

Appendix V. Outreach Efforts

A list of presentations, newspaper articles, and other outreach efforts on the Chromium Research Program is provided below, demonstrating the team's dedication to disseminating the information learned in this program to the water industry and community:

List of Conference Presentations:

- Blute, N.K., Wu, X., 2013. "**Chromium Treatment Studies at Glendale, Residuals, and Treatment Testing Guidelines**". Water Research Foundation Cr(VI) Workshop, February 2013 (Sacramento, CA).
- Blute, N. "**Treatment Options for Hexavalent Chromium, Perchlorate, and Nitrate.**" Invited speaker at the Groundwater Resources Association Central Coast Branch Meeting, January 2013 (Santa Barbara, CA).
- Blute, N., Wu, X., and Fong, L. "**What's the Latest with Chromium 6? Regulatory Update, Treatment Options and Costs.**" Invited speaker at the Southern California Water Utilities Association Meeting, July 2012 (Pomona, CA).
- Blute, N. and Wu, Y. "**Pilot Testing Cr(VI) Treatment: The Latest from Glendale and a Guide to Piloting Treatment.**" American Water Works Association Water Quality and Technology Conference, June 2012 (Toronto, Canada).
- Wu, X-Y, Blute, N.K., Fong, L. and Blacet, D. "**Hexavalent Chromium Treatment Residuals Disposal and Costs**", Conference and Exposition of the American Water Works Association, June 2012 (Dallas, TX).
- Blute, N.K., Wu, X. and Fong, L., 2012. "**Hexavalent Chromium Treatment Options and Costs: An Update from the City of Glendale, California**", Conference and Exposition of the American Water Works Association, June 2012 (Dallas, TX).
- Blute, N. "**The Science Behind Chromium(VI) and Perchlorate Removal.**" Invited speaker at the Clean Water Symposium, March 2012, (Irvine CA).
- Blute, N.K. and Kavounas, P. "**Hexavalent Chromium Treatment Residuals Management**," invited speaker at the Association of California Water Agencies Safe Drinking Water Committee Meeting, February 2012 (Los Angeles, CA).
- Blute, N.K., Wu, Y., and Kavounas, P. "**Advanced Water Treatment Research Program for Hexavalent Chromium in Drinking Water**," Invited speaker at the Groundwater Resources Association Emerging Contaminants Symposium, February 2012 (Concord, CA).
- Blute, N.K. and Kavounas, P. "**Hexavalent Chromium Treatment Residuals Management**," Invited speaker at the Association of California Water Agencies, January 2012, Sacramento, CA.
- Blute, N.K. and Kavounas, P. "**Chromium (VI) Overview**," Invited speaker at the California Nevada American Water Works Association Simultaneous Compliance Workshop, December 2011 (Reno, NV).
- Blute, N.K., "**Hexavalent Chromium Treatment Options**," American Water Works Association Water Quality and Technology Conference, November 2011 (Phoenix, AZ).
- Blute, N.K., "**Ion Exchange Treatment for the Removal of Groundwater Contaminants – Cr(VI), Perchlorate, and Nitrate**," American Water Works Association Water Quality and Technology Conference, November 2011 (Phoenix, AZ).

- Wu, X., Blute, N., and Kavounas, P. "**Hexavalent Chromium Treatment Technologies**," Annual Fall Conference of the American Water Works Association, California-Nevada Section, October 2011 (Reno, NV).
- Blute, N.K., "**Cr(VI) Treatment Options**," Invited speaker at the Water Research Foundation Technology Transfer Workshop on Hexavalent Chromium, August 2011 (Los Angeles, CA).
- Blute, N.K., "**Treatment Options for Hexavalent Chromium, Perchlorate, and Nitrate**," Invited speaker at Water Replenishment District Groundwater Quality Workshop, June 2011 (Carson, CA).
- Wu, X., Blute, N.K., Fong, L., and Blacet, D. "**An Analysis of Disposal Options for Ion Exchange Resin that Accumulated Uranium during Service**," Annual Conference and Exposition of the American Water Works Association, June 2011 (Washington DC).
- Blute, N.K., "**Update on Hexavalent Chromium Treatment for Drinking Water**," invited speaker at the American Water Works Association Cr(VI) Workgroup, April 2011 (Denver, CO).
- Blute, N.K., "**Treatment Options for Hexavalent Chromium, Perchlorate, and Nitrate**," invited speaker at Babcock Laboratories Technical Environmental Analytical Meeting (TEAM), March 2011 (Riverside, CA).
- Blute, N.K. and Kavounas, P. "**Chromium (VI) Overview**," invited speaker at the California Nevada American Water Works Association Simultaneous Compliance Workshop, January 2011 (Los Angeles, CA).
- Blute, N.K. "**Optimization Studies to Assist in Cr(VI) Treatment Design**," Proceedings, Annual Conference and Exposition of the American Water Works Association, June 2010 (Chicago, IL).
- Blute, N.K., Porter, K.M., Kuhnelt, B.T. "**Cost Estimates for Two Hexavalent Chromium Treatment Processes**," Proceedings, Annual Conference and Exposition of the American Water Works Association, June 2010 (Chicago, IL).
- Blute, N.K. "**Optimization Studies to Assist in Cr(VI) Treatment Design**," presented at the Annual Spring Conference of the American Water Works Association, California-Nevada Section, April 2010 (Hollywood, CA).
- Porter, K.M., Blute, N.K., Kuhnelt, B.T., "**Cost Estimates for Two Hexavalent Chromium Treatment Processes**," presented at the Annual Spring Conference of the American Water Works Association, California-Nevada Section, April 2010 (Hollywood, CA).
- Blute, N.K., "**Optimization of a Reduction/Coagulation/Filtration Process for Hexavalent Chromium Removal from Drinking Water**," Proceedings, Annual Conference and Exposition of the American Water Works Association, June 2009 (San Diego, CA).
- Blute, N.K., "**Hexavalent Chromium Treatment Technologies for Drinking Water**," presented at the Winter Educational Extravaganza, American Water Works Association, California- Nevada Section, December 2008 (Santa Clarita, CA).
- Blute, N.K., McGuire, M.J., Kavounas, P., Brabander, D.J., Newville, M., Sarkar, S., SenGupta, A., "**Chromium Treatment for Glendale, California's Groundwater Supply: Mechanistic Studies of Weak-Base Anion Exchange**," Proceedings, Inorganic Contaminants Workshop, American Water Works Association, January 2008 (Albuquerque, NM).
- Blute, N.K. 2008. "**Considerations in Drinking Water Treatment of Groundwater to Remove Emerging Contaminants**," Water Quality and Wetlands Committee Newsletter, American Bar Association.

- Blute, N.K., “**Status of Glendale, California’s Research Program on Hexavalent Chromium Removal from Drinking Water**,” presented at the Association of California Water Agencies Safe Drinking Water Subcommittee Meeting, September 2007 (Sacramento, CA).
- Qin, G., Blute, N.K., McGuire, M.J., “**Analysis of Spent Weak-Base Anion Exchange Resin from Hexavalent Chromium Treatment Implications for Residuals Management**,” Proceedings, 126th Annual Conference and Exposition of the American Water Works Association (AWWA), June 2007 (Toronto, Canada).
- Qin, G., Blute, N.K., McGuire, M.J., “**Hexavalent Chromium Removal from Drinking Water Source Using Weak Base Anion Exchange Technology**,” Proceedings, Spring Conference of the American Water Works Association, California-Nevada Section, April 2007 (Las Vegas, NV).
- Blute, N.K., McGuire, M.J., Qin, G., Kavounas, P., “**Pilot Studies of Hexavalent Chromium Removal from Groundwater in Glendale, California**,” presented at the 18th Symposium on Groundwater Contaminants in the Series on Emerging Contaminants in Groundwater: A Continually Moving Target, Groundwater Resources Association of California, June 2006 (Concord, CA).
- Blute, N.K., Seidel, C., McGuire, M.J., Kavounas, P., “**Conceptual Cost Estimates for Pilot-Tested Hexavalent Chromium Removal Technologies**,” presented at the Spring Conference of the American Water Works Association, California-Nevada Section, April 2006 (Burlingame, CA).
- Blute, N.K., McGuire, M.J., Qin, G., Kavounas, P., “**Hexavalent Chromium Removal from Drinking Water Using Weak Base Anion Exchange Technologies**,” presented at the Inorganic Contaminants Workshop of the American Water Works Association, January 2006 (Austin, TX).
- Blute, N.K., Seidel, C., and McGuire, M.J. “**Conceptual Cost Estimates for Pilot-Tested Hexavalent Chromium Removal Technologies**,” presented at the Spring Conference of the American Water Works Association, California-Nevada Section, April 2006 (Burlingame, CA).
- Seidel, C.J., McGuire, M.J., Blute, N.K., Qin, D., Fong, L., “**Field Pilot Testing of Hexavalent Chromium Removal by Reduction, Precipitation, and Coagulation**,” Proceedings, 124th Annual Conference and Exposition of the American Water Works Association, June 2005 (San Francisco, CA).
- Blute, N.K., McGuire, M.J., Qin, D., Seidel, C.J., Fong, L., “**Removing Hexavalent Chromium by Ion Exchange: A Suite of Pilot-Scale Results**,” presented at the 124th Annual Conference and Exposition of the American Water Works Association, June 2005 (San Francisco, CA).
- Blute, N.K., “**Pilot-Scale Investigations of Hexavalent Chromium Removal**,” invited speaker at the UCLA Department of Civil and Environmental Engineering, October 2004 (Los Angeles, CA).
- Blute, N.K., “**Pilot-Scale Investigations of Hexavalent Chromium Removal to Low ppb Concentrations**,” presented at the Annual Conference of the American Water Works Association, California-Nevada Section, October 2004 (Sacramento, CA).
- Blute, N.K., “**Chromium (VI)-Success of Pilot Treatment Processes and Project Status**,” invited speaker at Annual Conference of the American Water Resources Association, SoCal Section, June 2004 (Glendale, CA).
- Brandhuber, P.J., Blute, N.K., Seidel, C.J., Frey, M., Yoon, J., Amy, G., Froelich, D., “**Alternative Treatment Technologies for the Removal of Hexavalent Chromium to Very Low Levels**,” presented at the Inorganic Contaminants Workshop of the American Water Works Association, February 2004 (Reno, NV).

List of Community Presentations (including streaming on the web and cable access television):

- Project Advisory Committee Meeting on Chromium 6 Removal Demonstration Facilities. Meeting organized by the USEPA, the City of Glendale Water and Power, and the American Water Works Association Research Foundation. October 2006.
- Project Advisory Committee Meeting on Chromium 6 Removal Demonstration Facilities. Meeting organized by the USEPA, the City of Glendale Water and Power, and the American Water Works Association Research Foundation. September 2010.

Newspaper Articles:

- Glendale News-Press, "Water contamination study nears end Glendale researchers wind down their part in research of chromium 6." By Brittany Levine, December 2, 2012.
- Glendale News-Press, "Chromium 6 removal process could cost \$27 million over two decades." By Brittany Levine, August 13, 2012.
- Los Angeles Times, "Schiff pushes EPA to release information on chromium 6 contamination." By Brittany Levine. March 14, 2012.
- Los Angeles Times, "Glendale Water & Power to test chromium 6 filtration method." By Brittany Levine. March 12, 2012.
- Los Angeles Times, "Schiff calls for faster pace in finding maximum chromium 6 levels in drinking water." By Brittany Levine. March 5, 2012.
- Los Angeles Times, "Antonovich slams agencies for slow progress on chromium-6." By Jason Wells, February 21, 2012.
- CBS Los Angeles, "EPA: 'We Know' Of Chromium-6 Contamination In Burbank, Glendale Drinking Water." February 21, 2012.
- Los Angeles Times, "EPA digs into city's chromium 6 levels." By Brittany Levine, February 18, 2012.
- Los Angeles Times, "Costs Mount for Glendale's Ongoing Inquiring into Chromium 6: Research on removing the cancer-causing contaminant from groundwater has slogged on for nine years, and some officials are getting impatient." By Brittany Levine. December 20, 2011.
- Los Angeles Times, "More Funding to Remove Cancerous Agent from Glendale Water." By Brittany Levine. October 17, 2011.
- Glendale News-Press, "Briefly in the News: State Sends \$1.9M for Chromium 6 Project." January 12, 2011.
- Glendale News-Press, "Plans Resume to 86 Chromium 6: Glendale Water and Power wants to expand the removal project now that state funding is restored." By Melanie Hicken. December 18, 2010.
- Glendale News-Press, "Utility Working on Chromium 6 Removal: City is wary about committing money to water project as it awaits state reimbursement." By Melanie Hicken. September 13, 2010.
- Glendale News-Press, "Glendale Gets Major Grant for Chromium 6 Removal Efforts." By Jason Wells. July 27, 2010.
- Glendale News-Press, "Carcinogen Project in its Final Phase: Tests could shape how utilities remove chromium 6 from water, officials say." By Melanie Hicken. January 17, 2010.

- Glendale News-Press, "Water Standard Could Be Changed: Utility may have to add expensive treatment practices to keep chromium 6 out of local taps." By Melanie Hicken. August 26, 2009.
- Glendale News-Press, "Utilities Projects Power through Losses in Funds: \$5M projects will collect data on carcinogen found in ground water, officials say." By Melanie Hicken. June 25, 2009.
- Glendale News-Press, "Water Project Gets More Funds." By Jason Wells. April 30, 2009.
- Glendale News-Press, "Vote Advances Chromium 6 Fight: Plans approved for facility designed to reduce presence of the carcinogen in drinking water." By Jason Wells. September 10, 2008.
- Glendale News-Press, "Financing Chromium 6 Removal: Contribution of \$430,000 would go toward cleaning up groundwater contamination." By Jason Wells. September 9, 2008.
- Glendale News-Press, "City Eyes Top Contaminant: Water tests show chromium 6 levels to be worrisome but don't appear to pose a health risk." By Jason Wells. June 21, 2008.
- Glendale News-Press, "Grant to Fund Study of Element: The \$2 million will give Glendale Water and Power a chance to move forward on chromium 6 project." By Jason Wells. March 26, 2008.
- Glendale News-Press, "Water Supply Safe, Officials Tell Residents: As work continues to remove chromium 6 from water supply, regulators reassure inhabitants of safety." March 11, 2008.
- Glendale News-Press, "Taking Steps to Test the Water: Area officials take a look at one potential technology to remove hazardous chromium 6 from water supply." By Jason Wells. February 21, 2008.
- Glendale News-Press, "Study Raises Additional Chromium 6 Concerns." By Charles Cooper. May 25, 2007.
- Glendale News-Press, "Water Filtering Plants Closer: Facilities that will help remove harmful chemical from city's water depend on grant." By Jason Wells. May 19, 2007.
- Glendale News-Press, "City Gets Advice on Treatment of Water: Levels of chromium 6 not yet harmful, but they could rise and become a danger to health." By Tania Chatila. October 13, 2006.
- Glendale News-Press, "\$100K for Chromium Removal Plan." By Fred Ortega. October 13, 2005.
- Glendale News-Press, "Chromium 6 Study May Go to the Next Level." By Fred Ortega. September 27, 2005.
- Glendale News-Press, "City Leading the Way on Chromium." By Joshua Pelzer. August 6, 2003.
- Glendale News-Press, "Schiff Secures More Money for Clean Water." By Darlene Barrientos. February 27, 2003.
- Glendale News-Press, "State Launches Chromium Investigation" By Buck Wargo. August 23, 2000.
- Glendale News-Press, "Chromium Workshop to be Held in Glendale." By Buck Wargo. November 1, 2000.

Others (Peer-Reviewed Publications):

- McGuire, M.J., Blute, N.K., Seidel, C.J., Qin, G., Fong, L. 2006. "**Pilot-Scale Studies of Hexavalent Chromium Removal from Drinking Water**," *Journal of the American Water Works Association*, Vol. 98, No. 2, pp. 134–143.

- McGuire, M.J., Blute, N.K., Qin, G., Kavounas, P., Froelich, D., and Fong, L. 2007. "**Hexavalent Chromium Removal Using Anion Exchange and Reduction with Coagulation and Filtration,**" *American Water Works Association Research Foundation Report*, Denver, CO.
- Qin, G., McGuire, M.J., Blute, N.K., Seidel, C.J., Fong, L. 2005. "**Hexavalent Chromium Removal by Reduction with Ferrous Sulfate, Coagulation, and Filtration: A Pilot-Scale Study,**" *Environmental Science and Technology*, Vo. 39, No. 16, pp. 6321–6327.
- Brandhuber, P.J., Frey, M., McGuire, M.J., Chao, P.-F., Seidel, C., Amy, G., Yoon, J., McNeill, L., and Banerjee, K. 2004. "**Low-Level Hexavalent Chromium Treatment Options: Bench-Scale Evaluation,**" *American Water Works Association Research Foundation Report*, Denver, CO.