

General Facility Description

Location

The Dow Chemical Company, Michigan Operations -- Midland Plant Site is located within the City of Midland in Sections 27, 28, and 35 of Midland Township; Township 14N, Range 2E.

The street address is:

The Dow Chemical Company
Michigan Operations
Washington Street
1790 Building
Midland, Michigan 48674

Applicant mailing address is:

The Dow Chemical Company
Michigan Operations
1790 Building
Midland, Michigan 48674

The Dow Chemical Company Salzburg Landfill (SLF or the Landfill) is located less than one mile from The Dow Chemical Company (Dow) Michigan Operations, southwest of the intersection of Waldo and Salzburg Roads, in Section 35, T14N, R2E, City of Midland, Midland County, Michigan.

The street address is:

The Dow Chemical Company
Michigan Operations Environmental Operations
Salzburg Landfill

2314 Salzburg Road
Midland, Michigan 48667

The individual responsible for hazardous waste management activities at the licensed units is:

Production Leader, Environmental Operations
The Dow Chemical Company
34 Building
Midland, Michigan 48667

Function

The Michigan Operations - Midland Plant Site is an industrial manufacturing and research site comprising approximately 1,900 acres. Hazardous waste management activities occur at this site and are regulated under Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, Part 111 and the Federal Resource Conservation and Recovery Act (RCRA) found at 40 CFR Parts 260 through 270. Active regulated units at the Midland Plant Site include the following:

- Surface Impoundment (Tertiary Pond)
- Container Storage Areas (Waste Storage Area I (WSA I), 32 Building Container Storage Area (32 Pack Room), 830 Building Container Storage Area (830 Building), Offload Spots at the Incinerator, Rail Car Spots, and 703 Tank Farm Spots)
- 32 Incinerator and ancillary equipment
- Tank Systems (1163 Building, 33 Building, and Incinerator Tank Farm)
- Salzburg Landfill

The locations and unit boundaries for the active units are shown on the Facility drawing (B2-010-927122) located in Section I, Applications, of this operating license reapplication. A brief description of each active hazardous waste management unit follows. Descriptions of the closed units are located in Attachment XIV.A11, Closure & Post-Closure Care Plans, of this reapplication. Descriptions of corrective actions undertaken and proposed for Michigan Operations are contained in Attachment XIV.B2, Corrective Action, of this reapplication.

Surface Impoundment (Tertiary Pond)

The Tertiary Pond is a hazardous waste surface impoundment used for storage and treatment of wastewater and is actually comprised of three ponds in series: the Pentagonal Pond, the Rectangular Pond and the Main Pond. The Tertiary Pond has a design capacity of 783,000,000 gallons for storage and 50,000,000 gallons per day for treatment. The Tertiary Pond has been granted a waiver under RCRA §3005(j)(3) from meeting the minimum technology requirements for surface impoundments in 40 CFR 264 Subpart K, this waiver can be found in attachment C of the Surface Impoundment section of this license application.

The Tertiary Pond provides temperature equilibration, storage, treatment, flow stabilization and surge capacity for the secondary effluent from the Michigan Operations Wastewater Treatment Plant prior to discharge to the Tittabawassee River. The secondary effluent undergoes aggressive biological treatment at the wastewater treatment plant and is discharged via a National Pollutant Discharge Elimination System (NPDES) permit. All influent to the Tertiary Pond is pumped directly from the Wastewater Treatment Plant. See Attachment XIV.C5, Surface Impoundments, of this operating license reapplication for detailed process information.

Container Storage Areas (WSA I, 32 Pack Room, 830 Building, Offload Spots at the Incinerator, Rail Car Spots, and 703 Tank Farm Spots)

WSA I, 32 Pack Room, 830 Building, Offload Spots at the Incinerator, Rail Car Spots, and 703 Tank Farm Spots are all long-term (greater than 90-day) storage areas for containerized waste designed for storage prior to further processing on-site or prior to off-site shipment. Wastes can be received into the container storage areas from off-site or on-site generators. The wastes stored in these areas can include: containerized sludges, organic liquids, inorganic liquids, solid and liquid wastes and gases.

WSA I consists of a containment building (1143) surrounded by a larger outside dike that provides additional capacity for storage. WSA I is used to store/stage containerized (e.g., packs, tank trucks, isotainers, etc.) wastes prior to further processing on-site or prior to off-site shipment. WSA I has a design capacity of 443,685 gallons for storage of hazardous waste.

32 Pack Room is used to store/stage containerized (i.e., packs and drums) wastes for feeding to the 32 Incinerator. 32 Pack Room has a design capacity of 133,250 gallons for storage of hazardous waste.

830 Building is mainly used to handle overflow from 32 Pack Room. Overflow containers stored in 830 Building are transferred to 32 Pack Room for feeding to the 32 Incinerator. 830 Building has a design capacity of 125,000 gallons for storage of hazardous waste, of which only 100,000 gallons can be used for storage of liquid hazardous waste.

Offload Spots at the Incinerator consist of two spots for dempster offloading, two spots for dino offloading, and five spots for tank truck/isotainer offloading. Each dempster offload spot has a design capacity of 750 gallons for storage of hazardous waste. Each dino offload spot has a design capacity of 2,500 gallons for storage of hazardous waste. Each tank truck/isotainer offload spot has a design capacity of 7,000 gallons for storage of hazardous waste.

703 Tank Farm Spots consist of one spot for dempster storage, one spot for dino storage, six spots for tank truck/isotainer storage and one spot for tank

truck/isotainer offloading into the Incinerator Tank Farm. The dempster spot has a design capacity of 750 gallons for storage of hazardous waste. The dino spot has a design capacity of 2,500 gallons for storage of hazardous waste. The tank truck/isotainer offload spot has a design capacity of 7,000 gallons for the storage of hazardous waste. Four of the tank truck/isotainer storage spots have a design capacity of 7,000 gallons for storage of hazardous waste and two have a design capacity of 6,000 gallons for storage of hazardous waste.

Rail Car Spots consist of two spots used mainly for rail car offloading to the 32 Incinerator. In addition, the rail car spots can be used for transferring materials from containers to rail cars and vice versa. Each Rail Car Spot has a design capacity of 20,000 gallons for storage of hazardous waste.

Each of the container storage areas may be used to store other containerized materials (e.g., non-hazardous wastes and raw materials) other than those described above, as long as the design capacity for each area is not exceeded. See Attachment XIV.C1, Use and Management of Containers, of this operating license reapplication for detailed process information.

32 Incinerator and Ancillary Equipment

The Incinerator Complex functions as a necessary component of Dow's integrated waste management system. It is capable of reducing the volume and toxicity of a wide variety of hazardous and non-hazardous wastes. 32 Incinerator has been designed, constructed, and operated so as to minimize the possibility of fire, explosion, and sudden or non-sudden releases of hazardous waste or hazardous waste constituents to air, soil, or surface water.

The 32 Incinerator runs 24 hours/day, 7-days/week with scheduled shutdowns. Technical staff, administrative support, and trained technical operations personnel manage the complex.

Scrubber water and ash are generated by the Incinerator and are managed by Dow's on-site wastewater treatment plant and Salzburg Landfill, respectively. The Wastewater Treatment Plant has an NPDES permit and Salzburg Landfill is licensed under RCRA and Michigan Part 111. The scrubber water is discharged to the Wastewater Treatment Plant. Incinerator ash is collected in the ash dewatering-staging area (33 Building). After the ash has been dewatered, it is transported via truck to the Salzburg Landfill.

The Incinerator Complex, 32 Building, is located entirely within the Michigan Operations, Midland Plant Site and consists of a rotary kiln incinerator, secondary combustion chamber, air pollution control equipment, induced draft fans, stack, a bulk liquid feed system, a bulk solids feed system, and a packaged solids feed system. The permitted thermal output capacity of this Incinerator Complex is 130 MM Btu/hr. The Incinerator Complex operates according to the requirements of Permit Number MI-ROP-A4033-2024a and 40 CFR 63, Subpart EEE (Hazardous Waste Combustor MACT Rule). See Attachment XIV.C3, 32 Rotary Kiln Incinerator, of this operating license reapplication for detailed process information.

Tank Systems (1163 Building, 33 Building, and Incinerator Tank Farm)

1163 Building and 33 Building are designed for interim storage and/or treatment of bulk solids or sludges prior to treatment or disposal. The buildings are actually designed to meet the tank standards of 40 CFR 264 Subpart J.

The materials handled by 1163 Building and 33 Building are primarily incinerator ash, contaminated soil, demolition materials, and waste water treatment plant solids. Most of the solids placed in the facility are generated on-site, however, off-site waste may also be stored or treated.

1163 Building is licensed to store 360,000 gallons (1,800 cubic yards) of hazardous waste and to treat 400,000 gallons/day (1,950 cubic yards/day). 33 Building is licensed to store 181,800 gallons (900 cubic yards) of hazardous waste and to treat 400,000 gallons/day (1,950 cubic yards/day). Treatment primarily consists of dewatering and delumping solid materials prior to further treatment or disposal.

The Incinerator Tank Farm contains ten individual tank systems located within a secondary containment area. All ten are existing tank systems. Seven of the tank systems, V-301, V-302, V-303, V-401, V-402, V-403 and V-404, are used for organic or other liquid wastes; one tank system, V-701, is used for water wastes; and two tank systems, V-101 and V-601, are used for containment of drainage from hazardous waste container management areas, waste unloading areas or for secondary containment of releases from tank systems V-301, V-302, V-303, V-401, V-402, V-403, V-404, and V-701.

The Incinerator Tank Farm tank systems have a total licensed storage design capacity of 152,250 gallons. See Attachment XIV.C2, Tank Systems, of this operating license reapplication for detailed process information.

Salzburg Landfill (SLF or Landfill)

The Landfill is designed for disposal of Dow Michigan Operations non-hazardous and hazardous wastes. No treatment or storage occurs at SLF. SLF consists of landfill cells, paved roads, and buildings which contain a vehicle wash area, spare parts, utilities, lunch room, locker room, and office. Drawing B2-001-1374, delineates all existing structures; existing disposal areas; and sites of future disposal area at SLF, per 40 CFR 270.13(h)(2). No sites for treatment or transfer are depicted, since those activities do not exist at SLF.

The types of wastes disposed at SLF consists primarily of incinerator ash, contaminated soil, dewatered sludges, asbestos, remediation materials, Corrective Action Management Unit (CAMU)- eligible wastes, debris, and demolition rubble. Disposal of T-pond solids at SLF began August 2002 and was discontinued in October 2006 with the conclusion of the T-Pond dredging project. Dow maintains an Land Disposal Restrictions (LDR) variance to allow for future Disposal of T-pond Solids to SLF, see attachment 3 in the waste analysis plan of this license renewal application. However, the large majority of the waste disposed of at SLF since the conclusion of the T-pond project is incinerator ash from the Michigan Operations incinerator complex.

Because the incinerator is a state of the art 99.999% Destruction and Removal Efficiency (DRE) incinerator, there is minimal untreated organic hazardous waste disposed at SLF, any soils or dewatered sludges contain only a small quantity of organics. All hazardous waste disposed at the Landfill will have met the LDR requirements (40 CFR Part 268) or the LDR variance requirements.

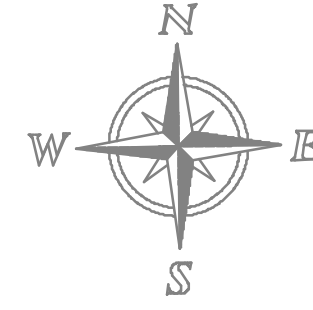
Dow is highly committed to waste minimization and, through waste reduction efforts, SLF operates on an as-needed basis.

All wastes placed in SLF are overlaid by the end of the day with daily cover. Traffic routes around the cells are paved. These practices result in a minimum of airborne particles emanating from the fence line.

At the time the Landfill was issued its first operating license, the lifetime of the Landfill was estimated to be until the year 2017. Dow's waste minimization

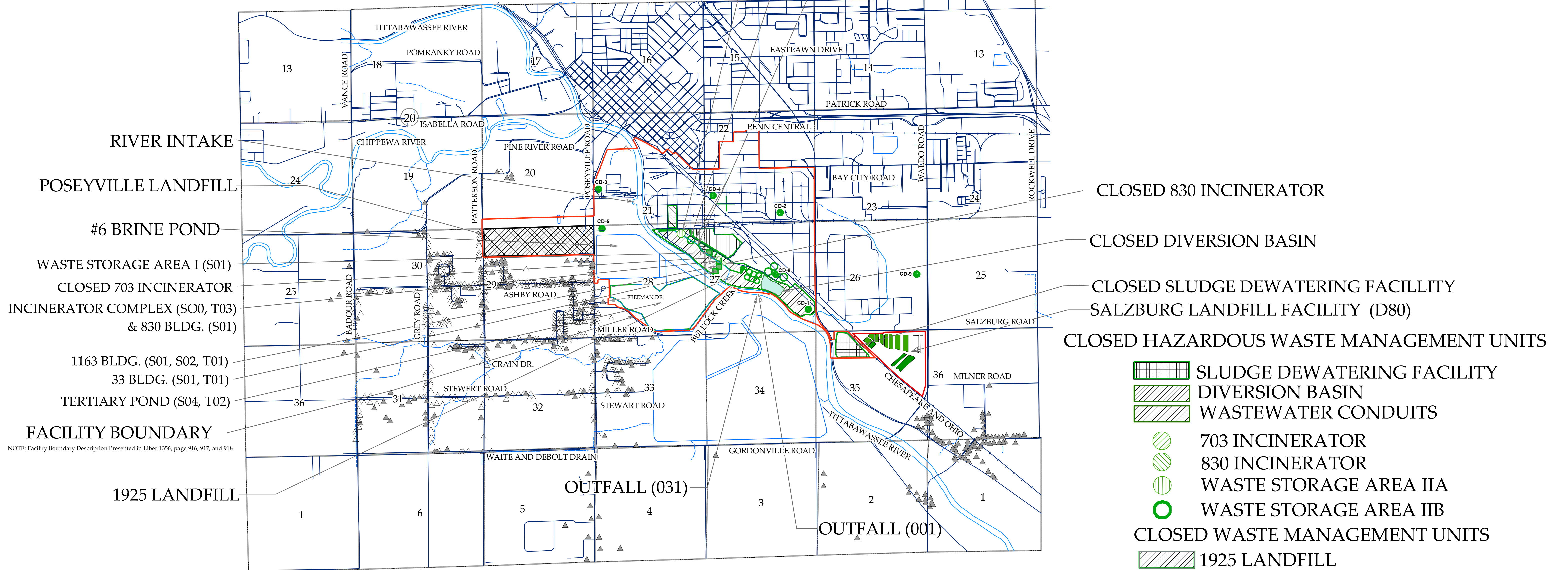
efforts have significantly prolonged the life of the Landfill. Current estimates are that the Landfill will have capacity at least through the year 2062.

Eliminating and minimizing the generation of waste to be placed in SLF is an important consideration in research, process design, plant operations, and maintenance, and is considered prior to other options. Materials are reused and recycled whenever possible, and treated if unusable. Disposal of the wastes in SLF is the least desirable option of waste management and is conducted only when necessary after other options have been evaluated.



LATITUDE = 43°-36'-11"
LONGITUDE = 84°-13'-23"

CLOSED WASTEWATER CONDUITS
CLOSED WASTE STORAGE AREA IIB (S01, S02)
CLOSED WASTE STORAGE AREA IIA (S01, S02)



RIVER INTAKE
POSEYVILLE LANDFILL
#6 BRINE POND
WASTE STORAGE AREA I (S01)
CLOSED 703 INCINERATOR
INCINERATOR COMPLEX (S00, T03)
& 830 BLDG. (S01)
1163 BLDG. (S01, S02, T01)
33 BLDG. (S01, T01)
TERTIARY POND (S04, T02)
FACILITY BOUNDARY

CLOSED 830 INCINERATOR
CLOSED DIVERSION BASIN
CLOSED SLUDGE DEWATERING FACILITY
SALZBURG LANDFILL FACILITY (D80)
CLOSED HAZARDOUS WASTE MANAGEMENT UNITS

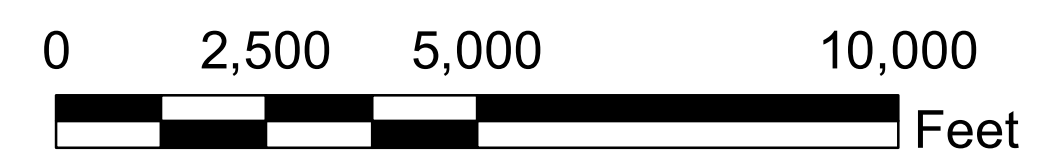
- SLUDGE DEWATERING FACILITY
- DIVERSION BASIN
- WASTEWATER CONDUITS
- 703 INCINERATOR
- 830 INCINERATOR
- WASTE STORAGE AREA IIA
- WASTE STORAGE AREA IIB
- 1925 LANDFILL
- POSEYVILLE LANDFILL
- LEL I
- LEL II
- LEL III
- SALZBURG LANDFILL CLOSED CELLS

NOTE: Facility Boundary Description Presented in Liber 1356, page 916, 917, and 918

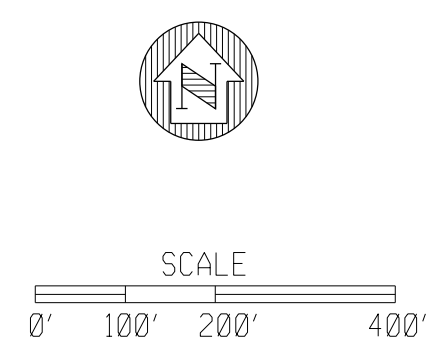
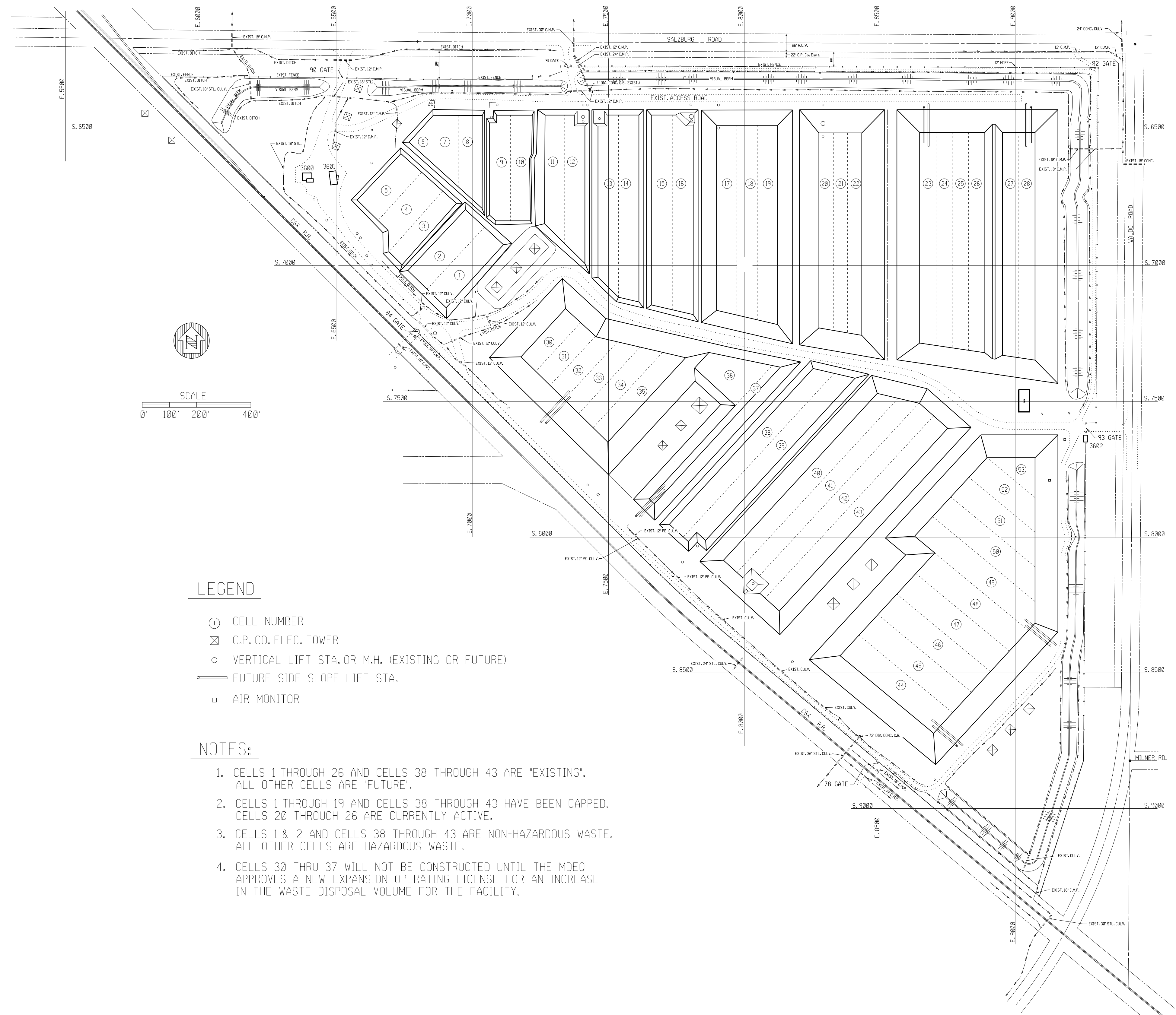
● INDICATES CLOSED DISPOSAL WELLS
△ DWELLING ON CITY WATER SUPPLY, BUT NO WELL CLOSURE RECORD
▲ INDICATES DRINKING WATER WELLS AS OF 2025

THE DOW CHEMICAL COMPANY
MIDLAND MI. - FACILITY #MID 000 724 724
and
MID 980 617 435

DRAWING B2-010-927122
RCRA PART A FACILITY MAP
PART 111 OPERATING LICENSE RE-APPLICATION
FACILITY ID NUMBER MID000724724
(Revised February 2025)



No active oil, gas and mineral wells were identified in the Michigan DEQ GeoWebFace system (accessed at <http://www.deq.state.mi.us/GeoWebFace/>) within 1 mile of the Facility Boundary in December 2015.



LEGEND

- ① CELL NUMBER
- ⊠ C.P. CO. ELEC. TOWER
- VERTICAL LIFT STA. OR M.H. (EXISTING OR FUTURE)
- FUTURE SIDE SLOPE LIFT STA.
- AIR MONITOR

NOTES:

1. CELLS 1 THROUGH 26 AND CELLS 38 THROUGH 43 ARE "EXISTING". ALL OTHER CELLS ARE "FUTURE".
2. CELLS 1 THROUGH 19 AND CELLS 38 THROUGH 43 HAVE BEEN CAPPED. CELLS 20 THROUGH 26 ARE CURRENTLY ACTIVE.
3. CELLS 1 & 2 AND CELLS 38 THROUGH 43 ARE NON-HAZARDOUS WASTE. ALL OTHER CELLS ARE HAZARDOUS WASTE.
4. CELLS 30 THRU 37 WILL NOT BE CONSTRUCTED UNTIL THE MDEQ APPROVES A NEW EXPANSION OPERATING LICENSE FOR AN INCREASE IN THE WASTE DISPOSAL VOLUME FOR THE FACILITY.

REV. MARK	REVISION	BY	CHK	APP	DATE
A	REVISED CONFIGURATION OF CELLS 23 THRU 28 AND CELLS 44 THRU 53 - ALSO ADDED INTERMEDIATE DIKE IN CELLS 23 THRU 28	LEG	JJA	JJA	2/08
B	REVISED TO NOTE CELLS 30 THRU 37 WILL NOT BE BUILT UNTIL CONSTRUCTION PERMIT VOLUME MOD IS APPROVED	LEG	JJA	JJA	9/08
C	REVISED NOTE 1 - REPLACED THE NUMBER "22" WITH "26"	HG			6/15
D	REVISED NOTE 2-CHANGED THE SECOND SENTENCE TO "CELLS 20 THROUGH 26 ARE CURRENTLY ACTIVE"	HG			6/15

REV. MARK	REVISION	BY	CHK	APP	DATE
E	REVISED NOTE 4- REPLACED WORDS "CONSTRUCTION PERMIT MODIFICATION" TO "NEW EXPANSION OPERATING LICENSE"	HG	ML	ML	6/15
F	REMOVED TRAILER T-1563 FROM MAP	ML	ML	RO	8/20/24

DRAWING ISSUE RECORD					
ISSUE NO.	REV	MATERIAL OR JOB SPEC	BID	FAB	CONST

DESIGNED	J.J. ALLEN	11/05
DRAWN	L.E. GIRARDIN	11/05
CHECKED	J.J.A.	11/05
APPROVED	J.J.A.	11/05
PROJ. ENGR.	J.J. ALLEN	11/05
MFG. REPT.	STEVE LUCAS	11/05

THE DOW CHEMICAL COMPANY	
MICHIGAN OPERATIONS	MIDLAND, MICHIGAN
SALZBURG LANDFILL	3600
EXISTING & FUTURE CELL LAYOUT	
EJN NUMBER 114291	SCALE 1" = 200'-0"
B2-001-1374	
REV. F	2
PLN	

8/20/2024
 01-USER:1023757
 C:\PROGRAMS\ESL\BORG\ESL\PROJECTS\4001-1374.DGN



Salzburg Road

Sludge Dewatering Facility

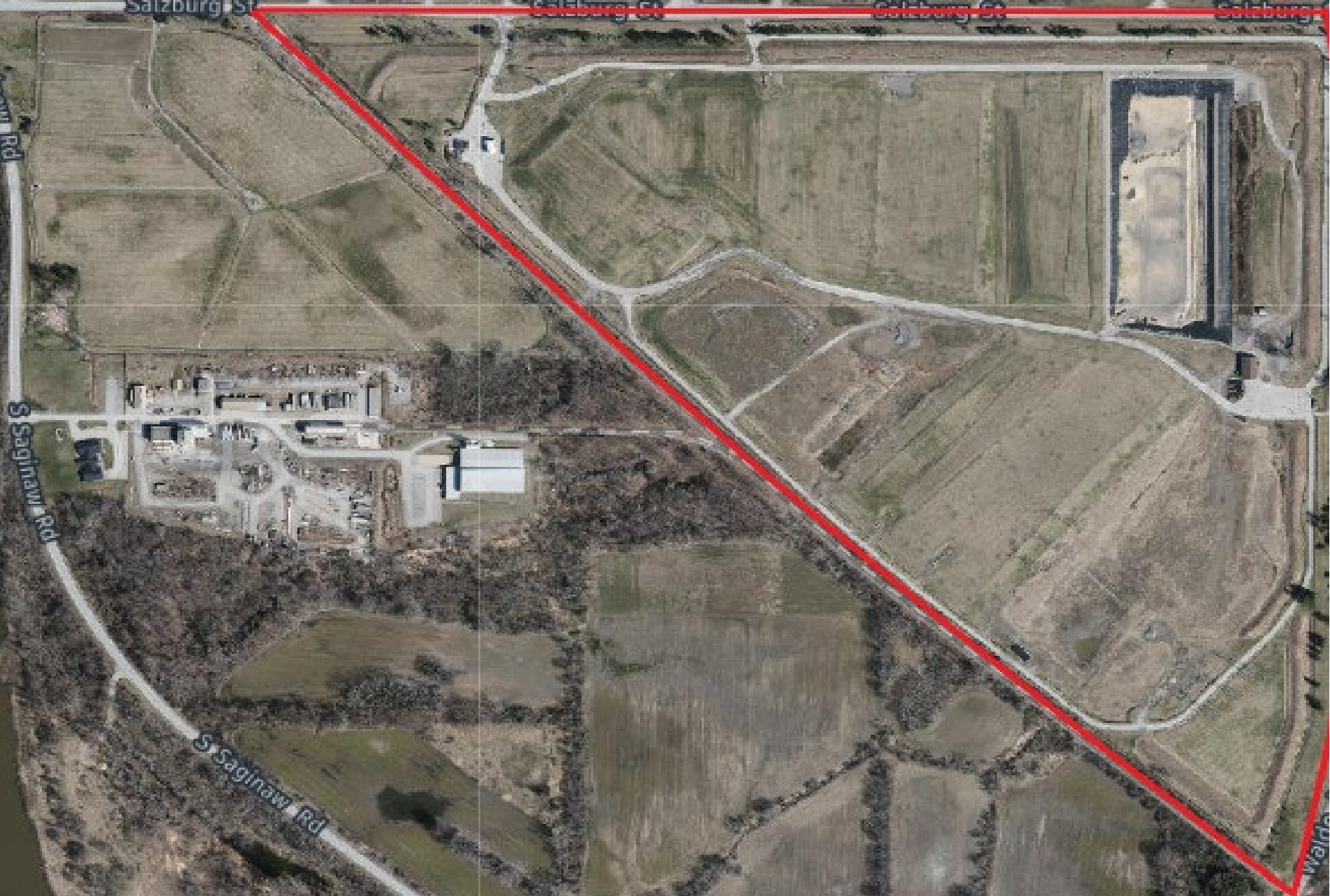
1 inch = 300 feet



Legend

-  Facility Boundary
-  SDF Roadways





Salzburg Landfill

General Business

