ChemDesign

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September 13, 2019

Via E-Mail and FedEx

Mr. Dave Neste
Remediation and Redevelopment Program
Wisconsin Department of Natural Resource
625 E. County Road Y, Suite 700
Oshkosh, WI 54901

RE: Request for Site Information
ChemDesign Products, Inc
2 Stanton Street, Marinette, WI
DNR BRRTS Activity # 02-38-583852
DNT FID # 438008340

Dear Mr. Neste:

ChemDesign Products, Inc ("ChemDesign") received the Wisconsin Department of Natural Resources' ("WDNR") Reported Contamination Letter dated July 2, 2019 ("Letter"), which included a Request for Site Information to be provided within 60 days ("Information Request"). By separate correspondence, WDNR subsequently agreed to a 30-day extension of this deadline. ChemDesign is providing its response to the Information Request in the enclosed documents.

In addition, the Letter requested that ChemDesign submit a Site Investigation Work Plan within 60 days of the date of the Letter. ChemDesign leases its facility from Tyco Fire Products LP ("Tyco"). By separate correspondence to WDNR dated September 3, 2019, Tyco indicated its agreement that it will address the leased property through its existing Site Investigation Work Plan with regard to the Stanton Street facility. Therefore, ChemDesign will not be submitting a separate Site Investigation Work Plan at this time. Please let us know if you have any questions about this arrangement.

We look forward to working with the WDNR on this matter and to explain how we operate and the steps we take to ensure our manufacturing does not affect the environment.

Sincerely,

David Mielke
President & CEO

Enclosures

Response of ChemDesign Products, Inc. to Wisconsin Department of Natural Resources' Request for Information for ChemDesign Products, Inc.'s Leased Facility Located at 2 Stanton Street, Marinette, WI Under Wis. Stat. §§ 292.11(8), 292.31(1), 292.31(1)(D)(1)-(3)

September 13, 2019

ChemDesign Products, Inc. ("ChemDesign") prepared the following responses to the Wisconsin Department of Natural Resources' ("WDNR") Information Request dated July 2, 2019 ("Information Request"). ChemDesign is providing its response to all requests within the Information Request related to its facility located at 2 Stanton Street, Marinette, WI.

General Objections

ChemDesign's objections are made without in any way waiving or intending to waive, but on the contrary, preserving and intending to preserve:

(a) all questions and/or objections as to competency, relevancy, materiality, privilege, and admissibility as evidence for any purpose of the responses or the subject matter thereof in any subsequent proceeding involving ChemDesign;
(b) the right to object on any ground to the use of these responses or the subject matter thereof in any subsequent proceeding involving ChemDesign; and
(c) the right to object on any ground at any time to other requests or discovery procedures involving or relating to the subject of these responses.

These responses are based on, and therefore necessarily limited by, the records and information still in existence, presently recollected, and thus far discovered in the course of preparing these responses. ChemDesign reserves the right to supplement and make any changes to these responses if it appears at any time that omissions or errors have been made or that more accurate information is available.

ChemDesign objects to each and every instruction and request to the extent that it seeks information that is not relevant or otherwise beyond that authorized by Wisconsin law.

ChemDesign objects to each and every instruction and request to the extent that it seeks information protected by the attorney/client privilege, the attorney work product doctrine, or any other applicable privilege or restriction, and ChemDesign has not included in this response copies of any such documents protected by such privileges, doctrines, or restrictions.

ChemDesign objects to each and every request to the extent that such requests are overly broad and unduly burdensome.

ChemDesign objects to this Information Request to the extent it lacks any definitions for the terminology utilized in the requests, such that ChemDesign is unable to determine what information is being sought by WDNR. Nothing in this response or in any subsequent or previous response to the Information Request shall be considered or deemed to be a waiver of these objections.

The following responses correspond to the numbered requests in the Information Request (the Information Request language is set forth in italics). All responses were prepared with the

assistance and advice of counsel and such discussions are covered by attorney/client and attorney work product privileges.

Introduction

ChemDesign is a synthetic organic chemistry toll service provider processing, in a safe and environmentally sound platform, chemical intermediates used in agriculture, plastic, construction, and other industries. ChemDesign rents time on its assets, primarily reactor trains, and provides technical resources to process customer-supplied and customer-owned reagents in accordance with the customer's recipes, procedures, and specifications. This process results in the creation of intermediates which are returned to the customer.

ChemDesign was founded in 1983 and began leasing its facility from Ansul (now Tyco Fire Products LP through merger and acquisition) on property located at 2 Stanton Street, Marinette, Wisconsin. ChemDesign's leased property is nested within the Tyco facility. Figure 1 generally depicts ChemDesign's leased facilities and where different activities occur.

ChemDesign's only involvement with PFAS chemicals began in 2005 as part of ChemDesign's relationship with Chemguard, Inc. After Tyco Fire Products LP ("Tyco") acquired Chemguard in or around 2011, ChemDesign's relationship continued with Tyco.[1] Prior to 2005, ChemDesign never handled, processed, tested, or had any involvement of any kind with any perfluorinated products. To this date, Tyco was and is ChemDesign's only customer for PFAS-related tolling services.

ChemDesign adheres to all twelve elements[2] of OSHA's Process Safety Management of Hazardous Chemicals (29 CFR 1910.119) during the preparation and processing of all chemicals and materials on its site. ChemDesign's teams of Chemical Operators, Building Managers, Chemical Engineers, Chemists, Engineers, Supervisors and Health and Safety Professionals continuously evaluate materials and process to anticipate and eliminate all safety and environmental issues that could occur. This includes: evaluating hazards, handling of all chemicals, proper personal protective equipment, writing procedures, employee education and involvement, engineering controls, waste management, performing Hazard and Operability studies and much more for each process it brings on-site.

[1] For ease of reference, this response will use "Tyco" to refer to both Chemguard and Tyco as appropriate.
[2] The twelve elements are: Process Safety Information; Process Hazard Analysis; Operating Procedures; Training; Contractors; Mechanical Integrity; Hot Work; Management of Change (PCN); Incident Investigation; Employee Participation; Pre-startup Safety Review (Safety Walk-Through); and Emergency Planning and Response.

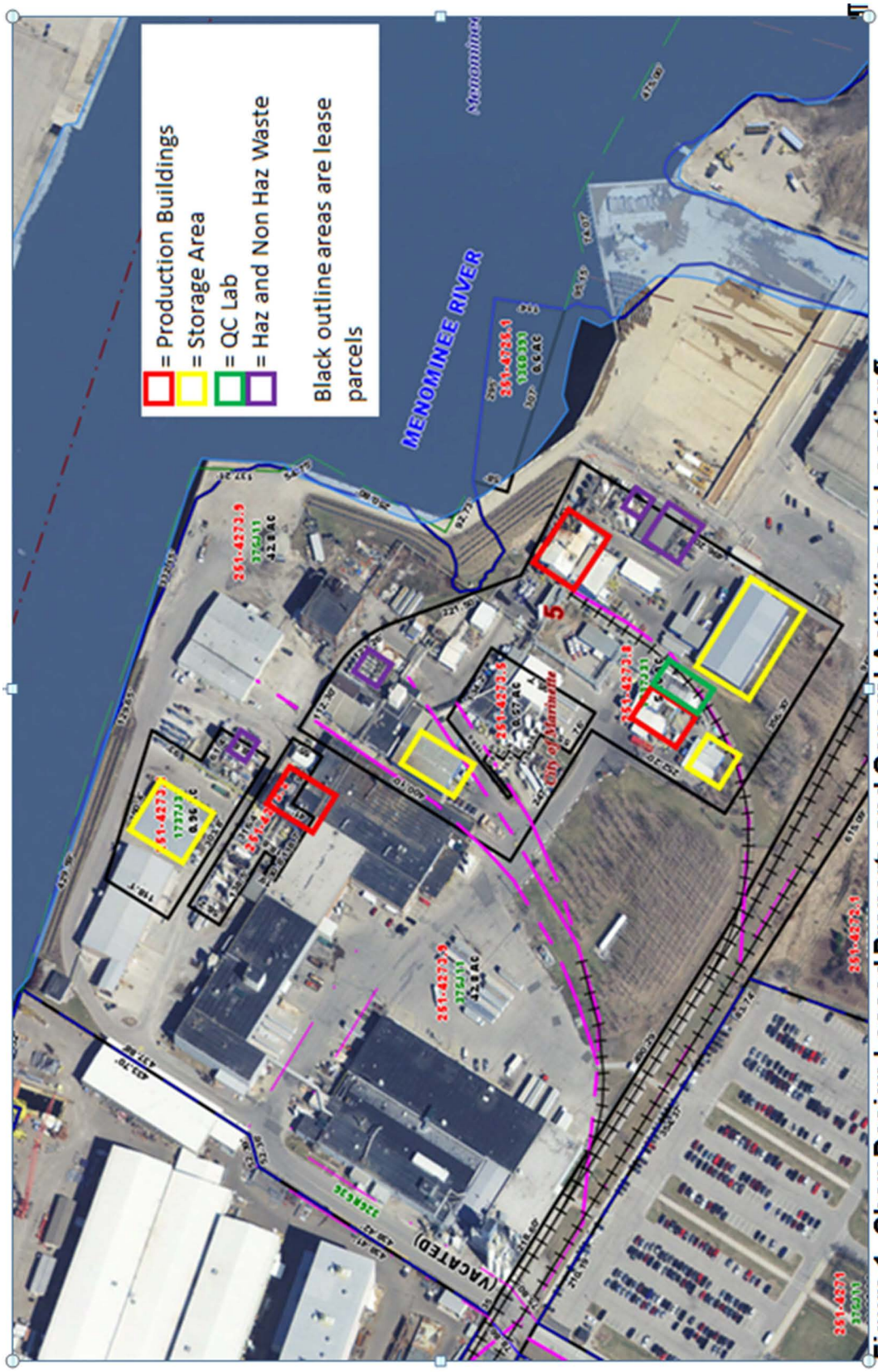


Figure 1. ChemDesign Leased Property and General Activities by Location

Responses to Questions

1. *Describe the use and manufacture of PFAS or PFAS-containing materials at the facility from the receipt of the material to the final use, sale or disposal of PFAS or PFAS-containing materials. Include in that the description the information on all entities responsible for its manufacture and use; the years involved in its manufacture and use; what it was used to manufacture; whether any product containing PFAS was used or tested at the facility; the areas of the facility where it was manufactured and used; and whether it was emitted from any air emission sources.*

Response 1:

PFAS-Containing Material History

As noted above, ChemDesign is a synthetic organic chemistry toll service provider. It uses customer-supplied and owned reagents to process chemical intermediates which are returned to the customer.

Beginning in 2005, ChemDesign provided a small amount of reactor capacity (two to six reactors out of 45 total reactors at the facility) to process a series of different perfluorinated compounds following Tyco's direction and technical recipes. Tyco provides ChemDesign with a complete technical package and procedure, the key reagents (including all PFAS-containing materials), and the plastic totes or 55-gallon drums to package the return material. ChemDesign uses Tyco's technical packages to create batch processing procedures, trains operators based on MSDS/SDSs and technical information from Tyco, purchases non-key raw materials (acetic acid, caustic, water, methanol, t-butanol, and chlorine), and processes the Tyco supplied reagents into intermediates as requested. ChemDesign does not take ownership of the Tyco materials or the resulting intermediates. It returns all intermediates to Tyco at 1 Stanton Street, Marinette, WI (or, prior to 2016, to Chemguard in Mansfield, Texas) using the totes or drums provided by Tyco.

ChemDesign does not own the PFAS compounds supplied by Tyco and does not sell them in the market. ChemDesign does not design, invent, create, sell, manufacture or market AFFF. ChemDesign does perform analytical quality testing on intermediates it processes to determine purity, pH, and percent solids, but does not test any aspect of Tyco's AFFF or other products.

The material mix has consisted of 37 various compounds since 2005 that can be considered PFAS-containing materials. While the distinct materials have subtle variants in synthesis, they can be grouped into the following basic reaction types:

1) Conversion of perfluoroalkylethyl iodides (provided by Tyco/Chemguard from third parties) to mercaptan intermediates. All mercaptans are reacted further by ChemDesign to make the following materials:
    a. Telomers (Returned to Tyco/Chemguard)
    b. Surfactant Intermediates (Returned to Tyco/Chemguard)
    c. SW Intermediates (Returned to Tyco/Chemguard)
2) Conversion of perfluoroalkylethyl alcohols (provided by Tyco/Chemguard from third parties) to P-esters and returned to Tyco/Chemguard.

The Process

These materials are processed in batches in various assets depending on the Tyco request and Tyco's recipe changes.

The general process is as follows. PFAS raw materials are delivered to Tyco as solids (i.e., a wax-like form) in sealed poly totes or 55-gallon drums. Tyco either delivers the totes/drums to ChemDesign or ChemDesign picks them up from Tyco and moves them to covered storage on impervious concrete pads.

When the PFAS raw materials are ready to be processed, ChemDesign places the tote/drum and its storage pallet into a heated enclosure which melts the raw material inside the tote/drum over a period of about eight hours. The tote/drum and pallet are then transferred to the reactor area and placed on a scale. The operator opens the manway on the top of the tote/drum, inserts a metal dip pipe, and pumps or sucks the appropriate amount of material into the reactor via hose which is connected to the reactor. When transfer is complete, the dip tube and hose is cleared with a nitrogen flush. The dip tube is either left in the tote for future transfers or cleaned with solvent which is flushed into the reactor.

The batch synthesis is conducted in 1000, 2000, or 3000 gallon glass lined steel (g/l) Pfaudler-style closed and sealed reactors or 316 stainless steel (s/s) closed and sealed reactors. A reactor is a pressure rated agitated vessel with a jacket for heating and cooling, valves for charging materials, and a vapor line with reflux condenser. All reactors are located inside production buildings. Production buildings have impervious floors (i.e., concrete with acid brick surface) and containment in case of a spill. The reactors that process these compounds change depending on requests but are primarily vessels 5226 and 5227 (2000-gal glass lined steel reactors (g/l)) located in Building 52). There are also a few reactors in Building 38 and Building 69 that are used as needed (3830 (1500-gal s/s)), 3839 (2000-gal g/l), 3802 (1000-gal g/l), 6901 and 6910 (both 1000-gal g/l), 6907 (300-gal g/l)).

All of the PFAS materials used by ChemDesign are non-volatile at the temperatures handled. The reactions typically involve inertion of the vessel with nitrogen, drawing vacuum on the vessel, and charging the liquid reagents under residual vacuum. Next, multiple other liquid or solid non-PFAS reagents are added. The mixture is then heated or cooled until the reaction is completed. Finished intermediates are blends or solutions in water or solvent. Since these intermediates and the chemistry are fairly simple and conducted at moderate temperatures without pressure, the risk of leaks or releases is low. The only outputs from the reactor are intermediates, waste for incineration (as described further below), or co-product streams for reuse in subsequent batches. The co-products are typically stored in a receiver until the next batch or stored in reused totes and then recharged into a reactor. If there is a surplus of co-product it is incinerated at a licensed third-party waste vendor.

After reaction, small two to four ounce samples of the intermediates are pulled and brought to Quality Control in closed containers. If testing indicates it is necessary, adjustments are made to the reacted intermediates' percent solids, solvent choice, and/or pH in the reactor. The reactor is then cooled, and the intermediate is then packaged in new plastic totes or drums using nitrogen through a valve flexible hose and dip pipe through a bunghole located on the top of the tote/drum. The totes/drums are sealed and either transported to Tyco's storage area or Tyco picks them and transports them. All outdoor runways for material movement in totes/drums between ChemDesign and Tyco are asphalt. The finished intermediates must be protected from freezing, so during colder months, the intermediates are stored in totes/drums in heated facilities under cover. During warmer months, they may be stored under cover on impervious surfaces.

There are no PFAS-air emissions from ChemDesign's operations. First, the PFAS-raw materials have extremely high boiling points under vacuum, and reactor tempered water heating coils are incapable of heating the reactors to these temperatures. Therefore, with one exception noted below, the PFAS materials are never vaporized during the process of mixing, reacting, and blending; they remain in liquid form. In addition, the reactors are often operated under non-vented conditions,

meaning no air emissions leave the reactors. However, at times the reactors do need to be vented, especially when additional materials are added to the reactors.[3] When this occurs, the vapors (from solvents utilized in the process) are directed first to a primary chilled condenser and condensed solvents are returned to the reactor. Any remaining vapors are directed to a secondary condenser with condensate directed to hazardous waste storage and then incineration by a licensed third party vendor. Any emissions from the secondary condensor are directed to a caustic scrubber which absorbs any remaining non PFAS reagents.

On occasion, ChemDesign will perform a simple distillation on mercaptan intermediates to purify the material. The distillation is conducted in a glass lined reactor under very high vacuum and special heating. The mercaptan is vaporized then condensed and the condensers are vented to secondary condensers and then the vacuum pump which in turn vents to the building caustic scrubber. All non-mercaptan condensed materials are recycled or incinerated as further described below. Therefore, no PFAS-containing materials can release to the atmosphere from ChemDesign's processes.

Waste Handling and Disposal

All hazardous waste is stored in contained, inspected aboveground storage tanks. Drum waste is stored in the Building 91 contained and inspected storage area. Hazardous waste, as required by law, is sent for disposal within 90 days of generation. All piping associated with hazardous waste is inspected, maintained and monitored for leaks by a third party contractor as part of ChemDesign's Leak Detection and Repair (LDAR) program. All site waste is managed by a full time dedicated, degreed, and trained waste manager.

The PFAS toll processes do not generate much waste. Process water and reactor rinse is recycled as product dilution water. All empty raw material containers that contained the perfluoroalkyl iodine materials are refilled with the iodine water from the mercaptan synthesis process and returned to Tyco. Solvents are collected and reused. Excess solvents or clean-out solvents are collected by bulk hazardous waste transporters and incinerated by licensed third party vendors.

Empty used drums and totes are reused for intermediate mercaptans, iodine water, or rinse water. If tote/drum disposal is required, the tote/drum is triple-rinsed, and the rinse water is collected and incinerated by a third party. Totes/drums are then cut into pieces and sent to a licensed third party for disposal.

All other rinse waters from cleaning are recycled as dilution water for other batches, or if a surplus, transferred to above ground storage tanks directly then transferred to bulk tanker truck and incinerated by licensed third party waste vendors.

All used plant personal protective equipment is placed in hazardous waste solids drums and collected and incinerated by a licensed third party vendor. Filters and lab sample jars are collected in drums as solid hazardous waste and incinerated by licensed third party vendors. Lab liquid samples are poured into liquid hazardous waste containers and incinerated via bulk hazardous waste by licensed third party vendors. Process water is incinerated or shipped via tanker truck for disposal.

See Attachment 1, PFAS Materials Site Map which identifies movement of PFAS-related drums and totes through the site by process, as well as waste transport and average inventories and

[3] ChemDesign holds an air operating permit from the Wisconsin Department of Natural Resources which governs its controls and emissions.

Attachment 2 Waste Vendor Summary.

2. *Describe, using generic and trade names, the materials containing PFAS that were transported to or from, disposed of, stored, produced, used, handled, managed, or processed at or related to the Facility. The description should include the physical form (solid, liquid, gas) of any materials and the type of container used to transport, store, produce, use, handle, manage, or process the PFAS.*

Response 2: Please see response to Question 1 and Attachment 1, PFAS Materials Site Map. All PFAS-containing raw materials and finished intermediates are handled in 55-gallon drums and 250-gallon plastic totes. This includes product received from Tyco, when material is moved internally, and when intermediates are packaged for delivery to Tyco. All materials are moved through the site in closed, caged plastic totes or drums via forklift on pallets. All the raw material perfluroroalkyliodides and alcohols are solids (similar to wax) and require melting prior to use. The raw material is only a liquid immediately prior to use and during transfer to the reactor. The final intermediates are liquid solutions in solvent/water and leave the reactor building in sealed totes or drums.

3. *Describe the transportation to or from, production, disposal off, storage, use, handling, management, and processing of PFAS-containing material related to the Facility. Include in each description where and in what process at the Facility the transportation to or from, disposal storage, use, handling, management, and processing of PFAS-containing material occurred at the Facility. E.g., the material was disposed of in landfill, drained to soil sewer drain, etc. If the point of transportation to or from, production of, disposal of, storage, use, handling, management, or processing of PFAS-containing material changed over time, please provide dates of such changes and what changes were made.*

Response 3: Please see the response to Question 1, Attachment 1, PFAS Materials Site Map, and Attachment 2, Waste Vendor Summary.

4. *Estimate the amounts of PFAS-containing materials that were transported to or from, disposed of, stored, produced, handled, managed, or processed at or related to the Facility.*

Response 4:

Please also see response to Question 1 and Attachment 1 PFAS Materials Site Map.

PFAS related waste stream summary (based on 2018 data[4])

Waste streams related to PFAS containing process are managed, tracked and disposed of using licensed third party vendors. Below is a summary of waste streams, where they are held, how much ChemDesign disposed of in 2018, and the average inventory for 2018.

[4] Information was compiled from ChemDesign's 2018 hazardous waste report and 2018 TRI report.

Building 91 Drum Waste Storage Pad: Samples, contaminated filters, and contaminated PPE are managed under three different waste profile numbers. These waste streams are put into drums and logged into Building 91 (hazardous waste storage pad) and then shipped for disposal to licensed third party hazardous waste incinerators. Drums come from all production buildings producing PFAS-related material and from the quality control lab after samples are run. In 2018, ChemDesign produced 11,654 pounds of drummed waste that encountered PFAS related streams and that were staged, stored, and transported from Building 91. This is an average inventory of 971 pounds each month. Of the total weight, 11,210 pounds was generated from waste streams directly profiled for PFAS-related waste. The other 444 pounds was generated from comingled lab waste that contained an estimated 10 percent of waste that encountered a PFAS-related process.

Building 83 Water Tank: In 2018, approximately 64,000 gallons of water from vessel clean-outs and process water cuts that were in contact with PFAS materials were toted out from production buildings via poly totes. The contents of these totes were then bulked for disposal in a tank in Building 83 to be shipped to licensed off-site incineration facilities. The totes are reused as discussed in the response to Question 1. This results in a 14,811 gallon monthly average inventory of process water.

STS-6 and 6206 Bulk Hazardous Waste Aboveground Storage Tanks: ChemDesign cleans its vessels used for PFAS-related processes and directs the used cleaning solvents to tank STS-6 or 6206 where it comingles with other solvent-based waste streams. In 2018, approximately 6430 gallons of waste solvents from a PFAS related process entered tanks STS-6 and 6206. The average monthly inventory was 530 gallons. In 2018, these streams came from Building 52, 69, 38, and the QC lab. From the tanks, these solvents were transferred to bulk tankers for incineration at a licensed off-site facility.

5. *Identify which part of ChemDesign's operations, including storage, involving PFAS or PFAS-containing materials, generated waste, including but not limited to wastes resulting from spills of liquid materials and wastes generated by cleaning and maintenance of equipment, inventory cleanout, off-specification determined wastes and machinery. Include locations where the waste was generated and stored, and an estimation of the volume or mass of the waste generated and stored.*

Response 5: Please see the responses to Question 1 and Question 4 and Attachment 1, PFAS Materials Site Map which identifies movement of PFAS-related drums and totes through the site by process, as well as waste transport and average inventories.

6. *Identify discharges of PFAS or PFAS-containing materials and describe the methods used to clean up the discharges including but not limited to:*
    a. *The types of materials spilled,*
    b. *The media onto or into which the spill occurred,*
    c. *The materials used to clean up those spills,*
    d. *The methods used to clean up those spills, and*
    e. *Where the materials used to clean up those spills were disposed of.*

Response 6: ChemDesign does not have a known spill of PFAS or PFAS containing materials at its facility as a result of its operations.

7. *Describe the cleaning and maintenance of equipment and machinery involved in*

PFAS operations, including but not limited to:

Response 7:

a. The types of materials used to clean and maintain this equipment/machinery,

Water rinses or boil-outs at reflux are used for cleaning on all processes except the Toll SW Intermediates where methanol is used for cleaning. The liquid wastes from the reactor clean-outs are collected in totes and recycled as process water in future batches or incinerated as hazardous waste.

b. The monthly or annual quantity of each such material used,

In 2018, the facility conducted 161 clean outs with water at approximately 400 gallons each and 16 clean outs using 400 gallons of methanol each.

c. The disposition of those materials used in cleaning equipment,

Methanol is removed from the site by a licensed third-party vendor via tank truck and incinerated as hazardous waste by licensed third party vendors. Rinse water is removed from the site by a licensed third-party vendor via tank truck and incinerated by licensed third party vendors.

d. Where the materials are/were disposed of.

Non-flammable water is shipped to Covanta for incineration. Flammable hazardous waste is shipped to Veolia for incineration. Manifests and profiles can be provided by year upon request. Please see Attachment 2, Waste Vendor Summary.

8. *Was there ever a spill, leak, release, or discharge of PFAS into any subsurface disposal system or floor drain inside or under the buildings within the facility, or that may have migrated from the facility? If so, identify:*
    a. *Where the disposal system or floor drains were located,*
    b. *Whether the disposal system or floor drains were connected to pipes,*
    c. *Where such pipes were located and emptied,*
    d. *Whether such pipes ever leaked or in any way discharged the substances into the environment.*

Response 8: ChemDesign does not have any knowledge of spills, leaks, releases, or discharges of PFAS substances into any subsurface disposal system or floor drain inside or under the buildings within the facility or that may have migrated from the facility. The reactors are sealed pressure vessels and part of a sealed pressure tested system and piping. Transfers of materials to the vessels are made through stainless steel, Teflon-lined pipe, or chemhose directly to the appropriate container, and containers are sealed prior to transport. The buildings have a concrete floor with acid brick surface. All transfers, storage, and processing are conducted in contained production units with all vessels, piping, and containers located above ground and visible to operators.

Reactor cleaning is internal to the reactor as described in response to Question 7. When operators perform non-chemical contact wash downs of the building they collect the floor water in a sealed sump pit which pumps to the dirty water aboveground storage tank, is analyzed, and then sent for treatment based on evaluation to either non-hazardous or hazardous waste processing vendors.

Vendors and disposal protocols are described in response to Questions 1 and 3. ChemDesign inspects all building sump pits for leaks on a routine basis.

9. *Identify all entities who transported reject water from the Groundwater Collection and Treatment System (GWCTS) and the location(s) where reject water was disposed. Provide information regarding dates and volumes of reject water sent off-site for disposal.*

Response 9: ChemDesign does not have a GWCTS and does not collect, treat, or sample groundwater, and does not have the knowledge to answer this question.

10. *Was there ever an application of PFAS or PFAS-containing material, including Aqueous Film Forming Foams (AFFF) and Alcohol Resistant-AFFF to the ground for fire training purposes or to extinguish a fire? If so, identify:*
    a. *Where the fire or fire training occurred,*
    b. *When the fire occurred,*
    c. *The range of dates when fire training occurred,*
    estimate the volume of PFAS or PFAS-containing materials were applied to the ground.

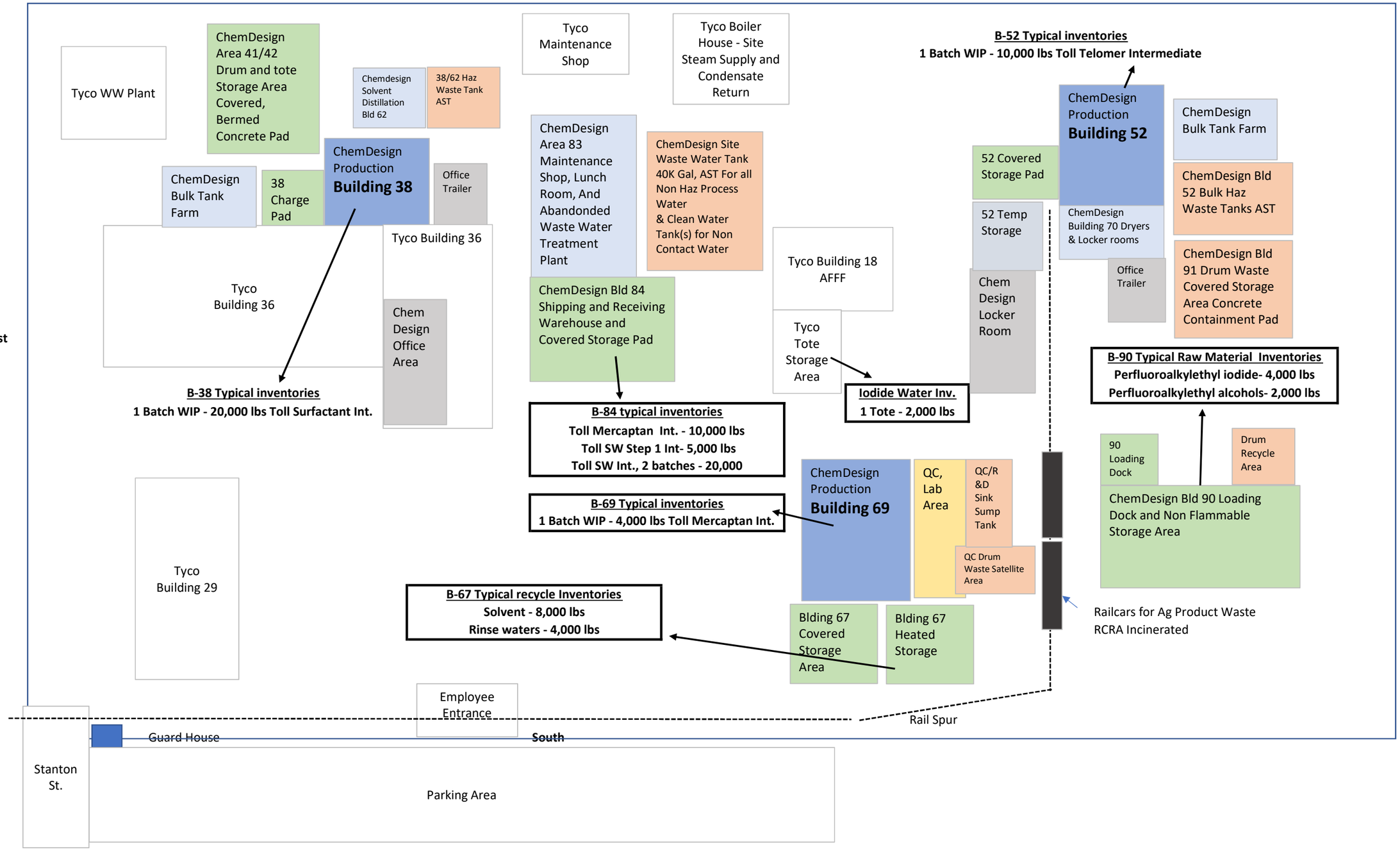
Response 10: ChemDesign has not applied any PFAS-containing materials or foams to the ground for fire training or to extinguish a fire. Most of ChemDesign's buildings have a water deluge system and/or hand held dry chemical extinguishers for fire suppression purposes. Only one of ChemDesign's production units, Building 69, has a foam fire protection system utilizing a 300-gallon foam tank. ChemDesign's records indicate that this system has never discharged in response to a fire since ChemDesign started leasing the facility in 1983.

To ChemDesign's knowledge, no tests of the Building 69 foam system were conducted prior to 2016 because the system did not have a foam test header installed. In 2016, ChemDesign's insurer recommended that the system be tested annually. In 2016, Great Lakes Fire Suppression installed a foam test header and conducted a foam test in accordance with NFPA testing requirements as adopted by the State of Wisconsin.

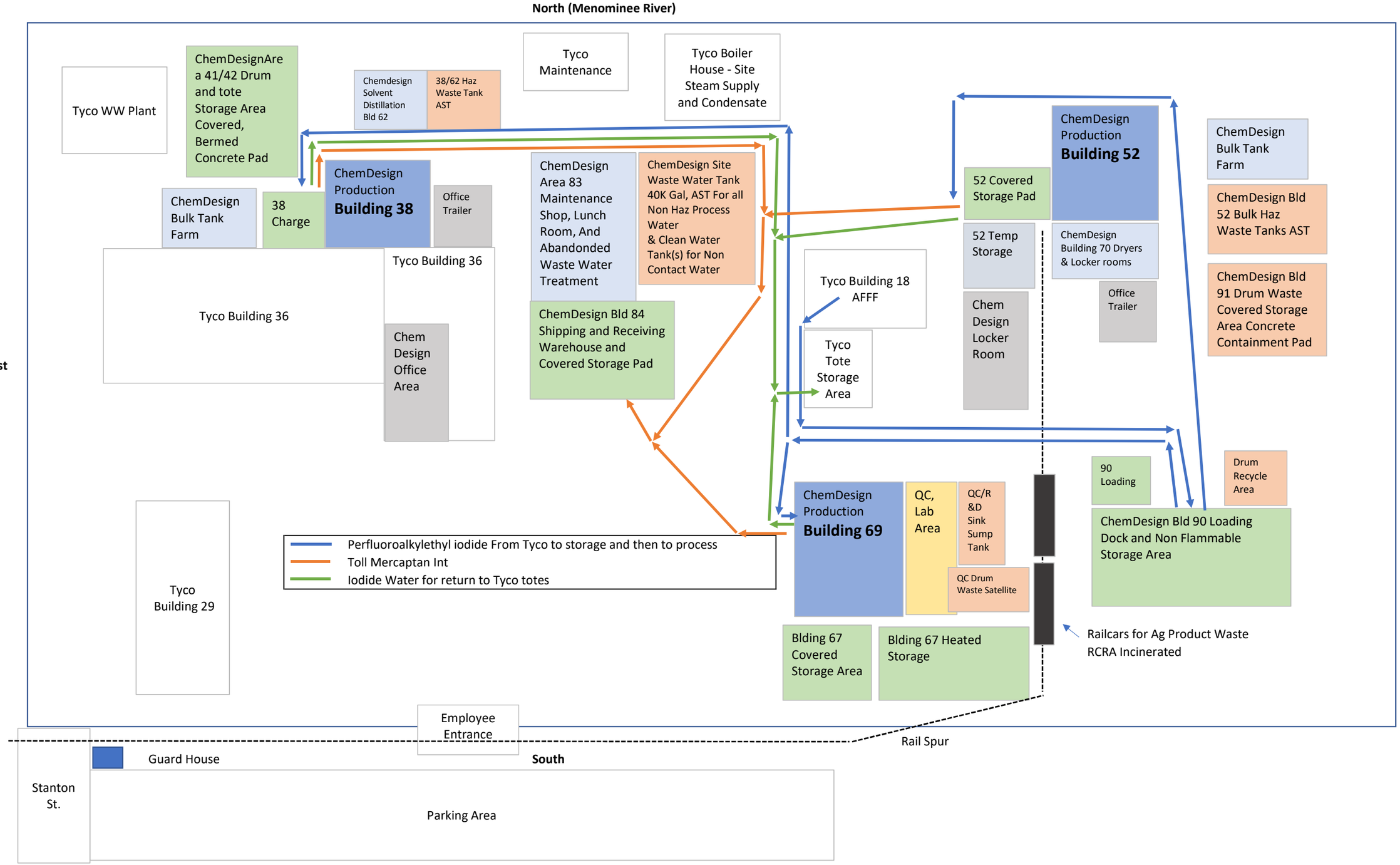
In 2017 and 2018, ChemDesign contracted with SimplexGrinnell to conduct foam system inspection and maintenance for Building 69, which included testing of the system in accordance with NFPA testing requirements as adopted by the State of Wisconsin. ChemDesign understands that Tyco intends to address the testing activities in its ongoing Site Investigation Plan for the Stanton Street facility.

ATTACHMENT 1

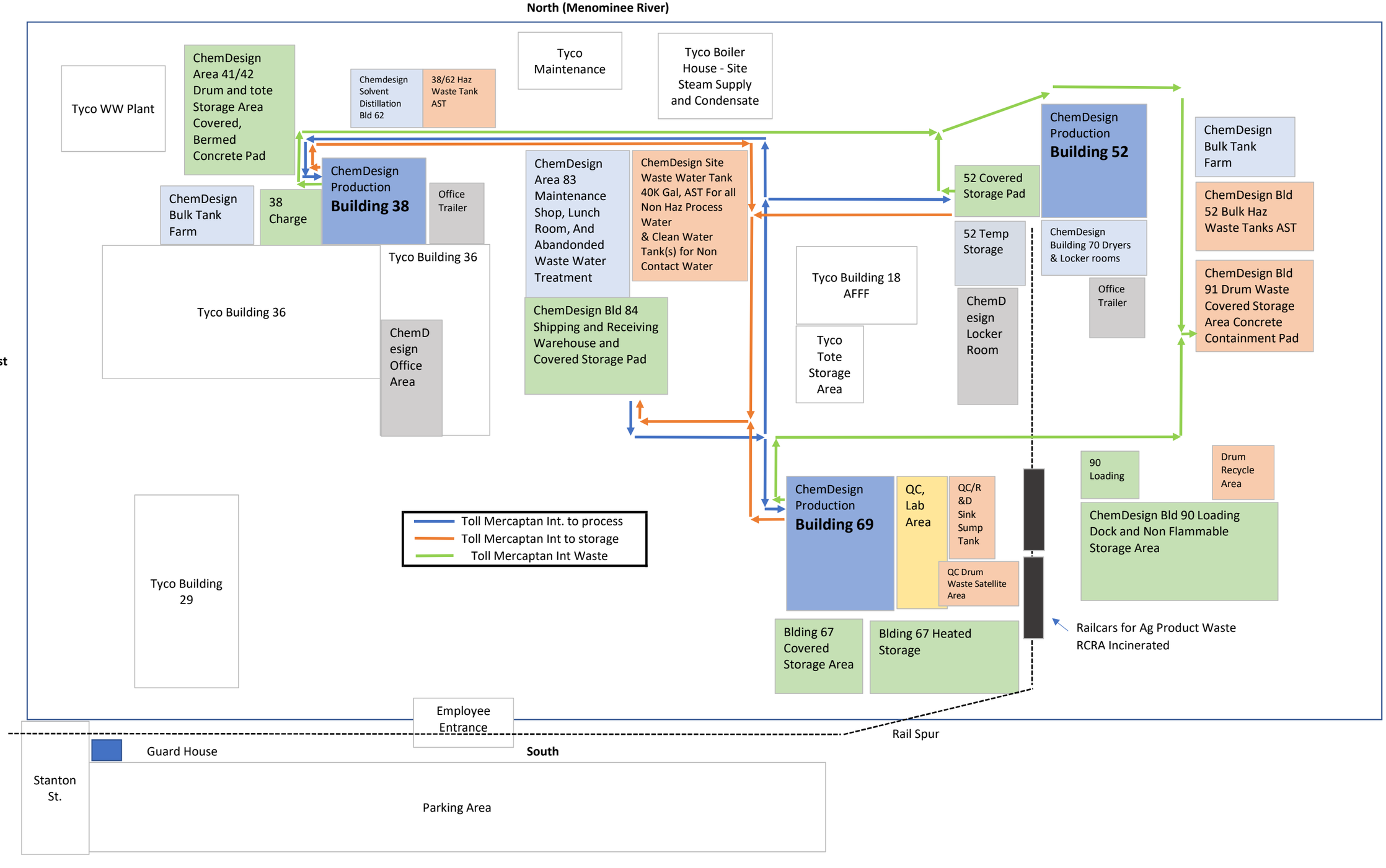
Attachment 1.1: ChemDesign General Site Map with Inventory locations BRRTS 02-38-583852
Typical Inventories Excludes any Tyco/Chemguard Inventories, WIP Refers to Work in Progress Materials
These are materials in drums, totes, or in a reactor.



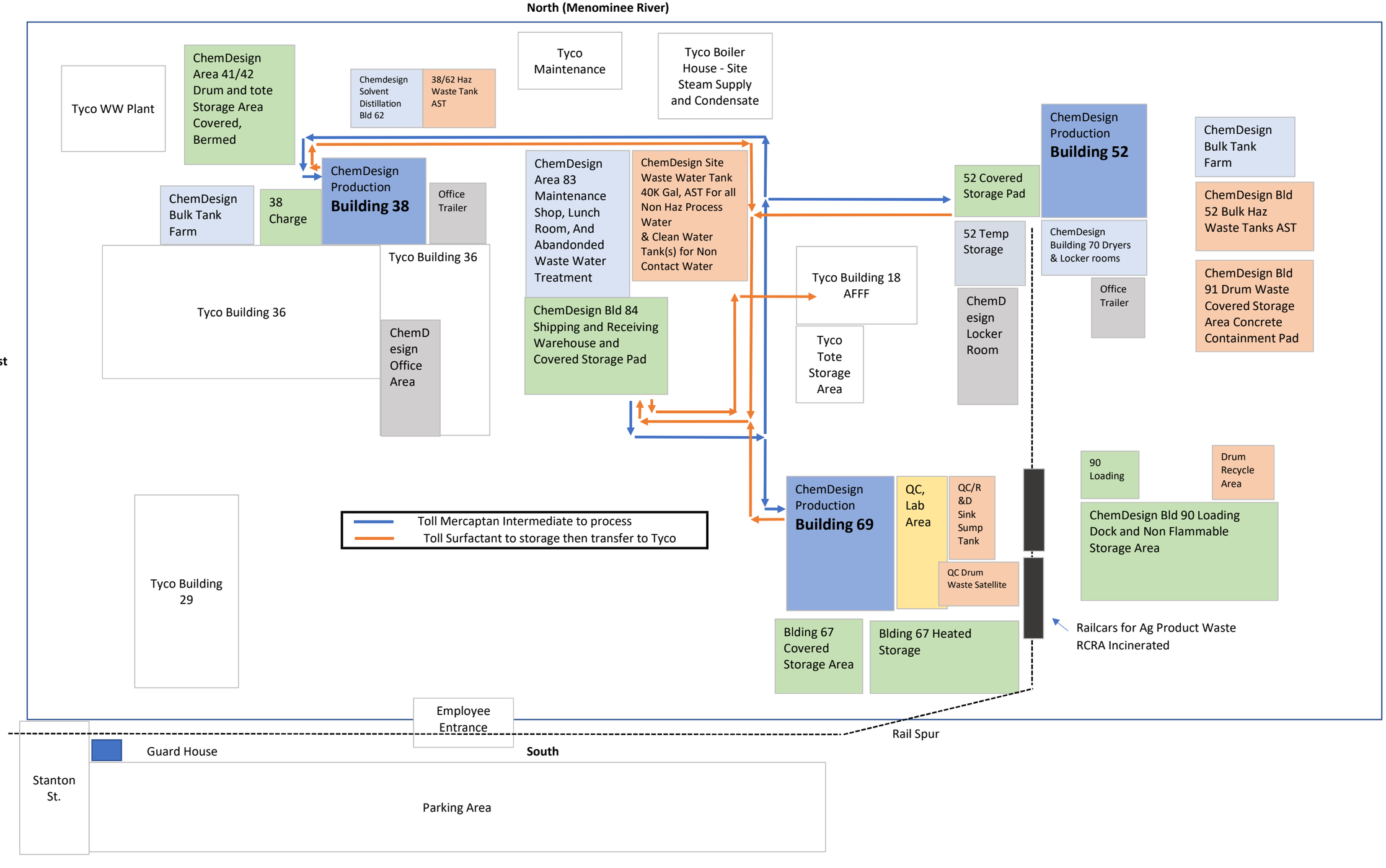
Attachment 1.2: ChemDesign Site Map Toll Mercaptan Intermediate Traffic BRRTS 02-38-583852



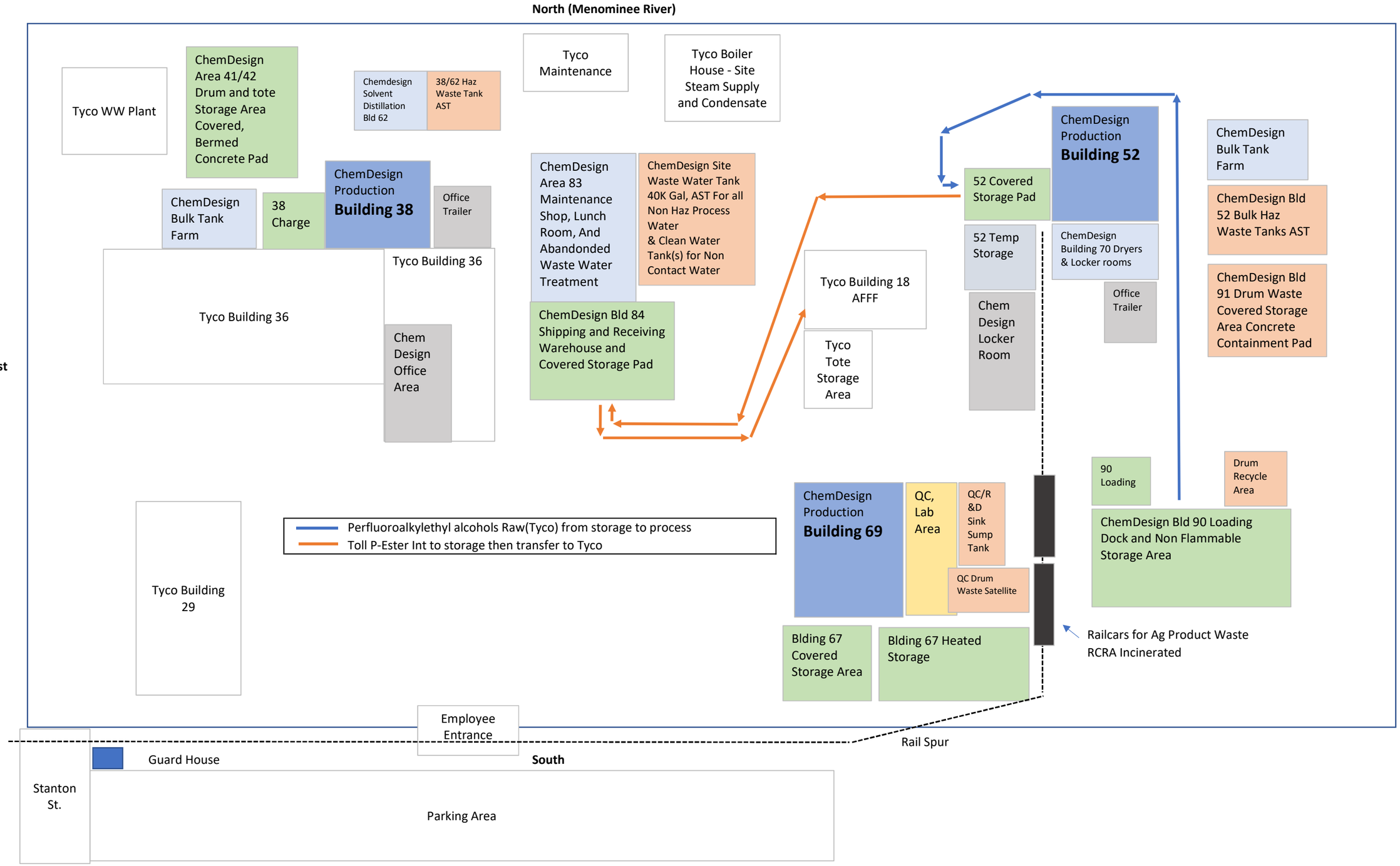
Attachment 1.3: ChemDesign Site Map Toll Mercaptan Distillation Traffic BRRTS 02-38-583852



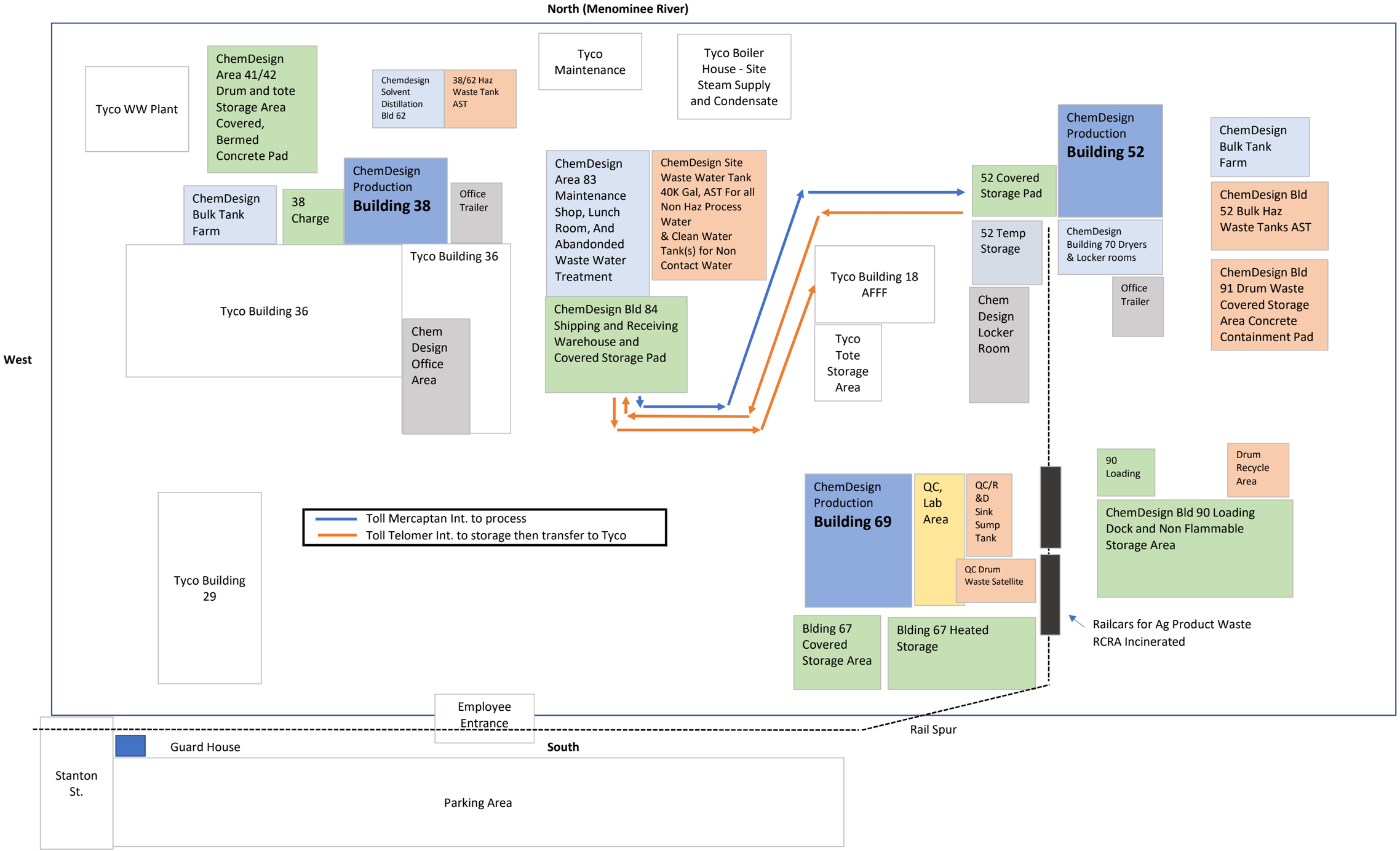
Attachment 1.4: ChemDesign Site Map Toll Surfactant Intermediate Traffic BRRTS 02-38-583852



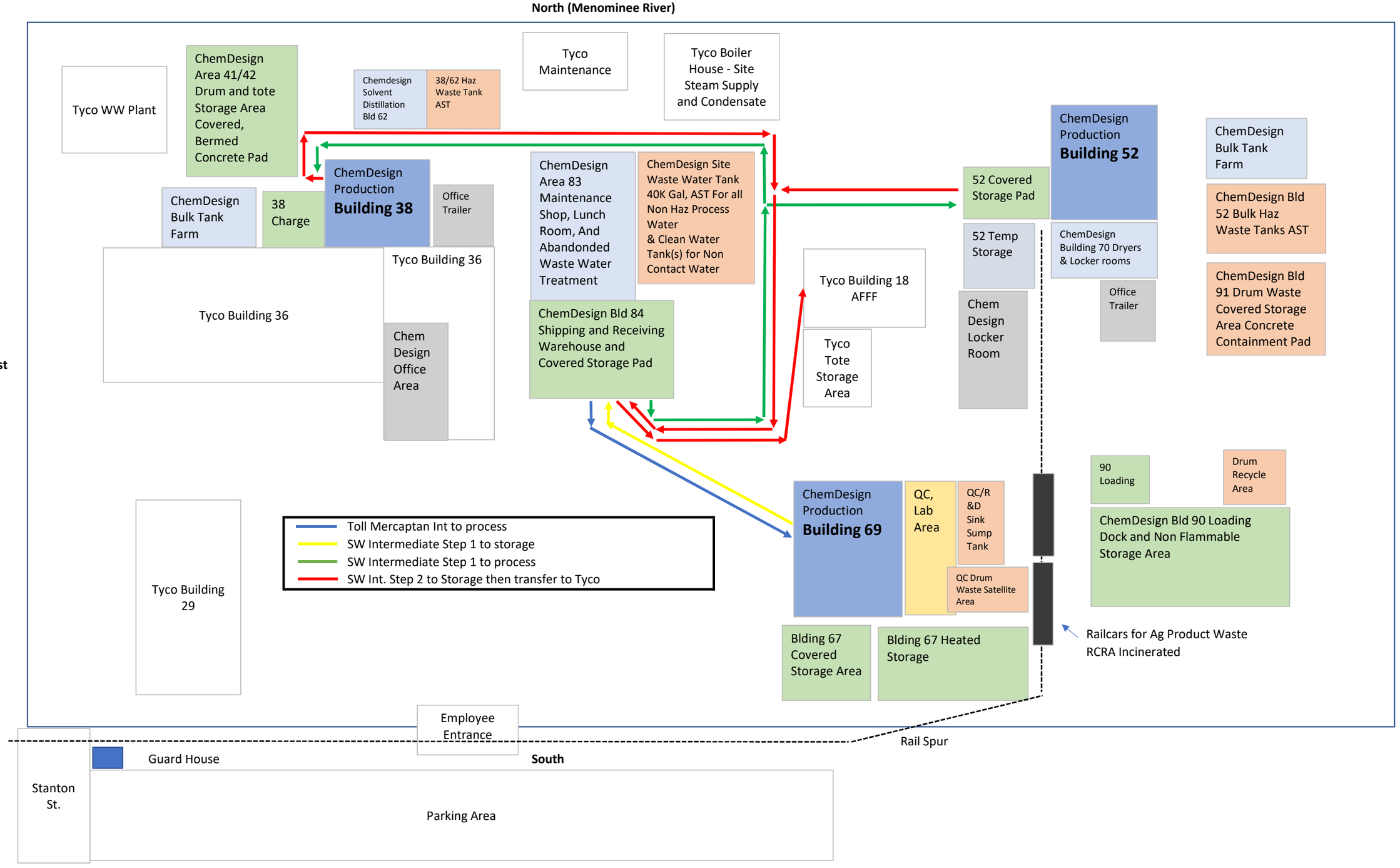
Attachment 1.5: ChemDesign Site Map Toll P-Ester Traffic BRRTS 02-38-583852



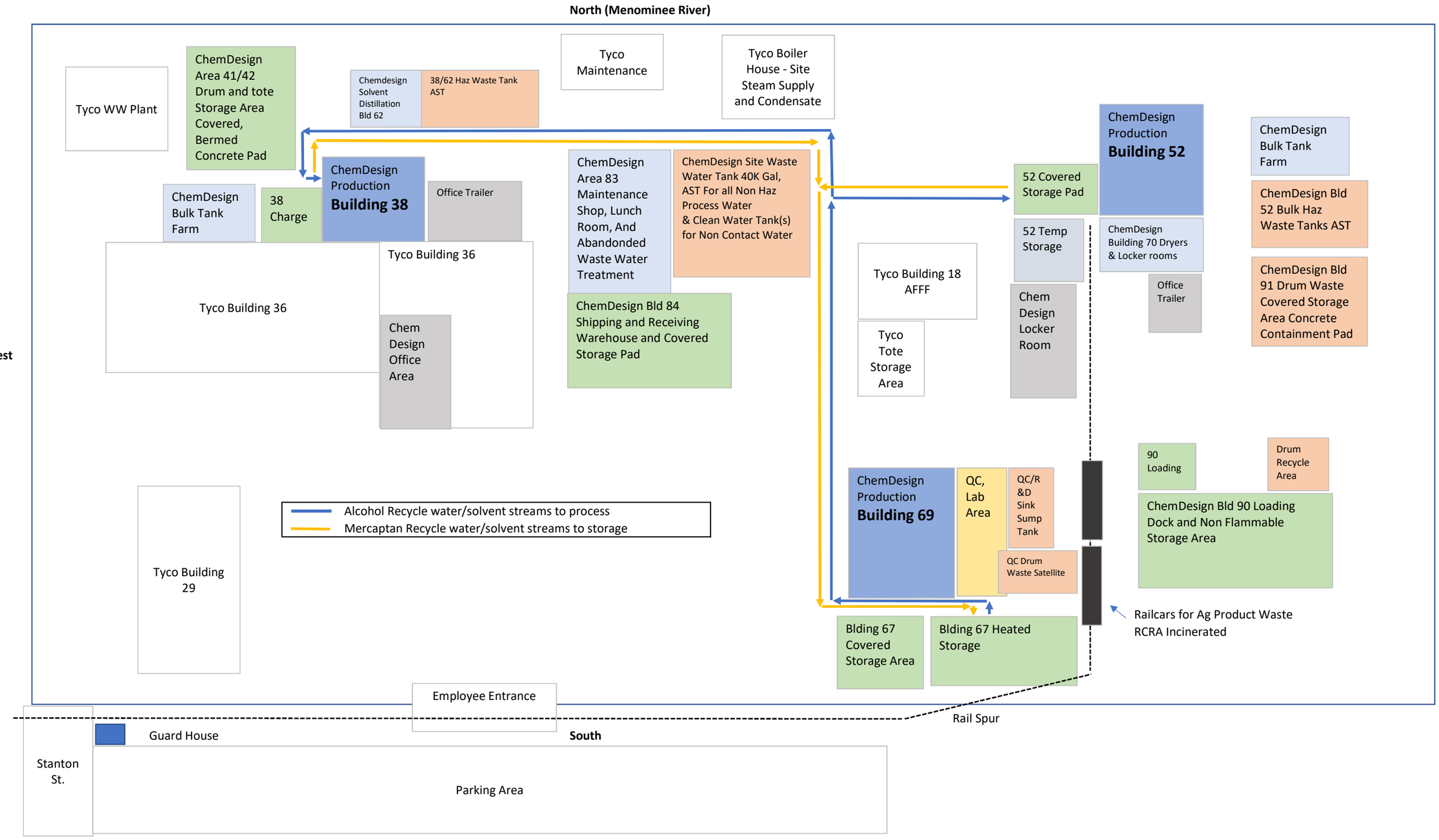
Attachment 1.6: ChemDesign Site Map Toll Telomer Int Traffic BRRTS 02-38-583852



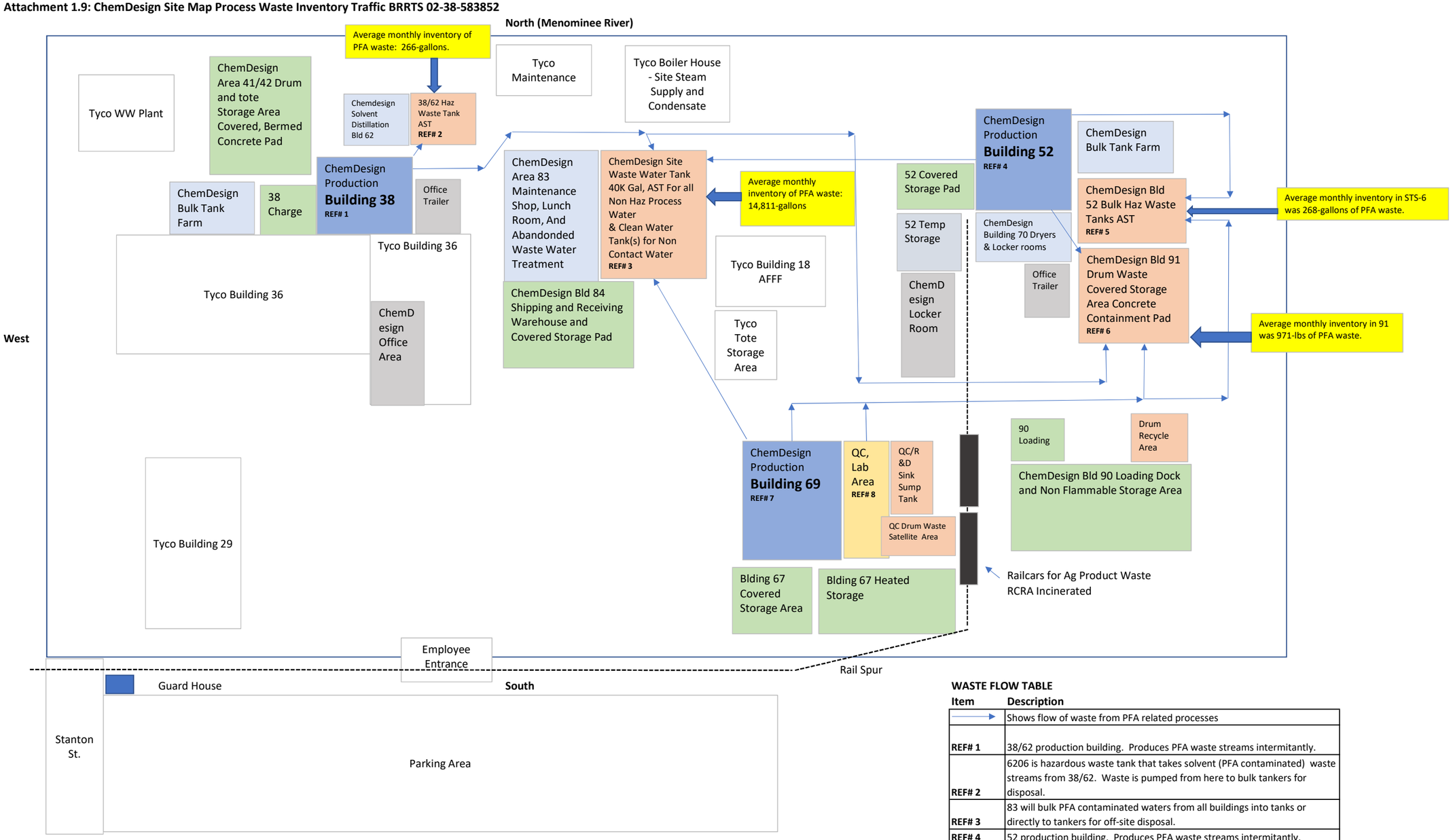
Attachment 1.7: ChemDesign Site Map Toll SW Intermediate Traffic BRRTS 02-38-583852



Attachment 1.8: ChemDesign Site Map Recycle Materials Traffic BRRTS 02-38-583852



Attachment 1.9: ChemDesign Site Map Process Waste Inventory Traffic BRRTS 02-38-583852



WASTE FLOW TABLE

Item	Description
→	Shows flow of waste from PFA related processes
REF# 1	38/62 production building. Produces PFA waste streams intermitantly.
REF# 2	6206 is hazardous waste tank that takes solvent (PFA contaminated) waste streams from 38/62. Waste is pumped from here to bulk tankers for disposal.
REF# 3	83 will bulk PFA contaminated waters from all buildings into tanks or directly to tankers for off-site disposal.
REF# 4	52 production building. Produces PFA waste streams intermitantly.
REF# 5	STS-6 is hazardous waste tank that takes solvent (PFA contaminated) waste streams from 52/70/69 and the labs. Waste is pumped from here to bulk tankers for disposal.
REF# 6	91 is the drummed hazardous waste storage. It will take sample and contaminated (PFA) material waste from all production buildings and the labs.
REF# 7	69 production building. Produces PFA waste streams intermitantly.
REF# 8	QC/ R&D labs. Produces PFA waste streams intermitantly.

ATTACHMENT 2

Attachment 2: Waste Vendor Summary BRRTS 02-38-583852

FACILITY NAME	ADDRESS	HAZARDOUS/NON-HAZARDOUS	NOTES	TIMEFRAME
Veolia E.S. - Sauget	7 - Mobile Street; Sauget, Il 62201	Hazardous Waste Facility	Sauget is a RCRA incinerator that we send PFAS related liquid waste streams that have high water content.	2007-TO PRESENT
Tradebe LLC	5611 West Hemlock Street, Milwaukee, WI 53223	Hazardous Waste Facility	Tradebe is a facility where we would send PFAS related material that were typically solids in drums. Most common was process samples from chemguard. This material was thermally destroyed by fuel blending or incineration.	2015-PRESENT
Tradebe LLC	4343 Kennedy Avenue, East Chicago, IN 46312	Hazardous Waste Facility	Tradebe is a facility where we would send PFAS related material that were typically solids in drums. Most common was process samples from Chemguard. This material was thermally destroyed by fuel blending or incineration.	2007-PRESENT
Buzzi Unicem - Greencastle	3301 S CTY RD 150 West, Greencastle, IN 46135	Hazardous Waste Facility	Greencastle is a facility that burns hazardous waste as fuel. We send Greencastle PFAS related wastes streams that are high in solvents.	2007-PRESENT
Green America Recycling, LLC	10107 Hwy 79, Hannibal, MO 63401	Hazardous Waste Facility	Green America Recycling, LLC is a facility that burns hazardous waste as fuel. We send Green America PFAS related wastes streams that are high in solvents.	2007-PRESENT
Lone Star Industries, Inc.	2524 South Sprigg Street, Cape Girardeau, MO 63701	Hazardous Waste Facility	Lone Star is a facility that burns hazardous waste as fuel. We send Lone Star PFAS related wastes streams that are high in solvents.	2007-PRESENT
Covanta Indianapolis	2515 South Holt Road, Indianapolis, IN 46241	Non-Hazardous Waste Facility	Covanta is an Energy from Waste facility where we do send PFAS related material that were non-hazardous. Most common is clean-out waters. This material was thermally destroyed.	2016-PRESENT
Elite Environmental	12630 Custer Avenue, Butler, WI	Non-Hazardous Waste Facility	Elite Environmental is a non-hazardous wastewater treatment facility. We send Elite environmental non-hazardous general waste waters from non PFAS operations.	MAY 2009 - PRESENT
Elite Environmental	360 South Curtis; West Allis, WI 53214	Non-Hazardous Waste Facility	Elite Environmental is a non-hazardous wastewater treatment facility. We send Elite environmental non-hazardous general waste waters from non PFAS operations.	MAY 2009 - PRESENT
Klean Waters, Inc.	10542 W. Donges Ct, Milwaukee, WI 53224	Non-Hazardous Waste Facility	Klean Waters, Inc. Received non-hazardous general site waste waters.	JUNE 2008 - MAY 2009