

STATIC GROUNDING & BONDING OF HYDROBLASTING EQUIPMENT AND OTHER PORTABLE EQUIPMENT

PLAINTIFF'S
EXHIBIT

MON-104

PURPOSE

The purpose of this procedure is to establish a method for grounding hydroblasting equipment and other portable equipment to prevent a static build-up.

SCOPE

This procedure covers static grounding of all hydrocleaning equipment and other non-electrical portable or mobile equipment capable of generating static electricity.

RESPONSIBILITY

1. It is the responsibility of the department or contract personnel performing the work or using the equipment to make the ground connections.
2. It is the responsibility of Production supervision to see that hydroblasting equipment and other portable or mobile equipment capable of generating static electricity is grounded. Production, after checking that ground wires are connected on hydroblasting equipment, will contact the Safety Department for a resistance check before work is begun. Other portable or mobile equipment, capable of generating static electricity, that has a ground wire attached will not normally require a resistance check by the Safety Department unless the integrity of the ground is questionable.
3. It is the responsibility of the Safety Department to make a resistance check of all hydrocleaning equipment before work is begun or equipment is put in service. Resistance checks are to be made, at the request of Production, on non-electrical portable or mobile equipment.
4. It is the responsibility of the I&E Department to determine the proper method of grounding this equipment.

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By J. E. Crabtree Apprv. _____ Date 1/19/71 Procedure # 52

Revised By J. E. Crabtree

Date 11/11/75

STATIC GROUNDING & BONDING OF HYDROBLASTING EQUIPMENT
AND OTHER PORTABLE EQUIPMENT

PROCEDURE

1. Care should be exercised when connecting and disconnecting ground and bonding connections as it is possible that a spark could be generated when they are connected or disconnected. The person making the connect or disconnect should be sure that there are no combustibles in the area where the connections are to be connected or disconnected. A statement should be included on the Fire & Entry Permit that grounds are going to be connected, since connecting the ground could generate a spark.

- Revised*
2. All non-electrical portable equipment, such as air blowers, diesels, pneumatic motors, etc. (excluding hand tools), will be grounded before being used or placed in service. A resistance check is not normally required unless the integrity of the ground is questionable.

3. All hydrocleaning equipment will have the truck grounded. The lance will normally be grounded to the truck thru the steel braid in the hose. The Safety Department will make a resistance check from the lance to ground. If the resistance is too high or if there is not a steel braid in the hose, the lance is to be bonded to the vessel (see attachment).

NOTE: The bond wires are comparatively large because of mechanical considerations, but a bond resistance of 1 megohm or less is entirely adequate to dissipate the static build-up.

CAUTION: It appears to be impossible to eliminate all sources of ignition from hydroblasting. The only safe way to eliminate ignition is to eliminate the fuel, air, or both. The water droplets breaking away from the main stream can themselves create sparks.

4. The vessel being hydroblasted shall be grounded. If unsure that the vessel is grounded, contact the I&E Department to check that vessel is grounded.

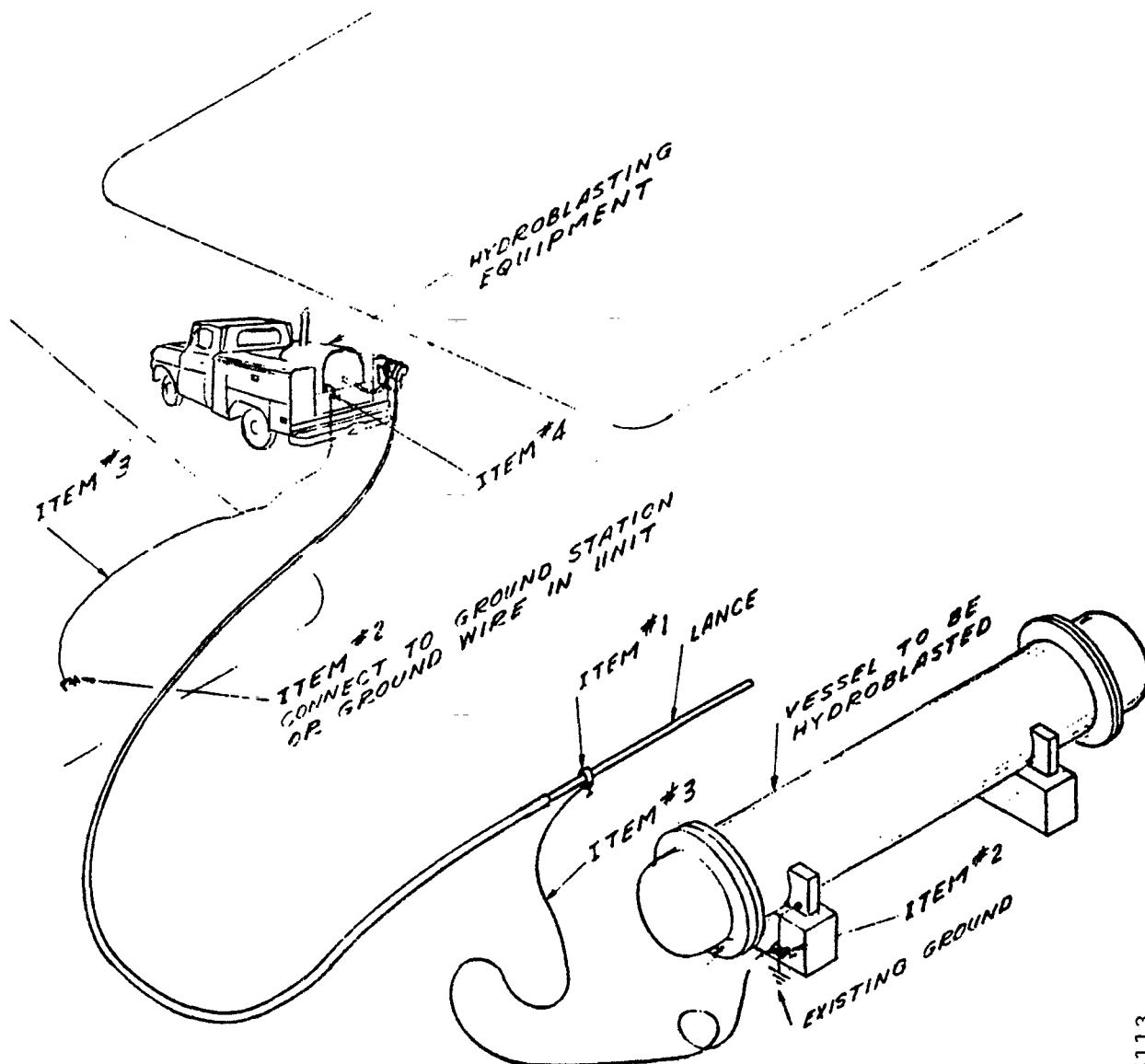
References: American Petroleum Institute Bulletin API RP2015,
"Recommended Practice for Cleaning Petroleum Storage Tanks"
American Petroleum Institute Bulletin API RP2003,
"Recommended Practices against Ignitions Arising out of
Static, Lightning and Spray Currents"

By J. E. Crabtree *W. E. Crabtree* Apprv. WED Date 1/19/71 Procedure # 52
Revised By J. E. Crabtree *W. E. Crabtree* Date 11/11/75

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ITEM NO.	DESCRIPTION
1	T#B CLAMP # 3847
2	T#B CLAMP # 31217
3	#6 WELDING CABLE (MIN. SIZE)
4	T#B LUG # 71005



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NO.	PROJ. NO.	DR.	DET. DATE	REVISIONS	APPROVALS
DRAWN	D. KEYS			ENGINEERING DEPT.	PROJ. NO.
CHECKED				Monsanto	PLANT Chocolate Bayou
				COMPANY ALVIN, TEXAS	AREA NAME