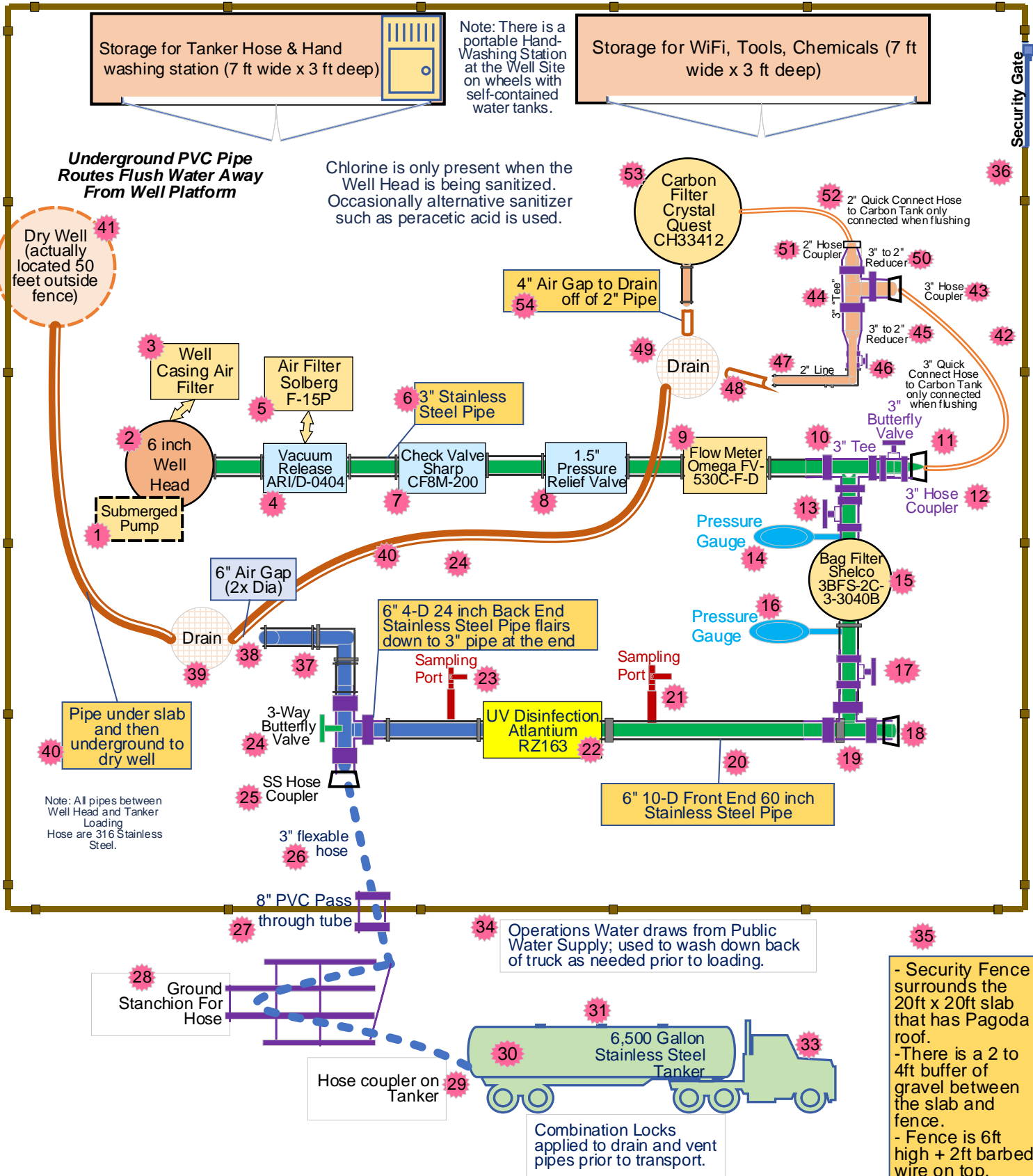


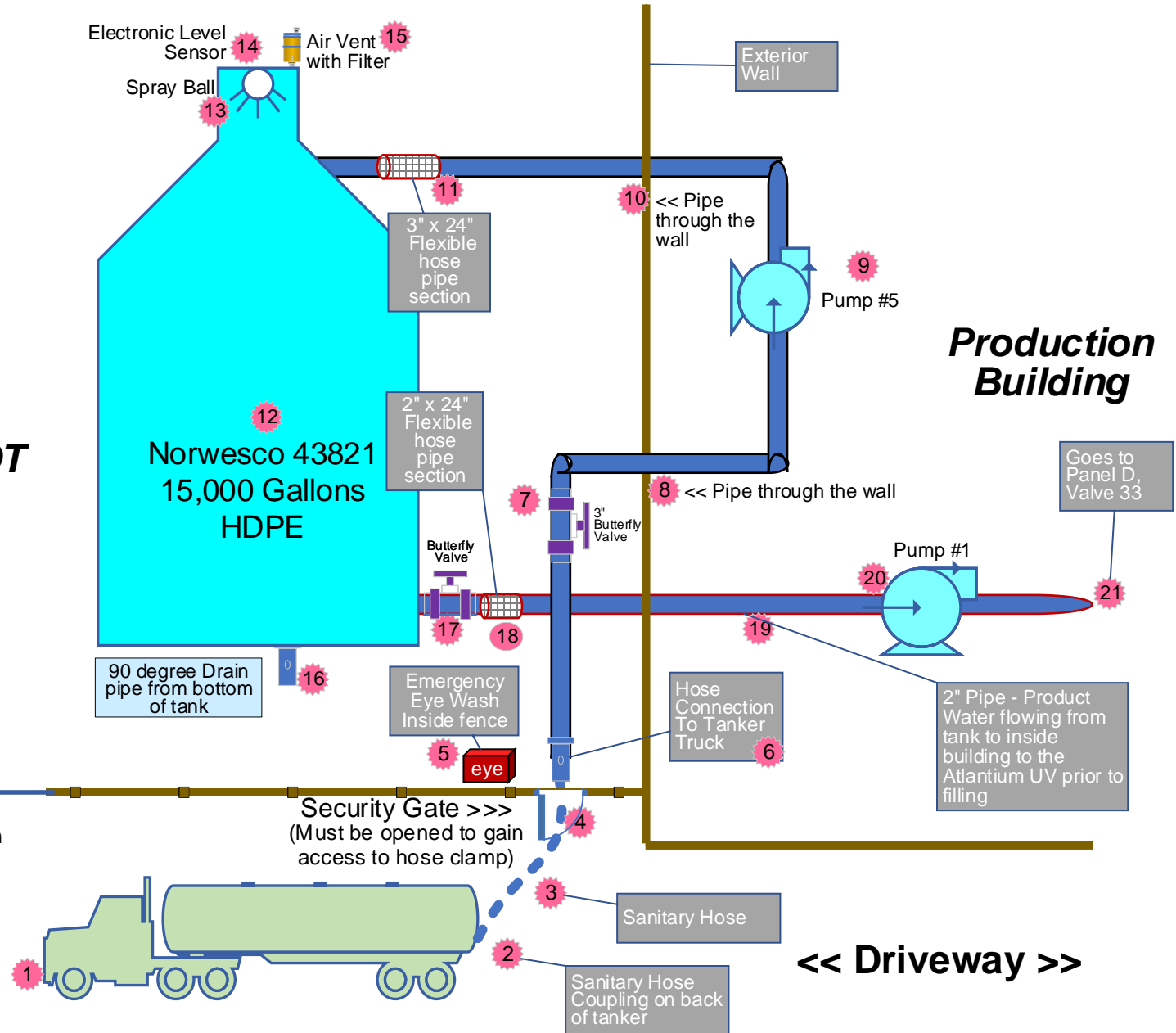
Waiakea Hawaiian Volcanic Water	DIAGRAM – Process Flow Diagram – Well Source Water		
	Completed by: Jay Malloe	Date: May 14, 2019	Rev # 2.0
	Approved by: Jerry Clark	Supersedes: August 1, 2018	Doc # DIAG-01
	Waiakea Hawaiian Volcanic Water	Hilo, HI	



6,500 Gallon Stainless Steel Tanker dedicated to transporting Waiakea Deep Well Water to Bottling Facility approximately 10 miles/20 minutes away.

<i>Waiakea Hawaiian Volcanic Water</i>	DIAGRAM – Process Flow – Tanker Unloading Diagram		
	Completed by: Jay Malloe	Date: May 14, 2019	Rev # 2.0
	Approved by: Jerry Clark	Supersedes: August 1, 2018	Doc # DIAG-02
	Waiakea Hawaiian Volcanic Water	Hilo, HI	

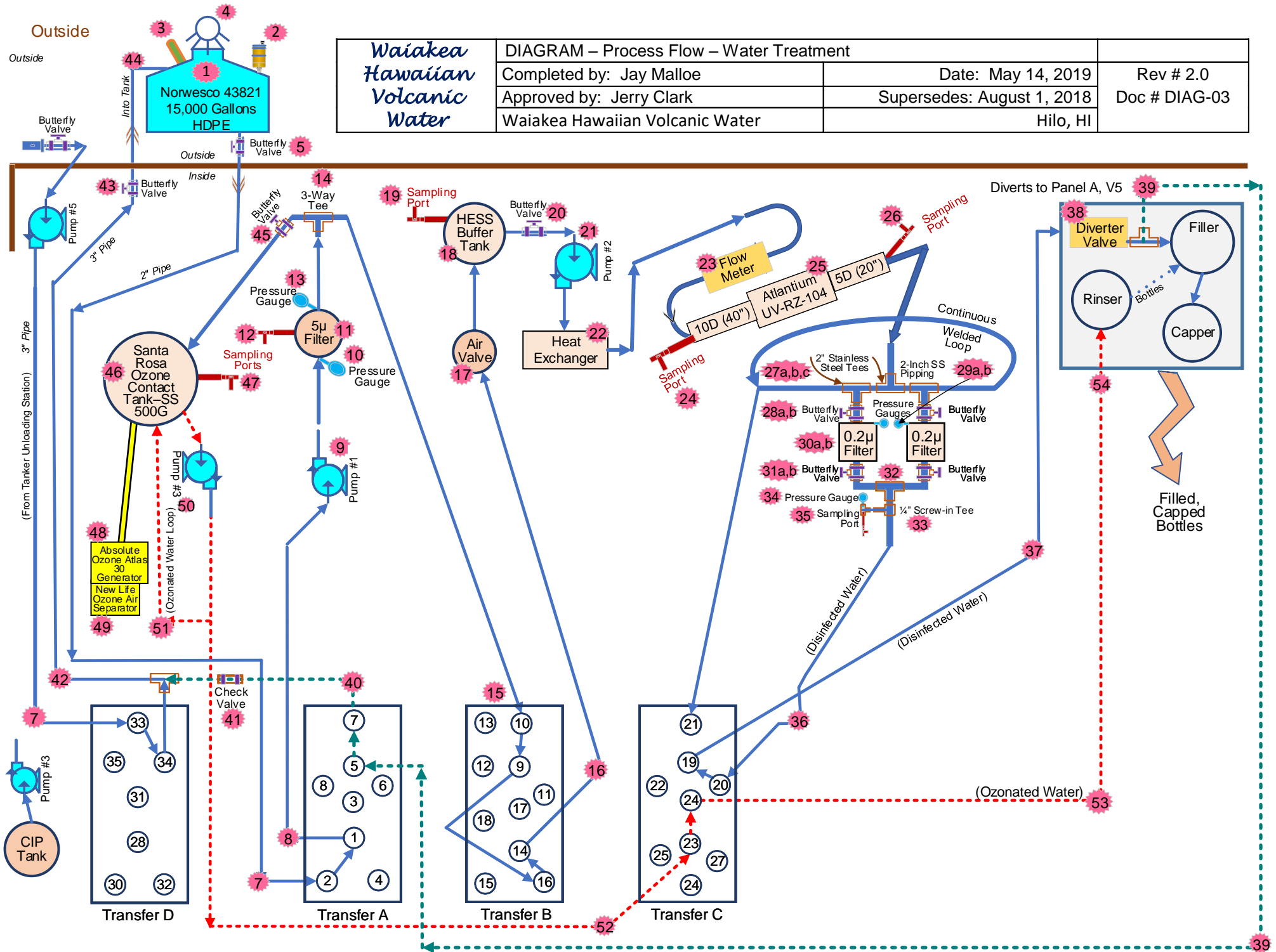
Note: This drawing is NOT to scale



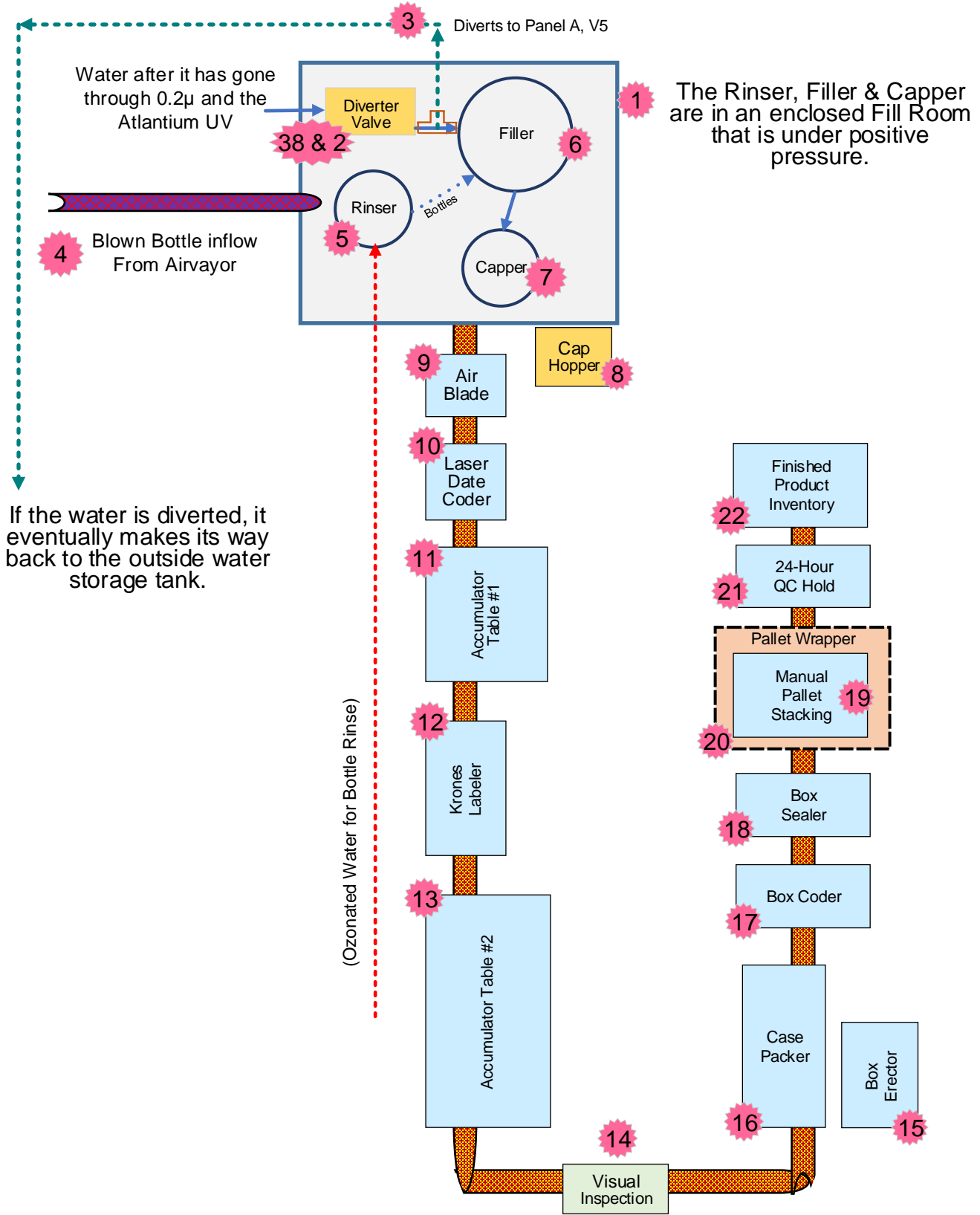
Outside

Outside

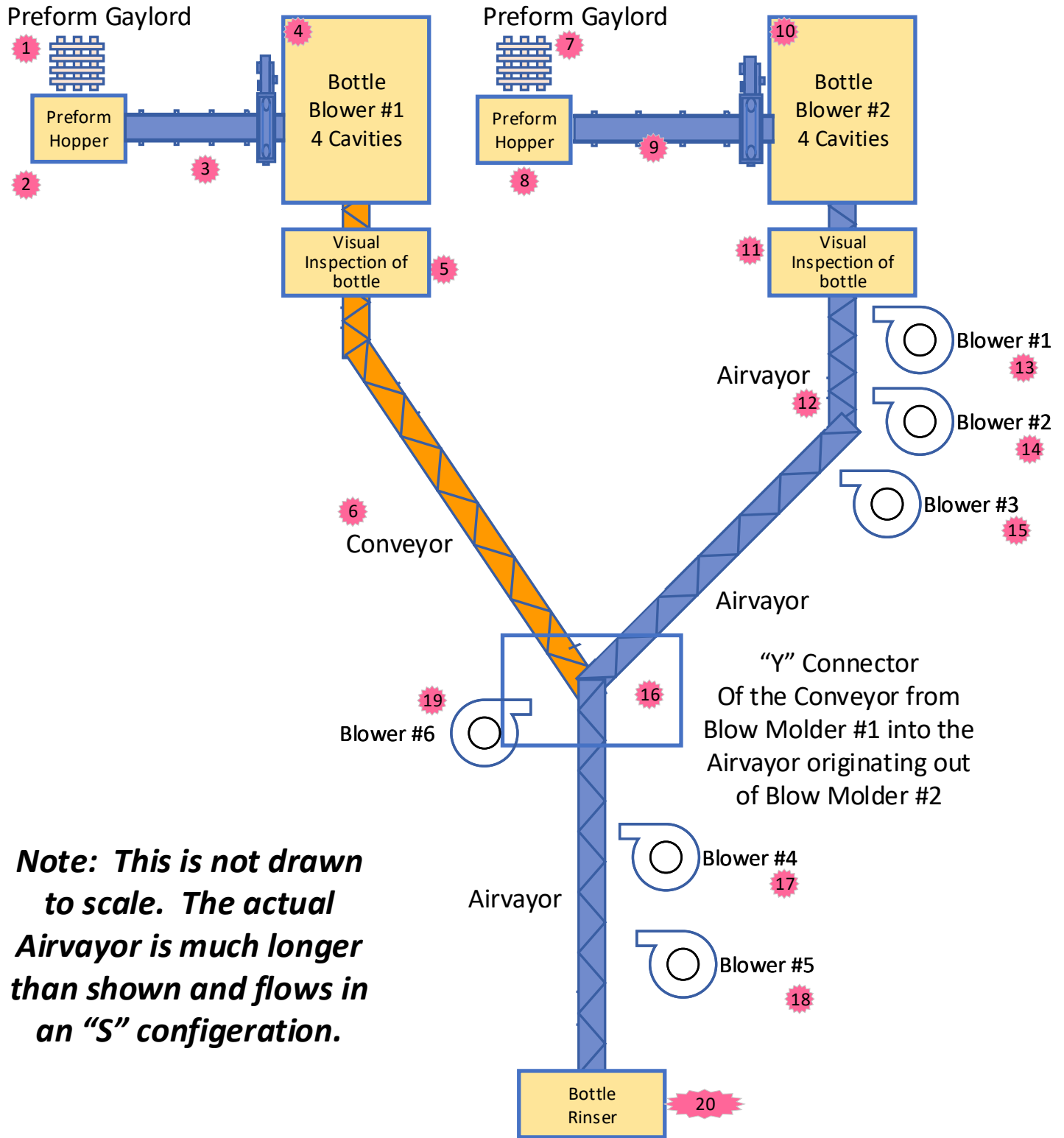
Waiakea Hawaiian Volcanic Water	DIAGRAM – Process Flow – Water Treatment		
	Completed by: Jay Malloe	Date: May 14, 2019	Rev # 2.0
	Approved by: Jerry Clark	Supersedes: August 1, 2018	Doc # DIAG-03
	Waiakea Hawaiian Volcanic Water	Hilo, HI	



Waiakea Hawaiian Volcanic Water	DIAGRAM – Process Flow – Bottling Diagram		Rev # 2.0 Doc # DIAG-04
	Completed by: Jay Malloe	Date: May 14, 2019	
	Approved by: Jerry Clark	Supersedes: August 1, 2018	
	Waiakea Hawaiian Volcanic Water	Hilo, HI	

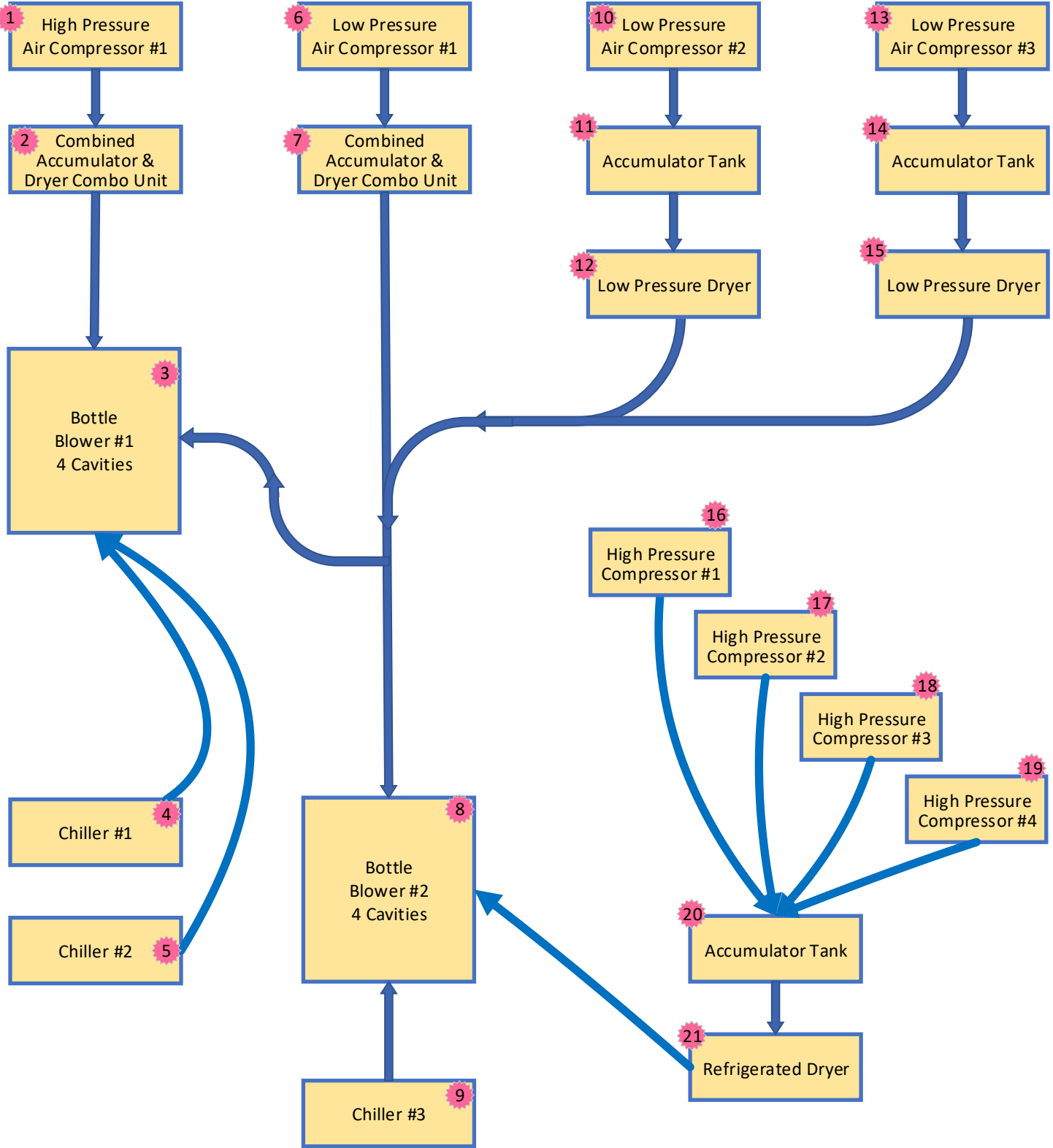


Waiakea Hawaiian Volcanic Water	DIAGRAM – Process Flow – Bottle Transport Diagram		
	Completed by: Jay Malloe	Date: May 14, 2019	Rev # 2.0
	Approved by: Jerry Clark	Supersedes: August 1, 2018	Doc # DIAG-05
	Waiakea Hawaiian Volcanic Water	Hilo, HI	



Note: This is not drawn to scale. The actual Airvayor is much longer than shown and flows in an "S" configuration.

Waiakea Hawaiian Volcanic Water	DIAGRAM – Process Flow Diagram – Blow Molding		
	Completed by: Jay Malloe	Date: May 14, 2019	Rev # 2.0
	Approved by: Jerry Clark	Supersedes: August 1, 2018	Doc # DIAG-06
	Waiakea Hawaiian Volcanic Water	Hilo, HI	

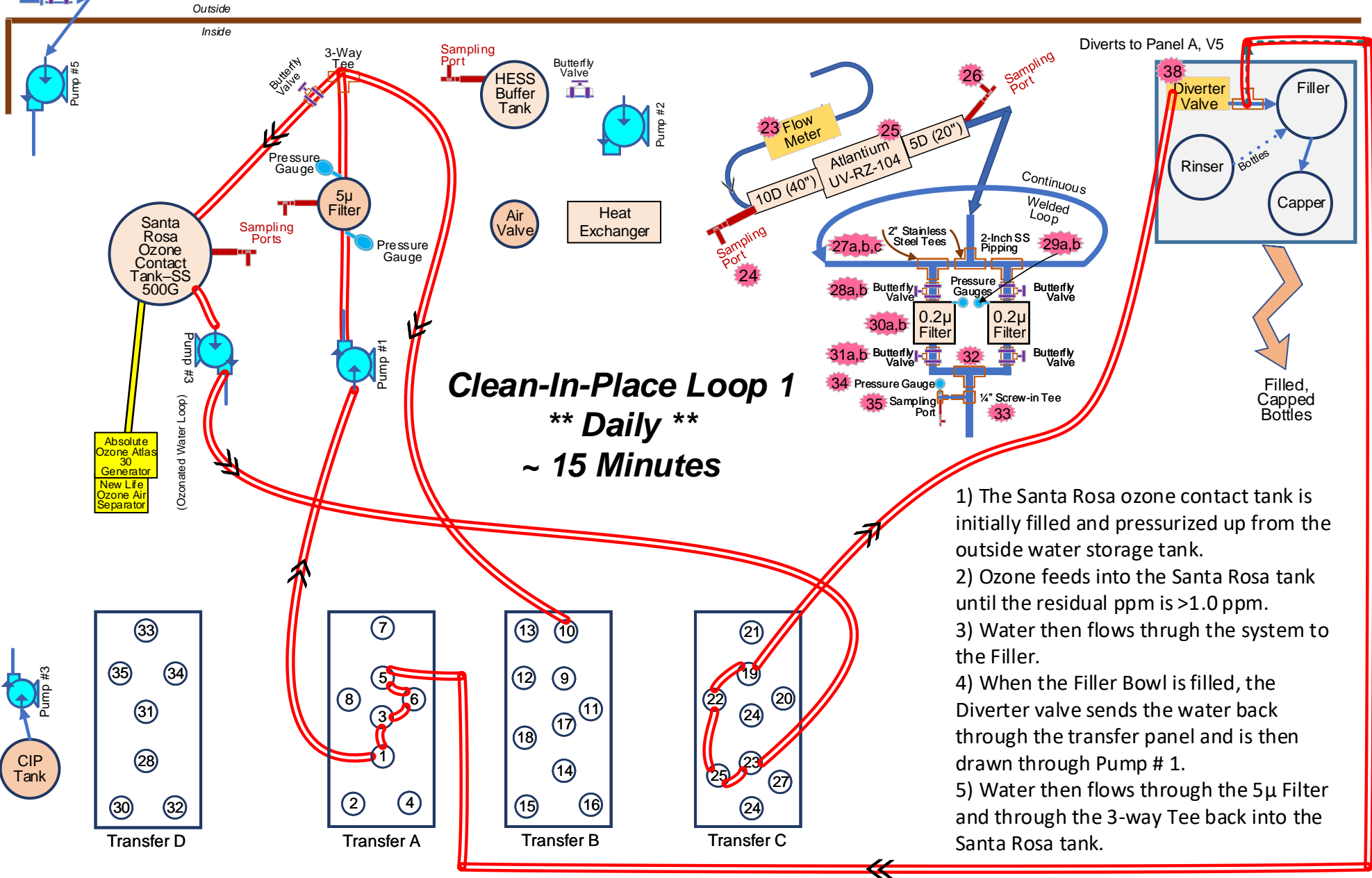


Outside

Outside



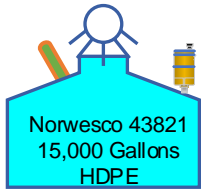
Waiakea Hawaiian Volcanic Water	DIAGRAM – Process Flow – Water Treatment – Clean in Place		
	Completed by: Jay Malloe	Date: May 14, 2019	Rev # 2.0
	Approved by: Jerry Clark	Supersedes: August 1, 2018	Doc # DIAG-03
	Waiakea Hawaiian Volcanic Water	Hilo, HI	CIP #1



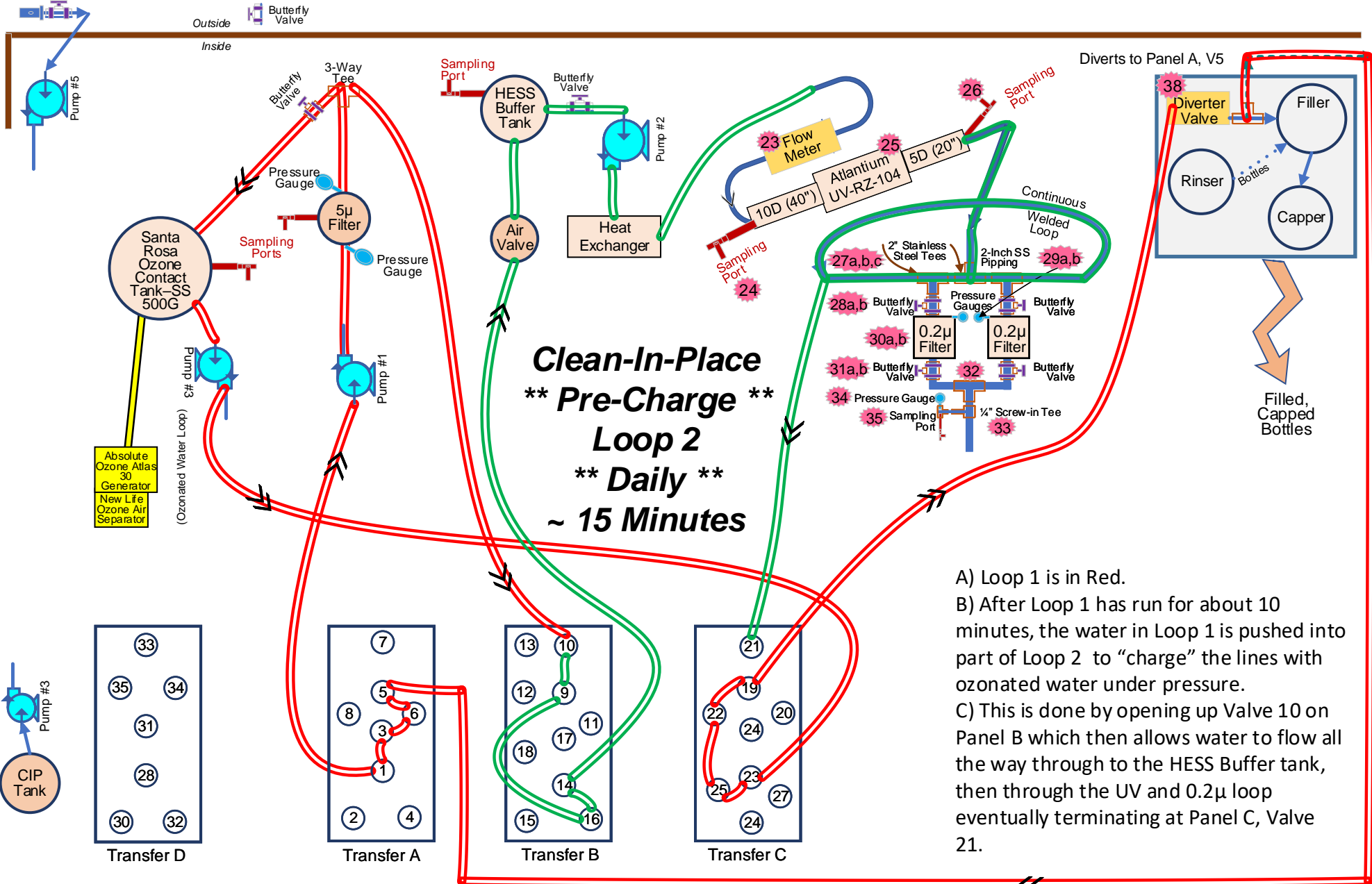
- 1) The Santa Rosa ozone contact tank is initially filled and pressurized up from the outside water storage tank.
- 2) Ozone feeds into the Santa Rosa tank until the residual ppm is >1.0 ppm.
- 3) Water then flows through the system to the Filler.
- 4) When the Filler Bowl is filled, the Divter valve sends the water back through the transfer panel and is then drawn through Pump # 1.
- 5) Water then flows through the 5µ Filter and through the 3-way Tee back into the Santa Rosa tank.

Outside

Outside



<i>Waiakea Hawaiian Volcanic Water</i>	DIAGRAM – Process Flow – Water Treatment – Clean in Place		
	Completed by: Jay Malloe	Date: May 14, 2019	Rev # 2.0
	Approved by: Jerry Clark	Supersedes: August 1, 2018	Doc # DIAG-03
	Waiakea Hawaiian Volcanic Water	Hilo, HI	PRE-CHG-2

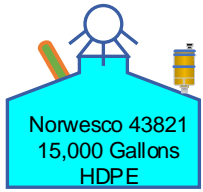


Clean-In-Place
**** Pre-Charge Loop 2 ****
**** Daily ****
~ 15 Minutes

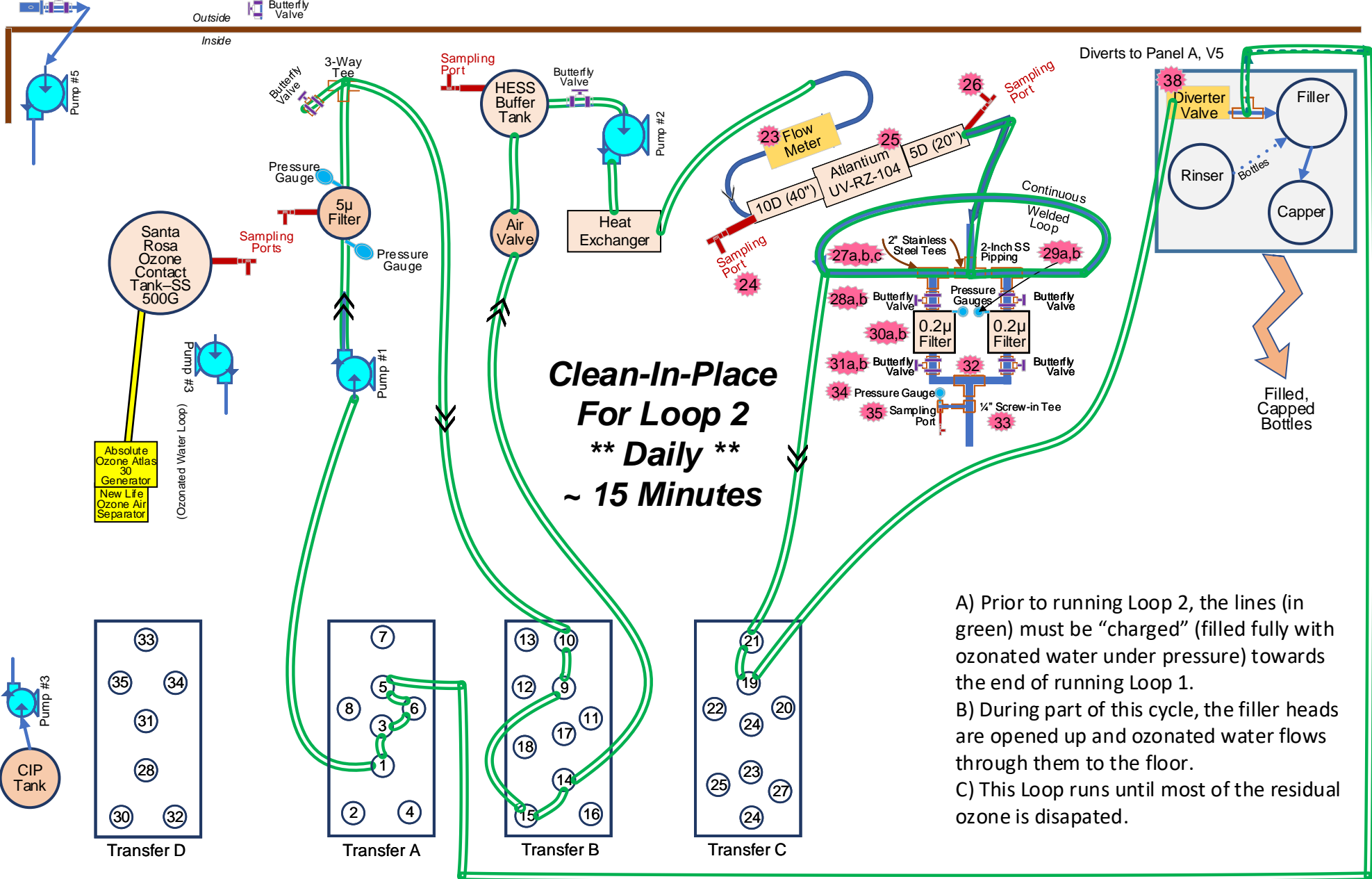
A) Loop 1 is in Red.
 B) After Loop 1 has run for about 10 minutes, the water in Loop 1 is pushed into part of Loop 2 to "charge" the lines with ozonated water under pressure.
 C) This is done by opening up Valve 10 on Panel B which then allows water to flow all the way through to the HESS Buffer tank, then through the UV and 0.2µ loop eventually terminating at Panel C, Valve 21.

Outside

Outside



Waiakea Hawaiian Volcanic Water	DIAGRAM – Process Flow – Water Treatment – Clean in Place		
	Completed by: Jay Malloe	Date: May 14, 2019	Rev # 2.0
	Approved by: Jerry Clark	Supersedes: August 1, 2018	Doc # DIAG-03
	Waiakea Hawaiian Volcanic Water	Hilo, HI	CIP #2



**Clean-In-Place
For Loop 2
** Daily **
~ 15 Minutes**

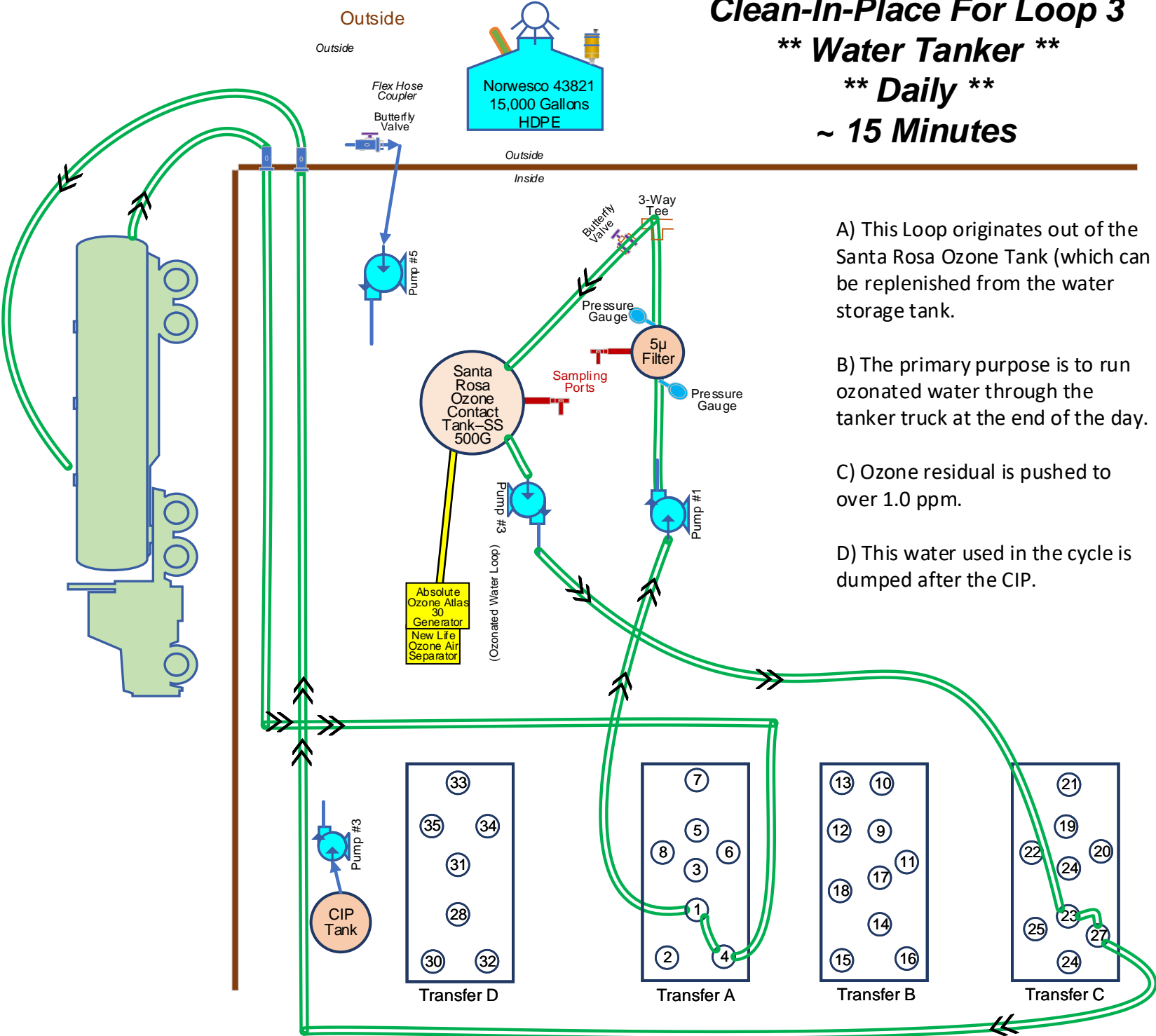
- A) Prior to running Loop 2, the lines (in green) must be "charged" (filled fully with ozonated water under pressure) towards the end of running Loop 1.
- B) During part of this cycle, the filler heads are opened up and ozonated water flows through them to the floor.
- C) This Loop runs until most of the residual ozone is disipated.

Clean-In-Place For Loop 3

**** Water Tanker ****

**** Daily ****

~ 15 Minutes

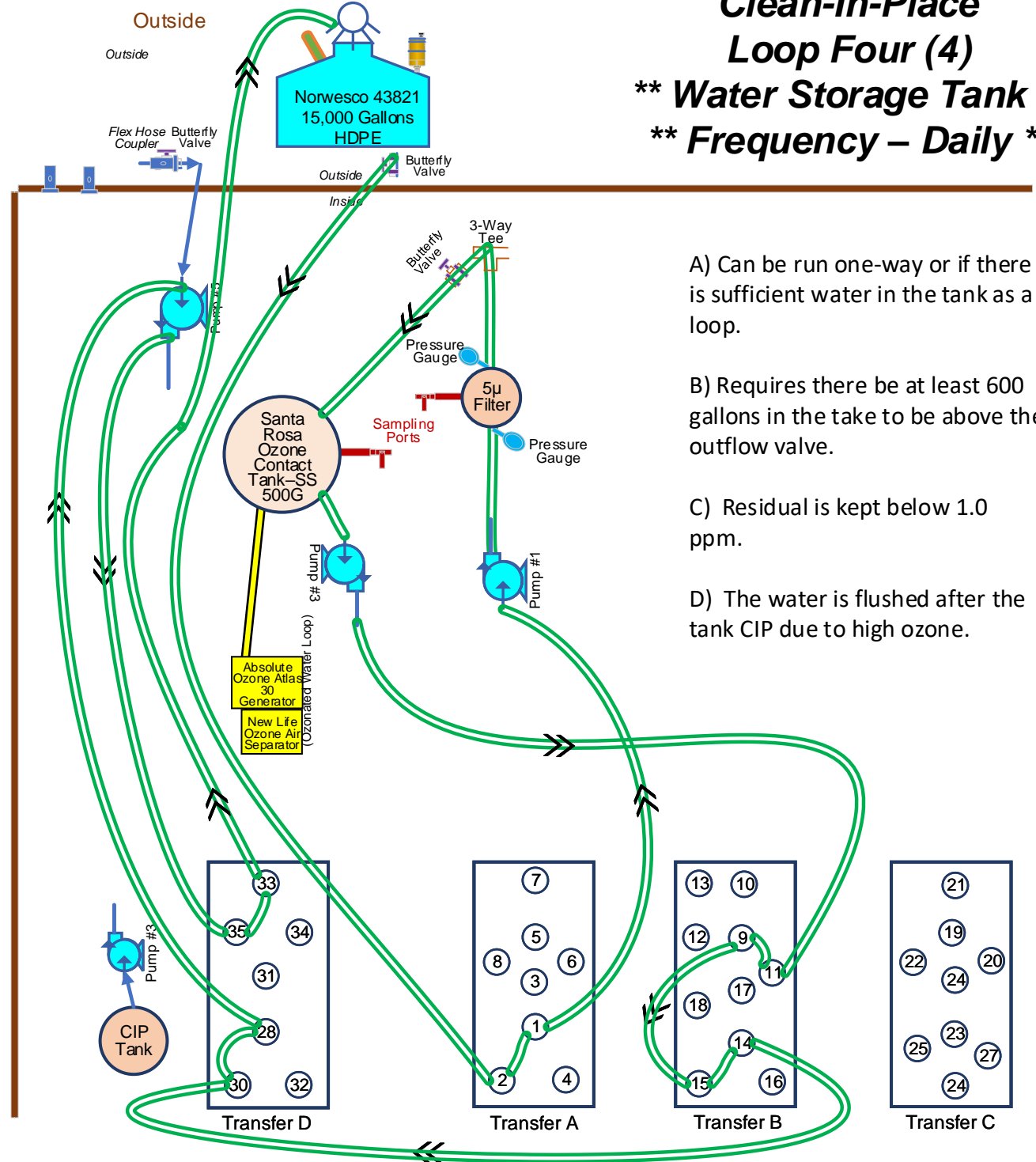


- A) This Loop originates out of the Santa Rosa Ozone Tank (which can be replenished from the water storage tank).
- B) The primary purpose is to run ozonated water through the tanker truck at the end of the day.
- C) Ozone residual is pushed to over 1.0 ppm.
- D) This water used in the cycle is dumped after the CIP.

Waiakea Hawaiian Volcanic Water	DIAGRAM – Process Flow – CIP of Tanker	Date: May 14, 2019	Rev # 2.0
	Completed by: Jay Malloie	Supersedes: August 1, 2018	Doc # DIAG-09
	Approved by: Jerry Clark	Hilo, HI	CIP #3
	Waiakea Hawaiian Volcanic Water		

Clean-In-Place Loop Four (4)

**** Water Storage Tank ****
**** Frequency – Daily ****

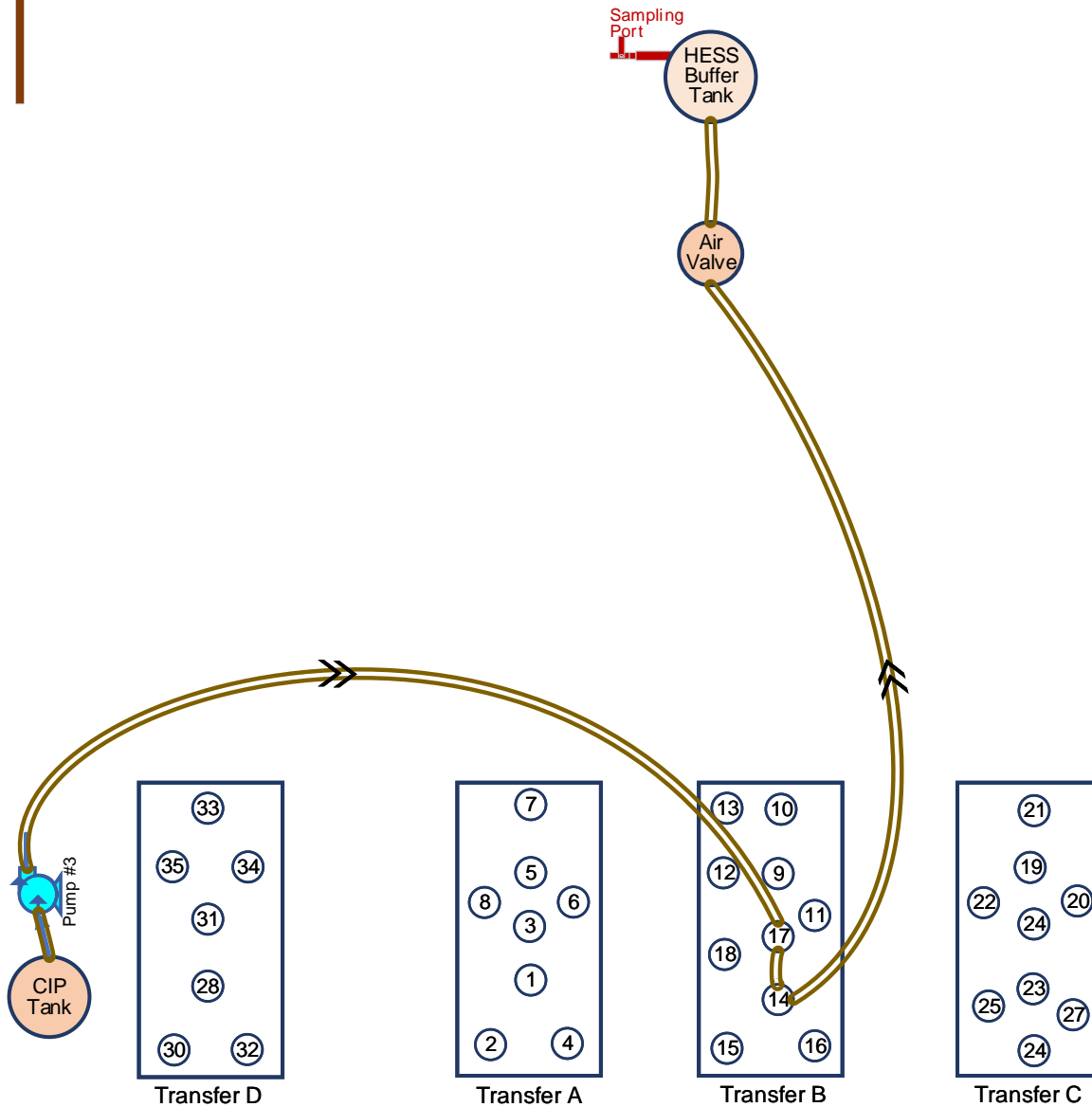


- A) Can be run one-way or if there is sufficient water in the tank as a loop.
- B) Requires there be at least 600 gallons in the take to be above the outflow valve.
- C) Residual is kept below 1.0 ppm.
- D) The water is flushed after the tank CIP due to high ozone.

Waiakea Hawaiian Volcanic Water	DIAGRAM – Process Flow – CIP of Water Tank	Date: May 14, 2019	Rev # 2.0
	Completed by: Jay Malloe	Supersedes: August 1, 2018	Doc # DIAG-09
	Approved by: Jerry Clark	Hilo, HI	CIP #4

Outside

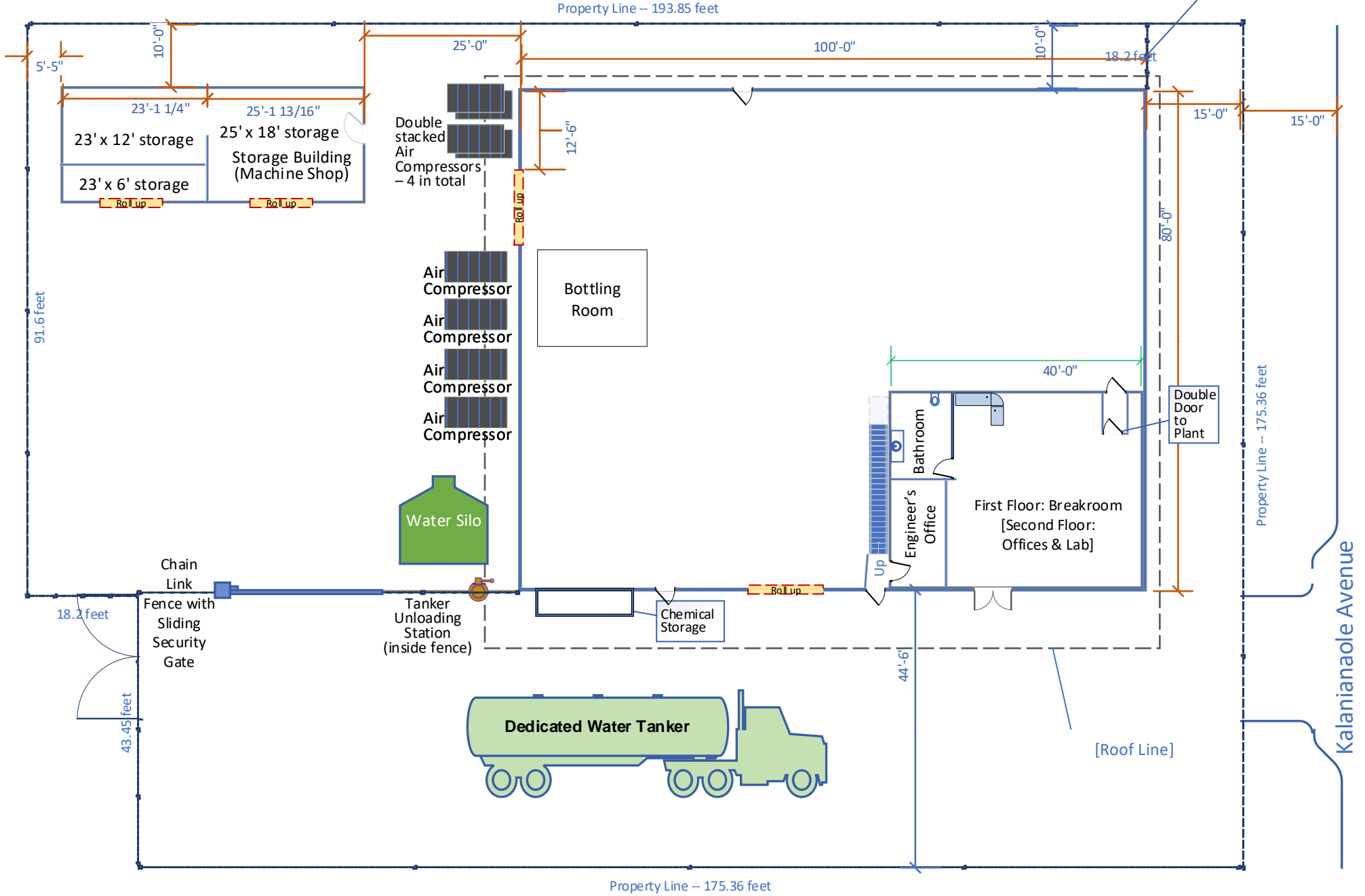
<i>Waiakea Hawaiian Volcanic Water</i>	DIAGRAM – Process Flow – CIP Using Chemicals through Loop 1 Loop 2		
	Completed by: Jay Malloe	Date: May 14, 2019	Rev # 2.0
	Approved by: Jerry Clark	Supersedes: August 1, 2018	Doc # DIAG-09
	Waiakea Hawaiian Volcanic Water	Hilo, HI	CIP #5



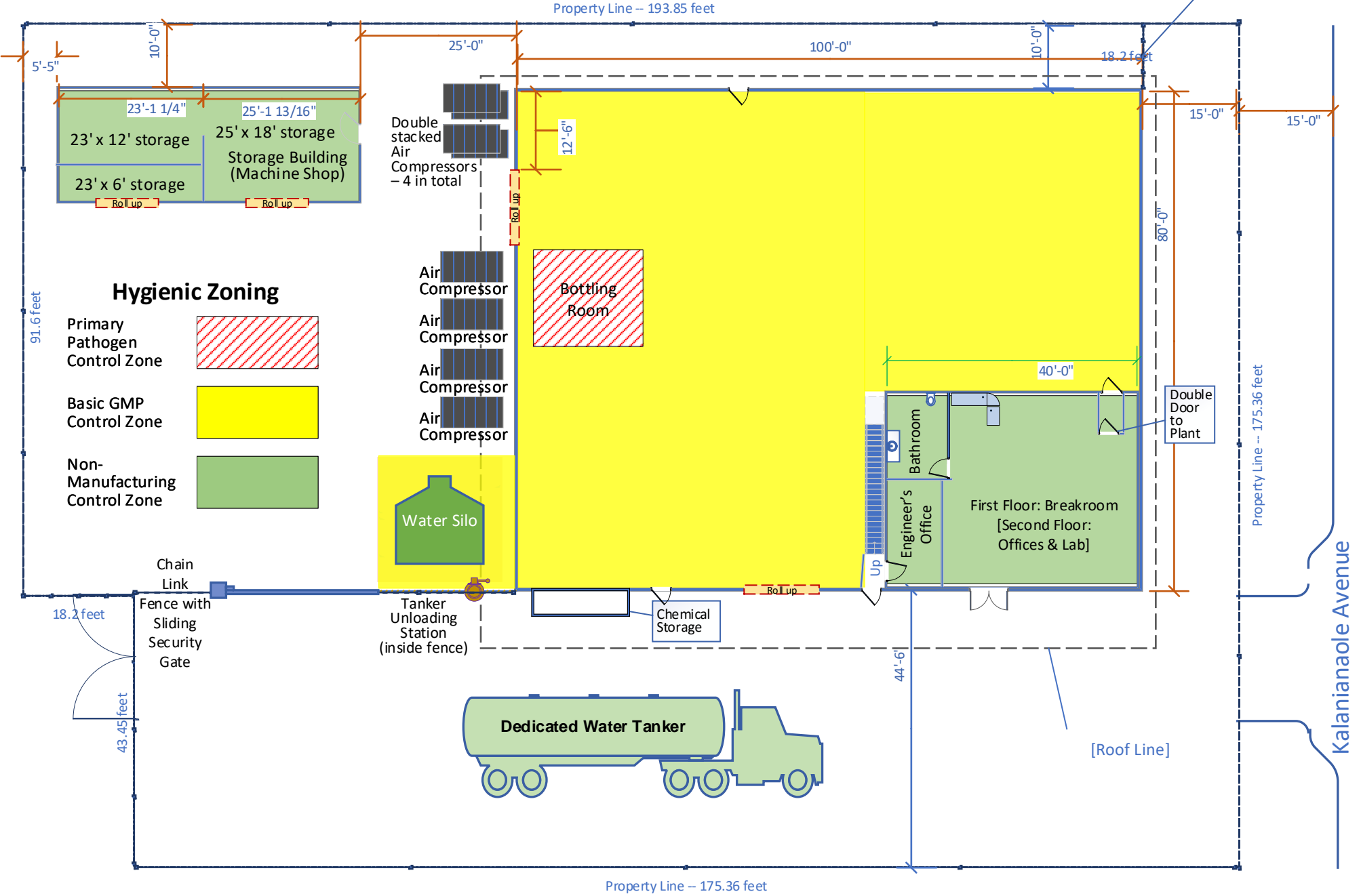
**Clean-In-Place
Loop Five (5)
** Chemical Feed to
Loop 1 & Loop 2 ****

A) This Loop is designed to move chemical cleaners from the CIP tank to the HESS Buffer Tank where it is then tied into either Loop 1 or Loop 2 to effect CIP using chemicals rather than ozonated water.

Waiakea Hawaiian Volcanic Water	DIAGRAM – Facility		
	Completed by: Jay Malloe	Date: May 14, 2019	Rev # 2.0
	Approved by: Jerry Clark	Supersedes: August 1, 2018	Doc # DIAG-07
	Waiakea Hawaiian Volcanic Water	Hilo, HI	



Waiakea Hawaiian Volcanic Water	DIAGRAM – Facility Hygienic Zone		
	Completed by: Jay Malloe	Date: May 14, 2019	Rev # 2.0
	Approved by: Jerry Clark	Supersedes: August 1, 2018	Doc # DIAG-08
	Waiakea Hawaiian Volcanic Water	Hilo, HI	



Kalaniana'ole Avenue