Summary of Available Data for LOU 59
Storm Sewer System in Area II
Tronox Facility – Henderson, Nevada

Name of LOU:

LOU 59 – Storm Sewer System in Area II

Goal of Closure:

- Continuation of current use – regulatory closure not presently requested.

Site Investigation Area:

- Size:
  - Approximately 22,558 linear feet in total.
  - Approximately 1,350 linear feet of the Storm Sewer System is located in Area II.
- Location:
  - Northern Branch: This branch originates from the Chemstar property and runs east-west along the property boundary, along Avenue F.
  - Southern Branch: This branch originates just south of Units 3 and 4 and runs north along 8th Street then west along Avenue G.
- Current Status/Features: The Storm Sewer System is currently active.

Description:

Storm Sewer System in Area II

- The Storm Sewer System is a subsurface feature that carried storm water run-off and process effluent from the southern portion of the BMI site.
- The system provided a means to manage both storm water and industrial effluent [Ref. 1].
- The Northern Branch of the Storm Sewer System in Area II passes just south of LOU 45 (Diesel Storage Tanks).
- The Southern Branch of the Storm Sewer System in Area II passes directly under LOU 12 (Hazardous Waste Storage Area).

A description of the Site-wide extent of the Storm Sewer System is detailed below to provide the current understanding (based the documents reviewed) of the historical and current use of the system and the process waste streams that are known to have entered or may have potentially entered the system. Phase B investigations for the segments of the Storm Sewer System in Area II are discussed in the "Proposed Phase B Soil Investigation/Rationale" section of this LOU summary document.

- The Storm Sewer System comprises a network of concrete and clay tile storm drains (subsurface pipes), manholes (drop inlets), and outfalls (discharge points), which were installed during construction of the original BMI complex in 1941 to 1942 [Ref. 2].

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- The system provided a means to manage both storm water and industrial effluent [Ref. 1].
- The Storm Sewer System was constructed of several smaller networks, each of which drained a discrete portion of the BMI complex and discharged to different outfalls [Ref. 1].
- Outfalls occurred along the Beta Ditch, tributaries to the Beta Ditch, and other drainage ditches. The storm water/effluent ultimately merged in the Beta Ditch and was conveyed off-site to the upper and lower BMI Ponds [Ref. 1].
- From 1941 through January 1976, the Storm Sewer System conveyed storm water and process effluent from the southern portions of the Site to the Beta Ditch [Ref. 1].
- Onsite run-off from storm events historically would follow local topography, enter nearby drop inlets, and follow the storm drain to an outfall [Ref. 1].
- The Storm Sewer System also historically conveyed effluent from the following off-site sources: U.S. Lime facility (Chemstar), Stauffer Chemical, Jones Chemical, and Timet, Inc. [Ref. 1].
- Between 1945 and 1976, process effluent, or waste water, contained classes of chemicals associated with chlorate, perchlorate, elemental boron, and leach plant processes as well as slurried sodium chlorate filter cake containing 0.05 percent by weight hexavalent chromium [Ref. 1].

1976 - Present:

- By January 1976, the Storm Sewer System was no longer used to convey process effluent or wastewater. The Kerr-McGee Chemical Corporation attained “zero discharge” status [Ref. 1].
- The Storm Sewer System only conveyed storm water and once-through non-contact cooling water to the Beta Ditch [Ref. 1].
- Currently, process wastewater and fluids are conveyed throughout the Site by a system of surface and subsurface pipelines to onsite lined surface impoundments [Ref. 1].
- Many storm drains located in, or near, process areas have been sealed or retrofitted with a protective berm to reduce the possibility that wastes, process fluids, or process area contaminated storm water runoff would accidentally enter the Storm Sewer System [Ref. 1].

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Process Waste Streams Associated with LOU 59 Site-Wide	Known or Potential Chemicals Associated with LOU 59 Site-Wide
Storm water runoff	• Pre 1976 – TPH (from vehicle operations) and chemicals from process effluent listed in this table. • Post 1976 – TPH (from vehicle operation).
Once-through non-contact cooling water	• None
Process effluent consisting of slurried filter cake, mother liquor and storm water contaminated by spills or releases of process fluids from chlorate production [Ref. 1].	• Chlorate • Metals (hexavalent chromium) • Wet chemistry analytes • Perchlorate
Process effluents from perchlorate production process including slurried filter cakes and cell bottoms, spent caustic scrubbing solution from chlorine gas scrubbing operations, and AP Cooling Tower overflow [Ref. 1].	• Perchlorate • Chlorate • Metals (Hexavalent chromium, magnesium, platinum) • Ammonia • Wet chemistry analytes • Sodium chloride and sodium hypochlorite
Boron process neutralization tank waste solution from elemental boron process [Ref. 1].	• Metals • Wet chemistry analytes • Sodium Borate
Storm water run-on/run-off from manganese tailings area where leach acid thickener underflow sludge (filtered or unfiltered) is disposed.	• Metals (barium, zinc, nickel, lead, and manganese) • Sulfide • Sulfuric acid
Process Waste Streams Associated with LOU 43 (Unit 4 Basement and Old Sodium Chlorate Plant Decommissioning)	**Known or Potential Chemicals Associated with LOU 43 (Unit 4 Basement and Old Sodium Chlorate Plant Decommissioning)**
Sodium chlorate production wastes	• Wet chemistry analytes • Chlorate • Hexavalent chromium • Ammonia • Perchlorate
Sodium perchlorate production wastes	• Wet chemistry analytes • Perchlorate • Hexavalent chromium • Ammonia
Manganese dioxide production wastes	• Manganese

Summary of Available Data for LOU 59
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Boron, Boron trichloride, Boron tribromide production wastes.	• Boron
Process Waste Streams Associated with LOU 12 (Hazardous Waste Storage Area)	**Known or Potential Chemicals Associated with LOU 12 (Hazardous Waste Storage Area)**
Prior to 1990 Filter cake wastes from Sparkler and Durco filters [Ref. 1].	• Hexavalent chromium • Wet chemistry analytes • Perchlorate • Chlorate
From 1990 to Present Sodium chlorate filter cake drying waste originating from the mud, brine, polishing, and sulfate filters [Ref. 1].	• Hexavalent chromium • Wet chemistry analytes • Perchlorate • Chlorate
Process Waste Streams Associated with LOU 45 (Diesel Fuel Tanks)	**Known or Potential Chemicals Associated with LOU 45 (Diesel Fuel Tanks)**
Diesel fuel releases (Northern Branch)	• Metals • VOCs • SVOCs • TPH-DRO
Process Waste Streams Associated with LOU 11 (Sodium Chlorate Filter Cake Holding Area)	**Known or Potential Chemicals Associated with LOU 11 (Sodium Chlorate Filter Cake Holding Area)**
Prior to 1990 Filter cake waste from Sparkler and Durco filters [Ref. 1].	• Hexavalent chromium • Wet chemistry analytes • Perchlorate • Chlorate
From 1990 to Present Sodium chlorate filter cake drying waste originating from the mud, brine, polishing, and sulfate filters [Ref. 1].	• Hexavalent chromium • Wet chemistry analytes • Perchlorate • Chlorate
Process Waste Streams Associated with LOU 60 (Acid Drain System)	**Known or Potential Constituents Associated with LOU 60 (Acid Drain System)**
Process Waste Streams from magnesium production during U.S. Government activities [Ref. 1]:	• Metals (Magnesium) • Sodium hydroxide • Hydrochloric acid solutions • Chlorides • Caustic liquor • Acid process liquors • Magnesium chloride solutions

Summary of Available Data for LOU 59
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Acid spills from within an acid storage tank [Ref. 1].	• Inorganic acids (hydrochloric or sulfuric acid) • Wet chemistry analytes
Effluent from drains in basements of Units 1 through 5 prior to 1984 [Ref. 1].	• Metals (hexavalent chromium, magnesium, boron) • Phosphates • Chlorides • Perchlorate • Ammonia • Chlorate • Wet chemistry analytes
Unknown effluents from off-site facilities (Timet, Jones Chemical, Chemstar, and Stauffer) were discharged into the Acid Drain System from 1945 through 1976.	• Metals • Hexavalent chromium • Sulfates • Wet chemistry analytes • VOC • SVOC • TPH • Organochlorine pesticides

Overlapping or Adjacent LOUs in Area II:

The following LOUs overlap or are adjacent to LOU 59:

Overlapping LOUs

- LOU 12 (Hazardous Waste Storage Area) – Located above the Southern Branch of LOU 59 that runs along 8th Street.
- LOU 60 (Acid Drain System) – Lines from the Acid Drain System cross the Storm Sewer System lines in the Northern Branch and the Southern Branch, and additionally parallel the Southern Branch for approximately 240 feet.

Adjacent LOUs

- LOU 43 (Units 4 Basement and Old Sodium Chlorate Plant) – Located west (cross-gradient) of the Southern Branch of LOU 59 that runs along 8th Street.
- LOU 11 (Sodium Chlorate Filter Cake Holding Area) – Located west (cross-gradient) of the Southern Branch of LOU 59 that runs along 8th Street.
- LOU 15 (Platinum Drying Unit) – Located east (cross-gradient) of the Southern Branch of LOU 59 that runs along 8th Street.
- LOU 45 (Diesel Storage Tanks) – Located north (upgradient) of the Northern Branch of LOU 59.

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The potential for LOU 45 to affect LOU 59 is considered to be minimal since LOU 45 is downgradient of LOU 59 and no records of spills or leaks were found in the documents reviewed.

For detailed information on these LOUs, please refer to the specific LOU data package.

LOUs Potentially Affecting Soils in LOU 59 in Area II:

The following LOUs have the potential to affect LOU 59:

- LOU 11 (Sodium Chlorate Filter Cake Holding Area), LOU 15 (Platinum Drying Unit), LOU 12 (Hazardous Waste Storage Area), and LOU 15 (Platinum Drying Unit) – Surface run-off from these LOUs could have potentially entered LOU 59 via surface drains; therefore, they may have affected LOU 59.
- LOU 43 (Units 4 Basement and Old Sodium Chlorate Plant) - Surface run-off from this LOU could have potentially entered LOU 59 via surface drains; therefore, it may have affected LOU 59.
- LOU 60 – This LOU consists of a network of pipes, sumps and treatment areas used to collect waste acid effluent from throughout the BMI complex in the 1940's. Leaks in pipelines were repaired as needed. No leaks were reported in the area of LOU 59; however, LOU 60 has the potential to affect the Southern and Northern Branches of LOU 59.

Known or potential chemical classes associated with LOUs 11, 12, 15, 43, and 60 are consistent with those listed for LOU 59; therefore, the addition of other chemical classes to the Phase B Analytical Plan for LOU 59 is not required.

Known or Potential Chemical Classes:

- Metals
- Hexavalent chromium
- Wet chemistry analytes
- Perchlorate
- VOCs
- SVOCs
- TPH-DRO

Summary of Available Data for LOU 59
Storm Sewer System in Area II
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Known or Potential Release Mechanisms:

- Releases to soil could have occurred due to breaks or leaks of liner pipes or at pipe joints/connections; however, no releases were reported in the documents reviewed.
- If releases occurred on an on-going basis, migration to the groundwater would be possible; however, no releases were reported in the documents reviewed.
- Prior to 1976, waste waters conveyed by the Storm Sewer System were discharged to surface water of the Beta Ditch (LOU 5) [Ref. 1].

Results of Historical Sampling:

- No known historical soil sampling was identified in the documents reviewed for LOU 59.

Groundwater

- The nearest monitoring wells are M-12A, M-13, M-21, and M-50 (downgradient) and are routinely tested for perchlorate, hexavalent chromium, total dissolved solids, nitrate, and chlorate as part of the routine groundwater monitoring program. See attached **LOU 59 Area II Table 6 – Groundwater Characterization Data – Routine Monitoring**.

Did Historical Samples Address Potential Release?

- No

Summary of Phase A SAI:

Soil

- Borings SA05 (upgradient) and SA06 (down- and cross-gradient) are located near the Southern Branch of LOU 59 and were specifically sampled to evaluate this LOU [Ref. 3].

Groundwater

- Wells M-12A and M-13 are located downgradient of the Southern Branch of LOU 59 and were sampled specifically to evaluate this LOU [Ref. 3].

Chemical classes detected in Phase A soil borings SA05 and SA06:

- Metals
- Perchlorate
- Wet chemistry analytes
- VOCs
- SVOCs (SA05 only)
- Organochlorine pesticides (SA05 only)
- Dioxins/furans
- Radionuclides
- Asbestos (SA05 only)

Summary of Available Data for LOU 59
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As a result of the Phase A data, the Phase B analytical plan for samples collected from LOU 59 in Area II will be expanded to include analyses for organochlorine pesticides, dioxins/furans, radionuclides, and asbestos.

Analytical results for soil and groundwater from the Phase A sampling event are summarized in LOU 59 Area II Tables 1 through 5 and LOU 59 Area II Tables 7 through 22 (see attached) [Ref. 3].

Are Phase A Sample Locations in "Worst Case" Areas?

- No

Is Phase B Investigation Recommended?

- Yes

Proposed Phase B Soil Investigation/Rationale:

The Phase B Source Area Investigation of LOU 59 in Area II consists of collecting soil samples from 10 locations.

  - One (1) soil boring will be drilled along the boundary of LOU 59.
  - Three (3) soil borings will be drilled south (upgradient) of LOU 59.
  - Six (6) soil borings will be drilled north (downgradient) of LOU 59.
  - All 10 borings along with the analytical program to evaluate soil samples from LOU 59 are listed on **Table A – Soil Sampling and Analytical Plan for LOU 59 in Area II**.

- Soil sample locations consist of both judgmental and randomly-placed locations.
- Judgmental sample locations:
  - Designed to evaluate soil for known or potential chemical classes associated with LOU 59, based on the known process waste streams.
  - Seven (7) of the 10 sample locations are judgmental locations and consist of soil borings SA30, SA125, SA40, SA41, SA188, SA187, and SA172.
- Random sample locations:
  - Designed to assess whether unknown constituents associated with LOU 59 are present.
  - Three (3) of the 10 sample locations are randomly-placed locations and include soil borings RSAQ5, RSAQ6, and RSAR6.

Summary of Available Data for LOU 59
Storm Sewer System in Area II
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Proposed Chemical Classes for Phase B Investigation for soils:

Both judgmental and random sample grid locations will be analyzed for the following list of Phase A Site-related chemicals for LOU-specific and area-wide coverage purposes:

- Metals (Phase A list)
- Hexavalent chromium
- Perchlorate
- Wet chemistry analytes
- VOCs
- SVOCs
- TPH-DRO
- Organochlorine pesticides
- Dioxins/furans
- Radionuclides
- Asbestos

Proposed Phase B Groundwater Investigation/Rationale:

The Phase B groundwater investigation of LOU 59 in Area II consists of collecting groundwater samples from five (5) locations to evaluate local groundwater conditions and as part of a Site-wide evaluation of constituent trends in groundwater.

- Wells M-12A, M-50, M-21, and M-97 are located north or northeast (downgradient) of the Storm Sewer System.
- Well M-13 is located south (upgradient) of the Storm Sewer System.
- The analytical program to evaluate the groundwater sample associated with LOU 59 is listed on **Table B – Groundwater Sampling and Analytical Plan for LOU 59 in Area II.**

Proposed Phase B Constituents List for Groundwater:

Groundwater samples will be analyzed for the following analytes:

- Metals (Phase A list)
- Hexavalent chromium
- Perchlorate
- Wet chemistry analytes
- VOCs
- SVOCs
- Organochlorine pesticides
- Radionuclides

Summary of Available Data for LOU 59
Storm Sewer System in Area II
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Proposed Phase B Soil Gas Investigation/Rationale:

One soil gas sample will be collected to evaluate area conditions for the presence of vapor-phase VOCs in the vadose zone.

- Soil gas point SG69 is located east of the Southern Branch of the Storm Sewer System to investigate the system as a potential VOC source.

Details of the soil gas sampling program are contained in the NDEP-approved (March 26, 2008) Soil Gas Survey Work Plan, Tronox LLC, Henderson, Nevada, dated March 20, 2008.

Proposed Phase B Constituents List for Soil Gas:

- VOCs (by EPA TO-15)

References:

1. Kleinfelder, 1993, Environmental Conditions Assessment, Kerr-McGee Chemical Corporation, Henderson, Nevada Facility, April 15, 1993 (Final).
2. ENSR, 2005, Conceptual Site Model, Kerr-McGee Facility, Henderson, Nevada, ENSR, Camarillo, California, 04020-023-130, February 2005 and August 2005.
3. ENSR, 2007a, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.

Summary of Available Data for LOU 59
Storm Sewer System in Area II

Tronox Facility – Henderson, Nevada

LOU Figure

J:\TronoxGIS\mxd\Phase_B_WorkPlan\LOUs\lou-59_Storm_Drains_Area-2.mxd

N

1:1,800
1 inch equals 150 feet

150 75 0 150

Feet

AREA I

AREA II

AREA III

AREA IV

AVENUE F

AVENUE G

AVENUE H

7th STREET

8th STREET

LOU #39 BOUNDARY
LOU #64 BOUNDARY
LOU #8 BOUNDARY
LOU #9 BOUNDARY
LOU #7 BOUNDARY
LOU #13 BOUNDARY
LOU #14 BOUNDARY
LOU #24 BOUNDARY
LOU #34 BOUNDARY
LOU #45 BOUNDARY
LOU #49 BOUNDARY
LOU #50 BOUNDARY
LOU #48 BOUNDARY
LOU #65 BOUNDARY
LOU #63 BOUNDARY
LOU #4 BOUNDARY
LOU #28 BOUNDARY
LOU #11 BOUNDARY
LOU #12 BOUNDARY
LOU #15 BOUNDARY
LOU #43 BOUNDARY
LOU #42 BOUNDARY
LOU #36 BOUNDARY
LOU #29 BOUNDARY

Parcel F

LOU #60

LEGEND

- LOU #59 Storm Sewer System with manholes and sumps with flow direction in Area II
- LOU #59 Storm Sewer System with manholes and sumps with flow direction
- LOU #60 Acid Drain System with manholes and sumps with flow direction
- Other LOU Boundary
- Other LOU Associated Pipelines

Proposed Phase B Explorations for LOU

- Groundwater Monitoring Well Location
- Boring Location
- Soil Gas Location

Other Explorations

- Phase A Boring Location (Sep. 2007)
- Phase II BRC Sample Location (Oct. 2007)
- Historic Sample Location (pre 2006)
- Existing Well Location (No Proposed Sampling)
- Proposed Phase B Groundwater Location (Other LOU)
- Proposed Phase B Soil Boring Location (Other LOU)
- Proposed Phase B Soil Gas Location (Other LOU)
- Tronox Facility Boundary
- Area Boundary
- Parcel Boundary
- Four Acre Grid Line (Cell reference displayed as row-column, i.e. M-8)

Base Aerial Photo from PBS&J, October 2006

Storm Sewer Reference:
Basic Water Company, 2003, Storm Drain System, Drawing R 27, January 2, 2003.

Kleinfelder, 1993 Environmental Conditions Assessment, Kerr-McGee Chemical Corporation, Henderson Nevada Facility, Map 30, April 15 1993 (Final).

FIGURE NUMBER: 1
SHEET NUMBER: X

SAMPLE LOCATIONS FOR LOU #59 STORM SEWER SYSTEM SEGMENT IN AREA II

Phase B Area II Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/16/2008	04020-023-430

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Summary of Available Data for LOU 59
Storm Sewer System in Area II

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Sampling and Analytical Plans for LOU 59:

Table A – Soil Sampling and Analytical Plan for LOU 59 in Area II
Table B – Groundwater Sampling and Analytical Plan for LOU 59 in Area II

Table A
Soil Sampling and Analytical Plan for LOU 59 in Area II
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

Grid Location	LOU Number	Phase B Boring No.	Sample ID Number	Sample Depths[1] (ft. bgs)	Perchlorate (EPA 314.0)	Metals (EPA 6020)	Hex Cr (EPA 7199)	TPH-DRO/ORO (EPA 8015B)	TPH-GRO (EPA 8015B)	VOCs[2] (EPA 8260B)	Wet Chemistry[3]	Total Cyanide (EPA 9012A)	OCPs[4] (EPA 8081A)	SVOCs[5] (EPA 8270C)	Radio-nuclides[6]	Dioxins/ Furans[7]	Asbestos[9] EPA/540/R-97/028	Geo-technical Tests[10]	Rationale
Borings are organized by grid location as shown on Plate A - Starting point is on the northwestern most grid in Area 2 (M-2) and ending with the southeastern most grid in Area 2 (S-7)																			
O-5	45, 59, 60	SA41	SA41-0.0	0.0													X		Boring located to evaluate LOU 45 (Diesel Storage Tanks), LOU 59 (Storm Sewer System), and LOU 60 Acid Drain
O-5	45, 59, 60		SA41-0.5	0.5	X	X	X	X		X	X		X	X	X	X			System). Located on the perimeter of the former aboveground storage tank to evaluate potential releases (see text
O-5	45, 59, 60		SA41-10	10	X	X	X	X		X	X		Hold	X	X				for historic details) and between LOUs 59 and 60 to evaluate possible piping releases.
O-5	45, 59, 60		SA41-20	20	X	X	X	X		X	X		Hold	X	X				
O-5	45, 59, 60		SA21-30	20	X	X	X	X		X	X		Hold	X	X				
O-5	45, 59, 60		SA21-40	40	X	X	X	X		X	X		X	X	X				
O-5	45, 59, 60	SA172	SA172-0.0	0.0													X		Boring located to evaluate LOU 45 (Diesel Storage Tanks) and LOU 59 (Storm Sewer System), and LOU 60 (Acid Drain
O-5	45, 59, 60		SA172-0.5	0.5	X	X	X	X		X	X		X	X	X	X			System). Located beneath the footprint of a aboveground storage tank to evaluate subsurface releases (See LOU 45
O-5	45, 59, 60		SA172-10	10	X	X	X	X		X	X		Hold	X	X				summary for historical data).
O-5	45, 59, 60		SA172-20	20	X	X	X	X		X	X		Hold	X	X				
O-5	45, 59, 60		SA172-30	30	X	X	X	X		X	X		Hold	X	X				
O-5	45, 59, 60		SA172-35	35	X	X	X	X		X	X		X	X	X				
O-5	45, 59, 60	SA187	SA187-0.0	0.0													X		Boring located to evaluate LOU 45 (Diesel Storage Tanks), LOU 59 (Storm Sewer System), and LOU 60 Acid Drain
O-5	45, 59, 60		SA187-0.5	0.5	X	X	X	X		X	X		X	X	X	X			System). Located on the perimeter of the former aboveground storage tank to evaluate potential releases (see text
O-5	45, 59, 60		SA187-10	10	X	X	X	X		X	X		Hold	X	X				for historic details) and between LOUs 59 and 60 to evaluate possible piping releases.
O-5	45, 59, 60		SA187-20	20	X	X	X	X		X	X		Hold	X	X				
O-5	45, 59, 60		SA187-30	30	X	X	X	X		X	X		Hold	X	X				
O-5	45, 59, 60		SA187-35	35	X	X	X	X		X	X		X	X	X				
O-5	45, 59	SA188	SA188-0.0	0.0													X		Boring located to evaluate LOU 45 (Diesel Storage Tanks) and LOU 59 (Storm Sewer System), and LOU 60 (Acid Drain
O-5	45, 59		SA188-0.5	0.5	X	X	X	X		X	X		X	X	X	X			System). Located beneath the footprint of a aboveground storage tank to evaluate subsurface releases (See LOU 45
O-5	45, 59		SA188-10	10	X	X	X	X		X	X		Hold	X	X				summary for historical data).
O-5	45, 59		SA188-20	20	X	X	X	X		X	X		Hold	X	X				
O-5	45, 59		SA188-30	30	X	X	X	X		X	X		Hold	X	X				
O-5	45, 59		SA188-35	35	X	X	X	X		X	X		X	X	X				
O-6	45, 59	SA40	SA40-0.0	0.0													X		Boring located to evaluate LOU 45 (Diesel Storage Tanks), LOU 59 (Storm Sewer System), and LOU 60 Acid Drain
O-6	45, 59		SA40-0.5	0.5	X	X	X	X		X	X		X	X	X	X			System). Located on the perimeter of the former aboveground storage tank to evaluate potential releases (see text
O-6	45, 59		SA40-10	10	X	X	X	X		X	X		Hold	X	X				for historic details) and between LOUs 59 and 60 to evaluate possible piping releases.
O-6	45, 59		SA40-20	20	X	X	X	X		X	X		Hold	X	X				
O-6	45, 59		SA40-30	30	X	X	X	X		X	X		Hold	X	X				
O-6	45, 59		SA40-40	40	X	X	X	X		X	X		X	X	X				
Q-5	59	RSAQ5	RSAQ5-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer System). Random boring located near LOU 59 piping to evaluate
Q-5	59		RSAQ5-0.5	0.5	X	X	X	X		X	X		X	X	X	X			possible piping releases and for site wide conditions.
Q-5	59		RSAQ5-10	10	X	X	X	X		X	X		Hold	X	X				
Q-5	59		RSAQ5-20	20	X	X	X	X		X	X		Hold	X	X				
Q-5	59		RSAQ5-30	30	X	X	X	X		X	X		Hold	X	X				
Q-5	59		RSAQ5-35	35	X	X	X	X		X	X		X	X	X				
Q-6	43, 59, 60	RSAQ6	RSAQ6-0.0	0.0													X		Boring located nearby LOU 43 (Unit 4 Basement and Old Sodium Chlorate Plant Decommissioning), LOU 59 Storm
Q-6	43, 59, 60		RSAQ6-0.5	0.5	X	X	X	X		X	X		X	X	X	X			Sewer System), and LOU 60 (Acid Drain System). Located downslope of OU 43 to evaluate potential subsurface
Q-6	43, 59, 60		RSAQ6-10	10	X	X	X	X		X	X		Hold	X	X				releases and near LOU 60 piping to evaluate local piping releases.
Q-6	43, 59, 60		RSAQ6-20	20	X	X	X	X		X	X		Hold	X	X				
Q-6	43, 59, 60		RSAQ6-30	30	X	X	X	X		X	X		Hold	X	X				
Q-6	43, 59, 60		RSAQ6-35	35	X	X	X	X		X	X		X	X	X				
R-6	59, 60	SA30	SA30-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer System) and LOU 60 (Acid 'Drain System). Located near LOU 59
R-6	59, 60		SA30-0.5	0.5	X	X	X	X		X	X		X	X	X	X			and 60 piping to evaluate possible local piping releases and for general site coverage in Unit Buildings area.
R-6	59, 60		SA30-10	10	X	X	X	X		X	X		Hold	X	X			X	
R-6	59, 60		SA30-20	20	X	X	X	X		X	X		Hold	X	X				
R-6	59, 60		SA30-30	30	X	X	X	X		X	X		Hold	X	X				
R-6	59, 60		SA30-35	35	X	X	X	X		X	X		X	X	X				
R-6	12, 59, 60	SA125	SA125-0.0	0.0													X		Boring located to evaluate LOU 12 (Hazardous Waste Storage Area), LOU 59 (Storm Sewer System), and LOU 60
R-6	12, 59, 60		SA125-0.5	0.5	X	X	X	X		X	X		X	X	X	X			(Acid DrainSystem). Located downslope of LOU 12 to evaluate surface runoff releases and adjacent to LOU 59 and 60
R-6	12, 59, 60		SA125-10	10	X	X	X	X		X	X		Hold	X	X				piping to evaluate high risk release locations (Manhole).
R-6	12, 59, 60		SA125-20	20	X	X	X	X		X	X		Hold	X	X				
R-6	12, 59, 60		SA125-30	30	X	X	X	X		X	X		Hold	X	X				
R-6	12, 59, 60		SA125-35	35	X	X	X	X		X	X		X	X	X				
R-6	43, 59	RSAR6	RSAR6-0.0	0.0													X		Boring located to evaluate LOU 43 (Unit 4 Basement and Old Sodium Chlorate Plant Decommissioning),
R-6	43, 59		RSAR6-0.5	0.5	X	X	X	X		X	X		X	X	X	X			and LOU 59 (Storm Sewer System) and LOU 60 (Acid Drain System). Random boring located near LOU 43 as a
R-6	43, 59		RSAR6-10	10	X	X	X	X		X	X		Hold	X	X				stepout for general coverage, adjacent to LOU 59 and 60 piping to evaluate high risk release area (junction) and for site
R-6	43, 59		RSAR6-20	20	X	X	X	X		X	X		Hold	X	X				wide coverage.
R-6	43, 59		RSAR6-30	30	X	X	X	X		X	X		Hold	X	X				
R-6	43, 59		RSAR6-35	35	X	X	X	X		X	X		X	X	X				
Number of Samples:					**50**	**50**	**50**	**50**	**0**	**50**	**50**	**0**	**20**	**50**	**50**	**10**	**10**	**1**	

Notes:

n/a	Not applicable - boring is not associated with a specific LOU but is located to evaluate soil for general area-wide coverage.
X	Sample will be collected and analyzed.
	No sample collected under Phase B sampling program.
DD*	Sample depth to be determined in the field where DD = sample depth (ft).
TPH-DRO/ORO	Total petroleum hydrocarbons - Diesel-Range Organics/Oil-Range Organics.
1.	The 0.5 ft bgs sample will be collected from the 0.0 to 0.5 ft bgs interval, unless the area is paved. If area is paved, samples will be collected at 0.5 feet below or from a representative depth beneath the pavement. Alternately, if an unpaved area is within a reasonable distance, the sample will be moved to the unpaved area.
2.	Samples for VOC analysis will be preserved in the field using sodium bisulfate (or DI water) and methanol preservatives per EPA Method 5035.
3.	Consists of wet chemistry parameters (including pH) listed on Table 1 of the Phase B Source Area Work Plan.
4.	Organochlorine Pesticides (includes analysis for hexachlorobenzene).
5.	Semi-volatile Organic Compounds
6.	Radionuclides consists of alpha spec reporting for isotopic thorium and isotopic uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
7.	Dioxins/furans will be analyzed by EPA Method 8290 for all samples. Screening reports will be provided for 90% of the samples and full data packages for 10% of the samples.
8.	Polychlorinated biphenyls
9.	Soil samples for asbestos analyses will be collected from a depth of 0 to 2-inches bgs.
10.	Geotechnical Tests consist of: moisture content (ASTM D-2216), grain size analysis (ASTM D-422 and C117-04), Soil Dry Bulk Density (ASTM D-2937), Grain Density (ASTM D-854, Soil-Water Filled Porosity (ASTM D-2216); Vertical Hydraulic Conductivity (ASTM D-5084/USEPA 9100).
11.	SPLP samples will be analyzed by EPA method 1312 using two preparation methods: 1) with extraction fluid #2 (reagent water at pH 5.00±0.05), and 2) with extraction method #3 (reagent water); per NDEP.

Table B
Groundwater Sampling And Analysis Plan for LOU 59 in Area II
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson Nevada

Grid Location	Location Area	Monitoring Well No.	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1]	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Hex Cr (EPA 7199)	Metals	VOCs[2] (EPA 8260)	Wet Chemistry (a)	OCPs[3] (EPA 8081A)	SVOCs[4] (EPA 8270C)	Radionuclides[5]	Rationale
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area II (L-4) and ending with the southeastern-most grid covering Area II (S-7).														
O5	II	M-21	18 - 38	MCfg1	no	X	X	X	X	X	X	X	X	Located to evaluate LOU 45; as an upgradient stepout for LOUs 7, 9, 13 and 14; as a downgradient stepout for LOU 59; and for general Site coverage.
O6	II	M-50	39.6 - 59.6	MCfg1	no	X	X	X	X	X	X	X	X	Located to serve as a downgradient stepout for a segment of LOU 59 located in Area II as a **???** well for LOUs 13 and 14; and for general Site coverage.
P5	IIS	M-97	35 - 45	MCfg1/MCcg1	yes	X	X	X	X	X	X	X	X	Located to serve as an upgradient stepout for LOU 45 and segments of LOU 59 located in Area II; and for general Site coverage.
Q5	II	M-13	40 - 50	Qal/MCfg1	yes	X	X	X	X	X	X	X	X	Located to serve as a downgradient stepout for LOU 60; as an upgradient stepout for LOUs 36 and 45; and for general Site coverage.
Q6	II	M-12A	28 48	MCfg1	yes	X	X	X	X	X	X	X	X	Located as a downgradient stepout for LOUs 12, 15, 29, 36, 43, 59 and 60; and for general Site coverage.
				Number of Field Samples:		**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	

Notes:

*	Well completion information or boring log not available. Soil type inferred from nearby wells and geologic cross-section provided in the Phase A Source Area Investigation Report (ENSR 2007). ENSR is in the process of obtaining information from BMI.
X	Sample will be collected and analyzed.
1	It is anticipated that the large majority of the flow to the well will be from the coarse-grained sediments. As such, in the cases where there are two lithologies present across the screen interval, the water sampled will represent conditions in the coarse-grained interval.
2	VOCs = Volatile organic compounds (to include analysis for naphthalene).
3	OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).
4	SVOCs = Semi volatile organic compounds.
5	Radionuclides consists of alpha spec reporting for isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
IIIN/E/W/S	Well located outside (north, east, west, or south) of Area II.
nr	Not recorded in the All Wells Database (June 2008).
TBD	To be determined when well is constructed
(a)	Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.
Qal	Quaternary Alluvium
MCfg1	Muddy Creek Formation - first fine-grained facies
MCcg1	Muddy Creek Formation - first coarse-grained facies

Summary of Available Data for LOU 59
Storm Sewer System in Area II

Tronox Facility – Henderson, Nevada

Soil and Groundwater Characterization Data

Summary of Available Data for LOU 59
Storm Sewer System in Area II
Tronox Facility – Henderson, Nevada

LOU-specific analytes identified include:

- Metals
- Hexavalent Chromium
- Wet chemistry analytes
- Perchlorate
- VOCs
- SVOCs
- TPH-DRO

The tables in **BOLD** below present historical data associated with these LOU-specific analytes.

LOU 59 Area II Table 1 – Soil Characterization Data – Wet Chemistry

LOU 59 Area II Table 2 – Groundwater Characterization Data – Wet Chemistry

LOU 59 Area II Table 3 – Soil Characterization Data – Dioxins and Dibenzofurans

LOU 59 Area II Table 4 – Soil Characterization Data – Metals

LOU 59 Area II Table 5 – Groundwater Characterization Data – Metals

LOU 59 Area II Table 6 – Groundwater Characterization Data – Routine Monitoring

LOU 59 Area II Table 7 – Soil Characterization Data – Organochlorine Pesticides (OCPs)

LOU 59 Area II Table 8 – Groundwater Characterization Data – Organochlorine Pesticides (OCPs)

LOU 59 Area IV Table 9 – Soil Characterization Data – Organophosphorus Pesticides (OPPs)

LOU 59 Area II Table 10 – Groundwater Characterization Data – Organophosphorus Pesticides (OPPs)

LOU 59 Area II Table 11 – Soil Characterization Data – PCBs

LOU 59 Area II Table 12 – Groundwater Characterization Data – PCBs

LOU 59 Area II Table 13 – Soil Characterization Data – Perchlorate

LOU 59 Area II Table 14 – Groundwater Characterization Data – Perchlorate

LOU 59 Area II Table 15 – Soil Characterization Data – Radionuclides

LOU 59 Area II Table 16 – Groundwater Characterization Data – Radionuclides

LOU 59 Area II Table 17 – Soil Characterization Data – SVOCs

LOU 59 Area II Table 18 – Groundwater Characterization Data – SVOCs

LOU 59 Area II Table 19 – Soil Characteristic Data - TPH and Fuel Alcohols

LOU 59 Area II Table 20 – Soil Characterization Data – VOCs

LOU 59 Area II Table 21 – Groundwater Characterization Data – VOCs

LOU 59 Area II Table 22 – Soil Characterization Data – Long Asbestos Fibers in Respirable Soil Fraction

Notes for all Phase A data tables are listed at the end of the tables.

LOU 59 Area II Table 1
Soil Characterization Data - Wet Chemistry

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	
Boring No.		SA5	SA5	SA5	SA5	SA5	SA6	SA6	SA6	SA6	SA6	SA6	
Sample ID		SA5-0.5	SA5-10	SA5-20	SA5-30	SA5-37	SA6-0.5	SA6-0.5D	SA6-10	SA6-20	SA6-30	SA6-35	
Sample Depth (ft)		0.5	10	20	30	37	0.5	0.5	10	20	30	35	
Sample Date		11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	
Wet Chemistry Parameter	**MSSL[2] mg/kg**												**Units**
Percent moisture	--	**22.6**	**14.2**	**15.2**	**7.6**	**39.9**	**5.8**	**13.8**	**7.6**	**7.7**	**5.0**	**32.6**	percent
Alkalinity (as CaCO3)	--	**561**	58.2 U	**90.7**	54.1 U	83.2 U	**637 J**	**352 J**	**109 J**	**131 J**	52.6 UJ	**148 J**	mg/kg
Bicarbonate	--	**1400**	**861**	**363**	**301**	**411**	**2970 J**	**1410 J**	**530 J**	**690 J**	**292 J**	**387 J**	mg/kg
Total Alkalinity	--	**1960**	**874**	**454**	**314**	**430**	**3610 J**	**1760 J**	**640 J**	**821 J**	**304 J**	**536 J**	mg/kg
Ammonia (as N)	--	6.5 UJ	5.8 UJ	5.9 UJ	5.4 UJ	8.3 UJ	5.3 UJ	5.8 UJ	5.4 UJ	5.4 UJ	5.3 UJ	7.4 UJ	mg/kg
Cyanide	1.37E+04	R	R	R	R	R	R	R	R	R	R	R	mg/kg
MBAS	--	**2.4 J**	**2.5 J**	2.1 U	**2.5 J**	**4.6 J**	**2.4 J**	2.2 U	2.2 U	2.2 U	2.2 U	3.1 U	mg/kg
pH (solid)	--	**10.0**	**7.9**	**8.3**	**8.3**	**7.8**	**9.6**	**9.5**	**8.4**	**9.0**	**8.1**	**7.9**	none
Bromide	--	3.2 U	29.1 U	29.5 U	27.1 U	41.6 U	2.7 U	2.9 U	2.7 U	2.7 U	26.3 U	37.1 U	mg/kg
Chlorate	--	**14.4 J-**	**642 J-**	**1310 J-**	**429 J-**	8.3 UJ	5.3 UJ	5.8 UJ	**2.8 J-**	**3.0 J-**	**86.9 J-**	**207 J-**	mg/kg
Chloride	--	**13.0**	**377**	**1560**	**1070**	**5600**	**5.1**	**8.5**	**9.8**	**13.9**	**77.7**	**414**	mg/kg
Nitrate (as N)	--	0.26 U	**4.3 J+**	**20.2 J+**	**21.0**	**68.2**	**0.48 J+**	**0.27 J+**	**1.6 J+**	**2.3 J+**	**19.6**	**26.5**	mg/kg
Nitrite	--	**0.21 J**	2.3 U	2.4 U	2.2 U	3.3 U	0.21 U	0.23 U	**0.32**	**0.93**	2.1 U	3.0 U	mg/kg
ortho-Phosphate	--	6.5 U	5.8 U	5.9 U	5.4 U	166 U	5.3 U	5.8 U	**3.9 J**	**1.6 J**	**79.6 J**	7.4 U	mg/kg
Sulfate	--	**77.0**	**479**	**168**	**1030**	**804**	**115**	**147**	**175**	**214**	**7710**	**599**	mg/kg
Total Organic Carbon	--	**15200**	**6000**	**8300**	**6600**	**11200**	**9100**	**4300**	**6420**	**7220**	**900 J**	**9150**	mg/kg

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).

LOU 59 Area II Table 2
Groundwater Characterization- Wet Chemistry

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	
Well ID		M12A	M13	
Sample ID		M12A	M13	
Sample Date		12/05/2006	12/01/2006	
Wet Chemistry Parameters	**MCL[2] mg/L**			**Units**
Total Dissolved Solids	5.00E+02 j	**8170**	**3440**	mg/L
Total Suspended Solids	--	**57.0 J**	**17.0 J**	mg/L
Alkalinity (as CaCO3)	--	5.0 U	5.0 U	mg/L
Bicarbonate	--	**381**	**111 J+**	mg/L
Total Alkalinity	--	**381**	**111 J+**	mg/L
Ammonia (as N)	--	50.0 U	50.0 U	ug/L
MBAS	--	**0.41**	0.16 U	mg/L
Cyanide	2.00E-01	R	R	ug/L
pH (liquid)	--	**7.8 J**	**7.5 J**	none
Specific Conductance	--	**3660 J+**	**2320**	umhos/cm
Bromide	--	25.0 U	**0.60**	mg/L
Chlorate	--	**2370**	**279**	mg/L
Chloride	2.50E+02	**1030**	**394**	mg/L
Nitrate (as N)	1.00E+01	**15.2**	**1.8**	mg/L
Nitrite	1.00E+00	10.0 U	R	mg/L
ortho-Phosphate	--	500 U	5.0 U	mg/L
Sulfate	2.50E+02 j	**1510**	**1520**	mg/L
Total Organic Carbon	--	50.0 U	50.0 U	mg/L

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
(j) Secondary Drinking Water Regulation value.

LOU 59 Area II Table 3
Soil Characterization Data - Dioxins and Dibenzofurans

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

		Sampling Program	Ph A[1]	Ph A	Ph A	
		Boring No.	SA5	SA6	SA6	
		Sample ID	SA5-0.5	SA6-0.5	SA6-0.5D	
		Sample Depth (ft)	0.5	0.5	0.5	
		Sample Date	11/14/2006	11/14/2006	11/14/2006	
chemical_name:	**Method**	**MSSL[2] ng/kg**				**Unit**
Dioxin 8290 SCREEN Total TEQ-ENSR Calculated (a) ng/kg		--	**15.09**	**0.64**		ng/kg
Dioxin SW 846 8290 Total TEQ-ENSR Calculated (a) ng/kg		--				ng/kg
Dioxin 8290 SCREEN Total TEQ-ENSR Calculated (b) ng/kg		--	**15.09**	**0.72**		ng/kg
Dioxin SW 846 8290 Total TEQ-ENSR Calculated (b) ng/kg		--				ng/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran	8290 Screen	--	**80.879**	**7.730**	**2.554**	ng/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran	SW 846 8290	--				ng/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	8290 Screen	--	**5.161**	**1.036**	**0.461**	ng/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	SW 846 8290	--				ng/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran	8290 Screen	--	**36.815**	**2.617**	**0.801**	ng/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran	SW 846 8290	--				ng/kg
1,2,3,4,7,8-Hexachlorodibenzofuran	8290 Screen	--	**37.078**	**2.392**	**0.864**	ng/kg
1,2,3,4,7,8-Hexachlorodibenzofuran	SW 846 8290	--				ng/kg
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	8290 Screen	--	**0.652**	0.059 U	0.055 U	ng/kg
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	SW 846 8290	--				ng/kg
1,2,3,6,7,8-Hexachlorodibenzofuran	8290 Screen	--	**20.664**	**1.665**	**0.552**	ng/kg
1,2,3,6,7,8-Hexachlorodibenzofuran	SW 846 8290	--				ng/kg
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	8290 Screen	--	**1.273**	**0.191**	**0.140**	ng/kg
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	SW 846 8290	--				ng/kg
1,2,3,7,8,9-Hexachlorodibenzofuran	8290 Screen	--	**5.906**	**0.259**	**0.145**	ng/kg
1,2,3,7,8,9-Hexachlorodibenzofuran	SW 846 8290	--				ng/kg
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	8290 Screen	--	**1.340**	**0.256**	**0.176**	ng/kg
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	SW 846 8290	--				ng/kg
1,2,3,7,8-Pentachlorodibenzofuran	8290 Screen	--	**18.712**	**0.886**	**0.456**	ng/kg
1,2,3,7,8-Pentachlorodibenzofuran	SW 846 8290	--				ng/kg
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	8290 Screen	--	**0.846**	0.059 U	0.047 U	ng/kg
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	SW 846 8290	--				ng/kg
2,3,4,6,7,8-Hexachlorodibenzofuran	8290 Screen	--	**10.995**	**0.795**	**0.262**	ng/kg
2,3,4,6,7,8-Hexachlorodibenzofuran	SW 846 8290	--				ng/kg
2,3,4,7,8-Pentachlorodibenzofuran	8290 Screen	--	**8.426**	0.279 U	**0.195**	ng/kg
2,3,4,7,8-Pentachlorodibenzofuran	SW 846 8290	--				ng/kg
2,3,7,8-Tetrachlorodibenzofuran	8290 Screen	--	**19.343**	**1.724**	**0.752**	ng/kg
2,3,7,8-Tetrachlorodibenzofuran	SW 846 8290	--				ng/kg
2,3,7,8-Tetrachlorodibenzo-p-Dioxin	8290 Screen	1.00E+03 h,v	**0.132**	0.077 U	0.059 U	ng/kg
2,3,7,8-Tetrachlorodibenzo-p-Dioxin	SW 846 8290	1.00E+03 h,v				ng/kg
Octachlorodibenzofuran	8290 Screen	--	**237.642**	**20.727**	**6.640**	ng/kg
Octachlorodibenzofuran	SW 846 8290	--				ng/kg
Octachlorodibenzo-p-Dioxin	8290 Screen	--	**7.486**	**6.287**	**2.965**	ng/kg
Octachlorodibenzo-p-Dioxin	SW 846 8290	--				ng/kg
Tetrachlorinated Dibenzofurans, (Total)	SW 846 8290	--				ng/kg
Total HpCDD	SW 846 8290	--				ng/kg

LOU 59 Area II Table 3 (continued)
Soil Characterization Data - Dioxins and Dibenzofurans

Hazardous Waste Storage Area
Tronox Facility - Henderson, Nevada

		Sampling Program	Ph A[1]	Ph A	Ph A	
		Boring No.	SA5	SA6	SA6	
		Sample ID	SA5-0.5	SA6-0.5	SA6-0.5D	
		Sample Depth (ft)	0.5	0.5	0.5	
		Sample Date	11/14/2006	11/14/2006	11/14/2006	
chemical_name:	**Method**	**MSSL[2] ng/kg**				**Unit**
Total HpCDF	SW 846 8290	--				ng/kg
Total HxCDD	SW 846 8290	--				ng/kg
Total HxCDF	SW 846 8290	--				ng/kg
Total PeCDD	SW 846 8290	--				ng/kg
Total PeCDF	SW 846 8290	--				ng/kg
Total TCDD	SW 846 8290	--				ng/kg

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
(a) Calculated assuming 0 for non-detected congeners and 2006 toxic equivalency factors (TEFs).
(b) Calculated assuming 1/2 detection limit as proxy for non-detected congeners and 2006 TEFs.
(h) Dioxins and furans were expressed as 2,3,7,8- TCDD TEQ (toxic equivalents), calculated using the TEFs (Toxic Equivalency Factors) published by Van den Berg et al., 2006.
(v) USEPA. 1998. Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites. OSWER Directive 9200.4-26. April, 1998. A value of 1000 ng/kg is applicable to residential soils. The range of 5000 to 20000 ng/kg is applicable to commercial/industrial soils. The Agency for Toxic Substances and Disease Registry (ATSDR) provides a screening level of 50 ng/kg for dioxin in residential soil [http://www.atsdr.cdc.gov/substances/dioxin/policy/].

LOU 59 Area II Table 4
Soil Characterization Data - Metals

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

	Sampling Program		Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
	Boring No.		SA5	SA5	SA5	SA5	SA5	SA6	SA6	SA6	SA6	SA6	SA6
	Sample ID		SA5-0.5	SA5-10	SA5-20	SA5-30	SA5-37	SA6-0.5	SA6-0.5D	SA6-10	SA6-20	SA6-30	SA6-35
	Sample Depth (ft)		0.5	10	20	30	37	0.5	0.5	10	20	30	35
	Sample Date		11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
Metals	**MSSL[2] mg/kg**		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	1.00E+05		**6440**	**5440**	**5450**	**4130**	**12500**	**6160**	**6710**	**6440**	**6220**	**5800**	**12500**
Antimony	4.50E+02		**0.32 J-**	**0.15 J-**	**0.13 J-**	**0.16 J-**	**0.25 J-**	**0.15 J-**	**0.15 J-**	**0.16 J-**	**0.18 J-**	**0.16 J-**	**0.27 J-**
Arsenic	2.80E+02		**3.2**	**2.7**	**2.5**	**10.9**	**27.6**	**2.4**	**3.1**	**3.1**	**4.0**	**4.2**	**24.4**
Barium	1.00E+05		**176 J+**	**129 J+**	**98.2 J+**	**100 J+**	**39.3 J+**	**163 J+**	**149 J+**	**162 J+**	**186 J+**	**143 J+**	**40.1 J+**
Beryllium	2.20E+03		**0.48**	**0.47**	**0.41**	**0.28**	**0.94**	**0.40**	**0.44**	**0.50**	**0.46**	**0.43**	**0.70**
Boron	1.00E+05		6.7 UJ	6.0 UJ	7.0 UJ	17.9 UJ	85.7 UJ	5.2 UJ	5.3 UJ	5.6 UJ	6.0 UJ	5.8 UJ	20.8 UJ
Cadmium	5.60E+02		**0.11**	**0.085**	**0.063**	**0.039 J**	**0.11**	**0.089**	**0.10**	**0.083**	**0.083**	**0.090**	**0.12**
Calcium	--		**22400**	**20700**	**24000**	**47100**	**31600**	**24600**	**19400**	**29300**	**33600**	**25500**	**32500**
Chromium (Total)	7.10E+01		**14.8**	**6.6**	**7.2**	**5.9**	**38.8**	**8.5**	**12.8**	**10.6**	**10.1**	**7.7**	**27.4**
Chromium-hexavalent	5.00E+02		**2.4**	0.23 U	0.24 U	**8.4**	0.33 U	**0.22**	**0.13 J**	0.22 U	0.22 U	0.21 U	**0.21 J**
Cobalt	2.10E+03		**8.8 J-**	**6.9 J-**	**6.1 J-**	**4.2 J-**	**4.5 J-**	**5.4 J-**	**5.9 J-**	**5.6 J-**	**6.4 J-**	**6.3 J-**	**5.2 J-**
Copper	4.20E+04		**14.3 J-**	**10.6 J-**	**11.3 J**	**7.6 J-**	**10.5 J-**	**10.1 J-**	**12.4 J-**	**11.4 J-**	**12.0 J-**	**12.4 J-**	**12.0 J-**
Iron	1.00E+05		**11800**	**10400**	**9680**	**6500**	**11300**	**9600**	**11600**	**11700**	**12000**	**11200**	**12600**
Lead	8.00E+02		**24.2**	**6.2**	**5.5**	**5.6**	**6.6**	**7.1**	**11.5**	**7.6**	**8.1**	**7.4**	**8.3**
Magnesium	--		**7040 J-**	**6850 J-**	**7480 J-**	**7810 J-**	**46100 J-**	**6570 J-**	**7250 J-**	**6730 J-**	**8850 J-**	**6880 J-**	**28300 J-**
Manganese	3.50E+04		**483 J**	**254 J**	**234 J**	**131 J**	**167 J**	**249 J**	**271 J**	**227 J**	**301 J**	**323 J**	**195 J**
Molybdenum	5.70E+03		**0.69**	**0.90**	**0.34 J**	**0.56**	**1.1**	**0.48 J**	**0.64**	**0.46 J**	**0.43 J**	**0.47 J**	**0.95**
Nickel	2.30E+04		**12.7 J-**	**13.7 J-**	**13.1 J-**	**10.1 J-**	**11.4 J-**	**12.8 J-**	**12.6 J-**	**12.1 J-**	**11.9 J-**	**12.2 J-**	**12.5 J-**
Platinum	--		**0.015 J**	0.012 U	0.012 U	0.011 U	**0.018 J**	**0.012 J**	**0.018 J**	**0.018 J**	**0.016 J**	**0.015 J**	**0.022 J**
Potassium	--		**2000 J-**	**1290 J-**	**980 J-**	**1110 J-**	**3110 J-**	**2100 J-**	**2200 J-**	**2030 J-**	**1220 J-**	**1050 J-**	**3180 J-**
Selenium	5.70E+03		0.14 UJ	0.13 UJ	0.13 UJ	0.12 UJ	0.18 UJ	0.12 UJ	0.13 UJ	0.12 UJ	0.12 UJ	0.11 UJ	0.16 UJ
Silver	5.70E+03		**0.13 J**	**0.088 J**	**0.081 J**	**0.074 J**	**0.14 J**	**0.10 J**	**0.13 J**	**0.13 J**	**0.12 J**	**0.12 J**	**0.17 J**
Sodium	--		**1790 J-**	**522 J-**	**532 J-**	**1120 J-**	**4560 J-**	**626 J-**	**560 J-**	**581 J-**	**443 J-**	**699 J-**	**577 J-**
Strontium	1.00E+05		**151 J+**	**200 J+**	**210 J+**	**1120 J+**	**102 J+**	**126 J+**	**101 J+**	**188 J+**	**207 J+**	**299 J+**	**159 J+**
Thallium	--		0.091 U	0.081 U	0.082 U	0.076 U	0.19 U	0.080 U	0.081 U	0.095 U	0.082 U	0.082 U	0.22 U
Tin	--		**0.79**	**0.39**	**0.35**	**0.27**	**0.58**	**0.40**	**0.55**	**0.48**	**0.46**	**0.47**	**0.64**
Titanium	--		**511**	**370**	**366**	**287**	**502**	**361 J**	**616 J**	**549 J**	**463 J**	**507 J**	**530 J**
Tungsten	--		0.41 UJ	0.44 UJ	0.27 UJ	0.33 UJ	0.39 UJ	0.28 UJ	0.30 UJ	0.29 UJ	0.42 UJ	0.39 UJ	0.55 UJ
Uranium	--		**1.1**	**1.1**	**1.0**	**2.3**	**6.1**	**0.80**	**1.0**	**1.0**	**2.1**	**1.8**	**3.7**
Vanadium	5.70E+03		**33.2 J-**	**29.9 J-**	**26.7 J-**	**24.9 J-**	**33.3 J-**	**21.8 J-**	**30.5 J-**	**33.8 J-**	**35.2 J-**	**34.8 J-**	**32.7 J-**
Zinc	1.00E+05		**31.8 J-**	**27.8 J-**	**25.2 J-**	**18.9 J-**	**32.3 J-**	**24.1 J-**	**29.6 J-**	**24.8 J-**	**23.9 J-**	**24.9 J-**	**36.1 J-**
Mercury	3.41E+02	(t)	**0.018 J-**	0.0078 UJ	0.0079 UJ	0.0072 UJ	0.011 UJ	0.0071 UJ	**0.011 J-**	0.0072 UJ	0.0072 UJ	0.007 UJ	0.0099 UJ

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
(t) Value for mercury and compounds.

LOU 59 Area II Table 5
Groundwater Characterization Data - Metals

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	
Well ID:		M12A	M13	
Sample ID		M12A-Z	M13-Z	
Sample Depth (ft)				
Sample Date		05/11/2007	05/09/2007	
Metals	**MCL[2] ug/L**			**Units**
Aluminum	5.00E+01 j	786 U	197 U	ug/L
Antimony	6.00E+00	50.0 U	12.5 U	ug/L
Arsenic	1.00E+01	**700**	**51.6 J**	ug/L
Barium	2.00E+03	24.7 U	10.7 U	ug/L
Beryllium	4.00E+00	8.8 U	2.2 U	ug/L
Boron	7.30E+03	3340 U	**2680**	ug/L
Cadmium	5.00E+00	5.7 U	1.4 U	ug/L
Calcium	--	**50100**	**204000**	ug/L
Chromium (Total)	1.00E+02	**12800**	**292**	ug/L
Chromium-hexavalent	1.09E+02	**14000**	0.20 UJ	ug/L
Cobalt	7.30E+02	31.3 U	7.8 U	ug/L
Copper	1.30E+03 p	25.0 U	6.3 U	ug/L
Iron	3.00E+02 j	940 UJ	**4370 J-**	ug/L
Lead	1.50E+01 u	49.2 U	12.3 U	ug/L
Magnesium	1.50E+05 a	**19000**	**94700**	ug/L
Manganese	5.00E+01 j	140 U	**1580**	ug/L
Molybdenum	1.82E+02	**51.1 J**	**32.5 J**	ug/L
Nickel	7.30E+02	51.7 U	12.9 U	ug/L
Platinum	--	10.0 U	2.5 U	ug/L
Potassium	--	**44400**	**13500**	ug/L
Selenium	5.00E+01	100 U	25.0 U	ug/L
Silver	1.00E+02 j	20.3 U	5.1 U	ug/L
Sodium	--	**2330000**	**613000**	ug/L
Strontium	2.19E+04	**1620**	**5000**	ug/L
Thallium	2.00E+00	32.0 U	8.0 U	ug/L
Tin	2.19E+04	20.0 U	5.0 U	ug/L
Titanium	1.46E+05	39.1 U	9.8 U	ug/L
Tungsten	--	50.0 U	12.5 U	ug/L
Uranium	3.00E+01	**39.4 J**	**23.8 J**	ug/L
Vanadium	3.65E+01	160 UJ	40.0 U	ug/L
Zinc	5.00E+03 j	100 U	48.1 U	ug/L
Mercury	2.00E+00	0.093 U	0.093 U	ug/L

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
(j) Secondary Drinking Water Regulation value.
(p) The national primary drinking water regulations (b) lists a treatment technology action level of 1.3 mg/l as the MCL for Copper. Therefore, the secondary value is not used.
(u) See footnote (b). Treatment technology action level.
(a) NAC 445A.455 Secondary standards. Certain provisions of the National Primary Drinking Water Regulations are adopted by reference (NAC 445A.4525). These values are listed in the first column of this table and are therefore not listed again here. Only NAC 445A.455 Secondary standards are listed.

LOU 59 Area II Table 6
Groundwater Characterization Data - Routine Monitoring [1]

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Well ID	Date	Depth to water (ft)	Perchlorate mg/L	Qual	MCL [2] mg/L	Total Chromium mg/L	Qual	MCL [2] mg/L	TDS mg/L	Qual	MCL [2] mg/L	Nitrate (as N) mg/L	Qual	MCL [2] mg/L	Chlorate mg/L	Qual	MCL [2] mg/L
M-12A	2/2/2006	---	360	d	1.80E-02 a,m	13	d	1.00E-01	10230		5.00E+02 j			1.00E+01			--
M-12A	5/4/2006	---	340	d	1.80E-02 a,m	12	d	1.00E-01	8760		5.00E+02 j	<0.1	ud	1.00E+01	2600	d	--
M-12A	8/2/2006	---	312	d	1.80E-02 a,m	12	d	1.00E-01	5640		5.00E+02 j	13	d	1.00E+01	1260	d	--
M-12A	11/1/2006	---	288	d	1.80E-02 a,m	12	d	1.00E-01	7270		5.00E+02 j	14.1	d	1.00E+01	2540	d	--
M-12A	2/1/2007	---	291		1.80E-02 a,m	12		1.00E-01	7820		5.00E+02 j			1.00E+01			--
M-12A	5/3/2007	---	283	J	1.80E-02 a,m	12		1.00E-01	7910	J	5.00E+02 j	18.2	d	1.00E+01	1980	d	--
M-12A	8/1/2007	---	320		1.80E-02 a,m	13		1.00E-01	7890		5.00E+02 j			1.00E+01			--
M-13	5/3/2006	---	27	d	1.80E-02 a,m	1.8	d	1.00E-01	2680		5.00E+02 j	<0.1	ud	1.00E+01	390	d	--
M-13	5/3/2007	---	18.6	J	1.80E-02 a,m	0.8		1.00E-01	3310	J	5.00E+02 j	5.64	d	1.00E+01	255	d	--
M-21	5/3/2006	---	32	d	1.80E-02 a,m	1.5	d	1.00E-01	3650		5.00E+02 j			1.00E+01			--
M-21	5/2/2007	---	3.05		1.80E-02 a,m	1.4		1.00E-01	3460		5.00E+02 j			1.00E+01			--
M-50	2/2/2006	46.44	970	d	1.80E-02 a,m	39	d	1.00E-01			5.00E+02 j			1.00E+01			--
M-50	5/3/2006	46.58	870	d	1.80E-02 a,m	37	d	1.00E-01	11700		5.00E+02 j			1.00E+01			--
M-50	8/2/2006	46.66	856	d	1.80E-02 a,m	34	d	1.00E-01	10400		5.00E+02 j			1.00E+01			--
M-50	11/1/2006	46.65	1030	d	1.80E-02 a,m	34	d	1.00E-01	13500		5.00E+02 j			1.00E+01			--
M-50	1/31/2007	46.66	801		1.80E-02 a,m	32		1.00E-01	14000		5.00E+02 j			1.00E+01			--
M-50	5/2/2007	46.53	776		1.80E-02 a,m	31		1.00E-01	12400		5.00E+02 j			1.00E+01			--
M-50	8/1/2007	47.02	1080		1.80E-02 a,m	29		1.00E-01	14100		5.00E+02 j			1.00E+01			--

Notes
1. ENSR, 2007, Quarterly Performance Report for Remediation Systems, Tronox LLC, Henderson, Nevada, July-September 2007, November 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
(a) NAC 445A.455 Secondary standards. Certain provisions of the National Primary Drinking Water Regulations are adopted by reference (NAC 445A.4525). These values are listed in the first column of this table and are therefore not listed again here. Only NAC 445A.455 Secondary standards are listed.
(m) Equal to the provisional action level derived by NDEP as referenced in "Defining a Perchlorate Drinking Water Standard". NDEP Bureau of Corrective Action. URL: [http://ndep.nv.gov/bca/perchlorate02_05.htm].
(j) Secondary Drinking Water Regulation value.

< = less than the reporting limit
Blank cell or --- = no data and or no qualifier
Qual = data qualifiers applied by laboratory or during data validation
TDS = Total Dissolved Solids
mg/l = milligram per liter

Laboratory Qualifiers:
d = the sample was diluted
ud = the sample was dilluted and was not detected above the sample reporting limit

Validation Qualifiers:

J = the result is an estimated quantity

LOU 59 Area II Table 7
Soil Characterization Data - Organochlorine Pesticides - (OCPs)

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A	Ph A	
	Boring No.	SA5	SA6	SA6	
	Sample ID	SA5-0.5	SA6-0.5	SA6-0.5D	
	Sample Depth (ft)	0.5	0.5	0.5	
	Sample Date	11/14/2006	11/14/2006	11/14/2006	
Organochlorine Pesticides	**MSSL[2] mg/kg**				**Units**
4,4'-DDD	1.10E+01	0.0022 U	0.0018 U	0.0020 U	mg/kg
4,4'-DDE	7.80E+00	0.0022 U	0.0018 U	0.0020 U	mg/kg
4,4'-DDT	7.80E+00	0.0022 U	0.0018 U	0.0020 U	mg/kg
Aldrin	1.10E-01	0.0022 U	0.0018 U	0.0020 U	mg/kg
Alpha-BHC	4.00E-01	0.0022 U	0.0018 U	0.0020 U	mg/kg
Alpha-chlordane	1.40E+00 (y)	0.0022 U	0.0018 U	0.0020 U	mg/kg
Beta-BHC	1.40E+00	**0.0035**	0.0018 U	0.0020 U	mg/kg
Delta-BHC	--	0.0022 U	0.0018 U	0.0020 U	mg/kg
Dieldrin	1.20E-01	0.0022 U	0.0018 U	0.0020 U	mg/kg
Endosulfan I	4.10E+03 (aa)	0.0022 U	0.0018 U	0.0020 U	mg/kg
Endosulfan II	4.10E+03 (aa)	0.0022 U	0.0018 U	0.0020 U	mg/kg
Endosulfan Sulfate	4.10E+03 (aa)	0.0022 U	0.0018 U	0.0020 U	mg/kg
Endrin	2.10E+02	0.0022 U	0.0018 U	0.0020 U	mg/kg
Endrin Aldehyde	2.10E+02 (k)	0.0022 U	0.0018 U	0.0020 U	mg/kg
Endrin Ketone	2.10E+02 (k)	0.0022 U	0.0018 U	0.0020 U	mg/kg
Gamma-BHC (Lindane)	1.90E+00	0.0022 U	0.0018 U	0.0020 U	mg/kg
Gamma-Chlordane	1.40E+00 (y)	0.0022 U	0.0018 U	0.0020 U	mg/kg
Heptachlor	4.30E-01	0.0022 U	0.0018 U	R	mg/kg
Heptachlor Epoxide	2.10E-01	0.0022 U	0.0018 U	0.0020 U	mg/kg
Methoxychlor	3.40E+03	0.0043 UJ	0.0035 UJ	0.0038 UJ	mg/kg
Tech-Chlordane	1.40E+00	0.013 U	0.011 U	0.012 U	mg/kg
Toxaphene	1.70E+00	0.065 U	0.053 U	0.058 U	mg/kg

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
(y) Value for chlordane (technical) used as surrogate for alpha-chlordane and gamma-chlordane based on structural similarities.
(aa) Value for endosulfan used as surrogate for endosulfan I, endosulfan II and endosulfan sulfate based on structural similarities.
(k) Value for endrin used as surrogate for endrin aldehyde and endrin ketone due to structural similarities.

LOU 59 Area II Tables 8
Groundwater Characterization- Organochlorine Pesticides

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A	
	Well ID	M12A	M13	
	Sample ID	M12A	M13	
	Sample Date	12/05/2006	12/01/2006	
Organochlorine Pesticides	**MCL[2] ug/L**			**Unit**
4,4'-DDD	2.80E-01	0.050 U	0.050 U	ug/L
4,4'-DDE	1.98E-01	0.050 U	0.050 U	ug/L
4,4'-DDT	1.98E-01	0.050 U	0.050 U	ug/L
Aldrin	4.00E-03	0.050 U	0.050 U	ug/L
Alpha-BHC	1.10E-02	0.050 U	0.050 U	ug/L
Alpha-chlordane	2.00E+00 (l)	0.050 U	0.050 U	ug/L
Beta-BHC	3.74E-02	0.050 U	0.050 U	ug/L
Delta-BHC	1.10E-02 (z)	0.050 U	0.050 U	ug/L
Dieldrin	4.20E-03 (z)	0.050 U	0.050 U	ug/L
Endosulfan I	2.19E+02 (aa)	0.050 U	0.050 U	ug/L
Endosulfan II	2.19E+02 (aa)	0.050 U	0.050 U	ug/L
Endosulfan Sulfate	2.19E+02 (aa)	0.050 U	0.050 U	ug/L
Endrin	2.00E+00	0.050 U	0.050 U	ug/L
Endrin Aldehyde	1.09E+01 (k)	0.050 U	0.050 U	ug/L
Endrin Ketone	1.09E+01 (k)	0.050 U	0.050 U	ug/L
Gamma-BHC (Lindane)	2.00E-01	0.050 U	0.050 U	ug/L
Gamma-Chlordane	2.00E+00 (l)	0.050 U	0.050 U	ug/L
Heptachlor	4.00E-01	0.050 U	0.050 U	ug/L
Heptachlor Epoxide	2.00E-01	0.050 U	0.050 U	ug/L
Methoxychlor	4.00E+01	0.10 U	0.10 U	ug/L
Tech-Chlordane	2.00E+00 (l)	0.50 U	0.50 U	ug/L
Toxaphene	3.00E+00	2.0 U	2.0 U	ug/L

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
(l) Value for chlordane used as surrogate for alpha-chlordane, chlordane (technical) and gamma-chlordane due to structural similarities.
(z) Value for alpha-BHC used as surrogate for delta-BHC based on structural similarities.
(aa) Value for endosulfan used as surrogate for endosulfan I, endosulfan II and endosulfan sulfate based on structural similarities.
(k) Value for endrin used as surrogate for endrin aldehyde and endrin ketone due to structural similarities.

LOU 59 Area II Table 9
Soil Characterization Data - Organophosphorus Pesticides (OPPs)

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	Ph A	
Boring No.		SA5	SA6	SA6	
Sample ID		SA5-0.5	SA6-0.5	SA6-0.5D	
Sample Depth (ft)		0.5	0.5	0.5	
Sample Date		11/14/2006	11/14/2006	11/14/2006	
OPPs	**MSSL[2] mg/kg**				**Unit**
Azinphos-methyl	--	0.017 UJ	0.014 UJ	0.015 UJ	mg/kg
Bolstar	--	0.017 U	0.014 U	0.015 U	mg/kg
Chlorpyrifos	2.10E+03	0.026 U	0.021 U	0.023 U	mg/kg
Coumaphos	--	0.017 UJ	0.014 UJ	0.015 UJ	mg/kg
Demeton-O	--	0.050 U	0.041 U	0.045 U	mg/kg
Demeton-S	--	0.019 U	0.016 U	0.017 U	mg/kg
Diazinon	6.20E+02	0.028 U	0.023 U	0.026 U	mg/kg
Dichlorvos	6.60E+00	0.030 U	0.024 U	0.027 U	mg/kg
Dimethoate	--	**0.013 J**	**0.011 J**	**0.012 J**	mg/kg
Disulfoton	2.70E+01	0.062 U	0.051 U	0.056 U	mg/kg
EPN	--	0.017 U	0.014 UJ	0.015 U	mg/kg
Ethoprop	--	0.019 U	0.016 U	0.017 U	mg/kg
Ethyl Parathion	4.10E+03	0.023 U	0.019 U	0.021 U	mg/kg
Famphur	--	0.017 UJ	0.014 UJ	0.015 UJ	mg/kg
Fensulfothion	--	0.017 U	0.014 U	0.015 U	mg/kg
Fenthion	1.70E+02 (ff)	0.043 U	0.035 U	0.038 U	mg/kg
Malathion	1.40E+04	0.019 U	0.016 U	0.017 U	mg/kg
Merphos	--	0.039 U	0.032 U	0.035 U	mg/kg
Methyl parathion	1.70E+02	0.026 U	0.021 U	0.023 U	mg/kg
Mevinphos	--	0.019 U	0.016 U	0.017 U	mg/kg
Naled	1.40E+03	0.043 UJ	0.035 UJ	0.038 UJ	mg/kg
Phorate	--	0.026 U	0.021 U	0.023 U	mg/kg
Ronnel	3.40E+04	0.023 U	0.019 UJ	0.021 U	mg/kg
Stirphos	--	0.019 UJ	0.016 UJ	0.017 UJ	mg/kg
Sulfotep	--	0.026 U	0.021 U	0.023 U	mg/kg
Thionazin	--	0.023 U	0.019 U	0.021 U	mg/kg
Tokuthion	--	0.026 U	0.021 U	0.023 U	mg/kg
Trichloronate	--	0.026 U	0.021 U	0.023 U	mg/kg

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
(ff) Value for methyl parathion used as surrogate for fenthion based on structural similarities.

LOU 59 Area II Table 10
Groundwater Characterization - Organophosphorus Pesticides (OPPs)

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A	
	Well ID	M12A	M13	
	Sample ID	M12A	M13	
	Sample Date	12/05/2006	12/01/2006	
OPPs	**MCL[2] ug/L**			**Unit**
Azinphos-methyl	--	2.5 U	2.5 UJ	ug/L
Bolstar	--	1.0 U	1.0 U	ug/L
Chlorpyrifos	1.09E+02	1.0 U	1.0 U	ug/L
Coumaphos	--	1.0 U	1.0 U	ug/L
Demeton-O	1.46E+00 (cc)	1.0 U	1.0 U	ug/L
Demeton-S	1.46E+00 (cc)	1.0 UJ	1.0 U	ug/L
Diazinon	3.28E+01	1.0 U	1.0 U	ug/L
Dichlorvos	2.32E-01	1.0 U	1.0 U	ug/L
Dimethoate	7.30E+00	1.0 U	1.0 U	ug/L
Disulfoton	1.46E+00	0.50 U	0.50 U	ug/L
EPN	3.65E-01	1.2 U	1.2 U	ug/L
Ethoprop	--	0.50 U	0.50 U	ug/L
Ethyl Parathion	9.12E+00 (tt)	1.0 U	1.0 U	ug/L
Famphur	--	1.0 U	1.0 U	ug/L
Fensulfothion	--	2.5 U	2.5 U	ug/L
Fenthion	9.10E+00 (ff)	2.5 U	2.5 U	ug/L
Malathion	7.30E+02	1.2 U	1.2 U	ug/L
Merphos	1.09E+00	5.0 U	5.0 U	ug/L
Methyl parathion	9.12E+00	4.0 U	4.0 U	ug/L
Mevinphos	--	6.2 U	6.2 U	ug/L
Naled	7.30E+01	1.0 UJ	1.0 UJ	ug/L
Phorate	7.30E+00	1.2 UJ	1.2 U	ug/L
Ronnel	1.82E+03	10 U	10 U	ug/L
Stirphos	--	3.5 U	3.5 U	ug/L
Sulfotep	1.82E+01	1.5 U	1.5 U	ug/L
Thionazin	--	1.0 U	1.0 U	ug/L
Tokuthion	--	1.6 U	1.6 U	ug/L
Trichloronate	--	0.50 U	0.50 U	ug/L

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
(cc) Value for demeton used as surrogate for demeton-o and demeton-s based on structural similarities.
(ff) Value for methyl parathion used as surrogate for fenthion based on structural similarities.
(tt) Value for parathion-methyl used as surrogate for parathion-ethyl due to structural similarities.

LOU 59 Area II Table 11
Soil Characterization Data - PCBs

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
Boring ID		SA5	SA5	SA5	SA5	SA5	SA6	SA6	SA6	SA6	SA6	SA6
Sample ID		SA5-0.5	SA5-10	SA5-20	SA5-30	SA5-37	SA6-0.5	SA6-0.5D	SA6-10	SA6-20	SA6-30	SA6-35
Sample Depth (ft)		0.5	10	20	30	37	0.5	0.5	10	20	30	35
Sample Date		11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
PCBs	MSSL[2] mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aroclor-1016	2.40E+01 (i)	0.043 U	0.038 U	0.039 U	0.036 U	0.055 U	0.035 U	0.038 U	0.036 U	0.036 U	0.035 U	0.049 U
Aroclor-1221	8.30E-01 (i)	0.043 U	0.038 U	0.039 U	0.036 U	0.055 U	0.035 U	0.038 U	0.036 U	0.036 U	0.035 U	0.049 U
Aroclor-1232	8.30E-01 (i)	0.043 U	0.038 U	0.039 U	0.036 U	0.055 U	0.035 U	0.038 U	0.036 U	0.036 U	0.035 U	0.049 U
Aroclor-1242	8.30E-01 (i)	0.043 U	0.038 U	0.039 U	0.036 U	0.055 U	0.035 U	0.038 U	0.036 U	0.036 U	0.035 U	0.049 U
Aroclor-1248	8.30E-01 (i)	0.043 U	0.038 U	0.039 U	0.036 U	0.055 U	0.035 U	0.038 U	0.036 U	0.036 U	0.035 U	0.049 U
Aroclor-1254	8.30E-01 (i)	0.043 U	0.038 U	0.039 U	0.036 U	0.055 U	0.035 U	0.038 U	0.036 U	0.036 U	0.035 U	0.049 U
Aroclor-1260	8.30E-01 (i)	0.043 U	0.038 U	0.039 U	0.036 U	0.055 U	0.035 U	0.038 U	0.036 U	0.036 U	0.035 U	0.049 U

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008)
(i) For PCBs, the individual Aroclors were compared to the TSCA action level of 10 mg/kg, for high occupancy, restricted (non-residential) use. (40 CFR Part 761; 63 FR 35383-35474, June 29, 1998).

LOU 59 Area II Table 12
Soil Charcaterization - PCBs

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	
Well ID		M12A	M13	
Sample ID		M12A	M13	
Sample Date		12/05/2006	12/01/2006	
PCBs	**MCL[2] ug/L**			**Unit**
Aroclor-1016	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1221	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1232	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1242	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1248	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1254	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1260	5.00E-01 (bb)	0.10 U	0.10 U	ug/L

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
(bb) Value for total PCBs.

LOU 59 Area II Table 13
Soil Characterization Data - Perchlorate

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Boring ID	Sample ID	Sample Depth (ft)	Sample Date	Perchlorate ug/kg	MSSL[1] ug/kg	Sampling Program
SA5	SA5-0.5	0.5	11/14/2006	**14900**	7.95E+05	Ph A[2]
SA5	SA5-10	10	11/14/2006	**112000**	7.95E+05	Ph A
SA5	SA5-20	20	11/14/2006	**66400**	7.95E+05	Ph A
SA5	SA5-30	30	11/14/2006	**19100**	7.95E+05	Ph A
SA5	SA5-37	37	11/14/2006	**375000**	7.95E+05	Ph A
SA6	SA6-0.5	0.5	11/14/2006	**239**	7.95E+05	Ph A
SA6	SA6-0.5D	0.5	11/14/2006	**426**	7.95E+05	Ph A
SA6	SA6-10	10	11/14/2006	**2320**	7.95E+05	Ph A
SA6	SA6-20	20	11/14/2006	**3020**	7.95E+05	Ph A
SA6	SA6-30	30	11/14/2006	**5340**	7.95E+05	Ph A
SA6	SA6-35	35	11/14/2006	**54100**	7.95E+05	Ph A

Notes:
1. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
2. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.

LOU 59 Area II Table 14
Groundwater Characterization - Perchlorate

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Well ID Number	Sample ID	Sample Date	Perchlorate	Units	MCL[1] ug/L	Sampling Program
M12A	M12A	12/05/2006	**323000 J+**	ug/L	1.80E+01 a,(m)	Ph A[2]
M13	M13	12/01/2006	**25300**	ug/L	1.80E+01 a,(m)	Ph A

Notes:
1. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
2. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson Nevada, September 2007.
(a) NAC 445A.455 Secondary standards. Certain provisions of the National Primary Drinking Water Regulations are adopted by reference (NAC 445A.4525). These values are listed in the first column of this table and are therefore not listed again here. Only NAC 445A.455 Secondary standards are listed.
(m) Equal to the provisional action level derived by NDEP as referenced in "Defining a Perchlorate Drinking Water Standard". NDEP Bureau of Corrective Action. URL: [http://ndep.nv.gov/bca/perchlorate02_05.htm].

LOU 59 Area II Table 15
Soil Characterization Data - Radionuclides

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Boring ID Number	Sample ID	Sample Depth (ft)	Date	Ra-226 (gamma) pci/g	Ra-228 (gamma) pci/g	Th-228 (TH MOD) pci/g	Th-230 (TH MOD) pci/g	Th-232 (TH MOD) pci/g	U-233/234 (U MOD) pci/g	U-235/236 (U MOD) pci/g	U-238 (U MOD) pci/g	Sampling Program
SA5	SA5-0.5	0.5	11/14/2006	**1.12 J**	**1.92**							Ph A[1]
SA5	SA5-10	10	11/14/2006	**1.07 J**	**1.66**							Ph A
SA5	SA5-20	20	11/14/2006	**1.1 J**	**1.52**							Ph A
SA5	SA5-30	30	11/14/2006	**2.29**	**1.68**	**0.481 JB**	**2.23**	**0.59 J**	**1.58**	**0.0469 J**	**1.37**	Ph A
SA5	SA5-37	37	11/14/2006	**2.46**	**0.806 J**							Ph A
SA6	SA6-0.5	0.5	11/14/2006	**1.18 J**	**1.87**							Ph A
SA6	SA6-0.5D	0.5	11/14/2006	**1.32 J**	**1.89**							Ph A
SA6	SA6-10	10	11/14/2006	**1.07 J**	**1.8**	**0.601 J**	**0.619 JB**	**0.668 J**	**0.787**	**0.0165 J**	**0.483 J**	Ph A
SA6	SA6-20	20	11/14/2006	**1.21 J**	**1.63**							Ph A
SA6	SA6-30	30	11/14/2006	**1.49 J**	**1.94**							Ph A
SA6	SA6-35	35	11/14/2006	**2.1**	1.1 U							Ph A

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson Nevada, September 2007.

LOU 59 Area II Table 16
Groundwater Characterization - Radionuclides

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Well ID Number	Sample ID	Date	Ra-226 pCi/L	Ra-228 pCi/L	Th-228 pCi/L	Th-230 pCi/L	Th-232 pCi/L	U-233/234 pCi/L	U-235/236 pCi/L	U-238 pCi/L	Sampling Program
M-12A	M-12A-Z	05/11/2007	**0.601 J**	**1.45**							Ph A[1]
M-13	M-13-Z	05/09/2007	0.0728 U	0.152 UJ							Ph A

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.

LOU 59 Area II Table 17
Soil Characterization Data - SVOCs

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

		Sampling Program	Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
		Boring No.	SA5	SA5	SA5	SA5	SA5	SA6	SA6	SA6	SA6	SA6	SA6
		Sample ID	SA5-0.5	SA5-10	SA5-20	SA5-30	SA5-37	SA6-0.5	SA6-0.5D	SA6-10	SA6-20	SA6-30	SA6-35
		Sample Depth (ft)	0.5	10	20	30	37	0.5	0.5	10	20	30	35
		Sample Date	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
SVOC	**Analytical Method**	**MSSL[2] ug/kg**	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,4-Dioxane	non-SIM	1.70E+05	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
2-Methylnaphthalene	non-SIM	2.10E+05 (jj)	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
2-Methylnaphthalene	SIM	2.10E+05 (jj)	8.5 U					7.0 U	7.7 U				
Acenaphthene	non-SIM	3.30E+07	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Acenaphthene	SIM	3.30E+07	8.5 U					7.0 U	7.7 U				
Acenaphthylene	non-SIM	3.30E+07 (pp)	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Acenaphthylene	SIM	3.30E+07 (pp)	8.5 U					7.0 U	7.7 U				
Anthracene	non-SIM	1.00E+08	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Anthracene	SIM	1.00E+08	8.5 U					7.0 U	7.7 U				
Benz(a)anthracene	non-SIM	2.30E+03	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Benz(a)anthracene	SIM	2.30E+03	8.5 U					7.0 U	7.7 U				
Benzo(a)pyrene	non-SIM	2.30E+02	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Benzo(a)pyrene	SIM	2.30E+02	8.5 U					7.0 U	7.7 U				
Benzo(b)fluoranthene	non-SIM	2.30E+03	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Benzo(b)fluoranthene	SIM	2.30E+03	8.5 U					7.0 U	7.7 U				
Benzo(g,h,i)perylene	non-SIM	3.20E+07 (w)	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Benzo(g,h,i)perylene	SIM	3.20E+07 (w)	8.5 U					7.0 U	7.7 U				
Benzo(k)fluoranthene	non-SIM	2.30E+04	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Benzo(k)fluoranthene	SIM	2.30E+04	8.5 U					7.0 U	7.7 U				
bis(2-Ethylhexyl)phthalate	non-SIM	1.40E+05	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Butyl benzyl phthalate	non-SIM	2.40E+05	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Chrysene	non-SIM	2.30E+05	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Chrysene	SIM	2.30E+05	8.5 U					7.0 U	7.7 U				
Dibenz(a,h)anthracene	non-SIM	2.30E+02	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Dibenz(a,h)anthracene	SIM	2.30E+02	8.5 U					7.0 U	7.7 U				
Diethyl phthalate	non-SIM	1.00E+08	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Dimethyl phthalate	non-SIM	1.00E+08	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Di-N-Butyl phthalate	non-SIM	6.80E+07	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Di-N-Octyl phthalate	non-SIM	--	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Fluoranthene	non-SIM	2.40E+07	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Fluoranthene	SIM	2.40E+07	8.5 U					7.0 U	7.7 U				
Fluorene	non-SIM	2.60E+07	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Fluorene	SIM	2.60E+07	8.5 U					7.0 U	7.7 U				
Hexachlorobenzene	non-SIM	1.20E+03	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Hexachlorobenzene	SIM	1.20E+03	**21**					7.0 U	7.7 U				
Indeno(1,2,3-cd)pyrene	non-SIM	2.30E+03	430 U	380 U	390 U	360 U	550 U	350 UJ	380 UJ	360 U	360 U	350 U	490 U

LOU 59 Area II Table 17 (continued)
Soil Characterization Data - SVOCs

Hazardous Waste Storage Area
Tronox Facility - Henderson, Nevada

		Sampling Program	Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
		Boring No.	SA5	SA5	SA5	SA5	SA5	SA6	SA6	SA6	SA6	SA6	SA6
		Sample ID	SA5-0.5	SA5-10	SA5-20	SA5-30	SA5-37	SA6-0.5	SA6-0.5D	SA6-10	SA6-20	SA6-30	SA6-35
		Sample Depth (ft)	0.5	10	20	30	37	0.5	0.5	10	20	30	35
		Sample Date	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
SVOC	**Analytical Method**	**MSSL[2] ug/kg**	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Indeno(1,2,3-cd)pyrene	SIM	2.30E+03	8.5 U					7.0 U	7.7 U				
Naphthalene	non-SIM	2.10E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Naphthalene	non-SIM	2.10E+05	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Naphthalene	SIM	2.10E+05	8.5 U					7.0 U	7.7 U				
Nitrobenzene	non-SIM	1.10E+05	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Octachlorostyrene	non-SIM	--	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Phenanthrene	non-SIM	1.00E+08 (n)	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Phenanthrene	SIM	1.00E+08 (n)	8.5 U					7.0 U	7.7 U				
Pyrene	non-SIM	3.20E+07	430 U	380 U	390 U	360 U	550 U	350 U	380 U	360 U	360 U	350 U	490 U
Pyrene	SIM	3.20E+07	8.5 U					7.0 U	7.7 U				
Pyridine	non-SIM	6.80E+05	2100 U	1900 U	1900 U	1700 U	2700 U	1700 U	1900 U	1700 U	1700 U	1700 U	2400 U

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
(jj) Value for naphthalene used as surrogate for 2-methylnaphthalene based on structural similarities.
(pp) Value for acenaphthene used as surrogate for acenapthylene based on structural similarities.
(w) Value for pyrene used as surrogate for benzo(g,h,i)perylene based on structural similarities.
(n) Value for anthracene used as surrogate for phenanthrene due to structural similarities.

LOU 59 Area II Table 18
Groundwater Characterization - SVOCs

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

		Sampling Program	Ph A[1]	Ph A
		Well No.	M12A	M13
		Sample ID	M12A	M13
		Sample Date	12/05/2006	12/01/2006
SVOCs	**Analytical Method**	**MCL[2] ug/L**	ug/L	ug/L
1,4-Dioxane	non-SIM	6.11E+00	10 U	**9.9**
2-Methylnaphthalene	non-SIM	6.20E+00 (jj)	10 U	10 U
2-Methylnaphthalene	SIM	6.20E+00 (jj)		0.20 U
Acenaphthene	non-SIM	3.65E+02	10 U	10 U
Acenaphthene	SIM	3.65E+02		0.20 U
Acenaphthylene	non-SIM	3.65E+02 (pp)	10 U	10 U
Acenaphthylene	SIM	3.65E+02 (pp)		0.20 U
Anthracene	non-SIM	1.83E+03	10 U	10 U
Anthracene	SIM	1.83E+03		0.20 U
Benz(a)anthracene	non-SIM	9.21E-02	10 U	10 U
Benz(a)anthracene	SIM	9.21E-02		0.20 U
Benzo(a)pyrene	non-SIM	2.00E-01	10 U	10 U
Benzo(a)pyrene	SIM	2.00E-01		0.20 U
Benzo(b)fluoranthene	non-SIM	9.21E-02	10 U	10 U
Benzo(b)fluoranthene	SIM	9.21E-02		0.20 U
Benzo(g,h,i)perylene	non-SIM	1.83E+02 (w)	10 U	10 U
Benzo(g,h,i)perylene	SIM	1.83E+02 (w)		0.20 U
Benzo(k)fluoranthene	non-SIM	9.21E-01	10 U	10 U
Benzo(k)fluoranthene	SIM	9.21E-01		0.20 U
bis(2-Ethylhexyl)phthalate	non-SIM	6.00E+00	10 U	10 U
Butyl benzyl phthalate	non-SIM	7.30E+03	10 U	10 U
Chrysene	non-SIM	9.21E+00	10 U	10 U
Chrysene	SIM	9.21E+00		0.20 U
Dibenz(a,h)anthracene	non-SIM	9.21E-03	10 U	10 U
Dibenz(a,h)anthracene	SIM	9.21E-03		0.20 U
Diethyl phthalate	non-SIM	2.92E+04	10 U	10 U
Dimethyl phthalate	non-SIM	3.65E+05	10 U	10 U
Di-N-Butyl phthalate	non-SIM	3.65E+03	10 U	10 U
Di-N-Octyl phthalate	non-SIM	1.46E+03	10 U	10 U
Fluoranthene	non-SIM	1.46E+03	10 U	10 U
Fluoranthene	SIM	1.46E+03		0.20 U
Fluorene	non-SIM	2.43E+02	10 U	10 U
Fluorene	SIM	2.43E+02		0.20 U
Hexachlorobenzene	non-SIM	1.00E+00	10 U	10 U
Hexachlorobenzene	SIM	1.00E+00		0.20 U
Indeno(1,2,3-cd)pyrene	non-SIM	9.21E-02	10 U	10 U
Indeno(1,2,3-cd)pyrene	SIM	9.21E-02		0.20 U
Naphthalene	non-SIM	6.20E+00	5.0 U	5.0 U
Naphthalene	non-SIM	6.20E+00	10 U	10 U
Naphthalene	SIM	6.20E+00		0.20 U
Nitrobenzene	non-SIM	3.40E+00	10 U	10 U
Octachlorostyrene	non-SIM	--	10 U	10 U

LOU 59 Area II Table 18 (continued)
Groundwater Characterization - SVOCs

Hazardous Waste Storage Area
Tronox Facility - Henderson, Nevada

		Sampling Program	Ph A[1]	Ph A
		Well No.	M12A	M13
		Sample ID	M12A	M13
		Sample Date	12/05/2006	12/01/2006
SVOCs	**Analytical Method**	**MCL[2] ug/L**	ug/L	ug/L
Phenanthrene	non-SIM	1.80E+03 (n)	10 U	10 U
Phenanthrene	SIM	1.80E+03 (n)		0.20 U
Pyrene	non-SIM	1.83E+02	10 U	10 U
Pyrene	SIM	1.83E+02		0.20 U
Pyridine	non-SIM	3.65E+01	20 U	20 U

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
(jj) Value for naphthalene used as surrogate for 2-methylnaphthalene based on structural similarities.
(pp) Value for acenaphthene used as surrogate for acenapthylene based on structural similarities.
(w) Value for pyrene used as surrogate for benzo(g,h,i)perylene based on structural similarities.
(n) Value for anthracene used as surrogate for phenanthrene due to structural similarities.

LOU 59 Area II Table 19
Soil Characterization Data - TPH and Fuel Alcohols

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

				Fuel Alcohols			Total Petroleum Hydrocarbons			
				Ethanol	Ethylene glycol	Methanol	TPH - ORO	TPH - DRO	TPH - GRO	
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
			MSSL[1] mg/kg	--	1.00E+05	1.00E+05	1.00E+02 vv	1.00E+02 vv	1.00E+02 vv	
Boring No.	**Sample ID.**	**Sample Depth (ft)**	**Sample Date**							**Sampling Program**
SA6	SA6-0.5	0.5	11/14/2006	53 UJ	69 UJ	53 UJ	27 U	27 U	0.11 U	Ph A[2]
SA6	SA6-0.5D	0.5	11/14/2006	58 UJ	75 UJ	58 UJ	29 U	29 U	0.12 U	Ph A
SA6	SA6-10	10	11/14/2006	54 UJ	108 UJ	54 UJ	27 U	27 U	0.11 U	Ph A
SA6	SA6-20	20	11/14/2006	54 UJ	85 UJ	54 UJ	27 U	27 U	0.11 U	Ph A
SA6	SA6-30	30.0	11/14/2006	53 UJ	98 UJ	53 UJ	26 U	26 U	0.11 U	Ph A
SA6	SA6-35	35.0	11/14/2006	74 UJ	112 UJ	74 UJ	37 U	37 U	0.15 U	Ph A

Notes:
1. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
2. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
(w) Value for pyrene used as surrogate for benzo(g,h,i)perylene based on structural similarities.

LOU 59 Area II Table 20
Soil Characterization Data - VOCs

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
	Boring No.	SA5	SA5	SA5	SA5	SA5	SA6	SA6	SA6	SA6	SA6	SA6
	Sample ID	SA5-0.5	SA5-10	SA5-20	SA5-30	SA5-37	SA6-0.5	SA6-0.5D	SA6-10	SA6-20	SA6-30	SA6-35
	Sample Depth (ft)	0.5	10	20	30	37	0.5	0.5	10	20	30	35
	Sample Date	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
VOCs	**MSSL[2] ug/kg**	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Naphthalene	2.10E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,1,1,2-Tetrachloroethane	7.60E+03	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,1,1-Trichloroethane	1.40E+06	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,1,2,2-Tetrachloroethane	9.70E+02	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,1,2-Trichloroethane	2.10E+03	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,1-Dichloroethane	2.30E+06	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,1-Dichloroethene	4.70E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,1-Dichloropropene	1.75E+03 (gg)	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,2,3-Trichlorobenzene	2.60E+05 (hh)	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,2,3-Trichloropropane	1.60E+03	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,2,4-Trichlorobenzene	2.60E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,2,4-Trimethylbenzene	2.20E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,2-Dibromo-3-chloropropane	2.00E+01	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,2-Dichlorobenzene	3.70E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,2-Dichloroethane	8.40E+02	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,2-Dichloropropane	8.50E+02	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,3,5-Trimethylbenzene	7.80E+04	6.5 UJ	5.8 U	5.9 UJ	5.4 U	8.3 U	5.3 UJ	5.8 UJ	5.4 UJ	5.4 UJ	5.3 UJ	7.4 U
1,3-Dichlorobenzene	1.40E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,3-Dichloropropane	4.10E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
1,4-Dichlorobenzene	8.10E+03	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
2,2-Dichloropropane	8.50E+02 (ii)	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
2-Butanone	3.40E+07	13 U	12 U	12 U	11 U	17 U	11 U	12 U	11 U	11 U	11 U	15 U
2-Chlorotoluene	5.10E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
2-Hexanone	1.72E+07 (nn)	13 UJ	12 UJ	12 UJ	11 UJ	17 UJ	11 UJ	12 UJ	11 UJ	11 UJ	11 UJ	15 UJ
2-Methoxy-2-methyl-butane	--	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
4-Chlorotoluene	5.10E+05 (ww)	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
4-Isopropyltoluene	--	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
4-Methyl-2-pentanone	1.70E+07	13 U	12 U	12 U	11 U	17 U	11 U	12 U	11 U	11 U	11 U	15 U
Acetone	6.00E+07	13 U	12 U	12 U	11 U	17 U	11 U	12 UJ	11 U	11 U	11 U	15 U
Benzene	1.60E+03	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Carbon tetrachloride	5.80E+02	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Chlorobenzene	5.00E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Chloroethane	7.20E+03	6.5 UJ	5.8 UJ	5.9 UJ	5.4 UJ	8.3 UJ	5.3 UJ	5.8 UJ	5.4 UJ	5.4 UJ	5.3 UJ	7.4 UJ
Chloroform	5.80E+02	6.5 U	5.8 U	**0.79 J**	**19**	**120**	5.3 U	5.8 U	**0.50 J**	5.4 U	5.3 U	**28**
Chloromethane	1.70E+05	6.5 UJ	5.8 UJ	5.9 UJ	5.4 UJ	8.3 UJ	5.3 UJ	5.8 UJ	5.4 UJ	5.4 UJ	5.3 UJ	7.4 UJ
cis-1,2-Dichloroethene	1.60E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
cis-1,3-Dichloropropene	1.75E+03 (gg)	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Dibromochloromethane	2.60E+03	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Dibromomethane	5.90E+05 (xx)	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U

LOU 59 Area II Table 20 (continued)
Soil Characterization Data - VOCs

Hazardous Waste Storage Area
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
	Boring No.	SA5	SA5	SA5	SA5	SA5	SA6	SA6	SA6	SA6	SA6	SA6
	Sample ID	SA5-0.5	SA5-10	SA5-20	SA5-30	SA5-37	SA6-0.5	SA6-0.5D	SA6-10	SA6-20	SA6-30	SA6-35
	Sample Depth (ft)	0.5	10	20	30	37	0.5	0.5	10	20	30	35
	Sample Date	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
VOCs	**MSSL[2] ug/kg**	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Dichlorodifluoromethane	3.40E+05	6.5 UJ	5.8 UJ	5.9 UJ	5.4 UJ	8.3 UJ	5.3 UJ	5.8 UJ	5.4 UJ	5.4 UJ	5.3 UJ	7.4 UJ
Ethyl t-butyl ether	7.90E+04 (kk)	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Ethylbenzene	2.30E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Ethylene dibromide	7.00E+01	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Hexachlorobutadiene	2.50E+04	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
isopropyl ether	--	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Isopropylbenzene	5.80E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Methyl tert butyl ether	7.90E+04	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Methylene chloride	2.20E+04	6.5 U	5.8 UJ	5.9 U	5.4 UJ	8.3 UJ	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 UJ
N-Butylbenzene	2.40E+05	6.5 UJ	5.8 U	5.9 UJ	5.4 U	8.3 U	5.3 UJ	5.8 UJ	5.4 UJ	5.4 UJ	5.3 UJ	7.4 U
N-Propylbenzene	2.40E+05	6.5 UJ	5.8 U	5.9 UJ	5.4 U	8.3 U	5.3 UJ	5.8 UJ	5.4 UJ	5.4 UJ	5.3 UJ	7.4 U
sec-Butylbenzene	2.20E+05	6.5 UJ	5.8 U	5.9 UJ	5.4 U	8.3 U	5.3 UJ	5.8 UJ	5.4 UJ	5.4 UJ	5.3 UJ	7.4 U
Styrene	1.70E+06	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
t-Butyl alcohol	--	13 UJ	12 UJ	12 UJ	11 UJ	17 UJ	11 UJ	12 UJ	11 UJ	11 UJ	11 UJ	15 UJ
tert-Butylbenzene	3.90E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Tetrachloroethene	1.70E+03	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Toluene	5.20E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
trans-1,2-Dichloroethylene	2.00E+05	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
trans-1,3-Dichloropropene	1.75E+03 (gg)	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Trichloroethene	1.00E+02	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Trichlorofluoromethane	1.40E+06	6.5 UJ	5.8 UJ	5.9 UJ	5.4 UJ	8.3 UJ	5.3 UJ	5.8 UJ	5.4 UJ	5.4 UJ	5.3 UJ	7.4 UJ
Vinylchloride	8.60E+02	6.5 U	5.8 U	5.9 U	5.4 U	8.3 U	5.3 U	5.8 U	5.4 U	5.4 U	5.3 U	7.4 U
Xylene (Total)	2.10E+05	13 U	12 U	12 U	11 U	17 U	11 U	12 U	11 U	11 U	11 U	15 U

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
(gg) Value for 1,3-dichloropropene used as surrogate for 1,1-dichloropropene, cis-1,3-dichloropropene and trans-1,3-dichloropropene based on structural similarities.
(hh) Value for 1,2,4-trichlorobenzene used as surrogate for 1,2,3-trichlorobenzene based on structural similarities.
(ii) Value for 1,2-dichloropropane used as surrogate for 2,2-dichloropropane based on structural similarities.
(kk) Value for methyl tertbutyl ether (MTBE) used as surrogate for ethyl-tert-butyl ether (ETBE) based on structural similarities.
(nn) Value for methyl isobutyl ketone used as surrogate for 2-hexanone based on structural similarities.
(ww) Value for 2-chlorotoluene used as surrogate for 4-chlorotoluene based on structural similarities.
(xx) Value for methylene bromide used as surrogate for dibromomethane based on structural similarities.

LOU 59 Area II Table 21
Groundwater Characterization Data - VOCs

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

	Sampling Program		Ph A[1]	Ph A
	Well ID		M12A	M13
	Sample ID		M12A	M13
	Sample Date		12/05/2006	12/01/2006
VOCs	**MCL[2] ug/L**		ug/L	ug/L
Naphthalene	6.20E+00		5.0 U	5.0 U
1,1,1,2-Tetrachloroethane	4.32E-01		5.0 U	5.0 U
1,1,1-Trichloroethane	2.00E+02		5.0 U	**1.6 J**
1,1,2,2-Tetrachloroethane	5.00E+00		5.0 U	5.0 U
1,1,2-Trichloroethane	5.00E+00		5.0 U	5.0 U
1,1-Dichloroethane	8.11E+02		5.0 U	**2.6 J**
1,1-Dichloroethene	7.00E+00		5.0 U	**2.7 J**
1,1-Dichloropropene	3.95E-01	gg	5.0 U	5.0 U
1,2,3-Trichlorobenzene	7.16E+00	hh	5.0 U	5.0 U
1,2,3-Trichloropropane	5.60E-03		5.0 U	5.0 U
1,2,4-Trichlorobenzene	7.00E+01		5.0 U	5.0 U
1,2,4-Trimethylbenzene	1.23E+01		5.0 U	5.0 U
1,2-Dibromo-3-chloropropane	2.00E-01		5.0 UJ	5.0 U
1,2-Dichlorobenzene	6.00E+02		5.0 U	5.0 U
1,2-Dichloroethane	5.00E+00		5.0 U	5.0 U
1,2-Dichloropropane	5.00E+00		5.0 U	5.0 U
1,3,5-Trimethylbenzene	1.23E+01		5.0 U	5.0 U
1,3-Dichlorobenzene	1.83E+02		5.0 U	5.0 U
1,3-Dichloropropane	1.22E+02		5.0 U	5.0 U
1,4-Dichlorobenzene	7.50E+01		5.0 U	5.0 U
2,2-Dichloropropane	1.65E-01	ii	5.0 U	5.0 U
2-Butanone	6.97E+03		10 U	10 U
2-Chlorotoluene	1.22E+02		5.0 U	5.0 U
2-Hexanone	2.00E+03	nn	10 U	10 UJ
2-Methoxy-2-methyl-butane	--		5.0 U	5.0 U
4-Chlorotoluene	1.22E+02	ww	5.0 U	5.0 U
4-Isopropyltoluene	--		5.0 U	5.0 U
4-Methyl-2-pentanone	1.99E+03		10 UJ	10 U
Acetone	5.48E+03		10 U	10 U
Benzene	5.00E+00		5.0 U	5.0 U
Bromobenzene	2.03E+01		5.0 U	5.0 U
Bromochloromethane	1.81E-01	qq	5.0 U	5.0 U
Bromodichloromethane	8.00E+01	r	5.0 U	5.0 U
Bromoform	8.00E+01	r	5.0 U	5.0 U
Bromomethane	8.66E+00		10 UJ	10 UJ
Carbon tetrachloride	5.00E+00		5.0 U	5.0 U
Chlorobenzene	1.00E+02	o	5.0 U	5.0 U
Chloroethane	4.64E+00		5.0 U	5.0 UJ
Chloroform	8.00E+01	r	**1600 J+**	**40**
Chloromethane	1.58E+02		5.0 U	5.0 UJ
cis-1,2-Dichloroethene	7.00E+01		5.0 U	5.0 U
cis-1,3-Dichloropropene	3.95E-01	gg	5.0 U	5.0 U
Dibromochloromethane	8.00E+01	r	5.0 U	5.0 U
Dibromomethane	6.08E+01	xx	5.0 U	5.0 U
Dichlorodifluoromethane	3.95E+02		5.0 U	5.0 UJ
Ethyl t-butyl ether	1.10E+01	kk	5.0 U	5.0 U
Ethylbenzene	7.00E+02		5.0 U	5.0 U
Ethylene dibromide	--		5.0 U	5.0 U

LOU 59 Area II Table 21 (continued)
Groundwater Characterization Data - VOCs

Hazardous Waste Storage Area
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A
	Well ID	M12A	M13
	Sample ID	M12A	M13
	Sample Date	12/05/2006	12/01/2006
VOCs	**MCL[2] ug/L**	ug/L	ug/L
Hexachlorobutadiene	8.62E-01	5.0 U	5.0 U
isopropyl ether	--	5.0 U	5.0 U
Isopropylbenzene	6.58E+02	5.0 U	5.0 U
Methyl tert butyl ether	2.00E+01 a,uu	5.0 U	5.0 U
Methylene chloride	5.00E+00	5.0 U	5.0 U
N-Butylbenzene	2.43E+02	5.0 U	5.0 U
N-Propylbenzene	2.43E+02	5.0 U	5.0 U
sec-Butylbenzene	2.43E+02	5.0 U	5.0 U
Styrene	1.00E+02	5.0 U	5.0 U
t-Butyl alcohol	--	10 UJ	10 UJ
tert-Butylbenzene	2.43E+02	5.0 U	5.0 U
Tetrachloroethene	5.00E+00	**0.93 J**	**0.44 J**
Toluene	1.00E+03	5.0 U	5.0 U
trans-1,2-Dichloroethylene	1.00E+02	5.0 U	5.0 U
trans-1,3-Dichloropropene	--	5.0 U	5.0 U
Trichloroethene	5.00E+00	5.0 U	**33**
Trichlorofluoromethane	--	5.0 U	5.0 UJ
Vinylchloride	2.00E+00	5.0 U	5.0 UJ
Xylene (Total)	1.00E+04	10 U	10 U

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
(gg) Value for 1,3-dichloropropene used as surrogate for 1,1-dichloropropene, cis-1,3-dichloropropene and trans-1,3-dichloropropene based on structural similarities.
(hh) Value for 1,2,4-trichlorobenzene used as surrogate for 1,2,3-trichlorobenzene based on structural similarities.
(ii) Value for 1,2-dichloropropane used as surrogate for 2,2-dichloropropane based on structural similarities.
(nn) Value for methyl isobutyl ketone used as surrogate for 2-hexanone based on structural similarities.
(ww) Value for 2-chlorotoluene used as surrogate for 4-chlorotoluene based on structural similarities.
(qq) Value for bromodichloromethane used as surrogate for bromochloromethane due to structural similarities.
(o) See footnote (b). Listed under synonym monochlorobenzene.
(xx) Value for methylene bromide used as surrogate for dibromomethane based on structural similarities.
(kk) Value for methyl tertbutyl ether (MTBE) used as surrogate for ethyl-tert-butyl ether (ETBE) based on structural similarities.
(a) NAC 445A.455 Secondary standards. Certain provisions of the National Primary Drinking Water Regulations are adopted by reference (NAC 445A.4525). These values are listed in the first column of this table and are therefore not listed again here. Only NAC 445A.455 Secondary standards are listed.
(uu) NDEP, 1998. Oxygenated Fuel Corrective Action Guidance. Draft. October, 12 1998. URL [http://ndep.nv.gov/bca/mtbe_doc.htm].

LOU 59 Area II Table 22
Soil Characterization Data - Long Asbestos Fibers in Respirable Soil Fraction

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

			Long Amphibole Protocol Structures	Long Amphibole Protocol Structures	Long Chrysotile Protocol Structures	Long Chrysotile Protocol Structures	
Boring No.	**Sample ID**	**Sample Date**	s/gPM10	structures/samples	s/gPM10	structures/samples	**Sampling Program**
SA5	SA5	12/07/2006	2980000 U	0	**35800000**	**12**	Ph A[1]
SA6	SA6	12/07/2006	2846000 U	0	2846000 U	0	Ph A

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.

LOU 59 Area II Table 23
Notes for Phase A Data Tables

Storm Sewer System in Area II
Tronox Facility - Henderson, Nevada

Blank	Not analyzed
Bold	Bold values are constituents detected above the laboratory sample quantitation limit.
Gray	Grayed out values are non-detected values with the laboratory sample quantitation limits shown.
B	The result may be a false positive totally attributable to blank contamination.
D	Dissolved Metals
DO	Dissolved Oxygen
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J-	The result is an estimated quantity and the result may be biased low.
J+	The result is an estimated quantity and the result may be biased high.
JB	The result may be biased high partially attributable to blank contamination.
JK	The result is an estimated maximum possible concentration.
R	The result was rejected and unusable due to serious data deficiencies. The presence or absence of the analyte cannot be verified.
S	Soluable metals
T	Total Metals
U	The analyte was analyzed for, but was not detected above the laboratory sample quantitation limit.
UJ	The analyte was not detected above the laboratory sample quantitation limit and the limit is approximate.
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
ml/min	Milliliters per minute
ng/kg	Nanogram per kilogram
nm	Not measured
NTUs	Nephelometric Turbidity Units
ORP	Oxidation-reduction potential
pCi/g	PicoCuries per gram
pci/L	PicoCuries per liter
s/gPM10	Revised protocol structures per gram PM10 fraction dust.
TEF	Toxic Equivalency Factor
TEQ	Toxic Equivalent Concentration
ug/kg	Micrograms per kilogram
ug/L	Micrograms per liter
umhos/cm	MicroSiemens per centimeter
L	Sample ID suffix indicating the sample was collected using low low-flow pumping rates (100-150 ml/min).
F	Sample ID suffix indicating the sample was collected using low-flow pumping rates (150-480 ml/min) and field filtered.
Z	Sample ID suffix indicating the sample was collected using low-flow pumping rates (150-480 ml/min).
*	No analytical data is available for this sample due to a laboratory error.
(a)	Calculated assuming 0 for non-detected congeners and 2006 toxic equivalency factors (TEFs).
(b)	Calculated assuming 1/2 detection limit as proxy for non-detected congeners and 2006 TEFs.
--	Not established