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August 21, 2006

Camqui Nguyen
Air Pollution Control Engineer
San Diego Air Pollution Control District
10124 Old Grove Road
San Diego, CA 92131

Subject: Permit Application for South Bay Replacement Project (Appl. # 984569)

Dear Ms. Nguyen:

On behalf of LSP South Bay LLC, Sierra Research is pleased to submit the enclosed response to the information requested in the District's August 9, 2006 letter regarding the permit application for the South Bay Replacement Project (SBRP).

If you have any questions or need any additional information, please do not hesitate to contact me at (916) 444-6666 or Kevin Johnson with LSP South Bay LLC at (713) 303-2758.

Sincerely,

Gary Rubenstein
Senior Partner

Enclosure

Cc: CEC Dockets (06-AFC-3)
Bill Pfanner, CEC

Response to August 9, 2006 SDAPCD Request for Information

1. **Analyses on how the SBRP will comply with the requirements of District New Source Review Rule 20.3, including Air Quality Impact Analysis, Prevention of Significant Deterioration, and Emission Offsets, during the SBRP commissioning period. The SBRP commissioning period commences in the second quarter of 2009 and ends in the second quarter of 2010, during which time the existing South Bay Power Plant (SBPP) is also in operation. This may result in emission increases which subject the SBRP from the above District New Source Review Requirements.**

Response: The sum of actual 12-month emissions from the SBRP during the 12 months that includes commissioning and the actual emissions from the existing SBPP during the same 12 months will not exceed the maximum emissions allowed the SBRP, based on the baseline 2004-2005 emissions from the SBPP and the offsets resulting from its shutdown. The total allowable emissions from the SBRP are presented in AFC Section 8.1 (Air Quality) Table 8.1-23, -24, -25 and -34.

The mechanism by which the combined 12-month emissions from the SBPP and the SBRP will be kept below the allowable maximum is through the management of operations of SBPP and SBRP, and use of continuous emissions monitoring systems for both facilities. For those pollutants not directly monitored (e.g., VOC, SOx, PM_{10}), emissions will be calculated using measured fuel consumption and district-approved emission factors.

2. **Calculation of criteria pollutant emissions from the SBRP during the commissioning period.**

Response: Although the maximum potential commissioning emissions were presented in AFC Appendix 8.1B Table 8.1B-9 (Gas Turbine/HRSG Commissioning Profile), an example of more detailed commissioning emissions is presented in Attachment 1, created from publicly available information regarding a similar facility. It is important to keep in mind that commissioning activities are unique from one plant startup to the next; the commissioning emissions in Attachment 1 represent SBRP's best estimates at the present time. For your convenience, Attachment 1 also contains a copy of AFC Appendix 8.1B Table 8.1B-9, the maximum commissioning emissions. As can be seen, the expected emissions are substantially below the maximum estimate contained in the AFC.

3. **Manufacturer documents on specifications and emission data for the combustion gas turbines, the steam turbine, the duct burner, the boiler, and the fire pump engine.**

Response: For a combined cycle power plant, separate specification documents are prepared by each individual equipment supplier. Since these individual specification documents are not always prepared on a consistent basis (e.g. different manufacturers, vendors, and applications), the project engineer (in this case, Black & Veatch), integrates

the vendor data to predict plant performance. In addition, the project's air quality consultant, Sierra Research, used this information to calculate emission rates in a manner and format suitable for use in dispersion modeling analyses and in anticipated permit conditions. These calculations can be found in the AFC in the following locations:

- Gas turbine and HRSG performance data (AFC Appendix 8.1B Table 8.1B-1, also included as Attachment 2 to this response)
- Boiler specifications and emission information from Babcock & Wilcox (AFC Appendix 8.1B Tables 8.1B-1 [see Attachment 2 to this response], and in AFC Appendix 8.1B Table 8.1B-2, also included as Attachment 3 to this response)
- Emergency Fire Water Pump engine specifications and emission information from Clarke (AFC Appendix 8.1B Table 8.1B-3, also included in Attachment 4)

A Clarke technical data specification for their JU6H-UF60 fire water pump, showing its compliance with the California Air Toxics Control Measure (ATCM) at Tier 2, is also included in Attachment 4.

The steam turbine will not be an emitting device, and hence, no emission data are provided for it.

4. **Design parameters and details for the dry low-NOx combustor, the selective catalytic reduction (SCR) and oxidation catalytic control systems to demonstrate that the proposed systems are adequate to achieve required controlled emission rates.**

Response: The dry low-NOx (DLN) combustors do not have specifications tabulated like those of turbines, boilers and engines. The use of the GE DLN combustors in the turbines result in the emissions presented in the AFC. Technical information available for the two catalytic control systems is provided in Attachment 5.

5. **Specifications and operational procedures for the Continuous Emission Monitoring Systems (CEMS), to be used during initial start-up and commissioning prior to the permanent CEM's being certified.**

Response: The continuous emissions monitoring system (CEMS) will measure stack concentrations of oxides of nitrogen, oxygen, and carbon monoxide in accordance with the requirements of 40 CFR 75, 40 CFR 60, and District regulations and policies (as applicable). In addition, fuel flow from each gas turbine and duct burner will be monitored in accordance with the requirements of 40 CFR 75, enabling the calculation of mass emissions from each unit. The CEMS will be installed and calibrated prior to initial operation of each gas turbine/HRSG. The values from the calibrated CEMS will be used to determine emissions from SBRP during the commissioning period.

6. **CEMS data on Nitrogen Oxides (NOx) emissions from the SBPP for the years 2004 and 2005.**

Response: The summarized CEMS data on NOx for 2004 and 2005 are in Attachment 6. The 2005 NOx emissions are taken directly from the available CEMS data, while the 2004 NOx emissions are calculated from the SDAPCD emission inventory and emission factors, which were developed by the SDAPCD from the 2004 CEMS data. The detailed 2005 hourly CEMS data for each SBPP unit have been placed on a CD, and transmitted separately to the SDAPCD.

7. **Fuel consumption records for the SBPP for the years 2004 and 2005.**

Response: The summarized fuel consumption data for 2004 and 2005 are in Attachment 7. The hourly detailed fuel use for 2005 is contained in the same files as the CEMS emission data described in the previous response, and transmitted to the SDAPCD on the same CD.

8. **For the health risk assessment on emissions from non-criteria pollutants:**
   a. **Calculation for toxic cancer risk of naphthalene;**

Response: The following AFC Appendix 8.1E Tables have been updated with the unit risk values for naphthalene in the Derived-OEHHA Method, Average Point Estimate Method, High-End Point Estimate Method, Derived-Adjusted Method, and Worker Exposure Derived-OEHHA Method, and are included in Attachment 8:

- Table 8.1E-2 (Calculation of Modeling Inputs and Cancer Risk for Gas Turbines)
- Table 8.1E-4 (Cancer Risk Assessment Modeling Inputs and Results for Auxiliary Boiler and Fire Pump Engine)
- Table 8.1E-6 (Summary of Modeling Input Values for Screening Health Risk Assessment)

   b. **Clarification on the use of the AERMOD modeling: whether the source strength calculated from HARP was used as emission rates for each source, or if the AERMOD calculations that used unit emission rates were post processed with the source strength data to produce tables of risks for all receptors;**

Response: The basis of the screening level health risk assessment was CARB's Hotspots Analysis and Reporting Program (HARP) computer program and associated guidance in the OEHHA's *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* (August 2003). The following discussion describes the procedures used to prepare this screening health risk assessment.

The risk assessment module of the HARP model was run using unit ground level impacts to obtain derived cancer risks for each toxic chemical of interest.[1] Cancer risks were obtained for the derived (OEHHA) method, the derived (adjusted) method, average point estimate and high-end point estimate options. The HARP model output was cancer risk by pollutant and route for each type of analysis, based on an assumed input exposure of 1.0 $\mu g/m^3$. The emission rates of the toxic air contaminants were then combined with the HARP unit values to determine weighted input values that were used in the AERMOD model to determine actual cancer risk and health hazard indices at 34,215 receptors, including the nearest resident and nearest worker. The resulting potential health risks were presented in AFC Section 8.1 (Air Quality) Table 8.1-32 and AFC Section 8.6 (Public Health) Table 8.6-5.

HARP model output showing the calculated unit risk values is included as Attachment 9. Individual cancer risks are expressed in units of risk per $\mu g/m^3$ of exposure. To calculate the weighted risk for each source, the annual average emission rate in g/s for each pollutant was multiplied by the individual cancer risk for that pollutant in units of $(\mu g/m^3)^{-1}$. The resulting weighted cancer risks for each pollutant were then summed for the source, and that value was used as the "emission rate" input to AERMOD. The same procedure was used to determine the acute and chronic health impacts associated with the proposed SBRP.

Note: In a follow-up phone call for clarification on Item 8, Dick Brightman of the SDAPCD inquired about a screening health risk assessment (SHRA) on commissioning emissions. A SHRA was not conducted on commissioning emissions because commissioning emission rates of toxic air contaminants are not expected to be higher than the emission rates of the same contaminants during normal operation, which was the basis for the emission rates used in the SHRA.[2] Therefore, potential health risks, short-term acute non-carcinogenic health hazard and long-term cancer risk and chronic non-carcinogenic health hazard, would not exceed the maximum potential health risks reported in the AFC.

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[1] Procedure is described in Part B of Topic 8 of the HARP How-To Guides: How to Perform Health Analyses Using a Ground Level Concentration.

[2] Although there will be some limited operations of the units without oxidation catalysts installed during commissioning, these limited operations will be comparable, in terms of emission rates, to routine startups.

c. **Clarification on which AERMOD output files or post-processed risk files were used to reach the conclusions of the risks assessment, and copy of these files for review. The Readme.txt file provided with the modeling CDs is not sufficient.**

Response: As discussed in our August 10, 2006 telephone conversation with Dick Brightman of the SDAPCD, the three AERMOD output files that support the health risk assessment are identified on the CD as follows:

- *de18.ain (input file)*
- *de18.out (output file)*
- *sbpst.dat (output posting file).*

d. **Verification that the UTMs for the emission sources, buildings, property boundary and receptors use the correct datum for acceptance of calculations for review. The UTM Zone 11 NAD27 datum is preferred by the District to ensure accuracy and consistency with digital elevation data. Since San Diego county geographic data is provided for analysis and display in NAD 1983 California VI FIPS feet, location coordinates used for modeling should be transformed to the proper UTM datum before proceeding with the modeling.**

Response: The UTM coordinates are in the Zone 11 NAD27 datum.

Attachment 1

Detailed Commissioning Emissions Example

Facility-Wide Daily Emissions During Commissioning Period

Date	CO	NO_x	PM_{10}	VOC	SOx
11/17/05	1,398	656	15	6	2
11/18/05	782	417	8	3	1
11/19/05	2,011	1,551	30	11	4
11/20/05	3,124	2,878	53	19	8
11/21/05	16,431	2,689	58	21	9
11/22/05	11,853	2,898	56	20	8
11/23/05	3,546	1,227	26	9	4
11/25/05	7,151	1,274	31	11	5
12/28/05	982	361	9	3	1
12/29/05	3,438	1,466	32	12	5
12/30/05	2,881	832	19	7	3
12/31/05	4,975	1,789	50	18	7
01/02/06	697	678	110	40	16
01/03/06	392	1,008	193	71	28
01/04/06	3,233	1,219	26	10	4
01/05/06	807	784	77	28	11
01/06/06	377	538	102	37	15
01/09/06	1,318	898	86	31	13
01/10/06	43	3	0	0	0
01/11/06	834	487	45	16	6
01/12/06	596	310	8	3	1
01/13/06	873	1,102	150	55	22
01/14/06	1,721	1,102	52	19	8
01/15/06	3,908	1,748	90	33	13
01/17/06	288	57	1	0	0
01/18/06	949	723	106	39	16
01/19/06	1,778	974	85	30	12
01/20/06	2,049	828	70	25	10
01/21/06	1,342	1,173	154	55	22
01/22/06	323	1,879	375	136	55
01/23/06	1,500	1,369	234	85	34
01/24/06	638	713	80	29	11
01/25/06	1,348	1,218	180	65	26
01/26/06	194	2,087	401	146	59
01/27/06	193	2,049	401	147	59
01/28/06	356	1,817	331	121	49
01/29/06	787	875	170	62	25
01/30/06	849	458	210	77	31
01/31/06	254	118	69	25	10
02/08/06	2,503	409	82	30	12
02/09/06	294	397	262	95	38
02/10/06	420	460	290	105	42
02/11/06	49	117	94	34	14
02/12/06	508	186	46	16	7
02/13/06	617	284	122	44	18
02/14/06	849	399	205	68	27
02/15/06	75	246	191	66	27
Total =	91,534	46,750	5,489	1,987	797

Table 8.1B-9

Gas Turbine/HRSG Commissioning Profile

Operating Mode	Maximum Hours of Operation [1]	Hourly Emissions (lbs/hr)					Total Emissions (lbs)				
		NOx [2]	CO [3]	VOC [4]	PM10 [5]	SOx [6]	NOx	CO	VOC	PM10	SOx
CTG/HRSG 1 - No/20% Load	120	436	1000	16.00	7.75	3.96	52,320	120,000	1,920	930	475
CTG/HRSG 2 - No/20% Load	120	436	1000	16.00	7.75	3.96	52,320	120,000	1,920	930	475
CTG/HRSG 1 - 50% Load	144	39.24	20.33	2.00	18.00	0.26	5,651	2,928	288	2,592	37
CTG/HRSG 2 - 50% Load	144	39.24	20.33	2.00	18.00	0.26	5,651	2,928	288	2,592	37
CTG/HRSG 1 - Full Load - No SCR	48	62.00	31.46	3.00	18.00	0.40	2,976	1,510	144	864	19
CTG/HRSG 2 - Full Load - No SCR	48	62.00	31.46	3.00	18.00	0.40	2,976	1,510	144	864	19
CTG/HRSG 1 - Full Load - Partial SCR	24	37.90	11.60	2.55	18.25	0.34	910	278	61	438	8
CTG/HRSG 2 - Full Load - Partial SCR	24	37.90	11.60	2.55	18.25	0.34	910	278	61	438	8
CTG/HRSG 1 - Full Load - Full SCR	600	13.80	11.60	2.10	18.50	0.28	8,280	6,960	1,260	11,100	168
CTG/HRSG 2 - Full Load - Full SCR	600	13.80	11.60	2.10	18.50	0.28	8,280	6,960	1,260	11,100	168
CTG/HRSG 1 - Hot Starts	6	160	1000	16.00	7.75	3.96	960	6,000	96	47	24
CTG/HRSG 2 - Hot Starts	6	160	1000	16.00	7.75	3.96	960	6,000	96	47	24
Total	1884	–	–	–	–	–	142,192	275,352	7,538	31,941	1,461

Notes to Table 8.1B-9

(1) Based on experience at commissioning the 7EA turbines at the Walnut Energy Center.

(2) NOx Emissions

- No Load test: Based on uncontrolled emission level in ppmc @ 15% O_2 = 100
- 50% Load test: Based on a NOx emission level in ppmc @ 15% O_2 = 9 and B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Full Load No SCR test: Based on NOx level in ppmc @ 15% O_2 = 9 and B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Full Load Partial SCR test: Based on NOx emission level at the midway point between 9 and 2.0 ppmc = 5.5
- Full Load Full SCR test: Based on meeting the project design NOx emission level in ppmc @ 15% O_2 = 2 and B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Hot Startups: Based on maximum NOx emission level expected during hot startups.

(3) CO Emissions

- No Load test: Based on maximum startup emissions of 1,000 lbs/hr.
- 50% Load test: Based on B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Full Load No SCR test: Based on B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Full Load Partial SCR test: Based on unit meeting the project design level of 4 ppmc @ 15% O_2 with oxidation catalyst installed and operating, and B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Full Load Full SCR test: Based on unit meeting the project design level of 4 ppmc @ 15% O_2 with oxidation catalyst installed and operating, and B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Hot Startups: Based on maximum CO emission level expected during hot startups.

(4) VOC Emissions

- No Load test: Same as startup emissions.
- 50% Load test: Based on B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Full Load No SCR test: Based on 7EA machine with VOC levels of 1.3 ppmvd @ 15 % O_2.
- Full Load Partial SCR test: Based on the midpoint between full load with and without SCR.
- Full Load Full SCR test: Based on VOC level of 0.9 ppmvd @ 15 % O_2.
- Hot Startups: Based on maximum VOC emission level of 16 lbs/hr expected during hot startups.

(5) PM10 Emissions

- No Load test: Same as startup emissions.
- 50% Load test: Based on B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Full Load No-SCR test: Based on B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Full Load Partial SCR test: Based on the midpoint between full load with and without SCR.
- Full Load Full-SCR test: Based on B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Hot Startups: Based on maximum emission level expected without duct firing.

(6) SOx Emissions

- No Load test: Same as startup emissions.
- 50% Load test: Based on B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Full Load No-SCR test: Based on B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Full Load Partial SCR test: Based on the midpoint between full load with and without SCR.
- Full Load Full-SCR test: Based on B&V Dry Heat Rejection Emission calculation of January 23, 2006.
- Hot Startups: Based on maximum emission level expected with tariff limit sulfur content of 0.75 grains/100scf natural gas.

Attachment 2

Gas Turbine and HRSG Performance Data

Table 8.1B-1
South Bay Replacement Project
Combustion Model for Gas Turbines

SDAPCD Standard Temperature = 68 F

Standard pressure = 29.92 in. Hg

Case	1) Annual Avg. w/DB	2) Ext. Cold w/DB	3) Extreme Hot Base	4) Annual Avg. Base	5) Extreme Cold Base	6) Extreme Hot Low Load	7) Annual Avg. Low Load	8) Extreme Cold Low Load	Boiler
Ambient Temperature (°F)	62.0	27.0	108.0	62.0	27.0	108.0	62.0	27.0	60.0
Ambient Relative Humidity (%)	83.6%	51.2%	31.8%	83.6%	51.2%	31.8%	83.6%	51.2%	83.6%
Turbine Load (%)	100%	100%	100%	100%	100%	50%	50%	50%	100%
Turbine Fuel Flow Rates									
scfm	28,772	30,756	25,262	28,772	30,756	16,715	18,733	19,836	622
lbs/hr as fired	77,136	82,455	67,726	77,136	82,455	44,811	50,223	53,179	1,669
lbs/hr, dry, ash free	77,136	82,455	67,726	77,136	82,455	44,811	50,223	53,179	1,669
MMBtu/hr (HHV)	1,757.4	1,878.6	1,543.0	1,757.4	1,878.6	1,020.9	1,144.2	1,211.6	38.02
MMBtu/hr (LHV)	1,583.6	1,692.8	1,390.4	1,583.6	1,692.8	920.0	1,031.1	1,091.8	34.3
Duct Burner Fuel Flow Rates									
scfm	9,400	9,400	-	-	-	-	-	-	-
lbs/hr as fired	25,200	25,200	-	-	-	-	-	-	-
lbs/hr, dry, ash free	25,200	25,200	-	-	-	-	-	-	-
MMbtu/hr (HHV)	574.1	574.1	-	-	-	-	-	-	-
Total Fuel Flow Rates									
scfm	38,172	40,156	25,262	28,772	30,756	16,715	18,733	19,836	622
lbs/hr as fired	102,336	107,655	67,726	77,136	82,455	44,811	50,223	53,179	1,669
lbs/hr, dry, ash free	102,336	107,655	67,726	77,136	82,455	44,811	50,223	53,179	1,669
MMbtu/hr (HHV)	2,331.5	2,452.7	1,543.0	1,757.4	1,878.6	1,020.9	1,144.2	1,211.6	38.02
Exhaust Gas Parameters									
Exhaust Flow Rate (wacfm)	984,690	1,054,243	910,600	1,012,396	1,063,216	635,107	660,794	681,729	16,303
Exhaust Flow Rate (dscfm)	734,632	796,316	657,802	744,165	804,727	469,697	499,984	521,079	6,754
Exhaust Flow Rate (lbs/hr)	3,607,491	3,868,975	3,166,922	3,582,109	3,839,448	2,268,351	2,402,321	2,485,563	35,091
Stack Temperature (F)	161.0	163.0	190.0	166.0	188.0	176.0	169.0	170.0	583.0
Diluent Concentrations									
O2 (%), dry basis	11.40%	11.68%	13.89%	13.84%	13.92%	14.41%	14.06%	13.95%	4.00%
Pollutant Concentrations at Ref. O2									
VOC as CH4, ppmvd	2	2	2	2	2	2	2	2	9.53
CH4, ppmvd									
THC as CH4, ppmvd	2	2	2	2	2	2	2	2	9.53
CO (short term), ppmvd	4	4	4	4	4	4	4	4	50.00
CO (long term), ppmvd	4	4	4	4	4	4	4	4	50.00
NOx (short term), ppmvd	2	2	2	2	2	2	2	2	9.00
NOx (long term), ppmvd	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	9.00
SOx (short term), ppmvd	0.4176	0.4176	0.4176	0.4176	0.4176	0.4176	0.4176	0.4176	1.2599
SOx (long term), ppmvd	0.1392	0.1392	0.1392	0.1392	0.1392	0.1392	0.1392	0.1392	0.4200
NH3, ppmvd	10	10	10	10	10	10	10	10	
Emission Rates (lbs/hour/turbine)									
VOC as CH4	5.69	6.20	3.90	4.44	4.75	2.58	2.69	3.06	0.15
CH4									
THC as CH4	5.69	6.20	3.90	4.44	4.75	2.58	2.69	3.06	0.15
CO (short term)	20.57	21.64	13.61	15.51	16.58	9.01	10.10	10.69	1.39
CO (long term)	20.57	21.64	13.61	15.51	16.58	9.01	10.10	10.69	1.39
NOx (short term)	16.89	17.77	11.16	12.73	13.61	7.40	8.29	8.78	0.41
NOx (long term)	14.36	15.11	9.50	10.82	11.57	6.29	7.05	7.48	0.41
SOx (short term)	4.91	5.17	3.25	3.70	3.96	2.15	2.41	2.55	0.060
SOx (long term)	1.64	1.72	1.08	1.23	1.32	0.72	0.80	0.85	0.027
NH3	31.27	32.90	20.70	23.57	25.20	13.69	15.35	16.25	
PM10	10.28	10.28	7.75	7.75	7.75	7.75	7.75	7.75	0.19

Attachment 3

Boiler Specifications and Emission Information

Table 8.1B-2
Auxiliary Boiler

Rating (MMBtu/hr) =	38.02
Fuel =	Natural Gas
Exhaust Temperature (F) =	583
Stack Diameter (ft) =	2.5
Exhaust Flow Rate (acfm) =	16303.5
Exhaust Velocity (ft/sec) =	55.36
Stack Height (ft AGL) =	125

	NOx	CO	VOC	SOx (short term)	SOx (long term)	PM10
Exhaust Concentration (ppmvd @ 3% O_2) =	9	50	9.53			
Hourly Emissions (lbs/hr) =	0.41	1.39	0.15	0.080	0.027	0.19

Attachment 4

Emergency Fire Water Pump Engine Specifications and Emission Information

Table 8.1B-3
Emergency Engine

Emergency Firepump Engine					
Rating (bhp) =	240				
Fuel =	Diesel				
Fuel Consumption (gal/hr) =	10.3				
Exhaust Temperature (F) =	891				
Exhaust Diameter (inches) =	6				
Exhaust Flow Rate (acfm) =	1,227				
Exhaust Velocity (ft/sec) =	104				
Stack height (ft AGL) =	22				
	NOx	CO	VOC	SOx	PM10
Emission Factor (g/bhp-hr) =	4.41	0.59	0.49	0.0050	0.14
Hourly Emissions (lbs/hr) =	2.33	0.31	0.26	0.0026	0.074

JU6H-UF60

FIRE PUMP DRIVER

EMISSION DATA

FOR

CALIFORNIA ATCM TIER 2

6 *Cylinders*
Four *Cycle*
Lean *Burn*
Turbocharged

15 PPM SULFUR #2 DIESEL FUEL [3b]								
RPM	BHP [1]	FUEL GAL/HR (L/HR)	GRAMS / HP / HR			% O_2	EXHAUST	
			NMHC+NOx	CO	PM [2]		°F (°C)	CFM (m^3/min)
1760	200	10.0 (38)	4.90	0.47	0.15	7.6	973 (523)	952 (27)
2100	240	10.3 (39)	4.90	0.59	0.14	11.4	891 (477)	1227 (35)
2350	240	11.2 (42)	4.90	0.55	0.13	11.4	853 (456)	1345 (38)

6068T Base Model Engine Manufactured by John Deere Co.

Notes:

1) *Engines are rated at standard conditions of 29.61in. (7521 mm) Hg barometer and 77°F (25° C) inlet air temperature. (SAE J1349)*

2) *PM is a measure of total particulate matter, including PM_{10}.*

3) *These emission values:*
   a) *are dependent on CUSTOMER PURCHASED special option C131329 on the engine*
   b) *are dependent on the use of fuel with the following properties;*
      i) *maximum 15 parts per million (PPM) sulfur content*
      ii) *maximum 10% by volume aromatic hydrocarbon content*
      iii) *minimum lubricity level of a maximum wear scar diameter of 520 microns based on ASTM D6079 or D6079-02*
   c) *have been determined using a calculation method found valid by CARB*
   d) *see disclaimer on reverse side*

CLARKE

FIRE PROTECTION PRODUCTS
3133 EAST KEMPER ROAD
CINCINNATI, OH 45241

Disclaimer

1. Stationary diesel-fueled compression ignition engines installed in California after January 1, 2005 are subject to California's Airborne Toxic Control Measure for Stationary Compression Ignition Engines (the "ATCM"), Cal. Code Regs. Title 17, Section 93115. The California Air Resources Board ("CARB") has reviewed the emissions estimation methodology provided by Clarke Fire Protection Products, Inc. ("Clarke") and has concluded that Clarke has used a valid methodology for estimating the emissions from engines supplied by Clarke and that the engines presumptively comply with the ATCM's emissions standards. Clarke's methodology used existing emissions test data associated with similar engines to estimate the emissions produced by the emergency fire pump engines supplied by Clarke.

2. The reverse side of this document shows the estimated emissions from this model engine supplied by Clarke using Clarke's methodology.

3. CARB's determination is not binding on the local air districts, which have primary jurisdiction for implementing and enforcing the ATCM. Actual test data in the field or other information established by the local air districts or CARB that show actual emissions from an engine supplied by Clarke in excess of the ATCM limitations could indicate a violation of the ATCM and subject the seller, owner and operator of the engine to penalties under California law. Although Clarke believes that the engines supplied by Clarke comply with the ATCM based on the available data and methodology accepted by CARB, for the foregoing reasons, Clarke cannot, and does not, guarantee that its engines will comply with the ATCM emission regulations.

4. CLARKE MAKES NO WARRANTIES OR GUARANTIES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, THAT THE ENGINES SUPPLIED BY CLARKE WILL COMPLY WITH THE ATCM. CLARKE ALSO EXPRESSLY DISCLAIMS THAT THE ENGINES SUPPLIED BY CLARKE WILL, IN FACT, COMPLY WITH THE ATCM. IN NO EVENT SHALL CLARKE BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THESE TERMS AND CONDITIONS OR THE ENGINES SUPPLIED BY CLARKE OR FOR INDEMNIFICATION OF BUYER ON ACCOUNT OF ANY CLAIM ASSERTED AGAINST BUYER, OR FOR ANY OTHER DAMAGE OF ANY KIND, WHETHER DIRECT OR INDIRECT, IF THE ENGINES SUPPLIED BY CLARKE DO NOT COMPLY WITH THE ATCM.

Attachment 5

Specifications for the Catalyst Systems

Specifications for SCR and Oxidation Catalyst

Equipment	Specification	Range
Gas Turbine SCR	Manufacturer	Cormetech, Haldor-Topsoe, Hitachi, Argillon, Ceram
	Catalyst description	Vanadium-Titanium plate or honeycomb type.
	Dimensions of catalyst (ft)	SCR system design not yet completed. Final application specific system design information to be provided by vendor to meet NO_x reduction requir[illegible]
	Catalyst volume (ft^3)	
	Space velocity (hr^{-1})	
	Area velocity (ft/hr)	
	Temperature at the outlet (deg. F)	
	Temperature at the outlet (deg. F)	
	Ammonia injection rate (lbs/hr)	Appr[illegible]ately 16 lb[illegible] per unit (assumed 1,6[illegible]MBtu/hr duct firing).
	SCR reactor temperature (range in deg. F)	Approxima[illegible] F
	Unit cost ($)	Approximately $[illegible],000 per unit (excluding ammonia storage and transfe[illegible]ps, controls, CEMS, silencing [illegible]ovisions).
	Pressure drop across catalyst (in. [illegible]g.)	[illegible]imately 6.5" w.c.
	Catalyst replacement cost ($)	Ap[illegible]xima[illegible]0 per unit.
	SO_2 to S[illegible]n rate (%)	[illegible]%
Gas Turbine Oxidation Catalyst	Ma[illegible]acturer	[illegible]gelhard, EmeraChem
	Catalyst [illegible]	Ho[illegible]comb monolith on ceramic or metallic substrates.
	[illegible]alyst volu[illegible])	System design not yet completed. Final application specific system design information to be provided by vendor to meet CO/VOC reduction requirement.
	Spac[illegible]ity (hr^{-1})	
	Area velo[illegible]ft/hr)	
	Catalyst dim[illegible]ons (ft)	
	[illegible]O catalyst t[illegible] cost ($)	Approximately $385,000 per unit.
	C[illegible]t [illegible]placement cost ($)	Approximately $385,000 per unit.
	Pre[illegible]ure drop across catalyst (in w.g.)	Approximately 2.5" w.c.
	Unsaturated HC conversion efficiency (%)	Data usually provided by vendor when system design has been completed.
	Saturated HC conversion efficiency (%)	Data usually provided by vendor when system design has been completed.
	Methane conversion efficiency (%)	Data usually provided by vendor when system design has been completed.

DRAFT

Attachment 6

Summarized CEMS NOx Emissions For 2004 and 2005

2004-2005 NOx Emissions from CEMS
South Bay Power Plant

Unit	Natural Gas Energy Supplied to Unit	Natural Gas Quantity Supplied to Unit		2004		CEMS	NOx
	2004+2005	2004	2005	NOx EF	NOx ER	2005 NOx	Baseline
	MMBtu	Mcf	Mcf	lb/10^6 scf	lb/yr	lb/yr	lb/yr
Unit 1	11,110,175	5,380,908	5,582,267	11.9	64,033	67,565	65,809
Unit 2	10,865,500	6,278,531	4,450,925	11.7	73,459	51,514	62,486
Unit 3	10,495,949	5,713,185	4,652,424	12.6	71,986	53,946	62,966
Unit 4	4,606,421	2,928,293	1,619,737	9.08	26,589	15,834	21,212
CTG	-	-			-		
			Total lb/yr =		236,067	188,880	212,473
			Total TPY =		118.03	94.44	106.24

Unit	Oil Quantity Supplied to Unit 2004+2005 barrels	NOx lb/yr
Unit 1	648	0
Unit 2	375	0
Unit 3	543	0
Unit 4	908	0
CTG	5,899	2,230
	Total lb/yr =	2,230
	Total TPY =	1.11

Unit	Oil		
	2004+2005 MMBtu	Mean MMBtu/yr	2004+2005 barrels
Unit 1	3,980	1,990	648
Unit 2	2,303	1,152	375
Unit 3	3,334	1,687	543
Unit 4	5,576	2,789	908
CTG	33,192	16,596	5,899

	Jet Fuel	
NOx lb/10^3 gal	18.0	2004 Inventory

Attachment 7

Summarized Fuel Consumption Data for 2004 and 2005

Fuel Usage
South Bay Power Plant
2004-2005

South Bay Power Plant										
	Unit 1		Unit 2		Unit 3		Unit 4		CT	
Quarter	Oil (Barrels)	Gas (mcf)	Oil (Barrels)	Gas (mcf)	Oil (Barrels)	Gas (mcf)	Oil (Barrels)	Gas (mcf)	Oil (Barrels)	Gas (mcf)
Jan-Mar 2004	-	201,931	-	1,418,445	-	1,831,255	-	733,417	1,046	-
Apr-Jun 2004	-	1,406,348	-	1,253,378	-	976,106	-	1,018,283	209	-
Jul-Sep 2004	-	1,838,479	-	1,755,935	-	1,362,460	-	920,622	638	-
Oct-Dec 2004	-	1,934,150.0	-	1,850,773	-	1,543,364	-	255,971	2,165	-
Jan-Mar 2005	648	1,919,339	375	1,543,646	467	1,472,167	908	615,508	1,088	-
Apr-Jun 2005	-	1,603,784	-	1,217,156	-	767,726	-	558,487	73	-
Jul-Sep 2005	-	818,480	-	1,090,070	-	1,199,901	-	228,718	513	-
Oct-Dec 2005	-	1,240,664	-	600,053	76	1,212,630	-	217,024	168	-

Attachment 8

Revised AFC Appendix 8.1E Tables

1. Table 8.1E-2 (Calculation of Modeling Inputs and Cancer Risk for Gas Turbines)
2. Table 8.1E-4 (Cancer Risk Assessment Modeling Inputs and Results for Auxiliary Boiler and Fire Pump Engine)
3. Table 8.1E-6 (Summary of Modeling Input Values for HRA)

Table 8.1E-2
South Bay Replacement Project
Calculation of Modeling Inputs and Cancer Risk for Gas Turbines

		Derived (OEHHA) Method			Average Point Estimate			High-End Point Estimate			Derived (Adjusted) Method			Worker Exp: Derived (OEHHA) Method		
Compound	Annual Average Emissions Per Turbine, g/s	Unit Risk (per ug/m3)	Cancer Risk Model Input (per ug/m3 per g/s)	Modeled Contribution to Cancer Risk (2)	Unit Risk (per ug/m3)	Cancer Risk Model Input (per ug/m3 per g/s)	Modeled Contribution to Cancer Risk (3)	Unit Risk (per ug/m3)	Cancer Risk Model Input (per ug/m3 per g/s)	Modeled Contribution to Cancer Risk (4)	Unit Risk (per ug/m3)	Cancer Risk Model Input (per ug/m3 per g/s)	Modeled Contribution to Cancer Risk (5)	Unit Risk (per ug/m3)	Cancer Risk Model Input (per ug/m3 per g/s)	Modeled Contribution to Cancer Risk (6)
Ammonia	3.26E+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Propylene	1.84E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acetaldehyde	9.75E-03	3.77E-06	3.68E-02	8.79E-03	2.60E-06	2.54E-02	6.18E-03	3.77E-06	3.68E-02	8.86E-03	2.90E-06	2.83E-02	6.83E-03	5.72E-07	5.58E-03	1.42E-03
Acrolein	8.82E-04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Benzene	7.96E-04	3.77E-05	3.00E-02	7.17E-03	2.60E-05	2.07E-02	5.04E-03	3.77E-05	3.00E-02	7.23E-03	2.90E-05	2.31E-02	5.57E-03	5.72E-06	4.55E-03	1.16E-03
1,3-Butadiene	1.05E-04	2.26E-04	2.37E-02	5.67E-03	1.56E-04	1.64E-02	3.99E-03	2.26E-04	2.37E-02	5.72E-03	1.74E-04	1.83E-02	4.41E-03	3.43E-05	3.60E-03	9.15E-04
Ethylbenzene	7.79E-03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Formaldehyde	8.77E-02	7.91E-06	6.94E-01	1.66E-01	5.46E-06	4.79E-01	1.17E-01	7.91E-06	6.94E-01	1.67E-01	6.08E-06	5.33E-01	1.29E-01	1.20E-06	1.05E-01	2.67E-02
Hexane	6.19E-02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Naphthalene	3.97E-04	**6.86E-06**	**2.72E-03**	**6.51E-04**	**3.12E-05**	**1.24E-02**	**3.02E-03**	**4.52E-05**	**1.79E-02**	**4.32E-03**	**3.48E-05**	**1.38E-02**	**3.33E-03**	**6.86E-06**	**2.72E-03**	**6.92E-04**
PAHs (listed individually below) (Note 1)	3.13E-05	1.65E-02	5.17E-01	1.24E-01	3.83E-03	1.20E-01	2.92E-02	1.70E-02	5.32E-01	1.28E-01	1.65E-02	5.17E-01	1.25E-01	6.00E-03	1.88E-01	4.77E-02
Benzo(a)anthracene		*1.65E-03*			*3.83E-04*			*1.70E-03*			*1.65E-02*			*6.00E-04*		
Benzo(a)pyrene		*1.65E-02*			*3.83E-03*			*1.70E-02*			*1.65E-03*			*6.00E-03*		
Benzo(b)fluoranthrene		*1.65E-03*			*3.83E-04*			*1.70E-03*			*1.65E-03*			*6.00E-04*		
Benzo(k)fluoranthrene		*1.65E-03*			*3.83E-04*			*1.70E-03*			*1.65E-03*			*6.00E-04*		
Chrysene		*1.65E-04*			*3.83E-05*			*1.70E-04*			*1.65E-04*			*6.00E-05*		
Dibenz(a,h)anthracene		*6.84E-03*			*2.03E-03*			*6.84E-03*			*6.48E-03*			*2.21E-03*		
Indeno(1,2,3-cd)pyrene		*1.65E-03*			*3.83E-04*			*1.70E-03*			*1.65E-03*			*6.00E-04*		
Propylene oxide	7.07E-03	4.90E-06	3.46E-02	8.28E-03	3.38E-06	2.39E-02	5.82E-03	4.90E-06	3.46E-02	8.35E-03	3.76E-06	2.66E-02	6.42E-03	7.43E-07	5.25E-03	1.33E-03
Toluene	3.18E-02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Xylene	1.56E-02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			1.34E+00 per µg/m3	3.20E-01 in one million		6.98E-01 per µg/m3	1.70E-01 in one million		1.37E+00 per µg/m3	3.30E-01 in one million		1.16E+00 per µg/m3	2.80E-01 in one million		3.15E-01 per µg/m3	8.00E-02 in one million

Table 8.1E-4
South Bay Replacement Project
Cancer Risk Assessment Modeling Inputs and Results for Auxiliary Boiler and Fire Pump Engin

		Derived (OEHHA) Method			Average Point Estimate			High-End Point Estimate			Derived (Adjusted) Method			Worker Exposure: Derived (OEHHA) Method		
Compound	Annual Average Emissions, g/s	Unit Risk (per ug/m3)	Cancer Risk Model Input (per ug/m3 per g/s)	Modeled Contribution to Cancer Risk (2)	Unit Risk (per ug/m3)	Cancer Risk Model Input (per ug/m3 per g/s)	Modeled Contribution to Cancer Risk (3)	Unit Risk (per ug/m3)	Cancer Risk Model Input (per ug/m3 per g/s)	Modeled Contribution to Cancer Risk (4)	Unit Risk (per ug/m3)	Cancer Risk Model Input (per ug/m3 per g/s)	Modeled Contribution to Cancer Risk (5)	Unit Risk (per ug/m3)	Cancer Risk Model Input (per ug/m3 per g/s)	Modeled Contribution to Cancer Risk (6)
Auxiliary Boiler																
Propylene	1.39E-05	0	0	0.00E+00	0	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00
Acetaldehyde	8.05E-07	3.77E-06	3.03E-06	6.19E-06	2.60E-06	2.09E-06	4.18E-06	3.77E-06	3.03E-06	6.15E-06	2.90E-06	2.33E-06	4.74E-06	5.72E-07	4.60E-07	9.35E-07
Acrolein	7.15E-07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Benzene	1.52E-06	3.77E-05	5.73E-05	1.17E-04	2.60E-05	3.95E-05	7.90E-05	3.77E-05	5.73E-05	1.16E-04	2.90E-05	4.41E-05	8.95E-05	5.72E-06	6.69E-06	1.77E-05
Ethylbenzene	1.79E-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Formaldehyde	3.22E-06	7.91E-06	2.55E-05	5.20E-05	5.46E-06	1.76E-05	3.51E-05	7.91E-06	2.55E-05	5.16E-05	6.08E-06	1.96E-05	3.98E-05	1.20E-06	3.86E-06	7.85E-06
Hexane	1.16E-06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Naphthalene	2.68E-07	**6.66E-06**	**1.84E-06**	**3.76E-06**	**3.12E-05**	**8.37E-06**	**1.67E-05**	**4.52E-05**	**1.21E-05**	**2.46E-05**	**3.48E-05**	**9.33E-06**	**1.90E-05**	**6.86E-06**	**1.84E-06**	**3.74E-06**
Polycyclic Aromatic Hydrocarbons	8.94E-08	1.65E-02	1.47E-03	3.01E-03	3.83E-03	3.42E-04	6.85E-04	1.70E-02	1.52E-03	3.08E-03	1.65E-02	1.47E-03	3.00E-03	6.00E-03	5.36E-04	1.09E-03
Toluene	6.97E-06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Xylene	5.18E-06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			1.56E-03 per µg/m3	3.19E-03 in one million		4.10E-04 per µg/m3	8.20E-04 in one million		1.62E-03 per µg/m3	3.28E-03 in one million		1.55E-03 per µg/m3	3.15E-03 in one million		5.51E-04 per µg/m3	1.12E-03 in one million
Diesel Fire Pump Engine																
Diesel Exhaust Particulate	5.33E-05	4.15E-04	2.21E-02 per µg/m3	1.04E+00 in one million	2.86E-04	1.52E-02 per µg/m3	7.16E-01 in one million	4.15E-04	2.21E-02 per µg/m3	1.04E+00 in one million	3.19E-04	1.70E-02 per µg/m3	7.98E-01 in one million	6.29E-05	3.35E-03 per µg/m3	1.57E-01 in one million

Table 8.1E-6
South Bay Replacement Project
Summary of Modeling Input Values for SHRA

Unit	Derived (OEHHA) Method Cancer Risk (Res)	Average Point Estimate Cancer Risk (Res)	High-end Point Estimate Cancer Risk (Res)	Derived (Adjusted) Method Cancer Risk (Res)	Derived (OEHHA) Method Cancer Risk (Worker)	Acute HHI Model Input	Chronic HHI Model Input
Each CTG	**1.338E+00**	**6.975E-01**	**1.369E+00**	**1.160E+00**	**3.148E-01**	8.376E-03	6.184E-02
Auxiliary Boiler	1.563E-03	**4.099E-04**	**1.618E-03**	**1.550E-03**	**5.512E-04**	1.999E-05	1.408E-05
Fire Pump Engine	2.211E-02	1.524E-02	2.211E-02	1.699E-02	3.351E-03	n/a	1.065E-05

All modeling input values are in units of per μg/m3

Attachment 9

HARP Model Risk Assessment Module Output

This file: c:\HARP\projects\demo\DerOEHHAMethod.txt

Created by HARP Version 1.2a Build 23.03.27
Uses ISC Version 99155
Uses BPIP Version 95086
Creation date: 8/14/2006 11:17:33 AM

EXCEPTION REPORT
   (there have been no changes or exceptions)

INPUT FILES:
   Source-Receptor file:
   Averaging period adjustment factors file: not applicable
   Emission rates file: none
   Site parameters file: C:\HARP\PROJECTS\DEMO\MSATs.sit

GLC DATA SOURCE:
  concentrations loaded from file C:\HARP\PROJECTS\DEMO\MSATs.CML
  concentrations read from file C:\HARP\PROJECTS\DEMO\SFAirport.CML
  User memo:

Screening mode is OFF

Exposure Duration: 70 year (adult resident)
Analysis Method: Derived (OEHHA) Method
Health Effect: Cancer, Chronic and Acute

SITE PARAMETERS

DEPOSITION

   Deposition rate (m/s) 0.05

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

*** Pathway disabled ***

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway enabled ***

SOIL INGESTION

*** Pathway enabled ***

MOTHER'S MILK

*** Pathway enabled ***

CHEMICAL GROUND LEVEL CONCENTRATIONS (micrograms/m^3) (*** indicates not a multipathway chemical)

ABBREV	CAS	GLC Avrg	GLC Max	GLC Water	GLC Pasture	GLC Fish
Acetaldehyde	75070	1.000E+00	1.000E+00	***	***	***
Acrolein	107028	1.000E+00	1.000E+00	***	***	***
NH3	7664417	1.000E+00	1.000E+00	***	***	***
Benzene	71432	1.000E+00	1.000E+00	***	***	***
1,3-Butadiene	106990	1.000E+00	1.000E+00	***	***	***
DieselExhPM	9901	1.000E+00	1.000E+00	***	***	***
Formaldehyde	50000	1.000E+00	1.000E+00	***	***	***
Hexane	110543	1.000E+00	1.000E+00	***	***	***
B[a] anthracene	56553	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[a] P	50328	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[b] fluoranthen	205992	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[k] fluoranthen	207089	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Chrysene	218019	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
In[1,2,3-cd] pyr	193395	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Naphthalene	91203	1.000E+00	1.000E+00	***	***	***
Propylene	115071	1.000E+00	1.000E+00	***	***	***
Propylene Oxide	75569	1.000E+00	1.000E+00	***	***	***
Toluene	108883	1.000E+00	1.000E+00	***	***	***
Xylenes	1210	1.000E+00	1.000E+00	***	***	***
Ethyl Benzene	100414	1.000E+00	1.000E+00	***	***	***
Anthracene	120127	1.000E+00	1.000E+00	***	***	***
D[a,h] anthracen	53703	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
PM	11101	0.000E+00	0.000E+00	***	***	***

CHEMICAL CROSS-REFERENCE TABLE

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	75070	Acetaldehyde	Acetaldehyde	0.000E+00
0002	107028	Acrolein	Acrolein	0.000E+00
0003	7664417	NH3	Ammonia	0.000E+00
0004	71432	Benzene	Benzene	0.000E+00
0005	106990	1,3-Butadiene	1,3-Butadiene	0.000E+00
0006	9901	DieselExhPM	Diesel engine exhaust, particulate matter	0.000E+00
0007	50000	Formaldehyde	Formaldehyde	0.000E+00
0008	110543	Hexane	Hexane	0.000E+00
0009	56553	B[a] anthracene	Benz[a] anthracene	0.000E+00
0010	50328	B[a] P	Benzo[a] pyrene	0.000E+00
0011	205992	B[b] fluoranthen	Benzo[b] fluoranthene	0.000E+00
0012	207089	B[k] fluoranthen	Benzo[k] fluoranthene	0.000E+00
0013	218019	Chrysene	Chrysene	0.000E+00
0014	193395	In[1,2,3-cd] pyr	Indeno[1,2,3-cd] pyrene	0.000E+00
0015	91203	Naphthalene	Naphthalene	0.000E+00
0016	115071	Propylene	Propylene	0.000E+00
0017	75569	Propylene Oxide	Propylene oxide	0.000E+00
0018	108883	Toluene	Toluene	0.000E+00
0019	1210	Xylenes	Xylenes (mixed)	0.000E+00
0020	100414	Ethyl Benzene	Ethyl benzene	0.000E+00
0021	120127	Anthracene	Anthracene	0.000E+00
0022	53703	D[a,h] anthracen	Dibenz[a,h] anthracene	0.000E+00
0023	11101	PM	Particulate Matter	0.000E+00

EMISSIONS DATA SOURCE:
CHEMICALS ADDED OR DELETED: none

DOMINANT PATHWAYS FOR CANCER

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG
0001	YES	-	-	-	-	-	-	-	-	-	-	-
0002	-	-	-	-	-	-	-	-	-	-	-	-
0003	-	-	-	-	-	-	-	-	-	-	-	-
0004	YES	-	-	-	-	-	-	-	-	-	-	-
0005	YES	-	-	-	-	-	-	-	-	-	-	-
0006	YES	-	-	-	-	-	-	-	-	-	-	-
0007	YES	-	-	-	-	-	-	-	-	-	-	-
0008	-	-	-	-	-	-	-	-	-	-	-	-
0009	-	YES	YES	-	-	-	-	-	-	-	-	-
0010	-	YES	YES	-	-	-	-	-	-	-	-	-
0011	-	YES	YES	-	-	-	-	-	-	-	-	-
0012	-	YES	YES	-	-	-	-	-	-	-	-	-
0013	-	YES	YES	-	-	-	-	-	-	-	-	-
0014	-	YES	YES	-	-	-	-	-	-	-	-	-
0015	YES	-	-	-	-	-	-	-	-	-	-	-
0016	-	-	-	-	-	-	-	-	-	-	-	-
0017	YES	-	-	-	-	-	-	-	-	-	-	-
0018	-	-	-	-	-	-	-	-	-	-	-	-
0019	-	-	-	-	-	-	-	-	-	-	-	-
0020	-	-	-	-	-	-	-	-	-	-	-	-
0021	-	-	-	-	-	-	-	-	-	-	-	-
0022	-	YES	YES	-	-	-	-	-	-	-	-	-
0023	-	-	-	-	-	-	-	-	-	-	-	-

DERIVED DOSE BY PATHWAY (mg/(kg-d)) FOR CANCER CALCULATIONS

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG
0001	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0002	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0003	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0004	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0005	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0006	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0007	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0008	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0009	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0010	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0011	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0012	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0013	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0014	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0015	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0016	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0017	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0018	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0019	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0020	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0021	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

0022	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

DERIVED CANCER RISK

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG	MEAT	ORAL	TOTAL
0001	3.77E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.77E-06
0002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0004	3.77E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.77E-05
0005	2.26E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.26E-04
0006	4.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.15E-04
0007	7.91E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.91E-06
0008	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0009	1.01E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	3.98E-03
0010	1.01E-03	3.37E-02	5.05E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-02	3.98E-02
0011	1.01E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	3.98E-03
0012	1.01E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	3.98E-03
0013	1.01E-05	3.37E-04	5.05E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-04	3.98E-04
0014	1.01E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	3.98E-03
0015	4.52E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.52E-05
0016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0017	4.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.90E-06
0018	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0022	1.07E-03	1.15E-02	1.72E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-02	1.43E-02
0023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SUM	3.23E-03	5.90E-02	8.84E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.79E-02	7.11E-02

DOMINANT PATHWAYS FOR CHRONIC

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG
0001	YES	-	-	-	-	-	-	-	-	-	-	-
0002	YES	-	-	-	-	-	-	-	-	-	-	-
0003	YES	-	-	-	-	-	-	-	-	-	-	-
0004	YES	-	-	-	-	-	-	-	-	-	-	-
0005	YES	-	-	-	-	-	-	-	-	-	-	-
0006	YES	-	-	-	-	-	-	-	-	-	-	-
0007	YES	-	-	-	-	-	-	-	-	-	-	-
0008	YES	-	-	-	-	-	-	-	-	-	-	-
0009	YES	YES	YES	-	-	-	-	-	-	-	-	-
0010	YES	YES	YES	-	-	-	-	-	-	-	-	-
0011	YES	YES	YES	-	-	-	-	-	-	-	-	-
0012	YES	YES	YES	-	-	-	-	-	-	-	-	-
0013	YES	YES	YES	-	-	-	-	-	-	-	-	-
0014	YES	YES	YES	-	-	-	-	-	-	-	-	-
0015	YES	-	-	-	-	-	-	-	-	-	-	-
0016	YES	-	-	-	-	-	-	-	-	-	-	-
0017	YES	-	-	-	-	-	-	-	-	-	-	-
0018	YES	-	-	-	-	-	-	-	-	-	-	-
0019	YES	-	-	-	-	-	-	-	-	-	-	-
0020	YES	-	-	-	-	-	-	-	-	-	-	-
0021	YES	-	-	-	-	-	-	-	-	-	-	-
0022	YES	YES	YES	-	-	-	-	-	-	-	-	-
0023	-	-	-	-	-	-	-	-	-	-	-	-

INHALATION CONCENTRATION (ug/m^3) AND DERIVED DOSE BY PATHWAY (mg/(kg-d)) FOR CHRONIC CALCULATIONS

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG
0001	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0002	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0003	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0004	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

0005	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0006	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0007	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0008	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0009	1.00E+00	2.93E-03	4.39E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0010	1.00E+00	2.93E-03	4.39E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0011	1.00E+00	2.93E-03	4.39E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0012	1.00E+00	2.93E-03	4.39E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0013	1.00E+00	2.93E-03	4.39E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0014	1.00E+00	2.93E-03	4.39E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0015	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0016	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0017	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0018	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0019	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0020	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0021	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0022	1.00E+00	2.93E-03	4.39E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

DERIVED CHRONIC H1

CHEM	CV	CNS	BONE	DEVEL	ENDO	EYE	GILV	IMMUN	KIDN	REPRO	RESP	SKIN	BLOOD	MAX
0001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E-01	0.00E+00	0.00E+00	1.11E-01
0002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.67E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.67E+01	0.00E+00	0.00E+00	1.67E+01
0003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.00E-03	0.00E+00	0.00E+00	5.00E-03
0004	0.00E+00	1.67E-02	0.00E+00	1.67E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.67E-02	1.67E-02
0005	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.00E-02	0.00E+00	0.00E+00	0.00E+00	5.00E-02
0006	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E-01	0.00E+00	0.00E+00	2.00E-01
0007	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.33E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.33E-01	0.00E+00	0.00E+00	3.33E-01
0008	0.00E+00	1.43E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E-04
0009	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0010	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0011	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0012	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0013	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0014	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0015	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.11E-01	0.00E+00	0.00E+00	1.11E-01
0016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.33E-04	0.00E+00	0.00E+00	3.33E-04
0017	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.33E-02	0.00E+00	0.00E+00	3.33E-02
0018	0.00E+00	3.33E-03	0.00E+00	3.33E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.33E-03	0.00E+00	0.00E+00	3.33E-03
0019	0.00E+00	1.43E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.43E-03	0.00E+00	0.00E+00	1.43E-03
0020	0.00E+00	0.00E+00	0.00E+00	5.00E-04	5.00E-04	0.00E+00	5.00E-04	0.00E+00	5.00E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.00E-04
0021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0022	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SUM	0.00E+00	2.16E-02	0.00E+00	2.05E-02	5.00E-04	1.70E+01	5.00E-04	0.00E+00	5.00E-04	5.00E-02	1.75E+01	0.00E+00	1.67E-02	1.75E+01

ACUTE HI

CHEM	CV	CNS	BONE	DEVEL	ENDO	EYE	GILV	IMMUN	KIDN	REPRO	RESP	SKIN	BLOOD	MAX
0001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.26E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.26E+00	0.00E+00	0.00E+00	5.26E+00
0003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.13E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.13E-04	0.00E+00	0.00E+00	3.13E-04
0004	0.00E+00	0.00E+00	0.00E+00	7.69E-04	0.00E+00	0.00E+00	0.00E+00	7.69E-04	0.00E+00	7.69E-04	0.00E+00	0.00E+00	7.69E-04	7.69E-04
0005	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0006	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0007	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-02	0.00E+00	1.06E-02	0.00E+00	0.00E+00	1.06E-02	0.00E+00	0.00E+00	1.06E-02
0008	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0009	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0010	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0011	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0012	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0013	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

0014	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0015	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0017	0.00E+00	0.00E+00	0.00E+00	3.23E-04	0.00E+00	3.23E-04	0.00E+00	0.00E+00	0.00E+00	3.23E-04	3.23E-04	0.00E+00	0.00E+00	3.23E-04
0018	0.00E+00	2.70E-05	0.00E+00	2.70E-05	0.00E+00	2.70E-05	0.00E+00	0.00E+00	0.00E+00	2.70E-05	2.70E-05	0.00E+00	0.00E+00	2.70E-05
0019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.55E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.55E-05	0.00E+00	0.00E+00	4.55E-05
0020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0022	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SUM	0.00E+00	2.70E-05	0.00E+00	1.12E-03	0.00E+00	5.27E+00	0.00E+00	1.14E-02	0.00E+00	1.12E-03	5.27E+00	0.00E+00	7.69E-04	5.27E+00

This file: c:\HARP\projects\demo\PointEstimateRisk.txt

Created by HARP Version 1.2a Build 23.03.27
Uses ISC Version 99155
Uses BPIP Version 95086
Creation date: 8/14/2006 11:13:36 AM

EXCEPTION REPORT
(there have been no changes or exceptions)

INPUT FILES:
Source-Receptor file:
Averaging period adjustment factors file: not applicable
Emission rates file: none
Site parameters file: C:\HARP\PROJECTS\DEMO\MSATs.sit

GLC DATA SOURCE:
concentrations loaded from file C:\HARP\PROJECTS\DEMO\MSATs.CML
concentrations read from file C:\HARP\PROJECTS\DEMO\SFAirport.CML
User memo:

Screening mode is OFF

Exposure Duration: 70 year (adult resident)
Analysis Method: Average Point Estimate
Health Effect: Cancer

SITE PARAMETERS

DEPOSITION

Deposition rate (m/s) 0.05

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

*** Pathway disabled ***

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway enabled ***

SOIL INGESTION

*** Pathway enabled ***

MOTHER'S MILK

*** Pathway enabled ***

CHEMICAL GROUND LEVEL CONCENTRATIONS (micrograms/m^3) (*** indicates not a multipathway chemical)

ABBREV	CAS	GLC Avrg	GLC Max	GLC Water	GLC Pasture	GLC Fish
Acetaldehyde	75070	1.000E+00	1.000E+00	***	***	***
Acrolein	107028	1.000E+00	1.000E+00	***	***	***
NH3	7664417	1.000E+00	1.000E+00	***	***	***
Benzene	71432	1.000E+00	1.000E+00	***	***	***
1,3-Butadiene	106990	1.000E+00	1.000E+00	***	***	***
DieselExhPM	9901	1.000E+00	1.000E+00	***	***	***
Formaldehyde	50000	1.000E+00	1.000E+00	***	***	***
Hexane	110543	1.000E+00	1.000E+00	***	***	***
B[a] anthracene	56553	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[a] P	50328	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[b] fluoranthen	205992	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[k] fluoranthen	207089	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Chrysene	218019	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
In[1,2,3-cd] pyr	193395	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Naphthalene	91203	1.000E+00	1.000E+00	***	***	***
Propylene	115071	1.000E+00	1.000E+00	***	***	***
Propylene Oxide	75569	1.000E+00	1.000E+00	***	***	***
Toluene	108883	1.000E+00	1.000E+00	***	***	***
Xylenes	1210	1.000E+00	1.000E+00	***	***	***
Ethyl Benzene	100414	1.000E+00	1.000E+00	***	***	***
Anthracene	120127	1.000E+00	1.000E+00	***	***	***
D[a,h] anthracen	53703	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
PM	11101	0.000E+00	0.000E+00	***	***	***

CHEMICAL CROSS-REFERENCE TABLE

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	75070	Acetaldehyde	Acetaldehyde	0.000E+00
0002	107028	Acrolein	Acrolein	0.000E+00
0003	7664417	NH3	Ammonia	0.000E+00
0004	71432	Benzene	Benzene	0.000E+00
0005	106990	1,3-Butadiene	1,3-Butadiene	0.000E+00
0006	9901	DieselExhPM	Diesel engine exhaust, particulate matter	0.000E+00
0007	50000	Formaldehyde	Formaldehyde	0.000E+00
0008	110543	Hexane	Hexane	0.000E+00
0009	56553	B[a] anthracene	Benz[a] anthracene	0.000E+00
0010	50328	B[a] P	Benzo[a] pyrene	0.000E+00
0011	205992	B[b] fluoranthen	Benzo[b] fluoranthene	0.000E+00
0012	207089	B[k] fluoranthen	Benzo[k] fluoranthene	0.000E+00
0013	218019	Chrysene	Chrysene	0.000E+00
0014	193395	In[1,2,3-cd] pyr	Indeno[1,2,3-cd] pyrene	0.000E+00
0015	91203	Naphthalene	Naphthalene	0.000E+00
0016	115071	Propylene	Propylene	0.000E+00
0017	75569	Propylene Oxide	Propylene oxide	0.000E+00
0018	108883	Toluene	Toluene	0.000E+00
0019	1210	Xylenes	Xylenes (mixed)	0.000E+00
0020	100414	Ethyl Benzene	Ethyl benzene	0.000E+00
0021	120127	Anthracene	Anthracene	0.000E+00
0022	53703	D[a,h] anthracen	Dibenz[a,h] anthracene	0.000E+00
0023	11101	PM	Particulate Matter	0.000E+00

EMISSIONS DATA SOURCE:
CHEMICALS ADDED OR DELETED: none

AVERAGE DOSE BY PATHWAY (mg/(kg-d)) FOR CANCER CALCULATIONS

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG
0001	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0002	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0003	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0004	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0005	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0006	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0007	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0008	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0009	2.60E-04	1.66E-04	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0010	2.60E-04	1.66E-04	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0011	2.60E-04	1.66E-04	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0012	2.60E-04	1.66E-04	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0013	2.60E-04	1.66E-04	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0014	2.60E-04	1.66E-04	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0015	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0016	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0017	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0018	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0019	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0020	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0021	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0022	2.60E-04	1.66E-04	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

AVERAGE CANCER RISK

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG	MEAT	ORAL	TOTAL
0001	2.60E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.60E-06
0002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0004	2.60E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.60E-05
0005	1.56E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-04
0006	2.86E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.86E-04
0007	5.46E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.46E-06
0008	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0009	1.01E-04	1.99E-04	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.04E-04	8.05E-04
0010	1.01E-03	1.99E-03	5.05E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.04E-03	8.05E-03
0011	1.01E-04	1.99E-04	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.04E-04	8.05E-04
0012	1.01E-04	1.99E-04	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.04E-04	8.05E-04
0013	1.01E-05	1.99E-05	5.05E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.04E-05	8.05E-05
0014	1.01E-04	1.99E-04	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.04E-04	8.05E-04
0015	3.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.12E-05
0016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0017	3.38E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.38E-06
0018	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

0022	1.07E-03	6.80E-04	1.72E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.40E-03	3.47E-03
0023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SUM	3.00E-03	3.49E-03	8.84E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.23E-02	1.53E-02

This file: c:\HARP\projects\demo\HEndPointEstimateRisk.txt

Created by HARP Version 1.2a Build 23.03.27
Uses ISC Version 99155
Uses BPIP Version 95086
Creation date: 8/14/2006 11:16:28 AM

EXCEPTION REPORT
   (there have been no changes or exceptions)

INPUT FILES:
   Source-Receptor file:
   Averaging period adjustment factors file: not applicable
   Emission rates file: none
   Site parameters file: C:\HARP\PROJECTS\DEMO\MSATs.sit

GLC DATA SOURCE:
  concentrations loaded from file C:\HARP\PROJECTS\DEMO\MSATs.CML
  concentrations read from file C:\HARP\PROJECTS\DEMO\SFAirport.CML
  User memo:

Screening mode is OFF

Exposure Duration: 70 year (adult resident)
Analysis Method: High-end Point Estimate
Health Effect: Cancer

SITE PARAMETERS

DEPOSITION

   Deposition rate (m/s) 0.05

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

*** Pathway disabled ***

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway enabled ***

SOIL INGESTION

*** Pathway enabled ***

MOTHER'S MILK

*** Pathway enabled ***

CHEMICAL GROUND LEVEL CONCENTRATIONS (micrograms/m^3) (*** indicates not a multipathway chemical)

ABBREV	CAS	GLC Avrg	GLC Max	GLC Water	GLC Pasture	GLC Fish
Acetaldehyde	75070	1.000E+00	1.000E+00	***	***	***
Acrolein	107028	1.000E+00	1.000E+00	***	***	***
NH3	7664417	1.000E+00	1.000E+00	***	***	***
Benzene	71432	1.000E+00	1.000E+00	***	***	***
1,3-Butadiene	106990	1.000E+00	1.000E+00	***	***	***
DieselExhPM	9901	1.000E+00	1.000E+00	***	***	***
Formaldehyde	50000	1.000E+00	1.000E+00	***	***	***
Hexane	110543	1.000E+00	1.000E+00	***	***	***
B[a] anthracene	56553	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[a] P	50328	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[b] fluoranthen	205992	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[k] fluoranthen	207089	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Chrysene	218019	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
In[1,2,3-cd] pyr	193395	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Naphthalene	91203	1.000E+00	1.000E+00	***	***	***
Propylene	115071	1.000E+00	1.000E+00	***	***	***
Propylene Oxide	75569	1.000E+00	1.000E+00	***	***	***
Toluene	108883	1.000E+00	1.000E+00	***	***	***
Xylenes	1210	1.000E+00	1.000E+00	***	***	***
Ethyl Benzene	100414	1.000E+00	1.000E+00	***	***	***
Anthracene	120127	1.000E+00	1.000E+00	***	***	***
D[a,h] anthracen	53703	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
PM	11101	0.000E+00	0.000E+00	***	***	***

CHEMICAL CROSS-REFERENCE TABLE

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	75070	Acetaldehyde	Acetaldehyde	0.000E+00
0002	107028	Acrolein	Acrolein	0.000E+00
0003	7664417	NH3	Ammonia	0.000E+00
0004	71432	Benzene	Benzene	0.000E+00
0005	106990	1,3-Butadiene	1,3-Butadiene	0.000E+00
0006	9901	DieselExhPM	Diesel engine exhaust, particulate matter	0.000E+00
0007	50000	Formaldehyde	Formaldehyde	0.000E+00
0008	110543	Hexane	Hexane	0.000E+00
0009	56553	B[a] anthracene	Benz[a] anthracene	0.000E+00
0010	50328	B[a] P	Benzo[a] pyrene	0.000E+00
0011	205992	B[b] fluoranthen	Benzo[b] fluoranthene	0.000E+00
0012	207089	B[k] fluoranthen	Benzo[k] fluoranthene	0.000E+00
0013	218019	Chrysene	Chrysene	0.000E+00
0014	193395	In[1,2,3-cd] pyr	Indeno[1,2,3-cd] pyrene	0.000E+00
0015	91203	Naphthalene	Naphthalene	0.000E+00
0016	115071	Propylene	Propylene	0.000E+00
0017	75569	Propylene Oxide	Propylene oxide	0.000E+00
0018	108883	Toluene	Toluene	0.000E+00
0019	1210	Xylenes	Xylenes (mixed)	0.000E+00
0020	100414	Ethyl Benzene	Ethyl benzene	0.000E+00
0021	120127	Anthracene	Anthracene	0.000E+00
0022	53703	D[a,h] anthracen	Dibenz[a,h] anthracene	0.000E+00
0023	11101	PM	Particulate Matter	0.000E+00

EMISSIONS DATA SOURCE:
CHEMICALS ADDED OR DELETED: none

HIGH-END DOSE BY PATHWAY (mg/(kg-d)) FOR CANCER CALCULATIONS

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG
0001	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0002	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0003	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0004	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0005	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0006	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0007	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0008	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0009	3.77E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0010	3.77E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0011	3.77E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0012	3.77E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0013	3.77E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0014	3.77E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0015	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0016	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0017	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0018	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0019	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0020	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0021	3.77E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0022	3.77E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

HIGH-END CANCER RISK

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG	MEAT	ORAL	TOTAL
0001	3.77E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.77E-06
0002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0004	3.77E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.77E-05
0005	2.26E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.26E-04
0006	4.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.15E-04
0007	7.91E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.91E-06
0008	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0009	1.47E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	4.02E-03
0010	1.47E-03	3.37E-02	5.05E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-02	4.02E-02
0011	1.47E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	4.02E-03
0012	1.47E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	4.02E-03
0013	1.47E-05	3.37E-04	5.05E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-04	4.02E-04
0014	1.47E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	4.02E-03
0015	4.52E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.52E-05
0016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0017	4.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.90E-06
0018	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

0022	1.55E-03	1.15E-02	1.72E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-02	1.48E-02
0023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SUM	4.36E-03	5.90E-02	8.84E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.79E-02	7.22E-02

This file: c:\HARP\projects\demo\DerAdjMethod.txt

Created by HARP Version 1.2a Build 23.03.27
Uses ISC Version 99155
Uses BPIP Version 95086
Creation date: 8/14/2006 11:18:33 AM

EXCEPTION REPORT
   (there have been no changes or exceptions)

INPUT FILES:
   Source-Receptor file:
   Averaging period adjustment factors file: not applicable
   Emission rates file: none
   Site parameters file: C:\HARP\PROJECTS\DEMO\MSATs.sit

GLC DATA SOURCE:
  concentrations loaded from file C:\HARP\PROJECTS\DEMO\MSATs.CML
  concentrations read from file C:\HARP\PROJECTS\DEMO\SFAirport.CML
  User memo:

Screening mode is OFF

Exposure Duration: 70 year (adult resident)
Analysis Method: Derived (Adjusted) Method
Health Effect: Cancer

SITE PARAMETERS

DEPOSITION

   Deposition rate (m/s) 0.05

DRINKING WATER

*** Pathway disabled ***

FISH

*** Pathway disabled ***

PASTURE

*** Pathway disabled ***

HOME GROWN PRODUCE

*** Pathway disabled ***

PIGS, CHICKENS AND EGGS

*** Pathway disabled ***

DERMAL ABSORPTION

*** Pathway enabled ***

SOIL INGESTION

*** Pathway enabled ***

MOTHER'S MILK

*** Pathway enabled ***

CHEMICAL GROUND LEVEL CONCENTRATIONS (micrograms/m^3) (*** indicates not a multipathway chemical)

ABBREV	CAS	GLC Avrg	GLC Max	GLC Water	GLC Pasture	GLC Fish
Acetaldehyde	75070	1.000E+00	1.000E+00	***	***	***
Acrolein	107028	1.000E+00	1.000E+00	***	***	***
NH3	7664417	1.000E+00	1.000E+00	***	***	***
Benzene	71432	1.000E+00	1.000E+00	***	***	***
1,3-Butadiene	106990	1.000E+00	1.000E+00	***	***	***
DieselExhPM	9901	1.000E+00	1.000E+00	***	***	***
Formaldehyde	50000	1.000E+00	1.000E+00	***	***	***
Hexane	110543	1.000E+00	1.000E+00	***	***	***
B[a] anthracene	56553	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[a] P	50328	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[b] fluoranthen	205992	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
B[k] fluoranthen	207089	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Chrysene	218019	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
In[1,2,3-cd] pyr	193395	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
Naphthalene	91203	1.000E+00	1.000E+00	***	***	***
Propylene	115071	1.000E+00	1.000E+00	***	***	***
Propylene Oxide	75569	1.000E+00	1.000E+00	***	***	***
Toluene	108883	1.000E+00	1.000E+00	***	***	***
Xylenes	1210	1.000E+00	1.000E+00	***	***	***
Ethyl Benzene	100414	1.000E+00	1.000E+00	***	***	***
Anthracene	120127	1.000E+00	1.000E+00	***	***	***
D[a,h] anthracen	53703	1.000E+00	1.000E+00	1.000E+00	1.000E+00	1.000E+00
PM	11101	0.000E+00	0.000E+00	***	***	***

CHEMICAL CROSS-REFERENCE TABLE

CHEM	CAS	ABBREVIATION	POLLUTANT NAME	BACKGROUND (ug/m^3)
0001	75070	Acetaldehyde	Acetaldehyde	0.000E+00
0002	107028	Acrolein	Acrolein	0.000E+00
0003	7664417	NH3	Ammonia	0.000E+00
0004	71432	Benzene	Benzene	0.000E+00
0005	106990	1,3-Butadiene	1,3-Butadiene	0.000E+00
0006	9901	DieselExhPM	Diesel engine exhaust, particulate matter	0.000E+00
0007	50000	Formaldehyde	Formaldehyde	0.000E+00
0008	110543	Hexane	Hexane	0.000E+00
0009	56553	B[a] anthracene	Benz[a] anthracene	0.000E+00
0010	50328	B[a] P	Benzo[a] pyrene	0.000E+00
0011	205992	B[b] fluoranthen	Benzo[b] fluoranthene	0.000E+00
0012	207089	B[k] fluoranthen	Benzo[k] fluoranthene	0.000E+00
0013	218019	Chrysene	Chrysene	0.000E+00
0014	193395	In[1,2,3-cd] pyr	Indeno[1,2,3-cd] pyrene	0.000E+00
0015	91203	Naphthalene	Naphthalene	0.000E+00
0016	115071	Propylene	Propylene	0.000E+00
0017	75569	Propylene Oxide	Propylene oxide	0.000E+00
0018	108883	Toluene	Toluene	0.000E+00
0019	1210	Xylenes	Xylenes (mixed)	0.000E+00
0020	100414	Ethyl Benzene	Ethyl benzene	0.000E+00
0021	120127	Anthracene	Anthracene	0.000E+00
0022	53703	D[a,h] anthracen	Dibenz[a,h] anthracene	0.000E+00
0023	11101	PM	Particulate Matter	0.000E+00

EMISSIONS DATA SOURCE:
CHEMICALS ADDED OR DELETED: none

DOMINANT PATHWAYS FOR CANCER

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG
0001	A	-	-	-	-	-	-	-	-	-	-	-
0002	-	-	-	-	-	-	-	-	-	-	-	-
0003	-	-	-	-	-	-	-	-	-	-	-	-
0004	A	-	-	-	-	-	-	-	-	-	-	-
0005	A	-	-	-	-	-	-	-	-	-	-	-
0006	A	-	-	-	-	-	-	-	-	-	-	-
0007	A	-	-	-	-	-	-	-	-	-	-	-
0008	-	-	-	-	-	-	-	-	-	-	-	-
0009	-	YES	YES	-	-	-	-	-	-	-	-	-
0010	-	YES	YES	-	-	-	-	-	-	-	-	-
0011	-	YES	YES	-	-	-	-	-	-	-	-	-
0012	-	YES	YES	-	-	-	-	-	-	-	-	-
0013	-	YES	YES	-	-	-	-	-	-	-	-	-
0014	-	YES	YES	-	-	-	-	-	-	-	-	-
0015	A	-	-	-	-	-	-	-	-	-	-	-
0016	-	-	-	-	-	-	-	-	-	-	-	-
0017	A	-	-	-	-	-	-	-	-	-	-	-
0018	-	-	-	-	-	-	-	-	-	-	-	-
0019	-	-	-	-	-	-	-	-	-	-	-	-
0020	-	-	-	-	-	-	-	-	-	-	-	-
0021	-	-	-	-	-	-	-	-	-	-	-	-
0022	-	YES	YES	-	-	-	-	-	-	-	-	-
0023	-	-	-	-	-	-	-	-	-	-	-	-

DERIVED DOSE BY PATHWAY (mg/(kg-d)) FOR CANCER CALCULATIONS

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG
0001	2.90E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0002	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0003	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0004	2.90E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0005	2.90E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0006	2.90E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0007	2.90E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0008	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0009	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0010	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0011	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0012	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0013	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0014	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0015	2.90E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0016	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0017	2.90E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0018	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0019	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0020	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0021	2.60E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

0022	2.60E-04	2.81E-03	4.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
0023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

DERIVED CANCER RISK

CHEM	INHAL	DERM	SOIL	MOTHER	FISH	WATER	VEG	DAIRY	BEEF	CHICK	PIG	EGG	MEAT	ORAL	TOTAL
0001	2.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.90E-06
0002	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0003	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0004	2.90E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.90E-05
0005	1.74E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.74E-04
0006	3.19E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.19E-04
0007	6.08E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.08E-06
0008	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0009	1.01E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	3.98E-03
0010	1.01E-03	3.37E-02	5.05E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-02	3.98E-02
0011	1.01E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	3.98E-03
0012	1.01E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	3.98E-03
0013	1.01E-05	3.37E-04	5.05E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-04	3.98E-04
0014	1.01E-04	3.37E-03	5.05E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.87E-03	3.98E-03
0015	3.48E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.48E-05
0016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0017	3.76E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.76E-06
0018	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0019	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0020	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0021	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0022	1.07E-03	1.15E-02	1.72E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.32E-02	1.43E-02
0023	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
SUM	3.06E-03	5.90E-02	8.84E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.79E-02	7.09E-02