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DECONTAMINATION

CASE HISTORY

D-1003 Overehead drum

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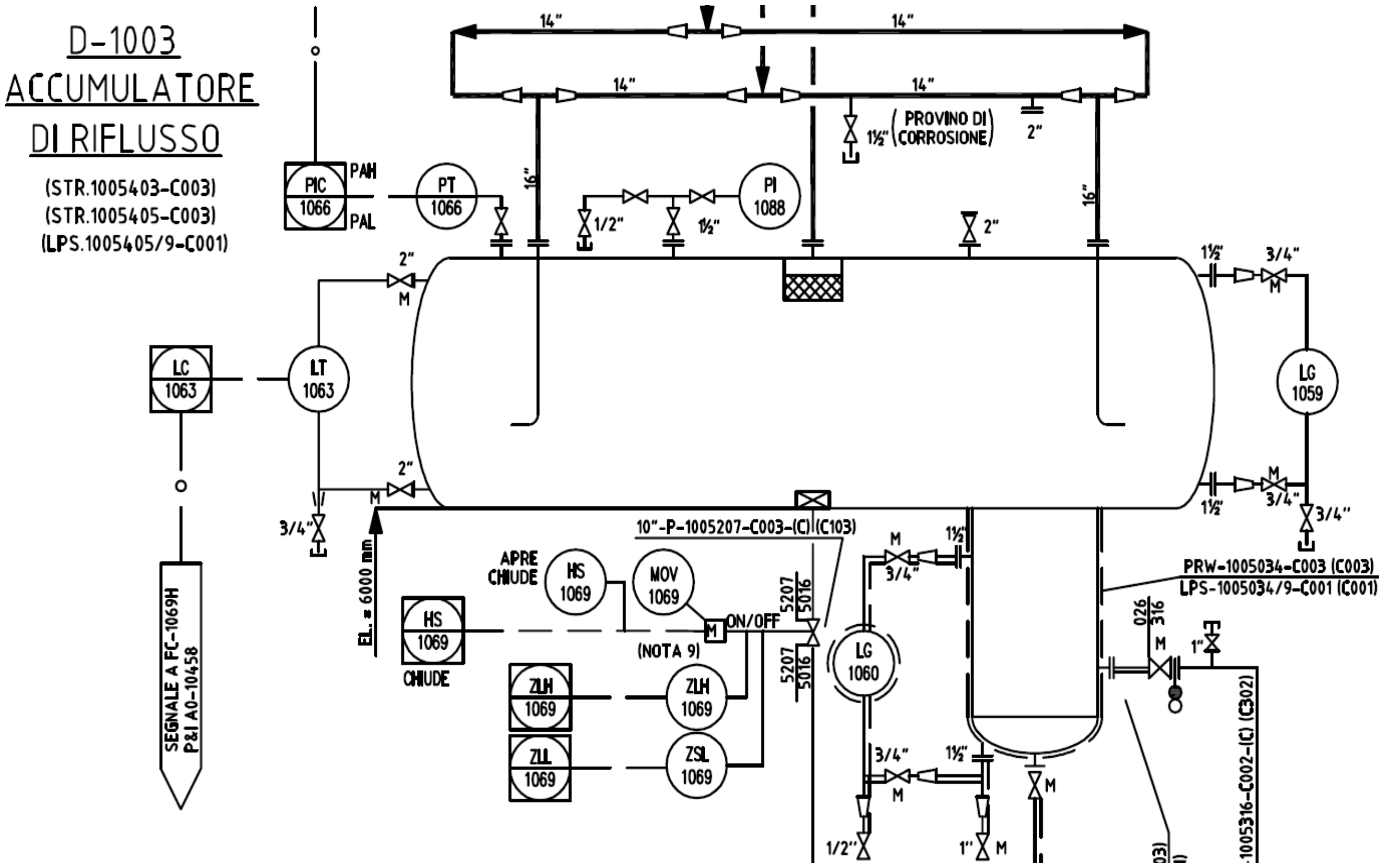
WHAT'S D-1003 ?

The overhead drum of the crude distillation plant serves as a vessel designed to collect condensation from the top of the main fractionator. This vessel effectively separates the majority of water from light hydrocarbons. The gas within this vessel is then routed to a secondary separation stage, D-1004, for further refinement before being directed to the gas unit.



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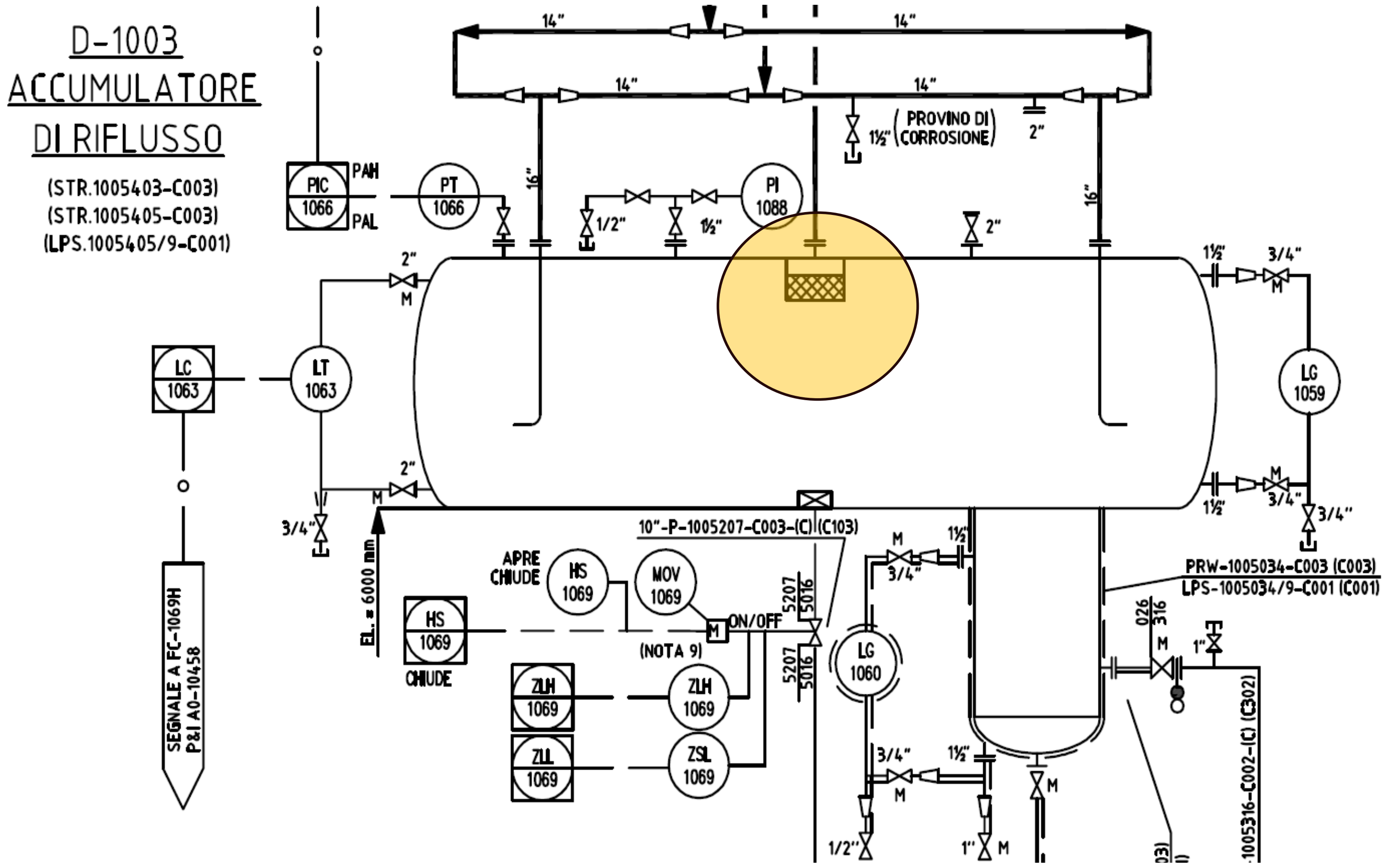
MAIN RISKS

The primary challenge with this type of vessel is the presence of pyrophoric compounds, predominantly found in the demister package constructed of metallic mesh. Situated at the gas outlet, it is imperative to prioritize chemical oxidation to mitigate the risk of fire resulting from oxygen reaction when opening the manhole for personnel entry. Ensuring thorough oxidation is crucial for safety.



THE PROCEDURE

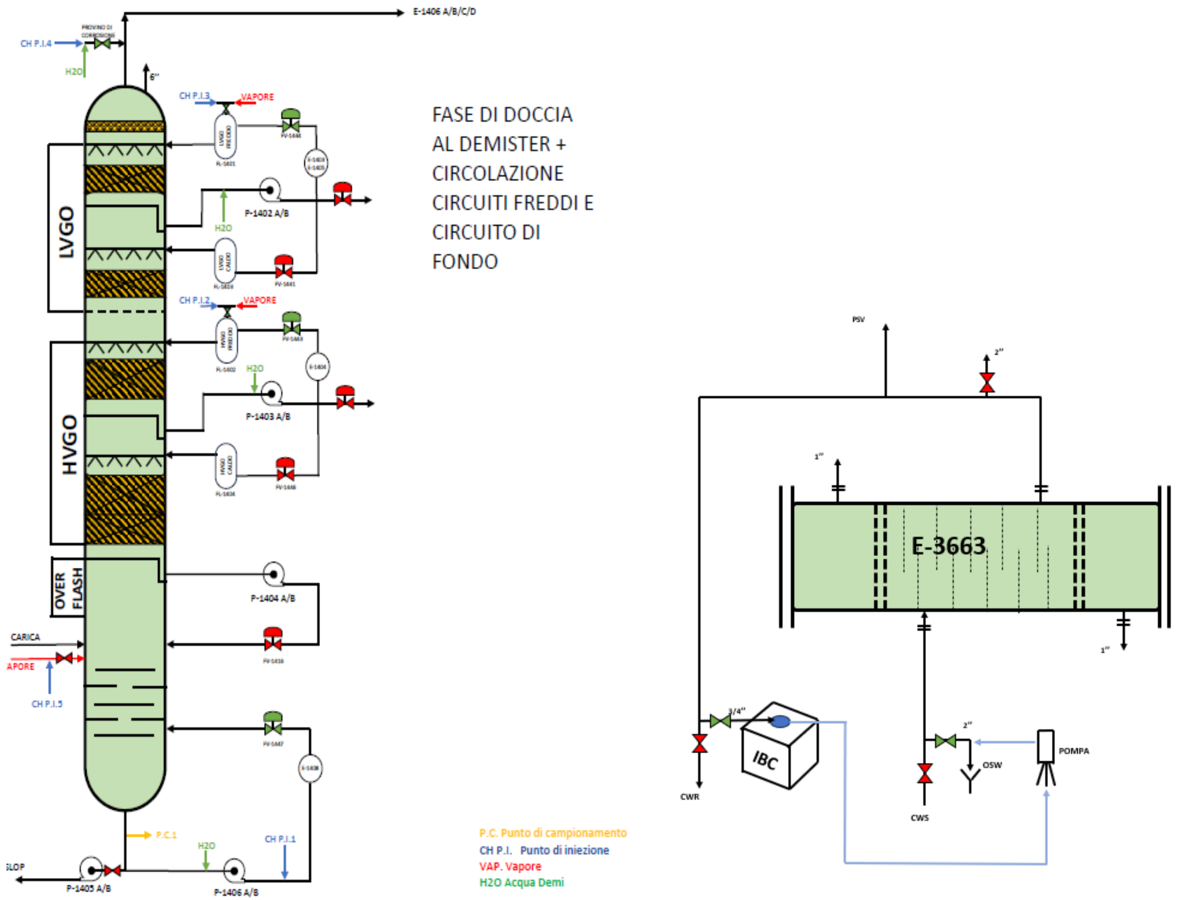
We have developed a tailored procedure for vessel cleaning, employing various chemicals for oxidation and odor removal, as well as the elimination of hydrocarbon residues. This procedure is divided into three distinct phases:

Demister Shower

Boil Out

Vapor Phase

Each phase is carefully orchestrated to ensure thorough and effective cleaning of the vessel.



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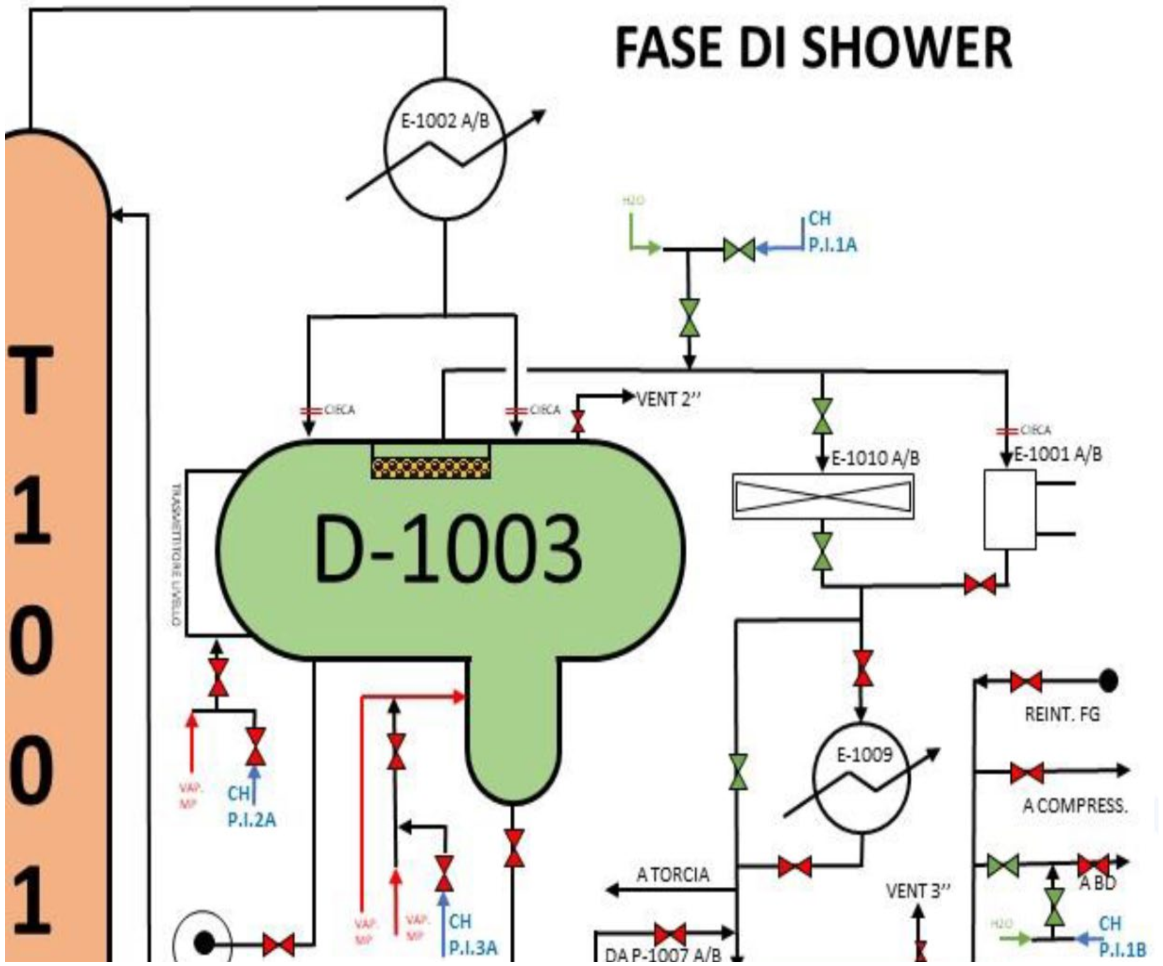
SHOWER PHASE

In this phase, we directly target the demister, vigorously oxidizing all pyrophoric materials present over the package. It's crucial to utilize a potent oxidizing chemical mixed with DEMI water to effectively achieve our objectives. We meticulously plan and verify all valve positions on the field that are pivotal for opening and closing during this phase.



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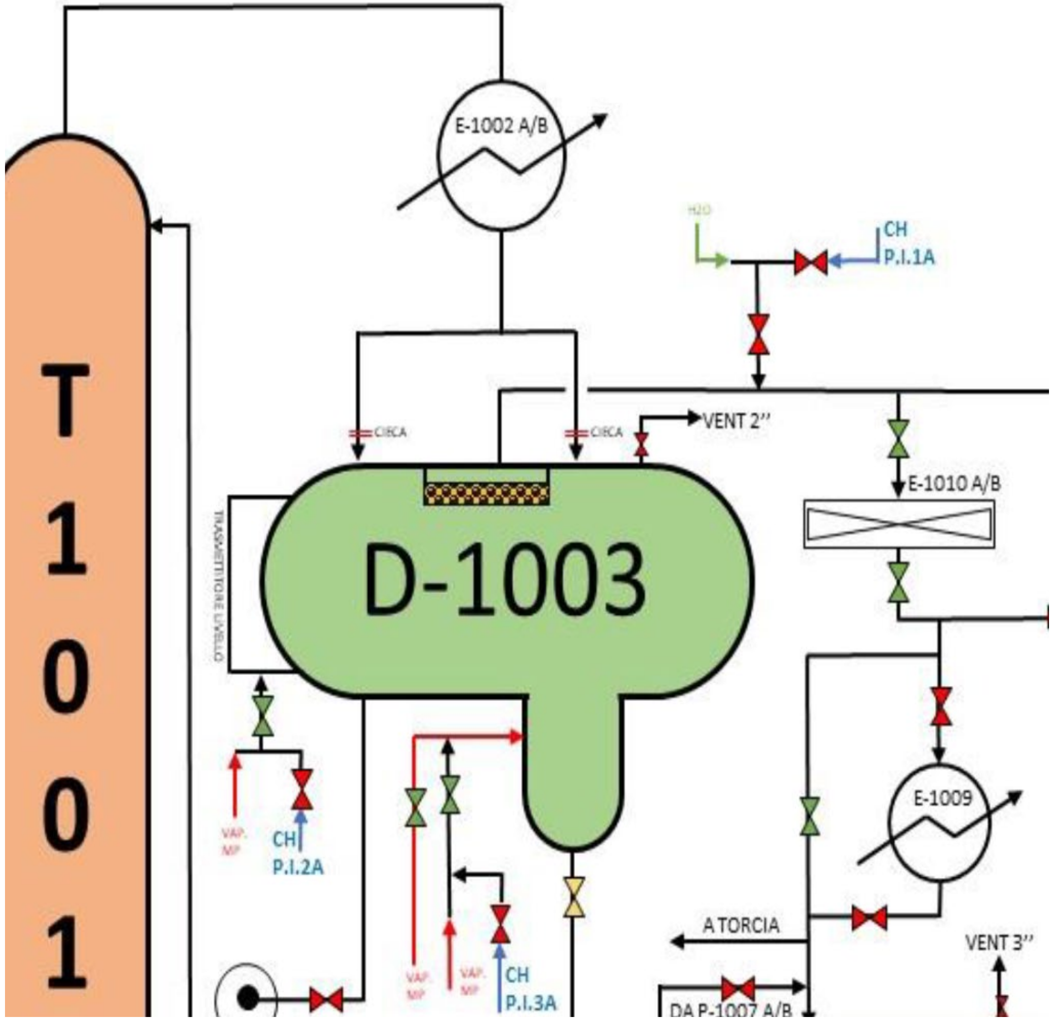
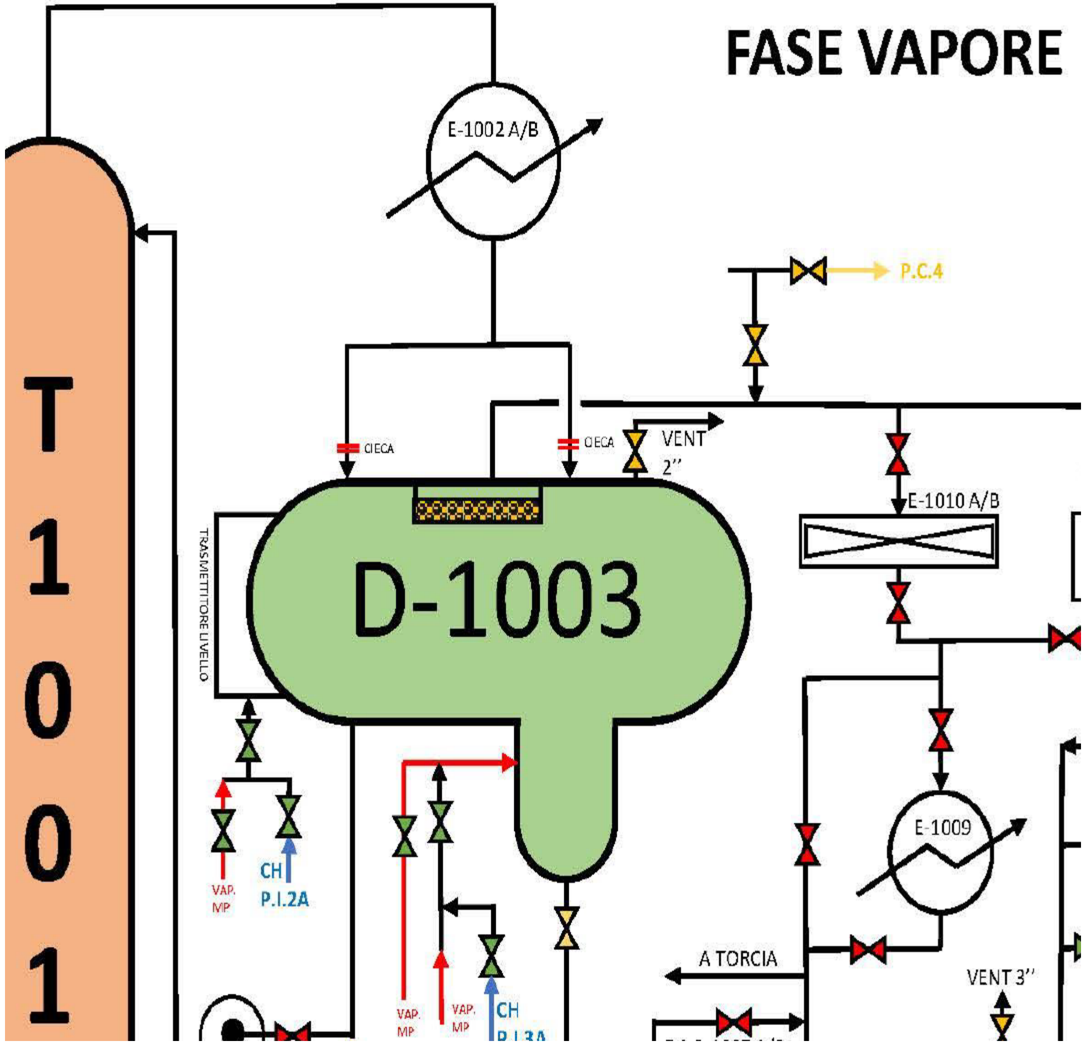
BOILOUT PHASE

In this phase, we gather all water and chemicals accumulated at the bottom of the vessel. Following the injection of new chemicals and additional water, we open the steam to initiate the boiling phase, facilitating the removal of solid residues from the bottom. Adjusting the valve positions is also part of this phase, aiding the operational support for our field team.



VAPOUR PHASE

This phase commences following the complete drainage of the entire vessel, with the steam left open while injecting the chemical directly into the stream. This process effectively eliminates all traces of hydrocarbons, H2S, LEL%, and associated odors, leaving the vessel prepared for safe opening after a cooldown period.



SAMPLING

We meticulously oversee all facets of the operation, conducting sampling every two hours to assess conditions within the equipment. This involves monitoring the levels of chemicals and hydrocarbons remaining inside

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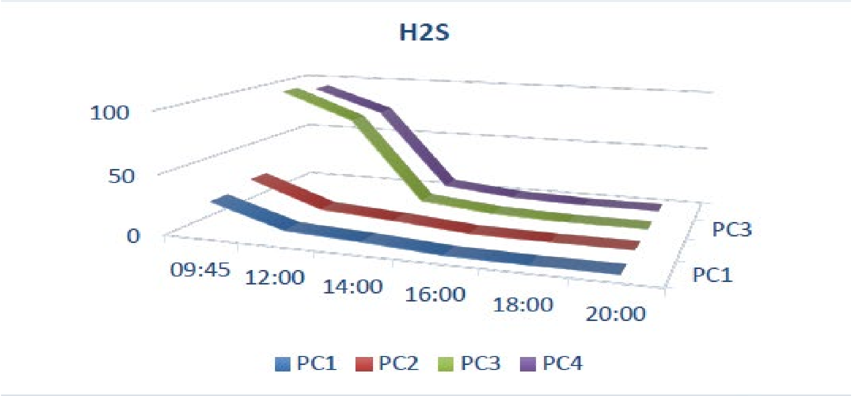
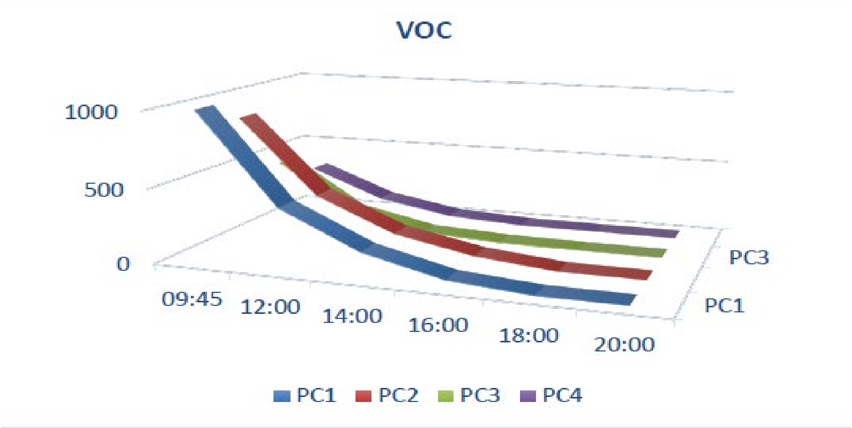
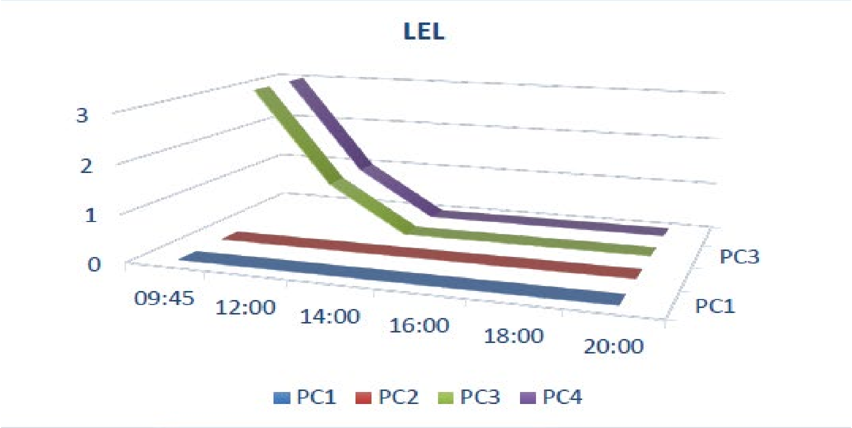
Datas are important to create a very easy report for the final client that must understand how the decontamination went.

We will create a report that shown the analysis made on field and showing the real numbers of the activity.

DATA & REPORTS







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RESULTS

The demister appears brand new with only a very small amount of soft sludge at the bottom, easily removable with just a water hose.

There's no smell or indication of fire; everything is running smoothly thanks to the Desias method.

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DECONTAMINATION

CASE HISTORY

- Main fractionator T2T1
- Head circuits D1 and D2
- Strippers T2T2 A/B/C/D
- Lower, middle, and upper Pumparound circuits
- Vacuum fractionator T2TN1
- Head circuits DN1 and DN2
- LVGO circuit
- HVGO circuit

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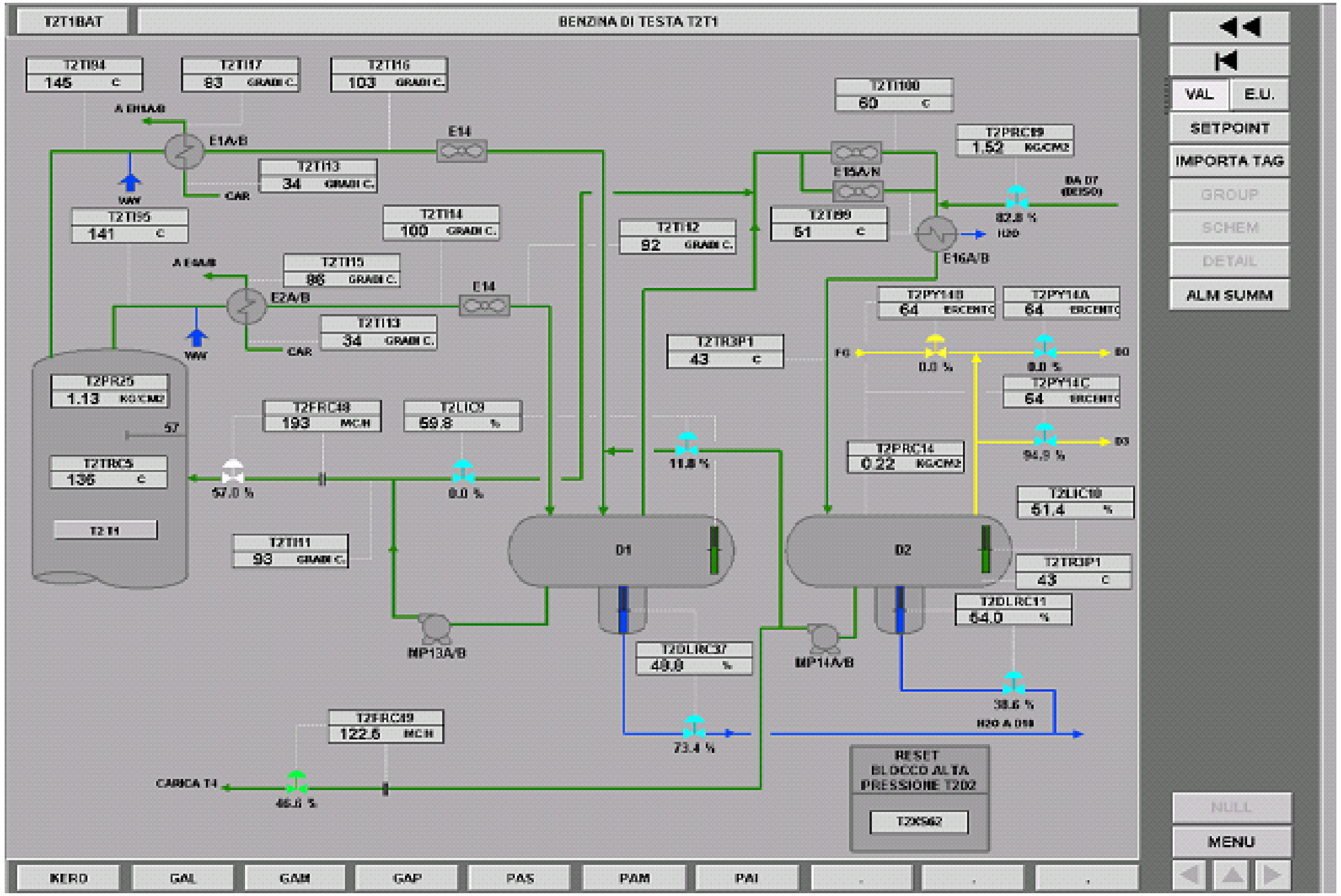
MAIN FRACTIONATOR T2T1

OBJECTIVES OF THE RECLAMATION TREATMENT

- Reduction of environmental impact
- Zero impact on the wastewater treatment plant
- Improvement of internal cleanliness conditions of the equipment
- Reduction of reclamation/decontamination times
- Reduction of the risk of ignition of pyrophoric iron sulfides
- Immediate usability after cooling and aeration of the containers



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DATA

SAMPLE POINT	27/03/12 H: 20:00			28/03/12 H: 06:00			H:10:00			H:13:00			H:15:00		
	H2S	VOC	LEL	H2S	VOC	LEL	H2S	VOC	LEL	H2S	VOC	LEL	H2S	VOC	LEL
C1 out .H_2O T2D1	0	320	0	0	20	0	0	35	0	0	50	0	-	-	-
C2 Asp. MP13A/B	2	170	o/r	0	40	0	0	250	1	0	150	0	0	50	0
C3 out.H_2O T2D2	0	70	0	0	11	0	4	600	6	3	300	0	1	90	0
C4 Asp. MP14A/B	5	400	o/r	-	-	-	-	-	-	-	-	-	-	-	-
C5 out. BD PY 14A	2	120	0	0	180	1	0	400	3	4	300	0	1	95	0

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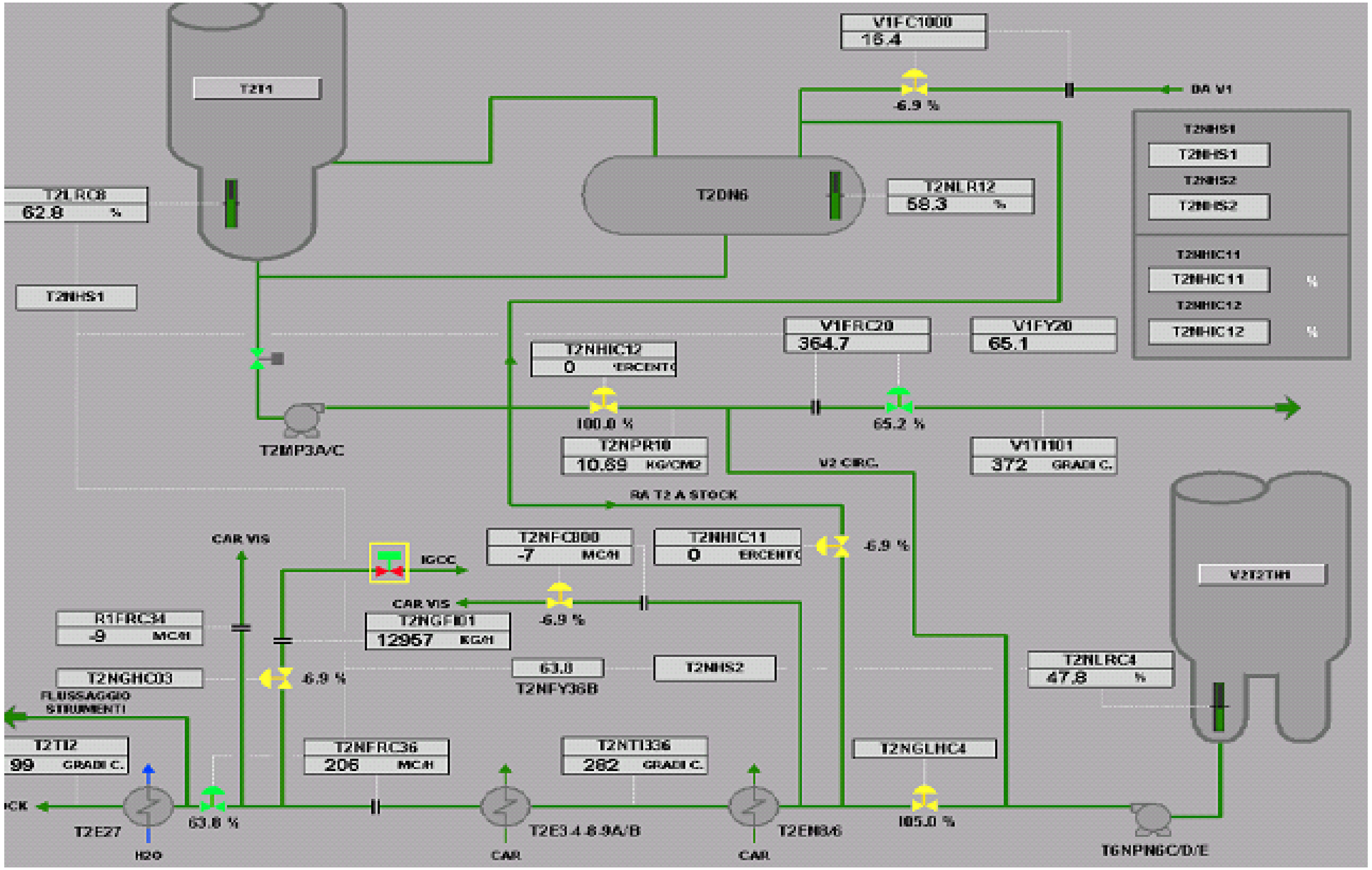
FURNACE CIRCUIT T2F1 - T2T1 - T2T2

The circuit consists of the furnace T2F1, the main fractionator T2T1, and the strippers T2A/B/C/D



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SAMPLE POINT	27/03/12 ORA:20:00			28/03/12 ORA:06:00			ORA:10:00			ORA:13:00		
	H2S	VOC	LEL	H2S	VOC	LEL	H2S	VOC	LEL	H2S	VOC	LEL
C6 valle FRC19	0	200	0	0	4	0						
C7 Asp. MP12	0	19	0	0	4	0						
C8 valle FRC18	4	500	40	1	16	0						
C9 Asp. MP11	0	170	0	0	38	0						
C10 valle FRC17	2	500	12	0	350	1	1	150	0	3	60	0
C11 Asp. MP10	5	400	8	0	0	0	-	-	-	-	-	-
C12 Asp. MP8/9	0	920	71	0	13	0						
C13 Asp. MP7A	1	55	7	0	6	0						
C14 Asp. MP5	0	o/r	7	0	12	0						
C15 Asp. MP4	0	28	0	0	0	0						
C16 Asp. MP3A/C	0	130	0	0	14	0						

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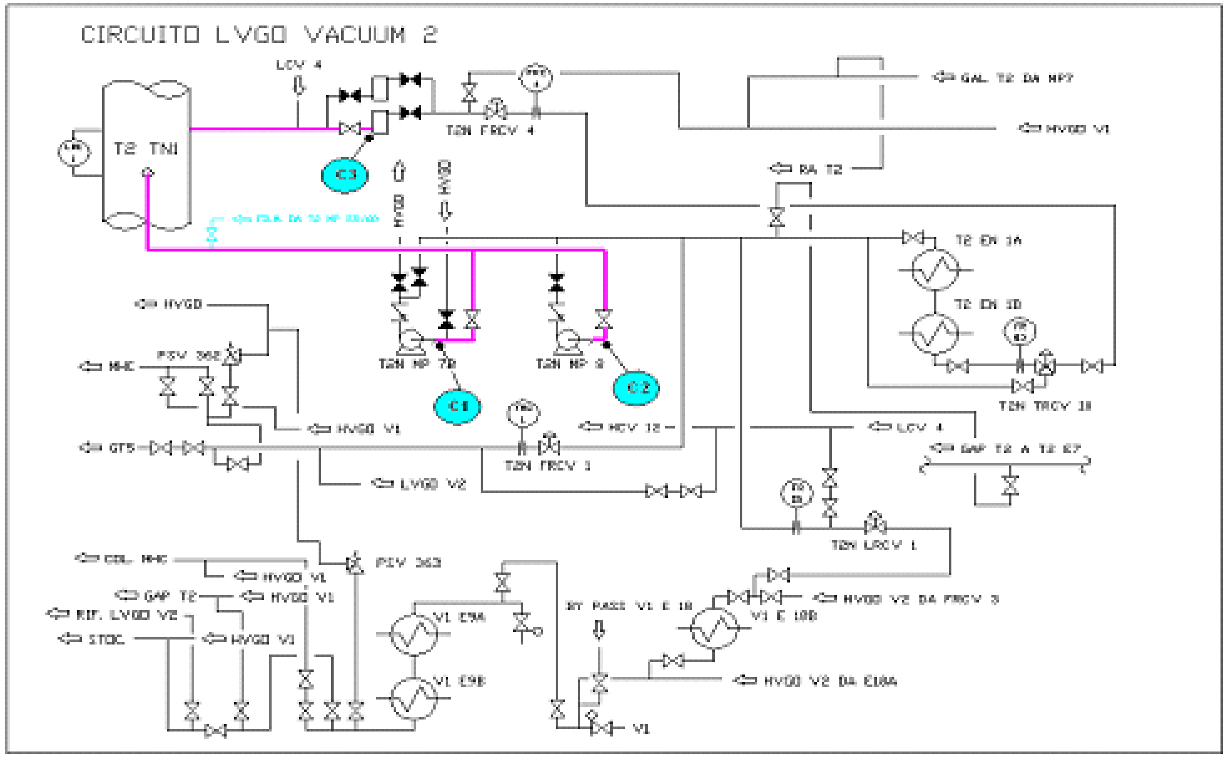
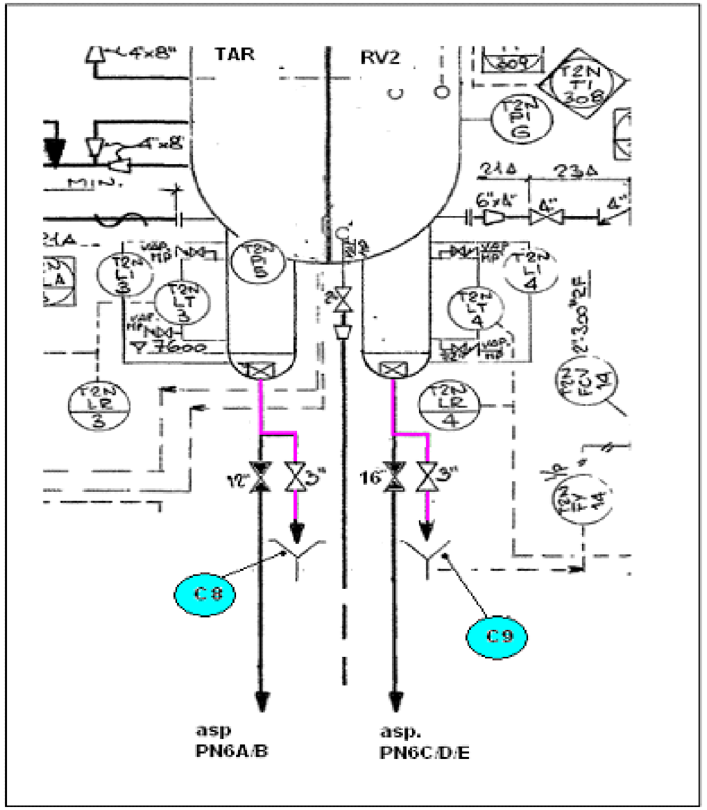
FURNACE CIRCUIT T2F1B - T2TN1

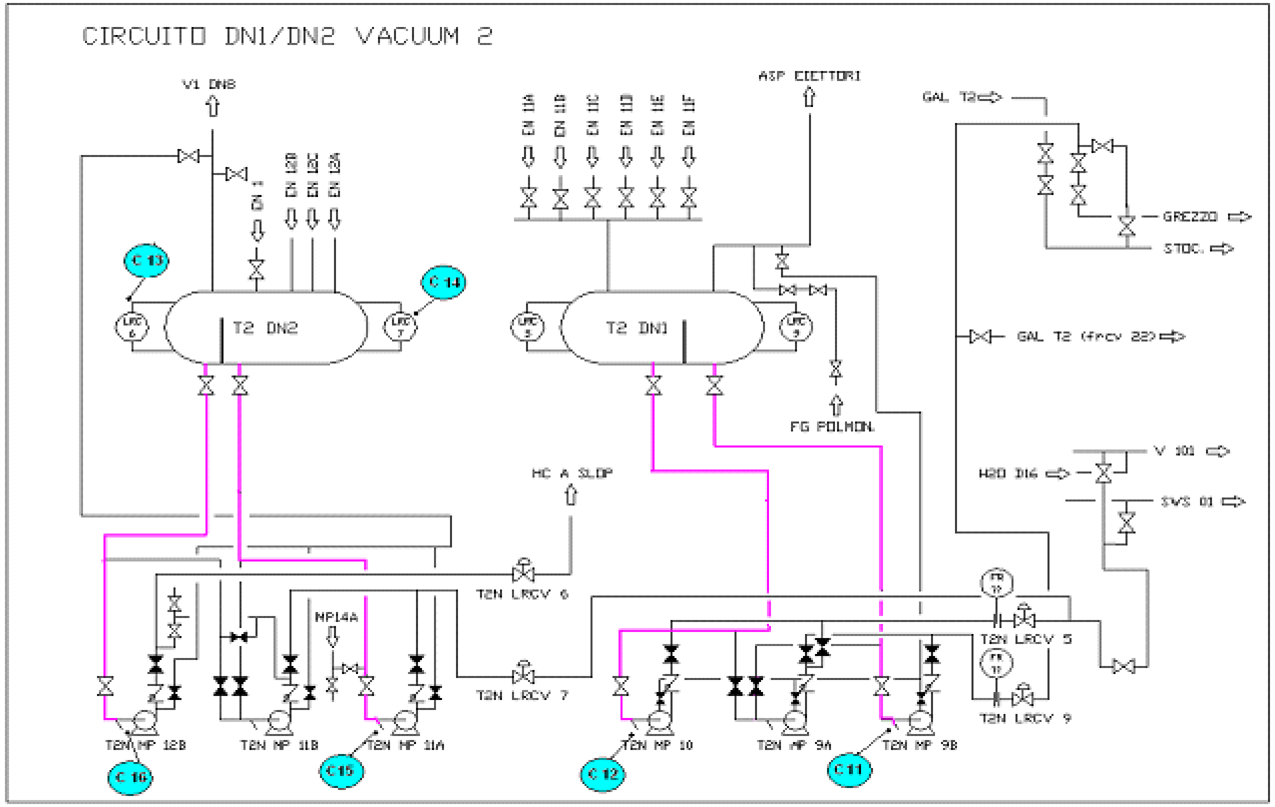
The circuit consists of the furnace T2F1B, the vacuum fractionator T2TN1, and the reflux circuits in the LVGO and HVGO columns.





SAMPLE POINT	ORA:07:00			ORA:13:00			ORA:18:00		
	H2S	VOC	LEL	H2S	VOC	LEL	H2S	VOC	LEL
C1 Aspirazione PN7B	-	-	-	6	120	1	2	46	0
C2 Aspirazione PN8	-	-	-	0	100	0	0	30	0
C3 Filtri rientro FRCV4	-	-	-	0	5	0	-	-	-
C4 Filtri rientro FRCV5	0	1	0	0	10	0	-	-	-
C5 Filtri rientro FRCV6	1	110	0	0	70	0	-	-	-
C6 Aspirazione PN7A	3	230	1	1	110	0	1	70	0
C8 Dreno mam-mellone Asp. PN6A/B	0	90	0	0	8	0			
C9 Dreno mammellone Asp. PN6C/D/E	0	20	0	0	5	0			

HEAD CIRCUIT T2TN1 - T2DN1 - T2DN2



SAMPLE POINT	28/03/12 ORA:07:00			ORA:13:00			ORA:19:00			ORA:24:00			ORA:01:30		
	H2S	VOC	LEL	H2S	VOC	LEL	H2S	VOC	LEL	H2S	VOC	LEL	H2S	VOC	LEL
C11 Asp. PN9	-	-	-	0	80	0	1	500	2	0	30	0	-	-	-
C12 Asp. PN10	17	380	5	3	340	3	0	200	1	0	75	0	-	-	-
C13 Klinger LT6DN2	-	-	-	10	110	1	20	210	3	9	40	0	5	25	0
C14 Klinger DN1 lato HC	-	-	-	15	170	1	30	350	3	1	30	0	-	-	-
C15 Asp. PN11	0	58	0	1	45	0	0	36	0	0	40	0	-	-	-
C16 Asp. PN12	0	83	0	0	5	0	12	o/r	20	10	40	0	3	10	0

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The circuit, consisting of the 1st and 2nd condensation stages, features the respective accumulators where, at the HC/H2O separation baffle, a demister is installed. The demister's porosity poses a significant obstacle to complete degassing.

RESULTS & CONCLUSIONS

The decontamination of the circuits using EKODEKO products was successful, despite the challenges faced during the process. Thanks to EKODEKO technology, all required parameters were met, and the equipment was returned within the expected timeframe.