



1222 FOREST PARKWAY, SUITE 190
WEST DEPTFORD, NEW JERSEY 08066
856 423-8800 FAX 856 423-3220

October 12, 2010

Mr. Dustin Armstrong
Environmental Cleanup Program
Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

Re: Comments on Notice of Listing
PA Bulletin September 11, 2010
Former Bishop Tube Site
East Whiteland Township
Chester County, PA

**FOR INCLUSION IN
ADMINISTRATIVE RECORD**

Dear Mr. Armstrong:

On September 11, 2010, the Pennsylvania Department of Environmental Protection (“DEP”) published a Notice of Listing (“Notice”) on the Pennsylvania Priority List (“PAPL”) of Hazardous Sites for Remedial Response (40 Pa. B. 5250) regarding the above-referenced Former Bishop Tube Site (“Property” or “Site”). Johnson Matthey Inc. (“Johnson Matthey”) and Whittaker Corporation (“Whittaker”) (collectively the “RI Parties”) are interested parties as they signed an Amended Consent Order and Agreement (“Amended Agreement”) with the DEP in August 2009. Roux Associates, Inc. (“Roux Associates”), on behalf of the RI Parties, is submitting these comments on the Notice within the 30-day public comment period. Please include these comments, the index of attachments and the attachments and enclosures in the Administrative Record (“AR”).

0.1 Roux Associates contacted you, the DEP designated contact for the Notice, on September 22, 2010 to request a 30-day extension to allow sufficient time to submit comments and to allow time to review and supplement the AR. DEP responded on September 24, 2010 by advising a) there is no mechanism to provide such an extension, b) documents may be added to the AR in the future, including any additional comments on the current Notice and c) the AR will be opened again in the future to address “any future response actions under HSCA.” In a separate communication, DEP advised that since the comment due date (October 11, 2010) falls on a holiday it would accept comments on October 12, 2010. We believe, however, that DEP has granted extensions to supplement the AR in the past and question why the DEP could not accommodate this reasonable request.

0.2 It is our expectation that the DEP will a) consider these comments in reaching a final decision regarding the appropriateness of placing the Site on the PAPL, b) re-evaluate the Hazard Ranking System (“HRS”) score for this Site, c) place these comments (and

cited documents) in the Site file, d) incorporate these comments (and cited documents) into the current AR for the Site and e) allow the AR to be supplemented in the future, including additional comments on the Notice and the associated HRS scoring documentation. We have organized these comments numerically (i.e. Paragraphs 0.1, 0.2, etc.), and would appreciate a response to each numeric paragraph.

Roux Associates' comments, on behalf of the RI Parties, are organized as follow:

- 1.0 Summary of Concerns;
- 2.0 Comments on September 11, 2010 PA Bulletin Notice;
- 3.0 Comments on the Hazardous Ranking System (HRS) Scoring;
- 4.0 Additional Documentation for Administrative Record; and
- 5.0 Additional Documentation Regarding Potentially Responsible Parties.

1.0 Summary of Concerns

1.1 By filing the Notice, DEP is sending a message to the public that a) the Site poses a substantial threat and b) the Site is not currently being addressed in a logical and proactive manner. Neither is true. The body of information and data relied upon for the listing indicate that conditions observed do not pose a substantial threat to public health. **More recent data, actively collected on behalf of RI Parties in accordance with the Amended Agreement (most of which has been submitted to the DEP), further support prior conclusions that the Site does not pose a current threat to public health.**

1.2 Collectively, the earlier and recent data will be utilized to help determine if Site conditions are the source of certain off-site observations. **DEP presumes that the Site is the cause of various off-site conditions, but there is insufficient data a) to reach this conclusion or b) to rule out other potential sources.**

1.3 **In addition, the existing AR and the information cited in the Hazard Ranking System (HRS) scoring documentation does not reflect current conditions.**

1.4 In light of the fact that the RI Parties are conducting a Remedial Investigation ("RI") of the vicinity of the Site, we believe it is premature to file a Pennsylvania Bulletin Notice or to list the Site on the PAPL. We believe that DEP should wait until the conclusion of the RI and then consider whether or not to list the Site.

Additional discussion regarding the language in the Notice and the HRS scoring documentation follows.

Mischaracterization of Risk Posed by Site Conditions

1.5 The Notice states that sites placed on the PAPL "present a substantial threat to public health, safety and environment." As concluded in the Agency for Toxic Substances and Disease Registry ("ATSDR") Health Consultation dated July 16, 2008, there is No Apparent Public Health Hazard for any current, completed exposure pathways associated with the Site. ATSDR also stated that, "based on the levels detected and the

exposure pathways identified, we do not expect adverse health effects to result from children's exposure to TCE and other VOCs". Furthermore, ATSDR noted that "[o]ff-site exposures to high concentrations of these contaminants [referring to the onsite conditions] are not expected at this time. ATSDR does not expect adverse effects due to current or past exposures to these chemicals." **As there is no apparent public health hazard for any current exposure pathways associated with the Site, we believe that the proposed placement of the Site on the PAPL misrepresents the health risks posed by current Site conditions.**

- 1.6 **The Notice, if not withdrawn, should communicate the above ATSDR findings to the public and explain that adverse effects are unlikely in the future, given reasonable assumptions regarding future conditions in the vicinity of the Site (i.e., continued availability of public water supply and continued land use similar to current land use).**

Unsubstantiated Link between On-Site and Off-Site Conditions

- 1.7 The Notice did not consider the possible contribution of chlorinated volatile organic compounds ("CVOCs") from sources other than the Site. Further investigation of subsurface conditions and evaluation of other potential sources are necessary before valid conclusions can be drawn regarding the nature and extent of CVOCs migrating from the Site. This investigation is currently being completed. **The Notice should communicate to the public and public officials that conclusions regarding off-site CVOCs originating from the Site are working theories only, not supported by scientifically defensible data.**

- 1.8 In contrast to on-site characterization, minimal off-site characterization had been completed during previous investigations; and further study of off-site conditions was needed. In fact, one of the key issues raised in the ATSDR Health Consultation was the need for certain additional off-site data. Under DEP oversight and in conformance with the DEP-approved February 17, 2009 Remedial Investigation Work Plan ("RIWP"), a comprehensive RI is being conducted. The RI was designed to address data gaps and further characterize both on- and off-site conditions. **DEP should utilize the data generated by the RI and any supplemental investigation data deemed appropriate before assuming that the Site is a source of CVOCs in the area and, if so, what portion of the contamination is attributable to the Former Bishop Tube Site.**

Use of Outdated Data

- 1.9 The language in both the Notice and the HRS scoring documentation should be modified to reflect the most current data available. For example, as discussed later in these comments, the Notice refers to indoor air data that either was not reproducible or does not reflect current conditions. The RI Parties have been actively conducting studies at the Site and have collected a substantial amount of additional data (most of which already has been provided to DEP). These data provide information that helps demonstrate that the Site does not pose a current risk to human health. **Not including or considering these data in the decision to list the Site provides a misleading and incomplete picture and is not reflective of best practice in risk evaluation.**

1.10 DEP has played an active role in guiding the ongoing RI. For example, at DEP's request, substantial data have been generated and the locations of monitoring points have been selected. DEP has been apprised of the ongoing efforts as a result of regular and continual communications (verbal and email) and through monthly Progress Reports that have been submitted to the DEP without fail (currently, 22 monthly Progress Reports have been submitted to DEP). We recognize that the listing process is a long one that began before some of the current data became available. **The listing process should have been suspended pending receipt of results from the agreed RI.**

1.11 Recent RI activities included characterization of the following media and pathways:

- Overburden groundwater;
- Bedrock groundwater;
- Vapor intrusion pathway; and
- Groundwater to surface water pathway.

The results from nearly all of this work have been reported in writing to the DEP over the last year. In accordance with Progress Report 22, a report on the findings of the work will be submitted to the DEP in November 2010.

The Notice should, at a minimum, communicate to the public that the results and findings of recent investigation activities were not a) included or considered in its decision to list the Site on the PAPL or b) used to calculate the HRS score. A better option would be for DEP to withdraw the Notice and delay the decision regarding listing the Site on the PAPL until it has evaluated the recently collected data and the RI report.

2.0 Comments on September 11, 2010 PA Bulletin Notice

2.1 The Notice states that the "Department places sites on the PAPL.....which present a substantial threat to the public health, safety and environment." **This general statement misrepresents Site-related health risks to local public officials and the people who live and work in the vicinity of the Former Bishop Tube Site.** As discussed above, ATSDR concluded there are no current substantial threats to public health. ATSDR reached these conclusions without the benefit of the recent data addressing certain off-site data gaps identified by ATSDR. This more recent data, collected pursuant to the Amended Agreement, provide some key off-site data further supporting the absence of a current threat to public health. **If the DEP motivation for the Notice is to facilitate funding or to support its efforts to involve non-cooperative parties, then this should be communicated in the Notice. As currently written, the Notice may cause unnecessary alarm to the public.**

2.2 There is no definitive statement regarding the definition of "Site" in the Notice. It is entirely unclear whether "Site" refers to the former Bishop Tube property, the area in

the immediate vicinity of the Former Bishop Tube Site or a larger area. **The Notice should define "Site" so that it is clear to what area the Notice is referring.**

2.3 As written, the Notice has the effect of communicating to the public that the necessary and appropriate steps are not being taken at this time. To the contrary, DEP is actively engaged in oversight of the extensive RI studies that the RI Parties have undertaken in compliance with the Amended Agreement. This data includes surface water studies of Little Valley Creek, indoor air quality studies, outdoor air studies, groundwater directional studies, groundwater contamination studies, and geologic studies. DEP has been the recipient of significant amounts of data, reports and Progress Reports regarding the RI effort. Furthermore, DEP has expressed its satisfaction with the studies being conducted. Our interest in accurately diagnosing conditions at the Site and identifying appropriate remedial solutions is aligned with the interests of the community and DEP. A report on the findings of the recent work is being completed and will be submitted to DEP in November. Thus, the RI Parties are perplexed by the timing of this Notice. **The Notice should be revised to state that significant efforts are being undertaken by the RI Parties to collect data and to develop a RI report.**

2.4 The Notice should state that the Amended Agreement requires that a RI and a Feasibility Study (FS), if necessary, be completed, as these are the logical next steps in the remedial process for this Site. **Since the appropriate remedial steps are already in motion, we request that the Notice be suspended pending DEP evaluation of the RI and FS.**

2.5 The Notice states that "[n]one of the potentially responsible parties have indicated that they are willing to conduct the additional remedial action required at the Site." The Notice should clarify if this statement refers to the future operation of the existing Constitution Drive Partner's air sparge/soil vapor extraction (AS/SVE) systems or if it is referring to some future remedy that may or may not be required. The purpose of the agreed RI/FS activities (ongoing) is to develop the data necessary to make a decision regarding the need for and scope of additional remedial actions. **Therefore, we request this statement either be more clearly defined, or be retracted.**

2.6 The Notice refers to a residential well located approximately 1/3 mile from the Site that "contains TCE in excess of 5 ppb." **The Notice should clearly acknowledge that a) this is the only known private supply well in the proximity of the Former Bishop Tube Site and b) that this private supply well has a carbon filtration system that DEP samples on a regular basis to ensure the system is operating as designed.**

2.7 No public drinking water supplies are located in proximity to the Former Bishop Tube Site. Other than the one (1) user identified above, all other residents are on public water. The Notice, as written, could be misinterpreted by the public and result in unnecessary alarm. **The Notice should advise that all other drinking water users in the vicinity of the Site are served by public water supply.**

2.8 The Notice states that “TCE has...been detected in indoor air in four of five homes selected for indoor air sampling” and goes on to state “[v]olatilization of TCE from groundwater is most likely responsible” for TCE that has been detected in indoor air samples at these four homes. Without further explanation, these statements give the impression that there is a documented vapor intrusion concern. For multiple reasons the DEP statements are misleading and should be clarified in the Notice. First, three of the four detections referenced by DEP were one-time detections that were not reproducible in follow-up sampling. Second, all three detections cited were nearly 50 times below DEP residential Indoor Air Quality (IAQ) standards. Third, the TCE concentrations were well below those levels that DEP considers representative of background indoor air conditions¹. Fourth, the remaining detection referenced by DEP was a one-time sample above the IAQ standards. Mitigation measures in the basement, including sump sealing, chemical product removal and ventilation activities, were undertaken and the property is currently under a quarterly monitoring schedule. There have been no exceedances of the IAQ standards for TCE at this location since these mitigation measures were conducted. Fifth, for at least three of the four samples referenced by DEP, the outdoor air (ambient background) sample had higher TCE results than the indoor air samples. **DEP’s conclusory statement that volatilization from groundwater [from the Site] is the most likely source of the indoor air TCE detections is not scientifically defensible.**

2.9 The Notice states that “TCE attributed to the Site has also been detected in Little Valley Creek.” DEP has previously investigated the area and found no evidence that Little Valley Creek is used as a drinking water source. **It should be made clear that there is no indication that Little Valley Creek has been in the past, is currently, or will be used in the future as a source for drinking water.**

2.10 Surface water exposures in Little Valley Creek in the vicinity of the Site are expected to be infrequent, limited to periodic seasonal wading or splashing in the creek. Significant recreational exposure is unexpected based on the shallow depth and narrow width of the stream in the vicinity of the Site. Furthermore, Little Valley Creek runs primarily through commercial properties and generally inaccessible areas (such as between a highway and a commercial shopping center) where recreational use is unlikely. **It should be made clear that there is no indication that Little Valley Creek is a likely source of significant recreational exposure to TCE.**

3.0 Comments on the Hazard Ranking System (“HRS”) Scoring

In accordance with the Hazardous Sites Cleanup Act (“HSCA”), DEP utilized the HRS to score the Site for placement on the PAPL. Several comments are presented below.

3.1 As stated in the Notice, DEP calculates an HRS score “to rank the sites for placement on the PAPL” and the HRS score “represents an estimate of the relative probability

¹ These likely represent background indoor air concentrations. PADEP, in its Guidance Manual (regarding vapor intrusion into buildings) identifies PCE and TCE as “having potentially higher indoor air background concentrations than the risk-based targets” (Land Recycling Program Technical Guidance Manual – Section IV.A.4. Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard. Pennsylvania Department of Environmental Protection; January 24, 2004).

and magnitude of harm to human populations or sensitive environments from potential exposure to hazardous substances by the groundwater, surface water, soil exposure or air pathways.” HRS scoring was originally intended for use in situations where there was little or no site-specific data available to assess the potential risk posed by a site. Given all of the available data and the failure of DEP to utilize the significant data that has been presented to it by the RI Parties, the HRS scoring is essentially a meaningless process. The HRS scoring is such a generic calculation that it essentially ignores the vast majority of the available data. As discussed earlier, there are no known completed exposure pathways that pose a current risk to human health. **The Notice should indicate that the HRS scoring was completed solely because it is a prerequisite to proposing a site for inclusion on the PAPL; it does not provide meaningful information regarding the risk associated with this Site. Alternatively, the HRS scoring should be suspended and should be recalculated once all of the available data have been considered by DEP.**

3.2 Given what is known about Site conditions, surrounding land use and the availability of public water supply in the vicinity of the Site, the calculated HRS score of 40.79 is flawed. For example, the HRS score is based in large part on the incorrect assumption that 22,500 people are drinking water from a public supply well potentially contaminated with TCE that could be attributed to the Former Bishop Tube Site. However, there is absolutely no basis for concluding or assuming that any contamination from that facility could migrate 1.5 miles west to that well. To assume this well is even potentially contaminated from Site conditions is without merit. Yet, the HRS scoring formula requires that this public supply well be assumed to be potentially contaminated. This occurs because there is no allowance for site-specific data and common sense modifications in the HRS scoring calculation. In addition to its distance from the Site, on-line records for Aqua PA Water Company confirmed that TCE was not present in the service area associated with this public supply well (well-specific data was not available) in the 2009 sampling data. **The HRS scoring should be suspended and should be recalculated.**

3.3 Making one change to the manner in which this Site was scored illustrates the flawed nature of the HRS scoring formula. If one simply concludes that the above-referenced public supply well is not potentially affected by contamination originating from the Site (which is supported by all evidence), then the calculated HRS score would change from 40.79 to 9.5.

3.4 The HRS scoring employs data from a residential private supply well (CH1985), approximately 1/3 mile northeast of the Site in determining the HRS score. This well has a point of entry treatment (POET) system, regularly sampled and maintained by DEP. Subsequent sampling of the treated water supply continues to demonstrate that the treatment system is operating as designed. Although the pre-treatment concentration constitutes a Level I contamination level (according to HRS protocols), the water supply is effectively treated to remove TCE from the drinking water supply, thus eliminating the Level I potential exposure at this location. **This treated well**

should not be defined by DEP as a “drinking water well subject to Level I concentration.”

3.5 The HRS scoring of potential groundwater contamination exposure from the Site is misleading. The scoring includes all private supply wells identified within a 4-mile radius of the Site, without consideration of where the wells are located relative to Site source areas or whether the wells are currently used for drinking water supply.

3.6 The supporting documentation contains various errors, inconsistencies and presents results that have been superseded by more recent data. We reserve the right, as advised by DEP, to provide supplemental comments on this in the future. **Furthermore, the DEP should correct any errors and explain why it has relied on results that have been superseded by more recent data.**

3.7 The reference list attached to the HRS scoring documentation is incomplete and does not include numerous historic documents or recent data. Attached to this comment letter are four indices and copies of additional documentation for the AR. We reserve the right, as advised by DEP, to further supplement the AR in the future. **We hereby submit these additional documents for inclusion in the AR.**

4.0 Additional Documentation for Administrative Record

4.1 A copy of the AR obtained from DEP lists no documents post-September 2007. The reference list attached to the HRS scoring documentation also excludes the majority of recent data available for this Site. In addition, numerous historic documents are not included in the AR. Attachment A includes four indices of additional documentation for the AR. Also, for DEP convenience, we have attached a CD containing all documents on the four indices. We reserve the right, as advised by DEP, to further supplement the AR in the future. **We hereby submit these additional documents for inclusion in the AR.**

4.2 We assume that all documents referenced in the DEP HRS scoring documentation will be added to the AR. In reviewing that reference list we observed that the ATSDR Health Consultation dated July 16, 2008 is included. However, Roux Associates' comments on the ATSDR Health Consultation were not included. A copy of our comments is provided in Attachment B. **We hereby submit this additional document for inclusion in the AR.**

5.0 Additional Documentation Regarding Potentially Responsible Parties

5.1 The RI parties will be submitting information for inclusion in the AR on a number of potentially responsible parties that are not participating in any investigation or remediation of contamination at the Site.

Mr. Dustin Armstrong

October 12, 2010

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On behalf of the RI Parties, Roux Associates appreciates the DEP's review and consideration of our comments. If you have any questions or would like to discuss this submittal further, please contact Gregory Martin at (856) 423-8800.

Sincerely,
ROUX ASSOCIATES, INC.

Gregory D. Martin, P.G.
Principal Hydrogeologist/Vice President

Attachments

Attachment A – Four Indices of Additional Documentation for the Administrative Record (Tables 1, 2, 3 and 4)

Attachment B – Roux Associates, Inc., Letter to Robert H. Helverson Re: Comments on ATSDR's July 16, 2008 Health Consultation, Bishop Tube Site, December 17, 2008

Enclosure

CD with electronic copies of documents listed on four indices

Mr. Dustin Armstrong

October 12, 2010

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On behalf of the RI Parties, Roux Associates appreciates the DEP's review and consideration of our comments. If you have any questions or would like to discuss this submittal further, please contact Gregory Martin at (856) 423-8800.

Sincerely,

ROUX ASSOCIATES, INC.



Gregory D. Martin, P.G.

Principal Hydrogeologist/Vice President

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Enclosure

CD with electronic copies of documents listed on four indices

ATTACHMENT A

**FOUR INDICES OF ADDITIONAL DOCUMENTATION FOR THE ADMINISTRATIVE
RECORD (TABLE 1,2,3 AND 4)**

Table 1. Additional Documents for Administrative Record - Former Bishop Tube Site. Malvern, Pennsylvania.

Date	Title/Subject	Author	Recipient
<u>Progress Reports</u>			
12/05/2008	Progress Report 1	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
01/05/2009	Progress Report 2	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
02/17/2009	Progress Report 3	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
03/13/2009	Progress Report 4	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
04/15/2009	Progress Report 5	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
05/15/2009	Progress Report 6	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
06/15/2009	Progress Report 7	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
07/15/2009	Progress Report 8	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
08/13/2009*	Progress Report 9	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
09/15/2009	Progress Report 10	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
10/15/2009	Progress Report 11	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
11/16/2009	Progress Report 12	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
12/15/2009	Progress Report 13	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
01/15/2010	Progress Report 14	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
02/16/2010	Progress Report 15	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
03/15/2010	Progress Report 16	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
04/15/2010	Progress Report 17	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
05/17/2010	Progress Report 18	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
06/15/2010	Progress Report 19	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
07/15/2010	Progress Report 20	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
08/16/2010	Progress Report 21	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
09/16/2010	Progress Report 22	G. Martin & R. Fisler - Roux	D. Armstrong - DEP

* = Progress Report 9 was incorrectly dated as July 13, 2009. Correct date is August 13,2009.

ATSDR Associated Information

07/16/2008	ATSDR's Health Consultation, Bishop Tube Site, East Whiteland Township, Chester County, Pennsylvania	R. Helverson - ATSDR	--
12/17/2008	Comments on ATSDR's July 16, 2008 Health Consultation, Bishop Tube Site, East Whiteland Township, Chester County, Pennsylvania	G. Martin & D. Kmetzo - Roux	R. Helverson - ATSDR

Table 1. Additional Documents for Administrative Record - Former Bishop Tube Site. Malvern, Pennsylvania.

Date	Title/Subject	Author	Recipient
<u>IAQ Letters</u>			
04/30/2009	Indoor Air Sampling Results - 92 Village Way	G. Martin & R. Fisler - Roux	L. Hitchcock
04/30/2009	Indoor Air Sampling Results - 95 Village Way	G. Martin & R. Fisler - Roux	S. Connor
04/30/2009	Indoor Air Sampling Results - 97 Village Way	G. Martin & R. Fisler - Roux	J. Jones
04/30/2009	Indoor Air Sampling Results - 10 Winding Way	G. Martin & R. Fisler - Roux	A. Juliano
08/31/2009	Indoor Air and Sump Sampling Results - 54 Conestoga Road	G. Martin & R. Fisler - Roux	B. Warren
09/30/2009	Follow-Up Indoor Air Quality Sampling Results - 54 Conestoga Road	G. Martin & R. Fisler - Roux	B. Warren
11/04/2009	Indoor Air Sampling Results - 54 Conestoga Road	G. Martin & R. Fisler - Roux	B. Warren
12/14/2009	Indoor Air Sampling Results - 54 Conestoga Road	G. Martin & R. Fisler - Roux	B. Warren
01/12/2010	Indoor Air Sampling Results - 54 Conestoga Road	G. Martin & R. Fisler - Roux	B. Warren
02/16/2010	Indoor Air Sampling Results - 54 Conestoga Road	G. Martin & R. Fisler - Roux	B. Warren
02/16/2010	Indoor Air Sampling Results - 10 Winding Way	G. Martin & R. Fisler - Roux	A. Juliano
06/28/2010	Indoor Air Sampling Results - 39 Conestoga Road	G. Martin & R. Fisler - Roux	G. Grillet - Peoples Light
06/28/2010	Indoor Air Sampling Results - 172 Lancaster Ave	G. Martin & R. Fisler - Roux	G. Rokke - Taylor Rental
06/28/2010	Indoor Air Sampling Results - 54 Conestoga Road	G. Martin & R. Fisler - Roux	B. Warren
06/28/2010	Radon Test Results - 54 Conestoga Road	G. Martin & R. Fisler - Roux	B. Warren
<u>Groundwater Sampling Letters</u>			
01/14/2010	Groundwater Sampling Results - 184 Lancaster Ave	G. Martin & R. Fisler - Roux	C. Diorio - Univ. Plumbing
01/14/2010	Groundwater Sampling Results - 30 Conestoga Road	G. Martin & R. Fisler - Roux	R. Gerlach
02/03/2010	Groundwater Sampling Results - 39 Conestoga Road	G. Martin & R. Fisler - Roux	G. Grillet - Peoples Light
02/03/2010	Groundwater Sampling Results - 54 Conestoga Road	G. Martin & R. Fisler - Roux	B. Warren
02/03/2010	Groundwater Sampling Results - 134 Lancaster Ave	G. Martin & R. Fisler - Roux	E. Kalemjian - Kalemjian, Inc
02/03/2010	Groundwater Sampling Results - 140 Lancaster Ave	G. Martin & R. Fisler - Roux	J. Fooskas - NBM
02/03/2010	Groundwater Sampling Results - 172 Lancaster Ave	G. Martin & R. Fisler - Roux	G. Rokke - Taylor Rental
02/03/2010	Groundwater Sampling Results - 209 Lancaster Ave	G. Martin & R. Fisler - Roux	Phanlam LLC
<u>Reports and Related Correspondence</u>			
02/17/2009	Remedial Investigation Work Plan - Former Bishop Tube Property	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
02/25/2009	DEP's Expedited Comments on February 2009 RIWP	D. Armstrong - DEP	R. Fisler - Roux
03/09/2009	DEP's Comments on Remaining Portions of the February 2009 RIWP	D. Armstrong - DEP	R. Fisler - Roux

Table 1. Additional Documents for Administrative Record - Former Bishop Tube Site. Malvern, Pennsylvania.

Date	Title/Subject	Author	Recipient
03/11/2009	Response to DEP's Expedited Review Letter dated February 25,2009	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
03/16/2009	DEP Approval to Proceed with Stream Study and Indoor Air Sampling Activities	D. Armstrong - DEP	R. Fisler - Roux
04/09/2009	Response to DEP Comment on Remaining Portions of February 2009 RIWP	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
04/19/2009	DEP Final Approval of February 2009 RIWP	D. Armstrong - DEP	R. Fisler - Roux
12/30/2009	Shallow Groundwater Investigation - Interim Letter Report	G. Martin & R. Fisler - Roux	D. Armstrong - DEP
<u>Miscellaneous Correspondence</u>			
04/01/2009	DEP's Response to EACs March 2009 E-Mail	D. Armstrong - DEP	Representative D. Milne & EAC
07/27/2009	DEP Transmitting Sump Sampling Results for 54 Conestoga Road - email	D. Armstrong - DEP	G. Martin & R. Fisler - Roux
10/09/2009	DEP Meeting Regarding VI and Identifying 2009 Deadlines - email	D. Armstrong - DEP	The Bishop Tube Team
10/12/2009	Response to DEP's October 9, 2009 Email - email	G. Martin - Roux	D. Armstrong - DEP
11/24/2009	Transmitting Surface Geophysics Report to DEP - email	R. Fisler - Roux	D. Armstrong - DEP
02/03/2010	Transmitting Supplemental Shallow Groundwater Grab Results to DEP - email	R. Fisler - Roux	D. Armstrong - DEP
09/24/2010	Transmitting July 2010 Groundwater Sampling Results	R. Fisler - Roux	D. Armstrong - DEP
<u>RI Modifications and DEP Approvals</u>			
08/21/2009	Revised Shallow Groundwater Investigation (RIWP Modification 1) - email	R. Fisler - Roux	D. Armstrong - DEP
08/26/2009	DEP Approval to Revised Shallow Groundwater Investigation (RIWP Modification 1) - email	D. Armstrong - DEP	R. Fisler - Roux
11/05/2009	Revisions to RIWP (RIWP Modification 2) - email	R. Fisler - Roux	D. Armstrong - DEP
11/12/2009	DEP Approval to Revisions to RIWP (RIWP Modification 2) - email	D. Armstrong - DEP	R. Fisler - Roux
04/06/2010	Proposed Shallow Well Locations - email	R. Fisler - Roux	D. Armstrong - DEP
04/06/2010	DEP Approval of Proposed Shallow Well Locations - email	D. Armstrong - DEP	R. Fisler - Roux
04/14/2010	Proposal to Collect IAQ Samples at Commercial Properties	R. Fisler - Roux	D. Armstrong - DEP
04/21/2010	DEP Approval to Collect Indoor Air Samples at Commercial Properties	D. Armstrong - DEP	R. Fisler - Roux
05/06/2010	Proposed Nested Well Locations and Revisions to RIWP (RIWP Modification 3) - email	R. Fisler - Roux	D. Armstrong - DEP
05/10/2010	DEP Approval of Nested Well Locations and Revisions to RIWP (RIWP Modification 3) - email	D. Armstrong - DEP	R. Fisler - Roux
07/13/2010	Revisions to RIWP (RIWP Modification 4) - email	R. Fisler - Roux	D. Armstrong - DEP
07/14/2010	DEP Approval to Revisions to RIWP (RIWP Modification 4) - email	D. Armstrong - DEP	R. Fisler - Roux
<u>Laboratory Data Packages</u>			
03/18/2009	AccuTest Job Number JA14598 - March 2009 IAQ Data	AccuTest Laboratory	Roux

Table 1. Additional Documents for Administrative Record - Former Bishop Tube Site. Malvern, Pennsylvania.

Date	Title/Subject	Author	Recipient
05/13/2009	AccuTest Job Number JA18598 - May 2009 Surface Water Sampling Data	AccuTest Laboratory	Roux
05/14/2009	AccuTest Job Number JA18719 - May 2009 Surface Water Sampling Data	AccuTest Laboratory	Roux
08/05/2009	AccuTest Job Number JA24836 - August 2009 Sump Water Sampling Data (54 Conestoga)	AccuTest Laboratory	Roux
08/05/2009	AccuTest Job Number JA24846 - August 2009 IAQ Data (54 Conestoga Road)	AccuTest Laboratory	Roux
08/26/2009	AccuTest Job Number JA26609 - August 2009 Sumpl Soil Sampling Data (54 Conestoga)	AccuTest Laboratory	Roux
09/10/2009	AccuTest Job Number JA27643 - September 2009 IAQ Data (54 Conestoga Road)	AccuTest Laboratory	Roux
09/09/2009	AccuTest Job Number JA27644 - September 2009 Bin Sampling Data (54 Conestoga)	AccuTest Laboratory	Roux
10/15/2009	AccuTest Job Number JA30638 - October 2009 IAQ Data (54 Conestoga Road)	AccuTest Laboratory	Roux
11/19/2009	AccuTest Job Number JA33417 - November 2009 IAQ Data (54 Conestoga Road)	AccuTest Laboratory	Roux
12/03/2009	AccuTest Job Number JA34486 - December 2009 Groundwater Grab Data	AccuTest Laboratory	Roux
12/04/2009	AccuTest Job Number JA34498 - December 2009 Groundwater Grab Data	AccuTest Laboratory	Roux
12/11/2009	AccuTest Job Number JA35139 - December 2009 Groundwater Data (54 Conestoga)	AccuTest Laboratory	Roux
12/18/2009	AccuTest Job Number JA35864 - December 2009 IAQ Data (54 Conestoga Road)	AccuTest Laboratory	Roux
01/19/2010	AccuTest Job Number JA37927 - January 2010 IAQ Data (54 Conestoga Road)	AccuTest Laboratory	Roux
01/21/2010	AccuTest Job Number JA38356 - January 2010 Groundwater Grab Data	AccuTest Laboratory	Roux
03/08/2010	AccuTest Job Number JA41502 - January 2010 Groundwater Grab Data	AccuTest Laboratory	Roux
04/29/2010	AccuTest Job Number JA45639 - April 2010 IAQ Data (Various Properties)	AccuTest Laboratory	Roux
06/23/2010	AccuTest Job Number JA49851 - June 2010 Waste Chracterization Data	AccuTest Laboratory	Roux
07/26/2010	AccuTest Job Number JA52349 - July 2010 Groundwater Sampling Data	AccuTest Laboratory	Roux
07/27/2010	AccuTest Job Number JA52450 - July 2010 Groundwater Sampling Data	AccuTest Laboratory	Roux
07/28/2010	AccuTest Job Number JA52579 - July 2010 Groundwater Sampling Data	AccuTest Laboratory	Roux
07/29/2010	AccuTest Job Number JA52683 - July 2010 Groundwater Sampling Data	AccuTest Laboratory	Roux
07/30/2010	AccuTest Job Number JA52748 - July 2010 Groundwater Sampling Data	AccuTest Laboratory	Roux
08/02/2010	AccuTest Job Number JA52896 - July 2010 Surface Water Sampling Data	AccuTest Laboratory	Roux

Bishop Tube

PADEP File Review

Environmental Cleanup

Data

-	September 15, 1987	Groundwater Monitoring Analytical Results -Purgeable Hydrocarbons, BCM Inc.
-	June 12, 1991	VOC results - Aqueous, letter from Preston Lutweiler (??) to Mr. and Mrs. Kenneth Leasa
-	February 14, 1996	Grinding Dust Lab Analysis - includes data package and COC
-	February 20, 1996	Packer Test Results and Well Logs - letter from Glenn Randall (Smith Environmental Technologies Corporation) to John MacAleese Esq. (Morgan Lewis & Bockius)
-	June 19, 1997	Analysis of sanding sludge - letter from Kent Lulewich (Bishop Tube) to Thomas Storer (Waste Management Specialist, PADEP), includes data package and COC
-	June 10, 1999	February 1999 Groundwater Sampling Results - letter from Michael Kozar (O'Brien & Gere Engineers) to Dustin Armstrong (PADEP), includes data tables, COC and data packages not included
-	June 19, 2001	Certificate of Analysis -Aqueous, letter from STL Pittsburgh to Dustin Armstrong (PADEP), includes COC, referenced data package not enclosed.
-	June 19, 2001	Certificate of Analysis - Soil, letter from STL Pittsburgh to Dustin Armstrong (PADEP), does not include COC, referenced data package not enclosed
-	June 20, 2001	Certificate of Analysis - Soil, letter from STL Pittsburgh to Dustin Armstrong (PADEP), includes COC, referenced data package not enclosed
-	June 20, 2001	Certificate of Analysis - Aqueous, letter from STL Pittsburgh to Dustin Armstrong (PADEP), does not include COC, referenced data package not enclosed
-	June 21, 2001	Certificate of Analysis - Soil, letter from STL Pittsburgh to Dustin Armstrong (PADEP), does not include COC, referenced data package not enclosed
-	June 21, 2001	Certificate of Analysis - Soil, letter from STL Pittsburgh to Dustin Armstrong (PADEP), include COC and data package.
-	June 22, 2001	Certificate of Analysis - Soil/Aqueous, letter from STL Pittsburgh to Dustin Armstrong (PADEP), does not include COC, referenced data package not enclosed
-	June 25, 2001	Certificate of Analysis - Aqueous, letter from STL Pittsburgh to Dustin Armstrong (PADEP), does not include COC, referenced data package not enclosed
-	June 28, 2001	Certificate of Analysis - Aqueous, letter from STL Pittsburgh to Dustin Armstrong (PADEP), does not include COC, referenced data package not enclosed
-	June 28, 2001	Certificate of Analysis - Soil, letter from STL Pittsburgh to Dustin Armstrong (PADEP), does not include COC, referenced data package not enclosed
-	June 29, 2001	Certificate of Analysis - Soil/Aqueous, letter from STL Pittsburgh to Dustin Armstrong (PADEP), does not include COC, referenced data package not enclosed
-	June 29, 2001	Certificate of Analysis - Aqueous, letter from STL Pittsburgh to Dustin Armstrong (PADEP), does not include COC, referenced data package not enclosed
-	June - August 2001	Analytical Sampling Results, letter from Robert E. Conrad (Mobile Analytical Services Section) to Dustin Armstrong (PADEP)
-	August 2, 2001	Certificate of Analysis - Soil/Aqueous, letter from STL Pittsburgh to Dustin Armstrong (PADEP), does not include COC, referenced data package not enclosed
-	December 18, 2001	Discreet Interval Sampling MW-5, MW-17, and MW-19, Dustin A. Armstrong (Project Officer PADEP)
-	March 1, 2002	Well Water sampling results - letter from Dustin Armstrong (PADEP) to Constance Prince, data package and COC not included
-	March 1, 2002	Well Water sampling results - letter from Dustin Armstrong (PADEP) to Kenneth Leasa, data package and COC not included
-	October 16, 2002	Well Water Sampling Results - letter from Michael Welsh (Applied Environmental Management, Inc) to Dustin Armstrong (PADEP), includes data package and COC
-	May 7, 2003	Well Water sampling results - letter from Dustin Armstrong (PADEP) to Kenneth Leasa, includes data package, COC not included
-	May 22, 2003	Certificate of Analysis - Aqueous, letter from STL Pittsburg to Dustin Armstrong (PADEP), includes COC and data package.
-	July 2, 2003	Surface Water Sampling Results - letter from Dustin Armstrong (PADEP) to Jeffery Goudsward (Penn E&R Environmental Remediation), includes data package, COC not included
-	September 2, 2003	Well Water sampling results - letter from Dustin Armstrong (PADEP) to Robert Gerlach, data package and COC not included
-	December 18, 2003	Well Water sampling results - letter from Dustin Armstrong (PADEP) to Kenneth Leasa, data package and COC not included
-	February 2004	8 CDs containing Data Packages -Groundwater
-	January 28, 2005	Indoor Air Sampling Results - letter from Dustin Armstrong (PADEP) to Mr. and Mrs. Larry Stairs, includes data package, COC not included
-	May 31, 2005	Well Water sampling results - letter from Dustin Armstrong (PADEP) to Kenneth Leasa, includes data package, COC not included
-	June 13, 2005	Technical Report - Aqueous, includes COC and data package
-	June 13, 2005	Accutest Results for 101 Lancaster Ave
-	June 2005	Analytical Reports - COC's not included
-	March 9, 2007	Well Water sampling results - letter from Dustin Armstrong (PADEP) to Michael Holsclaw, includes data package, COC not included

-	May 23, 2007	Well Water Sampling results - Letter from Dustin Armstrong (PADEP) to Robert Gerlach, data package and COC not included
-	June - September 2007	Analytical Reports - COC's not included
-	July 5, 2007	Well Water Sampling results - Letter from Dustin Armstrong (PADEP) to Robert Gerlach, data package and COC not included
-	October 16, 2007	Well Water sampling results - letter from Dustin Armstrong (PADEP) to Kenneth Leasa, includes data package, COC not included
-	October 16, 2007	Well Water sampling results - letter from Dustin Armstrong (PADEP) to Michael Holsclaw, includes data package, COC not included
-	October 16, 2007	Well Water sampling results - letter from Dustin Armstrong (PADEP) to Kenneth Leasa, includes data package, COC not included
-	October 16, 2007	Well Water sampling results - letter from Dustin Armstrong (PADEP) to Michael Holsclaw, includes data package, COC not included
-	Unknown	Table 3 Summary of Groundwater and Stream Sampling Analytical results

Reports

-	October 1981	Hydrogeological Study, BCM Inc.
-	January 1983	Water or Waste Quality Report
-	March 21, 1985	Waste Discharge Inspection Report
-	June 25, 1985	Site Inspection of Bishop Tube Company, NUS Corporation- Superfund Division
-	July 1, 1986	Bishop Tube closure Plan, letter from Miers Johnson (Bishop Tube) to Lawrence Lunsck (PADER)
-	February 1988	Groundwater Quality Investigation, BCM Inc.
-	May 1988	Groundwater Quality Investigation, BCM Inc.
-	May 25, 1988	Department of Environmental Resources Pollution Report
-	June 23, 1988	May 1988 report on subject site, letter from BCM inc. to Robert Bauer (PADER)
-	May 15, 1989	Results of the Soil Vapor Survey, letter from BCM to D. Craig Fuller (Christiana Metals)
-	June 26, 1989	Groundwater Remediation Work Plan, BCM Inc.
-	June 27, 1989	Health and Safety Plan, BCM Inc.
-	January 1990	Results of Implementation of Groundwater Remediation Work Plan Phase I, BCM Inc.
-	August 1990	Results of Well Search, BCM Inc.
-	August 1990	Soil Vapor Survey in the Degreaser Area, BCM Inc.
-	November 26, 1990	Scope of Work for Groundwater Investigation and Remediation, BCM Inc.
-	December 4, 1991	Summary of Quarterly Groundwater Monitoring Results, BCM Inc.
-	March 3, 1993	Complaint Tracking System Report
-	May 11, 1993	Storage Tank Closure Report, Brandywine Environmental Compliance, Inc.
-	December 16, 1993	Inorganic Data Validation Report, Lockheed Environmental Systems & Technologies Co.
-	December 27, 1993	Level M2 Organic Data Validation, Lockheed Environmental Systems & Technologies Co.
-	June 1994	Preparedness, Prevention, and Contingency Plan, BCM inc.
-	June 24, 1994	Storm Water Sampling Plan, BCM Engineers, Inc.
-	May 16, 1995	Proposal for Phase I Environmental Assessment, Smith Environmental Technologies
-	August 21, 1995	Phase I Environmental Assessment Draft, Smith Environmental Technologies
-	January 29, 1996	Status Report, letter from Glenn Randall (Smith Environmental Technologies Corp) to Jami McKeon Esq. (Morgan Lewis & Bockius)
-	May 29, 1997	Hazardous waste inspection report, PADEP
-	November 19, 1997	Environmental Audit of Damascuc/Bishop Frazer, PA Facility, Enviroplan Consulting
-	September 1998	Site Characterization and Interim Remedial Action Plan, O'Brien & Gere Engineers, Inc.
-	May 1999	Groundwater Interim Remedial Action Workplan, O'Brien & Gere Engineers, Inc.
-	May 1999	Quality Assurance Project Plan for the Bishop Tube Site, O'Brien & Gere Engineers, Inc.
-	May 1999	Health and Safety Plan for the Bishop Tube Site, O'Brien & Gere Engineers Inc.
-	March 13, 2000	Response Justification Document, from Dustin Armstrong (PADEP) to Thomas Sheehan (PADEP)
-	March 13, 2000	HSCA Response Justification Document, Dustin Armstrong (PADEP)
-	December 8, 2000	Site Characterization Final Work Plan, Malcolm Pirnie, Inc.
-	April 27, 2001	Site Characterization Cost Proposal, Baker Environmental Inc

-	April 27, 2001	Final Workplan for Site Characterization, Michael Baker Jr., Inc.
-	June 16, 2001	Change Order #1, letter from Mark Iooos (Michael baker Jr. Inc) to Dustin Armstrong (PADEP)
-	July 27, 2001	Change Order #2, letter from Mark Iooos (Michael baker Jr. Inc) to Dustin Armstrong (PADEP)
-	October 18, 2001	Change Order #3, letter from Mark Iooos (Michael baker Jr. Inc) to Dustin Armstrong (PADEP)
-	November 21, 2001	Change Order #4 Groundwater Investigation Workplan, Baker Environmental Inc.
-	November 21, 2001	Change Order #4, letter from Mark Iooos (Michael baker Jr. Inc) to Dustin Armstrong (PADEP)
-	January 9, 2002	Change Order #5, letter from Mark Iooos (Michael baker Jr. Inc) to Dustin Armstrong (PADEP)
-	January 11, 2002	Phase I Site Characterization Report- Soils, Sediment, Surface Water, and Shallow Groundwater, Baker Environmental Inc
-	March 21, 2002	Change Order #6, letter from Mark Iooos (Michael baker Jr. Inc) to Dustin Armstrong (PADEP)
-	May 22, 2002	Change Order #7, letter from Mark Iooos (Michael baker Jr. Inc) to Dustin Armstrong (PADEP)
-	July 1, 2002	Change Order #8, letter from Mark Iooos (Michael baker Jr. Inc) to Dustin Armstrong (PADEP)
-	August 23, 2002	Change Order #9- Final Work Plan and Cost Proposal Phase III- Site Characterization, Michael Baker Jr., Inc.
-	August 23, 2002	Change Order #9 Phase III-Site Characterization Cost Proposal, Baker Environmental Inc.
-	August 23, 2002	Change Order #9 Phase III-Site Characterization Work Plan, Baker Environmental Inc.
-	September 18, 2002	Change Order #10, letter from Mark Iooos (Michael baker Jr. Inc) to Dustin Armstrong (PADEP)
-	September 27, 2002	Change Order #11, letter from Mark Iooos (Michael Baker Jr. Inc) to Dustin Armstrong (PADEP)
-	October 29, 2002	Change Order #12, letter from Mark Iooos (Michael Baker Jr. Inc) to Dustin Armstrong (PADEP)
-	December 10, 2002	Change Order #13, letter from Mark Iooos (Michael Baker Jr. Inc) to Dustin Armstrong (PADEP)
-	December 19, 2002	Change Order #14, letter from Mark Iooos (Michael Baker Jr. Inc) to Dustin Armstrong (PADEP)
-	March 23, 2003	Complaint Tracking System Investigation Report
-	April 9, 2003	Little Valley Creek Surface Water and Spring Monitoring Sampling and Analysis report, Dustin A. Armstrong (Project Officer PADEP)
-	April 29, 2003	Change Order #15, letter from Mark Iooos (Michael Baker Jr. Inc) to Dustin Armstrong (PADEP)
-	August 27, 2003	Little Valley Creek Surface Water and Spring Monitoring Sampling Event Report, Dustin A. Armstrong (Project Officer PADEP)
-	September 10, 2003	Change Order #16, letter from Mark Iooos (Michael Baker Jr. Inc) to Dustin Armstrong (PADEP)
-	November 18, 2003	Change Order #17, letter from Mark Iooos (Michael Baker Jr. Inc) to Dustin Armstrong (PADEP)
-	April 6, 2004	Change Order #18, letter from Mark Iooos (Michael Baker Jr. Inc) to Tom Butterbaugh (PADEP)
-	July 23, 2004	Change Order #19, letter from Mark Iooos (Michael Baker Jr. Inc) to Dustin Armstrong (PADEP)
-	August 27, 2004	Soil Gas and Shallow Groundwater Sampling Report, Michael Baker JR., Inc.
-	October 18, 2004	Indoor Air Sampling Investigation and Groundwater Monitoring Work Plan, Michael Baker Jr. Inc.
-	April 2005	Surface Water Investigation - Data Summary, Dustin A. Armstrong (Project Officer PADEP)
-	September 23, 2005	Scope of work, letter from Dustin Armstrong (PADEP) to Raymond Wattras (Baker Environmental)
-	January 26, 2006	Scope of Work Air Sparging/Hot Spot Response, Dustin A Armstrong (Project Officer PADAP)
-	April 25, 2006	Feasibility Study and Groundwater Monitoring Workplan, Michael Baker Jr., Inc.
-	February 19, 2007	Summary of November 2006 Subsurface Soil Investigation and Results, Weston Solutions, Inc.
-	February 26, 2007	Well installation bids and associated information, from Bill Freeman (Weston) to Dustin Armstrong (PADEP)
-	March 16, 2007	Notice of Prompt Interim Response, letter from Robert Thomson (Babst, Calland, Clements, and Zomnir) to Dustin Armstrong (PADEP)
-	April 2007	Request for Bid for Liquid Boot Installation at the Former Bishop Tube Facility, Weston Solutions, Inc.
-	April 2007	Request for Bid for Piping and Associated Equipment Installation at the Former Bishop Tube Facility, Weston Solutions, Inc.
-	April 9, 2007	Additional GTAC Work Tasks, letter from Dustin Armstrong (PADEP) to Matthew Maloney (Baker Environmental)
-	November 1, 2007	Modifications to Remedial System Performance Criteria, letter from Andrew Riggs (Hagerty Environmental LLC) to Gerald Kirkpatrick (Environmental Standards)
-	November 6, 2007	Draft Supplemental Site Characterization Report Revisions, letter from Dustin Armstrong (PADEP) to Matthew Maloney (Baker Environmental Inc)
-	February 2008	CD containing Supplemental Site Characterization, Baker Environmental,
-	Unknown	Proposed Work Plan for a Groundwater Quality Investigation, BCM Eastern, Inc., date unknown - suspected late 1980's/early 1990's
-	Unknown	Statement of Work, Dustin A. Armstrong (Project Officer PADEP)
-	Unknown	Analysis of Alternatives and Proposed Response, PADEP

-	July 18, 1986	Letter referencing the revised closure plan from Lawrence Lunsik (PADER) to Miers Johnson (Bishop Tube)
-	August 13, 1986	Letter responding to notice of violation from Miers Johnson (Bishop Tube) to Brian Boyd (PADER)
-	October 24, 1986	Letter stating corrective action from David Moleton (Bishop Tube) to Carol (PADER)
-	July 10, 1987	Letter stating intent to proceed with Bishop Tube Work Plan from John Ousey Jr (BCM) to Robert Bauer (PADER)
-	July 12, 1988	Letter responding to notice of violation from David Moleton (Bishop Tube) to Brian Boyd (PADER)
-	October 6, 1989	Memo referencing 1989 "Results of Soil Vapor Survey" and "Groundwater Remediation Work Plan," from Steve O'Neil (PADER) to Robert Day-Lewis (PADER)
-	April 9, 1991	Letter referencing hazardous waste inspection from Tamera Rothschild Esq. (Mahany, Roeder & Rothschild) to Paul Panek (PADER)
-	April 16, 1992	Letter Referencing meeting between BCM, PADER, and Christiana Metals discussing Groundwater Remediation Work Plan, from Robert Day-Lewis (PADER) to Eric Schmidley (BCM), includes meeting notes.
-	January 11, 1993	Write-up of Phone Conversation between Stephen Brown (PADEP) and Russell Levering
-	September 8, 1993	Letter Referencing Storage Tank Closure from Linda Wnukowski (Water Quality Specialist PADEP) to Russel Levering (Bishop Tube)
-	August 21, 1995	Letter referencing phase I assessment, from Henry Alexander (Smith Environmental Technologies Corp) to David Lewis (Bishop Tube)
-	December 21, 1995	Letter recommending the plugging of back deep wells, from Glenn Randall (Smith Environmental Technologies Corp) to John MacAlesse (Morgan Lewis & Bockius)
-	April 19, 1996	Letter referencing conceptual cleanup plan, from Glenn Randall (Smith Environmental Technologies Corp) to John MacAlesse Esq. (Morgan, Lewis & Bockius)
-	January 12, 1998	Letter referencing waste from phase II assessment, from Bruce Johnson (Bishop Tube) to Craig Fuller (Christiana Metals)
-	January 13, 1998	Fax referencing removal and transport of chemical waste, from Mike Petrosky (Gemini Disposal Services) to Bruce Johnson (Bishop Tube)
-	January 19, 1998	Fax referencing disposal sites, from Mike Petrosky (Gemini Disposal Services) to Bruce Johnson (Bishop Tube)
-	January 26, 1998	Fax referencing removal and transport of chemical waste, from Mike Petrosky (Gemini Disposal Services) to Bruce Johnson (Bishop Tube)
-	June 27, 2000	Authorized Task Budget Letter from PADEP to Douglas E. Sawyers (Malcolm Pirnie, Inc.)
-	September 26, 2000	Draft Work Plan Revisions Letter from Dustin Armstrong (Project Officer PADEP) to Douglas Sawyers (Malcolm Pirnie Inc.)
-	May 17, 2000	Letter in response to information request, from Richard Roeder Esq. (Roeder & Rothschild) to Bruce Beitler (PADEP)
-	May 17, 2001	Letter referencing request for quotation for direct push drilling services, from Mark Ioo (Michael Baker Jr. Inc) to Brian Ray (Modern Pump and Equipment Inc)
-	May 25, 2001	Letter referencing subcontractor recommendation, from Mark Ioo (Michael Baker Jr., Inc) to Dustin Armstrong (PADEP)
-	June 4, 2001	Samples Analysis Plan letter from Robert E. Conrad (Mobile Analytical Services) to Dustin Armstrong (Project Officer PADEP)
-	November 9, 2001	Draft Work Plan Revisions Letter from Dustin Armstrong (Project Officer PADEP) to Mark B. Ioo (Michael Baker Jr., Inc.)
-	December 14, 2001	Letter referencing request for quotation for geophysical well logging services, from Mark Ioo (Michael Baker Jr. Inc)
-	July 30, 2001	Letter referencing Change Order #2, from Patricia Rickard (PADEP) to Raymond Wattras (Baker Environmental)
-	October 31, 2001	Letter referencing Change Order #3, from Patricia Rickard (PADEP) to Raymond Wattras (Baker Environmental)
-	December 3, 2001	Letter referencing Change Order #4, from Patricia Rickard (PADEP) to Raymond Wattras (Baker Environmental)
-	December 14, 2001	Letter referencing request for quotation for well digging services, from Mark Ioo (Michael Baker Jr. Inc) to Gregg Myers (B.L. Myers Bros Inc)
-	December 14, 2001	Letter referencing request for quotation for aquifer testing services, from Mark Ioo (Michael Baker Jr. Inc) to Brian Ray (Modern Pump and Equipment Inc)
-	January 7, 2002	Letter referencing subcontractor recommendation, from Mark Ioo (Michael Baker Jr., Inc) to Dustin Armstrong (PADEP)
-	January 7, 2002	Letter referencing subcontractor responsibility form, from Mark Ioo (Michael Baker Jr. Inc) to Patricia Rickard (PADEP)
-	January 15, 2002	Letter referencing Change Order #5, from ??? (PADEP) to Raymond Wattras (Baker Environmental)(1st page only) ~ To George Seidman (Earth Data Inc) and Felicia Bechtel (Enviroscan Inc)
-	April 1, 2002	Letter referencing Change Order #6, from Patricia Rickard (PADEP) to Raymond Wattras (Baker Environmental)
-	April 2, 2002	Letter referencing subcontractor recommendation, from Mark Ioo (Michael Baker Jr., Inc) to Dustin Armstrong (PADEP)
-	April 2, 2002	Letter referencing subcontractor responsibility form, from Mark Ioo (Michael Baker Jr. Inc) to Patricia Rickard (PADEP)
-	April 9, 2002	Letter referencing subcontractor recommendation, from Mark Ioo (Michael Baker Jr., Inc) to Dustin Armstrong (PADEP)
-	April 9, 2002	Letter referencing subcontractor responsibility form, from Mark Ioo (Michael Baker Jr. Inc) to Patricia Rickard (PADEP)
-	April 18, 2002	Letter referencing subcontractor approval, from Patricia Rickard (PADEP) to Raymond Wattras (Baker Environmental)
-	June 13, 2002	Letter Referencing Additional Site Characterization Requirements from Dustin Armstrong (PADEP) to Mark Ioo (Michael Baker Jr. Inc.)
-	September 18, 2002	Letter referencing Change Order #9 & #10, from Patricia Rickard (PADEP) to Raymond Wattras (Baker Environmental)
-	November 25, 2002	Letter with consent for right of entry and access form, from Dustin Armstrong (PADEP) to Robert Gerlach
-	December 19, 2002	Letter referencing Change Order #17, from Douglas Cordelli (PADEP) to Raymond Wattras (Baker Environmental)

-	December 19, 2002	Letter referencing Change Order #13, from Douglas Cordelli (PADEP) to Raymond Wattras (Baker Environmental)
-	January 2, 2003	Letter referencing Change Order #16, from Douglas Cordelli (PADEP) to Raymond Wattras (Baker Environmental)
-	January 2, 2003	Letter referencing Change Order #14, from Douglas Cordelli (PADEP) to Raymond Wattras (Baker Environmental)
-	May 27, 2003	Letter referencing Change Order #15, from Douglas Cordelli (PADEP) to Raymond Wattras (Baker Environmental)
-	June 20, 2003	Letter referencing Monitoring Well Sampling, from Dustin Armstrong (PADEP) to Karen Stamy (Norfolk Southern Corporation), enclosure not present
-	June 20, 2003	Letter referencing sampling results, from Dustin Armstrong (PADEP) to Ralph DeFazio (Chester County Health Department)
-	June 20, 2003	Letter referencing sampling results, from Dustin Armstrong (PADEP) to Marietta Myers (Chester County Economic Development Council)
-	September 2, 2003	Letter referencing Monitoring Well Sampling, from Dustin Armstrong (PADEP) to Karen Stamy (Norfolk Southern Corporation), enclosure not present
-	September 9, 2003	Letter referencing sampling results, from Dustin Armstrong (PADEP) to Ralph DeFazio (Chester County Health Department)
-	September 9, 2003	Letter referencing sampling results, from Dustin Armstrong (PADEP) to Marietta Myers (Chester County Economic Development Council)
-	September 9, 2003	Letter requesting information/documents regarding hazardous substances released by Bishop Tube from Bruce Beitler (PADEP) to Bishop Tube (3 Addresses)
-	September 9, 2003	Letter requesting information/documents regarding hazardous substances released by Bishop Tube from Bruce Beitler (PADEP) to Whittaker Corporation
-	September 9, 2003	Letter requesting information/documents regarding hazardous substances released by Bishop Tube from Bruce Beitler (PADEP) to Johnson-Matthey, Inc.
-	October 31, 2003	Response to HSCA Section 503 Letter. Prepared by Mr. Robert W. Thomson, Esq., on behalf of Marcegaglia USA to Dustin Armstrong (PADEP),
-	April 14, 2004	Letter referencing Change Order #18, from Douglas Cordelli (PADEP) to Raymond Wattras (Baker Environmental)
-	August 3, 2004	Letter referencing Change Order #19, from Douglas Cordelli (PADEP) to Raymond Wattras (Baker Environmental)
-	September 10, 2004	Cover letter for CD-ROM containing Phase III Groundwater Characterization report, from Dustin Armstrong (PADEP) to Karen Stamy (Norfolk Southern Corporation), September 10, 2004, enclosure not present
-	October 13, 2004	Letter referencing Draft indoor air sampling investigation and groundwater monitoring work plan/cost estimate, from Dustin Armstrong (PADEP) to Mark Ios (Michael Baker Jr)
-	November 8, 2004	Memo referencing Work Plan/Cost Proposal, from Stephan Sinding (PADEP) to Douglas Cordelli (PADEP)
-	February 10, 2006	Letter of Requisition for Contractual Services from Ryan Kostival (PADEP) to Victor Valez (Weston Solutions Inc.)
-	February 10, 2006	Letter referencing new assignment of bishop tube site, from Ryan Kostival (PADEP) to Victor Valez (Weston Solutions Inc)
-	February 16, 2006	Letter referencing initial work plan and scope of work, from Victor Valez (Weston Solutions Inc) to Dustin Armstrong (PADEP)
-	February 16, 2006	Letter proposing scope of work for Bishop Tube site from Victor Valez (Weston Solutions) to Dustin Armstrong (PADEP)
-	March 7, 2006	Letter referencing "Bishop Tube site /Initial Work Plan and Cost Estimate" from Ryan Kostival (PADEP) to Victor Valez (Weston Solutions Inc.)
-	March 7, 2006	Letter referencing not-to-exceed budget, from Ryan Kostival (PADEP) to Victor Valez (Weston Solutions inc)
-	March 30, 2006	Letter referencing draft feasibility study and groundwater monitoring work plan, from Dustin Armstrong (PADEP) to Matthew Maloney (Baker Environmental)
-	April 10, 2006	Letter referencing SVE/AS Pilot Study Summary reports, from Dustin Armstrong (PADEP) to Gerry Kirkpatrick (Environmental Standards)
-	May 1, 2006	Memo referencing AS/SVE Design from Dustin Armstrong (PADEP) to George Horvat (PADEP)
-	June 9, 2006	Letter referencing AS/SVE Remediation System Design Report Comments, from Dustin Armstrong (PADEP) to Gerry Kirkpatrick (Environmental Standards)
-	July 31, 2006	Cover letter for CD-ROM containing Baker Phase III Groundwater Report, from Dustin Armstrong (PADEP) to Robert McPeak (Energy Solutions), enclosure not present
-	October 20, 2006	Letter referencing AS/SVE Remediation System Report Comments, from Dustin Armstrong (PADEP) to Gerry Kirkpatrick (Environmental Standards)
-	January 25, 2007	Letter referencing draft bid proposal requests for mechanical services and drilling, from Dustin Armstrong (PADEP) to Bill Freeman (Weston)
-	January 19, 2007	Cover letter for CD-Rom containing Phase I and Phase II Site Characterization Reports, from Dustin Armstrong (PADEP) to Rob Fisler (ROUX), enclosures not present
-	February 6, 2007	Letter Referencing Request for Proposal from Bill Freeman (Weston Solutions), includes Scope of work, schedule, costs, and health and safety data; Weston Subcontract Terms, Supplemental PADEP provisions; and prevailing wage rates for Chester county, PA
-	February 9, 2007	Letter requesting information/documents regarding hazardous substances released by Bishop Tube from George Horvat (PADEP) to George Pavia Esq. (Pavia & Harcourt LLP)
-	February 9, 2007	Letter requesting information/documents regarding Christiana Metals Corp's ownership of Bishop Tubes, from Lauren Rosen (Ass Council, PADEP) to George Pavia Esq. (Pavia & Harcourt LLP)
-	February 12, 2007	Letter with Request for Proposal for drilling from Dustin Armstrong (PADEP) to Gerry Kirkpatrick (Environmental Standards Inc.), enclosure not present
-	February 16, 2007	Letter with Annual Monitoring Well Audit, from Dustin Armstrong to Nanette Morrone (Chester County Health Department)
-	February 22, 2007	Cover letter for CD-ROM containing Final Site Characterization report from Dustin Armstrong, enclosure not present

-	March 2, 2007	~ To Gregory Martin (Roux), Robert McPeak Jr. (Energy Solutions), Terry Woodman (Manager, East Whiteland Township) E-Mail referencing subcontractor approval from George Hartenstein (PADEP) to Dustin Armstrong (PADEP)
-	March 5, 2007	Letter referencing Change Order #5 from Ryan Kostival (PADEP) to Bill Freeman (Weston) ~ To William Reichart (Reichart Drilling), Joe Mehalick (Eichelbergers), Jim Duffy (ECDI)
-	April 10, 2007	Letter with copy of check for well permits, from Dustin Armstrong (PADEP) to Penny Martin (Eichelbergers, Inc.)
-	May 11, 2007	Letter referencing Bishop Tube Clean-up funding from John Mott (Chairman East Whiteland Township) to Representative Duane Milne
-	May 11, 2007	Letter referencing Bishop Tube Clean-up funding from John Mott (Chairman East Whiteland Township) to Senator Andrew Dinniman
-	May 17, 2007	Letter Confirming support of clean-up of bishop tube site from Senator Andrew Dinniman to George Horvat
-	June 1, 2007	Letter of thanks for support of clean-up of bishop tube site from George Horvat (PADEP) to Senator Andrew Dinniman
-	September 10, 2007	Letters in response to Public comments on HSCA site from Dustin Armstrong
-	December 17, 2007	E-Mail between Stephen Bower (Environmental Standards) and Dustin Armstrong (PADEP) referencing O&M draft ~ To Robert Thomson, Delores Kash, Larry and Angela Bohn, Keith Hartman, Kenneth Leasa, John Mott, Michael Picarella, Brough Richey, and Mark Tillman
-	February 15, 2008	Letter referencing use of TCE by Bishop Tube, from Lauren Rosen (Ass. Council, PADEP) to Robert Thomson Esq. (Babst, Calland, Clements, and Zomnir)
-	July 12, 2008	Letter referencing Change Order #8, from Patricia Rickard (PADEP) to Raymond Watras (Baker Environmental)
-	Unknown	E-Mail referencing subcontractor approval, from Dustin Armstrong (PADEP) to Patricia Rickard (PADEP)

Permit Information

-	August 10, 1971	Application for permit for solid waste disposal or for processing facilities no. 300044
-	July 10, 1986	Status of Permit Applications Form permit no. PAD081868309
-	July 18, 1986	Status of Permit Applications Form permit no. PAD081868309
-	July 21, 1986	Notice of Violation permit no. PAD081868309, letter from Brian Boyd (PADER) to Miers Johnson (Bishop Tube)
-	August 6, 1986	Notice of Violation permit no. PAD081868309, letter from Brian Boyd (PADER) to Miers Johnson (Bishop Tube)
-	September 24, 1986	Hazardous Waste Inspection report for permit no. PAD081868309
-	September 25, 1986	Notice of Violation permit no. PAD081868309, letter from Carol Kurtz (PADER) to David Moleton (Bishop Tube)
-	December 2, 1986	Hazardous Waste Inspection report for permit no. PAD081868309
-	January 13, 1988	EPA Application for Permit to Discharge Wastewater, EPA ID No. PAD 081868309
-	March 8, 1988	Hazardous Waste Inspection report for permit no. PAD081868309
-	March 11, 1988	Notice of Violation permit no. PAD081868309, letter from Brian Boyd (PADER) to David Moleton (Bishop Tube)
-	June 15, 1988	Hazardous Waste Inspection report for permit no. PAD081868309
-	June 28, 1988	Notice of Violation permit no. PAD081868309, letter from Brian Boyd (PADER) to David Moleton (Bishop Tube)
-	October 17, 1988	Hazardous Waste Inspection report for permit no. PAD081868309
-	March 4, 1991	Revocation of Wastewater management permit no 300044, letter from Wayne Lynn(PADER) to Russell Levering (Bishop Tube)
-	March 8, 1991	Notice of Violation permit no. PAD081868309, letter from Paul Panek (PADER) to Russell Levering (Bishop Tube)
-	June 5, 1991	Hazardous Waste Inspection report for permit no. PAD081868309
-	November 5, 1991	Hazardous Waste Inspection report for permit no. PAD081868309
-	November 19, 1991	Hazardous Waste Inspection report for permit no. PAD081868309
-	March 31, 1994	Semi Annual Inspection Verification Report for permit no PAD081868309
-	1994	Toxic Chemical Release Inventory Reporting Form - Form R - (Chromium) for permit no. PAD081868309
-	1994	Toxic Chemical Release Inventory Reporting Form - Form R - (Manganese) for permit no. PAD081868309
-	1994	Toxic Chemical Release Inventory Reporting Form - Form R - (Nickel) for permit no. PAD081868309
-	1997	Toxic Chemical Release Inventory Reporting Form - Form R - (Chromium) for permit no. PAD081868309
-	1997	Toxic Chemical Release Inventory Reporting Form - Form R - (Manganese) for permit no. PAD081868309
-	1997	Toxic Chemical Release Inventory Reporting Form - Form R - (Nickel) for permit no. PAD081868309
-	1996	Toxic Chemical Release Inventory Reporting Form - Form R - (Chromium) for permit no. PAD081868309
-	1996	Toxic Chemical Release Inventory Reporting Form - Form R - (Manganese) for permit no. PAD081868309
-	1996	Toxic Chemical Release Inventory Reporting Form - Form R - (Nickel) for permit no. PAD081868309

- 1995 Toxic Chemical Release Inventory Reporting Form - Form R - (Chromium) for permit no. PAD081868309
- 1995 Toxic Chemical Release Inventory Reporting Form - Form R - (Manganese) for permit no. PAD081868309
- 1995 Toxic Chemical Release Inventory Reporting Form - Form R - (Nickel) for permit no. PAD081868309
- 1998 Toxic Chemical Release Inventory Reporting Form - Form R - (Chromium) for permit no. PAD081868309
- 1998 Toxic Chemical Release Inventory Reporting Form - Form R - (Manganese) for permit no. PAD081868309
- 1998 Toxic Chemical Release Inventory Reporting Form - Form R - (Nickel) for permit no. PAD081868309
- May 12, 1999 South Carolina Department of Health and Environmental Control, Uniform Hazardous Waste Manifest for permit no. PAD081868309
- May 12, 1999 Uniform Hazardous Waste manifest Form for permit no. PAD081868309

Water Management - NPDES

Application/Permit

- September 7, 1988 NPDES Permit Amendment Letter from BCM to Joseph Feola (Regional Water Quality Manager PADEP)
- March 20, 1989 Application for NPDES Permit - New and Existing Industrial Discharges, Permit No. PA0013641
- June 15, 1992 Application for Transfer of Permit, dated June 15, 1992 (Permit No. 0013641).
- September 30, 1992 Notification Letter stating BS intends to apply for a NPDES permit, to Local Emergency Planning Committee (County of Chester) from Russell Levering (Bishop Tube)
- September 30, 1992 Notification Letter stating BS intends to apply for a NPDES permit, to East Whiteland Township (County of Chester) from Russell Levering (Bishop Tube)
- March 22, 1993 NPDES Permit Letter from Russell Levering (Bishop Tube Plant Engineer) to Joseph Feola (regional Water Quality Manager PADEP)
- September 24, 1993 Application for NPDES Permit - New and Existing Industrial Discharges, Permit No. PA0013641
- September 27, 1993 Application Acceptance Letter NPDES Application No. PA0013641 - letter dated December 7, 1993 to Russell Levering (Bishop Tube) from Joseph Feola (Water Management, PADEP)
- September 27, 1993 Clarification Letter - NPDES Permit Application (PA 0013641) - letter from Russell Leverying (Bishop Tube) to Joseph Feola (Water Management, PADEP), requesting change of term "treated industrial wastewaters" to "non-contact cooling water".
- November 24, 1993 Simplified Application for NPDES Permit for Discharges of Storm Water Associated with Industrial Activities, PADEP received
- December 7, 1993 Letter referencing NPDES discharge from Joseph Feola (PADER) to Russell Levering (Bishop Tube)
- January 21, 1994 Flow of Non-contact cooling water to NPDES discharge
- June 7, 1994 Piping System to DPDES discharge
- June 24, 1994 Application for NPDES Permit - New and Existing Industrial Discharges, Permit No. PA0013641
- January 25, 1995 Acceptance of Preparedness, Prevention, and Contingency Plan, BCM Engineers, Inc., June 1994, 1995 to Russell Levering (Bishop Tube) from Charles Rehn (Water Management, PADEP). Report added to NPDES file.
- February 1995 NDPEs Permit Amendment, letter from Charles Rehn (Water Management, PADEP) to Russell Levering (Bishop Tube), referenced permit, permit amendment, master discharge monitoring report, and general permit PAG-3 are not included

Reports/Inspections

- January 1988 Letter referencing NPDES permit no. PA0013641 renewal and pollution report
- March 20, 1989 NPDES permit PA0013641 renewal application
- July 8, 1989 DMR, monitoring period from July 1, 1989 to July 31, 1989.
- Nov. - Dec. 1993 Non-Storm water discharge assessment and Certification
- February 15, 1994 Letter referencing Preparedness, Prevention and Contingency Plan to Russell Levering (Plant Engineer BS) from JoAnn Dolchak (Water Management PADER)
- May 12, 1994 NPDES Compliance Inspection Report- Permit No. PA0031641, cited DMRs submitted late and not including all information (i.e. flow measured), NPDES permit and PA Clean Streams law violations
- June 1994 Internal review and recommendations, January 1995, Preparedness, Prevention, and Contingency Plan, BCM Engineers, Inc., report has been reviewed and meets PPC Plan requirements.
- August 19, 1994 Letter request revision submittal of the Preparedness, Prevention, and Contingency Plan, to Russell Levering (Bishop Tube) from JoAnn Dolchak (Water Management, PADEP)
- October 21, 1994 Letter referencing Preparedness, Prevention and Contingency Plan to Russell Levering (Plant Engineer BS) from JoAnn Dolchak (Water Management PADER)

-	January 6, 1995	Letter referencing Preparedness, Prevention and Contingency Plan to JoAnn Dolchak (Water Management PADER) from Henry Alexander (BCM Inc.)
-	December 5, 1996	Notice of Violation of Permit No. PA0013641, letter from JoAnn Dolchak (PADEP) to Gianclaudio Conti (Plant Manger BS)
-	April 19, 1999	Letter referencing water discharge permit for month of March 1999, final submission of NPDES report as facility is closed, to PADEP from F Bruce Johnson (Bishop Tube), referenced permit was not included
-	July 8, 1999	NOV of Monitoring and Reporting Section of NPDES Permit PA, 0013641, letter to Kent Lulewich (Bishop Tube) from JoAnn Dolchak (Water Management,
-	August 25, 1999	NPDES Compliance Inspection Report - Permit No. PA0031641, Outfall and floor drains have been sealed. NPDES permit can now be cancelled.
-	Unknown	Memo - water main broke releasing thousands of gallons of water direct from water company. 14,400 g of this water discharged to NPDES 001 outfall at creek.
-	Unknown	Excerpts from a report, field notes, pertaining to application and draft permit [NPDES]

Data

-	November 15, 1982	Water and Waste Water Analytical Results
-	December 9, 1982	Water and Waste Water Analytical Results
-	March 17, 1983	Water and Waste Water Analytical Results
-	May 4, 1983	Water and Waste Water Analytical Results
-	April - May 1988	Memo - Fluoride concentrations for May 16, April 25, May 2, and May 9, 1988
-	September 11, 1989	Wastewater sample analytical reports - AGES Laboratories
-	April 4, 1990	Fourth Quarter 1989 NPDES Groundwater Monitoring results - letter from BCM to D. Craig Fuller (Christiana Metals), includes data packages and tables, COC not included
-	April 27, 1990	First Quarter 1990 NPDES Groundwater Monitoring results - letter from BCM to D. Craig Fuller (Christiana Metals), includes data package and tables but does not include COC

Other

Misc

-	June 17, 1981	Meeting notes from technical fact finding meeting held on June 17, 1981
-	May 29, 1985	Figure presenting water flow to 001 discharge point
-	February 1988	Development of Instream Water Quality Criteria
-	Nov. - Dec. 1993	Non-Storm Water Discharge Assessment and Certification, Worksheet #5, evaluations completed by Russel Levering (Bishop Tube)
-	1994-1996	Technical Support Document For US EPA Form R's Required Under Sara Title III, Section 313, Enviroplan Consulting
-	January 21, 1994	NPDES Permit Line Drawing, letter from Russell Levering (Bishop Tube) to James Newbold (Bureau of Water Quality, PADEP)
-	June 7, 1994	Plant layout showing piping system for the non-contact cooling water to the NPDES discharge, letter from Russell Levering (Bishop Tube) to Pravin Patel (Water Management, PADEP)
-	March 25, 1998	Technical Support Document For US EPA Form R's Required Under Sara Title III, Section 313, Enviroplan Consulting
-	May 18, 1999	Certificate of Recycling/Materials Re-Use, OMNI
-	February 2003	Site Map Bishop Tube Site, Michael Baker Jr. Inc.
-	March 17, 2005	Consent Order and Agreement and First Amendment to Consent Order and Agreement, PADEP
-	January 26, 2006	Requisition for Contractual Services
-	Nov. 2006- August 2007	DEP Daily Activity Reports
-	December 18, 2006	Listing, History and Map of Bishop Tube Area Sites
-	December 18, 2006	Proof of Publication Notice
-	Dec. 2006-March 2007	Administrative Record Docket Prompt Interim Response
-	January 30, 2007	Notes from HSCA Public Hearing Bishop Tube Site
-	April 9-11, 2007	Monitoring Well Permit Applications, Dustin Armstrong (PADEP)
-	September 5, 2007	Commonwealth of Pennsylvania Statement of Decision, PADEP
-	Unknown	Bishop Tube Invoices
-	Unknown	Gemini Disposal Services Receipts - Date Unknown due to copying error
-	Unknown	Soil Analytical results

Additional Docs

-	January 3, 1972	Sketch of facility (bates number 01742647)
-	April 3, 1973	Sketch of facility (bates number 01742665)
-	April 9, 1973	Engineering Report, Gilbert Associates
-	June 3, 1981	US Department of Interior sampling results
-	~1981	Excerpts from Resource Management Int'l, Inc. Report
-	~1981	Excerpts from Betz, Converse, Murdoch, Inc. Report
-	December 1982	Partial Report, Title and Author Unknown
-	December 15, 1983	TCE Storage Tank Containment Drawing
-	May 15, 1986	Letter from Lawrence Lusk (PADER) to Miers Johnson (Bishop Tube) re: comments on TCE secondary containment system
-	June 29, 1990	PADER Receipt of Storage Tank Registration
-	January 13, 1993	Storage System Report Form
-	May 17, 2000	Letter from Richard Roeder (Alloy Steel) to Bruce Beitler (PADEP) re: Bankruptcy of Alloy Steel Corporation
-	Unknown	Malcolm Pirnie Figure 2-1 Direction of Groundwater Flow in the Valley Creek Basin
-	Unknown	Malcolm Pirnie Figure 2-2 Wells in the Surrounding Area of the Bishop Tube Site
-	Unknown	Malcolm Pirnie Figure 2-3 Impacted Wells and Potential Contamination Sources
-	Unknown	Malcolm Pirnie Figure 2-4 Areas of Concern
-	Unknown	Bulk Tank and Drum Locations Drawing
-	Unknown	Bulk Tank and Drum Locations Drawing
-	Unknown	Excerpts from Gilbert/Commonwealth Report
-	June 21, 2002	Phase II Groundwater Investigation. Prepared by Baker Environmental, Inc.
-	June 30, 2003	Phase III Supplemental Soil Investigation Report. Prepared by Baker Environmental, Inc
-	July 2, 2004	Phase III Supplemental Groundwater Investigation Report. Prepared by Baker Environmental, Inc.
-	November 20, 2006	Final Remedial Design Report Air Sparging-Soil Vapor Extraction - Former Bishop Property. Prepared by Environmental Standards, Inc.. on behalf of Constitution Drive Partners, L.P.

Mobil Bulk Oil Facility - 8 South Malin Road, Frazer, Malvern Borough, Chester County, PA, 19355

The facility has the following IDs:

Primary SIC Code = 5171 Petroleum Bulk Stations and Terminals

Primary Facility Duns = 112021857

Primary NPDES ID = PA0053635

Primary RCRA ID = PAD981037989

Site-Related Documents

Groundwater Investigation, Pollution Enterprises, Inc., June 15, 1987.

Letter to Mr Gallante (Public Works Director, Frazier) from Pollution Enterprises, Inc. dated 10/14/1988 Re: Certification of Notification Application for NPDES Permit for Mobil Oil Corporation, Malvern Terminal, Hood Road, Malvern PA

Letter - Review of PEI Report 10/7/88 Pump Test, letter dated 11/18/1988

GES, Inc. Summary of Air Stripping Tower Design (Date Unknown, assume circa 1988/1989)

PADEP Water Quality Management Internal Review and Recommendations, Application PA0053287, ER-SWQ-43 Rev 06/76, March 1989

Quarterly Groundwater Monitoring and Remedial System Update Report, GES, 06/01/1992

NOV Letter dated May 26, 1994 to George Shealey (Mobil) from Richard Breitenstein (PADEP Water Quality Specialist) Re: Mobil Oil Corporation Malvern Terminal NPDES No. PA 0053635, WQ/IW Correspondence East Whiteland Township, Chester County

Letter date 06/09/1994 to Richard Breitenstein (PADEP Water Management Program) from Joyce Shirazi (Mobil) Re: Mobil's Malvern Terminal NPDES #PA0053635 Notice of Violation

NPDES Compliance Inspection Report Dated 12/18/1995, ER-SWQ-168 Rev 9/87

NPDES Compliance Inspection Report Dated 10/23/1996, ER-BWQ-168 Rev 9/87

Groundwater Monitoring Report, January 1, 1997 through March 31, 1997, Land Tech Remedial Inc. May 13, 1997

Letter dated 12/4/1997 to Charlie Kominas (Mobil) from Kathy Lyn King (PADEP Environmental Cleanup) Re: ECP Storage Tank Program, Mobile Terminal Station No. 37-049, 8 South Maling Road, Facility ID No 15-11091, East Whiteland Township, Chester County

Renewal Application for NPDES Permit # PA000053635, August 25, 2000

National Pollutant Discharge Elimination System New and Existing Industrial Discharges, NPDES Permit Nos. PA0053635 and PA0053287, August 30, 2000.

Authorization to Discharge Under the National Pollution Discharge Elimination System, NPDES Permit No. 0053635. Permit issued 03/29/2001, effective 04/01/2001, expiration 03/29/2006

General Information Form - Authorization Application, 8 00-OM-IT0001 Rev 06/07/2002

3Q2004 Quarterly Remedial Action Progress Report, GES, 10/20/2004 (Pages 1 and 2)

National Pollutant Discharge Elimination System Application for Permit to Discharge Industrial Wastewater, October 2005, 3800-PM-WSWM0008b Rev 4/2005

Permit Application Evaluation Form, 11/4/2005

Title V State Operating Permit, Issued 12/9/2005, effective 1/1/2006, expiration 12/31/2010

Mobil Bulk Oil Facility - 8 South Malin Road, Frazer, Malvern Borough, Chester County, PA, 19355

The facility has the following IDs:

Primary SIC Code = 5171 Petroleum Bulk Stations and Terminals

Primary Facility Duns = 112021857

Primary NPDES ID = PA0053635

Primary RCRA ID = PAD981037989

Site-Related Documents

PADEP Water Management Program Internal Review, Recommendations, & Fact Sheet, Application PA0053635, ER-BWQ-43 Rev 10/95, June 2006

Email from Stephanie Siegfried (Buckeye) to Paul Kallus (PADEP NPDES Permits Section, Water Management), 06/01/2006 and Laboratory Data from O/W Separator Effluent, up and down stream surface water samples from Little Valley Creek, cistern; 04/2006

Email from Dustin Armstrong to Paul Kallus (PADEP NPDES Permits Section, Water Management), 06/02/2006

Authorization to Discharge Under the National Pollution Discharge Elimination System, Discharge Requirements for Industrial Wastewater Facilities, NPDES Permit No. PA0053635, issued 06/12/2006, effective 07/01/2006, expiration 06/30/2011. 3800-PM-WSWM001

Title V Annual Compliance Certification Review Summary, Permit # 15-00105, Reporting Period 12/1/06-11/30/07, December 13, 2007

1Q2007 Remedial Action Progress Report, Groundwater & Environmental Services, Inc., May 29, 2007

National Pollutant Discharge Elimination System Discharge Monitoring Report (DMR), Ammendment No. 1, Permit No. PA0053635, Monitoring Period 04/01/07 to 06/30/07

Sunoco Malvern Terminal - 41 Malin Road, Malvern Borough, East Whiteland Township, Chester County, PA, 19355

The facility has the following IDs:

Primary Facility Duns = 0019-9455

Primary Facility ID = 15-40354

Site-Related Documents

Site Assessment Report, Handex

GORE-SORBER Screening Survey Final Report, Gore & Associates, Inc

First Quarter 1995 Quarterly Update Report, Handex

Second Quarter 1995 Quarterly Update Report, Handex

Third Quarter 1995 Quarterly Update Report, Handex

Fourth Quarter 1995 Quarterly Update Report, Handex

First Quarter 1996 Quarterly Update Report, Handex

Second Quarter 1996 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Third Quarter 1996 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Fourth Quarter 1996 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

First Quarter 1997 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Second Quarter 1997 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Fourth Quarter 1997 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Second Quarter 1998 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Semi-Annual Update Report, Mulry and Cresswell Environmental, Inc

First Quarter 1999 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Second Quarter 1999 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Third Quarter 1999 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Fourth Quarter 1999 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

First Quarter 2000 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Second Quarter 2000 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Third Quarter 2000 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Fourth Quarter 2000 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

First Quarter 2001 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Second Quarter 2001 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Third Quarter 2001 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Fourth Quarter 2001 Quarterly Update Report, Mulry and Cresswell Environmental, Inc

Sunoco Malvern Terminal - 41 Malin Road, Malvern Borough, East Whiteland Township, Chester County, PA, 19355

The facility has the following IDs:

Primary Facility Duns = 0019-9455

Primary Facility ID = 15-40354

Site-Related Documents

First Quarter 2002 Update Report, Mulry and Cresswell Environmental, Inc
Second Quarter 2002 Update Report, Mulry and Cresswell Environmental, Inc
Third Quarter 2002 Update Report, Mulry and Cresswell Environmental, Inc
Fourth Quarter 2002 Update Report, Mulry and Cresswell Environmental, Inc
Second Quarter 2003 Update Report, Mulry and Cresswell Environmental, Inc
Third Quarter 2003 Site Summary Report, Groundwater & Environmental Services, Inc.
Site Characterization Report, Groundwater & Environmental Services, Inc.
Remedial Action Plan, Groundwater & Environmental Services, Inc.
First Quarter 2006 Remedial Action Progress Report, Groundwater & Environmental Services, Inc.
Second Quarter 2006 Remedial Action Progress Report, Groundwater & Environmental Services, Inc.
Third Quarter 2006 Remedial Action Progress Report, Aquaterra Technologies, Inc.
Second Quarter 2007 Remedial Action Progress Report, Aquaterra Technologies, Inc.
Third Quarter 2007 Remedial Action Progress Report, Aquaterra Technologies, Inc.
Fourth Quarter 2007 Remedial Action Progress Report, Aquaterra Technologies, Inc.
First Quarter 2008 Remedial Action Progress Report, Aquaterra Technologies, Inc.
Second Quarter 2008 Remedial Action Progress Report, Aquaterra Technologies, Inc.
Third Quarter 2008 Remedial Action Progress Report, Aquaterra Technologies, Inc.
Fourth Quarter 2008 Remedial Action Progress Report, Aquaterra Technologies, Inc.
First Quarter 2009 Remedial Action Progress Report, Aquaterra Technologies, Inc.
Second Quarter 2009 Remedial Action Progress Report, Aquaterra Technologies, Inc.
Third Quarter 2009 Remedial Action Progress Report, Aquaterra Technologies, Inc.
First Quarter 2010 Update Report, Aquaterra Technologies, Inc.
First Quarter 2010 Remedial Action Progress Report, Aquaterra Technologies, Inc.
Fourth Quarter 2009 Remedial Action Progress Report, Aquaterra Technologies, Inc.
Second Quarter 2010 Remedial Action Progress Report, Aquaterra Technologies, Inc.

ATTACHMENT B

**ROUX ASSOCIATES, INC., LETTER TO ROBERT H. HELVERSON
RE: COMMENTS ON ATSDR'S JULY 16, 2008 HEALTH CONSULTATION,
BISHOP TUBE SITE, DECEMBER 17, 2008**

ENVIRONMENTAL CONSULTING & MANAGEMENT
ROUX ASSOCIATES INC



1222 FOREST PARKWAY, SUITE 190
WEST DEPTFORD, NEW JERSEY 08066
856 423-8800 FAX 856 423-3220

December 17, 2008

Robert H. Helverson
Regional Representative, Region III
Agency for Toxic Substances and Disease Registry
Department of Health and Human Services
1650 Arch Street (3HS00)
Philadelphia, PA 19103

Re: Comments on ATSDR's July 16, 2008 Health Consultation, Bishop Tube Site, East
Whiteland Township, Chester County, Pennsylvania

Dear Mr. Helverson:

Roux Associates, on behalf of Johnson Matthey, has reviewed the Final July 16, 2008 Health Consultation for the Bishop Tube Site, East Whiteland Township, Chester County, Pennsylvania ("Report"). Johnson Matthey is an interested party as it has recently signed a Consent Order with the Pennsylvania Department of Environmental Protection ("PADEP") to conduct further studies at the Bishop Tube Site ("Site").

In presenting these comments, Roux Associates recognizes that the Agency for Toxic Substances and Disease Registry ("ATSDR") had to compile and interpret extensive data contained within numerous documents. We also recognize that all available information may not have been provided to or available to ATSDR at the time of its health consultation. Should you be interested, Roux Associates would be pleased to meet with you to discuss the comments presented below.

1.0 Introduction

The primary objective of ATSDR's health consultation was to evaluate potential exposures of adults and children who might come in contact with Little Valley Creek or one of the several natural springs located in the vicinity of the Site. In addition, ATSDR also a) evaluated other potential exposure pathways, b) evaluated community concerns regarding a presumed "cancer cluster" in the vicinity of the Site and c) provided commentary regarding historical worker exposures.

In our view, this Report is flawed in several respects and should not have been released in its current form by ATSDR as a "Final" document.¹ A significant concern is that the presumed audience for this Report (the public who live and work in the vicinity of the Bishop Tube Site and the public officials that requested the consultation) may misinterpret it because it fails to clearly and concisely summarize its key conclusions. Furthermore, the Report a) uses exposure pathways that do not exist in its exposure assessments, b) contains factually inaccurate or contradictory statements, c) ignores some important data, and d) makes land use assumptions that do not comport with reality.

¹ Neither Johnson Matthey nor Roux Associates was provided a draft version of this report; therefore comments were not provided prior to finalization of the report.

On behalf of Johnson Matthey, we request that ATSDR consider our comments, modify or amend the Report as appropriate and include our comments in the public record for this Site. Moreover, to the extent ATSDR is verbally communicating its findings and conclusions to the public or to public officials, we request that the substance of our comments also be conveyed to these parties. Finally, to the extent the current Report cannot be revised or amended by ATSDR at this time, we request that these comments (and any future data that is collected) be addressed in a future report that supersedes or in an addendum that amends the current Report.

2.0 Summary of Key Conclusions and Areas of General Agreement

The Report presents a number of findings and conclusions of potential interest to the public, with which Roux generally agrees. However, given their significance, clear communication is critical. Some points that could have been communicated more effectively are:

1) No Current Public Health Hazard - ATSDR concludes that there is No Apparent Public Health Hazard for any current, completed exposure pathways associated with the Site. In addition, ATSDR concludes that, "based on the levels detected and the exposure pathways identified, we do not expect adverse health effects to result from children's exposure to TCE and other VOCs". Further, Section 5.0 notes that "Off-site exposures to high concentrations of these contaminants [referring to the onsite conditions] are not expected at this time. ATSDR does not expect adverse effects due to current or past exposures to these chemicals."

These conclusions are important. However, they are masked in the ATSDR Report, in large part due to the lengthy theoretical discussion in the body of the Report. Furthermore, we believe it is important to also communicate that adverse effects are unlikely in the future, given reasonable assumptions regarding future conditions in the vicinity of the Site i.e., continued availability of public water supply and continued land use similar to current land use.

2) No Evidence of a "Cancer Cluster" - While some community members voiced concern to ATSDR about the presumed prevalence of cancer in the neighborhood, ATSDR found no evidence of a cancer cluster in the vicinity of the Site. ATSDR includes an assessment of cancer outcomes within the proximate neighborhood of the Site from Pennsylvania Department of Health records and reports that "state epidemiologists did not find increased cancer rates in areas surrounding the Site as compared to overall statewide cancer rates". Yet this important conclusion was not mentioned in Section 5.0 of the Report. This conclusion should be clearly communicated by ATSDR to those who voiced the concern and to the general public.

3) No Current Drinking Water Well Exposure - The Report correctly documents that the area in the vicinity of the Site is serviced by a public water supply. ATSDR was presumably advised that PADEP thoroughly investigated the area surrounding the Site and found only one property using a private well for its drinking water. That well, as reported by ATSDR, has a whole-house carbon treatment system that is sampled and maintained by PADEP. The absence of any other private drinking water wells - which effectively negates any drinking water risk - is an important finding that should be clearly communicated by ATSDR.

4) Limited Potential for Drinking Water Exposure in the Past - The ATSDR Report also discusses potential exposures to contaminated drinking water from private supply wells used in the past, finding that there is no data to support any conclusions regarding potential past exposure to chlorinated volatile organic compounds (CVOCs) via this pathway. While it is true that there is no known data regarding CVOCs in groundwater during the 1950s, 1960s and 1970s, the more important question is whether any private supply wells were actually in

use. Historical aerial photographs reveal that nearly the entire area comprising AOC-1 and AOC-2 was farmland or wooded until it was developed into residential neighborhoods in the early 1950s or later. These neighborhoods are currently served by public water, and are believed to have been served by public water from the time they were constructed. As a result, the extensive discussion in the Report regarding past private supply well use should be explicitly limited to the few historic farmhouses that may have had private wells – if they did not connect to the public water supply when it first became available. It should be clearly stated that most homes were on public water after 1951 (when the Bishop Tube facility was constructed) and therefore the possibility of past exposure to CVOCs from well water is very small. This is an important finding and should be more clearly communicated by ATSDR.

5) No Current Drinking Water Exposure via Surface Water or Springs - The Report notes that Little Valley Creek and several natural springs are present in the general vicinity of the Site. PADEP had investigated the area and found no evidence that Little Valley Creek or any of the identified springs are used as a drinking water source. ATSDR found no contrary information. In fact, the Report states “[t]he residential community within AOC 1 is served by public water and ATSDR is not aware of any residents using Little Valley Creek or any of the natural springs in the area as a primary drinking water source”. These findings should be clearly communicated by ATSDR to the public and public officials.

6) Onsite Conditions Are Well-Defined - The Report notes that “extensive subsurface studies and tests of the site and surroundings by PADEP have resulted in a well-defined geology and hydrogeology.” Although ATSDR did not utilize all available data in conducting its consultation, ATSDR was clearly aware that multiple assessments in multiple phases for all media of concern have been conducted at the Site. These studies were completed by PADEP itself, PADEP’s contractors, USEPA, and contractors for prior owners and operators. Significant data has been collected and the Site itself has been repeatedly and thoroughly analyzed. This conclusion should be clearly communicated by ATSDR to the general public.

7) Off-Site Conditions Require Further Study - In contrast to the onsite characterization, off-site characterization has been very limited, as the Report acknowledges. Despite the paucity of data characterizing off-site geology, hydrogeology and the fate and transport of contaminants (which paucity Johnson Matthey, under PADEP’s oversight, will shortly be addressing), ATSDR has inappropriately assumed that all reported observations of CVOCs, regardless of media or location, originate from the Site. Such assumptions are not scientifically valid; offsite conditions require further study. At a minimum, ATSDR should explicitly acknowledge that its assumptions regarding the source(s) and fate and transport of CVOCs in the subsurface are preliminary assumptions only, not supported by data.

8) Off-Site Contaminant Sources Require Further Study - The Report did not consider the possible contribution of CVOCs from sources other than the Site. Further investigation of subsurface conditions and evaluation of other potential sources are necessary before valid conclusions can be drawn regarding the nature and extent of CVOCs migrating from the Site. ATSDR should clearly communicate to the public and public officials that statements in the Report regarding off-site CVOCs originating from the Site are presumptions only, not supported by actual data.

9) Off-Site Conditions Will Be Investigated Pursuant to Consent Order - ATSDR concludes that additional data is needed. We concur. Johnson Matthey signed a Consent Order in August 2008, and will be investigating off-site conditions pursuant to a scope of work to be prepared with input from and subject to the approval of PADEP. The work to be conducted will include:

- 1) Characterization of the following media and pathways:
 - a. Overburden groundwater;
 - b. Bedrock groundwater;
 - c. Vapor intrusion pathway downgradient of the property;
 - d. Groundwater to surface water pathway;
- 2) Performance of a risk assessment; and
- 3) Preparation of a feasibility study, if necessary.

It is anticipated that PADEP-approved work plans will include those studies necessary to address data gaps identified by ATSDR. In its communications with the public, ATSDR should clearly communicate that these additional investigations will be conducted, under PADEP oversight. ATSDR should also reiterate its commitment to assess additional data and information as it becomes available and revise its conclusions as appropriate.

3.0 Summary of Key Areas of Disagreement

While Roux agrees with many of the findings and conclusions in the Report (as discussed above), we find that other aspects of the Report are flawed and certain sections should be revised or removed entirely. The most significant areas of concern are described below.

1) The ATSDR Report Should Not Have Addressed Historical Worker Exposures. Commentary regarding decades-past worker exposure levels and health risks should not have been included in the ATSDR Report. ATSDR's guidance manual for conducting Public Health Assessments states: "ATSDR's mandate does not include the health of workers - this issue is mainly the responsibility of the Occupational Safety and Health Administration (OSHA) and the Centers for Disease Control and Prevention (CDC)/National Institute for Occupational Safety and Health (NIOSH). Exposures directly related to worker activities fall under the purview of these agencies. If workers request information on potential occupational hazards, whether chemical or physical, you should generally refer them to these agencies".² While we recognize that the Report was a health consultation, we nevertheless believe ATSDR overstepped its mandate.

2) ATSDR's Findings, Conclusions and Recommendations Regarding Historical Worker Exposures Are Not Supported. The Report contains commentary on past workplace exposure based upon statements from one former employee of Bishop Tube. The use of a single unsubstantiated report of health effects to derive broad conclusions regarding overall worker health exposure (which spanned several decades and likely a variety of site conditions) is inappropriate. If it were within ATSDR's charter to evaluate worker exposure, then it would have been required to conduct an industrial hygiene study, gathering all available information, evaluating its adequacy and validity, presenting findings and the uncertainty associated with those findings, and drawing only those conclusions that are scientifically valid. The ATSDR Report simply accepts statements from a single former worker as "fact" and draws conclusions. The conclusions and recommendations in the Report are without merit and should be retracted by ATSDR.

Without any factual basis, the Report concludes: "Although no specific environmental or occupational data is available for [the] specific time period of this worker's exposure, the highly contaminated soils identified in these specific work areas indicate heavy contamination

² ATSDR's Public Health Assessment Guidance Manual (obtained on the ATSDR website at <http://www.atsdr.cdc.gov/HAC/PHAmanual/toe.html>)

in the work area when the facility was in operation, which most likely resulted in very unhealthy TCE exposures for workers." ATSDR assumes that because there is significant soil contamination at the site today, all workers must have been exposed to unhealthy conditions during past decades (presumably 1951-1999) when the facility was in operation. This conclusion is flawed. ATSDR did not evaluate the different operations at the facility under the different owners between 1951 and 1999, nor investigate whether any equipment or procedures may have been in place to control employee exposures. There is no data (e.g., air monitoring results) demonstrating unhealthy work conditions at any time or at any location on the Site; nor does the Report cite any OSHA reports, data or violations to support the alleged unhealthy worker conditions. Absent data, ATSDR made no attempt to try to reconstruct by means of calculations or review of studies at similar types of plants or any other means what the unhealthy conditions were, or where, when and for how long they existed, or whether risks were the same both inside and outside the buildings, or the types of workers who may have been exposed to the assumed unhealthy conditions. Also not considered was whether any lifestyle risk factors or any exposures unrelated to Bishop Tube operations may have caused or contributed to any of the health concerns raised by the one former employee.

The "past worker exposure" conclusions are further undermined by the assumption that the presence of "highly contaminated soils" is proof of worker exposure. This assumption is also flawed. ATSDR does not know whether any former worker was ever exposed to any subsurface soil contamination at the Site. It cannot say when or how the soils became contaminated. It does not know whether the source of the contamination was inside the buildings where workers spent the majority of their time, or originated with subsurface (e.g., transfer piping beneath the floor) or external (e.g., outdoor storage in drums and a tank) features. The Report fails to mention that contaminated soils identified in recent investigations are primarily located beneath a concrete floor in the former manufacturing area, inaccessible to workers.

In summary, we believe that a) the worker health evaluation should not have been included in the Report, b) reliance on one report of alleged employee health effects is inappropriate, c) the conclusion that workers were exposed to "very unhealthy TCE exposures" is unsubstantiated, and d) the recommendation that former workers seek medical attention is unfounded. In conformity with its mandate, ATSDR should remove any discussion of worker exposures from the Report.

3) The Report Failed to Consider Important Information Regarding Vapor Intrusion Potential in AOC 2. In the "background" and "discussion" sections of the Report, ATSDR provides a detailed discussion of the findings and results of a vapor intrusion sampling event conducted by PADEP in 2005, concluding that a) the indoor air sampling results were inconclusive due to "background" interference caused by chemicals introduced into indoor air by normal household activities and b) a more extensive study was warranted. In fact, in March 2008 PADEP conducted a more extensive vapor intrusion study (to expand upon the 2005 study) that targeted the three homes presumed to have the greatest potential for exposure via the vapor intrusion pathway. Although ATSDR was aware of this study, the Report's sole reference to PADEP's March 2008 study is the statement "None of these results indicated a vapor intrusion concern for residential properties within AOC-2".

This reference to the March 2008 indoor air sampling results is inadequate. Indoor air samples were collected in March 2008 from three residences in the western portion of General Warren Village. These residences are located closest to the Site and have sumps in their basements; accordingly they were thought to have the greatest potential for vapor intrusion from subsurface contamination, as well as direct volatilization from groundwater. PADEP

analyzed indoor air in these homes for a large suite of compounds, including PCB and TCE. Twenty-six compounds were detected in indoor air in at least one of the three residences. Of the 26 compounds only three (PCE, TCE and 1,1,1-TCA) are constituents of concern at the Site. However:

- PCE was detected at a maximum concentration of 0.814 $\mu\text{g}/\text{m}^3$, almost 50 times lower than PADEP's Residential MSC of 36 $\mu\text{g}/\text{m}^3$ for PCE.
- TCE had a maximum concentration of 0.269 $\mu\text{g}/\text{m}^3$, also almost 50 times lower than PADEP's Residential MSC of 12 $\mu\text{g}/\text{m}^3$ for TCE³.
- TCA was detected in one sample at 3.0 $\mu\text{g}/\text{m}^3$, nearly 1000 times lower than PADEP's Residential MSC of 2900 $\mu\text{g}/\text{m}^3$.

PADEP also measured VOCs in outdoor air, and in the sump water collected from homes with sump water. No VOCs were detected in sump water, suggesting that there are no VOCs in shallow groundwater, and therefore no transport of VOCs from groundwater to indoor air. Moreover, an outdoor air sample had detectable levels of PCE and TCE, suggesting other sources of VOCs unrelated to groundwater or the Site.

In summary, the compounds detected in the more comprehensive March 2008 study conducted by PADEP were a) extremely low in concentration, b) far below PADEP standards, and c) consistent with typical background concentrations. Furthermore, the data do not indicate that the indoor air compounds detected during the 2008 study are present as a result of a Site-related vapor intrusion pathway.

Roux Associates requests that ATSDR conduct a more complete review of the PADEP March 2008 vapor intrusion assessment sampling for AOC-2 and revise its Report accordingly.

4) Some Exposure Assumptions and Methods Employed by ATSDR Led to a Significant Overstatement of Risk. Several assumptions and methods employed in the Report should be revised to avoid overstating potential exposures and to be consistent with available information regarding potential exposure pathways. While we recognize that the "more conservative" assumptions made by ATSDR nevertheless resulted in a finding of "No Apparent Public Health Hazard" for all current, completed exposure pathways, we are concerned that ATSDR's use of unrealistic exposure assumptions will lead the public to mistakenly conclude that such exposure pathways actually exist, thereby engendering unwarranted anxiety. Some of our concerns in this regard are discussed more fully below.

5) Little Valley Creek Should Not be Assessed as a Primary Drinking Water Source. There is no indication that Little Valley Creek has been in the past, is currently, or will be used in the future as a primary source for drinking water. Nevertheless, the Report assumes that Little Valley Creek is a primary drinking water source. ATSDR therefore assumed that an adult would ingest 2 liters of creek water per day, and that a child would ingest 1 liter of creek water per day, every day for 70 years. These assumptions are serious exaggerations of the actual exposure risk and are inappropriate. Even an accidental ingestion exposure scenario would not begin to approach the volumes of water assumed to be ingested in ATSDR's Report.

³ These likely represent background indoor air concentrations. PADEP, in its Guidance Manual (regarding vapor intrusion into buildings) identifies PCB and TCE as "having potentially higher indoor air background concentrations than the risk-based targets" (Land Recycling Program Technical Guidance Manual - Section IV.A.4. Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard. Pennsylvania Department of Environmental Protection; January 24, 2004).

In reality, surface water exposures in the vicinity of the Site are expected to be infrequent, limited to wading or splashing in the creek. Significant recreational exposure is unexpected based on the shallow depth and narrow width of the stream in the vicinity of the Site. Furthermore, Little Valley Creek runs primarily through commercial properties and generally inaccessible areas (such as between a highway and a commercial shopping center) where recreational use is unlikely. The exposure doses employed in the Report bear no resemblance to reasonable potential exposure doses in Little Valley Creek, and they should be revised accordingly.

6) Springs in the Vicinity of the Site Should Not Be Assessed as Primary Drinking Water Sources. There is no indication that the several natural springs in the vicinity of the Site have been in modern times, are currently, or will be used in the future as a primary source for drinking water. While several currently unused spring houses do exist in the vicinity of the Site, there is no evidence that these spring houses have been used as a source of drinking water since 1951⁴. Anyone previously using water obtained from springs likely discontinued this practice once public water became available.

Despite the lack of evidence of actual use, ATSDR assumed that a completed exposure pathway for spring water use exists. In Roux Associates' opinion, there is no current exposure pathway for ingestion of spring water, and ATSDR should modify the Report to identify the current exposure pathway as incomplete. Similarly, there is no evidence of a past exposure pathway for ingestion of spring water, especially in areas and during the timeframe (i.e. after 1951) when contaminated spring discharge might have been possible. Furthermore, as with its handling of Little Valley Creek, ATSDR evaluated this exposure pathway using daily exposure doses that assumed that an adult would ingest 2 liters of spring water per day, and that a child would ingest 1 liter of spring water per day, every day for 70 years. As above with respect to surface water, the exposure doses employed in the Report do not reflect reasonable potential exposures for the springs, and the Report should be revised to employ more appropriate estimated doses.

7) Evaluating Surface Water Data Against Drinking Water Standards is Inappropriate. In the Report, TCE and PCE in Little Valley Creek were assessed by comparing the maximum and mean surface water concentrations to drinking water standards. However, drinking water standards are developed based upon ingestion of 2 liters of water every day over a 70-year lifetime. The use of drinking water standards, even as comparison values, is misleading, has no bearing on the potential for a public health hazard, and may engender unwarranted concern. ATSDR's assessment of exposure pathways, exposure doses and potential public health hazards should reflect the types of exposures that are known or reasonably anticipated to occur.

8) Certain Other Exposure Assumptions and Methods Should Be Revised. A revised or amended Report should address the following flaws relating to exposure assumptions and methods.

- a) Surface water and spring water exposures are dissimilar, and should not be evaluated in the same manner. Tables 6, 7 and 8 should be revised accordingly.
- b) Table 8 identifies some currently incomplete pathways as complete. For example, the table shows ingestion of contaminated groundwater as a complete pathway. This

⁴ The primary historic use of spring houses in Pennsylvania was to preserve perishables. Spring houses were important for dairy farms in the 18th and 19th centuries and were locations where milk was stored, cream was separated, and butter was churned.

pathway is incomplete, since local residents use a public water supply (or in one case, treated water), not untreated groundwater.

- c) Table 7 presents assumed exposure doses, and notes that doubling the ingestion exposure dose can determine overall exposure, including inhalation and ingestion. This is not a generally accepted method of estimating exposure.

4.0 Closing

The Report presents a number of findings and conclusions of potential interest to persons who live and work in the vicinity of the Bishop Tube Site and the public officials who requested the consultation. We agree with many of the findings and conclusions and, given their significance, clear communication is critical. Below is a summary of the significant issues that should have been communicated more effectively in the Report.

- No current public health hazard exists;
- No evidence of a "Cancer Cluster" exists;
- No current drinking water well exposure exists;
- Very limited potential for past drinking water well exposure exists;
- No current drinking water exposures exist from surface water or springs;
- Onsite conditions are well-defined;
- Off-site conditions require further study;
- Off-site contaminant sources require further study; and
- Off-site conditions will be further investigated pursuant to a Consent Order.

While we agree with many of the findings and conclusions in the Report (as outlined above), we find that certain aspects of the Report are flawed. We would like these areas to be reviewed by ATSDR and urge that appropriate sections of the Report be revised or removed entirely. More specifically:

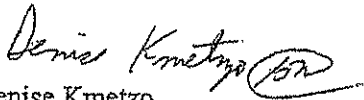
- The ATSDR Report should not have addressed historical worker exposures;
- ATSDR's findings, conclusions and recommendations regarding historical worker exposures are not supported;
- The Report failed to consider important information regarding the potential for vapor intrusion in AOC-2;
- Some exposure assumptions and methods used by ATSDR led to a significant overstatement of risk;
- Little Valley Creek should not be assessed as a primary drinking water source;

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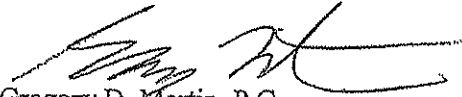
- Springs in the vicinity of the Site should not be assessed as a primary drinking water sources; and
- Comparison of surface water data to drinking water standards is inappropriate.

We thank you in advance for your careful consideration of our comments. If you have any questions, please feel free to contact Gregory Martin at (856) 423-8800. As mentioned previously, Roux Associates would be pleased to meet with ATSDR to discuss the comments contained in this letter.

Sincerely,
ROUX ASSOCIATES, INC.



Denise Kmetzo
Senior Risk Assessment Leader



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cc: Dustin Armstrong, PADEP
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