

# JG-PP Fax/Email

Joint Group on Pollution Prevention

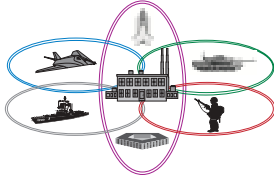
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***Cadmium Replacement Team  
 Technical Meeting Minutes  
 12 April 1999***

**Comments:**  
 Attached please find the minutes from the above referenced meeting minutes. Please further distribute as necessary.

\*Denotes Attendance

<u>Name</u>	<u>Company/Program</u>	<u>Phone</u>	<u>Fax</u>
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Robert Hill	JASPPA, NASA, Kennedy Space Center	407-867-4049	407-867-8040
Debora Meredith	JASPPA, HQ AFMC/LG-EV	937-257-3487	937-656-0499
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* Ron Vargo	JASPPA, Marine Corps Logistics Bases	912-439-6805	912-439-6824
Jeff Conrad	HQ U.S. Army Material Command	703-617-2816	703-617-5146
* Jason Dickens	Ocean City Research Corporation	703-212-9006	703-212-9019
David James	DCMC	703-767-2421	703-767-2345
Tom Sachar	ODUSD (ES)/EQ	703-604-1725	703-607-4237
* John Allison	NAVSEA/NSWC-CD	301-227-5087	301-227-5576
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Mel Brody	BISDS Philadelphia	610-591-9161	610-591-3008
* Paul Buckley	Army Research Lab	410-306-0848	
* Steven Carr	U.S. Army AMCOM	256-876-7472	256-842-1359
Mark Child	OO-ALC/LIOT	801-775-4461	801-777-2931
Paul Decker	TACOM	810-574-7738	810-574-5413
* Brian Dougherty	NUWC Division Keyport	360-396-2303	360-396-2578
* Paul Doyle	Westar Corporation	256-313-4688	
Stephen Gaydos	BISDS-St. Louis, Environmental Assurance	314-233-3451	314-233-8578
* Karen Gill	CNO-N451/SAIC	703-604-5467	703-602-2676
Ron Hagler	AMCOM (P)	256-955-0348	256-955-0749
* I. Carl Handsy	TACOM TARDEC	810-574-7738	810-574-5413



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<u>Name</u>	<u>Company/Program</u>	<u>Phone</u>	<u>Fax</u>
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* David James	NDCEE/CTC	814-269-6455	814-269-6882
* Gene Jeunelot	HQ AFMC LG-EV	937-904-0152	937-656-0499
* Michael Kane	NAWCAD	301-342-0986	301-342-0911
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* Gerald Katz	NSWCCD	215-897-8434	215-897-8458
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* Anthony Leofsky	PMS 450 TIMTL	703-602-0330	703-602-0047
Tom Lorman	HQ AFMC/LG-EV	937-257-7352	937-656-0499
* Louis MacDowell	NASA	407-867-3400	407-867-7959
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Michael McCall	NDCEE/CTC	814-269-2897	814-269-6882
Toni McNeal	AMSIO	309-782-2320	309-782-1457
* John Myer	U.S. Army CECOM	732-532-5392	732-532-1556
Thomas Naguy	AFRL/MLQE	937-656-5709	937-656-4378
* Joseph Osborne	BISDS-Kent	253-773-2569	253-773-5941
George Shaw	TACOM	810-574-5083	
* Brandon Shea	NAVSEA 03P	903-602-1895	703-602-4746
* Dan Verdonik	Hughes Associates, Inc.	410-737-8677	410-737-8688
Lorraine Wass	JASPPA, NAVAIR (AIR-6.OE.1)	301-757-3063	301-757-8451
* Robert Williams	Ocean City Research Corporation	703-212-9006	703-212-9019

## Minutes

1. On 12 April, 1999, technical representatives from NAVAIR, NAVSEA, NASA, AFMC, ARDEC, U.S. Marine Corps, NUWC, ARL, Boeing, AMCOM, TACOM, CECOM, NSWC, and the Joint Acquisition Sustainment Pollution Prevention Activity (JASPPA) met to discuss technical issues regarding integrating cadmium replacement projects, such as JG-PP/Boeing Information, Space & Defense Systems (BISDS) tin-zinc/zinc-nickel and ESTCP molten salt plating, into a coordinated Joint Services program.
2. Mr. David Asiello, JASPPA, opened the meeting by welcoming the participants to the meeting, restating that the purpose of the meeting and providing an overview of JASPPA and its mission to facilitate initiatives to reduce or eliminate the use of hazardous materials within DOD.
3. Dr. Michael Kane, NAVAIR, initiated the technical discussion pertaining to integrating separate cadmium replacement projects into a Joint Services program. Dr. Kane asked the group to focus on defining performance requirements for cadmium alternatives for specific applications within the Services.
4. Technical representatives identified hydrogen embrittlement of high-strength steels resulting from use of cadmium alternatives, especially those alternatives containing zinc, as a concern and recommended that testing be conducted to screen cadmium alternatives for hydrogen embrittlement. Dr. Kane recommended using the Rising Step Load Test to make this determination.
5. Technical representatives identified three functional requirements for cadmium alternatives as follows:
  - Sacrificial corrosion protection
  - Lubricity
  - Minimize harm to substrate
6. Mr. Joe Osborne, Boeing, recommended separating common NAS/SAE threaded fasteners from other candidate components for cadmium elimination because they are a commodity item purchased and use by Original Equipment Manufacturers (OEMs) and the DOD Sustainment Community. The group agreed with this recommendation.
7. An extended discussion on the focus of the cadmium program ensued and resulted in technical representatives identifying preliminary lists of applications targeted for eliminating cadmium and metrics for measuring performance of cadmium alternative coatings. These applications and metrics are as follows:
  - Applications – Structural, Fasteners, Electrical Connectors and Springs
  - Metrics – Adhesion, Corrosion (galvanic, fretting, salt fog, open circuit potential), Fatigue, Corrosion Fatigue, Hydrogen Embrittlement/Environmentally Assisted Cracking, Coefficient of Friction (galling), Coefficient of Friction after Corrosion, Fluid Compatibility, Off-gassing, Temperature Limitations, Environmental Limitations (exposure) and Wear Resistance

8. Technical representatives agreed that post treatments, such as chromate conversion coating and others, should be included with any cadmium alternative coatings
9. Dr. Kane agreed to prepare a draft Joint Test Protocol (JTP) for this program, based on the JG-PP/BISDS JTP, and distribute it to the technical representatives for review and comment (see action item CD.M.99.04.01 below). The JG-PP/BISDS JTP was distributed to the technical representatives for reference.
10. The next meeting of the technical group is tentatively scheduled to take place in six to nine months

SIGNED  
(Approved by R. Hill \_\_\_\_\_)

ROBERT P. HILL  
Chairman, JPPAB

Enclosure:  
Action Items

Action Items  
Cadmium Replacement Team Technical Meeting  
As of 19 April 1999

**New Action Item:**

**CD.M.99.04.01**

*Date Due:* **12 Jun 99**

*Responsibility:* Michael Kane, NAVAIR

*Required Action:* Prepare a draft Joint Test Protocol and distribute it to the technical representatives for review and comment.

*Comments:*

**Action Items Open from Previous Meetings:**

None.