FEBRUARY 2005
VAPOR INTRUSION SAMPLING REPORT

Former American Beryllium Company
1600 Tallevast Road
Tallevast, Florida

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1. INTRODUCTION

A vapor intrusion assessment was conducted at the former American Beryllium Company site in Tallevast, Florida. The work was performed to assess whether detectable concentrations of select chlorinated VOCs were present in the indoor air within the industrial buildings located at the former ABC facility. The intent of this investigation was to assess whether chlorinated volatile organic compounds (VOCs) identified in groundwater at the site were present in indoor air at detectable concentrations in onsite buildings.

2. PROJECT PLANNING

Prior to conducting the vapor intrusion sampling, Tetra Tech conducted a site inspection and performed data gathering at the WPI (former American Beryllium Company) facility in order to prepare a site-specific indoor air sampling plan. Key findings are presented in the sections below.

Site Inspection

A Tetra Tech Certified Industrial Hygienist was provided a tour of the former American Beryllium Company Buildings on Sunday, November 21, 2004 by current WPI plant manager Doug Koenig. A copy of architectural drawings and plans for the WPI facility Phase 1 and Phase 2 renovations were provided to Tetra Tech for use during the site visit. For reference, the building designations used by the former American Beryllium Company (i.e. Buildings 1 through 5) will be used to identify and discuss locations at the facility.

Building 1 adjoins Building 2, which together house the main WPI production areas including harness assembly, molding, engineering lab, cutting room, tool room, inspection, shipping and receiving, materials and file storage, employee fitness center and offices. Most employees work in these buildings. The main assembly areas are large open areas with overhead air supply and return vents for the central air conditioning systems (roof-mounted air handling units) at a ceiling height of 11-feet 9-inches in most areas. Most employees work at long work benches assembling harnesses and occasionally use very small quantities of isopropyl alcohol (IPA) for parts cleaning. Some soldering with tin and lead (60/40 bars) occurs at a few locations in Building 1. An elaborate PVC piping system is located along the back of the workbenches for exhaust of solder fumes. This localized exhaust system exhausts to the roof of the building. This system was not

being operated at the time of the site visit. There were only slight odors of plastics noted at some work areas but no odors of cleaning solvents, with the exception of the restrooms. Housekeeping is a high priority at this plant. All work areas were extremely clean with no debris, trip hazards, or waste materials noted anywhere throughout the facility.

Floor drains or other potential conduits for subsurface vapors were identified in the following areas:

- Building 2 restrooms (two restrooms on the office side, two restrooms on the production side) – one floor drain in each bathroom plus one shower drain in the women's restroom on the production side
- Building 1 Fitness center (one floor drain)
- One sealed sewer clean-out (PVC cap) in Building 2 mechanical room
- One shower drain in Building 1 women's shower and one floor drain in men's shower
- One sealed (flush metal cover) sewer clean-out in Building 2 at main walkway just outside of the restroom vestibules.

Buildings 1 and 2 were completely renovated in 2000 for occupation by WPI. Renovations included new mechanical systems, walls, flooring (12 x 12 floor tile in work areas, carpeting in offices), and new bathroom facilities.

Building 3 houses the employee cafeteria (vending machines, microwaves) and an adjacent workshop. Overhead ductwork supplies air to this building. One employee was noted working in this building in the small office area.

Building 4 has no centrally supplied air. One employee works near the open overhead door and uses a large circulating fan in the work area. A small storage room is located next to the main work room.

Building 5 houses the main workshop (concrete floor), maintenance office, a lab, harness board room, product storage room, and archive room. One to three employees were observed to be working in this building. The main workshop has a wall-mounted circulating fan, two roof exhaust fans, and one open floor drain located beneath the drill press table. The exterior door was

secured open for airflow. Small quantities of cleaning products are stored here (e.g., Goo-Gone). Conditioned air is provided to the maintenance office and the lab. The lab has two floor drains located in the center of the room. A wall-mounted exhaust fan is located in the product storage area. The product storage room contains 5-gallon paint containers, spray paint cans, roof coatings, contact cement, and mastics, all arranged very neatly with no signs of spillage. The outside door of the product storage room is kept open during business hours. A large floor drain is located in the center of the harness board room; and the archive room has one floor drain. A forklift is parked in an outside chemical storage area (behind a chain-link fence) located adjacent to Building 1 (southeast corner).

An exterior covered walkway is present between Buildings 3 and 4. Benches are located along the corridor for employee breaks. Minor surficial concrete cracks (less than ½" depth) were noted along this walkway. An open storm drain and two small floor drains are located in the corridor. The floor drains were observed to be clogged. A sump (with pooled water) is located just outside Building 5.

Monitoring wells were noted along the periphery of the plant. A storm drain is located to the east of Building 4. Outside of Building 3 are two cutoff PVC pipes which were filled with water (at ground level). Prevailing winds at the time of the site visit were from the south-southeast at 0-5 miles per hour (mph), with occasional gusts of 8-10 mph. Outdoor temperatures (in the shade) ranged from 80 to 90 degrees Fahrenheit during the day with relative humidity of 58-61%. Surrounding properties are mostly residential, with an abandoned small industrial site located to the west of the site. Sewer manhole access is located just outside and east of Building 2 directly below an employee picnic table. The main sanitary sewer for the facility runs along the concrete swale between the two groups of buildings to the sewer along 17th Street Court East.

Direct-Reading Instrument Screening

To assist in the evaluation of possible vapor intrusion monitoring locations, Tetra Tech used a calibrated Photovac Flame Ionization Detector (FID) to assess ambient volatile organic compound concentrations and a TSI thermo-anemometer to assess air flow velocity at worker heights and at

select air supply vents in various building areas. Recorded observations and instrument readings are summarized Table 1.

Material Safety Data Sheet Review

A review of material safety data sheets (MSDS) was performed for chemicals currently used at the WPI facility. The objective of this review was to identify the potential presence of chlorinated VOCs within chemicals used at the site that might affect the results of the vapor intrusion monitoring. This review revealed that several products containing chlorinated hydrocarbons or chlorine ingredients were present or potentially present. This included compounds containing trichloroethylene which is one of the target chlorinated VOCs identified in groundwater. None of the identified materials were observed to be in use during the site visit. Table 2 provides a list of the products identified as containing chlorinated compounds.

Soil Gas Sampling Results

As currently understood, groundwater containing chlorinated solvents underlies portions of the five buildings at the site. Recent soil gas sampling indicates that the target chlorinated VOCs trichloroethylene (TCE) and/or perchloroethylene (PCE) (as well as other VOCs) were detected in shallow soil gas at on-site locations. Table 3 illustrates the on-site soil gas sample locations where TCE and/or PCE were detected. This information was used in evaluating locations proposed for vapor intrusion sampling by identifying interior locations potentially situated over the affected groundwater, or locations with positive soil gas detections of the targeted chlorinated VOCs.

3. VAPOR INTRUSION SAMPLING LOCATIONS

Based on the site inspection findings, groundwater, and soil gas data, locations were selected for sampling to assess the potential presence of chlorinated VOCs in indoor ambient air (Table 4).

Sampling locations selected reflect potential worst-case vapor intrusion (conduit) and/or the highest potential for indoor air accumulation (little to no airflow) based on the information collected during the site visit. A total of ten (10) air sample locations were selected including eight indoor samples, one outdoor sample (background), and one field/trip blank.

4. VAPOR INTRUSION SAMPLING

Sampling was originally scheduled for a 24-hour period from Wednesday, December 29 through Thursday, December 30, 2004. The WPI plant was to have minimal operations (four personnel) for the entire week between the Christmas and New Year holidays. The reduction of plant operations would have minimized the potential contribution of WPI process-related VOC sources to ambient indoor air however, it was discovered that painting of the floor in Building 3 at one of the proposed sampling locations was going to be performed during this period. To minimize potential contributions from sources of VOCs not related to groundwater, the decision was made to reschedule the sampling for the weekend of January 7 and 8, 2005. During weekend hours the facility is closed with only limited personnel on-site.

Sampling did not commence until all WPI personnel left the site for the weekend except for two WPI employees that provided Tetra Tech with access to the sampling locations. Tetra Tech personnel placed and secured the sampling equipment at the specified locations and documented conditions through notes and photographs. Samples were collected using EPA Method Toxic Organic 15 (TO-15) for the collection and analysis of VOCs (EPA, 1999). In accordance with TO-15, individual evacuated Summa canisters were used to collect air samples at each location. Six-liter Summa canisters equipped with in-line particulate filters and integral controllers to set the rate of filling during sampling were used. All Summa canisters were certified clean (less than 0.2 parts per billion (ppb) volume of targeted compounds) by the analytical laboratory (Severn Tent Laboratory Burlington, Vermont)) in accordance with Section 8.4 of the TO-15 methodology (EPA, 1999).

At the time of the initial site visit, ambient temperatures were high enough for the HVAC system to be operating. Due to the potential for changes in ambient temperatures with the passage of cold fronts in the wintertime, secondary sampling locations (bench top versus below the return air vents) were identified if the HVAC system was not operating at the time of sampling (Table 4). When sampling was begun on January 7, 2005, the facility HVAC system was running so the SUMMA canisters were placed in the primary sampling locations (below the return air vents) identified in Table 4. Twenty-four hour National Weather Service meteorological data that covers

the sampling period was accessed via the Internet (Weather Underground, 2005) to document the weather conditions at the time of sampling.

All doors and windows at the interior sampling locations were kept closed and secured during the sampling event as much as was practical to minimize potential dilution effects and to prevent tampering with the sampling equipment by unauthorized personnel. Samples were collected by opening the valve on the canister, allowing outside air to enter the canister at the rate set by the controller. The controllers were calibrated by the laboratory prior to being shipped to the field. The begining of the sampling period was recorded in the log book as well as any observations regarding condititions that might affect the results of the sampling. Table 5 contains information regarding the individual samples.

At the end of the sampling period, all of the regulators on the SUMMA canisters were closed to end the sampling event. The canisters and their locations were inspected to assess the integrity of the samplers. No evidence of any tampering was observed on the canisters, regulators, or at the sampling locations. Following retrieval of all sampling canisters, chain-of-custody documentation was completed and the canisters were placed in appropriate packaging for shipment to the analytical laboratory. Samples were submitted to Severn Trent Laboratory (STL) located in Burlington, Vermont for analysis by USEPA Method TO-15. Copies of the chain-of-custody documentation, analytical results, and laboratory quality assurance/quality control documentation are included in Appendix A.

5. ANALYTICAL RESULTS

Following analysis and data validation, the analytical results were reviewed to identify positive VOC detections in each sample. The laboratory analytical results from the Method TO-15 analysis are summarized in Tables 6 through 14. It should be noted that elevated concentrations of acetone and isopropyl alcohol in some samples required that the affected samples be re-analyzed following dilution. These results are identified by the footnote "dl". Several samples had concentrations of acetone that exceeded the upper limit of the instruments' range of detection and are identified by the footnote "c". These samples were reported by the laboratory as below the detection limit

following dilution and re-analysis. For conservativeness, the original e-qualified concentrations are included in the tables.

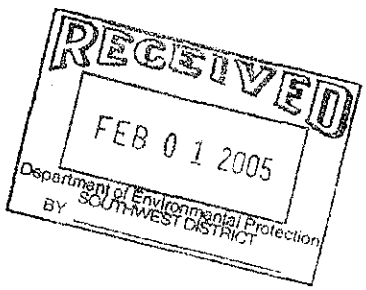
6. DATA INTERPRETATION

To provide perspective on the results and to be consistent with the data interpretation used by the Florida Department of Health for the TO-15 sampling and analyses performed within the Tallevast community, the results of the vapor intrusion monitoring were compared to the Agency For Toxic Substances Disease Registry's (ATSDR's) Minimal Risk Levels (MRLs). The ATSDR MRLs used were for the inhalation route of exposure. They were referenced from the ATSDR MRL table dated December 2004. Compounds marked as NA either had no MRL or the available MRL was for another route of exposure such as ingestion. If multiple MRLs were available for a given compound, for conservativeness the lowest MRL was used which typically corresponded to the chronic MRL value.

A review of the analytical data and the comparisons to MRLs in Tables 6 through 14 indicated the following:

- Trichloroethene (TCE) was the only chlorinated VOC identified in the State of Florida Department of Environmental Protection issued Consent Order (OGC Number 04-1328) that was detected within indoor air at the Former American Beryllium Company at very low concentrations that were many orders of magnitude less than the corresponding MRL.
- TCE was detected in Sample WPIVIM-04 (Building 2 Harness Assembly Shop); Sample WPIVIM-07 (Building 4 Archive Room); and, Sample WPIVIM-08 (Building 5 Lab).
- TCE is present in chemicals used in the workplace (Table -2).
- The only compound detected at concentrations that equaled or exceeded an ATSDR MRL was 1,4-Dichlorobenzene.
- The ATSDR MRL of 20 ppb for 1,4-Dichlorobenzene was equaled in sample WPIVIM-04 (Building 2 Harness Assembly Shop), and exceeded (32ppb) in sample WPIVIM-05 (Building 2 Women's Bathroom).

- 1,4-Dichlorobenzene typically enters the environment when it is used in mothballs and in toilet-deodorizer blocks. It is not very soluble in water (ATSDR, 2005).
- 1,4-Dichlorobenzene was not detected in the near-surface groundwater the most likely source for vapor intrusion.
- Although the concentrations varied among the different sampling locations, all of the compounds detected in outside air were detected within indoor air.
- A large number of the compounds detected in ambient air were also found to be present in materials observed to be used at the facility or identified in MSDS (Table 2).



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- 1,4-Dichlorobenzene was not detected in the near-surface groundwater the most likely source for vapor intrusion.

Table 1
Direct-Reading Instrument Results
Former American Beryllium Company
Tallevast, Florida

Building #	Room/Location	FID ppm readings	Air Velocity (fpm))	Comments
2	Receiving room	7-8	2	Door closed, no activity
	Receiving inspection	7.4	0	2 workers present
	Harness assembly area	6.3-8.4	0-1	Several workers present
	Office hallway	6-7	0 vent-400 +	
	Records room	7.2-7.9	0 1-5 vent	2 workers present
	Work floor ladies room	8-9- room 14-15 -toilet stall drain 126+ -shower drain	Ceiling vent 0-3	Strong perfume fragrance noted
	Office area ladies room	25-27 room 46 drain	0-1 vent-250-400	Strong perfume fragrance noted
	Outside near picnic table in shade			82 degrees Fahrenheit 60% relative humidity at 10AM
1	Molding	7-8.9	0	
	Lab behind molding 2	7.6-9.2	0-10 vent 345-400	
	Molding 2	8-9	0	2 workers present
	Main work area	7-10	0-3	
	Fitness Center	0	0	Vacant room
3	Work area	0		
Outdoors	Near entry to parking lot	0		
5	Workshop	0-floor drain	0	
	Lab	0-5 drains 0	0	
	Harness board room	1-2	0	Bench paint drying, doors open
	Product storage room	1-2	24-36	2 doors open 77.7 degrees Fahrenheit 59% relative humidity
	Archive room	0 drain 0	0	Doors closed
4	Work area	0-1	0-3	
	Outside cut-off pipes	3-4	0	
3	Cafeteria	0-2	0	Perfume odor detected
	Workshop	0	185 below vent	
Outside	Outside sump	0	Not measured	Water present

ppm – parts per million
fpm – feet per minute

Table 2
MSDS Review for Chlorinated Compound Use
Former American Beryllium Company
Tallevast, Florida

Product Name	Chemical Composition
FK1718 aerosol	43.1% chlorofluoromethane 39.8% aliphatic HC 11.6% acetone
CAMIE 3015 Mold Saver	55% methylene chloride
Chemlok 23413	25% TCE < 1% carbon tetrachloride
Colorine 7601-7617-	17.5% TCA
Fastbond 50-NF High Performance Contact Adhesive	30% polychloroprene
Freon TES Cleaning Agent	95.7% Freon 113
GenKlene LV	> 95% TCA
Genesolv 2000	100% dichlorofluoroethane
Genesolv 2004	95.8% DCFE
Genesolv DMS Azeotrope	92% Trichlorotrifluoroethane
Heavy Duty Silicone Mold Release E208	Halogenated HC/ether blend
Hydrochloric acid 37% reagent	37%
715 Inorganic acid flux	47% zinc/ammonium chloride < 0.5% HCl
Liquid Plastic K	10% PVC
Liquid Paper Correction Fluid	TCA % unlisted
Lithium chloride	100%
Locquic Primer T Locquic Primer N	85-90% TCA 95-100% TCA
Methylene chloride urethane GRD	100% methylene chloride
5530 Nickel-NU	16% hydrochloric acid
Rosco Colorine Thinner	95.5% TCA
Mold Saver Metal Protector MSP-16	50-60% TCE
Polyisocyanate solution	50% monochlorobenzene
Hydrocarbon Resin Compound Solution PR-420, Part B	50% TCE
Scotch Group TM 1357 High Performance Contact Adhesive	10-20% polychloroprene
Silicone Lubricant 8034	51-70% TCA
A-088 Lubricant and Release Agent	50-70% TCA
Soni-Kleen SK-1000	Dichloromethane % not listed
VC-3 Vibra-tite	70-80% TCA
Solvent 111	96.5% TCA
541 Soldering Flux	8% HCl, 5% NH3Cl

TCE – trichloroethene
TCA - trichloroethane
DCFE – dichlorofluoroethylene
PVC – polyvinylchloride
HC – hydrocarbon
HCL – hydrogen chloride
NH3CL – ammonium chloride

Table -3
Soil Gas Sample Locations With TCE and PCE Detection
Former American Beryllium Company
Tallevast, Florida

Sampling Location	TCE (ppbv)	PCE (ppbv)	Comments
SGS-3	0.7	ND	East of Building 5
SGS-4	0.59	5.8	East of Building 2
SGS-5	0.5	2.5	Center of parking lot
SGS-6	0.5U	4.1	Near 17th Street
SGS-7	10	ND	Southern fenceline
SGS-11	0.5	0.6	Near 17th Street

ppbv – parts per billion volume
ND – not detected

Table 4
Proposed Vapor Intrusion Sampling Locations
Former American Beryllium Company
Tallevast, Florida

Building	Location	Sample Type	Sample Conditions	Comments
Building 1	Roof air intake	Background sample (outdoor control)	Upwind of air intake	Represents outdoor makeup air entering the building.
	Center of main work area directly below ceiling return air vent at bench top height (if HVAC not operating) or secured on step ladder with strap or belt at 10-11' height if HVAC is operational.	Characterization	Canister height will depend on HVAC operation; plant thermostat setting is 73 °F; check and record ambient temperature. If below 73, set canister on benchtop. If above 73, place at 10-11' height using step ladder.	Area noted as Phase II factory 2 on site plans. Normally, occupied area, all air would be drawn to this area from entire large plant area.
	Fitness center near floor drain	Characterization	Canister at 5' height. Keep door shut.	HVAC system, enclosed room, door usually shut. Located above 100 ppb TCE plume
Building 2	Harness assembly shop below ceiling return air vent at in center of main work area at bench top height (if HVAC not operating) or secured on step ladder with strap or belt at 10-11' height if HVAC is operational.	Characterization	Canister height will depend on HVAC operation; plant thermostat setting is 73 °F; check and record ambient temperature. Keep all doors to room shut.	Normally, occupied area, all air would be drawn to this area from entire large plant area. 1/3 building above 100 ppb TCE plume (SAS).
	Office hall women's bathroom near floor drain	Characterization	Leave lights on to activate exhaust system (negative pressurization).Keep all doors to room shut. Post signage on bathroom door directing employees to use other restroom in production area (e.g., "Testing underway – do not enter – use restroom in production area")	Bathroom exhaust fan on; HVAC system, VOCs detected in room air and floor drain although fan exhaust operational, employee perfume, air freshener and floor cleaner are VOC sources (will be minimized during holiday).
Building 3	Workshop tabletop below return air vent	Characterization	Keep all doors to room shut.	Normally, occupied area (1-2 persons); HVAC system present, above 100 ppb TCE plume (SAS).
Building 4	Archive room near floor drain (east end of room). Place canister on top of file cabinet or table.	Characterization	Keep all doors to room shut.	Unoccupied area; floor drain, no HVAC present, no airflow, doors usually closed. Above 100 ppb TCE plume (SAS).
Building 5	Lab room (behind maintenance shop) on benchtop near floor drains in center of room	Characterization	Keep all doors to room shut.	Potential conduit, HVAC system present, occupied by 1 person, above 50 ppb TCE plume (SAS)
	Harness board room on top of bench seat above floor drain in center of floor	Characterization	Keep all doors to room shut.	Potential conduit, no HVAC present. Above 35,000 mg/L TCE in SAS
NA	Field blank	QA/QC	Do not open regulator valve.	

HVAC – heating ventilation and air conditioning
QA/QC – quality assurance/quality control
NA – not applicable

Table 5
Vapor Intrusion Sampling Information
Former American Beryllium Company
Tallevast, Florida

Building	Sample Identification	SUMMA Canister Number	Location	Sample Start Time (01/07/2005)	Sample Stop Time (01/08/2005)	Comments
Building 1	WPI-VIM-01	12455	Roof	1845	1845	Rooftop near air intake. Access to roof shut and locked.
	WPI-VIM-02	12404	Main work area.	1828	1828	Placed on ladder in center of main work area below return vent. HVAC running. Area secured.
	WPI-VIM-03	12489	Fitness center	1820	1820	Placed on ladder below return vent and above floor drain. HVAC running. Room closed and secured.
Building 2	WPI-VIM-04	11295	Harness assembly shop	1838	1838	Placed on ladder in center of main workroom below return vent. HVAC running. Area secured.
	WPI-VIM-05	12263	Office hall women's bathroom	1840	1840	Placed on top of towel dispenser. Lights on, exhaust fan running. Door closed. .
Building 3	WPI-VIM-06	12835	Workshop	1804	1804	Placed on top of workbench below return air vent. HVAC running. All doors closed and secured.
Building 4	WPI-VIM-07	12875	Archive room.	1815	1815	Placed on top of file cabinet east end of Archive room near floor drain approximately 5 to 5.5-feet above floor. Doors closed and secured.
Building 5	WPI-VIM-08	2957	Lab room	1833	1805	Placed on top of work bench near floor drains. HVAC running. Doors closed and secured.
	WPI-VIM-09	2961	Harness board room	1811	1806	Placed on boards approximately 5.5-feet above floor, 1 to 2-feet from floor drain. No HVAC. Doors closed and secured.
NA	WPI-VIM-FB	1878	Field blank	NA	NA	

HVAC – heating ventilation and air conditioning
NA – not applicable

TAB. 6

VAPOR INTRUSION MONITORING POSITIVE DETECTIONS
BUILDING 1 ROOFTOP
FORMER AMERICAN BERYLLIUM COMPANY
TALLEVAST, FLORIDA

Rooftop sample_id	parameter	conc	units	dilution	pql	ATSDR MRL (ppbv)
WPIVIM01 Bldg 1	1,2,4-Trimethylbenzene	0.24	ppbv	1.00	0.2	NA
WPIVIM01 Bldg 1	4-Ethyltoluene	0.2	ppbv	1.00	0.2	NA
WPIVIM01 Bldg 1	Acetone	7	ppbv	1.00	5	13000
WPIVIM01 Bldg 1	Benzene	0.37	ppbv	1.00	0.2	4
WPIVIM01 Bldg 1	Bromomethane	4.2	ppbv	1.00	0.2	5
WPIVIM01 Bldg 1	Carbon Disulfide	0.84	ppbv	1.00	0.5	300
WPIVIM01 Bldg 1	Chloromethane	0.62	ppbv	1.00	0.5	50
WPIVIM01 Bldg 1	Dichlorodifluoromethane	0.64	ppbv	1.00	0.5	NA
WPIVIM01 Bldg 1	Ethylbenzene	6.2	ppbv	1.00	0.2	1000
WPIVIM01 Bldg 1	Methyl Ethyl Ketone	0.75	ppbv	1.00	0.5	NA
WPIVIM01 Bldg 1	n-Heptane	0.21	ppbv	1.00	0.2	NA
WPIVIM01 Bldg 1	n-Hexane	0.2	ppbv	1.00	0.2	NA
WPIVIM01 Bldg 1	Toluene	1.2	ppbv	1.00	0.2	80
WPIVIM01 Bldg 1	Trichlorofluoromethane	0.23	ppbv	1.00	0.2	NA
WPIVIM01 Bldg 1	Xylene (m,p)	20	ppbv	1.00	0.2	NA
WPIVIM01 Bldg 1	Xylene (o)	5.8	ppbv	1.00	0.2	NA
WPIVIM01 Bldg 1	Xylene (total)	27	ppbv	1.00	0.2	100

ATSDR MRL - Agency For Toxic Substances Disease Registry Minimal Risk Levels
ppbv - parts per billion volume
conc - concentration
pql - practical quantitation limit
NA - not available

TAL -7

VAPOR INTRUSION MONITORING POSITIVE DETECTIONS
BUILDING 1 MAIN WORK AREA
FORMER AMERICAN BERYLLIUM COMPANY
TALLEVAST, FLORIDA

Main Work Area sample_id	parameter	conc	units	dilution	pql	ATSDR MRL (ppbv)
WPIVIM02 Bldg 1	1,2,4-Trimethylbenzene	0.74	ppbv	1.00	0.2	NA
WPIVIM02 Bldg 1	1,3,5-Trimethylbenzene	0.25	ppbv	1.00	0.2	NA
WPIVIM02 Bldg 1	1,4-Dichlorobenzene	9.6	ppbv	1.00	0.2	20
WPIVIM02 Bldg 1	2,2,4-Trimethylpentane	6	ppbv	1.00	0.2	NA
WPIVIM02 Bldg 1	4-Ethyltoluene	0.5	ppbv	1.00	0.2	NA
WPIVIM02 Bldg 1	Acetone	44_e	ppbv	1.00	5	13000
WPIVIM02 Bldg 1	Benzene	0.34	ppbv	1.00	0.2	4
WPIVIM02 Bldg 1	Bromomethane	0.7	ppbv	1.00	0.2	5
WPIVIM02 Bldg 1	Chloromethane	0.73	ppbv	1.00	0.5	50
WPIVIM02 Bldg 1	Dichlorodifluoromethane	0.51	ppbv	1.00	0.5	NA
WPIVIM02 Bldg 1	Ethylbenzene	1.1	ppbv	1.00	0.2	1000
WPIVIM02 Bldg 1	Isopropyl Alcohol	1800_{dl}	ppbv	100.00	500	NA
WPIVIM02 Bldg 1	Methyl Ethyl Ketone	26	ppbv	1.00	0.5	NA
WPIVIM02 Bldg 1	n-Heptane	25_{dl}	ppbv	100.00	20	NA
WPIVIM02 Bldg 1	n-Hexane	0.29	ppbv	1.00	0.2	600
WPIVIM02 Bldg 1	Styrene	1.4	ppbv	1.00	0.2	60
WPIVIM02 Bldg 1	Toluene	2.9	ppbv	1.00	0.2	80
WPIVIM02 Bldg 1	Trichlorofluoromethane	0.3	ppbv	1.00	0.2	NA
WPIVIM02 Bldg 1	Xylene (m,p)	4	ppbv	1.00	0.2	NA
WPIVIM02 Bldg 1	Xylene (o)	0.95	ppbv	1.00	0.2	NA
WPIVIM02 Bldg 1	Xylene (total)	5.1	ppbv	1.00	0.2	100

ATSDR MRL - Agency For Toxic Substances Disease Registry Minimal Risk Levels
ppbv - parts per billion volume
conc - concentration
pql - practical quantitation limit
NA - not available
e - concentration exceeded upper calibration limit of the instrument for this specific analyte. Re-analysis with dilution reported as non-detected at higher concentration.
dl - reanalyzed with dilution due to exceeding instrument calibration range for this analyte

TAB 8

VAPOR INTRUSION MONITORING POSITIVE DETECTIONS
BUILDING 1 FITNESS CENTER
FORMER AMERICAN BERYLLIUM COMPANY
TALLEVAST, FLORIDA

Fitness Center sample_id	parameter	conc	units	dilution	pql	ATSDR MRL (ppbv)
WPIVIM03 Bldg 1	1,4-Dichlorobenzene	0.23	ppbv	1.00	0.2	20
WPIVIM03 Bldg 1	2,2,4-Trimethylpentane	1.7	ppbv	1.00	0.2	NA
WPIVIM03 Bldg 1	Acetone	44_{e}	ppbv	1.00	5	13000
WPIVIM03 Bldg 1	Benzene	0.34	ppbv	1.00	0.2	4
WPIVIM03 Bldg 1	Bromomethane	2.6	ppbv	1.00	0.2	5
WPIVIM03 Bldg 1	Chloromethane	0.84	ppbv	1.00	0.5	50
WPIVIM03 Bldg 1	Dichlorodifluoromethane	0.53	ppbv	1.00	0.5	NA
WPIVIM03 Bldg 1	Isopropyl Alcohol	1100_{dl}	ppbv	66.70	330	NA
WPIVIM03 Bldg 1	Methyl Ethyl Ketone	15	ppbv	1.00	0.5	NA
WPIVIM03 Bldg 1	n-Heptane	7.7	ppbv	1.00	0.2	NA
WPIVIM03 Bldg 1	n-Hexane	0.26	ppbv	1.00	0.2	600
WPIVIM03 Bldg 1	Toluene	1.4	ppbv	1.00	0.2	80
WPIVIM03 Bldg 1	Trichlorofluoromethane	0.31	ppbv	1.00	0.2	NA

ATSDR MRL - Agency For Toxic Substances Disease Registry Minimal Risk Levels
ppbv - parts per billion volume
conc - concentration
pql - practical quantitation limit
NA - not available
e - concentration exceeded upper calibration limit of the instrument for this specific analyte. Re-analysis with dilution reported as non-detected at higher concentration.
dl - reanalyzed with dilution due to exceeding instrument calibration range for this analyte

TAB - 9

VAPOR INTRUSION MONITORING POSITIVE DETECTIONS
BUILDING 2 HARNESS ASSEMBLY SHOP
FORMER AMERICAN BERYLLIUM COMPANY
TALLEVAST, FLORIDA

Harness Assembly Shop sample_id	parameter	conc	units	dilution	pql	ATSDR MRL (ppbv)
WPIVIM04 Bldg 2	1,2,4-Trimethylbenzene	0.8	ppbv	1.00	0.2	NA
WPIVIM04 Bldg 2	1,3,5-Trimethylbenzene	0.22	ppbv	1.00	0.2	NA
WPIVIM04 Bldg 2	1,4-Dichlorobenzene	20	ppbv	1.00	0.2	20
WPIVIM04 Bldg 2	2,2,4-Trimethylpentane	4.2	ppbv	1.00	0.2	NA
WPIVIM04 Bldg 2	4-Ethyltoluene	0.49	ppbv	1.00	0.2	NA
WPIVIM04 Bldg 2	Acetone	46_e	ppbv	1.00	5	13000
WPIVIM04 Bldg 2	Benzene	0.33	ppbv	1.00	0.2	4
WPIVIM04 Bldg 2	Bromomethane	2.3	ppbv	1.00	0.2	5
WPIVIM04 Bldg 2	Chloromethane	0.81	ppbv	1.00	0.5	50
WPIVIM04 Bldg 2	Dichlorodifluoromethane	0.51	ppbv	1.00	0.5	NA
WPIVIM04 Bldg 2	Ethylbenzene	0.64	ppbv	1.00	0.2	1000
WPIVIM04 Bldg 2	Isopropyl Alcohol	1700_{dl}	ppbv	100.00	500	NA
WPIVIM04 Bldg 2	Methyl Ethyl Ketone	20	ppbv	1.00	0.5	NA
WPIVIM04 Bldg 2	n-Heptane	15	ppbv	1.00	0.2	NA
WPIVIM04 Bldg 2	n-Hexane	0.32	ppbv	1.00	0.2	600
WPIVIM04 Bldg 2	Styrene	1.4	ppbv	1.00	0.2	60
WPIVIM04 Bldg 2	Toluene	3	ppbv	1.00	0.2	80
WPIVIM04 Bldg 2	Trichloroethene	0.28	ppbv	1.00	0.2	100
WPIVIM04 Bldg 2	Trichlorofluoromethane	0.66	ppbv	1.00	0.2	NA
WPIVIM04 Bldg 2	Xylene (m,p)	2.4	ppbv	1.00	0.2	NA
WPIVIM04 Bldg 2	Xylene (o)	0.62	ppbv	1.00	0.2	NA
WPIVIM04 Bldg 2	Xylene (total)	3.1	ppbv	1.00	0.2	100

ATSDR MRL - Agency For Toxic Substances Disease Registry Minimal Risk Levels
ppbv - parts per billion volume
conc - concentration
pql - practical quantitation limit
NA - not available
e - concentration exceeded upper calibration limit of the instrument for this specific analyte. Re-analysis with dilution reported as non-detected at higher concentration.
dl - reanalyzed with dilution due to exceeding instrument calibration range for this analyte

TABLE 10

VAPOR INTRUSION MONITORING POSITIVE DETECTIONS
BUILDING 2 WOMEN'S BATHROOM
FORMER AMERICAN BERYLLIUM COMPANY
TALLEVAST, FLORIDA

Women's Bathroom sample_id	parameter	conc	units	dilution	pql	ATSDR MRL (ppbv)
WPIVIM05 Bldg 2	1,2,4-Trimethylbenzene	0.96	ppbv	1.00	0.2	NA
WPIVIM05 Bldg 2	1,4-Dichlorobenzene	32	ppbv	1.00	0.2	20
WPIVIM05 Bldg 2	2,2,4-Trimethylpentane	3.9	ppbv	1.00	0.2	NA
WPIVIM05 Bldg 2	4-Ethyltoluene	0.51	ppbv	1.00	0.2	NA
WPIVIM05 Bldg 2	Acetone	150_{e}	ppbv	1.00	5	13000
WPIVIM05 Bldg 2	Benzene	0.34	ppbv	1.00	0.2	4
WPIVIM05 Bldg 2	Bromomethane	1.6	ppbv	1.00	0.2	5
WPIVIM05 Bldg 2	Ethylbenzene	0.53	ppbv	1.00	0.2	1000
WPIVIM05 Bldg 2	Isopropyl Alcohol	1500_{dl}	ppbv	100.00	500	NA
WPIVIM05 Bldg 2	Methyl Ethyl Ketone	17	ppbv	1.00	0.5	NA
WPIVIM05 Bldg 2	n-Heptane	13	ppbv	1.00	0.2	NA
WPIVIM05 Bldg 2	n-Hexane	0.32	ppbv	1.00	0.2	600
WPIVIM05 Bldg 2	Styrene	1.4	ppbv	1.00	0.2	60
WPIVIM05 Bldg 2	Toluene	2.6	ppbv	1.00	0.2	80
WPIVIM05 Bldg 2	Trichlorofluoromethane	0.31	ppbv	1.00	0.2	NA
WPIVIM05 Bldg 2	Xylene (m,p)	2.3	ppbv	1.00	0.2	NA
WPIVIM05 Bldg 2	Xylene (o)	0.52	ppbv	1.00	0.2	NA
WPIVIM05 Bldg 2	Xylene (total)	2.9	ppbv	1.00	0.2	100

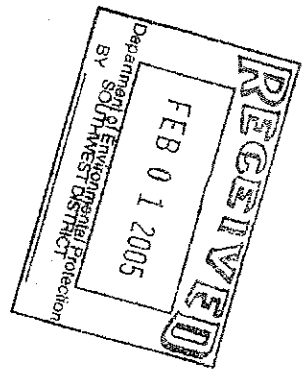
ATSDR MRL - Agency For Toxic Substances Disease Registry Minimal Risk Levels
ppbv - parts per billion volume
conc - concentration
pql - practical quantitation limit
NA - not available
e - concentration exceeded upper calibration limit of the instrument for this specific analyte.
Re-analysis with dilution reported as non-detected at higher concentration.
dl - reanalyzed with dilution due to exceeding instrument calibration range for this analyte

TAB 11

VAPOR INTRUSION MONITORING POSITIVE DETECTIONS
BUILDING 3 WORKSHOP
FORMER AMERICAN BERYLLIUM COMPANY
TALLEVAST, FLORIDA

Workshop sample_id	parameter	conc	units	dilution	pql	ATSDR MRL (ppbv)
WPIVIM06 Bldg 3	1,2,4-Trimethylbenzene	1.7	ppbv	1.00	0.2	NA
WPIVIM06 Bldg 3	1,2-Dichloroethene (total)	0.55	ppbv	1.00	0.2	200[1]
WPIVIM06 Bldg 3	1,3,5-Trimethylbenzene	0.47	ppbv	1.00	0.2	NA
WPIVIM06 Bldg 3	1,4-Dichlorobenzene	0.2	ppbv	1.00	0.2	20
WPIVIM06 Bldg 3	2,2,4-Trimethylpentane	5	ppbv	1.00	0.2	NA
WPIVIM06 Bldg 3	4-Ethyltoluene	0.82	ppbv	1.00	0.2	NA
WPIVIM06 Bldg 3	Acetone	30	ppbv	1.00	5	13000
WPIVIM06 Bldg 3	Benzene	0.47	ppbv	1.00	0.2	4
WPIVIM06 Bldg 3	Bromomethane	2.4	ppbv	1.00	0.2	5
WPIVIM06 Bldg 3	Chloromethane	0.8	ppbv	1.00	0.5	50
WPIVIM06 Bldg 3	Dichlorodifluoromethane	0.86	ppbv	1.00	0.5	NA
WPIVIM06 Bldg 3	Ethylbenzene	0.85	ppbv	1.00	0.2	1000
WPIVIM06 Bldg 3	Isopropyl Alcohol	460_{dl}	ppbv	20.00	100	NA
WPIVIM06 Bldg 3	Methyl Ethyl Ketone	1.9	ppbv	1.00	0.5	NA
WPIVIM06 Bldg 3	Methylene Chloride	0.65	ppbv	1.00	0.5	300
WPIVIM06 Bldg 3	n-Heptane	0.52	ppbv	1.00	0.2	NA
WPIVIM06 Bldg 3	n-Hexane	0.28	ppbv	1.00	0.2	600
WPIVIM06 Bldg 3	Styrene	1.2	ppbv	1.00	0.2	60
WPIVIM06 Bldg 3	Toluene	2.9	ppbv	1.00	0.2	80
WPIVIM06 Bldg 3	trans-1,2-Dichloroethene	0.55	ppbv	1.00	0.2	200
WPIVIM06 Bldg 3	Trichlorofluoromethane	0.34	ppbv	1.00	0.2	NA
WPIVIM06 Bldg 3	Xylene (m,p)	2.8	ppbv	1.00	0.2	NA
WPIVIM06 Bldg 3	Xylene (o)	0.67	ppbv	1.00	0.2	NA
WPIVIM06 Bldg 3	Xylene (total)	3.6	ppbv	1.00	0.2	100

ATSDR MRL - Agency For Toxic Substances Disease Registry Minimal Risk Levels
ppbv - parts per billion volume
conc - concentration
pql - practical quantitation limit
NA - not available
[1] MRL for Trans-1,2-Dichloroethene
dl - reanalyzed with dilution due to exceeding instrument calibration range for this analyte



TAB. 12

VAPOR INTRUSION MONITORING POSITIVE DETECTIONS
BUILDING 4 ARCHIVE ROOM
FORMER AMERICAN BERYLLIUM COMPANY
TALLEVAST, FLORIDA

Archive Room sample_id	parameter	conc	units	dilution	pql	ATSDR MRL (ppbv)
WPIVIM07 Bldg 4	1,2,4-Trimethylbenzene	1	ppbv	1.00	0.2	NA
WPIVIM07 Bldg 4	1,3,5-Trimethylbenzene	0.27	ppbv	1.00	0.2	NA
WPIVIM07 Bldg 4	2,2,4-Trimethylpentane	0.33	ppbv	1.00	0.2	NA
WPIVIM07 Bldg 4	4-Ethyltoluene	0.88	ppbv	1.00	0.2	NA
WPIVIM07 Bldg 4	Acetone	16	ppbv	1.00	5	13000
WPIVIM07 Bldg 4	Benzene	0.44	ppbv	1.00	0.2	4
WPIVIM07 Bldg 4	Bromomethane	3.5	ppbv	1.00	0.2	5
WPIVIM07 Bldg 4	Chloromethane	0.79	ppbv	1.00	0.5	50
WPIVIM07 Bldg 4	Dichlorodifluoromethane	0.59	ppbv	1.00	0.5	NA
WPIVIM07 Bldg 4	Ethylbenzene	0.42	ppbv	1.00	0.2	1000
WPIVIM07 Bldg 4	Isopropyl Alcohol	5.4	ppbv	1.00	5	NA
WPIVIM07 Bldg 4	Methyl Ethyl Ketone	2.2	ppbv	1.00	0.5	NA
WPIVIM07 Bldg 4	Methylene Chloride	1.3	ppbv	1.00	0.5	300
WPIVIM07 Bldg 4	n-Heptane	0.32	ppbv	1.00	0.2	NA
WPIVIM07 Bldg 4	n-Hexane	0.3	ppbv	1.00	0.2	600
WPIVIM07 Bldg 4	Styrene	0.8	ppbv	1.00	0.2	60
WPIVIM07 Bldg 4	Toluene	2.6	ppbv	1.00	0.2	80
WPIVIM07 Bldg 4	Trichloroethene	0.41	ppbv	1.00	0.2	100
WPIVIM07 Bldg 4	Trichlorofluoromethane	0.24	ppbv	1.00	0.2	NA
WPIVIM07 Bldg 4	Xylene (m,p)	1.6	ppbv	1.00	0.2	NA
WPIVIM07 Bldg 4	Xylene (o)	0.59	ppbv	1.00	0.2	NA
WPIVIM07 Bldg 4	Xylene (total)	2.3	ppbv	1.00	0.2	100

ATSDR MRL - Agency For Toxic Substances Disease Registry Minimal Risk Levels
ppbv - parts per billion volume
conc - concentration
pql - practical quantitation limit
NA - not available

TAB. 13

VAPOR INSTRUSION MONITORING POSITIVE DETECTIONS
BUILDING 5 LAB
FORMER AMERICAN BERYLLIUM COMPANY
TALLEVAST, FLORIDA

Lab sample_id	parameter	conc	units	dilution	pql	ATSDR MRL (ppbv)
WPIVIM08 Bldg 5	1,2,4-Trimethylbenzene	0.59	ppbv	1.00	0.2	NA
WPIVIM08 Bldg 5	1,3,5-Trimethylbenzene	0.25	ppbv	1.00	0.2	NA
WPIVIM08 Bldg 5	2,2,4-Trimethylpentane	0.37	ppbv	1.00	0.2	NA
WPIVIM08 Bldg 5	4-Ethyltoluene	1.3	ppbv	1.00	0.2	NA
WPIVIM08 Bldg 5	Acetone	33	ppbv	1.00	5	13000
WPIVIM08 Bldg 5	Benzene	0.59	ppbv	1.00	0.2	4
WPIVIM08 Bldg 5	Chloromethane	0.64	ppbv	1.00	0.5	50
WPIVIM08 Bldg 5	Cyclohexane	0.21	ppbv	1.00	0.2	NA
WPIVIM08 Bldg 5	Dichlorodifluoromethane	0.57	ppbv	1.00	0.5	NA
WPIVIM08 Bldg 5	Ethylbenzene	1	ppbv	1.00	0.2	1000
WPIVIM08 Bldg 5	Isopropyl Alcohol	6.8	ppbv	1.00	5	NA
WPIVIM08 Bldg 5	Methyl Butyl Ketone	1.1	ppbv	1.00	0.5	NA
WPIVIM08 Bldg 5	Methyl Ethyl Ketone	1.6	ppbv	1.00	0.5	NA
WPIVIM08 Bldg 5	Methylene Chloride	4.6	ppbv	1.00	0.5	300
WPIVIM08 Bldg 5	n-Heptane	0.46	ppbv	1.00	0.2	NA
WPIVIM08 Bldg 5	n-Hexane	0.53	ppbv	1.00	0.2	600
WPIVIM08 Bldg 5	Styrene	0.69	ppbv	1.00	0.2	60
WPIVIM08 Bldg 5	Toluene	5.5	ppbv	1.00	0.2	80
WPIVIM08 Bldg 5	Trichloroethene	0.4	ppbv	1.00	0.2	100
WPIVIM08 Bldg 5	Trichlorofluoromethane	0.24	ppbv	1.00	0.2	NA
WPIVIM08 Bldg 5	Xylene (m,p)	3.8	ppbv	1.00	0.2	NA
WPIVIM08 Bldg 5	Xylene (o)	1.2	ppbv	1.00	0.2	NA
WPIVIM08 Bldg 5	Xylene (total)	5.1	ppbv	1.00	0.2	100

ATSDR MRL - Agency For Toxic Substances Disease Registry Minimal Risk Levels
ppbv - parts per billion volume
conc - concentration
pql - practical quantitation limit
NA - not available

TABLE 14

VAPOR INTRUSION MONITORING POSITIVE DETECTIONS
BUILDING 5 HARNESS BOARD ROOM
FORMER AMERICAN BERYLLIUM COMPANY
TALLEVAST, FLORIDA

Harness Board Room sample_id	parameter	conc	units	dilution	pql	ATSDR MRL (ppbv)
WPIVIM09 Bldg 5	1,2,4-Trimethylbenzene	14	ppbv	1.00	0.2	NA
WPIVIM09 Bldg 5	1,3,5-Trimethylbenzene	3.6	ppbv	1.00	0.2	NA
WPIVIM09 Bldg 5	2,2,4-Trimethylpentane	0.63	ppbv	1.00	0.2	NA
WPIVIM09 Bldg 5	4-Ethyltoluene	14	ppbv	1.00	0.2	NA
WPIVIM09 Bldg 5	Acetone	71_{dl}	ppbv	3.00	15	13000
WPIVIM09 Bldg 5	Benzene	2.1	ppbv	1.00	0.2	4
WPIVIM09 Bldg 5	Bromomethane	3.6	ppbv	1.00	0.2	5
WPIVIM09 Bldg 5	Chloromethane	0.75	ppbv	1.00	0.5	50
WPIVIM09 Bldg 5	Cyclohexane	0.31	ppbv	1.00	0.2	NA
WPIVIM09 Bldg 5	Dichlorodifluoromethane	0.55	ppbv	1.00	0.5	NA
WPIVIM09 Bldg 5	Ethylbenzene	4.3	ppbv	1.00	0.2	1000
WPIVIM09 Bldg 5	Isopropyl Alcohol	11	ppbv	1.00	5	NA
WPIVIM09 Bldg 5	Methyl Butyl Ketone	0.68	ppbv	1.00	0.5	NA
WPIVIM09 Bldg 5	Methyl Ethyl Ketone	3.1	ppbv	1.00	0.5	NA
WPIVIM09 Bldg 5	Methylene Chloride	14	ppbv	1.00	0.5	300
WPIVIM09 Bldg 5	n-Heptane	1.2	ppbv	1.00	0.2	NA
WPIVIM09 Bldg 5	n-Hexane	1.9	ppbv	1.00	0.2	600
WPIVIM09 Bldg 5	Toluene	21	ppbv	1.00	0.2	80
WPIVIM09 Bldg 5	Trichlorofluoromethane	0.27	ppbv	1.00	0.2	NA
WPIVIM09 Bldg 5	Xylene (m,p)	20	ppbv	1.00	0.2	NA
WPIVIM09 Bldg 5	Xylene (o)	7.4	ppbv	1.00	0.2	NA
WPIVIM09 Bldg 5	Xylene (total)	29	ppbv	1.00	0.2	100

ATSDR MRL - Agency For Toxic Substances Disease Registry Minimal Risk Levels
ppbv - parts per billion volume
conc - concentration
pql - practical quantitation limit
NA - not available
dl - reanalyzed with dilution due to exceeding instrument calibration range for this analyte