

OHIO UNIVERSITY

**Lausche Energy Plant
Coal to Gas Conversion
IDEA Campus Energy Conference 2019**





















RILEY HARRINGTON TRAVELING GRATE STOKER

Riley-Harrington Forced Draft Traveling Grate Stokers are manufactured in two types: Standard and Heavy Duty.

Standard Stokers are available in widths 4'-0" to 14'-0" in even foot increments and in following lengths: 8'-0", 10'-0", 11'-0", 12'-0", 13'-2 1/2", 14'-0", 15'-2 1/2", 16'-0", 16'-11", 18'-0", 19'-0 1/2", 20'-0 1/2", 22'-0", 23'-0", 23'-11 1/2". Heavy Duty Stokers are available in widths 14'-0" to 25'-0" and in lengths from 14'-0" to 27'-0" both in even foot increments. The largest Riley-Harrington Traveling Grate Stoker in operation in the United States at the present time is at Cornell University, Ithaca, N.Y. and is 25'-0" wide x 27'-0" long.

GRATE SURFACE



The grate surface consists of small clips of special heat-resisting alloy which are available in two designs to suit fuel requirements. The clips, designed to minimize siftings, are carried on "Y" shaped rack head castings. Rack heads are either 12" or 15" long and are riveted to the vertical flanges of 3" x 3" x 1/4" rack angles. The rack angles are made in two or more sections across the stoker to prevent warping of the angle. Rack angles are bolted to each chain link.

In order to prevent air leakage at the side of the stoker, in addition to specially designed air seals, two sealing clips are installed at each side of stoker.

Grate Clip (A) is recommended to burn coke breeze or fine sizes of anthracite coals. The clip only 25/32" wide has an anti-sifting ledge to minimize siftings and a series of fluted air passages located on one side of the clip. Serrations spaced across the top of the clip assure adequate distribution of air to the fuel bed. Air openings are located in the tail of the clip for uniform cooling.

Grate Clip (B) is furnished when various types of bituminous coals and lignites are to be used. The clip, approximately 15/16"

wide has uniform air slots located on one side of the clip. Air openings located in the nose and air slots in the tail of each clip assure adequate cooling and uniformity of air distribution.

GRATE CLIP DATA

Description	Model Clip Designations	
	Anthracite & Coke Breeze	Bituminous
	HA	HB
% Air Opening - No clearance between clip	6.5%	8.75%
% Air Opening - 1/64 clearance between clips	8.81%	10.32%
Width of Clip	25/32	1"
Weight of Clip	1.4 LB5	1.6 LB5
Width of Sealing Clips	1 13/16"	1 13/16" ✓
Material	Riley 7	Riley 7
Approx. No. Grate Clips per rack	NOM. STOKER WIDTH - 8" 25/32"	NOM. STOKER WIDTH - 8" 1"
EXAMPLE: 14'-0" WIDE STOKER - 8" = 13'-4" $\frac{13'-4" \times 25/32}{1'}$ OR $\frac{160"}{7812} = 204$ GRATE CLIPS PER RACK		

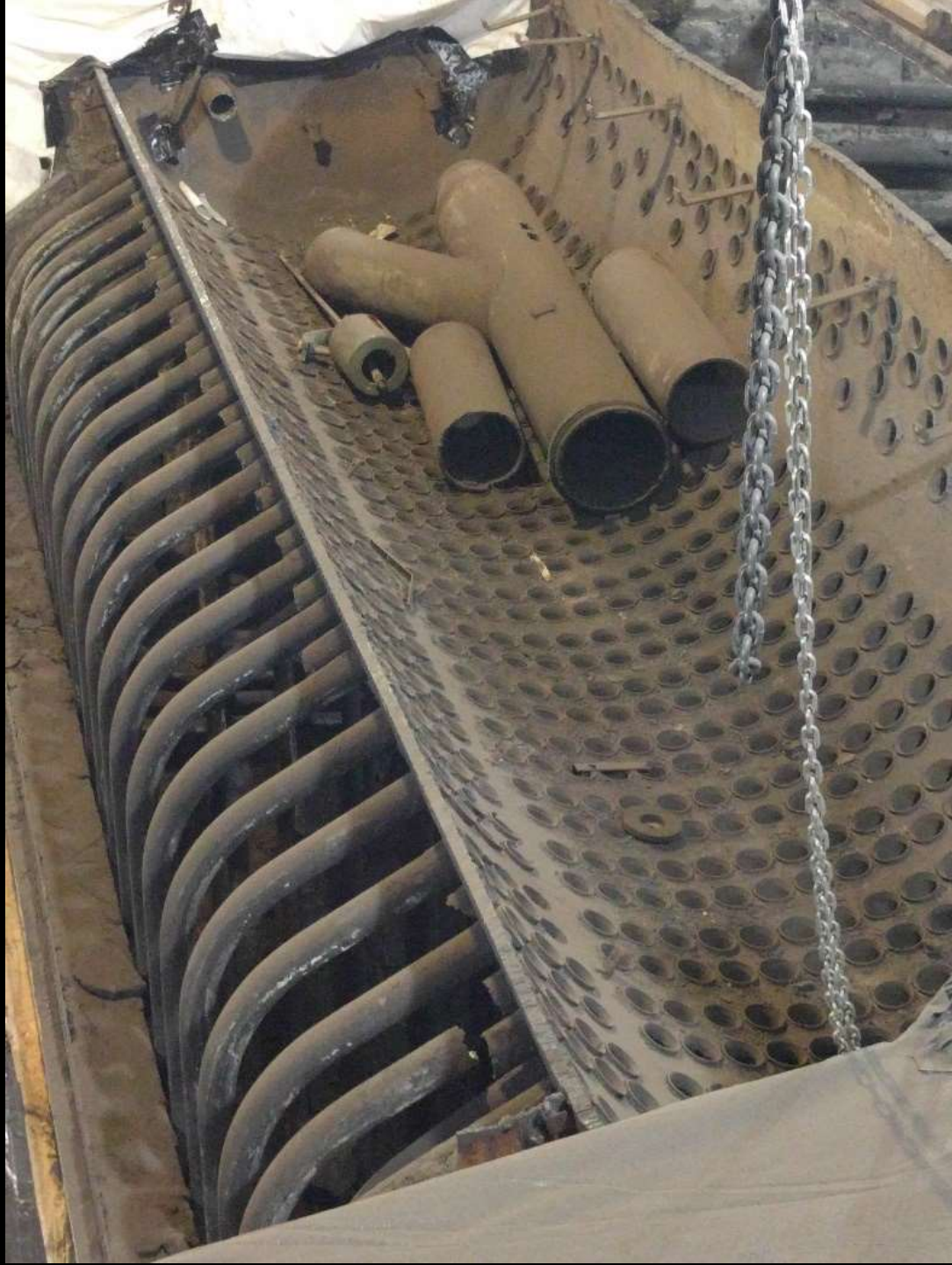


RILEY Stoker Corporation
WORCESTER, MASSACHUSETTS 01601







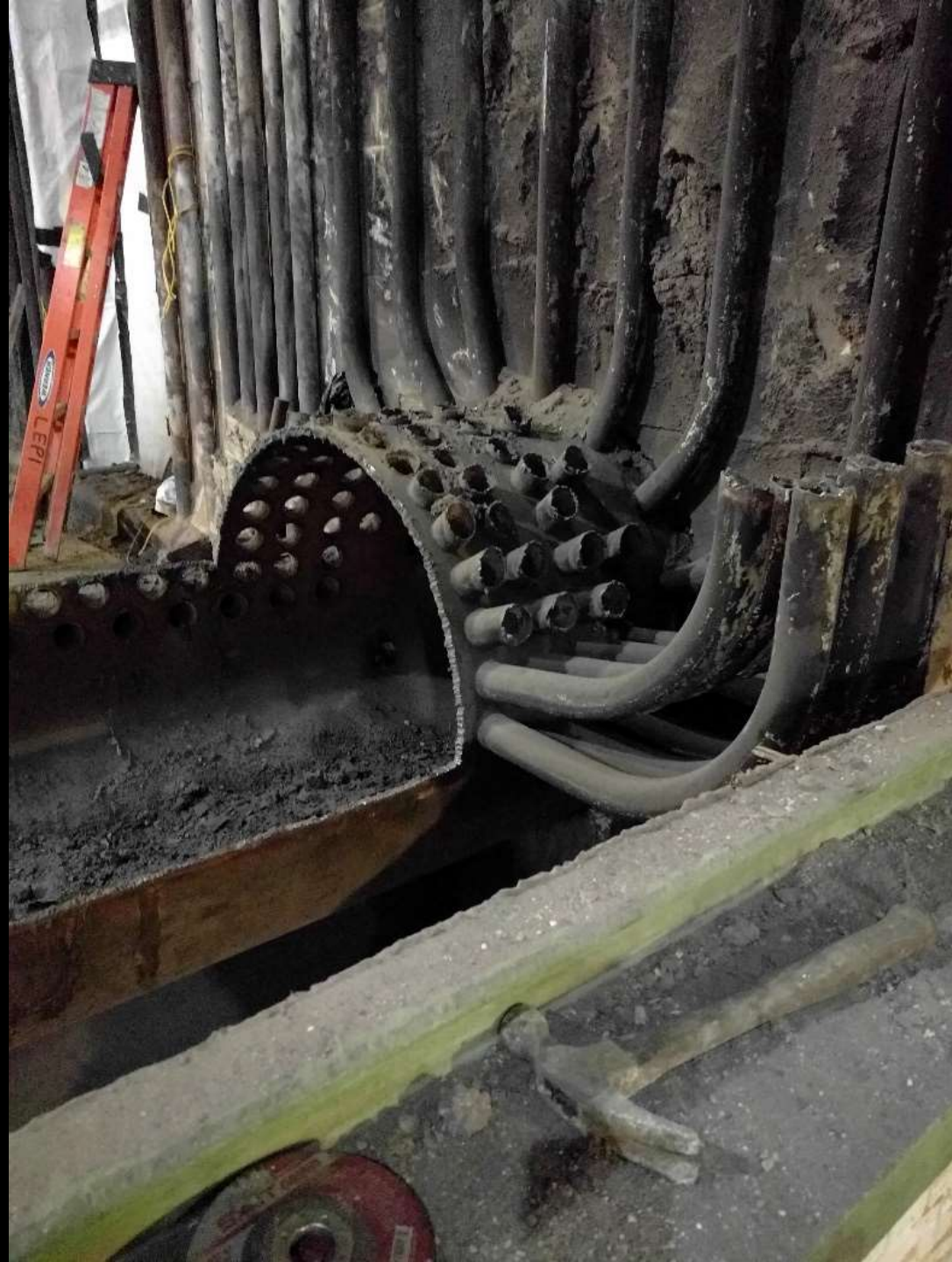




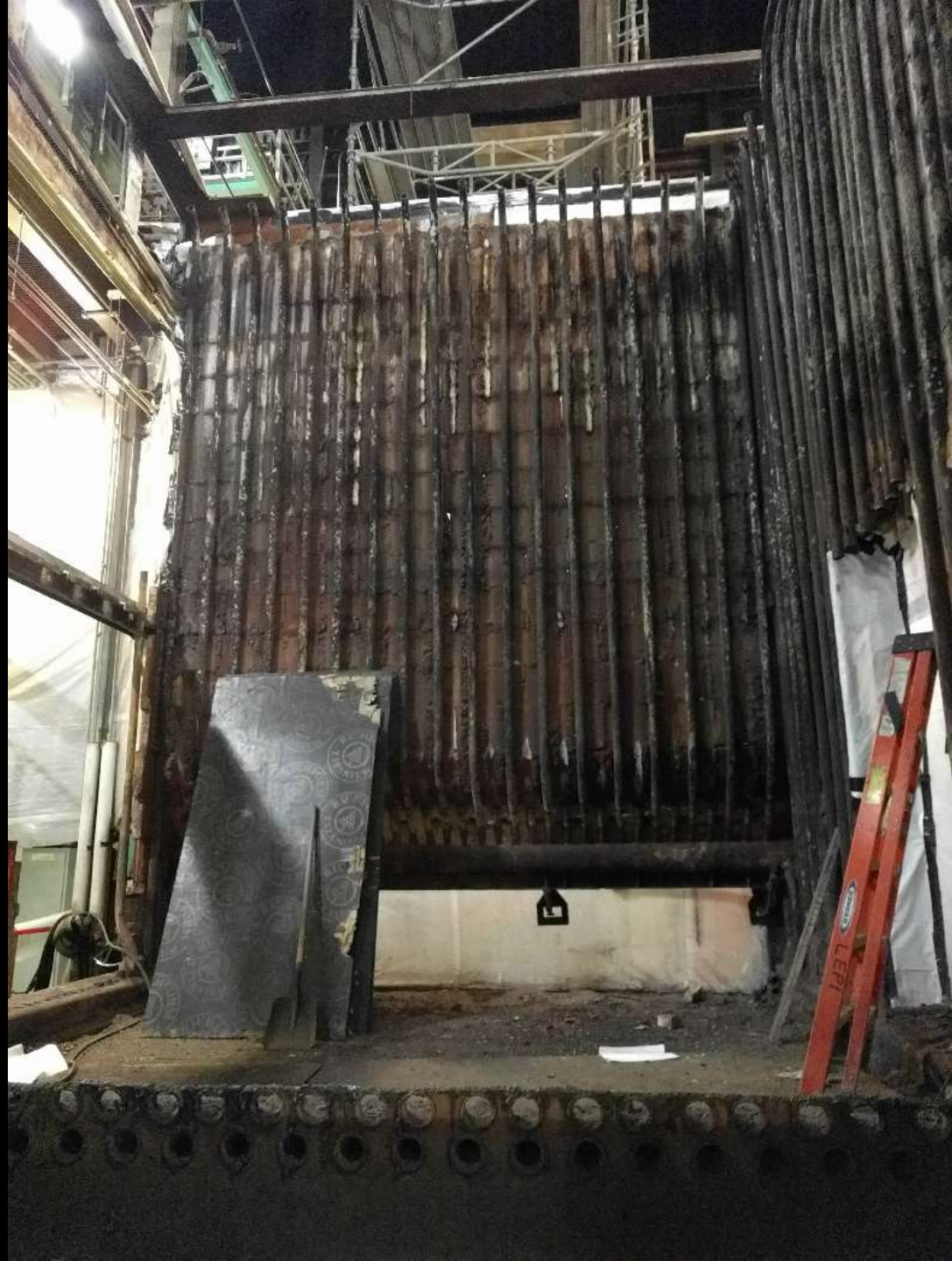




















































































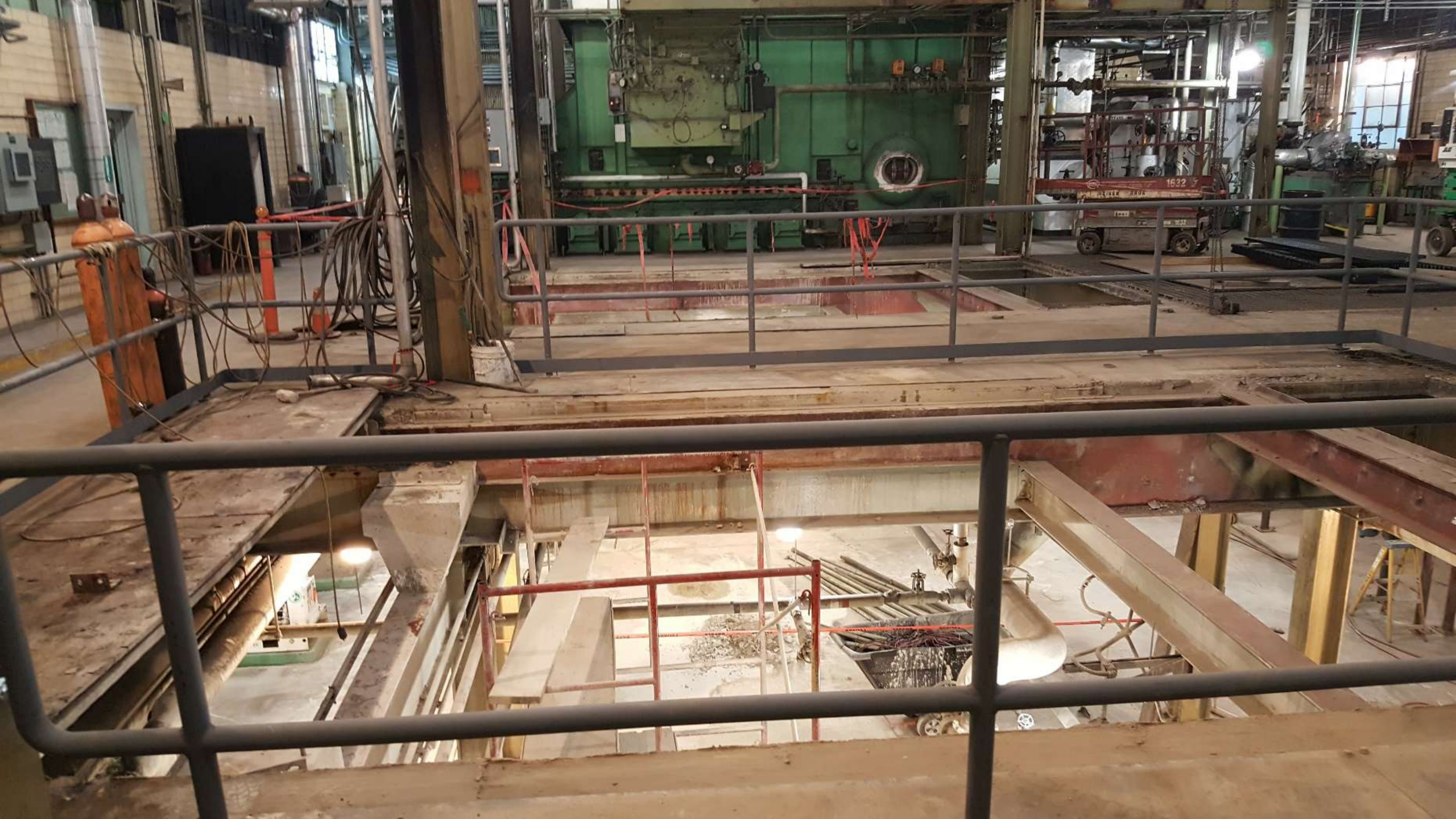




















































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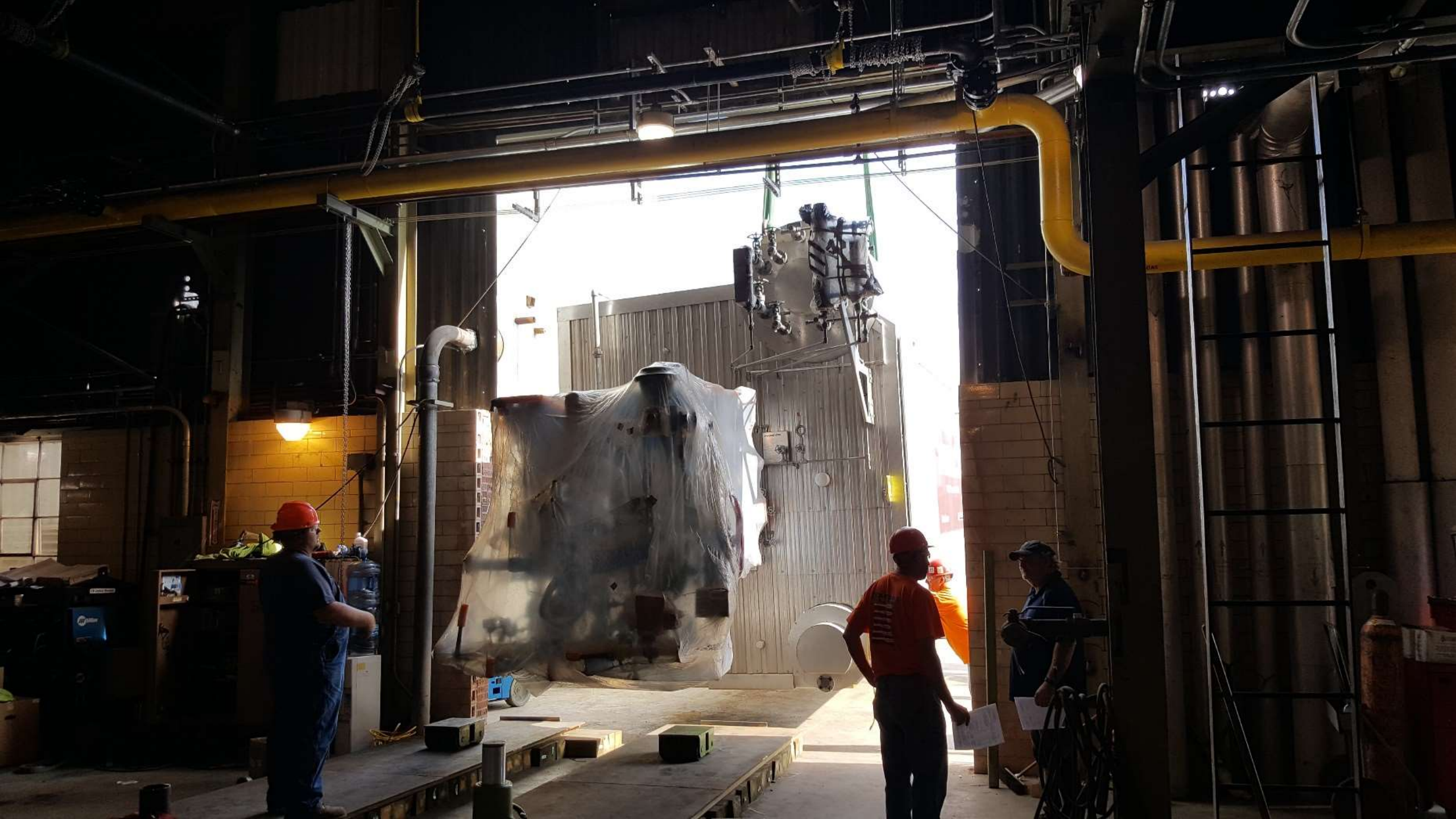


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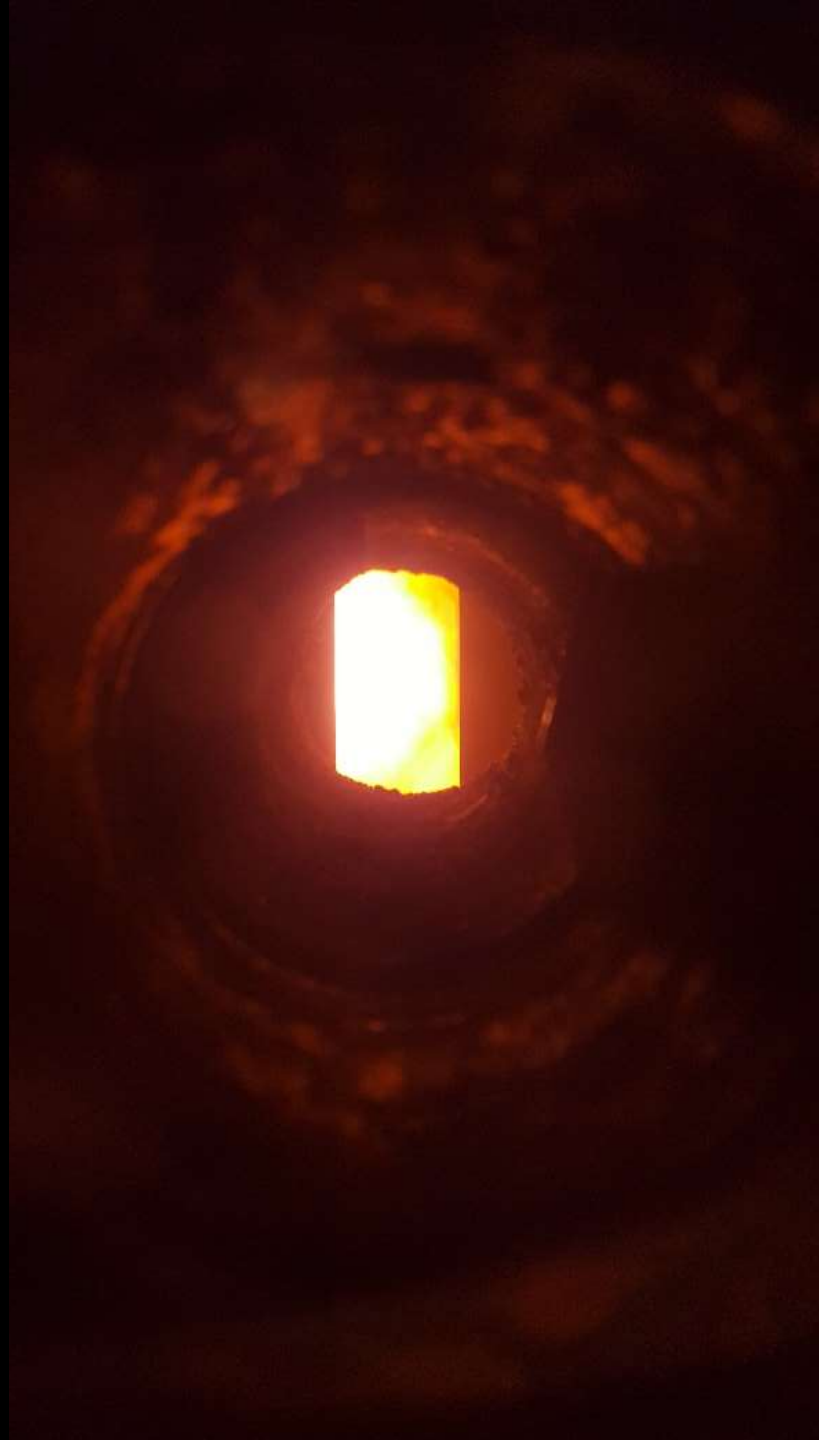
























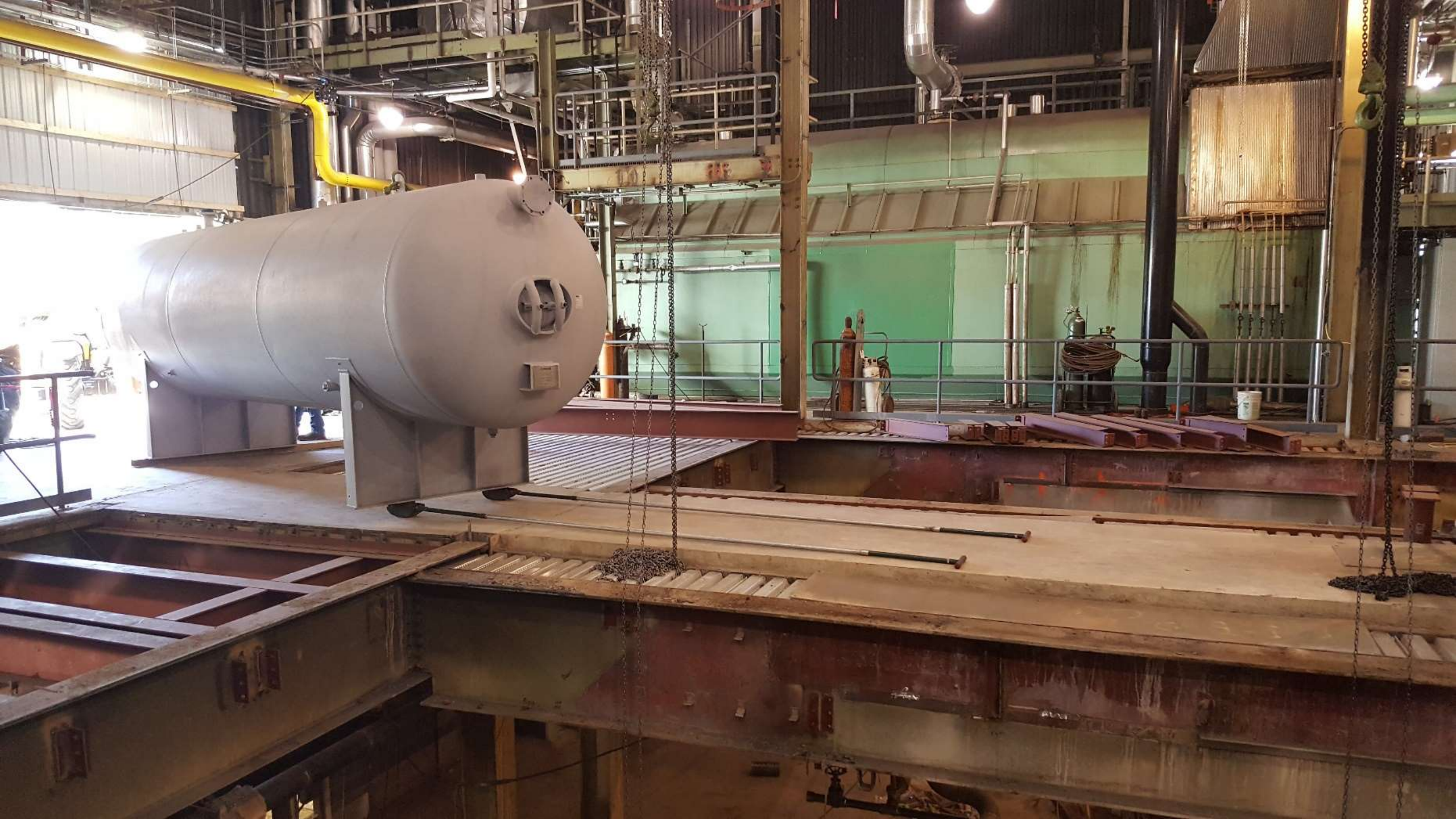
ENSATE TAN





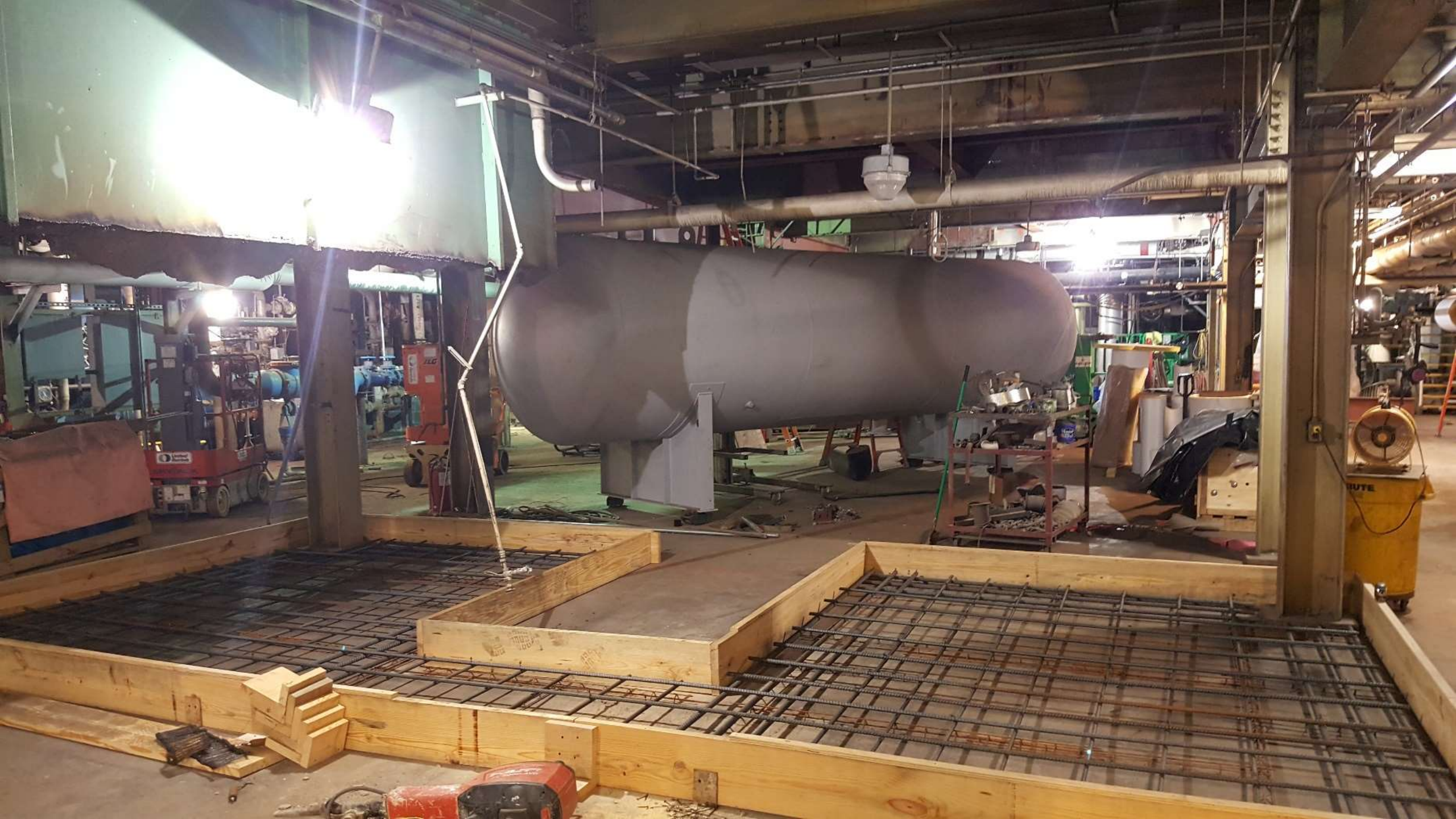
















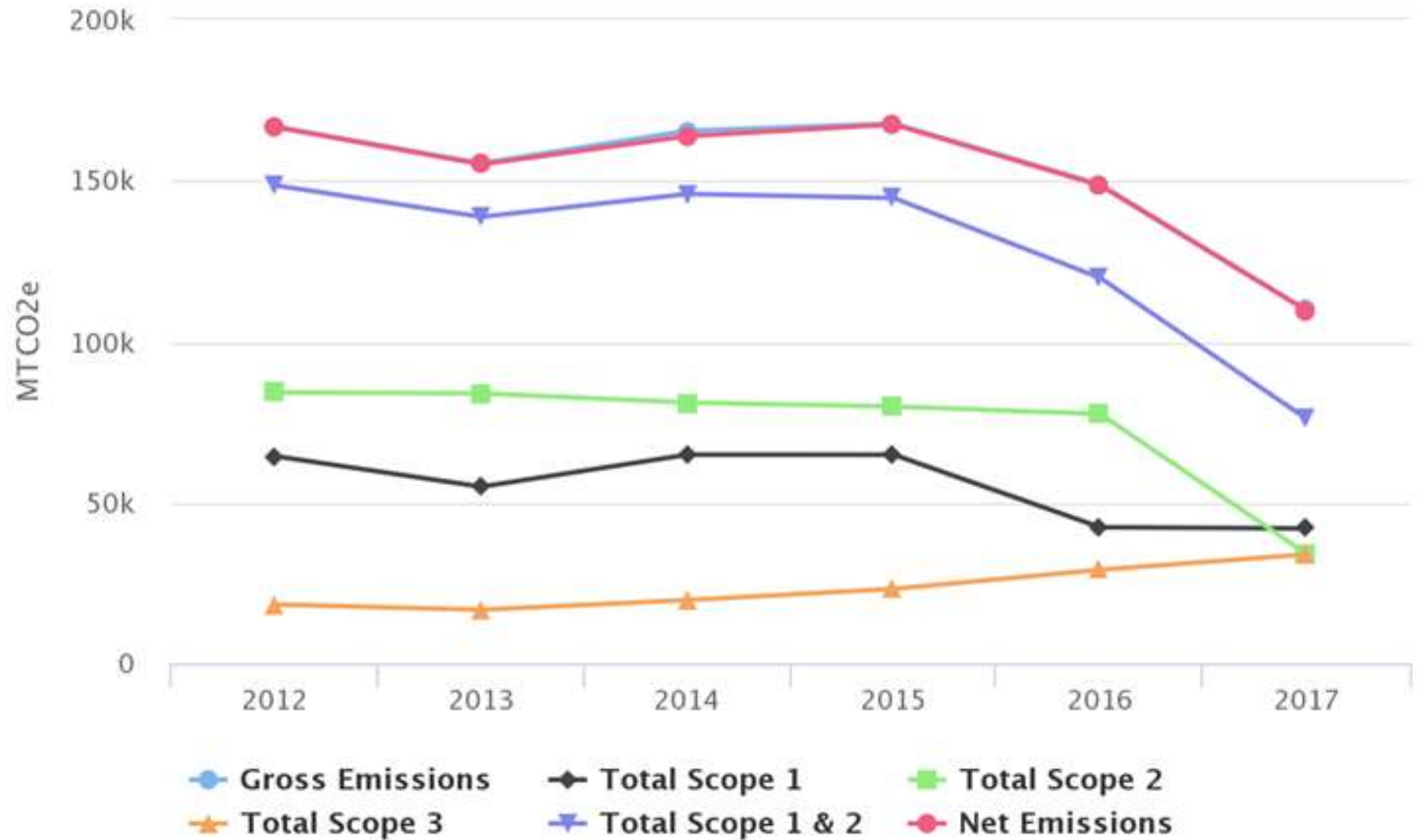
SOFTENER 2

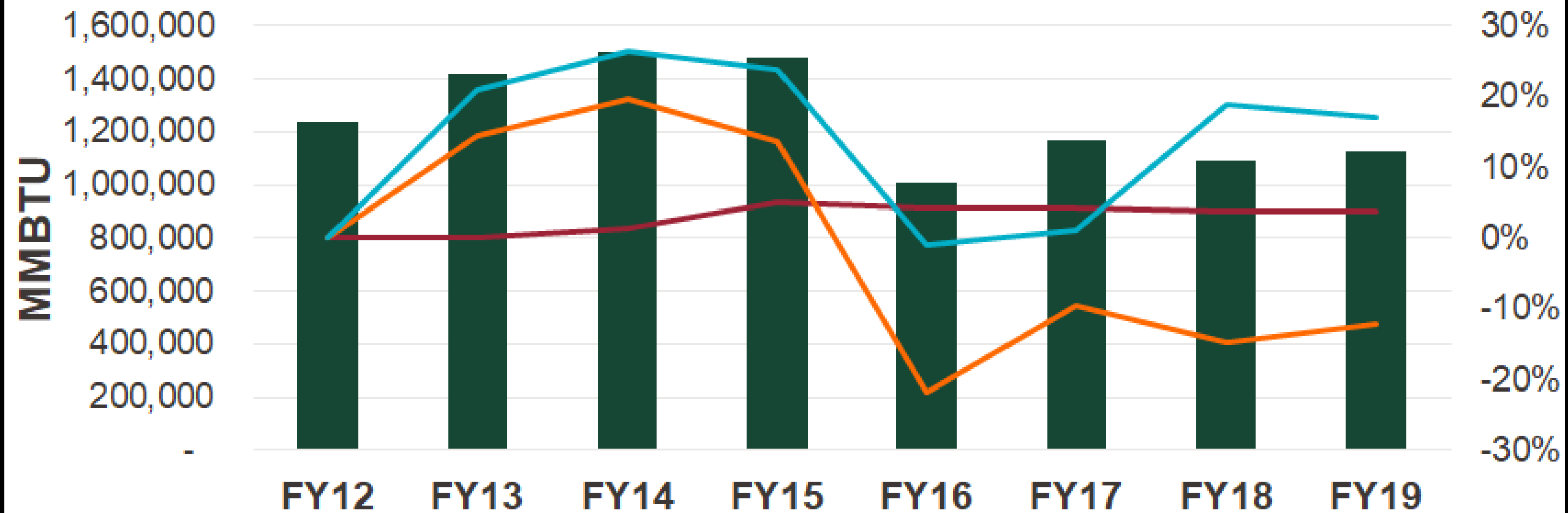
SOFTENER 3





EMISSIONS MTCO2E





■ MMBTU — GSF — MMBTU/GSF — DD

FY	MMBTU	GSF	MMBTU/GSF	HDD+CDD
FY12	1,237,067	8,069,085	0.153	5,422
FY13	1,417,161	8,082,924	0.175	6,560
FY14	1,502,330	8,180,960	0.184	6,853
FY15	1,477,733	8,486,818	0.174	6,710
FY16	1,007,914	8,417,568	0.120	5,366
FY17	1,167,379	8,417,568	0.139	5,487
FY18	1,092,879	8,367,693	0.131	6,449
FY19	1,128,243	8,367,693	0.135	6,352

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