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RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Attachment No. 4

Summary of Indoor Air Analytical Data
and
Constituents Detected in Indoor Air
Environmental Indicator Determination
For
Pratt & Whitney Rocky Hill Facility

INDOOR AIR MONITORING
IN SUPPORT OF
VCAP RISK ASSESSMENT

Pratt & Whitney
Rocky Hill, CT

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1. SUMMARY

Indoor air monitoring was performed at the Pratt & Whitney, Rocky Hill facility in support of the Voluntary Corrective Action Program (VCAP) Risk Assessment. Samples were collected throughout the facility from locations representative of process operations and from locations overlying areas where elevated volatile organic compound (VOC) concentrations were observed in the groundwater. The samples were collected on multimedia (thermal desorption) tubes and on charcoal tubes and were analyzed in accordance with modified EPA Method T01/T02 for an expanded list of VOCs.

2. FACILITY INFORMATION

The Pratt & Whitney Rocky Hill facility is located at 60 Belamose Avenue in Rocky Hill, Connecticut. The facility consists of a main factory building, a separate powerhouse, and several auxiliary buildings on 51.5 acres of land.

3. METHODOLOGY

Five indoor air samples, one trip blank and one duplicate were collected on November 4, 1998 from various locations throughout the main facility building and the Power House. The rationale for sample collection is provided below:

Sampling Location	Rationale
RH-RSK-AS-01	Collected in Power House.
RH-RSK-AS-02	Collected within manufacturing building (Bond Room).
RH-RSK-AS-03	Collected within manufacturing building near location of groundwater contamination (carbon disulfide, etc.).
RH-RSK-AS-04	Collected within manufacturing building.
RH-RSK-AS-05	Collected within manufacturing building.

The samples were collected in multimedia thermal desorption tubes and in charcoal tubes over approximately an eight hour period. The charcoal tubes were to be used in place of the multimedia tubes in case breakthrough was observed. No such condition was observed in any of the sampling locations, and therefore the charcoal tubes were not analyzed. A separate charcoal tube was used for the analysis for carbon disulfide. The method used for the analysis was modified EPA Method T01/T02.

The samples collected were placed in an ice-filled cooler and submitted to Cigna's Environmental Health Laboratory of Cromwell, Connecticut for analysis under chain-of-custody procedures. The samples collected were analyzed for an expanded list of volatile organic

compounds using gas chromatography / mass spectroscopy (GC/MS). All sample locations are shown in the Site Plan provided as Attachment No. 2 of the *Documentation of Environmental Indicator Determination for Current Human Exposures Under Control.* In addition, one trip blank and one duplicate sample were collected for quality assurance/quality control (QA/QC) purposes.

4. RESULTS

The analytical results obtained are summarized in tabular form in the following pages. Table 1 presents a summary of sampling and analytical information; Table 2 presents a list of detected constituents; and Table 3 summarizes all analytical results obtained.

The concentrations detected for most constituents were mostly in the low microgram per cubic meter ($\mu g/m^3$) range. The constituents detected and their highest concentrations included acetone (up to 330 $\mu g/m^3$); 1,4-dichlorobenzene (up to 3.1 $\mu g/m^3$); methyl ethyl ketone (up to 8.1 $\mu g/m^3$); methyl-tert-butyl-ether (up to 8.1 $\mu g/m^3$); toluene (up to 6.7 $\mu g/m^3$); m&p-xylenes (up to 2.3 $\mu g/m^3$). Carbon disulfide was not detected.

The indoor air sample data provided in the tables were compared to the numeric screening levels published in the *Conceptual Site Models and Screening Levels for Pratt & Whitney's VCAP Connecticut Facilities*, prepared by Gradient Corporation, issued on December 19, 1997 and revised on September 18, 1998 and September 15, 1999. Specifically, the indoor air data were compared to the numeric criteria published in Table 3-4 of the above-referenced report. The table is titled *Generic P&W Indoor Air Screening Levels (SLs) P&W VCAP, Connecticut Facilities*. The comparison indicated that the detected concentrations are several orders of magnitude below the corresponding screening levels.

A comparison of the duplicate samples collected in locations adjacent to each other indicated relative percent differences up to 73 % (toluene 3.1 $\mu g/m^3$ and 6.7 $\mu g/m^3$ in the duplicate). Such relative percent differences are to be expected in the low concentration range reported. The blank sample did not indicate any contamination.

Table 1
SUMMARY OF AIR SAMPLING AND ANALYTICAL INFORMATION
Pratt & Whitney, Rocky Hill, Connecticut

Sample Information					Analysis Information								
Location ID	Sample ID	Sample Date	From (ft) To (ft)	Class	Portable GC	Volatile Organics	Semivolatile Organics	Herbicides	Pesticides	PCBs	Metals	Extraction	Miscellaneous
RH-RSK-AS-01	1831433	11/04/1998		VS		X							
RH-RSK-AS-02	1831434	11/04/1998		VS		X							
RH-RSK-AS-03	1831435	11/04/1998		VS		X							
RH-RSK-AS-04	1831436	11/04/1998		VS		X							
RH-RSK-AS-04	1831437	11/04/1998		VS		X							
RH-RSK-AS-05	1831438	11/04/1998		VS		X							

Notes: 1. Legend: X - Analysed; at least one analyte over the detection limit; x - Analysed, no analytes in group over the detection limit
2. Printed on 10/06/1999

Table 2
SUMMARY OF CONSTITUENTS DETECTED IN INDOOR AIR SAMPLES
Pratt & Whitney, Rocky Hill, Connecticut

	Location ID	RH-RSK-AS-01	RH-RSK-AS-02	RH-RSK-AS-03	RH-RSK-AS-04	RH-RSK-AS-04	RH-RSK-AS-05
	Sample ID	1831433	1831434	1831435	1831436	1831437	1831438
	Sample Date	11/04/1998	11/04/1998	11/04/1998	11/04/1998	11/04/1998	11/04/1998
	Sample Time	16:02	16:07	16:15	13:24	16:24	16:37
	Laboratory	CIGN	CIGN	CIGN	CIGN	CIGN	CIGN
	Lab. Number	CIGNA1831433	CIGNA1831434	CIGNA1831435	CIGNA1831436	CIGNA1831437	CIGNA1831438
Constituent	Units						
Acetone	µg/m3	3.7	330	77	82	130	150
Dichlorobenzene,1,4-	µg/m3			1.4	2.7	3.1	1.1
Methyl Ethyl Ketone	µg/m3			7.2	3.5	6.1	8.1
Methyl-tert-butyl Ether	µg/m3	8.1					
Toluene	µg/m3	3.7		1.6	3.1	6.7	3.6
Xylenes,m- & p-	µg/m3	2.3					

Notes: 1. Only Detects Shown
2. Printed on 10/06/1999

Table 3
SUMMARY OF INDOOR AIR ANALYTICAL RESULTS
Pratt & Whitney, Rocky Hill, Connecticut

	Location ID	RH-RSK-AS-01	RH-RSK-AS-02	RH-RSK-AS-03	RH-RSK-AS-04	RH-RSK-AS-04	RH-RSK-AS-05
	Sample ID	1831433	1831434	1831435	1831436	1831437	1831438
	Sample Date	11/04/1998	11/04/1998	11/04/1998	11/04/1998	11/04/1998	11/04/1998
	Sample Time	16:02	16:07	16:15	13:24	16:24	16:37
	Laboratory	CIGN	CIGN	CIGN	CIGN	CIGN	CIGN
	Lab. Number	CIGNA1831433	CIGNA1831434	CIGNA1831435	CIGNA1831436	CIGNA1831437	CIGNA1831438
Constituent	Units						
Acetone	µg/m3	3.7	330	77	82	130	150
Benzene	µg/m3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.1
Bromoform	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide	µg/m3	<2.0	<2.0	<2.0	<2.1	<2.1	<2.1
Carbon Tetrachloride	µg/m3	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Chlorobenzene	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	µg/m3	<1.0	<1.0	<1.0	<1.1	<1.1	<1.1
Dichlorobenzene,1,2-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.1
Dichlorobenzene,1,3-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.1
Dichlorobenzene,1,4-	µg/m3	<1.0	<1.0	1.4	2.7	3.1	1.1
Dichloroethane,1,1-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloroethane,1,2-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloroethylene,1,1-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.1
Dichloropropane,1,2-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloropropylene,1,3-cis-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichloropropylene,1,3-trans-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylene Dibromide	µg/m3	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1
Methyl Ethyl Ketone	µg/m3	<2.0	<2.0	7.2	3.5	6.1	8.1
Methyl-2-pentanone,4-	µg/m3	<2.0	<2.0	<2.0	<2.1	<2.1	<2.1
Methyl-tert-butyl Ether	µg/m3	8.1	<2.0	<2.0	<2.1	<2.1	<2.1
Methylene Chloride	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.1
Styrene	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethane,1,1,1,2-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.1
Tetrachloroethane,1,1,2,2-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.1
Tetrachloroethylene	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.1
Toluene	µg/m3	3.7	<1.0	1.6	3.1	6.7	3.6
Trichloroethane,1,1,1-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.1
Trichloroethane,1,1,2-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.1

Notes: 1. Printed on 10/06/1999

Table 3
SUMMARY OF INDOOR AIR ANALYTICAL RESULTS
Pratt & Whitney, Rocky Hill, Connecticut

	Location ID	RH-RSK-AS-01	RH-RSK-AS-02	RH-RSK-AS-03	RH-RSK-AS-04	RH-RSK-AS-04	RH-RSK-AS-05
	Sample ID	1831433	1831434	1831435	1831436	1831437	1831438
	Sample Date	11/04/1998	11/04/1998	11/04/1998	11/04/1998	11/04/1998	11/04/1998
	Sample Time	16:02	16:07	16:15	13:24	16:24	16:37
	Laboratory	CIGN	CIGN	CIGN	CIGN	CIGN	CIGN
	Lab. Number	CIGNA1831433	CIGNA1831434	CIGNA1831435	CIGNA1831436	CIGNA1831437	CIGNA1831438
Constituent	Units						
Trichloroethylene	µg/m3	<1.0	<1.0	<1.0	<1.1	<1.1	<1.1
Vinyl Chloride	µg/m3	<4.0	<4.0	<4.0	<4.0	<4.0	<4.3
Xylene,o-	µg/m3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes,m- & p-	µg/m3	2.3	<2.0	<2.0	<2.0	<2.0	<2.1

Notes: 1. Printed on 10/06/1999