tanks are equipped with access covers, bottom drain lines and audible, visible high level alarms.

The Main Treatment Building also contains a corrosive treatment area which lies directly northeast of the administrative building and is completely enclosed. The area is designed to hold a maximum of 120 containers or 6,600 gallons of containerized waste. The waste is stored in rows running east and west approximately 4 foot wide rows separated by 2 foot wide aisles. Drums are placed into the storage area on pallets or directly onto the concrete slab using a fork-truck or other container/drum handling equipment. The area is completely covered which prevents precipitation from entering the treatment area.

The Chemical Precipitation Container Storage area stores approximately 120 drums. The two areas are approximately 45 ft by 65 ft and 29 ft by 102 ft. The concrete is lined with an epoxy coating. All surfaces are sloped to floor area drains which hold approximately 14,286 gallons.

The Main Treatment Building and two associated unloading areas are curbed to facilitate secondary containment of spilled wastes. The northwest side of the building is the primary hazardous waste unloading area and has a curbed area where trucks are parked while unloading. The entire processing and unloading area is secondarily contained by the building walls and continuous concrete curbing.

Containment areas drain to the northwest sump or to the spill containment structure, where any accumulated liquids are removed for chemical and physical treatment at EQD according to their characteristics. **Section B-15** provides the volumes and details of the facility secondary containment system.

Plastic polymer drums are stored adjacent to the treatment area within concrete curbing.

The south and east sides of the building houses in-plant offices, a maintenance area, and an analytical laboratory. The laboratory contains instrumentation designed to analyze small quantity representative samples of the materials being treated. The maintenance area is utilized for repair and servicing of on-site equipment. It is physically separated from the treatment plant by concrete block walls with metal entrance doors.

3. The Process Building is located to the north of the Main Treatment Building. The Process Building non-hazardous waste operations are housed within a pre-engineered, metal structure that is attached to the above ground storage tank (AST) farm.

4. The Container Staging area is located north of the Main Treatment Building. The area is designed to hold 988 containers or 54,340 gallons of liquid waste. Once containers are accepted by the facility, they are generally moved to either the Container Storage Area or other storage areas throughout the facility, as appropriate. Containers are stored in a manner that will contain potential leaks/spills within the Container Staging Area. The Container Staging Area is inspected once per day. Accumulated liquids which collect in the trench containment structure are removed upon detection.
5. The Container Storage Area is located north of the Main Treatment Building and is completely enclosed. The Container Storage Area is designed to hold a maximum of 1,826 drum containers or 100,430 gallons of containerized waste. The waste is stored in rows running east and west approximately 4 foot wide rows separated by 2 foot wide aisles. Containers are placed into the storage area on pallets or directly onto the concrete slab using a fork-truck or other container/drum handling equipment. The area is completely covered which prevents precipitation from entering the treatment area. The storage area is sloped to blind sumps which serve as a collection point for liquids in the event of spills/leaks in the storage area. Containers are stored in a manner that will contain potential leaks/spills within the curbed area. The container storage and blind sumps are inspected daily. Accumulated liquids collected in the blind sumps will be removed with a vacuum truck.
6. The Chemical Fixation Facility is located northwest of the Main Treatment Building. The facility operations are housed within a pre-engineered metal structure that is attached to treatment/storage tanks/vaults. The active portions (i.e. vaults, pugmill) are fully enclosed within the building.

Silos H-1 and H-2 are designed to receive hazardous dust for treatment and waste stabilization. Dusts are transported to bulk pneumatic tankers and unloaded through a dedicated line. Fugitive dusts are captured through a baghouse and discharged back into the silo.

Silos S-1 through S-3 receive the stabilizing reagents used for chemical fixation. Each silo is constructed identically with dedicated fill and discharge lines and separate baghouses. The blower is connected to the pneumatic trailer fluffing and conveying dust to the silo.

Dust is then fed from the bottom of each silo (dust may be fed from one silo or all silos simultaneously) through a variable speed vane feeder into a screw conveyor feeding the pugmill. The pugmill is a flow through device that receives dusts from the silos as well as non-hazardous liquids and sludges from tank 901 and then discharged into vaults 701 through 706. Wastes are fed and enter the pugmill on the south end. The waste is mixed by paddles mounted on counter rotating shafts running the length of the unit and is then discharged on the opposite end into a screw conveyor. The screw conveyor carries the treated waste to the treatment vaults. Feed rates are varied to obtain proper treatment ratios for different types of wastes.

Treatment vaults are steel constructed vaults, rectangular in shape, built within a concrete containment structure. The outer concrete serves as secondary containment and is sloped to a central low point. An inspection pipe located at the low point is designed to detect any free liquids accumulating in the interstitial space and may be used to remove such liquid.

Vaults 701 through 706 receive liquid and solid wastes from bulk tankers and containers. Mixing within the vaults, if required, is accomplished by use of an excavator bucket. After treatment, waste is removed from the vaults with the excavator and placed into a vessel for transport to the final disposal facility. Post treatment testing (as described in the **WAP** of this application) may be performed before or after the waste is removed, but is performed before wastes are transported to the final disposal facility.

7. EQD also accepts wastes in railroad tank cars. The tank cars are positioned northwest of the Main Treatment Building. The railroad car spur was designed and installed to provide secondary containment for possible leaks that may occur during the rail cars loading/unloading process. The soils directly under the rail tracks were excavated and the excavation lined with an 80-mil polyvinylchloride (PVC) liner, backfilled with stone ballast and a series of metal collection pans installed to capture any leakage.

The collection pans are sloped to cross drains, which slope to collection under-drain system which then drains into the lined spill containment structure. **Section B-15** provides the volumes and details of the facility's secondary containment system.

8. As mentioned above, the facility also contains a number of waste and reagent unloading areas located in the concrete roadways described at locations designed not to restrict traffic flow patterns. The unloading areas are within the engineered spill containment and collection system designed for EQD. Only trained employees are authorized to off-load any accepted waste or material at the specific identified areas.
9. EQD's secondary containment systems are separated into various zones and identified in **Sheets C-10 to C-19**. Secondary containment is provided for vaults 701 through 706 by an outer concrete structure. The concrete is sloped to a central low point where an inspection pipe is located. The inspection pipe is designed to detect free liquids that have accumulated in the interstitial space and will be utilized to remove any such liquids. Secondary containment for the 200 and 300 series tanks are epoxy coated concrete structures either as part of the building or stand alone structures.

Liquid collected in the secondary containment is considered contaminated rain or washwater and is transferred to the Main Treatment Building for treatment prior to discharge to GLWA. Liquid is transferred by tanker truck, vacuum truck or by direct pipeline to the wastewater treatment plant. The wastewater pre-treatment plant is operated under an Industrial Wastewater Discharge Permit (GLWA Wastewater Discharge Permit No. 923-91964-IU).

If a spill has occurred into the secondary containment, the accumulated liquid is considered to be identical to the waste type present in the leaking tank or spilled material. Liquid accumulated in the secondary containment structure is removed within 24 hours, or in as timely a manner as is possible to prevent harm to human health or the environment. The secondary containment structures are inspected daily and noted on the Daily Inspection Log.

The area containment capacities are engineered to meet or exceed the regulations in 40 CFR 264.183, MI Act 245, Part 5 and MI Act 451 R 299.9615. Refer to **Section B-15** for containment system details.

B-4 Prevention Systems and Programs

In addition to, and in conjunction with the above structures, EQD operates the following systems and programs to minimize the possibility of material fires or releases.

1. A comprehensive waste approval and acceptance program for incoming waste shipments that ensures safe and proper handling of the approved and accepted wastes. The acceptance procedure is an important aspect of the prevention plan. Additionally, through analysis interpretation, the program minimizes the potential of excessive heat generation or tank/piping/equipment corrosion, and other harmful occurrences resulting from the mixing of incompatible compounds.
2. A personnel training program has been developed to assist in safe facility operation and maintenance. This program has been designed for compliance with U.S. EPA, MDEQ, and OSHA requirements for RCRA treatment facilities (29 CFR 1910.120 (p) (7); 40 CFR 264.16).
3. A routine inspection program has been developed for equipment, structures, areas, etc. to facilitate early detection of malfunctions, deteriorations, operator errors, and discharges which could cause or lead to a release of hazardous waste constituents to the environment.. Refer to **Section O** for specific elements and details on the inspection program.
 - a. Visual inspections of the facility are performed by plant personnel and documented by operations personnel. Inspection areas, criteria and frequencies are listed on the Inspection Report Forms. The Inspection Report Forms will be retained for a period of three years from the date of the inspections. The designated employee must verify all inspections by signature.
 - b. The EQD maintenance program includes inspection and record keeping, via the Operating Records, of pumps, transfer lines, and equipment. Maintenance personnel inspect pump seals and lubricant valves on a regular basis. Lubricant is added if necessary and leaking or worn seals are replaced immediately.
 - c. All tank exteriors are inspected and results recorded in the Operating Record. As needed, access covers will be properly resealed and exteriors exhibiting corrosion are repaired, primed and painted.

- d. EQD maintains inventory for all waste received. The reported volume of each load is recorded on the daily inventory summary of the Operating Record. The inventory tracking allows for computation of received volumes to minimize the risk of exceeding tank and treatment capacities.
4. The EQD treatment system employs well documented processes which facilitate safe and successful treatment of the wastes. There will be no new technologies utilized at this facility prior to appropriate testing and analysis.
5. Odor reduction efforts are outlined in Section F-6h.
6. Areas of material storage, transfer and treatment are located within secondary containment structures. This safeguard limits the potential for either non-treated or treated-waste material to be released outside of designated areas.
7. All material storage areas maintain required aisle space to provide unobstructed access to each tank/vault and/or container for inspection and spill/fire control.

B-5 Incineration or Thermal Treatment

EQD does not have incineration or thermal treatment

B-6 Surface Impoundments

EQD does not have surface impoundments

B-7 Waste Piles

EQD does not have waste piles

B-8 Landfills

EQD does not have landfills

B-9 Land treatment

EQD does not have land treatment

B-10 Miscellaneous Units

EQD does not have miscellaneous units

B-11 Underground Mines or Caves

EQD does not have underground mines or caves

B-12 Drip Pads

EQD does not have drip pads

B-13 Boilers and Industrial Furnaces

EQD does not have boilers or industrial furnaces. There is a steam generating unit which utilizes only natural gas and is less than 10 MMBtu/hr capacity.

B-14 Underground Tanks

EQD does not have underground storage tanks.

B-15 Containment System

EQD maintains secondary containment for all tanks utilized in the processing of hazardous and non-hazardous waste. The containment system was engineered for compliance with 40 CFR 264.183, MI Act 245 Part 5 and MI Act 451 R 299.9615.

Containment volume calculations are provided in **C-10 to C-19**. In addition, secondary containment systems for the double-walled tanks associated with the Chemical Fixation Building are depicted on **C-10**.

Table B- 1: Main Treatment Building Waste Tanks

Table B- 2: Stabilization/Fixation Facility Process Units

Table B- 3: EQD Waste Management Units