VAPOR BLASTING vs. DRY ABRASIVE BLASTING

Surface Preparation & Salt Removal Test July 21, 2015

Surface Area Approximately 100 square feet Work Table (50 SF per test area)

Author: Norman Petticrew
CHLOR RID International, Inc.
norman.petticrew@chlor-rid.com
Cell: (504) 912-7765
NACE CIP LEVEL III PEER CERTIFICATION # 850

Location: **Carencro, Louisiana**

Objective: **To observe production time differences between Vapor Abrasive Blasting versus Dry Abrasive Blasting.**

STRUCTURE TO BE BLASTED – STEEL WORK TABLE:

Photo # 1

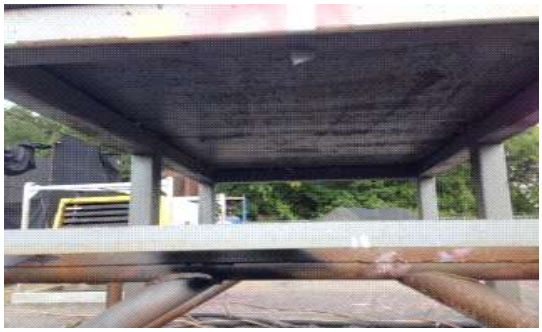

Photo # 2

- **VAPOR ABRASIVE BLASTING – STEEL TABLE (LEFT SIDE)**

Garnet: 30/60 Blend

CHLOR*RID® Soluble Salts Remover Injected into to Vapor Blast Water at 1:50 Ratio

Final Results after Blast: 1 µg/cm^2 chlorides remaining using CHLOR*TEST™

Time: 84 Minutes

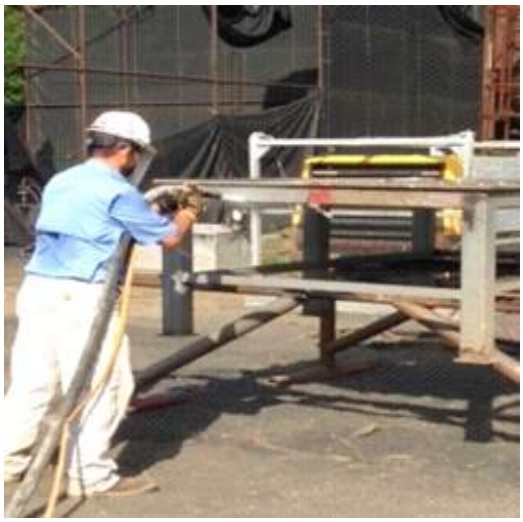

Photo # 3

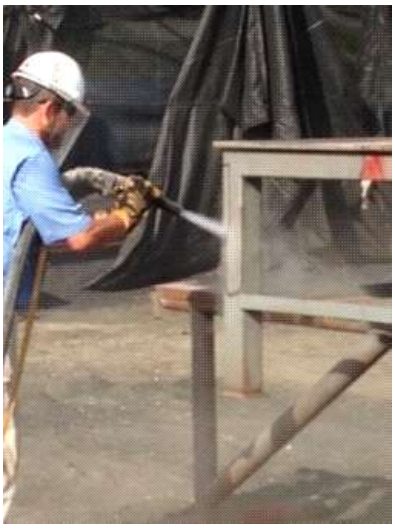

Photo # 4

Photo # 5

Photo # 6

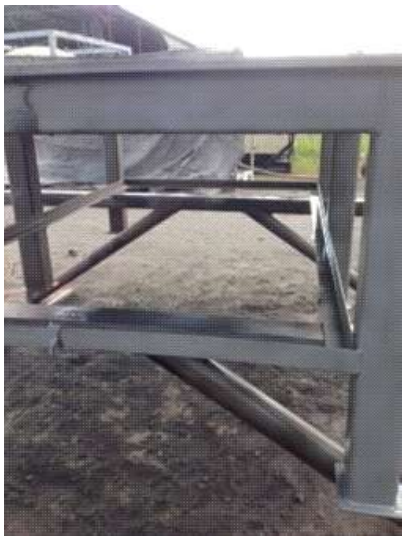

Photo # 7

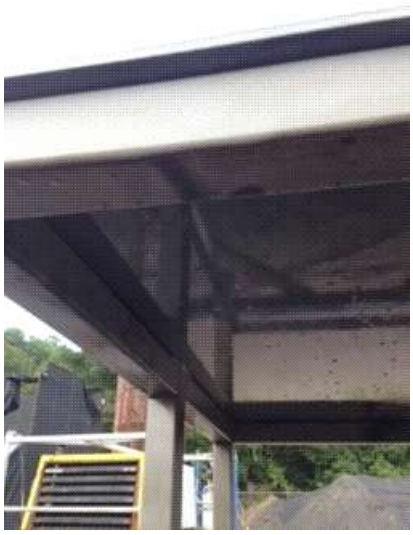

Photo # 8

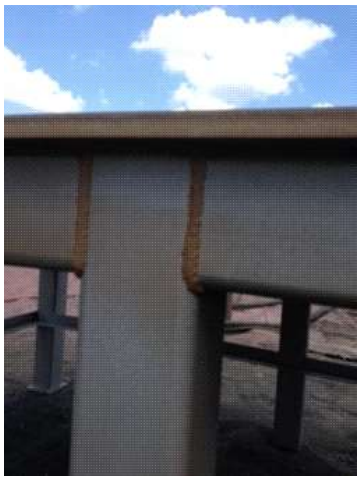

Photo # 9

NOTES:

- Very minimal Dust during blasting operations.
- No Sparks to be concerned with.
- Minimal PPE requirements in open areas.
- Blasting pressure can be regulated when needed.
- CHLOR*RID treatment is added directly to the blasting water and abrasives. A full rinse with CHLOR*RID was utilized to remove spent abrasives.
- The last photo above (Photo # 9) shows rapid flash rusting of weld seams after the CHLOR*RID treatment process for the dry blasting test had taken place. The run-off water caused this surface corrosion to occur after the CHLOR*RID treatment, which is normal.
- In viewing the dry blast operation photos below, you will see that run-off water from the CHLOR*RID treatment re-contaminated all surface areas where water was allowed to settle, such as the table top, the bottom of the table, and all horizontal surfaces on angles. (Photos # 13, 14 & 15)
- Vertical areas where any and all water was allowed to run off did not experience flash rusting.

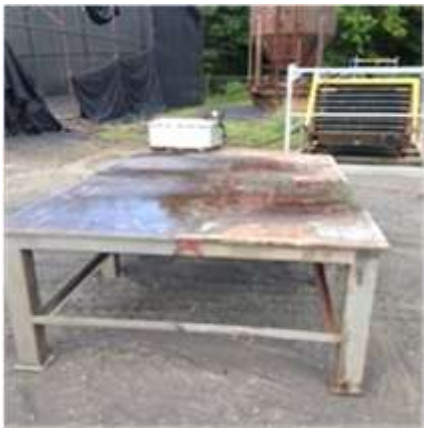

Photo # 10

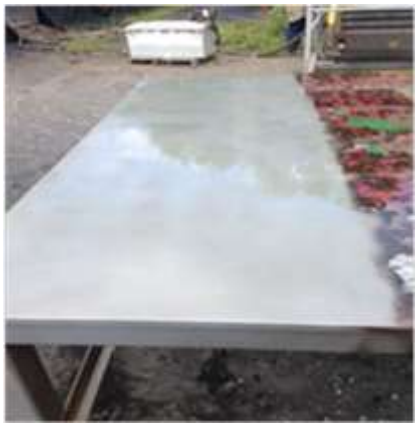

Photo # 11

- **DRY ABRASIVE BLASTING – STEEL TABLE (RIGHT SIDE)**

Garnet: 30/60 Blend

CHLOR*RID Soluble Salts Remover Applied via 3,000 psi Pressure Washing after Rough Blasting Process Completed at 1:50 Ratio

Final Results after Blast: 1 µg/cm^2 chlorides remaining using CHLOR*TEST

Time: 44 Minutes

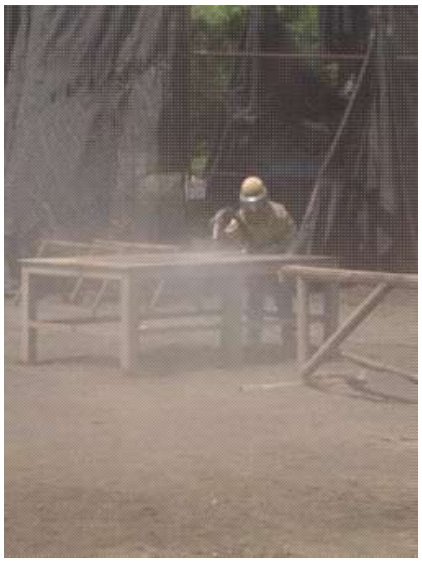

Photo # 12 (Rough Blasting)

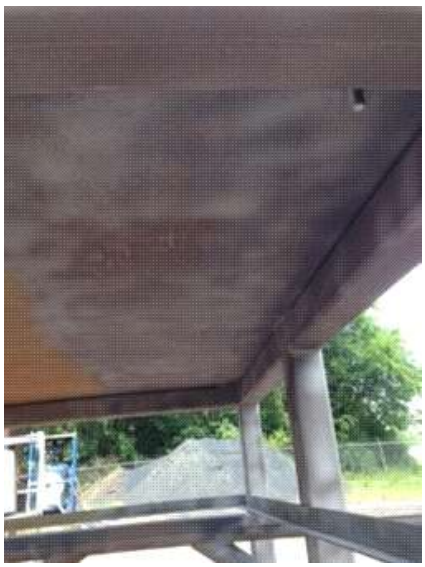

Photo # 13 (Rough Blasting)

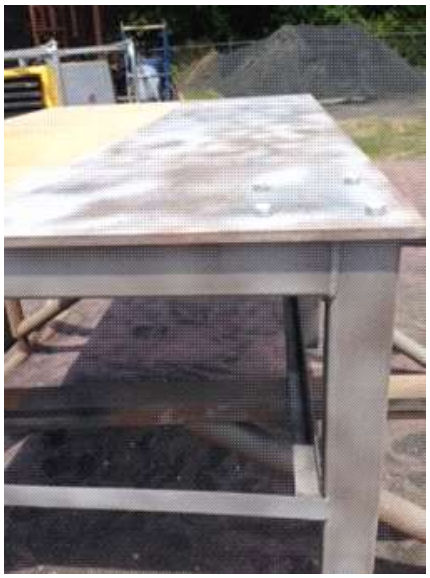

Photo # 14 (CHLOR*RID treatment)

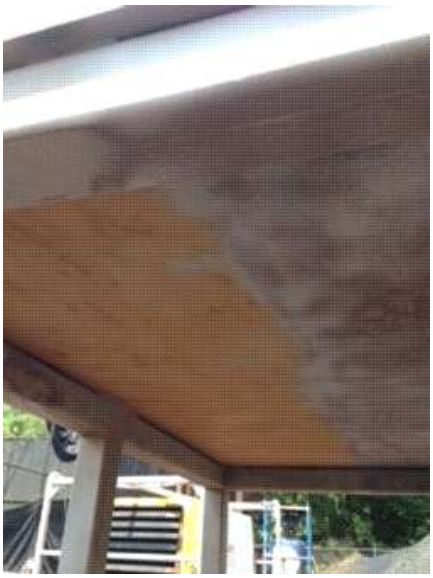

Photo # 15 (See Notes 6, 7 & 8 above)

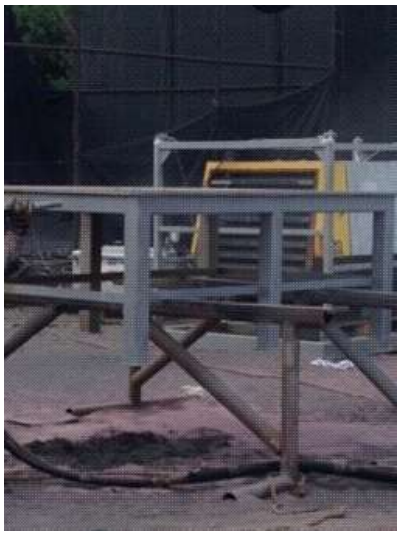

Photo # 16 (Finish Blasting)

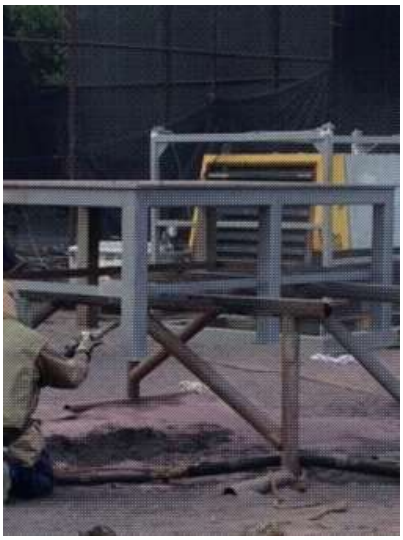

Photo # 17 (Finish Blasting)

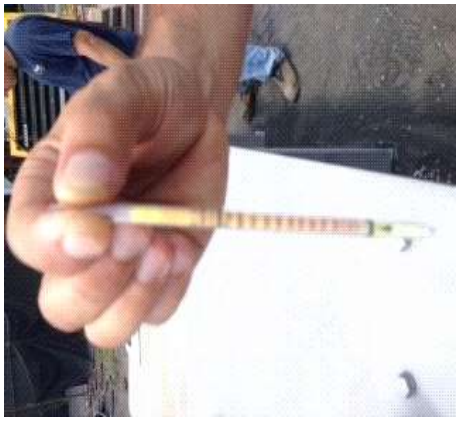

Photo # 18

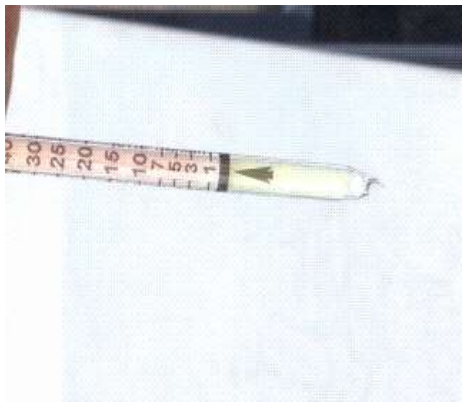

Photo # 19

(1 ug/cm^2 chloride)

NOTES:

- This was a three-phase process: (I.) Rough blast (II.) CHLOR*RID treatment (III.) Final blast.
- After the final dry blast, the blaster "swept" the water-blasted area in order to remove the flash rusting. Important note: If the vapor blasting test had been done after the dry blasting, the dry blasted area would have encountered the same degree of flash rusting.
- Flash rusting would have been a non-issue had the tests been performed on separate structures.
- As previously stated, when blasting operations are taking place and prevention of flash rusting is a must during extended times, it is recommended to rinse afterwards with HOLD*BLAST™ Surface Passivator at a 1:50 ratio.

CONCLUSION:

- CHLOR*RID is normally diluted at a ratio of 1:100. However, this testing was performed

at the 1:50 ratio per customer instructions. This was done in order to follow the same surface preparation specifications of the customer for their Gulf of Mexico Offshore Production Platform work currently underway.

- Vapor blasting experts state that just a face shield is all that is required in open areas. Best blasting practices recommend full face protection and long sleeve shirts.
- Vapor blasting appears to be slower than dry abrasive blasting. However, it is ideal for controlling dust. SSPC-SP10 Near-White Metal (or greater) blast cleanliness standards can be achieved by using CHLOR*RID when utilizing this process.
- Vapor blasting can produce the same blast cleanliness and surface profile as dry abrasive basting when using CHLOR*RID.
- Flash rusting when using CHLOR*RID in conjunction with vapor blasting is not an issue whenever specifications are followed according to CHLOR RID International, Inc. recommended directions.
- Vapor blasting eliminates sparking.
- Vapor blasting is also ideal for working around motors, air conditioning units, pumps, wire rope, etc.
- Others can work in the immediate surrounding area when vapor blasting is in effect. This, however, is not the case when dry blasting.
- Dry abrasive blasting is more productive than that of vapor blasting. When production rates are a factor, dry abrasive blasting is the best method.