

## **KAISER ALUMINUM CANADA LTD.**

**3021 GORE ROAD, LONDON, ONTARIO N5V 5A9**

### **TOXICS REDUCTION ACT TOXIC SUBSTANCE REDUCTION PLAN SUMMARIES 2012**

REPORT PREPARED BY:

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REPORT PREPARED FOR:

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MAY 30, 2013

LONDON

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CANADA



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## 1. PLAN SUMMARY – ZINC (AND ITS COMPOUNDS)

Name and CASRN of Substance	Zinc (and its compounds)	Not Applicable
Substances for which other plans have been prepared	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 -TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0

### 1.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 1.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to protecting the health and safety of our employees and to supporting the sustainability of the environment. Whenever possible we intend to reduce the use, creation, or discharge of Zinc in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate

all options available to achieve this.

### **1.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce Zinc to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **1.4 Description of Substance**

Zinc is found in the alloying agents purchased by the facility for its elemental characteristics.

### **1.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of Zinc (and its compounds).

### **1.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for Zinc (and its compounds), prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

### **1.7 Copy of Plan Certification**

A copy of the plan certification is presented in Section 22 of this document.



## 2. PLAN SUMMARY – HEXACHLOROBENZENE

Name and CASRN of Substance	Hexachlorobenzene	118-74-1
<b>Substances for which other plans have been prepared</b>	PCCD/F	Not Applicable
	2,3,7,8 -TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable

### 2.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 2.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to protecting the health and safety of our employees and to supporting the sustainability of the environment. Whenever possible we intend to reduce the use, creation, or discharge of Hexachlorobenzene in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we

will continue to evaluate all options available to achieve this.

### **2.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce Hexachlorobenzene to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **2.4 Description of Substance**

Hexachlorobenzene is believed to be created when melting scrap metal due to the presence of chlorinated substances contaminating the scrap. There is insufficient documentation in the published literature to indicate that this is always the case. Furthermore, the Kaiser Aluminum facility does not routinely accept or process scrap contaminated by plastics or other chlorinated compounds.

### **2.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the creation and release of Hexachlorobenzene.

### **2.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for Hexachlorobenzene, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

### **2.7 Copy of Plan Certification**

A copy of the plan certification is presented in Section 22 of this document.

**3. PLAN SUMMARY – Polychlorinated Dibenzo-P-Dioxins & Polychlorinated Dibenzofurans (PCCD/F)**

Name and CASRN of Substance	PCCD/F	Not Applicable
<b>Substances for which other plans have been prepared</b>	2,3,7,8 -TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1

**3.1 Basic Facility Information**

Basic facility information has been included in Section 21 of this document.

**3.2 Toxic Reduction Policy Statement of Intent**

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to protecting the health and safety of our employees and to supporting the sustainability of the environment. Whenever possible we intend to reduce the



use, creation, or discharge of Hexachlorobenzene in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **3.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce PCDD/F to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **3.4 Description of Substance**

PCDD/Fs are formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **3.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of PCDD/F.

### **3.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for PCDD/F, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

### **3.7 Copy of Plan Certification**

A copy of the plan certification is presented in Section 22 of this document.

#### 4. PLAN SUMMARY – 2,3,7,8 -TCCD

Name and CASRN of Substance	2,3,7,8 -TCCD	1746-01-6
Substances for which other plans have been prepared	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable

#### 4.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

#### 4.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 2,3,7,8 -TCCD in full compliance with all federal and provincial regulations. Toxic

use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

#### **4.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 2,3,7,8 -TCCD to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

#### **4.4 Description of Substance**

2,3,7,8 -TCCD is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

#### **4.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 2,3,7,8 -TCCD.

#### **4.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for 2,3,7,8 -TCCD, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

#### **4.7 Copy of Plan Certification**

A copy of the plan certification is presented in Section 22 of this document.

## 5. PLAN SUMMARY – 1,2,3,7,8 - PeCDD

<b>Name and CASRN of Substance</b>	1,2,3,7,8 - PeCDD	40321-76-4
<b>Substances for which other plans have been prepared</b>	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 - TCCD	1746-01-6

### 5.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 5.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 1,2,3,7,8 - PeCDD in full compliance with all federal and provincial regulations.

Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **5.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 1,2,3,7,8 - PeCDD to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **5.4 Description of Substance**

1,2,3,7,8 - PeCDD is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **5.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 1,2,3,7,8 - PeCDD.

### **5.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for 1,2,3,7,8 - PeCDD, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

### **5.7 Copy of Plan Certification**

A copy of the plan certification is presented in Section 22 of this document.



## 6. PLAN SUMMARY – 1,2,3,4,7,8 - HxCDD

<b>Name and CASRN of Substance</b>	1,2,3,4,7,8 - HxCDD	39227-28-6
<b>Substances for which other plans have been prepared</b>	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 - TCCD	1746-01-6
1,2,3,7,8 - PeCDD	40321-76-4	

### 6.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 6.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 1,2,3,4,7,8 - HxCDD in full compliance with all federal and provincial regulations.

Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **6.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 1,2,3,4,7,8 - HxCDD to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **6.4 Description of Substance**

1,2,3,4,7,8 - HxCDD is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **6.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 1,2,3,4,7,8 - HxCDD.

### **6.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for 1,2,3,4,7,8 - HxCDD, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

### **6.7 Copy of Plan Certification**

A copy of the plan certification is presented in Section 22 of this document.

## 7. PLAN SUMMARY – 1,2,3,6,7,8 - HxCDD

<b>Name and CASRN of Substance</b>	1,2,3,6,7,8 - HxCDD	57653-85-7
<b>Substances for which other plans have been prepared</b>	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 -TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
1,2,3,4,7,8 - HxCDD	39227-28-6	

### 7.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 7.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 1,2,3,6,7,8 - HxCDD in full compliance with all federal and provincial regulations.

Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **7.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 1,2,3,6,7,8 - HxCDD to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **7.4 Description of Substance**

1,2,3,6,7,8 - HxCDD is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **7.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 1,2,3,6,7,8 - HxCDD.

### **7.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for 1,2,3,6,7,8 - HxCDD, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

### **7.7 Copy of Plan Certification**

A copy of the plan certification is presented in Section 22 of this document.

## 8. PLAN SUMMARY – 1,2,3,7,8,9 - HxCDD

<b>Name and CASRN of Substance</b>	1,2,3,7,8,9 - HxCDD	19408-74-3
<b>Substances for which other plans have been prepared</b>	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 - TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
1,2,3,6,7,8 - HxCDD	57653-85-7	

### 8.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 8.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 1,2,3,7,8,9 - HxCDD in full compliance with all federal and provincial regulations.



Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **8.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 1,2,3,7,8,9 - HxCDD to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **8.4 Description of Substance**

1,2,3,7,8,9 - HxCDD is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **8.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 1,2,3,7,8,9 - HxCDD.

### **8.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for 1,2,3,7,8,9 - HxCDD, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

### **8.7 Copy of Plan Certification**

A copy of the plan certification is presented in Section 22 of this document.

## 9. PLAN SUMMARY – 1,2,3,4,6,7,8 - HpCDD

<b>Name and CASRN of Substance</b>	1,2,3,4,6,7,8 - HpCDD	35822-46-9
<b>Substances for which other plans have been prepared</b>	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 - TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
1,2,3,6,7,8 - HxCDD	57653-85-7	
1,2,3,7,8,9 - HxCDD	19408-74-3	

### 9.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 9.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or

discharge of 1,2,3,4,6,7,8 - HpCDD in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **9.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 1,2,3,4,6,7,8 - HpCDD to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **9.4 Description of Substance**

1,2,3,4,6,7,8 - HpCDD is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **9.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 1,2,3,4,6,7,8 - HpCDD.

### **9.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for 1,2,3,4,6,7,8 - HpCDD, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

### **9.7 Copy of Plan Certification**

A copy of the plan certification is presented in Section 22 of this document.



## 10. PLAN SUMMARY – OCDD

Name and CASRN of Substance	OCDD	3268-87-9
Substances for which other plans have been prepared	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 - TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9

### 10.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 10.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving

on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of OCDD in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **10.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce OCDD to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **10.4 Description of Substance**

OCDD is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **10.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of OCDD.

### **10.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for OCDD, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

## 10.7 Copy of Plan Certification

A copy of the plan certification is presented in Section 22 of this document.

## 11. PLAN SUMMARY – 2,3,7,8 - TCDF

Name and CASRN of Substance	2,3,7,8 - TCDF	51207-31-9
<b>Substances for which other plans have been prepared</b>	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 - TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9

### 11.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 11.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 2,3,7,8 - TCDF in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **11.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 2,3,7,8 - TCDF to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **11.4 Description of Substance**

2,3,7,8 - TCDF is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **11.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 2,3,7,8 - TCDF.

### **11.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for 2,3,7,8 - TCDF, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

## 11.7 Copy of Plan Certification

A copy of the plan certification is presented in Section 22 of this document.

## 12. PLAN SUMMARY – 2,3,4,7,8 - PeCDF

<b>Name and CASRN of Substance</b>	2,3,4,7,8 - PeCDF	57117-31-4
<b>Substances for which other plans have been prepared</b>	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 - TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
OCDD	3268-87-9	
2,3,7,8 - TCDF	51207-31-9	

### 12.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 12.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in

our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 2,3,4,7,8 - PeCDF in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **12.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 2,3,4,7,8 - PeCDF to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **12.4 Description of Substance**

2,3,4,7,8 - PeCDF is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **12.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 2,3,4,7,8 - PeCDF.

### **12.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for 2,3,4,7,8 -

PeCDF, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

### 12.7 Copy of Plan Certification

A copy of the plan certification is presented in Section 22 of this document.

### 13. PLAN SUMMARY – 1,2,3,7,8 - PeCDF

<b>Name and CASRN of Substance</b>	1,2,3,7,8 - PeCDF	57117-41-6
<b>Substances for which other plans have been prepared</b>	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 - TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4

#### 13.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

#### 13.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders,

supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 1,2,3,7,8 - PeCDF in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **13.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 1,2,3,7,8 - PeCDF to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **13.4 Description of Substance**

1,2,3,7,8 - PeCDF is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **13.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 1,2,3,7,8 - PeCDF.



### 13.6 Plan Summary Statement

This plan accurately reflects the content of the toxic substance reduction plan for 1,2,3,7,8 - PeCDF, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

### 13.7 Copy of Plan Certification

A copy of the plan certification is presented in Section 22 of this document.

## 14. PLAN SUMMARY – 1,2,3,4,7,8 - HxCDF

<b>Name and CASRN of Substance</b>	1,2,3,4,7,8 - HxCDF	70648-26-9
<b>Substances for which other plans have been prepared</b>	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 - TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
2,3,4,7,8 - PeCDF	57117-31-4	
1,2,3,7,8 - PeCDF	57117-41-6	

### 14.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 14.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through



operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 1,2,3,4,7,8 - HxCDF in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **14.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 1,2,3,4,7,8 - HxCDF to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **14.4 Description of Substance**

1,2,3,4,7,8 - HxCDF is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **14.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 1,2,3,4,7,8 - HxCDF.

## 14.6 Plan Summary Statement

This plan accurately reflects the content of the toxic substance reduction plan for 1,2,3,4,7,8 - HxCDF, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

## 14.7 Copy of Plan Certification

A copy of the plan certification is presented in Section 22 of this document.

## 15. PLAN SUMMARY – 1,2,3,7,8,9 - HxCDF

<b>Name and CASRN of Substance</b>	1,2,3,7,8,9 - HxCDF	72918-21-9
<b>Substances for which other plans have been prepared</b>	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 - TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9

## 15.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

## 15.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through



operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 1,2,3,7,8,9 - HxCDF in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **15.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 1,2,3,7,8,9 - HxCDF to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **15.4 Description of Substance**

1,2,3,7,8,9 - HxCDF is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **15.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 1,2,3,7,8,9 - HxCDF.

## 15.6 Plan Summary Statement

This plan accurately reflects the content of the toxic substance reduction plan for 1,2,3,7,8,9 - HxCDF, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

## 15.7 Copy of Plan Certification

A copy of the plan certification is presented in Section 22 of this document.

## 16. PLAN SUMMARY – 1,2,3,6,7,8 - HxCDF

<b>Name and CASRN of Substance</b>	1,2,3,6,7,8 - HxCDF	57117-44-9
<b>Substances for which other plans have been prepared</b>	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 - TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
1,2,3,4,7,8 - HxCDF	70648-26-9	
1,2,3,7,8,9 - HxCDF	72918-21-9	

### 16.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 16.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through



operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 1,2,3,6,7,8 - HxCDF in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **16.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 1,2,3,6,7,8 - HxCDF to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **16.4 Description of Substance**

1,2,3,6,7,8 - HxCDF is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **16.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 1,2,3,6,7,8 - HxCDF.

## 16.6 Plan Summary Statement

This plan accurately reflects the content of the toxic substance reduction plan for 1,2,3,6,7,8 - HxCDF, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

## 16.7 Copy of Plan Certification

A copy of the plan certification is presented in Section 22 of this document.

## 17. PLAN SUMMARY – 2,3,4,6,7,8 - HxCDF

<b>Name and CASRN of Substance</b>	2,3,4,6,7,8 - HxCDF	60851-34-5
<b>Substances for which other plans have been prepared</b>	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 -TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
1,2,3,7,8,9 - HxCDF	72918-21-9	
1,2,3,6,7,8 - HxCDF	57117-44-9	

### 17.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

### 17.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through



operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 2,3,4,6,7,8 - HxCDF in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **17.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 2,3,4,6,7,8 - HxCDF to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **17.4 Description of Substance**

2,3,4,6,7,8 - HxCDF is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **17.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 2,3,4,6,7,8 - HxCDF.



## 17.6 Plan Summary Statement

This plan accurately reflects the content of the toxic substance reduction plan for 2,3,4,6,7,8 - HxCDF, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

## 17.7 Copy of Plan Certification

A copy of the plan certification is presented in Section 22 of this document.

## 18. PLAN SUMMARY – 1,2,3,4,6,7,8 - HpCDF

<b>Name and CASRN of Substance</b>	1,2,3,4,6,7,8 - HpCDF	67562-39-4
<b>Substances for which other plans have been prepared</b>	1,2,3,4,7,8,9 - HpCDF	55673-89-7
	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 -TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
1,2,3,6,7,8 - HxCDF	57117-44-9	
2,3,4,6,7,8 - HxCDF	60851-34-5	

## 18.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

## 18.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through



operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 1,2,3,4,6,7,8 - HpCDF in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **18.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 1,2,3,4,6,7,8 - HpCDF to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **18.4 Description of Substance**

1,2,3,4,6,7,8 - HpCDF is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **18.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 1,2,3,4,6,7,8 - HpCDF.

## 18.6 Plan Summary Statement

This plan accurately reflects the content of the toxic substance reduction plan for 1,2,3,4,6,7,8 - HpCDF, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

## 18.7 Copy of Plan Certification

A copy of the plan certification is presented in Section 22 of this document.

## 19. PLAN SUMMARY – 1,2,3,4,7,8,9 - HpCDF

Name and CASRN of Substance	1,2,3,4,7,8,9 - HpCDF	55673-89-7
Substances for which other plans have been prepared	OCDF	39001-02-0
	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 -TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
1,2,3,4,6,7,8 - HpCDF	67562-39-4	

## 19.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

## 19.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through



operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of 1,2,3,4,7,8,9 - HpCDF in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **19.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce 1,2,3,4,7,8,9 - HpCDF to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **19.4 Description of Substance**

1,2,3,4,7,8,9 - HpCDF is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **19.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of 1,2,3,4,7,8,9 - HpCDF.

## 19.6 Plan Summary Statement

This plan accurately reflects the content of the toxic substance reduction plan for 1,2,3,4,7,8,9 - HpCDF, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

## 19.7 Copy of Plan Certification

A copy of the plan certification is presented in Section 22 of this document.

## 20. PLAN SUMMARY – OCDF

Name and CASRN of Substance	OCDF	39001-02-0
Substances for which other plans have been prepared	Zinc (and its compounds)	Not Applicable
	Hexachlorobenzene	118-74-1
	PCCD/F	Not Applicable
	2,3,7,8 -TCCD	1746-01-6
	1,2,3,7,8 - PeCDD	40321-76-4
	1,2,3,4,7,8 - HxCDD	39227-28-6
	1,2,3,6,7,8 - HxCDD	57653-85-7
	1,2,3,7,8,9 - HxCDD	19408-74-3
	1,2,3,4,6,7,8 - HpCDD	35822-46-9
	OCDD	3268-87-9
	2,3,7,8 - TCDF	51207-31-9
	2,3,4,7,8 - PeCDF	57117-31-4
	1,2,3,7,8 - PeCDF	57117-41-6
	1,2,3,4,7,8 - HxCDF	70648-26-9
	1,2,3,7,8,9 - HxCDF	72918-21-9
	1,2,3,6,7,8 - HxCDF	57117-44-9
	2,3,4,6,7,8 - HxCDF	60851-34-5
	1,2,3,4,6,7,8 - HpCDF	67562-39-4
	1,2,3,4,7,8,9 - HpCDF	55673-89-7

## 20.1 Basic Facility Information

Basic facility information has been included in Section 21 of this document.

## 20.2 Toxic Reduction Policy Statement of Intent

At Kaiser Aluminum, we manage our business for long-term success in a manner that is economically, environmentally and socially responsible. We demonstrate this through



operating our business with honesty and integrity, providing a safe workplace environment that fosters dignity and respect, creating a positive economic impact for our stakeholders, supporting the sustainability of the environment and striving to make a positive difference in our local communities.

Kaiser Aluminum is committed to achieving operational excellence by continuously improving on existing business processes. Whenever possible we intend to reduce the use, creation, or discharge of OCDF in full compliance with all federal and provincial regulations. Toxic use reduction will be an ongoing effort for Kaiser Aluminum; we will continue to evaluate all options available to achieve this.

### **20.3 Reduction Objectives**

All employees at Kaiser Aluminum will be involved in the reduction of toxic substance use, creation and releases. Where technically and economically feasible, our goal is to reduce OCDF to the greatest extent possible. Kaiser Aluminum has looked into all the options and currently found none to be feasible at this time. The facility will continue to monitor technological advancements to ensure that reduction options that are both technological and financially viable are implemented at our facility.

### **20.4 Description of Substance**

OCDF is a polychlorinated dibenzo-p-dioxin (PCDD/F). The substance is formed via *de novo* synthesis by the combustion of non-chlorinated organic matter such as polystyrene, coal and particulate carbon in the presence of chlorine donors (specifically metals such as copper or iron). Many of these substances are contained in trace concentrations in the steel scrap or are process raw materials such as injected carbon. Formations take place at temperatures between 250°C and 500°C in the presence of oxygen. High temperatures and contributing factors such as oxygen concentrations, gas exiting temperatures and scrap metal content have been factors for creating dioxins.

### **20.5 Toxic Substance Reduction Option to be Implemented**

There are currently no options identified for implementation to reduce the use and release of OCDF.

## **20.6 Plan Summary Statement**

This plan accurately reflects the content of the toxic substance reduction plan for OCDF, prepared on behalf of Kaiser Aluminum, and dated May 30, 2013.

## **20.7 Copy of Plan Certification**

A copy of the plan certification is presented in Section 22 of this document.

## 21. BASIC FACILITY INFORMATION

Facility Identification and Site Address		
<b>Company Name</b>	Kaiser Aluminum Inc.	
<b>Facility Name</b>	Kaiser Aluminum Inc.	
<b>Facility Address</b>	<b>Physical Address:</b>	<b>Mailing Address</b>
	3021 Gore Road London, ON N5V 5A9	3021 Gore Road London, ON N5V 5A9
<b>Spatial Coordinates (UTM)</b>	488513	4759340.34
<b>Datum</b>	WGS84	
<b>Number of Employees</b>	200	
<b>NPRI ID</b>	5649	
<b>ON MOE ID</b>		
Parent Company Information		
<b>Parent Company Name &amp; Address</b>	Kaiser Aluminum Inc. 3021 Gore Road London, ON N5V 5A9	
<b>Percent Ownership</b>	100%	
<b>CRA Business Number</b>	102755261	
Primary North American Industrial Classification System Code (NAICS)		
<b>2 Digit NAICS Code</b>	31-33 Manufacturing	
<b>4 Digit NAICS Code</b>	3313 - Alumina and aluminum production and processing	
<b>6 Digit NAICS Code</b>	33131 - Alumina and aluminum production and processing	
Company Contact Information		
<b>Facility Public Contact</b>	Les Charlton Environmental, Health and Safety Manager	Contact Address 3021 Gore Road London, ON N5V 5A9
	Les.Charlton@@kaiseral.com	Kaiser Aluminum Inc.
	Phone: (519) 457-3610	3021 Gore Road
	(519) 457-3610	London, ON N5V 5A9



## 22. COPY OF PLAN CERTIFICATION

### Rationale Statement – Highest Ranking Employee

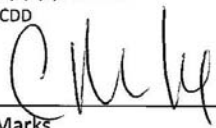
Submission of the required plan summaries and certification statements via the Environment Canada Single Window Information Manager (SWIM) system has been delayed as a result of the investigation and assessment of reduction options taking longer than anticipated to complete. Rather than compromise the integrity of the report and results by rushing the assessment to meet the deadline, we have chosen to take the time to properly evaluate all options we believe to be currently available for our operations. As such, submission of the required elements of the toxic substance reduction plans could not be made by the regulatory deadline.

### Confirmation by the Highest Ranking Employee

As of May 30, 2013, I, Cindy Marks, confirm that I have read the toxic substance reduction plans for the toxic substances referred to below and am familiar with their contents, and to my knowledge the plans are factually accurate and, with the exception of the regulatory deadline, comply with the Toxics Reduction Act, 2009 and Ontario Regulation 455/09 (General) made under that Act.

#### Toxic Substances:

Zinc (and its compounds)	2,3,4,7,8-PeCDF	2,3,4,6,7,8-HxCDF
PCDD & PCDF	1,2,3,7,8-PeCDF	1,2,3,4,6,7,8-HpCDF
2,3,7,8-TCDD	1,2,3,4,7,8-HxCDF	1,2,3,4,7,8,9-HpCDF
1,2,3,7,8-PeCD	1,2,3,7,8,9-HxCDF	OCDF
1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDF	Hexachlorobenzene
1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD
OCDD	2,3,7,8-TCDF	



Cindy Marks  
Kaiser Aluminum Canada Limited



## Confirmation by Licensed Planner

As of May 30, 2013, I, Tim Logan confirm that I am familiar with the processes at Kaiser Aluminum's London Plant that use or create the toxic substances referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv and v of subsection 4 (1) of the Toxics Reduction Act, 2009 that are set out in the plans dated May 30, 2013 and that the plans, with the exception of the regulatory deadline, comply with that Act and Ontario Regulation 455/09 (General) made under that Act.

### Toxic Substances:

Zinc (and its compounds)	2,3,4,7,8-PeCDF	2,3,4,6,7,8-HxCDF
PCDD & PCDF	1,2,3,7,8-PeCDF	1,2,3,4,6,7,8-HpCDF
2,3,7,8-TCDD	1,2,3,4,7,8-HxCDF	1,2,3,4,7,8,9-HpCDF
1,2,3,7,8-PeCD	1,2,3,7,8,9-HxCDF	OCDF
1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDF	Hexachlorobenzene
1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD
OCDD	2,3,7,8-TCDF	



, May 30, 2013

Tim Logan (License No. TSRP0003)  
President  
O2E Inc. Environmental Consultants