Table 6
Summary of Toxicity Criteria and Chemical-Specific Parameters Used in the Risk Assessment
Galaxy/Spectron Site
Elkton, Maryland

	RfDo (mg/kg-day)		RfDi (mg/kg-day)		CSFo (kg-day/mg)		CSFi (kg-day/mg)		Oral Absorption	RfDd (mg/kg-day)	CSFd (kg-day/mg)	Volatilization Factor (m^3/kg)	Permeability Coefficient (cm/hr)		Calculation of Soil-to-Air Volatilization Factor* Koc	Di	Dw	H	DA	VF
Volatile Organic Compounds																				
Acetone	1.00E-01	I							8.30E-01 N	8.30E-02		1.20E+04	6.00E-04	D				3.88E-05		
Benzene	3.00E-03	E	1.70E-03	E	5.50E-02	I	2.90E-02	I	0.8 RfD/1.0 CSF R/I	2.40E-03	5.50E-02	2.7E+03	2.1E-02	D				5.55E-03		
Benzyl chloride					1.70E-01	I			8.0E-01 R		2.13E-01		1.4E-02	D				3.40E-04		
Butanone, 2-	6.00E-01	I	2.86E-01	I					9.5E-01 N	5.70E-01			1.1E-03	D				4.70E-05		
Chlorobenzene	2.00E-02	I	1.70E-02	E					8.0E-01 R	1.60E-02		6.3E+03	4.1E-02	D				3.70E-03		
Chloroethane	4.00E-01	E	2.90E+00	I	2.90E-03	E			8.0E-01 R	3.20E-01	3.63E-03		8.0E-03	D				1.10E-02		
Chloroform	1.00E-02	I	8.60E-05	E	6.10E-03	I	8.10E-02	I	1.0E+00 N	1.00E-02	6.10E-03	2.9E+03	8.9E-03	D				3.70E-03		
Dichloroethane, 1,1-	1.00E-01	H	1.40E-01	HA					8.0E-01 R	8.00E-02		2.8E+03	8.9E-03	D				5.60E-03		
Dichloroethane, 1,2-	3.00E-02	E	1.40E-03	E	9.10E-02	I	9.10E-02	I	1.0E+00 N	3.00E-02	9.10E-02	4.9E+03	5.3E-03	D				9.80E-04		
Dichloroethene, 1,1-	9.00E-03	I			6.00E-01	I	1.75E-01	I	8.0E-01 R	7.20E-03	7.50E-01	1.4E+03	1.6E-02	D				2.60E-02		
Dichloroethene, 1,2- (total)	9.00E-03	H							1.0E+00 N	9.00E-03		2.9E+03	1.0E-02	D				9.40E-03		
Ethylbenzene	1.00E-01	I	2.90E-01	I			3.85E-03		9.2E-01 N	9.20E-02		4.0E+03	7.4E-02	D				7.90E-03		
Methylene chloride	6.00E-02	I	8.60E-01	H	7.50E-03	I	1.65E-03	I	8.0E-01 R	4.80E-02	9.38E-03	2.4E+03	4.5E-03	D				2.20E-03		
Methyl-2-pentanone, 4-	8.00E-02	H	2.00E-02	HA					8.0E-01 R	6.40E-02			4.00E-03	D				1.40E-04		
Tetrachloroethane, 1,1,2,2-	6.00E-02	E			2.00E-01	I	2.00E-01	I	8.0E-01 R	4.80E-02	2.50E-01	1.2E+04	9.0E-03	D	9.33E+01	7.10E-02	7.90E-06	1.41E-02	7.83E-05	1.25E+04
Tetrachloroethene	1.00E-02	I	1.40E-01	E	5.20E-02	E	1.00E-02	E	1.0E+00 N	1.00E-02	5.20E-02	2.3E+03	4.8E-02	D	1.55E+02	7.20E-02	8.20E-06	7.54E-01	2.40E-03	2.25E+03
Toluene	2.00E-01	I	1.14E-01	I					1.0E+00 N	2.00E-01		3.5E+03	4.5E-02	D				6.60E-03		
Trichloroethane, 1,1,1-	2.80E-01	E	6.30E-01	E					8.0E-01 R	2.24E-01		2.4E+03	1.7E-02	D				1.70E-02		
Trichloroethane, 1,1,2-	4.00E-03	I			5.70E-02	I	5.60E-02	I	8.0E-01 R	3.20E-03	7.13E-02	7.5E+03	8.4E-03	D				9.10E-04		
Trichloroethene	3.00E-04	E	1.00E-02		4.00E-01	E	4.00E-01	E	8.0E-01 R	4.80E-03	1.38E-02	2.6E+03	1.6E-02	D				1.00E-02		
Trichloro-1,2,2-trifluoroethane, 1,1,2-	3.00E+01	I	8.60E+00	H					8.0E-01 R	2.40E+01			1.7E-02	D,3				5.30E-01		
Vinyl Chloride (early life -- *used for resident exposures, assumes lifetime resident*)	3.00E-03	I	2.80E-02	I	1.40E+00	I	3.00E-02	I	1.0E+00 N	3.00E-03	1.40E+00	9.1E+02	7.3E-03	D	1.86E+01	1.06E-01	1.23E-06	1.11E+00	1.45E-02	9.15E+02
Vinyl Chloride (adult -- *used for non-resident exposures*)	3.00E-03	I	2.80E-02	I	7.20E-01	I	1.50E-02	I	1.0E+00 N	3.00E-03	7.20E-01	9.1E+02	7.3E-03	D	1.86E+01	1.06E-01	1.23E-06	1.11E+00	1.45E-02	9.15E+02
Xylenes (total)	2.00E+00	I							9.0E-01 N	1.80E+00		5.7E+03	8.0E-02	D				6.00E-03		
BDCM	2.00E-02	I			6.20E-02	I			1.0E+00	2.00E-02	6.20E-02		5.8E-03					1.60E-03		
Semivolatile Organic Compounds																				
Benz(a)anthracene					7.30E-01	E			1.0E+00 3		7.30E-01	8.3E+06	8.10E-01	D	3.98E+05	5.10E-02	9.00E-06	1.37E-04	1.76E-10	8.32E+06
Benzo(a)pyrene					7.30E+00	I	3.10E+00	E	1.0E+00 3		7.30E+00	2.1E+07	1.2E+00	D	1.02E+06	4.30E-02	9.00E-06	4.63E-05	2.64E-11	2.15E+07
Benzo(b)fluoranthene					7.30E-01	E			1.0E+00 3		7.30E-01	4.1E+06	1.2E+00	D	1.23E+06	2.26E-02	5.56E-06	4.55E-03	7.26E-10	4.09E+06
bis(2-Chloroethyl)ether					1.10E+00	I	1.10E+00	I	5.0E-01 R		2.20E+00	1.3E+04	2.1E-03	D				1.80E-05		
Chloroaniline, 4-	4.00E-03	I							5.0E-01 R	2.00E-03		2.8E+05	6.00E-03	D				3.30E-07		
Chlorophenol, 2-	5.00E-03	I							5.0E-01 R	2.50E-03		3.0E+04	1.1E-02	D				3.90E-04		
Dibenz(a,h)anthracene					7.30E+00	E			1.0E+00 3		7.30E+00	9.0E+07	2.7E+00	D	3.80E+06	2.02E-02	5.18E-06	6.03E-07	1.50E-12	9.02E+07
Dichlorobenzene, 1,2-	9.00E-02	I	4.00E-02	H					5.0E-01 R	4.50E-02		1.1E+04	6.1E-02	D				1.90E-03		
Dichlorobenzene, 1,3-	3.00E-02	E							5.0E-01 R	1.50E-02			8.7E-02	D				2.80E-03		
Dichlorobenzene, 1,4-	3.00E-02	E	2.29E-01	I	2.40E-02	H	2.20E-02	E	5.0E-01 R	1.50E-02	4.80E-02	1.1E+04	6.2E-02	D	6.17E+02	6.90E-02	7.90E-06	9.96E-02	9.32E-05	1.14E+04
Methylnaphthalene, 2-	2.00E-02	E							8.0E-01 A	1.60E-02			1.4E-01	D				2.60E-04		
Methylphenol, 4-	5.00E-03	H							6.5E-01 N	3.25E-03			1.0E-02	D				1.00E-06		
Naphthalene	2.00E-02	I	9.00E-04	I					8.0E-01 A	1.60E-02		5.5E+04	6.9E-02	D				4.80E-04		
Trichlorobenzene, 1,2,4-	1.00E-02	I	5.70E-02	H					5.0E-01 R	5.00E-03		3.8E+04	1.0E-01	D	1.78E+03	3.00E-02	8.23E-06	5.82E-02	8.38E-06	3.81E+04
Pesticide/PCBs Compounds																				
Aroclor-1242					2.00E+00	I	2.00E+00	I	0.89 RfD/1.0 CSF N/3		2.00E+00		7.00E-01	D						
BHC, alpha-					6.30E+00	I	6.30E+00	I	5.0E-01 R		1.26E+01		1.80E-02	D				6.70E-06		
BHC, beta-					1.80E+00	I	1.80E+00	I	5.0E-01 R		3.60E+00		1.80E-02	D				7.00E-07		
BHC, delta-					1.80E+00	I	1.80E+00	I	5.0E-01 R		3.60E+00		1.80E-02	D				4.30E-07		
Dieldrin	5.00E-05	I			1.60E+01	I	1.60E+01	I	9.0E-01 A	2.50E-05	1.78E+01		1.60E-02	D				1.00E-05		
Heptachlor epoxide	1.30E-05	I			9.10E+00	I	9.10E+00	I	5.0E-01 R	6.50E-06	1.82E+01		1.1E-02	D,2				9.50E-06		
Total Inorganics																				
Aluminum	1.00E+00	E	1.00E-03	E					5.00E-03 A	5.00E-03			1.00E-03	D,1						
Antimony	4.00E-04	I							1.00E-01 A	4.00E-05			1.00E-03	D,1						
Arsenic	3.00E-04	I			1.50E+00	I	1.51E+01	I	9.50E-01 N	2.85E-04	1.58E+00		1.00E-03	D,1						
Barium	7.00E-02	I	1.40E-04	HA					1.00E+00 N	7.00E-02			1.00E-03	D,1						

	RfDo (mg/kg-day)		RfDi (mg/kg-day)		CSFo (kg-day/mg)	CSFi (kg-day/mg)		Oral Absorption	RfDd (mg/kg-day)	CSFd (kg-day/mg)	Volatilization Factor (m^3/kg)	Permeability Coefficient (cm/hr)	Calculation of Soil-to-Air Volatilization Factor* Koc	Di	Dw	H	DA	VF
Beryllium	2.00E-03	I	5.70E-06	I		8.40E+00	I	1.00E-02 A	2.00E-05			1.00E-03 D,1						
Cadmium (food -- *used for soil exposures*)	1.00E-03	I	5.70E-05	E		6.30E+00	I	2.50E-02 I	2.50E-05			1.0E-03 D						
Cadmium (water)	5.00E-04	I	5.70E-05	E		6.30E+00	I	5.00E-02 I	2.50E-05			1.0E-03 D						
Chromium	3.00E-03	I	3.00E-05	I		4.10E+01	H	1.00E-02 A	3.00E-05			2.0E-03 D						
Cobalt	2.00E-02	E	7.00E-06	E				3.00E-01 A	6.00E-03			4.00E-04 D,1						
Copper	4.00E-02	H						6.00E-01 A	2.40E-02			1.00E-03 D,1						
Iron	3.00E-01	E						1.0E+00 3	3.00E-01			1.00E-03 D,1						
Manganese (food -- *used for ingestion exposures*)	4.67E-02	I	1.43E-05	I				1.0E+00 3	4.67E-02			1.00E-03 D,1						
Manganese (nonfood -- *used for dermal and inhalation exposures*)	2.00E-02	I	1.43E-05	I				1.0E+00 3	2.00E-02			1.00E-03 D,1						
Mercury	1.00E-04	I	8.60E-05	I				1.0E+00 3	1.00E-04			1.0E-03 D						
Nickel	2.00E-02	I				8.40E-01	I	1.00E-01 N	2.00E-03			1.0E-04 D						
Vanadium	7.00E-03	H						2.00E-02 A	1.40E-04			1.00E-03 D,1						
Zinc	3.00E-01	I						2.50E-01 N	7.50E-02			6.00E-04 D						

Notes:

* Soil-to-Air Volatilization Factors shown only for those COPCs retained for quantitative risk assessment in soil; calculations based on *RAGS Part B* , USEPA Publ. 9285.7-01B, December 1991.

For Manganese (food) RfD_o shown here, a Modifying Factor of 3 was applied to the pulbished Manganese (food) RfD_o per IRIS, December 2001.

Mercury RfD_o based on methylmercury, RfD_i based on inorganic mercury.

Nickel CSF_i based on nickel refinery dust.

No dermal absorption adjustment to CSF_os was used for PAHs.

A = ATSDR Toxicity Profile.

D = *Dermal Exposure Assessment:Principles and Applications*, EPA/600/8-91-011B, January 1992.

E = NCEA as presented by USEPA Region III, Risk-Based Concentration Table, October 2001 Update.

I = IRIS, December 2001.

H = *HEAST, 1997 Update* , EPA/540/R-97/036, July 1997.

HA = HEAST Alternate, *HEAST, 1997 Update* , EPA/540/R-97/036, July 1997.

N = NCEA Guidance as provided by Region 3.

R = USEPA Region 4, November 1995.

1 = Based on water as surrogate.

2 = Based on heptachlor as surrogate.

3 = 1,1,2-Trichloro-1,2,2-trifluoroethane Permeability Coefficient based on Trichlorofluoromethane.