HSCA RESPONSE JUSTIFICATION DOCUMENT

BISHOP TUBE SITE

EAST WHITELAND TOWNSHIP, CHESTER COUNTY

REGION I

HSCP Project Officer: Dustin A. Armstrong
Attorney: Anderson Hartzell

March 13, 2000

This report summarizes the technical and legal issues which justify a response under the Pennsylvania Hazardous Sites Cleanup Act (HSCA) at the Bishop Tube Site.

EXECUTIVE SUMMARY

The Bishop Tube Site ("site") is an area of soil and groundwater contamination which has resulted from a former tube manufacturing facility, located on Malin Road just South of U.S. Route 30, in Frazier, East Whiteland Township, Chester County. The 13.7 acre Bishop Tube property is currently owned by Christiana Metals, Inc. The site was used from the 1950's until 1999 for manufacturing of steel tubes and associated equipment. A monitoring well on the property has been found to contain trichloroethene (TCE) at a level of 620,000 ug/l. This level of TCE is indicative of an area of dense non-aqueous phase liquid (DNAPL), which is a likely source of groundwater contamination. The property was utilized by several entities who used the Bishop name. Most recently, a company named Damascus-Bishop Tube leased the property from Christiana Metals. Christiana Metals purchased Bishop Tube in 1974. The Bishop Tube property is currently not occupied. The Site is situated at latitude is 40° 02' 24" N and longitude 75° 32' 13" W. The Site may be located on the Malvern, PA 7.5 Minute Series Quadrangle. A Site location map is attached to this document (Figure 1).

The area of the Site is in the town of Frazier, which is mainly characterized by mixed commercial and residential land uses. Public water is available in the area of the Bishop Tube Site. However, at least one home, located down-gradient of the site, is supplied by a private well. A full house carbon filtration system was installed at the affected residence in 1999, at the expense of Christiana Metals. Little Valley Creek borders the site to the east. Little Valley Creek is designated as an Exceptional Value stream under the Department's Water Quality Regulations. Rail lines border the site to the north (Conrail) and south (Amtrak). A drainage swale is present adjacent to the property on the Conrail right-of-way. A figure depicting the layout of the site is attached to this document (Figure 2).

Fluoride contamination was discovered in a stream discharge in the early 1980's. TCE was detected in monitoring wells at the site in 1987. Monitoring wells were installed at the site in 1981, 1987, 1992, and 1993 as part of a voluntary site characterization by

Christiana Metals. Twenty monitoring wells at the site range in depth from 13.5 ft. below ground surface (BGS) to 413 ft BGS. Five monitoring wells are located off-site across the Conrail right-of-way on property belonging to Taylor Rental. The extent of off-site contamination is unknown. The contaminated home well is located along Conestoga Road, approximately 1500 feet northwest of the site. TCE has been detected in wells located at the Worthington Steel facility located approximately 1 ¼ mile east northeast of Bishop Tube. TCE has reportedly never been used by Worthington. Bishop Tube is one of a number of potential sources of contamination in groundwater at the Worthington Steel site. The Knickerbocker Sanitary Landfill site is located approximately 1 mile north of Bishop Tube. Knickerbocker Landfill was a pre-regulation landfill. The Department has no documentation of TCE disposal at Knickerbocker. TCE has been detected in an upgradient well at Knickerbocker. Unisys, Inc. operates a manufacturing facility, which is a known source of TCE contamination, approximately 2000 feet north of Worthington Steel. Unisys operated a groundwater collection and treatment system to contain the TCE plume associated with their operation. This system was shutdown due to mechanical problems and is no longer in operation. Unisys is now proceeding under the Act 2 process. (ERM, 1999) Two adjacent quarries north of the site form major cones of depression. Seeps at these quarries were reported to contain TCE in 1987. (Slotto, 1987)

The valley where Bishop Tube is located is primarily underlain by limestone and dolomite. Groundwater flows through a network of interconnected secondary openings: primary porosity is virtually nonexistent. (Slotto, 1990) This geology results in a complex groundwater flow regime. Results of monitoring well sampling by O'Brien and Gere, Inc., conducted on behalf of Christiana Metals, in 1999 revealed that contamination has migrated downward at the site. Table 1 shows detections of TCE, 1,1,1-tricloroethane (1,1,1 TCA) and 1,1-dicloroethene (1,1 DCE) from the most highly contaminated well cluster at the site, and the depths of open/screened intervals of the associated wells.

Well #	Open/screened Interval (ft. below top of casing)	TCE (ug/l)	1,1,1 TCA (ug/l)	1,1 DCE (ug/l)
MW-3	8 - 13.5	1100	2200	21
MW-2	15 - 24	3400	5200	250
MW-19	300 - 422	620,000	140,000	17,000
	Act 2 Cleanup Standard	5	200	7

Table 1 Selected VOC detections and open/screened intervals for Bishop Tube site clustered monitoring wells MW-3, MW-2, and MW-19. (February 1999)

In addition to TCE, 1,1,1 TCA, and 1,1 DCE, vinyl chloride, chloroform, and 1,1 Dichloroethane (1,1 DCA) were also detected in groundwater samples from the site. These volatile organic compounds are considered hazardous substances as defined by HSCA and CERCLA. TCE and 1,1,1 TCA are most commonly used in industry for cleaning grease from metal. Bishop Tube utilized a vapor degreaser, to clean seamless steel tubes. 1,1 DCE, 1,1 DCA and vinyl chloride are common breakdown products of TCE. TCE was stored at the site in a 4,000 gallon aboveground storage tank (AST).

Until 1979 waste at the site was reportedly disposed of in a 200 square foot unlined pit and in a 160 square foot cesspool. According to the 1985 Site Inspection prepared by NUS, Inc., the pit and cesspool were used to dispose of acid pickling rinse and cooling water. Bishop Tube closed these waste disposal areas in 1979. Closure reportedly involved filling the areas with limestone and covering them with concrete.

In June 1981 two releases of hydrofluoric and nitric acids occurred from a storage tank at the site resulting in the evacuation of approximately 500 residents of the nearby General Warren Village housing development. Sixteen people were treated at a local hospital for respiratory problems associated with the acid releases. (PADER, 1983)

Soil sampling was conducted in the vicinity of the former TCE AST, vapor degreaser area, and waste disposal areas in 1987 and 1989. Soil borings advanced in the vicinity of the former waste disposal areas were sampled for chromium, copper, nickel, zinc, and VOCs. No contaminants were detected in these samples. However, VOC analysis of samples collected in the vicinity of the former vapor degreaser, inside the building, and around the former TCE AST revealed high levels of halogenated compounds. The maximum level of TCE detected in soil at the site (3280 ppm) was found in the vicinity of the former degreaser, beneath the building floor. (O'Brien & Gere, 1998)

Surface water samples were collected from Little Valley Creek by Smith Environmental (Formerly BCM) in 1996. This data was reported in the 1998 O'Brien & Gere, *Site Characterization and Interim Remedial Action Plan*, after the bankruptcy of Smith Environmental. The offsite downstream sample contained 75 ug/l TCE. This sample also contained fluoride at a level of 1.08 mg/l. Smith Environmental also detected fluoride in MW-4 in the 1996 sampling event at a level of 17.5 mg/l. The Pennsylvania MCL for fluoride is 2 mg/l. Sodium fluoride, a solid salt of fluoride, is listed as a hazardous substance under CERCLA and HSCA.

The Department determined that HSCA action was warranted at the Bishop Tube site when the consultant and attorney representing Christiana Metals met with Department staff on November 8, 1999 to inform the Department that Christiana Metals would not be continuing the voluntary characterization and remediation at the site. The attorney for Christiana reported that the Italian investors who own the company planned to dissolve the corporation. Christiana Metals had been acting voluntarily. No orders have been issued by the Department requiring a cleanup of soil or groundwater at the site.

RESPONSIBLE PERSONS

The Department considers Christiana Metals Corporation, 125 Strafford Ave., Suite 100, Wayne, PA 19087 a Potentially Responsible Party (PRP) as the current Site owner and a former operator. Alloy Steel Corporation, 21 Seneca St., Oil City, PA 16301 was a former operator of the site . The Department does not posses address information concerning the following PRPs, who owned and operated the site between 1951 and 1974:

J. Bishop and Company, Platinum Works
Matthey Bishop and Company
Whittaker Corporation

FINDINGS AND AUTHORITY TO ACT

Pursuant to Section 501(a) of the Pennsylvania Hazardous Sites Cleanup Act, Act of October 18, 1988, P.L. 756, No. 108, 35 P.S. §6020.501(a) ("HSCA"), the Department of Environmental Protection may undertake any further investigation, interim response, or remedial response relating to a contaminant or hazardous substance which the Department deems necessary or appropriate to protect the public health, safety or welfare or the environment.

Based on the fact that a release of hazardous substances as defined by HSCA has occurred at the site, and that a residential water supply, offsite groundwater, onsite soil, and a nearby stream have been and continue to be affected by those hazardous substances, the Department is authorized under HSCA to take actions to assure the provision and/or maintenance of potable drinking water to affected residents and to conduct further investigation activities followed by any additional necessary response actions at the site to address releases or threatened releases of hazardous substances or contaminants, which present a substantial danger to the public health or safety or the environment.

REFERENCES

BCM Engineers, Planners and Scientists. *Groundwater Quality Investigation for Bishop Tube Company.* (May 1988)

BCM Engineers, Planners and Scientists. *Scope of Work for Groundwater Investigation and Remediation Christiana Metals Corporation Bishop Tube Facility* (October 25, 1994)

ERM. *Filing of Notice of Intent to Remediate Under Act 2; The Unisys and Former Lockheed-Martin Site, East Whiteland and Tredyfrin Twonships, Chester County.* (October 1999)

NUS Corporation. *Site Inspection of Bishop Tube Company.* (May 26, 1994)

O'Brien & Gere Engineers, Inc. *Ground Water Interim Remedial Action Workplan, Bishop Tube Site.* (May 1999)

O'Brien & Gere Engineers, Inc. *Letter to Dustin A. Armstrong: February 1999 Ground Water Sampling Results.* (June 10, 1999)

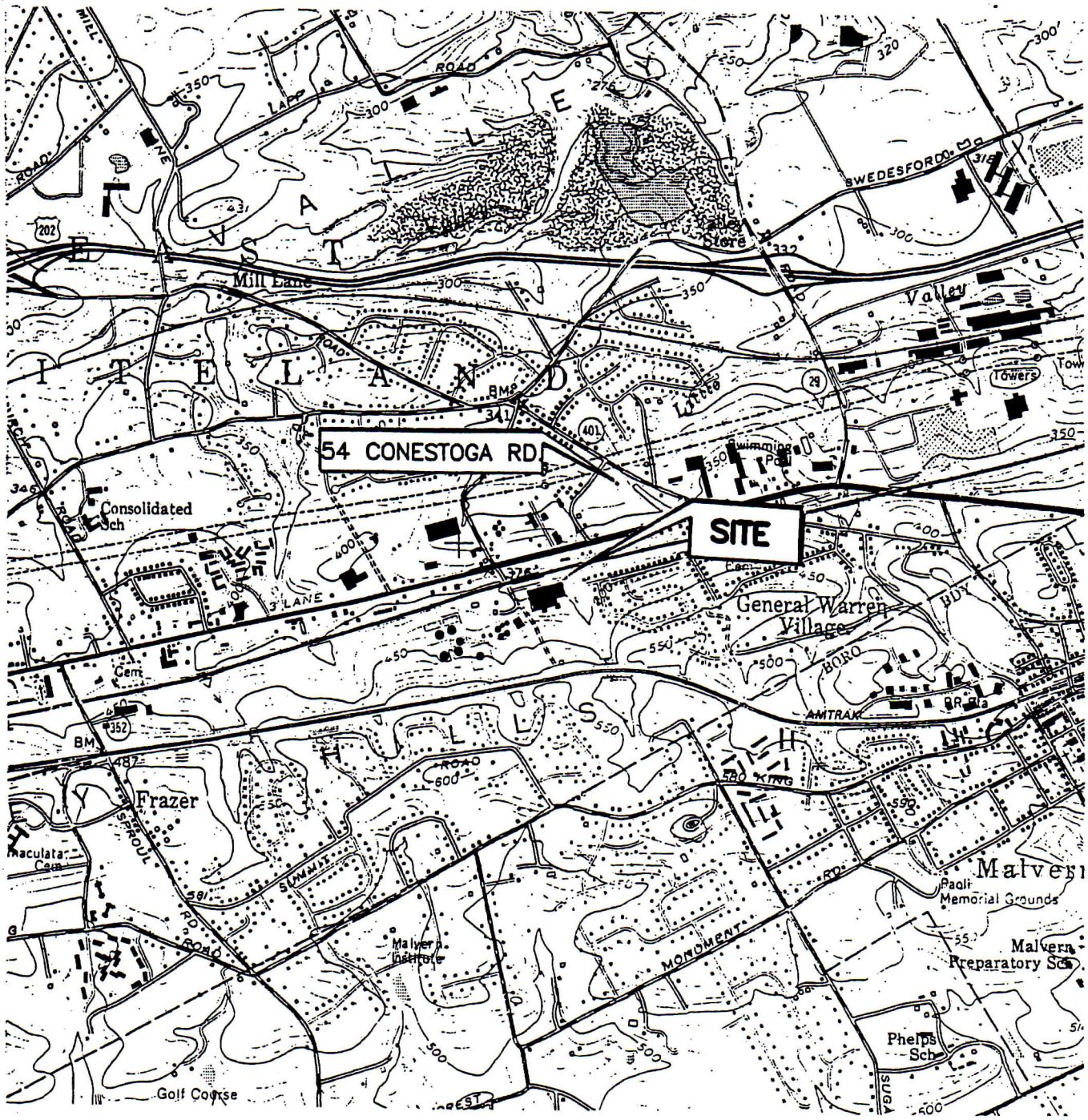
O'Brien & Gere Engineers, Inc. *Site Characterization and Interim Remedial Action Plan, Bishop Tube Site.* (September 1998)

PA DER. *Preliminary Assessment.* (November 29, 1983)

Slotto, Ronald, A. (USGS). *Effect of Urbanization on the Water Resources of Eastern Chester County, Pennsylvania.* (1987)

Slotto, Ronald, A. (USGS). *Geohydrology and Simulation of Ground-Water Flow in the Carbonate Rocks of The Valley Creek Basin, Eastern Chester County, Pennsylvania.* (1990)

USGS, 1955. *Malvern Quadrangle, 7.5 Minute Series (Topographic). (Photo revised 1983).* Reston VA.



MAP ADAPTED FROM USGS 7.5 MINUTE QUAD TITLED MALVERN, PA.

BISHOP TUBE FACILITY
FRAZER, PENNSYLVANIA

SITE LOCATION MAP

STATE LOCATION MAP

1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

SCALE: 1:24000

FILE NO.3552.009-01
9/98

O'BRIEN & GERE ENGINEERS INC.

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PLOT DATE: 9, 4