

April 28, 2006
Comments of Brush Wellman Inc. on:

Agency for Toxic Substances and Disease Registry
Public Comment Release
Testing for Beryllium Sensitization
A Community Service in Elmore, OH
March 31, 2006

Submitted to:
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General Summary

The blood testing “community service” is being proposed without the ATSDR providing any evidence of a significant beryllium health issue in the community or any evidence of a continuing or significant community concern.

From the scientific perspective, over the past four years of its investigation, the ATSDR has not identified a single case of beryllium disease due to emissions from the Elmore plant despite holding several public meetings and extensive information gathering and review, including a review of Ottawa County Health Department records. The Ottawa County Health Department conducted its own review of pulmonary (lung) deaths in Ottawa County in early 2006. The health department reported that over the past several years deaths due to lung disease are below the State of Ohio and national rates and are two to three times lower than Putnam County, a county originally proposed by the ATSDR as a comparison county to Ottawa County. The ATSDR has identified one case of CBD in the spouse of a Brush Wellman worker over the 53 years Brush Wellman has operated in the community. That Brush Wellman worker was involved in an industrial accident (furnace explosion) involving personal beryllium contamination where Brush Wellman provided work clothing was not removed prior to the worker going to the hospital. The laundering of work clothing was identified as the most likely significant source of potential beryllium exposure for the affected spouse. This production worker was subject to company policies, throughout the worker's employment, requiring the wearing of company work clothing (provided clean each day) and company provided work shoes that remained at the plant. A clean/dirty two locker room design was utilized throughout the worker's employment, separating work clothing from personal clothing and required end-of-work day showering. The affected spouse resided approximately 35 miles upwind of the plant so plant emissions are not the source of beryllium exposure. Based on the ATSDR's past four years of its investigation, the ATSDR has gathered sufficient information and evidence for it to support a conclusion that beryllium emissions from the plant and the potential for drag-out of beryllium into the community from the Elmore plant are unlikely to have posed a significant community health risk. It would appear that such a conclusion fits with the statement, made by Deputy Director Dr. Thomas Sinks of ATSDR at a March 24th meeting in Washington, DC regarding blood testing, that **no immediate health concerns exist** and they have found no evidence that supports a case study investigation at this time. The only remaining driving force for the ATSDR to continue its investigation appears to be relative to Dr. Sinks statement that the ATSDR feels that it “needs to do something”. The scientific and factual evidence presented by ATSDR to-date is not compelling and is therefore inadequate to support its blood testing plan or its continuing investigation.

From the community concern perspective, the ATSDR continues to state that an on-going beryllium related concern exists in the community, when in fact there is a direct absence of such a concern. The ATSDR has provided no assessment or evidence of an on-going community concern as a justification to providing a blood testing service to the community. Instead, the ATSDR has stated that it is offering blood testing as both a measure of, and to address, a community concern. This bizarre approach to evaluating the concerns of the community is highly biased toward creating community concern by offering a blood test that the ATSDR portrays as providing an individual benefit by attributing an interpretation of safety to a negative blood test result. There is no scientific evidence to support such a statement and it is merely an assumption on the part of ATSDR. However, the offering of such a test to the community certainly implies to residents that an unsafe condition may exist or has existed. The ATSDR likely increased public concern by announcing its testing program as being restricted to a limited number of persons and to announce when testing will begin even prior to holding its public

information session. In addition, unlike prior ATSDR actions, this blood testing plan was not first issued as a proposal for the community to consider whether it is desired by the community, or whether it would address community concerns (if any), but as a plan to implement in the community. This plan was also not subject to an open review in a public meeting setting which ATSDR has embodied in their own policies.

The presumption by the ATSDR that community concerns remain has not been tested by the ATSDR and no surveys or questionnaires have been completed to measure the level of community concern. In fact, the evidence for ATSDR's continuing involvement in the community has been just the opposite. A Freedom of Information Act Request to ATSDR revealed that the last request for public comments by the ATSDR in 2003 resulted in ATSDR receiving one comment in favor and 123 comments opposing the proposed home sampling work plan. Receiving one favorable comment can hardly be used as a justification by ATSDR to support its presumption of a continuing concern. In addition, in September 2002, the Ohio Citizen Action group terminated its Brush Wellman campaign over Elmore plant beryllium concerns and declared Brush Wellman a "good neighbor". In fact, in October 2005 the Ohio Citizen Action presented Brush Wellman Inc. a special recognition award for its health and safety efforts with workers and the community. Brush Wellman has completed and is maintaining all six of the recommendations ATSDR made for Brush Wellman to improve its community education and environmental reporting to both the community and the Ohio EPA. The Ottawa County Commissioners have also expressed that they have had no concerns raised to them by the public regarding the Elmore plant since 2002. In its 2002 Health Consultation, on page 13, the ATSDR stated that it received some requests for ATSDR to screen the Elmore community using a blood test. Brush Wellman, in its written comments on the 2001 ATSDR draft Health Consultation requested that ATSDR clarify this number. ATSDR did not clarify the number in the final report issued in 2003. In addition, a review of all the comments received by ATSDR in Appendix B in the final report reveals not one such comment or concern. The only reference made about the BeLPT in the comments and concerns section relates to the accuracy of the blood test.

It is also evident from the 2002 Health Consultation that the ATSDR did not complete the recommendations it made for itself to "Identify community health education needs related to beryllium exposure." over the past four years. Such information may have proven useful in assessing if any on-going concerns remain in the community.

A scientific basis or continuing evidence of a community concern is strikingly absent from the ATSDR blood testing plan. Brush Wellman understands that the Ottawa County Commissioners, working in concert with the Ottawa County Health Department, have proposed developing a plan that identifies and addresses community concerns in a manner that best serves the interests of the entire community. Brush Wellman recommends that the ATSDR postpone its planned implementation of the blood sampling program and work with Ottawa County on its plan for addressing community beryllium concerns. We also recommend that ATSDR fund any future activities developed as a result of this cooperative approach.

ATSDR has mischaracterized its Testing for Beryllium Sensitization plan as a community service when it is actually a study which should be subject to the Guidance Document for ATSDR Health Studies.

Brush Wellman's review finds that the ATSDR clearly refers to its plan as a "community service activity" and "public health activity" and avoids referring to its plan as a study in the body of the plan. However, the appendices to the plan clearly refer to the plan as a study. It is also clear

that the ATSDR is actively avoiding the characterization of its plan as a study in its public explanations of its planned actions. The planned aggregation and reporting of individual testing results constitutes the basic definition of a study. If the ATSDR were only performing a community service, it would only be providing test results to each individual so they may review them with their personal physician. It would appear that the ATSDR is trying to avoid the scientific scrutiny and scientific rigor which is required by the Guidance Document for ATSDR Health Studies by referring to its plan as a community service. Regardless of the ATSDR's play on words, the ATSDR does refer to its plan as a public health activity and as such is in conflict with the agency's Guidance Document for ATSDR Health Studies as follows.

In 1994, the ATSDR Board of Scientific Counselors determined a guidance document was needed to determine when health studies would be appropriate. The intent of the document was to provide clarification of important differences between the different types of health studies; guidance on when and what types of health studies are appropriate, and to identify standard practices for ensuring high levels of study quality. The Board recognized that certain types of health studies required a higher level of scientific rigor to ensure validity and reasonable precision in making inferences about cause and effect relationships. The Board desired that studies have sufficient rigor so that inferences would be based on facts and not be speculative or inconclusive. The guideline that was established identified key requirements for conducting health studies and public health activities. These are:

- A requirement to have the community and local and state health agencies fully informed and involved early.
- A requirement to explain to the community the differences between the possible options for health studies or other public health activities and to explain what can be studied scientifically, the limitations of proposed activities, and any other decisions that are to be made.
- A requirement to involve key community stakeholders to understand community health concerns and to obtain community support for the study being conducted.

The ATSDR has failed to meet all of the above requirements as it relates to the agency's work in the Elmore area. The concerns of the Ottawa County Commissioners and the community at large do not support a study, nor has ATSDR provided an adequate explanation of the scientific limitations of the proposed study. The information provided by the ATSDR is not balanced and did not provide the community with any options, limitations or what will be studied scientifically.

The Guideline further states:

"Since health studies can end up with inconclusive findings, it is important to consider how definitive the study might be in providing scientifically useful results related to specific exposure-outcome relationships. Issues for consideration include the ability to obtain appropriate exposure measures, document health outcomes and exposure, use adequate control or comparison populations, obtain community support to improve the participation rate, state clearly the study objectives and specific hypothesis to be tested, have sufficient statistical power to detect predicted effects, obtain data on important potential confounders, and evaluate a dose-response relationship or gradients of exposure."

The proposed study/public health activity meets very few of the above criteria and is particularly deficient as it lacks establishment of a control population, as emphasized throughout the Guideline. Additionally, ATSDR's depiction of the BeLPT as being predictive misleads the community and individuals who might participate in the study. The implication that those testing positive can benefit from medical follow-up is particularly disturbing, since treatment of asymptomatic persons is generally rejected by the medical community. There

is no study that has demonstrated a long-term medical benefit of treatment of chronic beryllium disease (CBD).

Finally the Guidance Document is specific as to when a health study/public health activity should not be performed:

Generally, Type-1 health studies would not be performed when there is insufficient information or other factors exist that severely limit ATSDR's ability to provide new and useful information on the health or exposure status of the community..... When the decision to conduct a health study is being considered, several criteria are used to determine the type of health study: When a Type-1 health study is recommended and considered appropriate, there are several attributes that are considered necessary in order to improve the quality of the study effort:

- A reasonable ability to document and characterize exposure in the target area.
- An adequate study size for the type of study recommended.
- An ability to identify and locate subjects and records.
- Appropriate comparisons for rates of occurrence.
- An ability to control confounding factors and biases (when possible).

It is clear the ATSDR has proposed performing a Type 1 study; however, its proposed plan lacks most of the attributes necessary to providing either a beneficial study or a public health benefit. In summary, the ATSDR Board of Scientific Advisors' wisdom should suggest to ATSDR leadership that their internal process does not adhere to agency guidelines.

Section Specific Comments

Section 1.1 Summary

Beryllium metal production/processing did not begin until 1957.

Brush Wellman finds the following statement misleading.

“During the 1990's, this facility released up to 1100 pounds of beryllium per year to the ambient air. After beryllium metal extraction ended in 2000, the amount released annually declined significantly. While current releases to the ambient air are not considered hazardous, little is known about the fate of beryllium that was: released to the air and deposited since 1953; incidentally taken home by the facility's beryllium workers; or, incidentally taken home by workers at machine shops contracting with the facility to machine beryllium alloys. “

First, the above statement is misleading by not informing the public of the high level of compliance with the NESHAPS ambient air standard for beryllium over the past 25 years at the Elmore plant. Second, further explanation as to meaning of the release data is appropriate to further the public's understanding. For example, according to the USEPA, characterizing estimated releases using “Toxic Release Inventory reports reflect releases of chemicals, not exposures to the public to those chemicals. Release estimates alone are not sufficient to determine exposure or to calculate potential adverse effects on human health and the environment.” Third, it would be appropriate to remind the public that:

- Brush Wellman monitors air quality outside the plant, or ambient air, on a continuous basis under EPA guidance to insure that the air quality is in compliance with EPA ambient air standards for beryllium.

- The air quality monitoring network design was approved by the EPA and includes monitoring stations that surround the entire plant.
- All ambient air monitoring results are reported on a monthly basis to the Ohio EPA.
- The Ohio EPA operates its own air monitoring station as a quality control check on Brush Wellman's sampling and analytical performance.

Fourth, there was adequate detailed data upon which ATSDR could evaluate community exposures back in time well beyond "current releases". In fact, the ATSDR does not use the terminology "current releases" in its conclusions in its 2002 Health Consultation report. The Health Consultation report states

"Beryllium emissions from the Brush Wellman-Elmore Plant, measured as 30-day averages over years of exposure, are below levels expected to cause adverse health effects and do not pose a public health hazard."

The terminology of "current releases" has only been applied by ATSDR in its 2006 blood testing plan. It is also important to note that extensive ambient air monitoring data was provided by Brush Wellman to the agency regarding measurements of airborne beryllium concentrations in the community from 1975 to 2000. This data covers almost the entire period since the USEPA enactment of the beryllium NESHAPS standard in 1973. The data was also available to ATSDR from the OEPA for the past three decades up to and including present day results. ATSDR was also provided the Elmore plant 1996 title V permit application.

Lastly, on April 26, 2002 detailed information on clothing and showering work practices were provided in writing to ATSDR which should have been sufficient for ATSDR to evaluate the potential for drag-out into the community. Peter Kowalski also toured the plant where he experienced clothing work practices to prevent drag-out controls first hand and all questions regarding the potential for historical drag-out were addressed.

Beryllium sensitivity should be clearly characterized to aid community member understanding that it is not a health effect, nor is it a change in health status, nor is it like an allergy as most people would define the term "allergy".

ATSDR should also clearly define the difference between clinical chronic beryllium disease¹ and surveillance or subclinical chronic beryllium disease².

This plan fails to clearly define the pros and cons of both the BeLPT as a test and in its potential use in a community setting. Brush Wellman hereby incorporates by reference all of its comments regarding the appropriate use of the BeLPT as made in its November 21, 2001 Comments of Brush Wellman Inc. With respect to: October 10, 2001 Health Consultation Public Comment Draft.

A summary of issues with the test are listed below.

- The BeLPT is not a standardized, consistent test.
- BeLPT results demonstrate significant variability.

¹ Clinical CBD is defined as symptomatic lung disease with abnormal chest x-ray or lung function test.

² Sub-clinical CBD is defined as beryllium sensitization plus granuloma upon lung biopsy with normal chest X-ray and lung function test.

- BeLPT testing reveals significant numbers of reversals from positive to negative.
- It has been demonstrated that 1 to 2.5% of a general, non-industrial exposed new worker population tests positive using the BELPT.
- A negative BeLPT does not mean one is not sensitized to beryllium and will not test positive in the future.
- A series of positive tests will probably be followed by a recommendation for no further beryllium exposure, which may force a job change and trigger a recommendation to undergo a bronchoscopy with lung biopsy, which is a procedure with significant hazards, for the purpose of diagnosis of sub-clinical CBD
- There is no evidence that removal from exposure changes the natural history of beryllium sensitization, sub-clinical CBD or clinical CBD
- There is no evidence that treatment of clinical CBD changes the long-term outcome of the disease, either progression or survival (sensitization and sub-clinical CBD are not treated).
- There is risk of positive BeLPT individuals being unnecessarily treated with steroids, thus having significant side effects in otherwise healthy individuals.
- There has been no formal analysis of the significant socio-economic impacts of the BeLPT when used for screening or monitoring.
- The BeLPT is a lagging measure and, as such, does nothing to protect workers who are currently exposed to beryllium containing particulate.
- The rate of sensitization in the general population is unknown and may vary geographically due to varying concentrations of beryllium in soil and rock throughout the United States.

Based on many of the above same reasons, the American Conference of Governmental Industrial Hygienists' (ACGIH) Biological Exposure Indices (BEI) Committee, as well as the United States Armyⁱ, Navyⁱⁱ and Air Forceⁱⁱⁱ, have all determined that the BeLPT should *not* be used as a screening tool. That is, each of these authorities has publicly announced that the BeLPT test should not be used for the precise purpose that ATSDR is now proposing it be used: to screen otherwise healthy, asymptomatic individuals attempting to detect health effects associated with beryllium exposure.

In addition, social, economic and psychological harm may result either from problems with the test or from the varying ways in which results can be interpreted or applied. The public should be advised of all of these potential issues with taking the test.

Consistent with the recommendations of ACGIH and the Armed Services, Brush Wellman uses the BeLPT as part of its defined research, as a tool to target work areas and specific jobs for improved exposure controls and to evaluate the effectiveness of exposure controls in the work place. However, Brush does not use or recommend BeLPT as a screening test for CBD because there is no known individual health benefit to the worker. ATSDR should adjust its description of Brush Wellman's use of the blood test accordingly.

On page 18 of the 2002 report, ATSDR recommended that community members "concerned with past beryllium exposure should talk with their personal physician." Now ATSDR is telling such persons, including any who took ATSDR's original recommendation, to get a BeLPT test instead. It is most unhelpful for ATSDR to be presenting mixed messages which undermine its own prior recommendations as well as any peace of mind that community members have obtained by consulting their physicians, as recommended by ATSDR.

Lastly, ATSDR's proposal is inconsistent with its 2002 ATSDR conclusions that biological testing of healthy community members was not appropriate based on the limitations of the BeLPT test.

Section 2.1 Background Science

Beryllium has been used as brake components on the shuttle aircraft.

The bicycle reference should be eliminated as only two beryllium metal bicycles frames have ever been built and less than 2 dozen AlBeMet bicycles were ever built (not an alloy).

BeO is transparent to microwaves, but it is not used in microwave ovens.

The following statements are misleading, in conflict with accepted medical practice and need to be corrected since it is well known the treatment of CBD is based on the treatment model developed for sarcoidosis.

“CBD and sarcoidosis are clinically similar. Indeed, sarcoidosis may be a group of disease processes with similar clinical presentations, but different etiologies and prognoses. As a diagnosis of exclusion, the term sarcoidosis does little to help establish etiology, select appropriate interventions, or determine prognosis. If sarcoidosis is diagnosed without excluding CBD, then CBD remains a potential etiology. Making the diagnosis of CBD identifies the exposure and helps to guide appropriate medical and exposure interventions for the patient.”

ATSDR should clarify that its description of CBD symptoms is for clinical cases of CBD.

Instead of stating that “BeLPT testing has rarely been extended to the communities nearby.”, ATSDR should state that BeLPT testing has only been performed in the community on one other occasion and the test results were quite variable.

Section 2.2 Modern Diagnostic Tests

ATSDR’s statement “Current medical practice also accepts one “abnormal” and one “borderline” as sufficient confirmation of sensitization.” is contrary to the vast majority of criteria used to define beryllium sensitization by clinics, the Department of Energy, the Department of Labor and in the definitions used in almost every research study on beryllium in the past 17 years.

Note previous comments on the definitions of clinical and subclinical CBD.

The predictive value of the BeLPT was higher than the chest radiograph, spirometry results, symptom reports, and clinical examination results for helping to identify predominantly subclinical CBD.

Stating a predictive value for a confirmed positive BeLPT as 50% is misleading because such a rate has not been determined in the general population and even in the beryllium worker populations calculated rates of predictive value for the test range from 11% to 100% (U.S. Army). Again, these predictive values are for detection of predominantly surveillance CBD which is mostly subclinical CBD.

The letters and fact sheets in the appendices are highly deficient in informing the public of the pros and cons and unknowns of using the BeLPT in a community setting. In addition, as Dr. Rossman pointed out in the panel discussion, some contain errors of fact. This is highly misleading to the public and should be corrected as soon as possible since some of these communications tools have already been put into use. Corrected communications should be sent to all persons to whom these communications have already been provided. The ATSDR

should disclose up-front in all of its communications that all post beryllium sensitization determination costs associated with any follow-up medical tests will be the responsibility of the individual and ATSDR will not pay for such testing. The ATSDR should also advise that such testing can be as much as \$5000 to \$10,000. It is appropriate the ATSDR advise participants who may find, after the fact, that follow-up testing may be costly and may not be covered by their health insurance plans.

Section 2.3 Justification

This section is misleading as previously mentioned in ATSDR's description of "current releases" and its guess as to whether or not the public remains concerned is unsupported by scientific evidence or any relevant facts. In essence, the ATSDR's stated justification is inadequate to support its actions.

2.3.1 Exposure

If the ATSDR is going to use the 1940's Lorain study it should also explain that community exposures during the 1940's were measured and estimated to be as much as 1600 times higher than the beryllium NESHAPS standard within one quarter mile of the plant. Also, the ATSDRs should not make statements that BeLPT findings from beryllium workplaces are comparable to findings in a community. Brush Wellman and NIOSH and the DOE have performed studies that indicate that beryllium sensitization is not evident when exposures are consistently controlled to within 0.2 µg/m³.

Section 2.3.3 Identifying Beryllium Sensitization and Disease

See earlier comments relevant to the statements in this section. In addition, the comments of David Deubner sent via e-mail to Dr. Middleton on April 6, 2006 are hereby incorporated by reference as comments to this section and as comments on the blood testing plan.

The comments of Stange are not relevant to community exposures nor is surveillance the same as screening by definition.

In this section and throughout the document, reference is made to machining of beryllium alloys in terms of risk, benefits, participation etc. The document should be corrected to reference that there are no studies indicating a beryllium health risk when solely machining alloys containing beryllium. Machining risks have only been defined for machining of beryllium metal and beryllium oxide ceramics.

Section 2.3.4 Benefits of Participation

The statement "This testing should provide some reassurance to participants with normal test results." is an irresponsible guess by the ATSDR since CBD does occur in persons who consistently test negative on the BELPT test, the BELPT is highly variable and unreliable, and no study has defined a negative test result as implying safety from beryllium disease. The Ottawa County Commissioners handout on the variability of the BELPT retests in Tallevast, FL is attached as an example demonstrating the variability of the BELPT in the only known use of the test in a community setting. The newspaper article also describes the unsettling effect of uncertain test results on the local population in Tallevast, FL.

The following statements are inaccurate and misleading and need to be corrected.

“For example, the diagnosis of CBD tells the physician that:

- b) the disease is progressive
- c) the disease is unlikely to spontaneously resolve (sarcoidosis often does), and,
- d) a need for oral steroids probably implies lifetime therapy.

A specific diagnosis (CBD) also reinforces the need for long term medical follow-up. As with other serious lung diseases, patients can get preferential treatment for vaccinations against influenza and pneumonia and can be identified for early and aggressive interventions during respiratory infections.”

First, according to NIOSH and most scientists progression of CBD is not known. Secondly, positive sensitization tests do not tell a physician that there is a need for lifetime therapy of steroids. In fact, good medical practice suggests otherwise.

Note: there should be a section on the downsides of participation.

3.1.2 Collecting, Handling, and Shipping Specimens

It should be noted that National Jewish Hospital’s Immunology Laboratory has often used a lower cut-point (2.5) than the other three commercial labs (3.0) which likely increases the number of unconfirmed samples as was demonstrated in testing performed in Tallevast, FL. Brush Wellman also questions why the ATSDR has not engaged the services of the Cleveland Clinic which is much closer to the Elmore site or Specialty Labs who have had the most consistent performance with the BeLPT based on Brush Wellman’s years of experience.

Section 3.1.3 Interpreting Test Results

The statement “These results provide ample evidence of the specificity of a confirmed abnormal BeLPT.” is not only untrue but outrageous. A close read of the Stange paper reveals that Stange used the BeLPT test results to confirm the predictive value and specificity of the BeLPT. In simple terms, you cannot use a test to verify the exact same test. In addition, the DOE has made a practice of using the BeLPT to identify exposed populations and the Stange work was compiled using known BeLPT test outcome data which introduced an unidentified and unaccounted for bias in the study results. Finally, upon close examination, the ATSDR conclusion is poorly supported by both Stange and by Middleton who repeated the same error as Stange. It should also be noted that Stange found a rate of BeLPT positivity of 2.5% on a single test in his “unexposed population”.

Regarding background BeLPT positivity and confirmed beryllium sensitization, ATSDR should carefully consider the findings of Yoshida, the soon to be published finding of Brush Wellman as presented to the ATSDR by Dr. Deubner and the Alcoa findings as relayed by Dr. Borak with the permission of Dr. Cullen.

Section 4.0 Population

ATSDR should explain its basis for a one-year residency requirement.

Section 5.0 Human Subjects

The statement by ATSDR that “The BeLPT has been used primarily for adult workers and there is no reason to believe that it will function differently among adult community members who are eligible to be tested.” is a guess unsupported by any scientific evidence.

Section 6.1 Training

ATSDR’s description of the National Jewish Medical laboratory as a national reference laboratory may be true, but is misleading since there is no national reference laboratory for performing the BeLPT, nor is there even a consistent test methodology used amongst the four labs that perform the test commercially. See comments in Section 3.1.2.

Appendices

See comments on the appendices and fact sheets in section 2.2.

Conclusion

In conclusion, the ATSDRs proposed blood sampling program justification is scientifically unbalanced, factually incomplete, and is therefore unwarranted. The ATSDR is ignoring obvious evidence of a distinct absence of beryllium health problems, due to plant emissions over the past 53 years, in the Elmore community. The ATSDRs inability to draw a conclusion after five years of investigations appears to define an agency behavior that is determined to find some kind of health risk and is now looking to use the unreliable and uninterpretable blood test in an attempt to find a smoking gun. The ATSDR has antagonized County officials and residents of the community with its unwillingness to put an end to its studies. The ATSDR can claim that it is not a study, but our Midwest upbringings have taught us that if it looks like a duck, walks like a duck and sounds like a duck, it is a duck.

Brush Wellman is committed to informing and educating the community about Brush Wellman and its Elmore operations including the plant’s environmental performance. In addition to publishing a quarterly general information newsletter, the Dialogue, and other educational publications, a monthly environmental monitoring newsletter is distributed to local neighbors, its Community Advisory Panel, as well as local elected officials. The plant also has a Speakers Bureau and has created library information centers at the Oak Harbor and Elmore public libraries. These information centers contain a host of environmental information including permits and up-to-date environmental monitoring information.

ⁱ United States Army. Beryllium Surveillance and Medical Monitoring Policy (2002).

ⁱⁱ United States Navy. Response to OSHA’s Occupational Exposure to Beryllium; Request For Information (2003).

ⁱⁱⁱ United States Air Force. Beryllium Surveillance and Medical Monitoring Policy (2002).