Appendix G Risk Characterization Calculations

Attachment A. Identification of Chemicals of Concern: 11711 Serene, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.069		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	21		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 11711 Serene, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.069		3E-03	2E-06	6E-04	2E-06	7E-04	3E-06	1E-03	4E-06	1E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**6.3E-04**	**Sum =**	**6.8E-04**	**Sum =**	**1.1E-03**	**Sum =**	**1.5E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**6.3E-04**	**Sum =**	**6.8E-04**	**Sum =**	**1.1E-03**	**Sum =**	**1.5E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 11711 Serene, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.069		5E-01	8E-07	4E-07	3E-08	1E-08	6E-07	7E-07	4E-07	1E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**4.1E-07**	**Sum =**	**1.4E-08**	**Sum =**	**7.5E-07**	**Sum =**	**1.0E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**4.1E-07**	**Sum =**	**1.4E-08**	**Sum =**	**7.5E-07**	**Sum =**	**1.0E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 11711 Serene, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.069		3E-05	2E-08	7E-04	3E-08	1E-03	3E-08	8E-04	3E-08	1E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**6.6E-04**	**Sum =**	**1.0E-03**	**Sum =**	**8.4E-04**	**Sum =**	**1.1E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**6.6E-04**	**Sum =**	**1.0E-03**	**Sum =**	**8.4E-04**	**Sum =**	**1.1E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 11711 Serene, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.069		5E+01	8E-09	4E-07	4E-10	2E-08	4E-09	6E-07	3E-09	8E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**4.2E-07**	**Sum =**	**2.2E-08**	**Sum =**	**5.7E-07**	**Sum =**	**7.7E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**4.2E-07**	**Sum =**	**2.2E-08**	**Sum =**	**5.7E-07**	**Sum =**	**7.7E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

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****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 21.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.043	0.000	1.938
1-2	0.034	0.882	0.000	4.726
2-3	0.062	0.971	0.000	4.978
3-4	0.067	0.942	0.000	5.137
4-5	0.067	0.917	0.000	5.430
5-6	0.093	0.971	0.000	5.768
6-7	0.093	1.056	0.000	5.895

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.059	7.060	3.8
1-2	6.289	11.931	4.8
2-3	6.370	12.381	4.6
3-4	6.449	12.594	4.4
4-5	4.866	11.279	3.9
5-6	4.411	11.244	3.5
6-7	4.185	11.229	3.2

Attachment A. Identification of Chemicals of Concern: 11789 Thomas Spring, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.15		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	16		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Tuesday, October 08, 2013

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 11789 Thomas Spring, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.15		3E-03	4E-06	1E-03	4E-06	1E-03	7E-06	2E-03	1E-05	3E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**1.4E-03**	**Sum =**	**1.5E-03**	**Sum =**	**2.4E-03**	**Sum =**	**3.2E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**1.4E-03**	**Sum =**	**1.5E-03**	**Sum =**	**2.4E-03**	**Sum =**	**3.2E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 11789 Thomas Spring, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.15		5E-01	2E-06	9E-07	6E-08	3E-08	1E-06	2E-06	8E-07	2E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**8.8E-07**	**Sum =**	**3.1E-08**	**Sum =**	**1.6E-06**	**Sum =**	**2.2E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**8.8E-07**	**Sum =**	**3.1E-08**	**Sum =**	**1.6E-06**	**Sum =**	**2.2E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 11789 Thomas Spring, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.15		3E-05	4E-08	1E-03	7E-08	2E-03	5E-08	2E-03	7E-08	2E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**1.4E-03**	**Sum =**	**2.2E-03**	**Sum =**	**1.8E-03**	**Sum =**	**2.4E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**1.4E-03**	**Sum =**	**2.2E-03**	**Sum =**	**1.8E-03**	**Sum =**	**2.4E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 11789 Thomas Spring, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident LADD	Adult Resident CR	Construction Worker LADD	Construction Worker CR	Youth Resident LADD	Youth Resident CR	Child Resident LADD	Child Resident CR
CHROMIUM(VI)	m	0.15		5E+01	2E-08	9E-07	1E-09	5E-08	9E-09	1E-06	6E-09	2E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**9.2E-07**	**Sum =**	**4.8E-08**	**Sum =**	**1.2E-06**	**Sum =**	**1.7E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**9.2E-07**	**Sum =**	**4.8E-08**	**Sum =**	**1.2E-06**	**Sum =**	**1.7E-06**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 16.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.048	0.000	1.484
1-2	0.034	0.890	0.000	3.634
2-3	0.062	0.979	0.000	3.825
3-4	0.067	0.949	0.000	3.943
4-5	0.067	0.923	0.000	4.165
5-6	0.093	0.977	0.000	4.423
6-7	0.093	1.063	0.000	4.518

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.079	6.631	3.6
1-2	6.347	10.906	4.4
2-3	6.423	11.289	4.2
3-4	6.497	11.455	4.0
4-5	4.899	10.054	3.5
5-6	4.440	9.933	3.1
6-7	4.211	9.885	2.8

Attachment A. Identification of Chemicals of Concern: 11812 Pine Tree, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	4.9		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Monday, March 25, 2013

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 4.900 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.060	0.000	0.459
1-2	0.034	0.909	0.000	1.137
2-3	0.062	0.998	0.000	1.194
3-4	0.067	0.965	0.000	1.228
4-5	0.067	0.937	0.000	1.295
5-6	0.093	0.991	0.000	1.374
6-7	0.093	1.077	0.000	1.403

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.125	5.665	3.1
1-2	6.482	8.562	3.5
2-3	6.546	8.799	3.3
3-4	6.606	8.865	3.1
4-5	4.975	7.274	2.6
5-6	4.505	6.964	2.2
6-7	4.269	6.842	2.0

Attachment A. Identification of Chemicals of Concern: 3737 Blueberry, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.031		ug/L	3.10E-02	C	Pass	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Tuesday, October 08, 2013

Attachment A. Identification of Chemicals of Concern: 3739 Blueberry, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.025		ug/L	3.10E-02	C	Pass	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Tuesday, October 08, 2013

Attachment A. Identification of Chemicals of Concern: 3829 Greenridge, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.108		ug/L	3.10E-02	C	Fail	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3829 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.108		3E-03	3E-06	1E-03	3E-06	1E-03	5E-06	2E-03	7E-06	2E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**9.9E-04**	**Sum =**	**1.1E-03**	**Sum =**	**1.7E-03**	**Sum =**	**2.3E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**9.9E-04**	**Sum =**	**1.1E-03**	**Sum =**	**1.7E-03**	**Sum =**	**2.3E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3829 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.108		5E-01	1E-06	6E-07	5E-08	2E-08	9E-07	1E-06	6E-07	2E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**6.3E-07**	**Sum =**	**2.3E-08**	**Sum =**	**1.2E-06**	**Sum =**	**1.6E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**6.3E-07**	**Sum =**	**2.3E-08**	**Sum =**	**1.2E-06**	**Sum =**	**1.6E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3829 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.108		3E-05	3E-08	1E-03	5E-08	2E-03	4E-08	1E-03	5E-08	2E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**1.0E-03**	**Sum =**	**1.6E-03**	**Sum =**	**1.3E-03**	**Sum =**	**1.8E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**1.0E-03**	**Sum =**	**1.6E-03**	**Sum =**	**1.3E-03**	**Sum =**	**1.8E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3829 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.108		5E+01	1E-08	7E-07	7E-10	3E-08	7E-09	9E-07	5E-09	1E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**6.6E-07**	**Sum =**	**3.4E-08**	**Sum =**	**8.9E-07**	**Sum =**	**1.2E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**6.6E-07**	**Sum =**	**3.4E-08**	**Sum =**	**8.9E-07**	**Sum =**	**1.2E-06**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Attachment A. Identification of Chemicals of Concern: 3835 Greenridge, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	10.1		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 10.100 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.054	0.000	0.942
1-2	0.034	0.900	0.000	2.320
2-3	0.062	0.989	0.000	2.439
3-4	0.067	0.957	0.000	2.511
4-5	0.067	0.931	0.000	2.651
5-6	0.093	0.985	0.000	2.814
6-7	0.093	1.070	0.000	2.873

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.103	6.120	3.3
1-2	6.418	9.672	4.0
2-3	6.488	9.977	3.7
3-4	6.554	10.089	3.5
4-5	4.939	8.587	3.0
5-6	4.474	8.366	2.6
6-7	4.241	8.278	2.4

Attachment A. Identification of Chemicals of Concern: 3923 Rosewood, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.036		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	6.6		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Tuesday, October 08, 2013

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3923 Rosewood, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.036		3E-03	1E-06	3E-04	1E-06	4E-04	2E-06	6E-04	2E-06	8E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**3.3E-04**	**Sum =**	**3.5E-04**	**Sum =**	**5.8E-04**	**Sum =**	**7.7E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.3E-04**	**Sum =**	**3.5E-04**	**Sum =**	**5.8E-04**	**Sum =**	**7.7E-04**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3923 Rosewood, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.036		5E-01	4E-07	2E-07	2E-08	8E-09	3E-07	4E-07	2E-07	5E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.1E-07**	**Sum =**	**7.5E-09**	**Sum =**	**3.9E-07**	**Sum =**	**5.3E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.1E-07**	**Sum =**	**7.5E-09**	**Sum =**	**3.9E-07**	**Sum =**	**5.3E-07**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3923 Rosewood, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.036		3E-05	1E-08	3E-04	2E-08	5E-04	1E-08	4E-04	2E-08	6E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**3.4E-04**	**Sum =**	**5.3E-04**	**Sum =**	**4.4E-04**	**Sum =**	**5.9E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.4E-04**	**Sum =**	**5.3E-04**	**Sum =**	**4.4E-04**	**Sum =**	**5.9E-04**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3923 Rosewood, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.036		5E+01	4E-09	2E-07	2E-10	1E-08	2E-09	3E-07	2E-09	4E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.2E-07**	**Sum =**	**1.1E-08**	**Sum =**	**3.0E-07**	**Sum =**	**4.0E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.2E-07**	**Sum =**	**1.1E-08**	**Sum =**	**3.0E-07**	**Sum =**	**4.0E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.058	0.000	0.618
1-2	0.034	0.906	0.000	1.526
2-3	0.062	0.995	0.000	1.603
3-4	0.067	0.962	0.000	1.650
4-5	0.067	0.935	0.000	1.741
5-6	0.093	0.989	0.000	1.847
6-7	0.093	1.075	0.000	1.885

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.118	5.814	3.2
1-2	6.461	8.927	3.7
2-3	6.527	9.187	3.4
3-4	6.589	9.267	3.3
4-5	4.963	7.706	2.7
5-6	4.495	7.424	2.4
6-7	4.260	7.314	2.1

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 6.600 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Attachment A. Identification of Chemicals of Concern: 3979 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.047		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	4.1		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Monday, March 25, 2013

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3979 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.047		3E-03	1E-06	4E-04	1E-06	5E-04	2E-06	8E-04	3E-06	1E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**4.3E-04**	**Sum =**	**4.6E-04**	**Sum =**	**7.5E-04**	**Sum =**	**1.0E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**4.3E-04**	**Sum =**	**4.6E-04**	**Sum =**	**7.5E-04**	**Sum =**	**1.0E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3979 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident LADD	Adult Resident CR	Construction Worker LADD	Construction Worker CR	Youth Resident LADD	Youth Resident CR	Child Resident LADD	Child Resident CR
CHROMIUM(VI)	m	0.047		5E-01	6E-07	3E-07	2E-08	1E-08	4E-07	5E-07	3E-07	7E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.8E-07**	**Sum =**	**9.9E-09**	**Sum =**	**5.1E-07**	**Sum =**	**6.9E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.8E-07**	**Sum =**	**9.9E-09**	**Sum =**	**5.1E-07**	**Sum =**	**6.9E-07**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3979 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.047		3E-05	1E-08	4E-04	2E-08	7E-04	2E-08	6E-04	2E-08	8E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**4.5E-04**	**Sum =**	**7.0E-04**	**Sum =**	**5.7E-04**	**Sum =**	**7.7E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**4.5E-04**	**Sum =**	**7.0E-04**	**Sum =**	**5.7E-04**	**Sum =**	**7.7E-04**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3979 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.047		5E+01	6E-09	3E-07	3E-10	1E-08	3E-09	4E-07	2E-09	5E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.9E-07**	**Sum =**	**1.5E-08**	**Sum =**	**3.9E-07**	**Sum =**	**5.3E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.9E-07**	**Sum =**	**1.5E-08**	**Sum =**	**3.9E-07**	**Sum =**	**5.3E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 4.100 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.060	0.000	0.385
1-2	0.034	0.911	0.000	0.952
2-3	0.062	0.999	0.000	1.000
3-4	0.067	0.966	0.000	1.029
4-5	0.067	0.938	0.000	1.085
5-6	0.093	0.992	0.000	1.151
6-7	0.093	1.078	0.000	1.175

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.128	5.594	3.0
1-2	6.492	8.389	3.5
2-3	6.555	8.616	3.2
3-4	6.614	8.675	3.0
4-5	4.981	7.071	2.5
5-6	4.510	6.747	2.1
6-7	4.273	6.620	1.9

Attachment A. Identification of Chemicals of Concern: 3981 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.072		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	1.8		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Monday, March 25, 2013

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3981 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.072		3E-03	2E-06	7E-04	2E-06	7E-04	3E-06	1E-03	5E-06	2E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**6.6E-04**	**Sum =**	**7.0E-04**	**Sum =**	**1.2E-03**	**Sum =**	**1.5E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**6.6E-04**	**Sum =**	**7.0E-04**	**Sum =**	**1.2E-03**	**Sum =**	**1.5E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3981 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.072		5E-01	8E-07	4E-07	3E-08	2E-08	6E-07	8E-07	4E-07	1E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**4.2E-07**	**Sum =**	**1.5E-08**	**Sum =**	**7.8E-07**	**Sum =**	**1.1E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**4.2E-07**	**Sum =**	**1.5E-08**	**Sum =**	**7.8E-07**	**Sum =**	**1.1E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3981 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.072		3E-05	2E-08	7E-04	3E-08	1E-03	3E-08	9E-04	4E-08	1E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**6.9E-04**	**Sum =**	**1.1E-03**	**Sum =**	**8.7E-04**	**Sum =**	**1.2E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**6.9E-04**	**Sum =**	**1.1E-03**	**Sum =**	**8.7E-04**	**Sum =**	**1.2E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3981 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.072		5E+01	9E-09	4E-07	5E-10	2E-08	4E-09	6E-07	3E-09	8E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**4.4E-07**	**Sum =**	**2.3E-08**	**Sum =**	**5.9E-07**	**Sum =**	**8.0E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**4.4E-07**	**Sum =**	**2.3E-08**	**Sum =**	**5.9E-07**	**Sum =**	**8.0E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 1.800 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.063	0.000	0.169
1-2	0.034	0.915	0.000	0.420
2-3	0.062	1.003	0.000	0.441
3-4	0.067	0.969	0.000	0.453
4-5	0.067	0.941	0.000	0.478
5-6	0.093	0.996	0.000	0.507
6-7	0.093	1.081	0.000	0.517

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.138	5.391	2.9
1-2	6.521	7.890	3.3
2-3	6.581	8.087	3.0
3-4	6.638	8.127	2.9
4-5	4.997	6.483	2.3
5-6	4.524	6.119	2.0
6-7	4.285	5.977	1.7

Attachment A. Identification of Chemicals of Concern: 3984 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.03		ug/L	3.10E-02	C	Pass	--	--
gw	Lead and Compounds	7439921	Water	2.3		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 2.300 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.062	0.000	0.216
1-2	0.034	0.914	0.000	0.536
2-3	0.062	1.002	0.000	0.563
3-4	0.067	0.968	0.000	0.579
4-5	0.067	0.941	0.000	0.610
5-6	0.093	0.995	0.000	0.647
6-7	0.093	1.081	0.000	0.661

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.136	5.435	3.0
1-2	6.515	7.999	3.3
2-3	6.575	8.202	3.1
3-4	6.633	8.246	2.9
4-5	4.993	6.611	2.4
5-6	4.521	6.256	2.0
6-7	4.283	6.117	1.8

Attachment A. Identification of Chemicals of Concern: 3984 Rye, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.047		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	1.7		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3984 Rye, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.047		3E-03	1E-06	4E-04	1E-06	5E-04	2E-06	8E-04	3E-06	1E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**4.3E-04**	**Sum =**	**4.6E-04**	**Sum =**	**7.5E-04**	**Sum =**	**1.0E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**4.3E-04**	**Sum =**	**4.6E-04**	**Sum =**	**7.5E-04**	**Sum =**	**1.0E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3984 Rye, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.047		5E-01	6E-07	3E-07	2E-08	1E-08	4E-07	5E-07	3E-07	7E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.8E-07**	**Sum =**	**9.9E-09**	**Sum =**	**5.1E-07**	**Sum =**	**6.9E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.8E-07**	**Sum =**	**9.9E-09**	**Sum =**	**5.1E-07**	**Sum =**	**6.9E-07**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3984 Rye, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.047		3E-05	1E-08	4E-04	2E-08	7E-04	2E-08	6E-04	2E-08	8E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**4.5E-04**	**Sum =**	**7.0E-04**	**Sum =**	**5.7E-04**	**Sum =**	**7.7E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**4.5E-04**	**Sum =**	**7.0E-04**	**Sum =**	**5.7E-04**	**Sum =**	**7.7E-04**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3984 Rye, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.047		5E+01	6E-09	3E-07	3E-10	1E-08	3E-09	4E-07	2E-09	5E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.9E-07**	**Sum =**	**1.5E-08**	**Sum =**	**3.9E-07**	**Sum =**	**5.3E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.9E-07**	**Sum =**	**1.5E-08**	**Sum =**	**3.9E-07**	**Sum =**	**5.3E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 1.700 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.063	0.000	0.160
1-2	0.034	0.915	0.000	0.397
2-3	0.062	1.003	0.000	0.416
3-4	0.067	0.969	0.000	0.428
4-5	0.067	0.942	0.000	0.451
5-6	0.093	0.996	0.000	0.479
6-7	0.093	1.082	0.000	0.489

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.138	5.382	2.9
1-2	6.522	7.868	3.3
2-3	6.582	8.064	3.0
3-4	6.639	8.103	2.8
4-5	4.997	6.457	2.3
5-6	4.524	6.092	2.0
6-7	4.286	5.949	1.7

Attachment A. Identification of Chemicals of Concern: 3984A Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.034		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	15.2		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Monday, March 25, 2013

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3984A Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.034		3E-03	9E-07	3E-04	1E-06	3E-04	2E-06	5E-04	2E-06	7E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**3.1E-04**	**Sum =**	**3.3E-04**	**Sum =**	**5.4E-04**	**Sum =**	**7.2E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.1E-04**	**Sum =**	**3.3E-04**	**Sum =**	**5.4E-04**	**Sum =**	**7.2E-04**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3984A Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.034		5E-01	4E-07	2E-07	1E-08	7E-09	3E-07	4E-07	2E-07	5E-07
	Cancer Risk for Detected Compounds Only:				**Sum =**	**2.0E-07**	**Sum =**	**7.1E-09**	**Sum =**	**3.7E-07**	**Sum =**	**5.0E-07**
	Cancer Risk for Detected and Nondetected Compounds:				**Sum =**	**2.0E-07**	**Sum =**	**7.1E-09**	**Sum =**	**3.7E-07**	**Sum =**	**5.0E-07**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3984A Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.034		3E-05	1E-08	3E-04	2E-08	5E-04	1E-08	4E-04	2E-08	6E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**3.2E-04**	**Sum =**	**5.0E-04**	**Sum =**	**4.1E-04**	**Sum =**	**5.5E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.2E-04**	**Sum =**	**5.0E-04**	**Sum =**	**4.1E-04**	**Sum =**	**5.5E-04**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3984A Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.034		5E+01	4E-09	2E-07	2E-10	1E-08	2E-09	3E-07	1E-09	4E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.1E-07**	**Sum =**	**1.1E-08**	**Sum =**	**2.8E-07**	**Sum =**	**3.8E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.1E-07**	**Sum =**	**1.1E-08**	**Sum =**	**2.8E-07**	**Sum =**	**3.8E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 15.200 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.049	0.000	1.411
1-2	0.034	0.892	0.000	3.457
2-3	0.062	0.980	0.000	3.638
3-4	0.067	0.950	0.000	3.750
4-5	0.067	0.924	0.000	3.961
5-6	0.093	0.978	0.000	4.206
6-7	0.093	1.064	0.000	4.297

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.082	6.562	3.6
1-2	6.357	10.740	4.4
2-3	6.432	11.113	4.1
3-4	6.504	11.271	3.9
4-5	4.904	9.856	3.4
5-6	4.444	9.722	3.0
6-7	4.215	9.669	2.8

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 1.900 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.063	0.000	0.179
1-2	0.034	0.915	0.000	0.443
2-3	0.062	1.003	0.000	0.465
3-4	0.067	0.969	0.000	0.478
4-5	0.067	0.941	0.000	0.504
5-6	0.093	0.995	0.000	0.535
6-7	0.093	1.081	0.000	0.546

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.137	5.400	2.9
1-2	6.520	7.912	3.3
2-3	6.580	8.110	3.0
3-4	6.637	8.151	2.9
4-5	4.996	6.508	2.3
5-6	4.523	6.147	2.0
6-7	4.285	6.005	1.7

Attachment A. Identification of Chemicals of Concern: 3985 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.042		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	22		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3985 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.042		3E-03	1E-06	4E-04	1E-06	4E-04	2E-06	7E-04	3E-06	9E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**3.8E-04**	**Sum =**	**4.1E-04**	**Sum =**	**6.7E-04**	**Sum =**	**8.9E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.8E-04**	**Sum =**	**4.1E-04**	**Sum =**	**6.7E-04**	**Sum =**	**8.9E-04**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3985 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.042		5E-01	5E-07	2E-07	2E-08	9E-09	3E-07	5E-07	2E-07	6E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.5E-07**	**Sum =**	**8.8E-09**	**Sum =**	**4.5E-07**	**Sum =**	**6.1E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.5E-07**	**Sum =**	**8.8E-09**	**Sum =**	**4.5E-07**	**Sum =**	**6.1E-07**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3985 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.042		3E-05	1E-08	4E-04	2E-08	6E-04	2E-08	5E-04	2E-08	7E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**4.0E-04**	**Sum =**	**6.2E-04**	**Sum =**	**5.1E-04**	**Sum =**	**6.9E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**4.0E-04**	**Sum =**	**6.2E-04**	**Sum =**	**5.1E-04**	**Sum =**	**6.9E-04**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3985 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.042		5E+01	5E-09	3E-07	3E-10	1E-08	3E-09	3E-07	2E-09	5E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.6E-07**	**Sum =**	**1.3E-08**	**Sum =**	**3.4E-07**	**Sum =**	**4.7E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.6E-07**	**Sum =**	**1.3E-08**	**Sum =**	**3.4E-07**	**Sum =**	**4.7E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 22.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.042	0.000	2.028
1-2	0.034	0.881	0.000	4.942
2-3	0.062	0.969	0.000	5.207
3-4	0.067	0.940	0.000	5.374
4-5	0.067	0.915	0.000	5.681
5-6	0.093	0.970	0.000	6.035
6-7	0.093	1.055	0.000	6.168

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.055	7.145	3.9
1-2	6.277	12.134	4.9
2-3	6.359	12.597	4.7
3-4	6.439	12.820	4.5
4-5	4.859	11.522	4.0
5-6	4.406	11.504	3.6
6-7	4.180	11.496	3.3

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 3.300 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.061	0.000	0.310
1-2	0.034	0.912	0.000	0.768
2-3	0.062	1.001	0.000	0.806
3-4	0.067	0.967	0.000	0.829
4-5	0.067	0.939	0.000	0.874
5-6	0.093	0.994	0.000	0.928
6-7	0.093	1.079	0.000	0.947

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.131	5.524	3.0
1-2	6.502	8.216	3.4
2-3	6.564	8.433	3.2
3-4	6.622	8.485	3.0
4-5	4.986	6.867	2.5
5-6	4.515	6.529	2.1
6-7	4.277	6.397	1.9

Attachment A. Identification of Chemicals of Concern: 3990 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	2.9		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 2.900 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.062	0.000	0.272
1-2	0.034	0.913	0.000	0.675
2-3	0.062	1.001	0.000	0.709
3-4	0.067	0.967	0.000	0.729
4-5	0.067	0.940	0.000	0.769
5-6	0.093	0.994	0.000	0.816
6-7	0.093	1.080	0.000	0.832

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.133	5.489	3.0
1-2	6.507	8.129	3.4
2-3	6.568	8.341	3.1
3-4	6.626	8.389	2.9
4-5	4.989	6.764	2.4
5-6	4.517	6.420	2.1
6-7	4.279	6.285	1.8

Attachment A. Identification of Chemicals of Concern: 3992 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	18		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Monday, March 25, 2013

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 18.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.046	0.000	1.666
1-2	0.034	0.887	0.000	4.073
2-3	0.062	0.976	0.000	4.288
3-4	0.067	0.946	0.000	4.423
4-5	0.067	0.920	0.000	4.673
5-6	0.093	0.975	0.000	4.963
6-7	0.093	1.060	0.000	5.071

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.071	6.803	3.7
1-2	6.324	11.318	4.6
2-3	6.402	11.728	4.4
3-4	6.477	11.912	4.2
4-5	4.886	10.546	3.6
5-6	4.428	10.459	3.3
6-7	4.201	10.425	3.0

Attachment A. Identification of Chemicals of Concern: 3992 Rye, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	9.5		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 9.500 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.055	0.000	0.887
1-2	0.034	0.901	0.000	2.184
2-3	0.062	0.990	0.000	2.296
3-4	0.067	0.958	0.000	2.364
4-5	0.067	0.931	0.000	2.495
5-6	0.093	0.985	0.000	2.649
6-7	0.093	1.071	0.000	2.704

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.106	6.068	3.3
1-2	6.425	9.545	3.9
2-3	6.494	9.842	3.7
3-4	6.560	9.949	3.5
4-5	4.943	8.437	3.0
5-6	4.478	8.205	2.6
6-7	4.245	8.113	2.3

Attachment A. Identification of Chemicals of Concern: 3994 Rye, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.038		ug/L	3.10E-02	C	Fail	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3994 Rye, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.038		3E-03	1E-06	3E-04	1E-06	4E-04	2E-06	6E-04	2E-06	8E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**3.5E-04**	**Sum =**	**3.7E-04**	**Sum =**	**6.1E-04**	**Sum =**	**8.1E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.5E-04**	**Sum =**	**3.7E-04**	**Sum =**	**6.1E-04**	**Sum =**	**8.1E-04**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3994 Rye, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.038		5E-01	4E-07	2E-07	2E-08	8E-09	3E-07	4E-07	2E-07	6E-07
	Cancer Risk for Detected Compounds Only:				**Sum =**	**2.2E-07**	**Sum =**	**8.0E-09**	**Sum =**	**4.1E-07**	**Sum =**	**5.5E-07**
	Cancer Risk for Detected and Nondetected Compounds:				**Sum =**	**2.2E-07**	**Sum =**	**8.0E-09**	**Sum =**	**4.1E-07**	**Sum =**	**5.5E-07**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3994 Rye, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.038		3E-05	1E-08	4E-04	2E-08	6E-04	1E-08	5E-04	2E-08	6E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**3.6E-04**	**Sum =**	**5.6E-04**	**Sum =**	**4.6E-04**	**Sum =**	**6.2E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.6E-04**	**Sum =**	**5.6E-04**	**Sum =**	**4.6E-04**	**Sum =**	**6.2E-04**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3994 Rye, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.038		5E+01	5E-09	2E-07	2E-10	1E-08	2E-09	3E-07	2E-09	4E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.3E-07**	**Sum =**	**1.2E-08**	**Sum =**	**3.1E-07**	**Sum =**	**4.2E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.3E-07**	**Sum =**	**1.2E-08**	**Sum =**	**3.1E-07**	**Sum =**	**4.2E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Attachment A. Identification of Chemicals of Concern: 3995 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.063		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	22		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Thursday, March 21, 2013

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3995 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.063		3E-03	2E-06	6E-04	2E-06	6E-04	3E-06	1E-03	4E-06	1E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**5.8E-04**	**Sum =**	**6.2E-04**	**Sum =**	**1.0E-03**	**Sum =**	**1.3E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**5.8E-04**	**Sum =**	**6.2E-04**	**Sum =**	**1.0E-03**	**Sum =**	**1.3E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3995 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.063		5E-01	7E-07	4E-07	3E-08	1E-08	5E-07	7E-07	3E-07	9E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**3.7E-07**	**Sum =**	**1.3E-08**	**Sum =**	**6.8E-07**	**Sum =**	**9.2E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**3.7E-07**	**Sum =**	**1.3E-08**	**Sum =**	**6.8E-07**	**Sum =**	**9.2E-07**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3995 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.063		3E-05	2E-08	6E-04	3E-08	9E-04	2E-08	8E-04	3E-08	1E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**6.0E-04**	**Sum =**	**9.3E-04**	**Sum =**	**7.7E-04**	**Sum =**	**1.0E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**6.0E-04**	**Sum =**	**9.3E-04**	**Sum =**	**7.7E-04**	**Sum =**	**1.0E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3995 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.063		5E+01	8E-09	4E-07	4E-10	2E-08	4E-09	5E-07	3E-09	7E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**3.9E-07**	**Sum =**	**2.0E-08**	**Sum =**	**5.2E-07**	**Sum =**	**7.0E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**3.9E-07**	**Sum =**	**2.0E-08**	**Sum =**	**5.2E-07**	**Sum =**	**7.0E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 22.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.042	0.000	2.028
1-2	0.034	0.881	0.000	4.942
2-3	0.062	0.969	0.000	5.207
3-4	0.067	0.940	0.000	5.374
4-5	0.067	0.915	0.000	5.681
5-6	0.093	0.970	0.000	6.035
6-7	0.093	1.055	0.000	6.168

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.055	7.145	3.9
1-2	6.277	12.134	4.9
2-3	6.359	12.597	4.7
3-4	6.439	12.820	4.5
4-5	4.859	11.522	4.0
5-6	4.406	11.504	3.6
6-7	4.180	11.496	3.3

Attachment A. Identification of Chemicals of Concern: 3996 Rye, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	2.6		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Thursday, March 21, 2013

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 2.600 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.062	0.000	0.244
1-2	0.034	0.913	0.000	0.606
2-3	0.062	1.002	0.000	0.636
3-4	0.067	0.968	0.000	0.654
4-5	0.067	0.940	0.000	0.690
5-6	0.093	0.994	0.000	0.732
6-7	0.093	1.080	0.000	0.746

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.134	5.462	3.0
1-2	6.511	8.064	3.3
2-3	6.572	8.272	3.1
3-4	6.629	8.318	2.9
4-5	4.991	6.688	2.4
5-6	4.519	6.338	2.0
6-7	4.281	6.201	1.8

Attachment A. Identification of Chemicals of Concern: 4107 Cove Court, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	2.9		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.062	0.000	0.272
1-2	0.034	0.913	0.000	0.675
2-3	0.062	1.001	0.000	0.709
3-4	0.067	0.967	0.000	0.729
4-5	0.067	0.940	0.000	0.769
5-6	0.093	0.994	0.000	0.816
6-7	0.093	1.080	0.000	0.832

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.133	5.489	3.0
1-2	6.507	8.129	3.4
2-3	6.568	8.341	3.1
3-4	6.626	8.389	2.9
4-5	4.989	6.764	2.4
5-6	4.517	6.420	2.1
6-7	4.279	6.285	1.8

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 2.900 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Attachment A. Identification of Chemicals of Concern: 3933 Rosewood, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	2.4		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 2.400 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.062	0.000	0.226
1-2	0.034	0.914	0.000	0.559
2-3	0.062	1.002	0.000	0.587
3-4	0.067	0.968	0.000	0.604
4-5	0.067	0.941	0.000	0.637
5-6	0.093	0.995	0.000	0.675
6-7	0.093	1.081	0.000	0.689

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.135	5.444	3.0
1-2	6.513	8.021	3.3
2-3	6.574	8.226	3.1
3-4	6.632	8.270	2.9
4-5	4.993	6.637	2.4
5-6	4.520	6.283	2.0
6-7	4.282	6.145	1.8

Attachment A. Identification of Chemicals of Concern: 11712 Serene, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	980		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 980.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	0.596	0.000	51.678
1-2	0.034	0.406	0.000	101.618
2-3	0.062	0.463	0.000	110.759
3-4	0.067	0.468	0.000	119.030
4-5	0.067	0.467	0.000	129.156
5-6	0.093	0.504	0.000	139.779
6-7	0.093	0.560	0.000	145.946

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	2.320	54.615	27.0
1-2	2.898	104.956	38.4
2-3	3.037	114.321	38.7
3-4	3.202	122.766	38.9
4-5	2.480	132.170	39.3
5-6	2.291	142.667	39.5
6-7	2.221	148.820	38.4

Environmental exposures associated with blood lead levels above 30 µg/dl are above the range of values that have been used in the calibration and empirical validation of this model. (Zaragoza, L. and Hogan, K. 1998. The Integrated Exposure Uptake Biokinetic Model for Lead In Children: Independent Validation and Verification. Environmental Health Perspectives 106 (supplement 6). p. 1555)

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 1.200 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.064	0.000	0.113
1-2	0.034	0.916	0.000	0.280
2-3	0.062	1.004	0.000	0.294
3-4	0.067	0.970	0.000	0.302
4-5	0.067	0.942	0.000	0.319
5-6	0.093	0.996	0.000	0.338
6-7	0.093	1.082	0.000	0.345

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.140	5.338	2.9
1-2	6.528	7.759	3.2
2-3	6.588	7.948	3.0
3-4	6.644	7.983	2.8
4-5	5.001	6.329	2.3
5-6	4.527	5.955	1.9
6-7	4.289	5.809	1.7

Maryland Department of the Environment
Land Management Administration
Land Restoration Program

MEMORANDUM

TO: Chris Ralston, Program Administrator
Oil Control Program

FROM: Mark A. Mank, Toxicologist
Land Management Administration, Land Restoration Program

SUBJECT: MDE-FCHD Green Valley/Monrovia Groundwater Investigation
11712 Serene Court

DATE: October 7, 2013

No additional risk assessment on water samples collected from the 11712 Serene property was performed post March 2013. As with the other residence identified during the Green Valley Monrovia investigation no hexavalent chromium results exceeded MDE recommended risk levels in any water sample and all point of use samples collected at the property were below the 15 µg/L lead action level and the recommended CDC 5 µg/dl blood lead level concentration. Based on the sampling results conducted at 11712 Serene lead detections appear to result from the accumulation of sediments throughout the plumbing system that originate from total suspended solids and the plumbing infrastructure itself. All point of use samples are well within acceptable ranges and no further assessment is warranted at the property. Please refer to the Green Valley/Monrovia report for further recommendations concerning well maintenance and upkeep.

Please contact me (x3436) if you have any questions.
/MAM

Attachment A. Identification of Chemicals of Concern: 11713 Serene, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.233		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	450		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Tuesday, October 08, 2013

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 11713 Serene, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.233		3E-03	6E-06	2E-03	7E-06	2E-03	1E-05	4E-03	1E-05	5E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**2.1E-03**	**Sum =**	**2.3E-03**	**Sum =**	**3.7E-03**	**Sum =**	**5.0E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**2.1E-03**	**Sum =**	**2.3E-03**	**Sum =**	**3.7E-03**	**Sum =**	**5.0E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 11713 Serene, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.233		5E-01	3E-06	1E-06	1E-07	5E-08	2E-06	3E-06	1E-06	3E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**1.4E-06**	**Sum =**	**4.9E-08**	**Sum =**	**2.5E-06**	**Sum =**	**3.4E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**1.4E-06**	**Sum =**	**4.9E-08**	**Sum =**	**2.5E-06**	**Sum =**	**3.4E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 11713 Serene, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.233		3E-05	7E-08	2E-03	1E-07	3E-03	8E-08	3E-03	1E-07	4E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**2.2E-03**	**Sum =**	**3.4E-03**	**Sum =**	**2.8E-03**	**Sum =**	**3.8E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**2.2E-03**	**Sum =**	**3.4E-03**	**Sum =**	**2.8E-03**	**Sum =**	**3.8E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 11713 Serene, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.233		5E+01	3E-08	1E-06	1E-09	7E-08	1E-08	2E-06	1E-08	3E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**1.4E-06**	**Sum =**	**7.4E-08**	**Sum =**	**1.9E-06**	**Sum =**	**2.6E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**1.4E-06**	**Sum =**	**7.4E-08**	**Sum =**	**1.9E-06**	**Sum =**	**2.6E-06**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 450.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	0.756	0.000	30.100
1-2	0.034	0.537	0.000	61.659
2-3	0.062	0.610	0.000	67.009
3-4	0.067	0.613	0.000	71.620
4-5	0.067	0.610	0.000	77.436
5-6	0.093	0.656	0.000	83.521
6-7	0.093	0.726	0.000	86.809

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	2.942	33.819	17.3
1-2	3.829	66.060	25.0
2-3	4.001	71.682	25.1
3-4	4.196	76.496	25.1
4-5	3.238	81.351	25.2
5-6	2.981	87.251	25.1
6-7	2.876	90.505	24.2

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 3.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.062	0.000	0.282
1-2	0.034	0.913	0.000	0.698
2-3	0.062	1.001	0.000	0.733
3-4	0.067	0.967	0.000	0.754
4-5	0.067	0.940	0.000	0.795
5-6	0.093	0.994	0.000	0.844
6-7	0.093	1.080	0.000	0.861

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.133	5.497	3.0
1-2	6.506	8.151	3.4
2-3	6.567	8.364	3.1
3-4	6.625	8.413	3.0
4-5	4.988	6.790	2.4
5-6	4.516	6.447	2.1
6-7	4.279	6.313	1.8

Attachment A. Identification of Chemicals of Concern: 11894 Barclay Court, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.026		ug/L	3.10E-02	C	Pass	--	--
gw	Lead and Compounds	7439921	Water	77		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Tuesday, April 09, 2013

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 77.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	0.989	0.000	6.737
1-2	0.034	0.802	0.000	15.755
2-3	0.062	0.891	0.000	16.740
3-4	0.067	0.871	0.000	17.431
4-5	0.067	0.853	0.000	18.530
5-6	0.093	0.907	0.000	19.756
6-7	0.093	0.990	0.000	20.267

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.848	11.595	6.2
1-2	5.718	22.309	8.8
2-3	5.842	23.535	8.6
3-4	5.968	24.337	8.4
4-5	4.529	23.979	7.9
5-6	4.121	24.877	7.5
6-7	3.925	25.276	7.1

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 4.800 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.060	0.000	0.450
1-2	0.034	0.909	0.000	1.114
2-3	0.062	0.998	0.000	1.170
3-4	0.067	0.965	0.000	1.203
4-5	0.067	0.937	0.000	1.269
5-6	0.093	0.992	0.000	1.347
6-7	0.093	1.077	0.000	1.374

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.125	5.656	3.1
1-2	6.483	8.541	3.5
2-3	6.547	8.776	3.3
3-4	6.607	8.841	3.1
4-5	4.976	7.249	2.6
5-6	4.506	6.937	2.2
6-7	4.269	6.814	2.0

Attachment A. Identification of Chemicals of Concern: 3740 Blueberry, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	58.3		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 58.300 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.006	0.000	5.189
1-2	0.034	0.827	0.000	12.294
2-3	0.062	0.915	0.000	13.029
3-4	0.067	0.893	0.000	13.530
4-5	0.067	0.873	0.000	14.358
5-6	0.093	0.927	0.000	15.290
6-7	0.093	1.011	0.000	15.667

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.915	10.132	5.4
1-2	5.893	19.048	7.6
2-3	6.005	20.012	7.4
3-4	6.118	20.608	7.1
4-5	4.634	19.932	6.6
5-6	4.212	20.523	6.3
6-7	4.007	20.779	5.9

Maryland Department of the Environment
Land Management Administration
Land Restoration Program

MEMORANDUM

TO: Chris Ralston, Program Administrator
Oil Control Program

FROM: Mark A. Mank, Toxicologist
Land Management Administration, Land Restoration Program

SUBJECT: MDE-FCHD Green Valley/Monrovia Groundwater Investigation
3740 Blueberry

DATE: October 7, 2013

Blood lead level modeling was not performed for point of use samples (POU) since all POU samples were nondetect for lead.

Please contact me (x3436) if you have any questions.
/MAM

Attachment A. Identification of Chemicals of Concern: 3806 Greenridge, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.073		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	84		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3806 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.073		3E-03	2E-06	7E-04	2E-06	7E-04	3E-06	1E-03	5E-06	2E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**6.7E-04**	**Sum =**	**7.1E-04**	**Sum =**	**1.2E-03**	**Sum =**	**1.6E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**6.7E-04**	**Sum =**	**7.1E-04**	**Sum =**	**1.2E-03**	**Sum =**	**1.6E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3806 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.073		5E-01	9E-07	4E-07	3E-08	2E-08	6E-07	8E-07	4E-07	1E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**4.3E-07**	**Sum =**	**1.5E-08**	**Sum =**	**7.9E-07**	**Sum =**	**1.1E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**4.3E-07**	**Sum =**	**1.5E-08**	**Sum =**	**7.9E-07**	**Sum =**	**1.1E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3806 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.073		3E-05	2E-08	7E-04	3E-08	1E-03	3E-08	9E-04	4E-08	1E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**7.0E-04**	**Sum =**	**1.1E-03**	**Sum =**	**8.9E-04**	**Sum =**	**1.2E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**7.0E-04**	**Sum =**	**1.1E-03**	**Sum =**	**8.9E-04**	**Sum =**	**1.2E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3806 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.073		5E+01	9E-09	4E-07	5E-10	2E-08	5E-09	6E-07	3E-09	8E-07
	Cancer Risk for Detected Compounds Only:				**Sum =**	**4.5E-07**	**Sum =**	**2.3E-08**	**Sum =**	**6.0E-07**	**Sum =**	**8.2E-07**
	Cancer Risk for Detected and Nondetected Compounds:				**Sum =**	**4.5E-07**	**Sum =**	**2.3E-08**	**Sum =**	**6.0E-07**	**Sum =**	**8.2E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 84.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	0.982	0.000	7.302
1-2	0.034	0.793	0.000	17.000
2-3	0.062	0.882	0.000	18.080
3-4	0.067	0.864	0.000	18.845
4-5	0.067	0.846	0.000	20.045
5-6	0.093	0.900	0.000	21.380
6-7	0.093	0.983	0.000	21.943

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.824	12.130	6.5
1-2	5.656	23.484	9.2
2-3	5.784	24.807	9.1
3-4	5.914	25.689	8.8
4-5	4.491	25.449	8.4
5-6	4.088	26.460	8.0
6-7	3.895	26.914	7.5

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 2.300 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.062	0.000	0.216
1-2	0.034	0.914	0.000	0.536
2-3	0.062	1.002	0.000	0.563
3-4	0.067	0.968	0.000	0.579
4-5	0.067	0.941	0.000	0.610
5-6	0.093	0.995	0.000	0.647
6-7	0.093	1.081	0.000	0.661

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.136	5.435	3.0
1-2	6.515	7.999	3.3
2-3	6.575	8.202	3.1
3-4	6.633	8.246	2.9
4-5	4.993	6.611	2.4
5-6	4.521	6.256	2.0
6-7	4.283	6.117	1.8

Attachment A. Identification of Chemicals of Concern: 3833 Greenridge, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	92		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Monday, April 08, 2013

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 92.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	0.975	0.000	7.941
1-2	0.034	0.784	0.000	18.393
2-3	0.062	0.872	0.000	19.581
3-4	0.067	0.855	0.000	20.431
4-5	0.067	0.838	0.000	21.747
5-6	0.093	0.891	0.000	23.205
6-7	0.093	0.975	0.000	23.827

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.797	12.734	6.8
1-2	5.587	24.798	9.7
2-3	5.719	26.233	9.6
3-4	5.855	27.207	9.3
4-5	4.448	27.100	8.9
5-6	4.051	28.241	8.5
6-7	3.862	28.757	8.0

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 39.300 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.024	0.000	3.562
1-2	0.034	0.854	0.000	8.559
2-3	0.062	0.943	0.000	9.045
3-4	0.067	0.917	0.000	9.363
4-5	0.067	0.895	0.000	9.917
5-6	0.093	0.949	0.000	10.548
6-7	0.093	1.033	0.000	10.794

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.987	8.594	4.6
1-2	6.086	15.533	6.2
2-3	6.184	16.233	6.0
3-4	6.281	16.628	5.8
4-5	4.749	15.627	5.3
5-6	4.311	15.901	4.9
6-7	4.095	16.016	4.5

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 5.100 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.059	0.000	0.478
1-2	0.034	0.909	0.000	1.182
2-3	0.062	0.998	0.000	1.242
3-4	0.067	0.964	0.000	1.278
4-5	0.067	0.937	0.000	1.348
5-6	0.093	0.991	0.000	1.430
6-7	0.093	1.077	0.000	1.460

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.124	5.683	3.1
1-2	6.479	8.605	3.6
2-3	6.543	8.845	3.3
3-4	6.604	8.913	3.1
4-5	4.974	7.325	2.6
5-6	4.504	7.018	2.2
6-7	4.268	6.898	2.0

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 1.700 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.063	0.000	0.160
1-2	0.034	0.915	0.000	0.397
2-3	0.062	1.003	0.000	0.416
3-4	0.067	0.969	0.000	0.428
4-5	0.067	0.942	0.000	0.451
5-6	0.093	0.996	0.000	0.479
6-7	0.093	1.082	0.000	0.489

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.138	5.382	2.9
1-2	6.522	7.868	3.3
2-3	6.582	8.064	3.0
3-4	6.639	8.103	2.8
4-5	4.997	6.457	2.3
5-6	4.524	6.092	2.0
6-7	4.286	5.949	1.7

Attachment A. Identification of Chemicals of Concern: 3837 Greenridge, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.032		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	65		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Tuesday, October 08, 2013

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3837 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.032		3E-03	9E-07	3E-04	9E-07	3E-04	2E-06	5E-04	2E-06	7E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**2.9E-04**	**Sum =**	**3.1E-04**	**Sum =**	**5.1E-04**	**Sum =**	**6.8E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**2.9E-04**	**Sum =**	**3.1E-04**	**Sum =**	**5.1E-04**	**Sum =**	**6.8E-04**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3837 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.032		5E-01	4E-07	2E-07	1E-08	7E-09	3E-07	3E-07	2E-07	5E-07
	Cancer Risk for Detected Compounds Only:				**Sum =**	**1.9E-07**	**Sum =**	**6.7E-09**	**Sum =**	**3.5E-07**	**Sum =**	**4.7E-07**
	Cancer Risk for Detected and Nondetected Compounds:				**Sum =**	**1.9E-07**	**Sum =**	**6.7E-09**	**Sum =**	**3.5E-07**	**Sum =**	**4.7E-07**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3837 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.032		3E-05	9E-09	3E-04	1E-08	5E-04	1E-08	4E-04	2E-08	5E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**3.1E-04**	**Sum =**	**4.7E-04**	**Sum =**	**3.9E-04**	**Sum =**	**5.2E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.1E-04**	**Sum =**	**4.7E-04**	**Sum =**	**3.9E-04**	**Sum =**	**5.2E-04**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3837 Greenridge, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.032		5E+01	4E-09	2E-07	2E-10	1E-08	2E-09	3E-07	1E-09	4E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.0E-07**	**Sum =**	**1.0E-08**	**Sum =**	**2.6E-07**	**Sum =**	**3.6E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.0E-07**	**Sum =**	**1.0E-08**	**Sum =**	**2.6E-07**	**Sum =**	**3.6E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 65.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.000	0.000	5.750
1-2	0.034	0.818	0.000	13.557
2-3	0.062	0.906	0.000	14.382
3-4	0.067	0.885	0.000	14.949
4-5	0.067	0.866	0.000	15.874
5-6	0.093	0.920	0.000	16.912
6-7	0.093	1.004	0.000	17.337

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.891	10.661	5.7
1-2	5.829	20.238	8.0
2-3	5.945	21.295	7.8
3-4	6.063	21.964	7.6
4-5	4.596	21.403	7.1
5-6	4.179	22.104	6.7
6-7	3.977	22.411	6.3

Attachment A. Identification of Chemicals of Concern: 3923 Rosewood, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.036		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	25		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3923 Rosewood, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.036		3E-03	1E-06	3E-04	1E-06	4E-04	2E-06	6E-04	2E-06	8E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**3.3E-04**	**Sum =**	**3.5E-04**	**Sum =**	**5.8E-04**	**Sum =**	**7.7E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.3E-04**	**Sum =**	**3.5E-04**	**Sum =**	**5.8E-04**	**Sum =**	**7.7E-04**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3923 Rosewood, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.036		5E-01	4E-07	2E-07	2E-08	8E-09	3E-07	4E-07	2E-07	5E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.1E-07**	**Sum =**	**7.5E-09**	**Sum =**	**3.9E-07**	**Sum =**	**5.3E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.1E-07**	**Sum =**	**7.5E-09**	**Sum =**	**3.9E-07**	**Sum =**	**5.3E-07**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3923 Rosewood, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.036		3E-05	1E-08	3E-04	2E-08	5E-04	1E-08	4E-04	2E-08	6E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**3.4E-04**	**Sum =**	**5.3E-04**	**Sum =**	**4.4E-04**	**Sum =**	**5.9E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.4E-04**	**Sum =**	**5.3E-04**	**Sum =**	**4.4E-04**	**Sum =**	**5.9E-04**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3923 Rosewood, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.036		5E+01	4E-09	2E-07	2E-10	1E-08	2E-09	3E-07	2E-09	4E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.2E-07**	**Sum =**	**1.1E-08**	**Sum =**	**3.0E-07**	**Sum =**	**4.0E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.2E-07**	**Sum =**	**1.1E-08**	**Sum =**	**3.0E-07**	**Sum =**	**4.0E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

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****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 2.400 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.062	0.000	0.226
1-2	0.034	0.914	0.000	0.559
2-3	0.062	1.002	0.000	0.587
3-4	0.067	0.968	0.000	0.604
4-5	0.067	0.941	0.000	0.637
5-6	0.093	0.995	0.000	0.675
6-7	0.093	1.081	0.000	0.689

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.135	5.444	3.0
1-2	6.513	8.021	3.3
2-3	6.574	8.226	3.1
3-4	6.632	8.270	2.9
4-5	4.993	6.637	2.4
5-6	4.520	6.283	2.0
6-7	4.282	6.145	1.8

Attachment A. Identification of Chemicals of Concern: 3983 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	145		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.063	0.000	0.151
1-2	0.034	0.915	0.000	0.373
2-3	0.062	1.004	0.000	0.392
3-4	0.067	0.969	0.000	0.403
4-5	0.067	0.942	0.000	0.425
5-6	0.093	0.996	0.000	0.451
6-7	0.093	1.082	0.000	0.460

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.139	5.373	2.9
1-2	6.523	7.846	3.3
2-3	6.583	8.041	3.0
3-4	6.640	8.079	2.8
4-5	4.998	6.431	2.3
5-6	4.525	6.065	1.9
6-7	4.286	5.921	1.7

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

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****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 1.600 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	0.932	0.000	11.959
1-2	0.034	0.727	0.000	26.886
2-3	0.062	0.813	0.000	28.785
3-4	0.067	0.802	0.000	30.222
4-5	0.067	0.790	0.000	32.297
5-6	0.093	0.842	0.000	34.552
6-7	0.093	0.923	0.000	35.579

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.628	16.540	8.7
1-2	5.182	32.829	12.8
2-3	5.334	34.995	12.7
3-4	5.495	36.586	12.4
4-5	4.192	37.345	12.1
5-6	3.827	39.314	11.7
6-7	3.659	40.255	11.2

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 145.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Attachment A. Identification of Chemicals of Concern: 3998 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.02		ug/L	3.10E-02	C	Pass	--	--
gw	Lead and Compounds	7439921	Water	58		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 58.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.006	0.000	5.164
1-2	0.034	0.827	0.000	12.237
2-3	0.062	0.916	0.000	12.968
3-4	0.067	0.894	0.000	13.465
4-5	0.067	0.873	0.000	14.289
5-6	0.093	0.927	0.000	15.217
6-7	0.093	1.012	0.000	15.592

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.916	10.108	5.4
1-2	5.896	18.994	7.5
2-3	6.008	19.954	7.3
3-4	6.121	20.546	7.1
4-5	4.636	19.865	6.6
5-6	4.214	20.451	6.2
6-7	4.008	20.705	5.8

Attachment A. Identification of Chemicals of Concern: 3987 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.029		ug/L	3.10E-02	C	Pass	--	--
gw	Lead and Compounds	7439921	Water	43		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

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****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 43.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.021	0.000	3.883
1-2	0.034	0.848	0.000	9.305
2-3	0.062	0.937	0.000	9.839
3-4	0.067	0.912	0.000	10.191
4-5	0.067	0.890	0.000	10.799
5-6	0.093	0.944	0.000	11.489
6-7	0.093	1.029	0.000	11.760

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.973	8.897	4.8
1-2	6.047	16.235	6.5
2-3	6.148	16.986	6.3
3-4	6.248	17.419	6.0
4-5	4.726	16.481	5.5
5-6	4.291	16.817	5.2
6-7	4.078	16.960	4.8

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

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****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 3.300 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.061	0.000	0.310
1-2	0.034	0.912	0.000	0.768
2-3	0.062	1.001	0.000	0.806
3-4	0.067	0.967	0.000	0.829
4-5	0.067	0.939	0.000	0.874
5-6	0.093	0.994	0.000	0.928
6-7	0.093	1.079	0.000	0.947

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.131	5.524	3.0
1-2	6.502	8.216	3.4
2-3	6.564	8.433	3.2
3-4	6.622	8.485	3.0
4-5	4.986	6.867	2.5
5-6	4.515	6.529	2.1
6-7	4.277	6.397	1.9

Attachment A. Identification of Chemicals of Concern: 3989 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	110		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 110.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	0.960	0.000	9.345
1-2	0.034	0.763	0.000	21.413
2-3	0.062	0.851	0.000	22.844
3-4	0.067	0.836	0.000	23.890
4-5	0.067	0.821	0.000	25.465
5-6	0.093	0.874	0.000	27.198
6-7	0.093	0.956	0.000	27.956

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.737	14.063	7.5
1-2	5.440	27.650	10.8
2-3	5.580	29.336	10.7
3-4	5.726	30.518	10.4
4-5	4.356	30.709	10.0
5-6	3.971	32.137	9.7
6-7	3.790	32.796	9.1

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 1.200 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.064	0.000	0.113
1-2	0.034	0.916	0.000	0.280
2-3	0.062	1.004	0.000	0.294
3-4	0.067	0.970	0.000	0.302
4-5	0.067	0.942	0.000	0.319
5-6	0.093	0.996	0.000	0.338
6-7	0.093	1.082	0.000	0.345

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.140	5.338	2.9
1-2	6.528	7.759	3.2
2-3	6.588	7.948	3.0
3-4	6.644	7.983	2.8
4-5	5.001	6.329	2.3
5-6	4.527	5.955	1.9
6-7	4.289	5.809	1.7

Attachment A. Identification of Chemicals of Concern: 3991 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.225		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	44		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3991 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.225		3E-03	6E-06	2E-03	7E-06	2E-03	1E-05	4E-03	1E-05	5E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**2.1E-03**	**Sum =**	**2.2E-03**	**Sum =**	**3.6E-03**	**Sum =**	**4.8E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**2.1E-03**	**Sum =**	**2.2E-03**	**Sum =**	**3.6E-03**	**Sum =**	**4.8E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3991 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.225		5E-01	3E-06	1E-06	9E-08	5E-08	2E-06	2E-06	1E-06	3E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**1.3E-06**	**Sum =**	**4.7E-08**	**Sum =**	**2.4E-06**	**Sum =**	**3.3E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**1.3E-06**	**Sum =**	**4.7E-08**	**Sum =**	**2.4E-06**	**Sum =**	**3.3E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3991 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.225		3E-05	6E-08	2E-03	1E-07	3E-03	8E-08	3E-03	1E-07	4E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**2.1E-03**	**Sum =**	**3.3E-03**	**Sum =**	**2.7E-03**	**Sum =**	**3.7E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**2.1E-03**	**Sum =**	**3.3E-03**	**Sum =**	**2.7E-03**	**Sum =**	**3.7E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3991 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.225		5E+01	3E-08	1E-06	1E-09	7E-08	1E-08	2E-06	9E-09	3E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**1.4E-06**	**Sum =**	**7.1E-08**	**Sum =**	**1.8E-06**	**Sum =**	**2.5E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**1.4E-06**	**Sum =**	**7.1E-08**	**Sum =**	**1.8E-06**	**Sum =**	**2.5E-06**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 44.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.020	0.000	3.970
1-2	0.034	0.847	0.000	9.505
2-3	0.062	0.936	0.000	10.052
3-4	0.067	0.911	0.000	10.414
4-5	0.067	0.889	0.000	11.035
5-6	0.093	0.943	0.000	11.741
6-7	0.093	1.028	0.000	12.019

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.969	8.979	4.8
1-2	6.037	16.423	6.6
2-3	6.138	17.188	6.4
3-4	6.240	17.631	6.1
4-5	4.720	16.711	5.6
5-6	4.286	17.064	5.2
6-7	4.073	17.213	4.9

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 22.400 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.041	0.000	2.064
1-2	0.034	0.880	0.000	5.028
2-3	0.062	0.969	0.000	5.298
3-4	0.067	0.940	0.000	5.468
4-5	0.067	0.915	0.000	5.781
5-6	0.093	0.969	0.000	6.142
6-7	0.093	1.054	0.000	6.277

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.053	7.179	3.9
1-2	6.273	12.215	4.9
2-3	6.355	12.684	4.7
3-4	6.435	12.910	4.5
4-5	4.856	11.619	4.0
5-6	4.403	11.607	3.6
6-7	4.178	11.603	3.3

Attachment A. Identification of Chemicals of Concern: 3993 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	33		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Monday, March 25, 2013

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 33.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.030	0.000	3.009
1-2	0.034	0.863	0.000	7.267
2-3	0.062	0.952	0.000	7.671
3-4	0.067	0.925	0.000	7.933
4-5	0.067	0.902	0.000	8.397
5-6	0.093	0.956	0.000	8.927
6-7	0.093	1.041	0.000	9.131

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.011	8.072	4.4
1-2	6.154	14.319	5.8
2-3	6.246	14.932	5.5
3-4	6.337	15.262	5.3
4-5	4.788	14.153	4.8
5-6	4.345	14.321	4.4
6-7	4.126	14.391	4.1

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 8.500 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.056	0.000	0.794
1-2	0.034	0.903	0.000	1.958
2-3	0.062	0.992	0.000	2.058
3-4	0.067	0.959	0.000	2.118
4-5	0.067	0.933	0.000	2.236
5-6	0.093	0.987	0.000	2.373
6-7	0.093	1.072	0.000	2.423

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.110	5.981	3.2
1-2	6.437	9.333	3.8
2-3	6.505	9.617	3.6
3-4	6.570	9.714	3.4
4-5	4.950	8.185	2.9
5-6	4.484	7.937	2.5
6-7	4.250	7.838	2.3

Attachment A. Identification of Chemicals of Concern: 3994 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.1		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	530		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3994 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.1		3E-03	3E-06	9E-04	3E-06	1E-03	5E-06	2E-03	6E-06	2E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**9.1E-04**	**Sum =**	**9.8E-04**	**Sum =**	**1.6E-03**	**Sum =**	**2.1E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**9.1E-04**	**Sum =**	**9.8E-04**	**Sum =**	**1.6E-03**	**Sum =**	**2.1E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3994 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.1		5E-01	1E-06	6E-07	4E-08	2E-08	8E-07	1E-06	5E-07	1E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**5.9E-07**	**Sum =**	**2.1E-08**	**Sum =**	**1.1E-06**	**Sum =**	**1.5E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**5.9E-07**	**Sum =**	**2.1E-08**	**Sum =**	**1.1E-06**	**Sum =**	**1.5E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3994 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.1		3E-05	3E-08	1E-03	4E-08	1E-03	4E-08	1E-03	5E-08	2E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**9.5E-04**	**Sum =**	**1.5E-03**	**Sum =**	**1.2E-03**	**Sum =**	**1.6E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**9.5E-04**	**Sum =**	**1.5E-03**	**Sum =**	**1.2E-03**	**Sum =**	**1.6E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3994 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.1		5E+01	1E-08	6E-07	6E-10	3E-08	6E-09	8E-07	4E-09	1E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**6.1E-07**	**Sum =**	**3.2E-08**	**Sum =**	**8.2E-07**	**Sum =**	**1.1E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**6.1E-07**	**Sum =**	**3.2E-08**	**Sum =**	**8.2E-07**	**Sum =**	**1.1E-06**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 530.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	0.723	0.000	33.927
1-2	0.034	0.508	0.000	68.669
2-3	0.062	0.578	0.000	74.733
3-4	0.067	0.581	0.000	80.035
4-5	0.067	0.580	0.000	86.648
5-6	0.093	0.624	0.000	93.554
6-7	0.093	0.691	0.000	97.362

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	2.816	37.487	19.0
1-2	3.621	72.832	27.4
2-3	3.789	79.162	27.6
3-4	3.981	84.664	27.6
4-5	3.077	90.371	27.8
5-6	2.835	97.107	27.7
6-7	2.739	100.886	26.8

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 7.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.057	0.000	0.655
1-2	0.034	0.906	0.000	1.617
2-3	0.062	0.994	0.000	1.699
3-4	0.067	0.961	0.000	1.748
4-5	0.067	0.935	0.000	1.845
5-6	0.093	0.989	0.000	1.958
6-7	0.093	1.074	0.000	1.999

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.116	5.849	3.2
1-2	6.456	9.013	3.7
2-3	6.522	9.277	3.5
3-4	6.585	9.362	3.3
4-5	4.960	7.807	2.8
5-6	4.492	7.533	2.4
6-7	4.258	7.424	2.1

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 1.200 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.064	0.000	0.113
1-2	0.034	0.916	0.000	0.280
2-3	0.062	1.004	0.000	0.294
3-4	0.067	0.970	0.000	0.302
4-5	0.067	0.942	0.000	0.319
5-6	0.093	0.996	0.000	0.338
6-7	0.093	1.082	0.000	0.345

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.140	5.338	2.9
1-2	6.528	7.759	3.2
2-3	6.588	7.948	3.0
3-4	6.644	7.983	2.8
4-5	5.001	6.329	2.3
5-6	4.527	5.955	1.9
6-7	4.289	5.809	1.7

Attachment A. Identification of Chemicals of Concern: 3996 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	91		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 91.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	0.976	0.000	7.861
1-2	0.034	0.785	0.000	18.220
2-3	0.062	0.873	0.000	19.395
3-4	0.067	0.856	0.000	20.234
4-5	0.067	0.839	0.000	21.536
5-6	0.093	0.892	0.000	22.978
6-7	0.093	0.976	0.000	23.593

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.800	12.659	6.7
1-2	5.595	24.635	9.7
2-3	5.727	26.057	9.5
3-4	5.862	27.019	9.3
4-5	4.453	26.895	8.8
5-6	4.055	28.020	8.5
6-7	3.866	28.528	8.0

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 19.200 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.044	0.000	1.775
1-2	0.034	0.885	0.000	4.335
2-3	0.062	0.974	0.000	4.565
3-4	0.067	0.944	0.000	4.709
4-5	0.067	0.919	0.000	4.977
5-6	0.093	0.973	0.000	5.286
6-7	0.093	1.058	0.000	5.401

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.066	6.906	3.7
1-2	6.310	11.564	4.7
2-3	6.389	11.990	4.5
3-4	6.466	12.185	4.3
4-5	4.878	10.840	3.7
5-6	4.422	10.774	3.4
6-7	4.195	10.747	3.1

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Non Detect

Drinking Water Concentration: 0.500 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.064	0.000	0.047
1-2	0.034	0.917	0.000	0.117
2-3	0.062	1.006	0.000	0.123
3-4	0.067	0.971	0.000	0.126
4-5	0.067	0.943	0.000	0.133
5-6	0.093	0.997	0.000	0.141
6-7	0.093	1.083	0.000	0.144

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.143	5.276	2.9
1-2	6.537	7.606	3.2
2-3	6.596	7.786	2.9
3-4	6.651	7.815	2.7
4-5	5.006	6.149	2.2
5-6	4.531	5.763	1.9
6-7	4.292	5.613	1.6

Attachment A. Identification of Chemicals of Concern: 3997 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.152		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	270		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Thursday, March 21, 2013

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3997 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.152		3E-03	4E-06	1E-03	4E-06	1E-03	7E-06	2E-03	1E-05	3E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**1.4E-03**	**Sum =**	**1.5E-03**	**Sum =**	**2.4E-03**	**Sum =**	**3.2E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**1.4E-03**	**Sum =**	**1.5E-03**	**Sum =**	**2.4E-03**	**Sum =**	**3.2E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 3997 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.152		5E-01	2E-06	9E-07	6E-08	3E-08	1E-06	2E-06	8E-07	2E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**8.9E-07**	**Sum =**	**3.2E-08**	**Sum =**	**1.6E-06**	**Sum =**	**2.2E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**8.9E-07**	**Sum =**	**3.2E-08**	**Sum =**	**1.6E-06**	**Sum =**	**2.2E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3997 Farm, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.152		3E-05	4E-08	1E-03	7E-08	2E-03	6E-08	2E-03	7E-08	2E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**1.4E-03**	**Sum =**	**2.2E-03**	**Sum =**	**1.8E-03**	**Sum =**	**2.5E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**1.4E-03**	**Sum =**	**2.2E-03**	**Sum =**	**1.8E-03**	**Sum =**	**2.5E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 3997 Farm, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.152		5E+01	2E-08	9E-07	1E-09	5E-08	9E-09	1E-06	6E-09	2E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**9.3E-07**	**Sum =**	**4.8E-08**	**Sum =**	**1.2E-06**	**Sum =**	**1.7E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**9.3E-07**	**Sum =**	**4.8E-08**	**Sum =**	**1.2E-06**	**Sum =**	**1.7E-06**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 270.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	0.847	0.000	20.244
1-2	0.034	0.628	0.000	43.275
2-3	0.062	0.709	0.000	46.739
3-4	0.067	0.707	0.000	49.568
4-5	0.067	0.700	0.000	53.317
5-6	0.093	0.750	0.000	57.292
6-7	0.093	0.826	0.000	59.289

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.298	24.411	12.7
1-2	4.479	48.417	18.6
2-3	4.651	52.161	18.6
3-4	4.840	55.181	18.4
4-5	3.716	57.800	18.3
5-6	3.408	61.543	18.0
6-7	3.274	63.482	17.3

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 2.400 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.062	0.000	0.226
1-2	0.034	0.914	0.000	0.559
2-3	0.062	1.002	0.000	0.587
3-4	0.067	0.968	0.000	0.604
4-5	0.067	0.941	0.000	0.637
5-6	0.093	0.995	0.000	0.675
6-7	0.093	1.081	0.000	0.689

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.135	5.444	3.0
1-2	6.513	8.021	3.3
2-3	6.574	8.226	3.1
3-4	6.632	8.270	2.9
4-5	4.993	6.637	2.4
5-6	4.520	6.283	2.0
6-7	4.282	6.145	1.8

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 14.900 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.049	0.000	1.383
1-2	0.034	0.892	0.000	3.391
2-3	0.062	0.981	0.000	3.568
3-4	0.067	0.950	0.000	3.678
4-5	0.067	0.924	0.000	3.885
5-6	0.093	0.978	0.000	4.125
6-7	0.093	1.064	0.000	4.213

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.083	6.537	3.5
1-2	6.360	10.678	4.4
2-3	6.435	11.046	4.1
3-4	6.507	11.202	3.9
4-5	4.906	9.782	3.4
5-6	4.446	9.643	3.0
6-7	4.216	9.587	2.7

Attachment A. Identification of Chemicals of Concern: 3998 Farm, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.025		ug/L	3.10E-02	C	Pass	--	--
gw	Lead and Compounds	7439921	Water	58		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Thursday, October 10, 2013

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 58.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.006	0.000	5.164
1-2	0.034	0.827	0.000	12.237
2-3	0.062	0.916	0.000	12.968
3-4	0.067	0.894	0.000	13.465
4-5	0.067	0.873	0.000	14.289
5-6	0.093	0.927	0.000	15.217
6-7	0.093	1.012	0.000	15.592

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.916	10.108	5.4
1-2	5.896	18.994	7.5
2-3	6.008	19.954	7.3
3-4	6.121	20.546	7.1
4-5	4.636	19.865	6.6
5-6	4.214	20.451	6.2
6-7	4.008	20.705	5.8

Attachment A. Identification of Chemicals of Concern: 3998 Rye, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.027		ug/L	3.10E-02	C	Pass	--	--
gw	Lead and Compounds	7439921	Water	150		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 150.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	0.928	0.000	12.320
1-2	0.034	0.722	0.000	27.630
2-3	0.062	0.808	0.000	29.595
3-4	0.067	0.798	0.000	31.088
4-5	0.067	0.786	0.000	33.233
5-6	0.093	0.838	0.000	35.561
6-7	0.093	0.919	0.000	36.628

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.613	16.882	8.9
1-2	5.147	33.534	13.0
2-3	5.301	35.767	13.0
3-4	5.464	37.417	12.7
4-5	4.169	38.255	12.4
5-6	3.808	40.300	12.0
6-7	3.641	41.281	11.4

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 1.800 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.063	0.000	0.169
1-2	0.034	0.915	0.000	0.420
2-3	0.062	1.003	0.000	0.441
3-4	0.067	0.969	0.000	0.453
4-5	0.067	0.941	0.000	0.478
5-6	0.093	0.996	0.000	0.507
6-7	0.093	1.081	0.000	0.517

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.138	5.391	2.9
1-2	6.521	7.890	3.3
2-3	6.581	8.087	3.0
3-4	6.638	8.127	2.9
4-5	4.997	6.483	2.3
5-6	4.524	6.119	2.0
6-7	4.285	5.977	1.7

Attachment A. Identification of Chemicals of Concern: 4016 Middleton Drive, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.054		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	36		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 4016 Middleton Drive, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident ADD	Adult Resident HQ	Construction Worker ADD	Construction Worker HQ	Youth Resident ADD	Youth Resident HQ	Child Resident ADD	Child Resident HQ
CHROMIUM(VI)	0.054		3E-03	1E-06	5E-04	2E-06	5E-04	3E-06	9E-04	3E-06	1E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**4.9E-04**	**Sum =**	**5.3E-04**	**Sum =**	**8.6E-04**	**Sum =**	**1.2E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**4.9E-04**	**Sum =**	**5.3E-04**	**Sum =**	**8.6E-04**	**Sum =**	**1.2E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For 4016 Middleton Drive, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.054		5E-01	6E-07	3E-07	2E-08	1E-08	4E-07	6E-07	3E-07	8E-07
	Cancer Risk for Detected Compounds Only:				**Sum =**	**3.2E-07**	**Sum =**	**1.1E-08**	**Sum =**	**5.8E-07**	**Sum =**	**7.9E-07**
	Cancer Risk for Detected and Nondetected Compounds:				**Sum =**	**3.2E-07**	**Sum =**	**1.1E-08**	**Sum =**	**5.8E-07**	**Sum =**	**7.9E-07**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For 4016 Middleton Drive, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.054		3E-05	2E-08	5E-04	2E-08	8E-04	2E-08	7E-04	3E-08	9E-04
Hazard Index for Detected Compounds Only:				**Sum =**	**5.1E-04**	**Sum =**	**8.0E-04**	**Sum =**	**6.6E-04**	**Sum =**	**8.8E-04**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**5.1E-04**	**Sum =**	**8.0E-04**	**Sum =**	**6.6E-04**	**Sum =**	**8.8E-04**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For 4016 Middleton Drive, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.054		5E+01	7E-09	3E-07	3E-10	2E-08	3E-09	4E-07	2E-09	6E-07
Cancer Risk for Detected Compounds Only:					**Sum =**	**3.3E-07**	**Sum =**	**1.7E-08**	**Sum =**	**4.4E-07**	**Sum =**	**6.0E-07**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**3.3E-07**	**Sum =**	**1.7E-08**	**Sum =**	**4.4E-07**	**Sum =**	**6.0E-07**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 36.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.027	0.000	3.273
1-2	0.034	0.859	0.000	7.886
2-3	0.062	0.948	0.000	8.329
3-4	0.067	0.921	0.000	8.617
4-5	0.067	0.899	0.000	9.124
5-6	0.093	0.953	0.000	9.702
6-7	0.093	1.037	0.000	9.926

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.999	8.321	4.5
1-2	6.121	14.900	6.0
2-3	6.216	15.555	5.8
3-4	6.310	15.915	5.5
4-5	4.769	14.858	5.0
5-6	4.328	15.077	4.6
6-7	4.111	15.168	4.3

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 5.500 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.059	0.000	0.515
1-2	0.034	0.908	0.000	1.274
2-3	0.062	0.997	0.000	1.338
3-4	0.067	0.964	0.000	1.377
4-5	0.067	0.937	0.000	1.453
5-6	0.093	0.991	0.000	1.542
6-7	0.093	1.076	0.000	1.573

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.122	5.718	3.1
1-2	6.474	8.691	3.6
2-3	6.539	8.936	3.3
3-4	6.600	9.007	3.2
4-5	4.971	7.427	2.6
5-6	4.501	7.127	2.3
6-7	4.266	7.009	2.0

Attachment A. Identification of Chemicals of Concern: FR-81-5955, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	2.59		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	31		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury, the screening value was arbitrarily set at 1E-6 for soil and water.

Tuesday, April 16, 2013

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For FR-81-5955, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	2.59		3E-03	7E-05	2E-02	8E-05	3E-02	1E-04	4E-02	2E-04	6E-02
Hazard Index for Detected Compounds Only:				**Sum =**	**2.4E-02**	**Sum =**	**2.5E-02**	**Sum =**	**4.1E-02**	**Sum =**	**5.5E-02**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**2.4E-02**	**Sum =**	**2.5E-02**	**Sum =**	**4.1E-02**	**Sum =**	**5.5E-02**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For FR-81-5955, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	2.59	m	5E-01	3E-05	2E-05	1E-06	5E-07	2E-05	3E-05	1E-05	4E-05
Cancer Risk for Detected Compounds Only:				**Sum = 1.5E-05**		**Sum = 5.4E-07**		**Sum = 2.8E-05**		**Sum = 3.8E-05**	
Cancer Risk for Detected and Nondetected Compounds:				**Sum = 1.5E-05**		**Sum = 5.4E-07**		**Sum = 2.8E-05**		**Sum = 3.8E-05**	

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.
* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For FR-81-5955, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	2.59		3E-05	7E-07	2E-02	1E-06	4E-02	9E-07	3E-02	1E-06	4E-02
Hazard Index for Detected Compounds Only:				**Sum =**	**2.5E-02**	**Sum =**	**3.8E-02**	**Sum =**	**3.1E-02**	**Sum =**	**4.2E-02**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**2.5E-02**	**Sum =**	**3.8E-02**	**Sum =**	**3.1E-02**	**Sum =**	**4.2E-02**

ADD = average daily dose (mg/kg-d) HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For FR-81-5955, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	2.59		5E+01	3E-07	2E-05	2E-08	8E-07	2E-07	2E-05	1E-07	3E-05
Cancer Risk for Detected Compounds Only:					**Sum =**	**1.6E-05**	**Sum =**	**8.2E-07**	**Sum =**	**2.1E-05**	**Sum =**	**2.9E-05**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**1.6E-05**	**Sum =**	**8.2E-07**	**Sum =**	**2.1E-05**	**Sum =**	**2.9E-05**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Attachment A. Identification of Chemicals of Concern: FR-88-1366, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.528		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	8		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

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Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For FR-88-1366, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.528		3E-03	1E-05	5E-03	2E-05	5E-03	3E-05	8E-03	3E-05	1E-02
Hazard Index for Detected Compounds Only:				**Sum =**	**4.8E-03**	**Sum =**	**5.2E-03**	**Sum =**	**8.4E-03**	**Sum =**	**1.1E-02**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**4.8E-03**	**Sum =**	**5.2E-03**	**Sum =**	**8.4E-03**	**Sum =**	**1.1E-02**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For FR-88-1366, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.528		5E-01	6E-06	3E-06	2E-07	1E-07	4E-06	6E-06	3E-06	8E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**3.1E-06**	**Sum =**	**1.1E-07**	**Sum =**	**5.7E-06**	**Sum =**	**7.7E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**3.1E-06**	**Sum =**	**1.1E-07**	**Sum =**	**5.7E-06**	**Sum =**	**7.7E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For FR-88-1366, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.528		3E-05	2E-07	5E-03	2E-07	8E-03	2E-07	6E-03	3E-07	9E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**5.0E-03**	**Sum =**	**7.8E-03**	**Sum =**	**6.4E-03**	**Sum =**	**8.6E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**5.0E-03**	**Sum =**	**7.8E-03**	**Sum =**	**6.4E-03**	**Sum =**	**8.6E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For FR-88-1366, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.528		5E+01	6E-08	3E-06	3E-09	2E-07	3E-08	4E-06	2E-08	6E-06
				Cancer Risk for Detected Compounds Only:	**Sum =**	**3.2E-06**	**Sum =**	**1.7E-07**	**Sum =**	**4.3E-06**	**Sum =**	**5.9E-06**
				Cancer Risk for Detected and Nondetected Compounds:	**Sum =**	**3.2E-06**	**Sum =**	**1.7E-07**	**Sum =**	**4.3E-06**	**Sum =**	**5.9E-06**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Attachment A. Identification of Chemicals of Concern: FR-88-1394, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.392		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	5.4		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

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Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For FR-88-1394, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.392		3E-03	1E-05	4E-03	1E-05	4E-03	2E-05	6E-03	3E-05	8E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**3.6E-03**	**Sum =**	**3.8E-03**	**Sum =**	**6.3E-03**	**Sum =**	**8.4E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.6E-03**	**Sum =**	**3.8E-03**	**Sum =**	**6.3E-03**	**Sum =**	**8.4E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For FR-88-1394, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	0.392	m	5E-01	5E-06	2E-06	2E-07	8E-08	3E-06	4E-06	2E-06	6E-06
Cancer Risk for Detected Compounds Only:				**Sum =**	**2.3E-06**	**Sum =**	**8.2E-08**	**Sum =**	**4.2E-06**	**Sum =**	**5.7E-06**
Cancer Risk for Detected and Nondetected Compounds:				**Sum =**	**2.3E-06**	**Sum =**	**8.2E-08**	**Sum =**	**4.2E-06**	**Sum =**	**5.7E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.
* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For FR-88-1394, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.392		3E-05	1E-07	4E-03	2E-07	6E-03	1E-07	5E-03	2E-07	6E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**3.7E-03**	**Sum =**	**5.8E-03**	**Sum =**	**4.8E-03**	**Sum =**	**6.4E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**3.7E-03**	**Sum =**	**5.8E-03**	**Sum =**	**4.8E-03**	**Sum =**	**6.4E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For FR-88-1394, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.392		5E+01	5E-08	2E-06	2E-09	1E-07	2E-08	3E-06	2E-08	4E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.4E-06**	**Sum =**	**1.2E-07**	**Sum =**	**3.2E-06**	**Sum =**	**4.4E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.4E-06**	**Sum =**	**1.2E-07**	**Sum =**	**3.2E-06**	**Sum =**	**4.4E-06**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Attachment A. Identification of Chemicals of Concern: FR-94-1233, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	4.68		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	38		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

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Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For FR-94-1233, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	4.68		3E-03	1E-04	4E-02	1E-04	5E-02	2E-04	7E-02	3E-04	1E-01
Hazard Index for Detected Compounds Only:				**Sum =**	**4.3E-02**	**Sum =**	**4.6E-02**	**Sum =**	**7.5E-02**	**Sum =**	**1.0E-01**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**4.3E-02**	**Sum =**	**4.6E-02**	**Sum =**	**7.5E-02**	**Sum =**	**1.0E-01**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For FR-94-1233, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	4.68		5E-01	5E-05	3E-05	2E-06	1E-06	4E-05	5E-05	3E-05	7E-05
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.7E-05**	**Sum =**	**9.8E-07**	**Sum =**	**5.1E-05**	**Sum =**	**6.8E-05**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.7E-05**	**Sum =**	**9.8E-07**	**Sum =**	**5.1E-05**	**Sum =**	**6.8E-05**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For FR-94-1233, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	4.68		3E-05	1E-06	4E-02	2E-06	7E-02	2E-06	6E-02	2E-06	8E-02
Hazard Index for Detected Compounds Only:				**Sum =**	**4.5E-02**	**Sum =**	**6.9E-02**	**Sum =**	**5.7E-02**	**Sum =**	**7.6E-02**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**4.5E-02**	**Sum =**	**6.9E-02**	**Sum =**	**5.7E-02**	**Sum =**	**7.6E-02**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For FR-94-1233, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	4.68		5E+01	6E-07	3E-05	3E-08	1E-06	3E-07	4E-05	2E-07	5E-05
Cancer Risk for Detected Compounds Only:					**Sum =**	**2.9E-05**	**Sum =**	**1.5E-06**	**Sum =**	**3.8E-05**	**Sum =**	**5.2E-05**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**2.9E-05**	**Sum =**	**1.5E-06**	**Sum =**	**3.8E-05**	**Sum =**	**5.2E-05**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Attachment A. Identification of Chemicals of Concern: FR-94-1281, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.657		ug/L	3.10E-02	C	Fail	--	--
gw	Lead and Compounds	7439921	Water	6.8		ug/L			?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

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Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For FR-94-1281, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.657		3E-03	2E-05	6E-03	2E-05	6E-03	3E-05	1E-02	4E-05	1E-02
Hazard Index for Detected Compounds Only:				**Sum =**	**6.0E-03**	**Sum =**	**6.4E-03**	**Sum =**	**1.1E-02**	**Sum =**	**1.4E-02**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**6.0E-03**	**Sum =**	**6.4E-03**	**Sum =**	**1.1E-02**	**Sum =**	**1.4E-02**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For FR-94-1281, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.657		5E-01	8E-06	4E-06	3E-07	1E-07	5E-06	7E-06	4E-06	1E-05
	Cancer Risk for Detected Compounds Only:				**Sum =**	**3.9E-06**	**Sum =**	**1.4E-07**	**Sum =**	**7.1E-06**	**Sum =**	**9.6E-06**
	Cancer Risk for Detected and Nondetected Compounds:				**Sum =**	**3.9E-06**	**Sum =**	**1.4E-07**	**Sum =**	**7.1E-06**	**Sum =**	**9.6E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For FR-94-1281, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.657		3E-05	2E-07	6E-03	3E-07	1E-02	2E-07	8E-03	3E-07	1E-02
Hazard Index for Detected Compounds Only:				**Sum =**	**6.3E-03**	**Sum =**	**9.7E-03**	**Sum =**	**8.0E-03**	**Sum =**	**1.1E-02**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**6.3E-03**	**Sum =**	**9.7E-03**	**Sum =**	**8.0E-03**	**Sum =**	**1.1E-02**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For FR-94-1281, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.657		5E+01	8E-08	4E-06	4E-09	2E-07	4E-08	5E-06	3E-08	7E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**4.0E-06**	**Sum =**	**2.1E-07**	**Sum =**	**5.4E-06**	**Sum =**	**7.3E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**4.0E-06**	**Sum =**	**2.1E-07**	**Sum =**	**5.4E-06**	**Sum =**	**7.3E-06**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Attachment A. Identification of Chemicals of Concern: GVP-POU, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.222		ug/L	3.10E-02	C	Fail	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For GVP-POU, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.222		3E-03	6E-06	2E-03	7E-06	2E-03	1E-05	4E-03	1E-05	5E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**2.0E-03**	**Sum =**	**2.2E-03**	**Sum =**	**3.5E-03**	**Sum =**	**4.7E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**2.0E-03**	**Sum =**	**2.2E-03**	**Sum =**	**3.5E-03**	**Sum =**	**4.7E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For GVP-POU, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.222		5E-01	3E-06	1E-06	9E-08	5E-08	2E-06	2E-06	1E-06	3E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**1.3E-06**	**Sum =**	**4.7E-08**	**Sum =**	**2.4E-06**	**Sum =**	**3.2E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**1.3E-06**	**Sum =**	**4.7E-08**	**Sum =**	**2.4E-06**	**Sum =**	**3.2E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For GVP-POU, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.222		3E-05	6E-08	2E-03	1E-07	3E-03	8E-08	3E-03	1E-07	4E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**2.1E-03**	**Sum =**	**3.3E-03**	**Sum =**	**2.7E-03**	**Sum =**	**3.6E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**2.1E-03**	**Sum =**	**3.3E-03**	**Sum =**	**2.7E-03**	**Sum =**	**3.6E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For GVP-POU, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.222		5E+01	3E-08	1E-06	1E-09	7E-08	1E-08	2E-06	9E-09	2E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**1.4E-06**	**Sum =**	**7.0E-08**	**Sum =**	**1.8E-06**	**Sum =**	**2.5E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**1.4E-06**	**Sum =**	**7.0E-08**	**Sum =**	**1.8E-06**	**Sum =**	**2.5E-06**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Attachment A. Identification of Chemicals of Concern: Supply Well Point of Use, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.222		ug/L	3.10E-02	C	Fail	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Wednesday, April 17, 2013

Table 1. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For Supply Well Point of Use, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.222		3E-03	6E-06	2E-03	7E-06	2E-03	1E-05	4E-03	1E-05	5E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**2.0E-03**	**Sum =**	**2.2E-03**	**Sum =**	**3.5E-03**	**Sum =**	**4.7E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**2.0E-03**	**Sum =**	**2.2E-03**	**Sum =**	**3.5E-03**	**Sum =**	**4.7E-03**

ADD = average daily dose (mg/kg/d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 2. Quantitative Risk Assessment - Carcinogenic
Residential Use - Ingestion of Drinking Water/Groundwater.
For Supply Well Point of Use, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.222		5E-01	3E-06	1E-06	9E-08	5E-08	2E-06	2E-06	1E-06	3E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**1.3E-06**	**Sum =**	**4.7E-08**	**Sum =**	**2.4E-06**	**Sum =**	**3.2E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**1.3E-06**	**Sum =**	**4.7E-08**	**Sum =**	**2.4E-06**	**Sum =**	**3.2E-06**

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Table 3. Quantitative Risk Assessment - Noncarcinogenic
Residential Use - Dermal Contact/Groundwater.
For Supply Well Point of Use, , Monrovia, Frederick County, Maryland.

Analyte	Concentration (ug/L)	Qualifier	Reference Dose (mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
				ADD	HQ	ADD	HQ	ADD	HQ	ADD	HQ
CHROMIUM(VI)	0.222		3E-05	6E-08	2E-03	1E-07	3E-03	8E-08	3E-03	1E-07	4E-03
Hazard Index for Detected Compounds Only:				**Sum =**	**2.1E-03**	**Sum =**	**3.3E-03**	**Sum =**	**2.7E-03**	**Sum =**	**3.6E-03**
Hazard Index for Detected and Nondetected Compounds:				**Sum =**	**2.1E-03**	**Sum =**	**3.3E-03**	**Sum =**	**2.7E-03**	**Sum =**	**3.6E-03**

ADD = average daily dose (mg/kg-d). HQ = Hazard Quotient (unitless). Compounds printed in lowercase letters were not detected in any sample.

* Hazard quotient or hazard index exceeds 1.5.

Table 4. Quantitative Risk Assessment - Carcinogenic
Residential Use - Dermal Contact/Groundwater.
For Supply Well Point of Use, , Monrovia, Frederick County, Maryland.

Analyte		Concentration (ug/L)	Qualifier	Slope Factor (1/mg/kg/d)	Adult Resident		Construction Worker		Youth Resident		Child Resident	
					LADD	CR	LADD	CR	LADD	CR	LADD	CR
CHROMIUM(VI)	m	0.222		5E+01	3E-08	1E-06	1E-09	7E-08	1E-08	2E-06	9E-09	2E-06
Cancer Risk for Detected Compounds Only:					**Sum =**	**1.4E-06**	**Sum =**	**7.0E-08**	**Sum =**	**1.8E-06**	**Sum =**	**2.5E-06**
Cancer Risk for Detected and Nondetected Compounds:					**Sum =**	**1.4E-06**	**Sum =**	**7.0E-08**	**Sum =**	**1.8E-06**	**Sum =**	**2.5E-06**

LADD = lifetime average daily dose (mg/kg-d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

* Cancer risk exceeds 10E-4. m - Mutagen

Attachment A. Identification of Chemicals of Concern: FR-73-1687, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	20.6		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Tuesday, April 16, 2013

Attachment A. Identification of Chemicals of Concern: FR-73-4918, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*	*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater										
Inorganics:										
gw	Lead and Compounds	7439921	Water	1.3		ug/L		?	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Attachment A. Identification of Chemicals of Concern: FR-73-6674, Monrovia, Frederick County, Maryland; PCA Code: 1234A

Sample ID	*Analyte*	*CAS*	*Matrix*	*Concentration*	*Qual.*	*Units*	*Adjusted Tap Water RBC*		*Pass Tier 1 Screen ?*	*Adjusted Soil RBC (Residential)*	*Pass Tier 1 Screen ?*
Water: Groundwater											
Inorganics:											
gw	Chromium(VI)	18540299	Water	0.025		ug/L	3.10E-02	C	Pass	--	--

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

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****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 31.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.032	0.000	2.832
1-2	0.034	0.866	0.000	6.851
2-3	0.062	0.955	0.000	7.230
3-4	0.067	0.928	0.000	7.473
4-5	0.067	0.904	0.000	7.909
5-6	0.093	0.959	0.000	8.407
6-7	0.093	1.044	0.000	8.598

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.019	7.905	4.3
1-2	6.176	13.928	5.6
2-3	6.267	14.513	5.4
3-4	6.356	14.824	5.2
4-5	4.801	13.681	4.7
5-6	4.356	13.815	4.3
6-7	4.136	13.871	3.9

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 8.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.056	0.000	0.748
1-2	0.034	0.904	0.000	1.845
2-3	0.062	0.993	0.000	1.938
3-4	0.067	0.960	0.000	1.995
4-5	0.067	0.933	0.000	2.106
5-6	0.093	0.987	0.000	2.235
6-7	0.093	1.073	0.000	2.281

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.112	5.937	3.2
1-2	6.444	9.226	3.8
2-3	6.511	9.504	3.5
3-4	6.575	9.597	3.4
4-5	4.953	8.059	2.8
5-6	4.487	7.802	2.5
6-7	4.252	7.700	2.2

LEAD MODEL FOR WINDOWS Version 1.1

==========

Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 5.400 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.059	0.000	0.506
1-2	0.034	0.908	0.000	1.251
2-3	0.062	0.997	0.000	1.314
3-4	0.067	0.964	0.000	1.352
4-5	0.067	0.937	0.000	1.427
5-6	0.093	0.991	0.000	1.514
6-7	0.093	1.077	0.000	1.545

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.123	5.709	3.1
1-2	6.476	8.670	3.6
2-3	6.540	8.913	3.3
3-4	6.601	8.984	3.2
4-5	4.971	7.401	2.6
5-6	4.502	7.100	2.3
6-7	4.266	6.981	2.0

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

==========

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 38.000 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.025	0.000	3.448
1-2	0.034	0.856	0.000	8.295
2-3	0.062	0.945	0.000	8.763
3-4	0.067	0.919	0.000	9.070
4-5	0.067	0.896	0.000	9.605
5-6	0.093	0.950	0.000	10.216
6-7	0.093	1.035	0.000	10.453

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	3.992	8.487	4.6
1-2	6.100	15.285	6.1
2-3	6.197	15.967	5.9
3-4	6.292	16.348	5.7
4-5	4.757	15.325	5.2
5-6	4.318	15.577	4.8
6-7	4.102	15.683	4.4

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

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****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 6.800 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.058	0.000	0.636
1-2	0.034	0.906	0.000	1.572
2-3	0.062	0.995	0.000	1.651
3-4	0.067	0.962	0.000	1.699
4-5	0.067	0.935	0.000	1.793
5-6	0.093	0.989	0.000	1.903
6-7	0.093	1.075	0.000	1.942

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.117	5.832	3.2
1-2	6.458	8.970	3.7
2-3	6.524	9.232	3.4
3-4	6.587	9.315	3.3
4-5	4.962	7.756	2.7
5-6	4.494	7.479	2.4
6-7	4.259	7.369	2.1

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

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****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 20.600 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.043	0.000	1.901
1-2	0.034	0.883	0.000	4.639
2-3	0.062	0.972	0.000	4.887
3-4	0.067	0.942	0.000	5.042
4-5	0.067	0.917	0.000	5.329
5-6	0.093	0.971	0.000	5.661
6-7	0.093	1.057	0.000	5.785

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.060	7.026	3.8
1-2	6.293	11.850	4.8
2-3	6.374	12.294	4.6
3-4	6.452	12.503	4.4
4-5	4.868	11.181	3.9
5-6	4.414	11.139	3.5
6-7	4.187	11.122	3.2

LEAD MODEL FOR WINDOWS Version 1.1

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Model Version: 1.1 Build11
User Name:
Date:
Site Name:
Operable Unit:
Run Mode: Research

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****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (µg Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(µg/day)
.5-1	2.260
1-2	1.960
2-3	2.130
3-4	2.040
4-5	1.950
5-6	2.050
6-7	2.220

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 1.300 µg Pb/L

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 µg/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (µg Pb/g)	House Dust (µg Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

****** Alternate Intake ******

Age	Alternate (µg Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

Maternal Blood Concentration: 1.000 µg Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (µg/day)	Diet (µg/day)	Alternate (µg/day)	Water (µg/day)
.5-1	0.021	1.064	0.000	0.122
1-2	0.034	0.916	0.000	0.304
2-3	0.062	1.004	0.000	0.319
3-4	0.067	0.970	0.000	0.328
4-5	0.067	0.942	0.000	0.345
5-6	0.093	0.996	0.000	0.366
6-7	0.093	1.082	0.000	0.374

Year	Soil+Dust (µg/day)	Total (µg/day)	Blood (µg/dL)
.5-1	4.140	5.347	2.9
1-2	6.527	7.781	3.2
2-3	6.587	7.972	3.0
3-4	6.643	8.007	2.8
4-5	5.000	6.354	2.3
5-6	4.527	5.982	1.9
6-7	4.288	5.837	1.7