Prepared for:
Tronox LLC
Henderson, Nevada

Revised Phase B Site Investigation Work Plan
Text, Tables, and Figures

Tronox LLC Facility
Henderson, Nevada

AECOM, Inc.
December 2008
Document No.: 04020-023-430

ENSR | AECOM

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December 18, 2008

Shannon Harbour, P.E.
Bureau of Corrective Actions
Special Projects Branch
2030 East Flamingo Road, Suite 230
Las Vegas, NV 89119

Subject: Revised SAP Tables, Figures and Plates for the Phase B Source Area Investigation Work Plans for Areas I, II, III and IV, Tronox LLC Facility, Henderson, Nevada (Facility # H-000539)

Dear Ms. Harbour:

Please find enclosed revised soil and groundwater Sampling and Analysis Plan tables (Table II and Table III respectively) for the four Tronox LLC (Tronox) Phase B area Work Plans; the *Phase B Source Area Investigation Work Plan Area I (Northern LOUs)*, the *Phase B Source Area Investigation Work Plan Area II (Central LOUs)*, the *Phase B Source Area Investigation Work Plan Area III (Eastern LOUs)* and the *Phase B Source Area Investigation Work Plan Area IV (Western and Southern LOUs)*. Supporting these Tables are enclosed Figures 1 to 4 which graphically present revisions and additions to the sampling locations for these four Work Plans.

In addition, a revised Plate A, encompassing all the Work Plan areas is enclosed. Plate A is a red-lined document displaying changes, while Plate A1 is a clean version of the same document.

If you have any comments or questions concerning this correspondence please contact me at (702) 651-2234. Thank you.

Sincerely

Susan M. Crowley, CEM 1428, exp 3-8-09

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Crouse	George	Syngenta		X	
Erickson	Lee	Stauffer		X	
Kelly	Joe	Montrose			
Sundberg	Paul	Montrose		X	
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Richards	Curt	Olin		X	
Bellotti	Michael	Olin		X	
Wilkinson	Craig	Timet		X	
Mack	Joel	Montrose Counsel			

Revised Phase B Work Plan for Areas I, II, III, and IV
Text, Tables, and Figures
Tronox LLC Facility
Henderson, Nevada

Responsible CEM for this project

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and, to the best of my knowledge, comply with all applicable federal, state and local statutes, regulations and ordinances.

Susan M. Crowley, CEM 1428 exp. date 3/8/09

Technical Contributions by:

Keith Bailey, Ph.D.
Michael Flack, PG
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ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
CPA	closed pond areas
CSM	Conceptual Site Model
DDT	Dichloro-diphenyl-trichloroethane
DV	data validation
ECA	Environmental Conditions Assessment
EPA	Environmental Protection Agency
HHRA	Human Health Risk Assessment
LDC	Laboratory Data Corporation
LOU	Letter of Understanding
MnO_2	Manganese dioxide
NaCl	Sodium chloride
$NaClO_3$	Sodium chlorate
$NaClO_4$	Sodium perchlorate
NDEP	Nevada Division of Environmental Protection
OA	organic acids
OPP	organochlorine pesticides
PCB	polychlorinated biphenyls
QA/QC	Quality Assurance/Quality Control
Qal	Quaternary alluvium
SAP	Sampling and Analysis Plans
SCR	Site-related chemicals
SOP	Statement Operating Procedures

1.0 Introduction

Tronox LLC (Tronox) has submitted four Area Sampling and Analysis Plans (SAPs) to the Nevada Division of Environmental Protection (NDEP) as part of the ongoing Phase B Site Investigation for the Tronox Henderson facility. This Environmental Conditions Assessment (ECA) work is being performed under terms of a 1996 Consent Agreement between NDEP and Tronox (then Kerr-McGee Chemical Corporation, NDEP 1996). NDEP has responded with comments on each Area SAP. After receiving conditional approval of the Area I SAP, Tronox initiated sampling in Area I in June 2008, but suspended work in July 2008 due to a combination of financial issues and a desire to ensure that changes being requested by NDEP in all four of the Area SAPs could be incorporated. Several conference calls have subsequently been held between NDEP and Tronox in an effort to identify the most efficient way to proceed with the Phase B work. This revised SAP submission incorporates our understanding of the combined comments and discussions for all four Area SAPs. We hope to receive timely approval of the modified SAPs presented here, to be followed by initiation of the proposed field work.

This response document is organized into five major parts. The first includes a review of the rationale for modifying the Phase B SAPs. A brief summary history of all NDEP correspondence related to the SAPs and copies of all NDEP comment letters and teleconference meeting minutes are attached in **Appendix A** (the comments are not separated by Areas since many of the teleconference discussions covered multiple Area plans). Parts two through five of this submission are tabbed sections for each Phase B Site Investigation Area, including revised soil and groundwater SAP Tables (**Tables 2** and **3** for each Area). Two versions of each Table are included. The first highlights changes being made from the original submission by showing additions with a green background and deletions with a brown background, similar to a red-line strikeout format. The second version is a clean black and white copy of each Table showing only the proposed work, and specifying Quality Assurance/Quality Control (QA/QC) samples such as duplicates, etc. The sampling locations for the four Site Areas being investigated are all shown on **Plate A** including starting and final locations for those borings or wells which are being moved. At NDEP's request, **Plate A1** is also included showing only the final locations for each boring/well. As requested, five copies of **Plates A** and **A1** have been included in the volume submitted to Shannon Harbour, while all other copies of the document contain only one copy of **Plates A** and **A1**. In all SAP Tables being submitted, soil types are shown which include both fine- and coarse-grained facies of the Muddy Creek Formation. Tronox understands that NDEP is considering revising the soil nomenclature and may drop the coarse and fine grain Muddy Creek designations (personal communication from Brian Rakvica, December 8, 2008). Should the final NDEP guidance drop the coarse and fine grain designations, the designations will be revised in the final Phase B Report.

The goal of the overall Phase B Site Investigation is to identify the nature and extent of chemical constituents from 70 potential source areas on the Tronox Site. Results from conducting the four Area SAPs will be combined with data from site-wide soil gas sampling (completed earlier this year), data from the Phase A Site Investigation, and data from a forthcoming work plan for quantifying background concentrations in quaternary alluvium (Qal) groundwater to form the basis for development of a site Human Health Risk Assessment (HHRA). The HHRA is expected to be prepared in the latter half of 2009. As Tronox proposes to modify the HHRA Standard Operating Procedure (SOP) generated by BMI to incorporate commercial/industrial land use and a few other changes, NDEP requested that Tronox provide a red-line/strike out version of Tronox' proposed modifications to the BMI SOP. This SOP will be provided under separate cover.

2.0 Rationale for SAP Modifications

Tronox is proposing several adjustments to the previously submitted SAPs. The adjustments involve a combination of the following:

- Incorporating NDEP review comments into the SAPs, as modified by subsequent NDEP teleconference discussions;
- Modifying sample collection methods and vertical sampling frequency to improve efficiency in the field and to optimize the sampling design; and
- Limiting sampling in areas of the Site for which regulatory closure is not currently being requested (e.g., active production areas).

2.1 Incorporating NDEP Review Comments

NDEP comments on the initial SAP submissions, as modified by telephone discussions, have been incorporated into the SAPs. As noted in the introduction, where corrections have been made, or wells/borings have been added, the changes are shown on the respective SAP Tables highlighted with a green background. Where deletions have been made from the original Table submissions, changes are shown with brown backgrounds.

Tronox has taken the NDEP comments for each Area SAP as the starting point for making the proposed revisions and has not gone back to individual LOU packages. In general, the columns titled "Location Description and Characterized Area Rationale for Investigation" or similar titles in the original SAP submissions have not been modified except to add estimated depths to groundwater for each boring/well. Tronox expects that this approach will facilitate the review process deferring extensive discussion of the individual LOUs to the full Phase B Site Investigation report.

2.2 Optimization/Efficiency Changes

The full list of Tronox' proposed sampling plan adjustments is as follows:

1. Use a Geoprobe® to collect proposed soil samples at depths of 0-0.5 and 10 feet below ground surface (bgs).
2. Reduce the number of soil samples collected between 10 feet bgs and the capillary fringe.
3. Limit the number of soil samples to be analyzed for Organochlorine Pesticides (OCPs) by review of the Conceptual Site Model (CSM).
4. Limit the number of soil and groundwater samples to be analyzed for Organophosphorus Pesticides (OPPs) and organic acids (OAs) by review of the CSM.
5. Limit the number of congener and Aroclor PCB analyses by review of the CSM.
6. Limit sampling in the active production areas of Area III, where closure is not being requested.
7. Reduce possible confusion and review time by showing individual borings/wells only on the Table for the Area in which they are physically located.

8. Partially replace ENSR data validation (DV) efforts with DV services provided by Laboratory Data Corporation (LDC).

The following subsections describe in more detail the proposed SAP modifications related to each of the eight changes above.

3.0 Geoprobe® Program

Recent Tronox Geoprobe® experience in soil gas sampling demonstrated rapid set-up and penetration of alluvial soils. The soil gas investigation demonstrated that this equipment could reach the depth of 5 feet below ground surface (bgs) with relative ease and likely can reach at least 10 feet. In order to increase the sampling efficiency in the field, Tronox proposes to utilize Geoprobe® equipment to collect the soil samples from the 0.5 and 10-foot bgs intervals. As in the original work plans, Roto-sonic drill rigs will be utilized to collect deeper soil samples and in any locations where the Geoprobe® fails to reach the required sampling depth.

Based on recent experience, Tronox anticipates significant increases in sample collection rates using the Geoprobe® equipment.

A BMI SOP for Geoprobe® work has been approved by NDEP. The approved SOP will be used for implementation of this SAP.

4.0 Revision of Soil Sample Intervals

Tronox proposes to collect soil samples at the surface (0-0.5 feet) and 10 feet bgs to evaluate the direct contact risk pathway and determine whether site related chemicals are migrating downward toward groundwater. Soil samples will be collected from the capillary fringe (i.e., 2 feet above the water table) to evaluate whether constituents migrating with groundwater are being sorbed onto soils. However, rather than collecting soil samples at 10-foot intervals between 10 feet bgs and the capillary fringe, Tronox proposes to reduce the sampling frequency.

Tronox proposes to collect soil samples at the following depths:

- 0 feet (Asbestos analysis only collected within the top two inches bgs),
- 0.5 feet bgs,
- 10 feet bgs,
- the capillary fringe, and
- If the capillary fringe is 20 feet or more below the 10 foot sample an additional sample will be taken near the midpoint (see below). If the capillary fringe depth minus 10 feet exceeds 40 feet two additional samples will be collected making the maximum depth between each vertical sample no more than 20 feet.

The capillary fringe sampling depths shown on the SAP Tables were determined by using Tronox May 2008 groundwater data and surface elevations to develop site-wide groundwater elevations. These groundwater elevations were used to estimate the depth to the groundwater at proposed boring locations. The capillary fringe sample depth shown on the revised SAP Tables is located two feet above the estimated depth to groundwater. The actual depth to groundwater will be confirmed as soil sampling is performed.

For clarity, an example calculation of sample depths between the 10 foot bgs and capillary fringe depth is as follows:

If the elevation difference between the 10 foot bgs sample and the capillary fringe does not exceed 40 feet, take the difference between the 10 foot sample depth and the capillary fringe sample depth, divide it by two, and add this value to the 10 foot sample depth, then round to the nearest 5-foot interval.

- If the original sampling plan called for samples to be collected at 0.5, 10, 20, 30, 40, and 42 feet bgs,
  - The difference between 10 feet and 42 feet = 32 feet.
  - Divide 32 feet by two: 32/2= 16 feet
  - Add 16 feet to 10 feet: 16+10 = 26 feet
  - Round to nearest 5-foot interval: 25 feet bgs is the depth for an additional sample.
  - The SAP Table is then revised for this location to indicate that soil samples will be collected at 0.5, 10, 25, and 42 feet. The originally proposed sample depths of 20, 30, and 40 feet are highlighted with a brown background in the color SAP tables to indicate that they have been removed from the SAP. The sample at 25 feet bgs is shown with a green background indicating that it has been added, while the sample at 42 feet bgs is shown with a white background indicating that it was part of the original work plan.

Tronox understands that this approach will reduce the total number of soil samples collected. Data for soils in the 0 to 10 foot bgs "direct contact" zone of the proposed HHRA will not be impacted by the change. Estimation of potential source quantities for leaching constituents from soils between 10 feet bgs and the capillary fringe will involve fewer samples and will require that Tronox use a "conservative" approach in preparing such estimates.

5.0 Rationale for Organochlorine Pesticide Sampling Program

5.1 Soil Sampling for OCPs

There are a limited number of locations on Tronox property where organochlorine pesticides (OCPs) or liquid wastes potentially containing OCPs were produced, stored, conveyed, or potentially disposed. It is proposed that judgmental borings (i.e., boring numbers prefaced with "SA") will be drilled at specific locations and analyzed for OCPs in these areas of the Site. In addition, soils at selected locations along the western boundary of the Tronox Site will be analyzed since OCPs are present in off-site soil to the west of the Site as a result of historic OCP production by other BMI companies. Judgmental boring locations were selected to provide general areal coverage in the western portion of the Site. At those judgmental boring locations where OCPs (and potential related wastes) were not generated, stored, conveyed, or disposed of, OCP sampling is not proposed. All random grid samples will be analyzed for OCPs.

Other than the former Hardesty Chemical site (LOU 4), which may have produced Dichloro-diphenyl-trichloroethane (DDT) and its degradation products on the Tronox Site, Tronox knows of no other on-site pesticide production area. Locations at the Site where OCPs could have been released to the environment include:

- LOU 4 (former Hardesty Chemical Co.) located north of Unit 2. OCPs may be present at this location, as DDT may have been produced and stored here in the 1940s. Soil from borings in LOU 4 will be analyzed for OCPs.
- LOU 60 (Acid Drain System). Liquid effluent potentially containing DDT from LOU 4 could have been conveyed along LOU 60 pipelines. Soil from borings along specific segments of LOU 60 pipelines that carried effluent from off-site sources to the west will also be analyzed for OCPs. Borings located along the LOU 60 conveyance route, specifically from Unit 2 to LOU 1 (the former Trade Effluent Ponds) where effluent was discharged, will also be analyzed for OCPs.
- LOU 1 (former Trade Effluent Ponds). In the 1940s, effluent from the Acid Drain System was discharged into the Trade Effluent Ponds. Soil from select judgmental borings within LOU 1 will be analyzed for OCPs.
- LOU 59 (Storm Sewer System). Surface water that potentially contained OCPs could have entered LOU 59 through storm-water run-off. Soil from borings along segments of LOU 59 that carried effluent from off-site sources west of the Site will be analyzed for OCPs. Additional borings located along the LOU 59 conveyance route specifically from Unit 2 to LOU 5 (Beta Ditch), which was (and still is) the receptor for discharges from LOU 59, will also be analyzed for OCPs.
- LOU 5 (Beta Ditch). LOU 5 was the receptor for discharges from LOU 59. Moreover, effluent discharged into the segment of Beta Ditch west of the Site would have flowed eastward (via surface flow) along Beta Ditch and onto the Tronox property.

Figure 1 shows the locations and proposed sampling depths for OCPs. In the areas where a hydrostatic head could have provided a potential transport mechanism for OCPs into the underlying soil column (marked by blue dots on **Figure 1**), samples collected from depths of 0.5-foot, 10 feet and the capillary fringe will be analyzed for OCPs. Where there is not a hydrostatic head driver (see red dots on **Figure 1**), samples from 0.5 foot and the capillary fringe will be analyzed for OCPs

to evaluate whether wind-blown soils or OCPs migrating with groundwater are being sorbed onto soils. Samples will also be collected from the remaining boring depths (shown on the SAP Tables with the notation "Hold"). These samples will be held for later analysis if OCPs are detected in samples from that same boring which are being analyzed. Tronox understands that the hold time (14 days for extraction) for these "Hold" samples may be exceeded if the samples are subsequently analyzed after results from the first samples are reported; therefore, OCP analyses of the "Hold" samples may be coded (J-flagged) to indicate that values are estimated. Since these analyses will likely be utilized for developing a groundwater source term rather than a direct contact pathway, the J-flagged data should be usable.

As noted above, soils from all proposed random borings (i.e., boring numbers prefaced with "RSA") will be analyzed for OCPs for general site-wide coverage. For the random borings, soil samples collected from 0.5 foot and the capillary fringe will be analyzed for OCPs. Intermediate samples in these borings will be placed on "hold" pending OCP results from the 0.5 foot and capillary fringe samples for those same borings.

5.2 Groundwater Sampling for OCPs

There are no proposed changes to the groundwater sampling program for OCPs that has been previously proposed in the Area work plans submitted to NDEP. All groundwater well samples in the Phase B Site Investigation will be analyzed for OCPs. **Table 3** for each Area and **Figure 3** show the proposed Phase B groundwater well locations to be sampled of OCPs.

6.0 Rationale for Organophosphorus Pesticides and Organic Acids Sampling Program

The Tronox Site is not known to have supported production of OPPs or OAs. The only pesticides thought to have been produced on site are associated with the former Hardesty Chemical site (LOU 4), where OCPs (e.g., DDT) may have been produced (though production records are not available for the operation). Possible migration of OPPs and OAs from sources off-site to the west of the Site prompted NDEP, in its July 21, 2008 letter, to request sampling for OPPs and OAs in soil borings and groundwater samples throughout the Tronox site. Tronox proposes to demonstrate from the CSM, that a reduced number of samples is adequate to characterize migration of OPPs and OAs onto the Site.

6.1 Soil Sampling for OPPs and OAs

Tronox proposes to collect soil samples for OPP and OA analyses from areas along the western portion of the Site (Area I) and from specific locations in Areas II, III, and VI where LOU 5 (Beta Ditch), and segments of LOU 59 (Storm Sewer System) and LOU 60 (Acid Drain System) may have carried OPP and OA constituents onto Tronox property from off-site sources to the west. Two borings are also proposed in the former Hardesty Chemical LOU to confirm the absence of OPPs and OAs. The proposed boring locations are shown on **Figure 2**.

NDEP requested OPP and OA analyses in soil borings and groundwater samples in and downstream of LOU 5 (Beta Ditch), LOU 59 (Storm Drain System), and LOU 60 (Acid Drain System). These LOUs are discussed below:

- LOU 5 (Beta Ditch) – Waste discharges being conveyed to the upper BMI ponds from the various BMI complex companies operating to the west of the Tronox Site flowed across the Site in the Beta Ditch. Some of these flows may have contained OPPs and OAs and therefore some infiltration of these contaminants into soils below the unlined Beta Ditch is possible. Tronox proposes to sample soils along the path of the Beta Ditch for OPPs and OAs.
- LOU 59 (Storm Sewer System) – As shown on **Figure 2**, the gravity flow Storm Drain System picked up water from the area west of the Site and carried it north, then moved east to 6th Street and finally north to the Beta Ditch. Since the drain lines slope to the north, it is highly unlikely that effluent would flow in directions opposite the flow arrows shown on the Figure. Accordingly, Storm Drain locations east of 6th Street (between Units 1 and 2) are not likely to carry constituents from the west. Tronox proposes to sample soils below the LOU 59 pipeline segments that carried off-site process waste from the west.
- LOU 60 (Acid Drain System) – The same argument presented above for LOU 59 applies to LOU 60 and similar sampling for OPPs and OAs is proposed. Entry of OPPs and OAs from west of the Site into the Acid Drain System would be limited to the line running from the southern end of the Site (Grid T-3) northward along 5th Street. That line then joins the other acid drain piping at Unit 1, running eastward along Avenue G towards 9th Street, then north to the conveyance leading to the former Trade Effluent Ponds.
- Based on information provided to Tronox by NDEP (Figure 2-2 of Revision 1.0 Conceptual Site Model, Former Montrose and Stauffer Facilities and Downgradient Areas to Las Vegas Wash, Henderson, Clark County, Nevada, Replacement Pages dated July 25, 2008), the only direct connections for the transfer of liquids potentially containing OPPs and OAs from the west are through the segment of LOU 60 that enters the Tronox Site at Grid O-2 and

through off-site flow from the west onto the Tronox portion of the Beta Ditch. Accordingly, Tronox proposes to sample for OPPs and OAs in the specified segment of LOU 60.

- LOU 1 (Former Trade Effluent Ponds) – In the 1940s, effluent from the Acid Drain System was discharged into the Trade Effluent Ponds. If OPPs and OAs from sources to the west used the Acid Drain System to dispose of process waste then the possibility exists that LOU 1 may have been impacted. Tronox proposes to sample for OPPs and OAs at select borings within LOU
- Along Western Property Line – Surface and capillary fringe sampling along the western edge of the Site in Areas I and IV will be conducted to assess migration of OPPs and OAs from the west.
- While the Hardesty Chemical operation (LOU 4) is not known to have produced OPPs or OAs, two borings in LOU 4 will be sampled for OPPs and OAs to confirm the CSM information.
- Additional locations outside of the areas discussed above will be analyzed for OPPs and OAs. These locations, shown on **Figure 2,** were selected based on wind rose patterns for the area and will provide general coverage across the Site to evaluate the potential transport of these constituents by wind and groundwater.

At locations marked with red dots on **Figure 2**, soil samples will be collected from depths of 0.5-foot bgs and the capillary fringe. These samples will be analyzed for OPPs and OAs to assess potential impacts related to wind-blown dust and to evaluate whether constituents migrating with groundwater are being sorbed onto soils. At locations marked with blue dots, soil samples from a depth of 10 feet bgs will also be analyzed for OPPs and OAs because at these locations, a hydrostatic head could have existed that provided a potential transport mechanism for OCPs into the underlying soil column.

6.2 Groundwater Sampling for OPPs and OAs

OPPs and OAs produced from the various BMI complex companies operating west of the Tronox Site could potentially be carried beneath the Tronox Site via groundwater migration from the west to the north-northeast. Tronox proposes to sample groundwater for OPPs and OAs along the path of groundwater migration from the west and downgradient of the Beta Ditch. Groundwater in the alluvium along the west side of the Site is effectively separated from groundwater on the eastern portion of the Site, by a Muddy Creek “high”. Where alluvial wells are not dry, Tronox proposes to sample groundwater in the alluvium along the western edge of the site. Groundwater in the upper portion of the Muddy Creek formation will also be sampled.

Groundwater samples for OPPs and OAs will be collected from monitoring well locations shown on **Figure 3**. The wells were selected to provide general coverage to evaluate potential migration of OPPs and OAs onto Tronox from off-site sources to the west.

7.0 Rationale for Polychlorinated Biphenyl Sampling Program

Tronox has and continues to operate electrolytic cells on the Henderson Site. NDEP has questioned whether the Tronox electrolytic cells could generate poly-chlorinated biphenyl (PCB) compounds (in their congener form) and has requested that Tronox analyze soil samples for both Aroclor PCBs and congener PCBs using EPA analytical methods 8082 and 1668A, respectively.

Aroclor PCBs are typically associated with electric transformers; these types of transformers have been used at the Site and a spill of PCB-containing transformer oil has been reported. Tronox proposes to utilize EPA method 8082 for analyzing Aroclor PCBs in such areas.

Tronox maintains that the electrolytic cells utilized at the Site can not generate PCB congeners. Tronox proposes that the use of EPA analytical method 1668A be limited to samples from the west side of the Site, where NDEP indicates that PCB congeners generated off-site may be entering Tronox property.

Tronox and its predecessors have operated several types of electrolytic cells on the Site since the 1940s. These include:

- Sodium chlorate cells converting NaCl to NaClO3;
- Sodium perchlorate cells converting NaClO3 to NaClO4; and
- Manganese cells plating MnO2 from manganese sulfate solutions.

Currently, the manganese dioxide cells in Units 5 and 6 (LOU 44) are the only electrolytic cells in operation at the Site. They operate using a sulfate based anolyte and thus do not utilize chlorine needed to form PCBs.

While both the historic sodium chlorate and sodium perchlorate cells generated free chlorine (a degradation product of sodium hypochlorite, an intermediate compound in the electrolytic operation), neither process utilized organic compounds that could produce benzene ring structures which could then be chlorinated to PCBs. Moreover, PCB congeners typically form at temperatures ranging from 400 to 700 degrees Celsius. Tronox electrolytic production processes (both historic and current) operate at temperatures well below the boiling point of water. Thus, it is highly unlikely that Tronox's manufacturing processes would have yielded PCB congeners as byproducts.

Geosyntec Consultants' CSM indicates that the Montrose Chemical Company's closed pond areas (CPAs) have site-related chemicals (SRCs) such as chloroform, chlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene and benzene that have affected both the soil and groundwater beneath and around the CPAs (Geosyntec, Sec 4.2.3). Montrose's SRCs are either organic hydrocarbons or chlorinated hydrocarbons, all of which are possible precursors to PCB byproduct synthesis. In the event that PCBs have been generated off-site through byproduct synthesis and not direct synthesis, EPA method 8082 for commercial mixtures of Aroclor PCBs is unlikely to be effective. EPA method 1668A for PCB congeners will be therefore be utilized at locations along the Tronox western boundary.

7.1 Soil Sampling for PCBs

Based on the discussion above, the following areas will be sampled for PCBs:

- Soil borings along the western property boundary where possible PCB congeners generated off-site may enter Tronox property,
- LOU 5 – Beta Ditch will be tested since off-site wastes flowed across the Tronox Site in the unlined ditch,
- LOU 27 – PCB Storage Area,
- LOU 35 – Former Truck Emptying/Dumping Area (PCBs were detected in Phase A samples),
- LOU 40 – PCB Transformer Spill will be sampled for PCBs, and
- Per NDEP's request, soil borings located near the Western Area Power Association (WAPA) site.

Figure 4 shows the PCB soil sampling locations. Borings identified with a red dot on Figure 4 will be analyzed by Environmental Protection Agency (EPA) Method 8082 for Aroclors. Borings identified with a blue dot will be analyzed using both EPA Method 8082 and EPA Method 1668A for PCB congeners.

NDEP previously requested specific borings be sampled for PCBs. Some of these borings, however, have already been drilled as part of the Area I Phase B source area investigation and were found to contain negligible PCB concentrations (see **Table A**). Other NDEP proposed borings were found to be in areas associated with Tronox electrolytic cells not associated with PCBs (as discussed above). Since no significant concentrations of PCB congeners have been identified over a large area of the Site, Tronox proposes that the following borings requested by NDEP not be sampled for PCB Aroclors or congeners: SA35, SA70, SA175, SA155,,SA158, SA62, SA145, SA61, SA144, SA71, RSAM8, RSAN7, SA151, SA208, SA34, SA177, SA68, and RSAT6.

As with OCP, OPP and OA sampling, Tronox proposes to sample at depths of 0.5 feet bgs and the capillary fringe at locations where a hydrostatic head is not likely to have facilitated downward migration of constituents through the soil column. At locations with a potential for hydraulic head such as the Beta Ditch, an additional sample at 10 feet bgs will be collected.

Soil samples in LOU 64 (former Koch Materials Company Area) and other locations marked with red diamonds on **Figure 4** were collected as part of the Area I Phase B investigation (June-July 2008). Those samples were analyzed for both Aroclors and PCB congeners (see **Table A**).

7.2 Groundwater Sampling for PCBs

Groundwater samples will be analyzed for both Aroclor and congener PCBs at two locations (M-123 and M-125) associated with LOU 35 (former Truck Emptying/Dumping Area). (Aroclor PCBs were detected in soil and groundwater from LOU 35 during Phase A investigation). One location (M-123) has already been sampled as part of the Area I Phase B investigation.

To determine whether PCBs are moving onto the Tronox Site in groundwater from the west, samples from the following wells will be tested using both EPA methods 8082 and 1668A: M-7B, M-5A, M-127, M-125, M-123, TR-2, TR-4, and TR-6.

8.0 Modification to Area III Soil Boring Program Where Closure is Not Being Sought (Removal of Justified Boring Locations)

In the original Phase B Area III SAP submission, Tronox proposed both random (4-acre grid) and judgmental sampling of several LOUs not being proposed for closure due to ongoing plant operations. Tronox now proposes to simplify the Phase B sampling by limiting sampling in areas not proposed for closure to random samples only. In areas of the Site that will remain as active production areas for the foreseeable future (i.e., the Manganese Leach Plant Area, and Units 5 and 6), most judgmental boring locations have been removed from the Area III Soil SAP. The randomly-located borings in these areas will be drilled and these borings remain on **Table 2** (Soil Sampling and Analytical Plan) for Area III as discussed with NDEP (October 1, 2008).

The borings initially proposed in the Area III Work Plan that will not be drilled include the following: SA159, SA78, SA38, SA37, SA174, SA36, and SA177. Boring SA140, which is located in the Mn Leach Plant Area will be drilled since this borehole will be converted to monitoring well M-141.

9.0 Removal of Duplicate Entries on Area Sampling Tables

In the original Area SAPs submitted to NDEP, several borings and wells were listed in Sampling Tables for more than one Area. This was done because the wells/borings were organized according to their listings in the individual LOU Data Packages. For example, in some cases, a well may be downgradient of an LOU in Area II and the same well may be upgradient of an LOU in Area I. To simplify review of this submission, Tronox has removed the duplicate entries and shows the borings and groundwater wells only in the Area in which they are physically located. The color coded **Table 2** and **Table 3** for each Area identifies duplicate listings for borings/wells that have been removed by a brown background and an explanation in the Rationale column.

For Phase B investigation wells located outside of Area boundaries or off-site, the wells are shown on **Table 3** for the Area work plans indicated below:

- Wells located in the north, west, and east of Area I are listed in Table 3 of Area I.
- Wells located off-site and east of Area III are listed in Table 3 of Area III.
- Wells locate on Tronox Parcels F, G, and H area listed in Table 3 of Area IV.

To assist reviewers, should a question arise on which Area includes a specific well or boring, two tables have been provided. **Table B** and **Table C** show alphabetical lists of soil borings and groundwater wells, respectively, along with corresponding Site grid coordinates and the Area SAP in which the well/boring is located.

10.0 Data Validation

To increase efficiencies in the data validation process, Tronox proposes to use Laboratory Data Corporation (LDC) to validate laboratory sample results. ENSR will coordinate the flow of data from the laboratories to LDC and will work with LDC to streamline the Tronox validation process.

11.0 References

Brian Rakvica, 2008, Personal communication via email, Lithologic Nomenclature, December 8, 2008.

NDEP, 1996, Consent Agreement dated August 1, 1996, between the State of Nevada, Department of Conservation and Natural Resources, Division of Environmental Protection and Kerr-McGee Chemical Corporation.

Tables

Table A. Sample-By-Sample Summary of Total Congener PCB Results in Soil
PRELIMINARY UNVALIDATED DATA
Tronox Facility - Henderson, Nevada

Grid Location	Boring ID	Sample ID	Sample Depth	PCBs TEQ Zero Detection Limit (a) (ug/kg)	PCBs TEQ Full Detection Limit (a) (ug/kg)	Total PCBs Zero Detection Limit (a) (mg/kg)	Total PCBs Full Detection Limit (a) (mg/kg)
N-2	RSAN2	RSAN2-0.5B	0.5	4.35E-07	1.80E-04	1.54E-03	1.89E-03
		RSAN2-10B	10	9.37E-07	9.23E-05	3.09E-03	3.35E-03
		RSAN2-20B	20	9.86E-07	5.73E-05	2.17E-03	2.26E-03
		RSAN2-30B	30	1.28E-06	1.93E-04	2.35E-03	3.04E-03
		RSAN2-30BD	30	9.44E-07	3.22E-04	2.54E-03	3.38E-03
		RSAN2-35B	35	9.90E-07	2.03E-04	2.00E-03	2.54E-03
O-2	RSAO2	RSAO2-0.5B	0.5	7.78E-06	2.85E-04	3.42E-03	3.93E-03
		RSAO2-10B	10	1.00E-06	1.08E-04	1.59E-03	2.15E-03
		RSAO2-20B	20	8.08E-07	2.61E-04	1.58E-03	2.03E-03
		RSAO2-20BD	20	9.09E-07	1.50E-04	1.60E-03	2.07E-03
		RSAO2-30B	30	5.64E-07	4.75E-04	1.77E-03	3.15E-03
		RSAO2-33B	33	2.09E-06	3.43E-04	5.33E-03	6.23E-03
O-4	RSAO4	RSAO4-0.5B	0.5	6.15E-06	4.75E-04	1.68E-02	1.70E-02
		RSAO4-10B	10	4.34E-06	2.02E-04	1.45E-02	1.49E-02
		RSAO4-20B	20	5.16E-07	2.77E-04	1.88E-03	2.86E-03
		RSAO4-30B	30	1.34E-06	4.03E-04	2.30E-03	3.32E-03
		RSAO4-36B	36	1.57E-06	3.01E-04	2.51E-03	2.82E-03
O-3	SA180	SA180-0.5B	0.5	2.22E-02	2.22E-02	5.73E-02	5.75E-02
		SA180-10B	10	1.08E-06	1.67E-04	1.84E-03	2.25E-03
		SA180-20B	20	1.13E-03	1.13E-03	1.79E-03	1.90E-03
		SA180-30B	30	1.92E-02	1.92E-02	3.47E-03	4.61E-03
O-3	SA48	SA48-0.5B	0.5	1.75E-02	1.75E-02	2.36E-01	2.36E-01
		SA48-10B	10	1.27E-05	2.13E-04	3.08E-03	4.15E-03
		SA48-20B	20	7.61E-03	7.61E-03	4.65E-02	5.01E-02
		SA48-30B	30	2.61E-06	3.98E-04	1.23E-03	2.00E-03
		SA48-35B	35	6.56E-06	2.38E-04	2.28E-03	2.57E-03
O-3	SA57	SA57-0.5B	0.5	7.75E-03	7.75E-03	5.25E-02	5.32E-02
		SA57-10B	10	7.98E-07	8.10E-05	1.42E-03	1.55E-03
		SA57-20B	20	5.45E-04	5.45E-04	8.60E-04	1.60E-03
		SA57-30B	30	2.34E-03	2.34E-03	1.74E-03	3.11E-03
		Comparison Levels		1 (b)	1 (b)	1.00E+00 TSCA (residential; 1/10 industrial.) (c)	
						2.90E-01 1/10th Region 6 MSSL (d)	

Notes:
MSSL - USEPA Region 6 Medium-Specific Screening Level. March 7, 2008.
PCB - Polychlorinated biphenyl.
TEQ - Toxic Equivalent. Calculated by first multiplying the congener concentration by the Toxic Equivalency Factor (TEF) (Van den Berg et al., 2006) and then summing the resulting values.
TSCA - Toxic Substances Control Act.
Van den Berg, et al. 2006. The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds. Toxicological Sciences 93(2): 223-241.
(a) Total PCB and PCB TEQs were calculated using two different methods for handling non-detected results:
- Results for congeners not detected above the laboratory detection limit were set equal to zero.
- Results for congeners not detected above the laboratory detection limit were set equal to the laboratory detection limit.
(b) USEPA, 1998. Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites. OSWER Directive 9200.4-26. April, 1998. Value for residential soils.
(c) TSCA. 40 CFR Part 761; 63 FR 35383-35474, June 29, 1998.
(d) MSSL. http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm.

Table B. Index to the Proposed Phase B Soil Boring Locations

Tronox Facility - Henderson, Nevada

Boring No.	Grid Location	Area
SA28	U-5	IV
SA29	R-4	IV
SA30	R-6	II
SA31	R-6	II
SA32	R-6	II
SA33	R-7	III
SA34	R-8	III
SA35	O-2	I
SA36	Q-7, Removed by Tronox	III
SA37	Q-8, Removed by Tronox	III
SA38	P-8, Removed by Tronox	III
SA39	O-6	III
SA40	O-6	II
SA41	O-5	II
SA42	O-6	II
SA43	O-6	II
SA44	O-5	II
SA45	O-5	II
SA46	O-4	I
SA47	O-4	I
SA48	O-3	I
SA49	N-7	II
SA50	O-5	II
SA51	O-6	II
SA52	O-7	III
SA53	O-5	II
SA54	O-4	II
SA55	O-4	I
SA56	N-2	I
SA57	O-3	I
SA58	N-5	II
SA59	R-8	III
SA60	N-6	II
SA61	N-8	II
SA62	M-8	II
SA63	M-7	II
SA64	M-6	II
SA65	M-5	II
SA66	M-3	II
SA67	M-2	II
SA68	R-8	III
SA69	M-4	I
SA70	M-5	II
SA71	M-8	II
SA72	L-5	II
SA73	L-6	II
SA74	L-5	I
SA75	L-7	I
SA76	K-6	I
SA77	S-8	III

Boring No.	Grid Location	Area
SA78	P-8, Removed by Tronox	III
SA79	J-8, Removed by NDEP	I
SA82	L-3	I
SA84	Q-4	IV
SA85	N-3	I
SA86	M-7	II
SA87	N-4	I
SA88	K-3	I
SA92	M-7	II
SA94	N-5	II
SA100	M-3	I
SA101	Q-4	IV
SA102	O-5	II
SA103	P-4	IV
SA104	M-5	II
SA105	N-6	II
SA106	O-5	II
SA107	N-7	II
SA108	O-8	III
SA109	O-5	II
SA110	R-3	IV
SA111	R-4	IV
SA112	R-7	III
SA113	N-5	II
SA114	O-5	II
SA115	T-5	IV
SA116	T-5	IV
SA117	P-5	II
SA118	T-6	IV
SA119	T-4	IV
SA120	Q-4	IV
SA121	Q-4	IV
SA122	S-7	II
SA123	L-5	II
SA124	Q-5	II
SA125	R-6	II
SA126	Q-6	II
SA127	J-6	I
SA128	M-4	II
SA129	M-5	II
SA130	P-6	II
SA131	L-8	II
SA132	R-7	III
SA133	R-5	II
SA134	K-3	I
SA135	R-5	IV
SA136	Q-6	II
SA137	O-7	III
SA138	Q-4	IV
SA139	N-8	III

Table B. Index to the Proposed Phase B Soil Boring Locations

Tronox Facility - Henderson, Nevada

Boring No.	Grid Location	Area
SA140	P-7, Removed by Tronox	III
SA141	O-7	III
SA142	O-8	III
SA143	O-8	III
SA144	M-8	II
SA145	M-8	II
SA146	U-4	IV
SA147	U-4	IV
SA148	Q-4	IV
SA149	O-7	III
SA150	N-6	II
SA151	N-6	II
SA152	K-2	I
SA153	O-5	II
SA154	N-7	II
SA155	M-7	II
SA156	Q-5	IV
SA157	N-7	III
SA158	N-8	II
SA159	P-8, Removed by Tronox	III
SA160	N-8	III
SA161	R-6	II
SA165	N-4	II
SA166	O-2	I
SA167	L-5	II
SA169	Q-3	IV
SA170	S-7	II
SA171	O-8	III
SA172	O-5	II
SA173	L-5	II
SA174	Q-8	III
SA175	M-6	II
SA176	O-3	I
SA177	Q-8	III
SA178	O-7	III
SA179	L-5	II
SA180	O-3	I
SA181	O-3	I
SA182	O-4	I
SA183	O-4	I
SA185	O-5	II
SA186	O-5	II
SA187	O-5	II
SA188	O-5	II
SA189	L-4	I
SA190	R-4	IV
SA191	R-4	IV
SA192	R-3	IV
SA193	Q-3	IV
SA196	N-6	II
SA197	M-6	II
SA198	M-6	II

Boring No.	Grid Location	Area
SA200	O-6	II
SA201	I-3	I
SA202	J-3	I
SA203	Q-4	IV
SA204	Q-4	IV
SA205	Q-5	IV
SA206	J-3	I
SA207	O-3	I
SA208	R-6	II
SA209	R-3	IV
SA210	T-8	IV
SA211	Q-3	IV
SA212	Q-3	IV
SA213	Q-4	IV
SA214	Q-5	IV
RSAH3	H-3	I
RSAI2	I-2	I
RSAI3	I-3	I
RSAI4	I-4	I
RSAI5	I-5	I
RSAI7	I-7	I
RSAJ2	J-2	I
RSAJ3	J-3	I
RSAJ5	J-5	I
RSAJ6	J-6	I
RSAJ7	J-7	I
RSAJ8	J-8	I
RSAK2	K-2	I
RSAK3	K-3	I
RSAK4	K-4	I
RSAK5	K-5	I
RSAK6	K-6	I
RSAK7	K-7	I
RSAK8	K-8	I
RSAL2	L-2	I
RSAL3	L-3	I
RSAL4	L-4	I
RSAL5	L-5	I
RSAL6	L-6	II
RSAL7	L-7	I
RSAL8	L-8	I
RSAM2	M-2	I
RSAM3	M-3	I
RSAM4	M-4	I
RSAM5	M-5	II
RSAM6	M-6	II
RSAM7	M-7	II
RSAM8	M-8	II
RSAN2	N-2	I
RSAN3	N-3	I
RSAR3	R-3	IV
RSAR4	R-4	IV

Table B. Index to the Proposed Phase B Soil Boring Locations

Tronox Facility - Henderson, Nevada

Boring No.	Grid Location	Area
RSAN4	N-4	I
RSAN5	N-5	II
RSAN6	N-6	II
RSAN7	N-7	II
RSAN8	N-8	III
RSAO2	O-2	I
RSAO3	O-3	I
RSAO4	O-4	I
RSAO5	O-5	II
RSAO6	O-6	II
RSAO7	O-7	III
RSAO8	O-8	III
RSAP5	P-5	IV
RSAP6	P-6	III
RSAP7	P-7	III
RSAP8	P-8	III
RSAQ3	Q-3	IV
RSAQ4	Q-4	IV
RSAQ5	Q-5	II
RSAQ6	Q-6	II
RSAQ7	Q-7	III
RSAQ8	Q-8	III

Boring No.	Grid Location	Area
RSAR5	R-5	IV
RSAR6	R-6	II
RSAR7	R-7	III
RSAR8	R-8	III
RSAS3	S-3	IV
RSAS4	S-4	IV
RSAS5	S-5	IV
RSAS6	S-6	IV
RSAS7	S-7	IV
RSAS8	S-8	III
RSAT3	T-3	IV
RSAT4	T-4	IV
RSAT5	T-5	IV
RSAT6	T-6	IV
RSAT7	T-7	IV
RSAT8	T-8	IV
RSAU4	U-4	IV
RSAU5	U-5	IV
RSAU6	U-6	IV
RSAU7	U-7	IV

Table C. Index to Phase B Groundwater Well Locations

Tronox Facility - Henderson, Nevada

Monitoring Well No.	Grid Location	Area
AA-BW-02A	J-2	Montrose (assoc. with Area I)
CLD1-R	K-9	Timet (assoc. with Area I)
CLD2-R	L-9	Timet (assoc. with Area II)
CLD3-R	L-10	Timet (assoc. with Area I)
CLD4-R	N-9	Timet (assoc. with Area III)
CLU1	O-10	Timet (assoc. with Area III)
H-11	W-1	Olin (assoc. with Area IV)
H-28A	H-2	Montrose (assoc. with Area I)
H-38	M-1	Olin (assoc. with Area I)
H-48	A-3	Olin (assoc. with Area I)
H-49A	B-3	Olin (assoc. with Area I)
I-AR	L-5	II
I-B	L-5	I
M-2A	N-6	II
M-5A	K-2	I
M-6A	H-2	I
M-7B	H-3	I
M-10	T-7	IV
M-11	Q-7	III
M-12A	Q-6	II
M-13	Q-5	II
M-14A	L-4	I
M-17A	N-6	II
M-19	M-8	II
M-21	O-5	II
M-22A	M-7	II
M-23	H-6	Parcel D (assoc. with Area I)
M-25	L-6	II
M-29	R-8	III
M-31A	P-7	III
M-33	O-8	III
M-34	N-7	II
M-35	N-7	III
M-38	L-6	II
M-39	M-8	I

Monitoring Well No.	Grid Location	Area
M-44	E-5	Parcel B (assoc. with Area I)
M-48	H-8	Parcel J (assoc. with Area I)
M-50	O-6	III
M-52	P-7	III
M-55	L-6	I
M-57A	L-4	I
M-61	L-8	I
M-64	L-6	II
M-65	L-6	I
M-67	L-8	I
M-68	L-8	I
M-69	K-5	I
M-75	N-5	II
M-76	N-5	II
M-77	P-8	III
M-78	L-6	I
M-79	K-5	I
M-83	K-6	I
M-84	K-6	I
M-86	K-7	I
M-88	K-8	I
M-89	M-6	II
M-92	Q-4	IV
M-93	P-4	IV
M-94	E-6	Parcel I (assoc. with Area I)
M-95	E-6	Parcel I (assoc. with Area I)
M-96	E-7	Parcel I (assoc. with Area I)
M-97	P-5	IV
M-98	I-4	I
M-99	I-5	I
M-100	I-6	I
M-101	I-7	I
M-102	J-8	I
M-103	V-7	IV
M-110	M-5	II

Table C. Index to Phase B Groundwater Well Locations

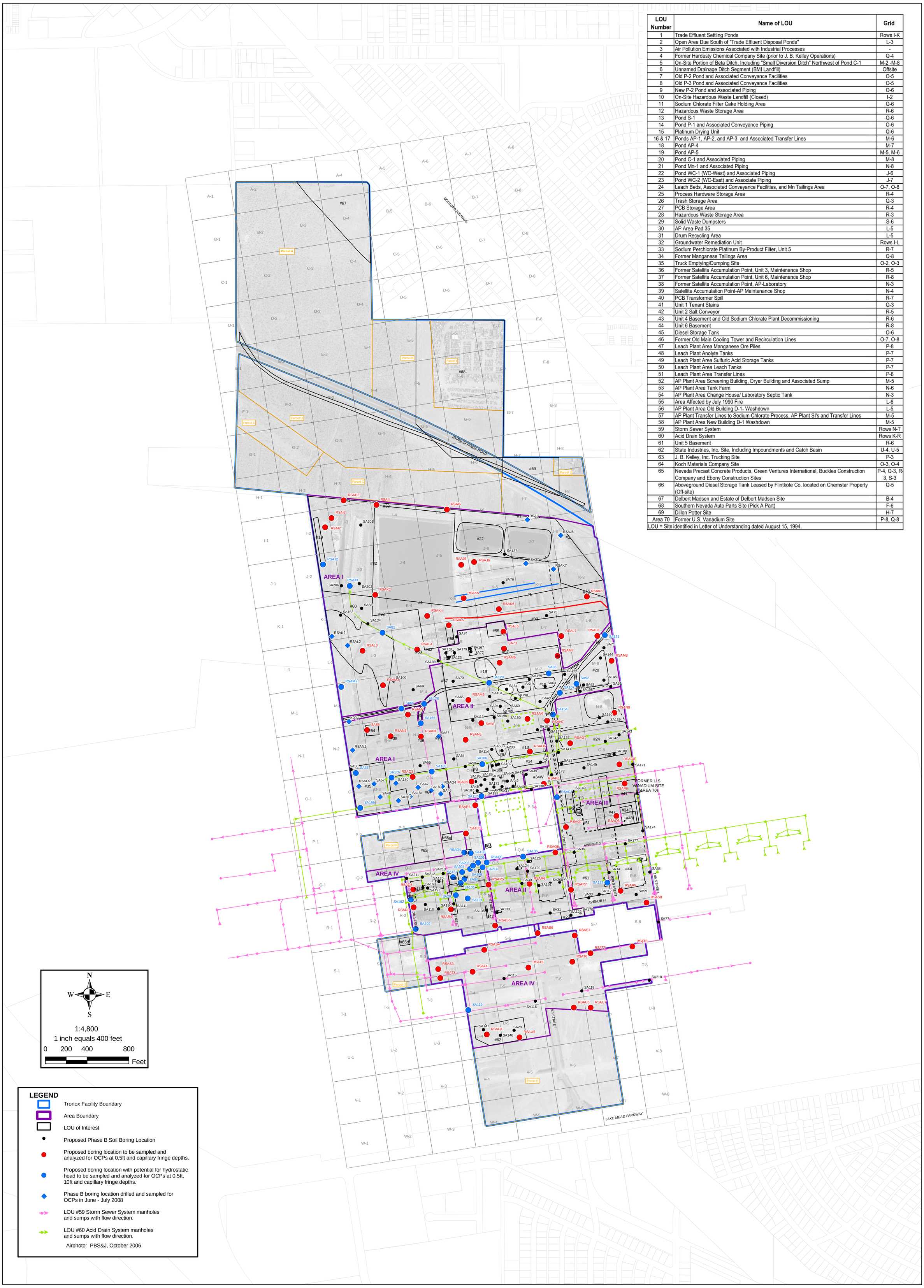
Tronox Facility - Henderson, Nevada

Monitoring Well No.	Grid Location	Area
M-111A	M-5	II
M-117	W-7	Parcel H (assoc. with Area IV)
M-118	W-5	Parcel H (assoc. with Area IV)
M-120	W-6	Parcel H (assoc. with Area IV)
M-121	W-4	Parcel H (assoc. with Area IV)
M-122	Q-8	III
M-123	O-2	I
M-124	O-4	I
M-125	M-3	I
M-126	L-3	I
M-127	L-2	I
M-128	O-4	I
M-129	K-9	Timet (assoc. with Area I)
M-130	L-9	Timet (assoc. with Area I)
M-137	U-4	IV
M-138	U-5	IV
M-139	R-8	III
M-141	P-7	III
M-142	N-4	I
M-143	Q-4	IV
M-144	R-5	IV
M-145	R-8	III
M-146	R-5	II
M-147	N-8	III
M-148	O-8	III
MC-3	G-1	Montrose (assoc. with Area I)
MC-32	H-2	Parcel C (assoc. with Area I)
MC-45	E-1	Parcel D (assoc. with Area I)
MC-53	F-2	Parcel D (assoc. with Area I)
MC-55	G-3	Parcel D (assoc. with Area I)
MC-59	H-3	Parcel D (assoc. with Area I)
MC-62	D-3	Parcel A (assoc. with Area I)
MC-65	E-3	Parcel A (assoc. with Area I)
MC-66	E-3	Parcel A (assoc. with Area I)
MC-94	G-2	Parcel D (assoc. with Area I)
MC-97	G-2	Parcel E (assoc. with Area I)
MW-06R	Q-9	Timet (assoc. with Area III)
MW-16	K-3	I
PC-37	F-4	Parcel B (assoc. with Area I)
PC-40	A-5	Parcel A (assoc. with Area I)
PC-72	D-4	Parcel B (assoc. with Area I)
TR-02	K-2	I
TR-04	M-2	I
TR-06	P-2	Parcel F (assoc. with Area IV)
TR-08	S-2	Parcel G (assoc. with Area IV)
TR-10	U-4	IV

Figures

J:\TronoxGIS\mxd\Phase_B_WorkPlan\LOUs\soil_Samples_for_OCPs.mxd

LOU Number	Name of LOU	Grid
1	Trade Effluent Settling Ponds	Rows I-K
2	Open Area Due South of "Trade Effluent Disposal Ponds"	L-3
3	Air Pollution Emissions Associated with Industrial Processes	-
4	Former Hardesty Chemical Company Site (prior to J. B. Kelley Operations)	Q-4
5	On-Site Portion of Beta Ditch, Including "Small Diversion Ditch" Northwest of Pond C-1	M-2 -M-8
6	Unnamed Drainage Ditch Segment (BMI Landfill)	Offsite
7	Old P-2 Pond and Associated Conveyance Facilities	O-5
8	Old P-3 Pond and Associated Conveyance Facilities	O-5
9	New P-2 Pond and Associated Piping	O-6
10	On-Site Hazardous Waste Landfill (Closed)	I-2
11	Sodium Chlorate Filter Cake Holding Area	Q-6
12	Hazardous Waste Storage Area	R-6
13	Pond S-1	Q-6
14	Pond P-1 and Associated Conveyance Piping	O-6
15	Platinum Drying Unit	Q-6
16 & 17	Ponds AP-1, AP-2, and AP-3 and Associated Transfer Lines	M-6
18	Pond AP-4	M-7
19	Pond AP-5	M-5, M-6
20	Pond C-1 and Associated Piping	M-8
21	Pond Mn-1 and Associated Piping	N-8
22	Pond WC-1 (WC-West) and Associated Piping	J-6
23	Pond WC-2 (WC-East) and Associate Piping	J-7
24	Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area	O-7, O-8
25	Process Hardware Storage Area	R-4
26	Trash Storage Area	Q-3
27	PCB Storage Area	R-4
28	Hazardous Waste Storage Area	R-3
29	Solid Waste Dumpsters	S-6
30	AP Area-Pad 35	L-5
31	Drum Recycling Area	L-5
32	Groundwater Remediation Unit	Rows I-L
33	Sodium Perchlorate Platinum By-Product Filter, Unit 5	R-7
34	Former Manganese Tailings Area	Q-8
35	Truck Emptying/Dumping Site	O-2, O-3
36	Former Satellite Accumulation Point, Unit 3, Maintenance Shop	R-5
37	Former Satellite Accumulation Point, Unit 6, Maintenance Shop	R-8
38	Former Satellite Accumulation Point, AP-Laboratory	N-3
39	Satellite Accumulation Point-AP Maintenance Shop	N-4
40	PCB Transformer Spill	R-7
41	Unit 1 Tenant Stains	Q-3
42	Unit 2 Salt Conveyor	R-5
43	Unit 4 Basement and Old Sodium Chlorate Plant Decommissioning	R-6
44	Unit 6 Basement	R-8
45	Diesel Storage Tank	O-6
46	Former Old Main Cooling Tower and Recirculation Lines	O-7, O-8
47	Leach Plant Area Manganese Ore Piles	P-8
48	Leach Plant Anolyte Tanks	P-7
49	Leach Plant Area Sulfuric Acid Storage Tanks	P-7
50	Leach Plant Area Leach Tanks	P-7
51	Leach Plant Area Transfer Lines	P-8
52	AP Plant Area Screening Building, Dryer Building and Associated Sump	M-5
53	AP Plant Area Tank Farm	N-6
54	AP Plant Area Change House/ Laboratory Septic Tank	N-3
55	Area Affected by July 1990 Fire	L-6
56	AP Plant Area Old Building D-1- Washdown	L-5
57	AP Plant Transfer Lines to Sodium Chlorate Process, AP Plant SI's and Transfer Lines	M-5
58	AP Plant Area New Building D-1 Washdown	M-5
59	Storm Sewer System	Rows N-T
60	Acid Drain System	Rows K-R
61	Unit 5 Basement	R-6
62	State Industries, Inc. Site, Including Impoundments and Catch Basin	U-4, U-5
63	J. B. Kelley, Inc. Trucking Site	P-3
64	Koch Materials Company Site	O-3, O-4
65	Nevada Precast Concrete Products, Green Ventures International, Buckles Construction Company and Ebony Construction Sites	P-4, Q-3, R-3, S-3
66	Aboveground Diesel Storage Tank Leased by Flintkote Co. located on Chemstar Property (Off-site)	Q-5
67	Delbert Madsen and Estate of Delbert Madsen Site	B-4
68	Southern Nevada Auto Parts Site (Pick A Part)	F-6
69	Dillon Potter Site	H-7
Area 70	Former U.S. Vanadium Site	P-8, Q-8
LOU = Site identified in Letter of Understanding dated August 15, 1994.		



LEGEND

- Tronox Facility Boundary
- Area Boundary
- LOU of Interest
- Proposed Phase B Soil Boring Location
- Proposed boring location to be sampled and analyzed for OCPs at 0.5ft and capillary fringe depths.
- Proposed boring location with potential for hydrostatic head to be sampled and analyzed for OCPs at 0.5ft, 10ft and capillary fringe depths.
- Phase B boring location drilled and sampled for OCPs in June - July 2008
- LOU #59 Storm Sewer System manholes and sumps with flow direction.
- LOU #60 Acid Drain System manholes and sumps with flow direction.

Airphoto: PBS&J, October 2006

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PROPOSED SOIL BORING LOCATIONS TO BE SAMPLED FOR ORGANOCHLORINE PESTICIDES (OCPs)

Phase B Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
1" = 400'	12/18/2008	04020-023-430

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T. McAdam	NO.:	DESCRIPTION:	DATE:	BY:
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M. Scop				
CHECKED BY:				
C. Schnell				
APPROVED BY:				
M. Flack				

TRONOX

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LOU Number	Name of LOU	Grid
1	Trade Effluent Settling Ponds	Rows I-K
2	Open Area Due South of "Trade Effluent Disposal Ponds"	L-3
3	Air Pollution Emissions Associated with Industrial Processes	-
4	Former Hardesty Chemical Company Site (prior to J. B. Kelley Operations)	Q-4
5	On-Site Portion of Beta Ditch, Including "Small Diversion Ditch" Northwest of Pond C-1	M-2 -M-8
6	Unnamed Drainage Ditch Segment (BMI Landfill)	Offsite
7	Old P-2 Pond and Associated Conveyance Facilities	O-5
8	Old P-3 Pond and Associated Conveyance Facilities	O-5
9	New P-2 Pond and Associated Piping	O-6
10	On-Site Hazardous Waste Landfill (Closed)	I-2
11	Sodium Chlorate Filter Cake Holding Area	Q-6
12	Hazardous Waste Storage Area	R-6
13	Pond S-1	Q-6
14	Pond P-1 and Associated Conveyance Piping	O-6
15	Platinum Drying Unit	Q-6
16 & 17	Ponds AP-1, AP-2, and AP-3 and Associated Transfer Lines	M-6
18	Pond AP-4	M-7
19	Pond AP-5	M-5, M-6
20	Pond C-1 and Associated Piping	M-8
21	Pond Mn-1 and Associated Piping	N-8
22	Pond WC-1 (WC-West) and Associated Piping	J-6
23	Pond WC-2 (WC-East) and Associate Piping	J-7
24	Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area	O-7, O-8
25	Process Hardware Storage Area	R-4
26	Trash Storage Area	Q-3
27	PCB Storage Area	R-4
28	Hazardous Waste Storage Area	R-3
29	Solid Waste Dumpsters	S-6
30	AP Area-Pad 35	L-5
31	Drum Recycling Area	L-5
32	Groundwater Remediation Unit	Rows I-L
33	Sodium Perchlorate Platinum By-Product Filter, Unit 5	R-7
34	Former Manganese Tailings Area	Q-8
35	Truck Emptying/Dumping Site	O-2, O-3
36	Former Satellite Accumulation Point, Unit 3, Maintenance Shop	R-5
37	Former Satellite Accumulation Point, Unit 6, Maintenance Shop	R-8
38	Former Satellite Accumulation Point, AP-Laboratory	N-3
39	Satellite Accumulation Point-AP Maintenance Shop	N-4
40	PCB Transformer Spill	R-7
41	Unit 1 Tenant Stains	Q-3
42	Unit 2 Salt Conveyor	R-5
43	Unit 4 Basement and Old Sodium Chlorate Plant Decommissioning	R-6
44	Unit 6 Basement	R-8
45	Diesel Storage Tank	O-6
46	Former Old Main Cooling Tower and Recirculation Lines	O-7, O-8
47	Leach Plant Area Manganese Ore Piles	P-8
48	Leach Plant Anolyte Tanks	P-7
49	Leach Plant Area Sulfuric Acid Storage Tanks	P-7
50	Leach Plant Area Leach Tanks	P-7
51	Leach Plant Area Transfer Lines	P-8
52	AP Plant Area Screening Building, Dryer Building and Associated Sump	M-5
53	AP Plant Area Tank Farm	N-6
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55	Area Affected by July 1990 Fire	L-6
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59	Storm Sewer System	Rows N-T
60	Acid Drain System	Rows K-R
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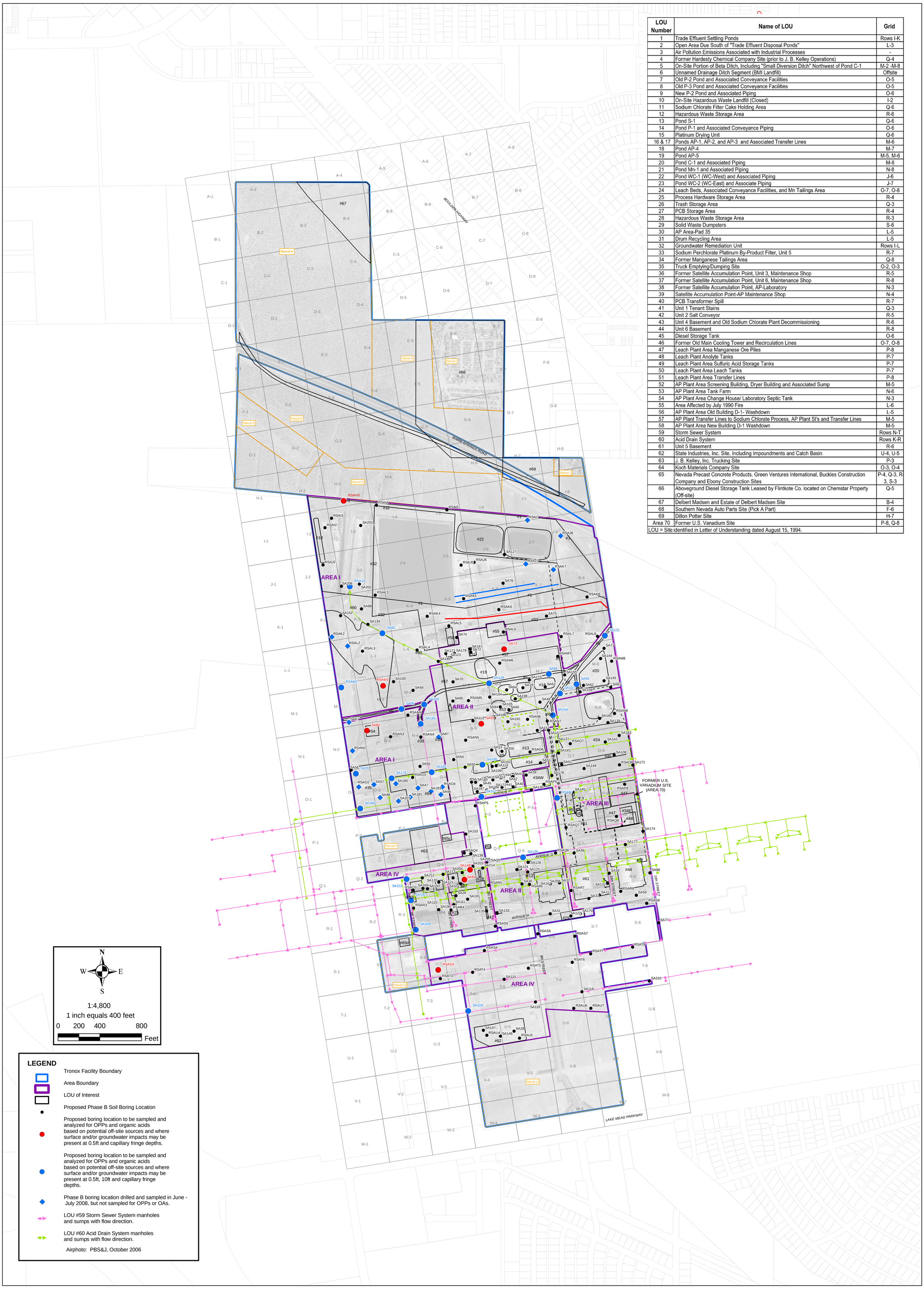
62	State Industries, Inc. Site, Including Impoundments and Catch Basin	U-4, U-5
63	J. B. Kelley, Inc. Trucking Site	P-3
64	Koch Materials Company Site	O-3, O-4
65	Nevada Precast Concrete Products, Green Ventures International, Buckles Construction Company and Ebony Construction Sites	P-4, Q-3, R-3, S-3
66	Aboveground Diesel Storage Tank Leased by Flintkote Co. located on Chemstar Property (Off-site)	Q-5
67	Delbert Madsen and Estate of Delbert Madsen Site	B-4
68	Southern Nevada Auto Parts Site (Pick A Part)	F-6
69	Dillon Potter Site	H-7
Area 70	Former U.S. Vanadium Site	P-8, Q-8
LOU = Site identified in Letter of Understanding dated August 15, 1994.		



LEGEND

- Tronox Facility Boundary
- Area Boundary
- LOU of Interest
- Proposed Phase B Soil Boring Location
- Proposed boring location to be sampled and analyzed for OPPs and organic acids based on potential off-site sources and where surface and/or groundwater impacts may be present at 0.5ft and capillary fringe depths.
- Proposed boring location to be sampled and analyzed for OPPs and organic acids based on potential off-site sources and where surface and/or groundwater impacts may be present at 0.5ft, 10ft and capillary fringe depths.
- Phase B boring location drilled and sampled in June - July 2008, but not sampled for OPPs or OAs.
- LOU #59 Storm Sewer System manholes and sumps with flow direction.
- LOU #60 Acid Drain System manholes and sumps with flow direction.

Airphoto: PBS&J, October 2006

X | SHEET NUMBER: | 2 | FIGURE NUMBER:

PROPOSED SOIL BORING LOCATIONS TO BE SAMPLED FOR OPPs AND ORGANIC ACIDS

Phase B Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
1" = 400'	12/18/2008	04020-023-430

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DRAWN BY:				
M. Scop				
CHECKED BY:				
C. Schnell				
APPROVED BY:				
M. Flack				

TRONOX

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LOU Number	Name of LOU	Grid
1	Trade Effluent Settling Ponds	Rows I-K
2	Open Area Due South of "Trade Effluent Disposal Ponds"	L-3
3	Air Pollution Emissions Associated with Industrial Processes	-
4	Former Hardesty Chemical Company Site (prior to J. B. Kelley Operations)	Q-4
5	On-Site Portion of Beta Ditch, Including "Small Diversion Ditch" Northwest of Pond C-1	M-2 -M-8
6	Unnamed Drainage Ditch Segment (BMI Landfill)	Offsite
7	Old P-2 Pond and Associated Conveyance Facilities	O-5
8	Old P-3 Pond and Associated Conveyance Facilities	O-5
9	New P-2 Pond and Associated Piping	O-6
10	On-Site Hazardous Waste Landfill (Closed)	I-2
11	Sodium Chlorate Filter Cake Holding Area	Q-6
12	Hazardous Waste Storage Area	R-6
13	Pond S-1	Q-6
14	Pond P-1 and Associated Conveyance Piping	O-6
15	Platinum Drying Unit	Q-6
16 & 17	Ponds AP-1, AP-2, and AP-3 and Associated Transfer Lines	M-6
18	Pond AP-4	M-7
19	Pond AP-5	M-5, M-6
20	Pond C-1 and Associated Piping	M-8
21	Pond Mn-1 and Associated Piping	N-8
22	Pond WC-1 (WC-West) and Associated Piping	J-6
23	Pond WC-2 (WC-East) and Associate Piping	J-7
24	Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area	O-7, O-8
25	Process Hardware Storage Area	R-4
26	Trash Storage Area	Q-3
27	PCB Storage Area	R-4
28	Hazardous Waste Storage Area	R-3
29	Solid Waste Dumpsters	S-6
30	AP Area-Pad 35	L-5
31	Drum Recycling Area	L-5
32	Groundwater Remediation Unit	Rows I-L
33	Sodium Perchlorate Platinum By-Product Filter, Unit 5	R-7
34	Former Manganese Tailings Area	Q-8
35	Truck Emptying/Dumping Site	O-2, O-3
36	Former Satellite Accumulation Point, Unit 3, Maintenance Shop	R-5
37	Former Satellite Accumulation Point, Unit 6, Maintenance Shop	R-8
38	Former Satellite Accumulation Point, AP-Laboratory	N-3
39	Satellite Accumulation Point-AP Maintenance Shop	N-4
40	PCB Transformer Spill	R-7
41	Unit 1 Tenant Stains	Q-3
42	Unit 2 Salt Conveyor	R-5
43	Unit 4 Basement and Old Sodium Chlorate Plant Decommissioning	R-6
44	Unit 6 Basement	R-8
45	Diesel Storage Tank	O-6
46	Former Old Main Cooling Tower and Recirculation Lines	O-7, O-8
47	Leach Plant Area Manganese Ore Piles	P-8
48	Leach Plant Anolyte Tanks	P-7
49	Leach Plant Area Sulfuric Acid Storage Tanks	P-7
50	Leach Plant Area Leach Tanks	P-7
51	Leach Plant Area Transfer Lines	P-8
52	AP Plant Area Screening Building, Dryer Building and Associated Sump	M-5
53	AP Plant Area Tank Farm	N-6
54	AP Plant Area Change House/ Laboratory Septic Tank	N-3
55	Area Affected by July 1990 Fire	L-6
56	AP Plant Area Old Building D-1- Washdown	L-5
57	AP Plant Transfer Lines to Sodium Chlorate Process, AP Plant SI's and Transfer Lines	M-5
58	AP Plant Area New Building D-1 Washdown	M-5
59	Storm Sewer System	Rows N-T
60	Acid Drain System	Rows K-R
61	Unit 5 Basement	R-6
62	State Industries, Inc. Site, Including Impoundments and Catch Basin	U-4, U-5
63	J. B. Kelley, Inc. Trucking Site	P-3
64	Koch Materials Company Site	O-3, O-4
65	Nevada Precast Concrete Products, Green Ventures International, Buckles Construction Company and Ebony Construction Sites	P-4, Q-3, R-3, S-3
66	Aboveground Diesel Storage Tank Leased by Flintkote Co. located on Chemstar Property (Off-site)	Q-5
67	Delbert Madsen and Estate of Delbert Madsen Site	B-4
68	Southern Nevada Auto Parts Site (Pick A Part)	F-6
69	Dillon Potter Site	H-7
Area 70	Former U.S. Vanadium Site	P-8, Q-8
LOU = Site identified in Letter of Understanding dated August 15, 1994.		

N

W E

S

1:4,800

1 inch equals 400 feet

0 200 400 800

Feet

LEGEND

- Tronox Facility Boundary
- Area Boundary
- LOU of Interest
- Proposed Phase B Wells to be Sampled for OCPs.
- Proposed Phase B Wells to be Sampled for OCPs, OPPs, and Organic Acids.
- Phase B Wells Sampled for OCPs in June-July 2008.
- LOU #59 Storm Sewer System manholes and sumps with flow direction.
- LOU #60 Acid Drain System manholes and sumps with flow direction.

Airphoto: PBS&J, October 2006

FORMER U.S. VANADIUM SITE (AREA 70)

LAKE MEAD PARKWAY

PROPOSED GROUNDWATER LOCATIONS TO BE SAMPLED FOR OCPs, OPPs, AND ORGANIC ACIDS

Phase B Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
1" = 400'	12/18/2008	04020-023-430

FIGURE NUMBER: 3

SHEET NUMBER: X

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T. McAdam	NO.:	DESCRIPTION:	DATE:	BY:
DRAWN BY:				
M. Scop				
CHECKED BY:				
C. Schnell				
APPROVED BY:				
C. Schnell				

TRONOX

Plates

J:\TronoxGIS\mxd\Phase_B_WorkPlan\LOUs\PlateA-All_Areas_Phase_B_Sampling_Map.mxd

LOU Number	Name of LOU	Grid
1	Trade Effluent Settling Ponds	Rows I-K
2	Open Area Due South of "Trade Effluent Disposal Ponds"	L-3
3	Air Pollution Emissions Associated with Industrial Processes	-
4	Former Hardesty Chemical Company Site (prior to J. B. Kelley Operations)	Q-4
5	On-Site Portion of Beta Ditch, Including "Small Diversion Ditch" Northwest of Pond C-1	M-2 -M-8
6	Unnamed Drainage Ditch Segment (BMI Landfill)	Offsite
7	Old P-2 Pond and Associated Conveyance Facilities	O-5
8	Old P-3 Pond and Associated Conveyance Facilities	O-5
9	New P-2 Pond and Associated Piping	O-6
10	On-Site Hazardous Waste Landfill (Closed)	I-2
11	Sodium Chlorate Filter Cake Holding Area	Q-6
12	Hazardous Waste Storage Area	R-6
13	Pond S-1	Q-6
14	Pond P-1 and Associated Conveyance Piping	O-6
15	Platinum Drying Unit	Q-6
16 & 17	Ponds AP-1, AP-2, and AP-3 and Associated Transfer Lines	M-6
18	Pond AP-4	M-7
19	Pond AP-5	M-5, M-6
20	Pond C-1 and Associated Piping	M-8
21	Pond Mn-1 and Associated Piping	N-8
22	Pond WC-1 (WC-West) and Associated Piping	J-6
23	Pond WC-2 (WC-East) and Associate Piping	J-7
24	Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area	O-7, O-8
25	Process Hardware Storage Area	R-4
26	Trash Storage Area	Q-3
27	PCB Storage Area	R-4
28	Hazardous Waste Storage Area	R-3
29	Solid Waste Dumpsters	S-6
30	AP Area-Pad 35	L-5
31	Drum Recycling Area	L-5
32	Groundwater Remediation Unit	Rows I-L
33	Sodium Perchlorate Platinum By-Product Filter, Unit 5	R-7
34	Former Manganese Tailings Area	Q-8
35	Truck Emptying/Dumping Site	O-2, O-3
36	Former Satellite Accumulation Point, Unit 3, Maintenance Shop	R-5
37	Former Satellite Accumulation Point, Unit 6, Maintenance Shop	R-8
38	Former Satellite Accumulation Point, AP-Laboratory	N-3
39	Satellite Accumulation Point-AP Maintenance Shop	N-4
40	PCB Transformer Spill	R-7
41	Unit 1 Tenant Stains	Q-3
42	Unit 2 Salt Conveyor	R-5
43	Unit 4 Basement and Old Sodium Chlorate Plant Decommissioning	R-6
44	Unit 6 Basement	R-8
45	Diesel Storage Tank	O-6
46	Former Old Main Cooling Tower and Recirculation Lines	O-7, O-8
47	Leach Plant Area Manganese Ore Piles	P-8
48	Leach Plant Anolyte Tanks	P-7
49	Leach Plant Area Sulfuric Acid Storage Tanks	P-7
50	Leach Plant Area Leach Tanks	P-7
51	Leach Plant Area Transfer Lines	P-8
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55	Area Affected by July 1990 Fire	L-6
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59	Storm Sewer System	Rows N-T
60	Acid Drain System	Rows K-R
61	Unit 5 Basement	R-6
62	State Industries, Inc. Site, Including Impoundments and Catch Basin	U-4, U-5
63	J. B. Kelley, Inc. Trucking Site	P-3
64	Koch Materials Company Site	O-3, O-4
65	Nevada Precast Concrete Products, Green Ventures International, Buckles Construction Company and Ebony Construction Sites	P-4, Q-3, R-3, S-3
66	Aboveground Diesel Storage Tank Leased by Flintkote Co. located on Chemstar Property (Off-site)	Q-5
67	Delbert Madsen and Estate of Delbert Madsen Site	B-4
68	Southern Nevada Auto Parts Site (Pick A Part)	F-6
69	Dillon Potter Site	H-7
Area 70	Former U.S. Vanadium Site	P-8, Q-8
LOU = Site identified in Letter of Understanding dated August 15, 1994.		

Sample locations in Areas I, II and IV are not finalized and subject to change.

N

1:2,400
1 inch equals 200 feet
200 100 0 200
Feet

LEGEND

- Tronox Facility Boundary
- Area Boundaries
- LOU Boundaries
- Associate LOU Pipelines
- Proposed Phase B Groundwater Monitoring Well Location
- Proposed Phase B Boring Location
- Proposed Phase B Boring and Geotechnical Sample Location
- Proposed Phase B Soil Gas Location
- Phase A Boring Location (Sept. 2007)
- Phase II BRC Sample Location (Oct. 2007)
- Historic Groundwater Monitoring Well Location (Dry)
- Historic Sample Location (pre 2006)
- LOU #59 Storm Sewer System manholes and sumps with flow direction.
- LOU #60 Acid Drain System manholes and sumps with flow direction.
- Four Acre Grid Line (Cell reference displayed row-column)
- Parcel Boundary
- Location moved per NDEP
- Location deleted per NDEP
- Location added per NDEP
- Location deleted per Tronox (Dec. 2008)

Grid: Stateplane, Nevada East, NAD83, Feet
Base Aerial Photo from PBS&J, October 2006

SHEET NUMBER: 1 of 1

FIGURE NUMBER: A

PHASE B SAMPLE LOCATIONS, LOUs AND NDEP REQUESTS FOR AREAS I, II, III AND IV

PHASE B SOURCE AREA INVESTIGATION
TRONOX FACILITY
HENDERSON, NEVADA

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	12/18/2008	04020-023-430

ENSR CORPORATION
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ENSR | AECOM

	REVISIONS			
	NO.:	DESCRIPTION:	DATE:	BY:
DRAWN BY: M. Scop				
CHECKED BY: C. Schnell				
APPROVED BY: B. Ho				

TRONOX

Appendix A

Phase B Source Area Investigation Work Plans Submittal History and NDEP Response Chronology

Appendix A

This Appendix provides a short summary of the four Phase B Site Investigation Area Work Plan submittals to NDEP, NDEP comments to those submittals and subsequent teleconferences between NDEP and Tronox. Following the summary, copies of full NDEP comment letters and teleconference minutes are attached.

To investigate the approximately 70 source areas and their potential affect on soil and groundwater conditions, the Tronox facility (Site) has been subdivided into four "Areas" (Area I, II, III, and IV; see **Plate A** of attached report). Work plans for each of the four Areas were submitted to NDEP between April and June 2008. NDEP reviewed and issued comments for each of the Work Plans, and a series of conference calls were held between NDEP and Tronox to discuss Tronox responses to the comments. For each of the Area work plans, NDEP provided conditional approval provided that NDEP's concerns were addressed prior to commencement of field activities.

Date	Event	Document	Author
April 3, 2008	Tronox submits Phase B Area I Work Plan to NDEP.	Phase B Source Area Investigation Work Plan, Area I (Northern LOUs), Tronox LLC Facility, Henderson, Nevada	Tronox
May 6, 2008	NDEP issues comments on Area I Work Plan to Tronox.	Nevada Division of Environmental Protection (NDEP) Response to: *Phase B Source Area Investigation Work Plan, Area I (Northern LOUs), Tronox LLC Facility, Henderson, Nevada*	NDEP
May 8, 2008	NDEP and Tronox meet via conference call to discuss Tronox responses to NDEP comments on Area I Work Plan.	Meeting Minutes Regarding Future Phase B submittals and NDEP's comments to the *Phase B Source Area Investigation Work Plan, Area I (Northern LOUs), Tronox LLC Facility, Henderson, Nevada*	NDEP (Meeting minutes are in-lieu of Tronox RTCs.)
May 16, 2008	Tronox submits Phase B Area IV Work Plan to NDEP.	Phase B Source Area Investigation Work Plan, Area IV (Western and Southern LOUs), Tronox LLC Facility, Henderson, Nevada	Tronox

Date	Event	Document	Author
May 30, 2008	Tronox submits to NDEP the following components of the Area I Work Plan that have been revised per requests from NDEP (May 8, 2008): Plate A Table 2 (Soil SAP) Table 3 (GW SAP)	Additional Documents for Phase B Area I Work Plan, Tronox LLC, Henderson, Nevada	Tronox.
June 18, 2008	NDEP issues comments on Area IV Work Plan to Tronox.	Nevada Division of Environmental Protection (NDEP) Response to: *Phase B Source Area Investigation Work Plan, Area IV (Western and Southern LOUs), Tronox LLC Facility, Henderson, Nevada*	NDEP
June 23, 2008	NDEP and Tronox meet via conference call to discuss future Phase B submittals and Tronox responses to NDEP comments on Area IV Work Plan.	Meeting Minutes Regarding Future Phase B submittals and NDEP's comments to the *Phase B Source Area Investigation Work Plan, Area IV (Western and Southern LOUs), Tronox LLC Facility, Henderson, Nevada*	NDEP (Meeting minutes are in-lieu of Tronox RTCs.)
June 27, 2008	Tronox submits Phase B Area II Work Plan to NDEP.	Phase B Source Area Investigation Work Plan, Area II (Central LOUs), Tronox LLC Facility, Henderson, Nevada	Tronox
June 27, 2008	Tronox submits Phase B Area III Work Plan to NDEP.	Phase B Source Area Investigation Work Plan, Area III (Eastern LOUs), Tronox LLC Facility, Henderson, Nevada	Tronox
July 11, 2008	Tronox submits to NDEP the following components of the Area IV Work Plan that have been revised per requests from NDEP (June 23, 2008): Plate A Table 2 (Soil SAP) Table 3 (GW SAP)	Revised Documents for Phase B Area IV Work Plan, Tronox LLC, Henderson, Nevada	Tronox

Date	Event	Document	Author
July 21, 2008	NDEP issues comments on Area II Work Plan to Tronox. NDEP requests the following: • SVOCs, PCBs, TPH-ORO/DRO/GRO, OPPs, and cyanide be added to the sampling plan for select borings, • select boring locations be moved, • select boreholes should be converted to groundwater wells, and • new soil borings should be added to select locations.	Nevada Division of Environmental Protection (NDEP) Response to: *Phase B Source Area Investigation Work Plan Area II (Central LOUs). Tronox LLC Facility, Henderson, Nevada*, Dated June 27, 2008	NDEP
July 21, 2008	NDEP issues comments on Area III Work Plan to Tronox. NDEP requests the following: • SVOCs, PCBs, TPH-ORO/DRO/GRO, OPPs, and cyanide be added to the sampling plan for select borings, • select boring locations be moved, • select boreholes should be converted to groundwater wells, and • new soil borings should be added to select locations.	Nevada Division of Environmental Protection (NDEP) Response to: *Phase B Source Area Investigation Work Plan Area III (Eastern LOUs). Tronox LLC Facility, Henderson, Nevada*, Dated June 27, 2008	NDEP

Date	Event	Document	Author
July 21, 2008	NDEP issues general comments that apply to the Work Plans for Areas I, II, III, and IV to Tronox. NDEP requests that PCBs, TPH-ORO/DRO, OPPs, and cyanide be added to the sampling plan for select borings.	Nevada Division of Environmental Protection (NDEP) Response to: - *Phase B Source Area Investigation Work Plan, Area I (Northern LOUs), Tronox LLC Facility, Henderson, Nevada,* Dated April 3, 2008 - *Phase B Source Area Investigation Work Plan Area IV (Western and Southern LOUs). Tronox LLC Facility, Henderson, Nevada,* Dated May 16, 2008 - *Phase B Source Area Investigation Work Plan Area II (Central LOUs). Tronox LLC Facility, Henderson, Nevada,* Dated June 27, 2008 - *Phase B Source Area Investigation Work Plan Area III (Eastern LOUs). Tronox LLC Facility, Henderson, Nevada,* Dated June 27, 2008	NDEP
August 11, 2008	NDEP and Tronox meet via conference call to discuss Tronox responses to NDEP comments issued on July 21, 2008.	Meeting Minutes of Tronox's response to comments to three NDEP letters dated July 21, 2008: 1) Re: Phase B SAPs Areas I through IV general soil sampling comments; 2) Re: Phase B Source Area Investigation Work Plan (SAP) Area II, and 3) Re: Phase B SAP Area III.	NDEP (Meeting minutes are in-lieu of Tronox RTCs.)

Date	Event	Document	Author
September 8, 2008	NDEP and Tronox meet via conference call to discuss changes to Tronox responses to NDEP comments. Topics discussed: • reducing the number of PCB congener analysis and organic acid analysis, • use of Geoprobe® for drilling, • increasing the interval between sample depths within each soil boring, • reducing the number of proposed borings in the active production areas in Area III, and • data validation.	Meeting Minutes on discussion of changes to Tronox's Response to Comments for the Phase B sampling.	NDEP
October 1, 2008	NDEP and Tronox meet via conference call to discuss Tronox's proposed justification for sampling design optimization.	Meeting Minutes on discussion of Tronox's proposed justification for sampling design optimization for the Phase B Site Investigation for Areas I, II, III, and IV.	NDEP

Copies of NDEP Area Work Plan Comments
and
Teleconference Minutes

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

5/14/08 Digital to ECA Doc. Distribution

May 6, 2008

MAY 12 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Phase B Source Area Investigation Work Plan, Area I (Northern LOUs), Tronox LLC Facility, Henderson, Nevada
Dated April 3, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's Phase B, Area I Sampling Analysis Plan (SAP) identified above and finds the document acceptable with the conditions and comments provided in Attachment A.

Errata sheets should be submitted based on the comments found in Appendix A. TRX should additionally provide an annotated response-to-comments (RTC) letter as part of the errata submittal. Alternately, in place of an RTC letter, TRX can discuss these comments with the NDEP in a meeting or via phone. Please advise the NDEP regarding the schedule for this submittal. Please note that it is NDEP's intent that TRX should be able to proceed with implementation of this SAP upon submittal of the erratum and RTC letter (or completion of meeting with NDEP in lieu of the RTC letter).

Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

Attachments A and B

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
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Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Ebrahim Juma, DAQEM, PO Box 551741, Las Vegas, NV, 89155-1741
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, Landwell, 875 West Warm Springs, Henderson, NV 89011
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
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Teri Copeland, 5737 Kanan Road #182, Agoura Hills CA 91301
Paul Hackenberry, Hackenberry Associates, LLC, 550 W. Plumb Lane B425, Reno, NV 89509
Paul Black, Neptune and Company, Inc., 8550 West 14th Street, Suite 100, Lakewood, CO 80215

Attachment A

1. General comment, it is the NDEP's understanding that the purpose of this work plan is to complete site characterization for Area I of the Site. It is the NDEP's understanding that the outputs of the implementation of this work plan will be: definition of decision units; definition of exposure areas; demonstration of the usability and adequacy of the data; completion of some degree of human health risk assessment; or collection of more data. If this is incorrect, please discuss with the NDEP. In future SAPs, please provide additional discussion on this issue.
2. General comment, TRX should note that the NDEP does not necessarily agree that the selected wells in the Appendix A LOU packets are representative of the up-gradient, cross-gradient, and/or down-gradient conditions at the corresponding LOU. It is noted, however, that the overall coverage of the groundwater sampling plan appears adequate.
3. General comment, TRX should clarify with the NDEP if a human health risk assessment (HHRA) work plan is going to be developed by TRX or if TRX is going to rely on the methodologies presented by others (e.g.: BRC's Section 9.0 of the approved *Closure Plan*). Please clarify this in all future SAPs in addition to providing clarification in the RTC for the Area I SAP.
4. General comment, TRX should clarify with the NDEP if the areas proposed for "continued use" are going to undergo a HHRA. If not, please explain what, if any, additional actions will be taken for these areas once site characterization is completed. Please clarify this in all future SAPs in addition to providing clarification in the RTC for the Area I SAP.
5. General comment, it is not clear that this SAP was developed with risk assessment as the output of the investigations. It is requested that future SAPs explicitly discuss this relationship and how the data that is being collected addresses the needs of a risk assessment. Please clarify this in all future SAPs in addition to providing clarification in the RTC for the Area I SAP.
6. Section 1.0, page 1-1, fourth paragraph, NDEP understands that deeper soils (greater than 10' bgs) may be investigated as part of the "Area" investigations for "Parcels" F, G, H and I. Please discuss this matter with the NDEP if this understanding is incorrect.
7. Section 1.1, page 1-3, TRX states that the USEPA Region IX PRGs may be used for a "screening level risk assessment". Per the NDEP's guidance under separate cover, please do not use the USEPA Region IX PRGs as they are not current. Region VI MSSLs should be used instead.
8. Section 2.3.2, page 2-6, the NDEP has the following comments:
   a. Regarding PCB analysis, please note the USEPA Method 1668 should be used for PCB congener analysis for any areas associated with trespass plumes from the west. Please advise the NDEP of any locations where this analysis will be completed, if applicable.
   b. Regarding radionuclide analyses, please note, as discussed with TRX previously, it is expected that the radionuclide analyses will be consistent with the methods (and preparatory methods) used for the BRC/TIMET background data set.
9. Section 2.3.4.1, the NDEP has the following comments on proposed sample locations for SPLP analyses and physical analyses (Please provide errata sheets as necessary to address these comments in the Area I SAP. These comments should also be addressed in future SAP submittals.):

a. TRX should add the following columns to the table at the bottom of page 2-7:
   i. LOU Number
   ii. Sample depth
   iii. Expected soil type
   iv. Analytes
   v. Rationale
b. TRX has proposed using EPA Method 1312, extraction fluid #2 (reagent water at pH 5.00 ± 0.05). NDEP suggests that TRX additionally use EPA Method 1312, extraction method #3 (reagent water) for comparison by evaluating the following:
   i. All soil wet chemistry for pH if wet chemistry was prepared with equivalent reagent grade water. (For worst case scenario, look for areas of known acid releases)
   ii. All groundwater samples for pH.
c. The minimum sampling depth for the SPLP samples should be located below the source maximum depth (e.g. pond or landfill invert depth). The maximum depth for the SPLP samples should not be greater than the capillary fringe depth. Any samples located within the capillary fringe would potentially be in some state of equilibrium between the soil and liquid phases and therefore not representative of leachability.
d. NDEP suggests that TRX consider sampling different soil types for leachability.
e. NDEP has noted that two of the proposed sample locations proposed for SPLP analyses are located within the influence of the recharge trenches and that TRX has not provided any rationale for these SPLP sampling locations. NDEP suggests that no more than one boring if any be located in this area pending on TRX rationale for the collection of these SPLP samples.
f. The NDEP requests that the samples collected for geotechnical analysis be co-located with the samples collected for leaching characteristics. This will better facilitate any future fate and transport modeling.
g. NDEP suggests that geotechnical and leaching samples be collected for each LOU.
h. The NDEP requests that TRX discuss the anticipated future use of these samples with the NDEP prior to the collection of the SPLP samples.

10. Section 3, after a cursory review of this section, the NDEP has determined that this section should be excluded from this document. The topics discussed in this section are addressed in the Quality Assurance Project Plan (QAPP), which has been approved by the NDEP. TRX should remove Section 3 and reference the QAPP in future submittals. TRX should note that this Section was not reviewed by the NDEP and it is expected that the approved QAPP will dictate the project procedures.
11. Section 3.3.2, page 3-3, as discussed with TRX previously, filtering of groundwater samples is not acceptable. If TRX complies with the SOP for low flow sampling, filtering should not be an issue. Failure to comply with the SOP will result in rejection of the data by the NDEP. If the referenced SOP includes filtering of groundwater samples, the SOP needs to be revised and resubmitted.
12. Section 4, the NDEP suggests that this section removed and a meeting scheduled between TRX and NDEP after the receipt of the analytical data to discuss the statistical analyses that should be used to evaluate the collected data. In addition, the procedures for evaluating data adequacy and usability should be discussed with the NDEP.
13. Section 5.0, page 5-1, TRX states that a final report will be developed and recommendations for additional work will be made. It is suggested that TRX instead discuss the data with the

NDEP and propose additional work as an addendum to this work plan. This is consistent with USEPA's recommended approaches for expedited site characterization.

14. Table 1, please note that the adequacy of the reporting limits in this table have not been reviewed by the NDEP as it is TRX's responsibility to insure that appropriate data is collected.
15. Table 2, Soil Sampling and Analysis Plan (SAP), the NDEP has the following comments (Please revise and resubmit this table. These comments should be additionally addressed in future SAP submittals.):
    a. General comment, in future SAPs, TRX should closely review column "LOU Number" against the "Location Description and Characterized Area Rationale" column and the text and tables of the LOU packets for consistency. NDEP has noted several discrepancies in these columns and the LOU packets.
    b. General comment, in future SAPs, TRX should review the Appendix A LOU packets to check that all LOUs that are associated with a specific boring are discussed in the "Location Description and Characterized Area Rationale" column for the corresponding boring.
    c. General comment, organochlorine pesticides (OCPs) should be sampled to depth in all borings that OCP sampling has been indicated by TRX and/or requested by NDEP. All of Area I is underlain by a plume of organic contaminants that (at least partially) originates to the west of the TRX Site. It is noted that areas within the TRX Site may have also contributed to this plume.
    d. General comment, TRX should note that the appropriate sampling depth for asbestos is the top 2 inches of soil (as indicated in the SOP).
    e. General comment, TRX should revise the table to note that all samples within the 0-1' bgs interval will be collected from 0-0.5' bgs unless the area is paved. If the area is paved it is expected that the sample will be collected from a representative depth beneath the pavement. Alternately, if an unpaved area is within a reasonable distance the sample could simply be moved to the unpaved area.
    f. General comment, NDEP does not believe that LOU 32 (Chromium and Perchlorate Groundwater Remediation Unit) needs to be separately characterized at this time as it is an active remediation area with no reported releases of untreated groundwater with detectable perchlorate or chromium concentrations. Additionally, all borings and groundwater monitoring wells proposed to characterize this LOU are associated with at least one other LOU.
    g. SA66 and SA67, TRX has proposed this boring to evaluate LOU 5 – Beta Ditch, which is in Area II. LOU 5 is in Area II; therefore, there is not an Appendix A LOU packet available for review at this time. Additionally, these two borings are located adjacent to the Area I/Area II boundary. TRX should suspend advancement of these borings for inclusion in the Area II SAP so that NDEP can review the rationale and information included in the Appendix A LOU 5 packet for appropriateness of the proposed analytes and locations of these borings. Alternately, TRX can proceed with the installation of these borings if TRX believes that the analytical suites are sufficiently broad as to address both Areas sufficiently; however, the NDEP suggests that TRX add SVOC analysis to SA 66 and TPH-DRO/ORO analysis to SA67 for consistency with the area.
    h. RSAN2 is not associated with LOU 35 according to the Appendix A LOU 35 packet and Table 5.

i. The following borings should be advanced to the water table to be consistent with other borings. (If this depth is not feasible, TRX should supply justification/rationale for the difference in boring depth.): RSAL5, SA152, SA176, and SA189.
j. The following borings should include the corresponding analyses:
   i. TPH-DRO/ORO: SA69, SA79, and SA82
   ii. VOCs: SA79
   iii. SVOCs: SA79 and SA82
   iv. Organochlorine pesticides (OCPs): SA46, SA47, SA74, SA75, SA181, and SA183.
   v. Asbestos: SA152
   vi. PCBs: SA48, SA56, SA166, SA180

16. Table 3, Groundwater SAP, the NDEP has the following comments (Please revise and resubmit this table. These comments should be additionally addressed in future SAP submittals.):
    a. General comment, TRX should note that if the well screen is not know or cannot be determined, then the data collected from the corresponding well may not be useable. TRX should verify the well screen interval as part of the implementation of the SAP.
    b. General comment, TRX should note that the proposed wells should not be screened across the entire water bearing zone (WBZ). NDEP suggests that the proposed wells be able to discretely sample both the alluvial aquifer and transitional Muddy Creek zones. Significant differences have been observed from samples collected from these two strata. NDEP acknowledges that this guidance differs from previous guidance, however, additional data has been received by the NDEP which supports this change.
    c. General comment, TRX should review the Appendix A LOU packets to check that all LOUs that are associated with a monitoring well are discussed in the "Rationale" column for the corresponding monitoring well.
    d. M-123, PCBs should be added to the sampling plan for this well per the text in LOU 35 Appendix A packet.
17. Tables 6 and 7, please note that these tables have not been reviewed by the NDEP as it is TRX's responsibility to insure that appropriate data is collected. It is expected that these tables are consistent with the approved QAPP.
18. Figure 4, it is noted that wells that are designated as "dry" may be a function of the screened interval as deeper portions of the water table aquifer are likely saturated. For example, the transitional Muddy Creek formation or the upper portion of the Muddy Creek formation. This issue should be considered in future SAPs and reports.
19. Figure 5, Phase B Well Locations, TRX should update and resubmit this figure based on NDEP's comments.
20. Plate A, TRX should update and resubmit this plate based on NDEP's comments.
21. Appendix A, the NDEP has the following comments:
    a. General comment, TRX should check the legends of Figure 1 in each of the LOU packets for inclusion of all symbols used on each figure. For example, the following symbols should be defined: bold yellow dashed line, bold grey dashed line, solid thin black line, etc. Please address this in future SAPs.
    b. General comment, TRX should review the NDEP's comments for Figure 1 for each LOU and make appropriate changes to the Soil and Groundwater Sampling Plans (Table 2, Table 3, and Appendix A: Tables A and B). NDEP has provided Attachment B to this letter, which contains LOU maps with hand-noted revisions to illustrate NDEP's

comments. If TRX concurs with these changes, Plate A should be revised to reflect these changes. It is not necessary to revise and resubmit each Figure in Appendix A.

c. General comment, NDEP has noted that the cation data from the Phase A Investigation were collected several months after the anion data. Please note that these data are not useable for cation/anion balance. Also, please contact the NDEP to explain this collection procedure as it is very atypical.

d. LOU 1, (Former) Trade Effluent Settling Ponds, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Table B, please see the above comments for Table 3 as applicable.
   iii. Figure 1, the NDEP has the following comments:
      1. General comment, LOU 60 should be noted.
      2. SA79 should be relocated within the white-stained area located approximately 100 feet west-northwest from the originally proposed location of SA79.
      3. RSAI2 should be relocated within the white-stained area adjacent to the east of LOU 10 located approximately 230 feet north of the originally proposed location of RSAI2. This boring should be relocated to better characterize LOU 10.
      4. RSAI3 should be relocated to just south of LOU 10 to better characterize LOU 10.

e. LOU 2, Open Area South of the Trade Effluent Settling Ponds, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. SA134 should be added to this figure.
      2. SA15 marker should be added to this figure.
      3. M6A should be added to the groundwater sampling analysis plan for LOU 2.

f. LOU 10, On-Site Hazardous Waste Landfill (Closed) , the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, RSAI2 and RSAI3 should be relocated as discussed in the above LOU 1 comments.

g. LOU 22 and LOU 23, Ponds WC-West and WC-East, respectively, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. SA79 should be relocated as discussed in the above LOU 1 comments.
      2. RSAJ8 may be removed from the sampling plan. The NDEP believes that this boring is located too far cross-gradient from LOU 23 for characterization of this LOU.
      3. M-84 should be replaced with well M-86 in the groundwater sampling plan.

h. LOU 35, Truck Emptying/Dumping Site, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. An additional boring should be added in the large white-stained area near the northwest corner of LOU 35.
      2. An additional boring should be added in the large white-stained area south of SA09 near the western boundary of grid O-3.

3. SA166 should be located as discussed in the following LOU 60 comments.

i. LOU 38, Former Satellite Accumulation Point AP-Laboratory, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, RSAN3 should be relocated adjacent to the northern boundary of LOU #38 in order to place the boring in the down-gradient side of the site based on topography unless TRX has information/additional rationale for locating the boring adjacent to the western boundary of this LOU.

j. LOU 54, AP Plant Area Change House / Laboratory Septic Tank, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. TRX should indicate the location of the septic tank.
      2. SA85 should be located at the outlet for the septic tank.
      3. If the septic tank location is unknown, then TRX should advance three borings in this LOU to triangulate the approximate location of the septic tank.

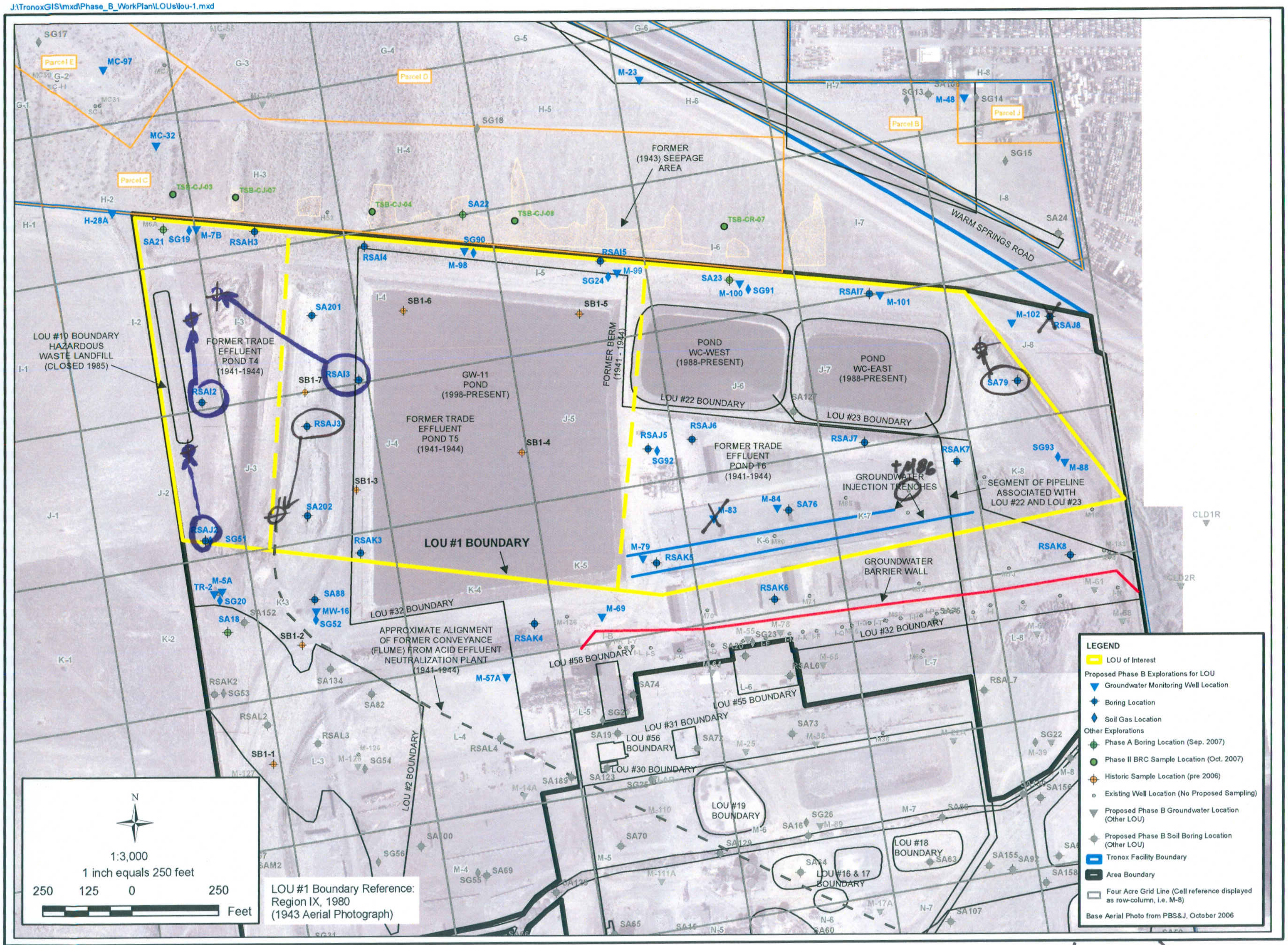
k. LOU 58, AP Plant Area New Building D-1, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, TRX should review the location of RSAL5 and relocate it as necessary. The aerial photograph seems to indicate the presence of structures on the proposed location for this boring.

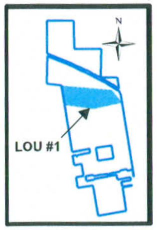
l. LOU 60, Former Acid Drain System Segment, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. Borings RSAL4, SA50, SA82, SA134, SA166, and SA182, SA189 should be located directly over the former acid drain by using a backhoe or other similar equipment to locate the drain. NDEP requests that TRX locate the borings over joints in the former acid drain system if discovered.
      2. RSAJ3 should be relocated to the outlet of the former acid drain system.
      3. An additional boring should be located to the west of the outlet of the acid drain system approximately the same distance as SA202 is from the outlet to the east.

m. LOU 64, Koch Materials Company Site (Former Asphalt Batch Plant) , the NDEP has the following comments:
   i. Table A, please see above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. SA46 should be relocated approximately 75 ft west of the eastern boundary and 90 ft north of the southern boundary of LOU 64.
      2. SA50 and SA182 should be located as discussed in the above LOU 60 comments.
      3. RSAO4 should be moved to the approximate location of former boring TS, BG.
      4. An additional sample should be located within the disturbed approximately square area between LOU 64 and LOU 35 (located to the south of the "pan handle" of LOU 64).

Attachment B

J:\TronoxGIS\mxd\Phase_B_WorkPlan\LOUs\lou-1.mxd





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SAMPLE LOCATIONS FOR LOU #1 (FORMER) TRADE EFFLUENT SETTLING PONDS

Phase B Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	4/3/2008	04020-023-430

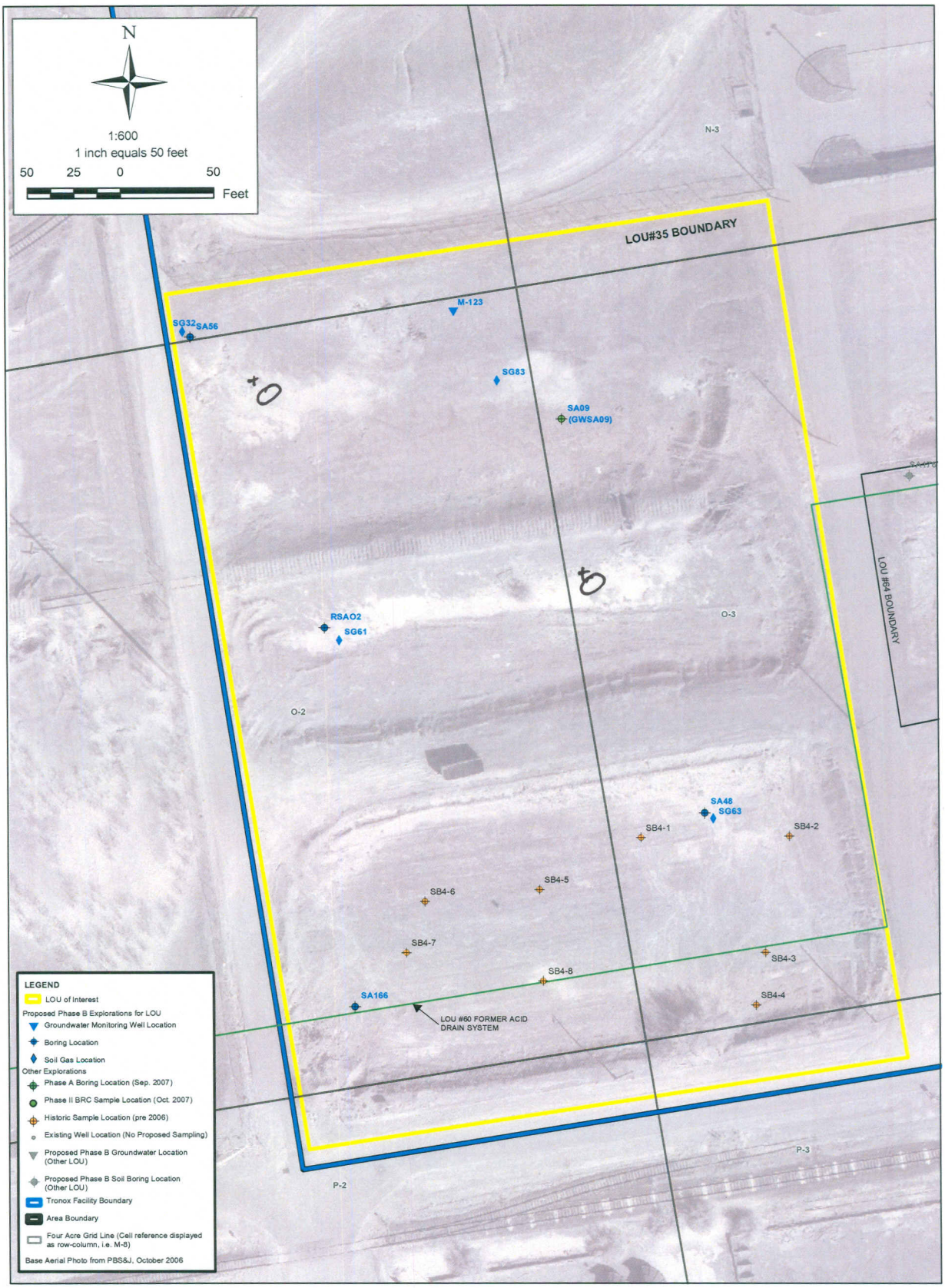
FIGURE NUMBER: 1

SHEET NUMBER: X

For: LOU 1, LOU 10, LOU 22 & LOU 23 (8 changes)

X = delete   ⌀ = relocate boring to ⌀   +O = add well

J:\TronoxGIS\mxd\Phase_B_WorkPlan\LOUs\lou-35.mxd



For: LOU 35 (2 changes)
+O = add'l boring

SHEET NUMBER: X → FIGURE NUMBER:

SAMPLE LOCATIONS FOR LOU #35
TRUCK EMPTYING/DUMPING SITE

Phase B Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	4/2/2008	04020-023-430

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C. Schnell
APPROVED BY:
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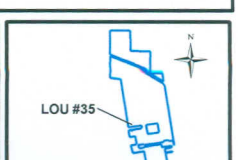

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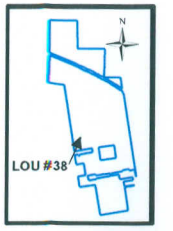

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CHECKED BY: C. Schnell
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SAMPLE LOCATIONS FOR LOU #38
FORMER SATELLITE ACCUMULATION POINT AP-LABORATORY
Phase B Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	4/2/2008	04020-023-430

FIGURE NUMBER: 1

SHEET NUMBER: X

For: LOU 38 & LOU 54

ϕ^{*} = relocate boring to ϕ

*LOU 54, move boring SA85 to septic tank outlet OR if unknown outlet, add 2 additional borings in vicinity to triangulate location of septic system

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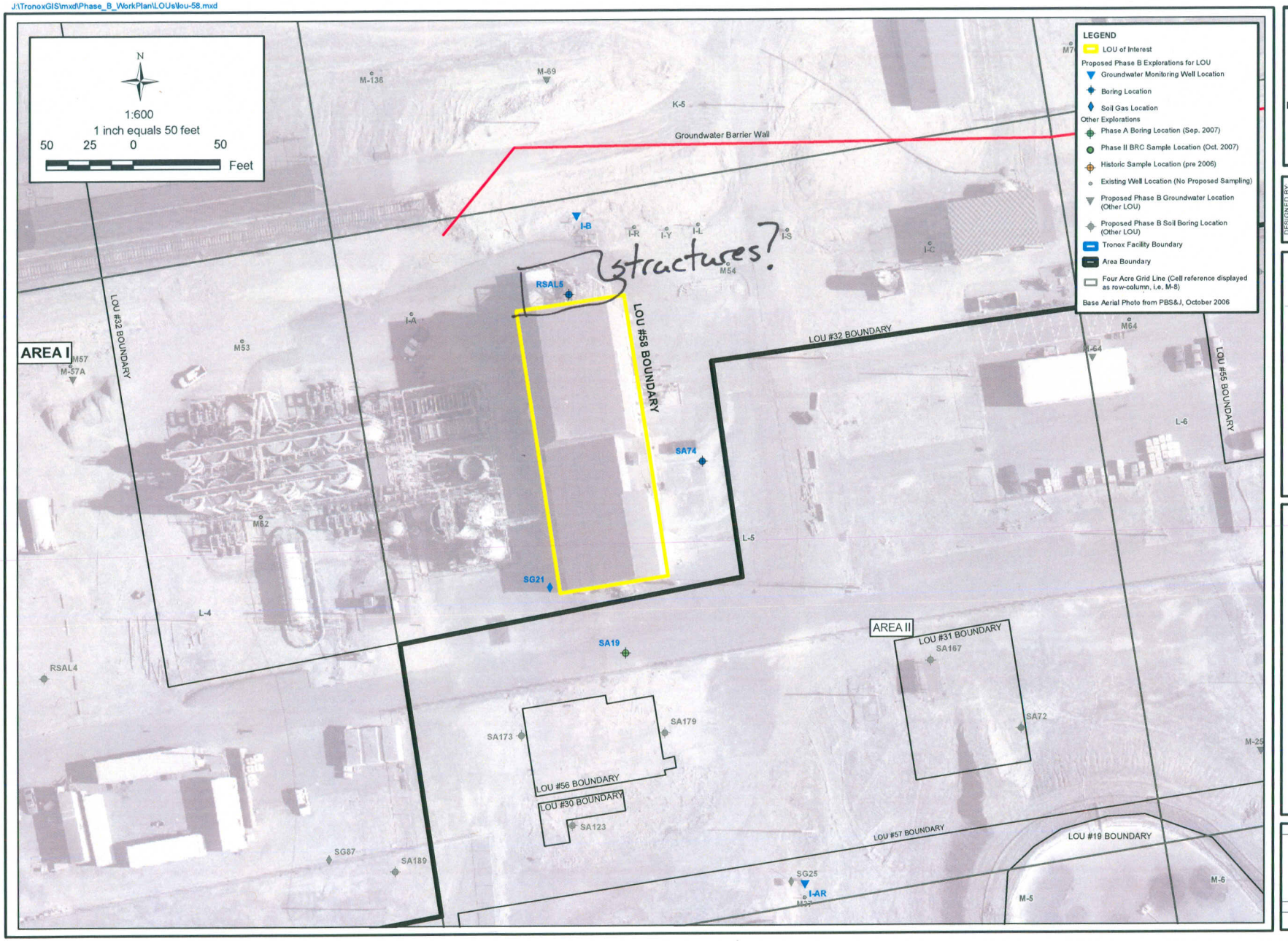

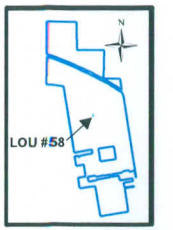

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
G Heis	M Scop	C Schnell	B Ho

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SAMPLE LOCATIONS FOR LOU #58
AP PLANT AREA NEW BUILDING D-1

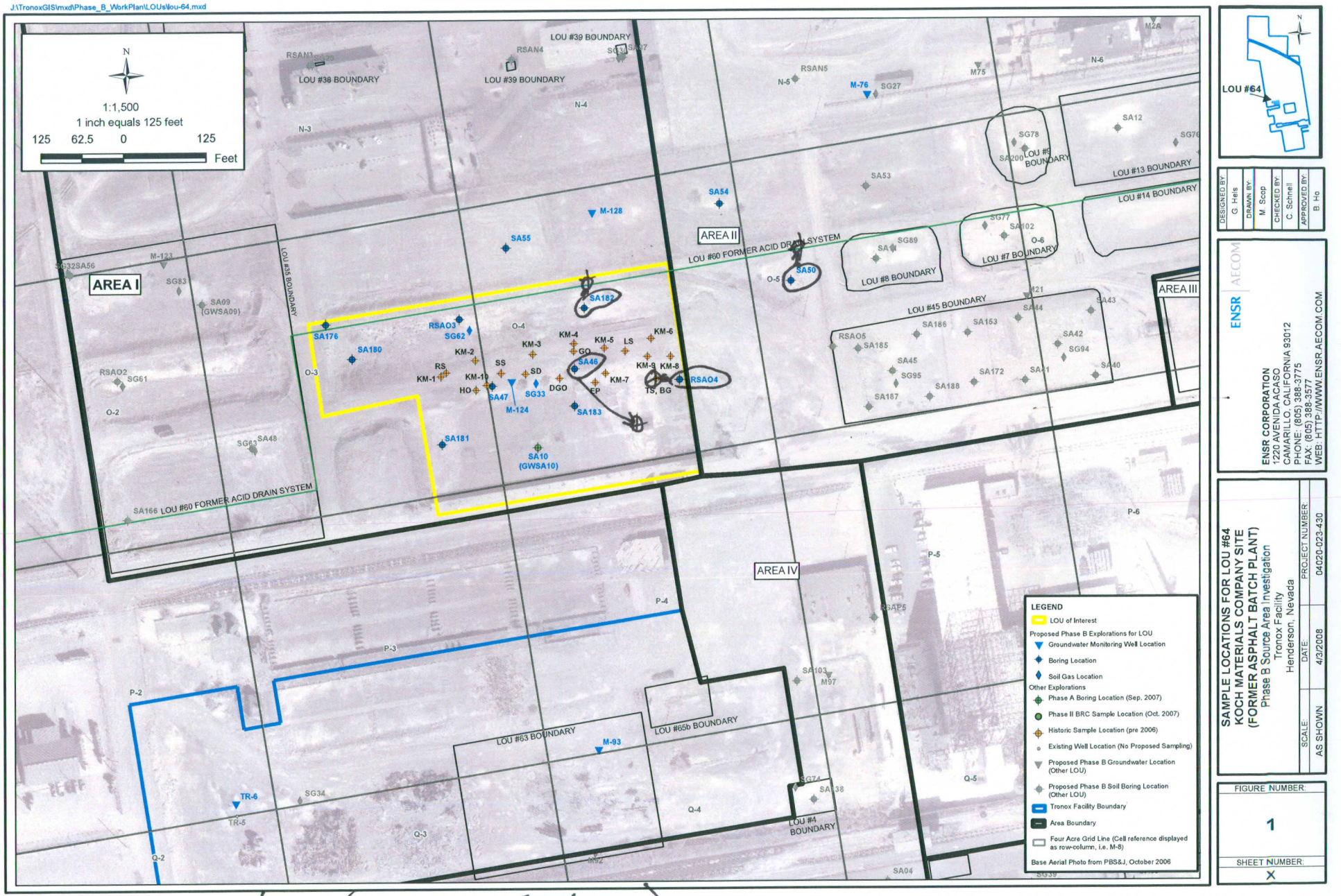
Phase B Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	4/2/2008	04020-023-430

FIGURE NUMBER: 1

SHEET NUMBER: X

For: LOU 58



For: LOU 64 (3 area I changes)

δ^{ϕ} = relocate boring to ϕ location

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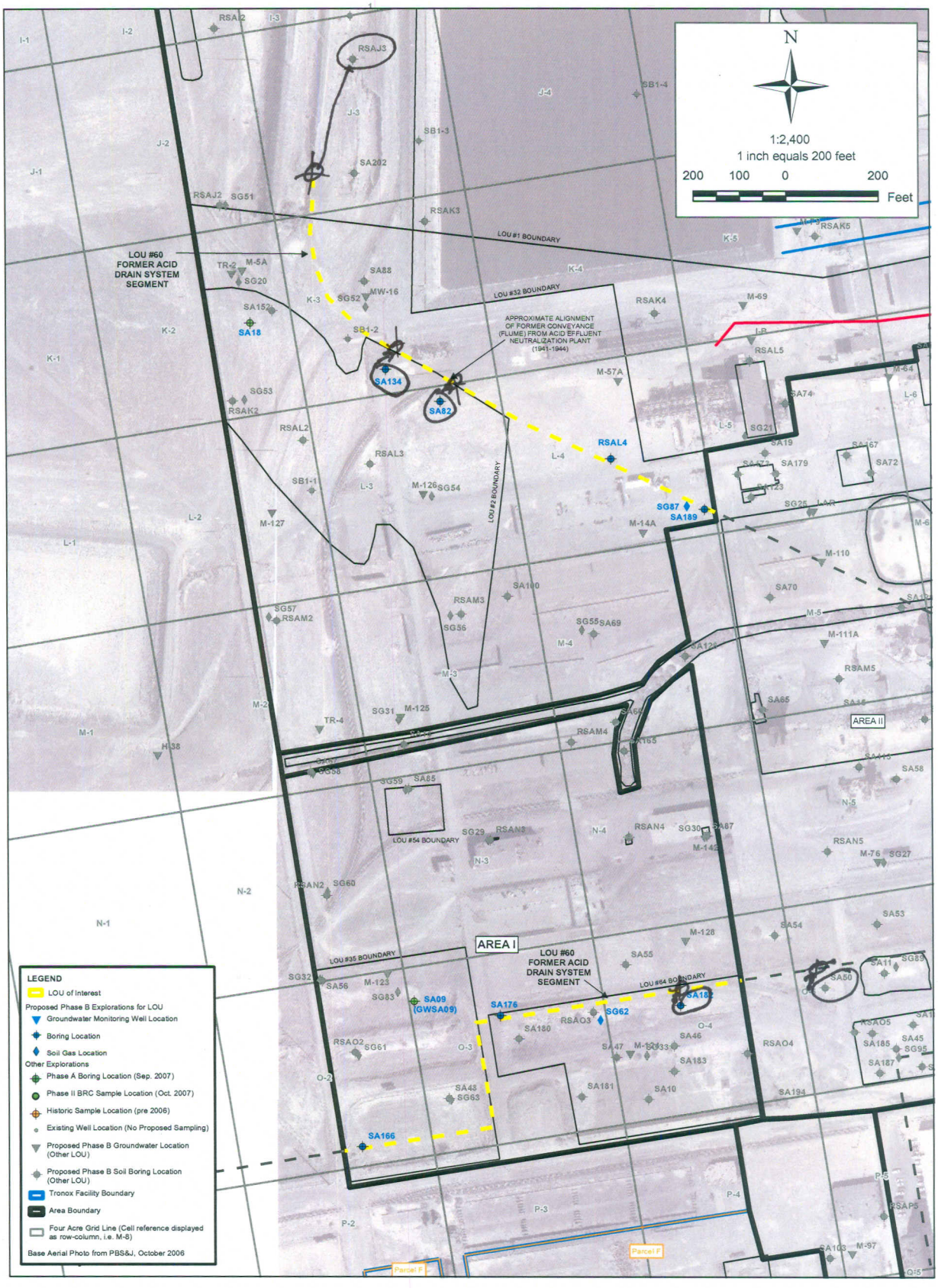
For LOU 60 (4 Area I changes



SHEET NUMBER:	FIGURE NUMBER:
X	1

SAMPLE LOCATIONS FOR LOU #60 IN AREA I FORMER ACID DRAIN SYSTEM SEGMENT

Phase B Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	4/2/2008	04020-023-430

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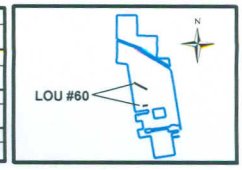
DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
B. Ho	M. Scop	C. Schnell	B. Ho



FINAL

Meeting Minutes

Project:	Tronox (TRX)
Location:	Conference Call
Time and Date:	1:30 PM, May 8, 2008
In Attendance:	NDEP – Brian Rakvica, Shannon Harbour
	Tronox –Susan Crowley
	Environmental Answers – Keith Bailey (for TRX)

CC: Jim Najima

1. The meeting was held to discuss future Phase B submittals and NDEP's comments to the *Phase B, Source Area Investigation Work Plan, Area I (Northern LOUs), Tronox LLC Facility, Henderson, Nevada* (Phase B Area I SAP).
2. The following are TRX's response to comments (RTCs) regarding NDEP's May 6, 2008 Response to the Phase B Area I SAP:
   a. RTC 1, TRX will add requested text.
   b. RTC 2, TRX acknowledges this comment.
   c. RTC 3, TRX will clarify plans for preparing a Human Health Risk Assessment including whether the BRC closure plan approach will be used
   d. RTC 4, TRX stated that broad suite analyses are proposed for currently operating LOUs to provide "baseline" conditions in these areas and if the current operations do not exacerbate contamination future closure would not require sampling for the full SRC list. TRX stated that if a chemical is not detected and is also not a part of the process, then TRX proposes not to conduct future investigations for this chemical.
   e. RTC 5, TRX stated that they are planning a human health risk assessment (HHRA) and will add text to future Phase B SAPs.
   f. RTC 6, TRX stated that deep borings will be advanced in Parcels F (3 borings), G (2 borings), and the small triangular section on the east side of C (1 boring). TRX is not planning any deep characterization in the other Parcels (A, B, C, D, and H).
   g. RTC 7, TRX will use Region VI MSSLs per NDEP's guidance.
   h. RTC 8.a, TRX stated that the sample Tables do not show PCB analyses, but TRX will check the text and revise as necessary. NDEP noted that text in Appendix A, LOU packets stated that PCB would be sampled in groundwater monitoring well M-123.
   i. RTC 8.b, TRX stated that radium will be analyzed using alpha and beta spectrometry.
   j. RTC 9.a, TRX will modify the table at the bottom of page 2-7 as requested.
   k. RTC 9.b.i, TRX will run EPA Method 1312 using 2 preparation methods: 1) with reagent water and 2) with reagent water at pH 5.00 ± 0.05.
   l. RTC 9.b.ii, TRX stated that pH will be analyzed in the field. Laboratory pH will not meet hold times.
   m. RTC 9.c, TRX acknowledges this comment.
   n. RTC 9.d, TRX proposes to sample from the alluvium and Muddy Creek formation for the SPLP tests.
   o. RTC 9.e, TRX will revise the sample locations.
   p. RTC 9.f, TRX acknowledges this comment and will revise the sampling locations.
   q. RTC 9.g, TRX does not agree with this comment. Leaching tests are designed to provide data on movement of SRCs through the alluvium and Muddy Creek soils. Data

from the tests can be used for multiple locations, making it unnecessary to perform a leach test at each LOU.

r. RTC 9.h, TRX stated that the SPLP samples may be used for modeling in the HHRA.

s. RTC 10, TRX acknowledges this comment and will remove Section 3.

t. RTC 11, TRX will collect two samples from any sample with 10 NTU or greater. One sample will be field filtered the other will not. NDEP noted that this procedure should be consistent with the BRC SOPs.

u. RTC 12, TRX acknowledges this comment and will schedule a meeting with NDEP to discuss the Phase B report once data are validated. NDEP will provide guidance at the meeting on use of appropriate statistical tests.

v. RTC 13, TRX acknowledges this comment. If additional investigation work is required, an addendum to the work plan will be proposed.

w. RTC 14, TRX acknowledges this comment.

x. RTC 15.a, TRX acknowledges this comment and will modify text and/or tables as necessary.

y. RTC 15.b, TRX will modify text and/or tables as necessary.

z. RTC 15.c, TRX stated that OCPs will be sampled and analyzed in soils and at the capillary fringe. OCP samples will be collected at other proposed sampling depths but will be placed on hold pending the results of the surface and capillary fringe samples.

aa. RTC 15.d, TRX acknowledges this comment.

bb. RTC 15.e, TRX will add requested text.

cc. RTC 15.f, TRX does not agree with this comment. However, TRX noted that this comment does not change anything substantive in the Phase B Area I SAP. Evaluation of LOU 32 could simplify future closure (see RTC 4 above).

dd. RTC 15.g, TRX acknowledges this comment and will add the SVOC analysis in SA66 and TPH-DRO/ORO to SA67.

ee. RTC 15.h, TRX acknowledges this comment and will modify the table as necessary.

ff. RTC 15.i, TRX acknowledges this comment and will modify the table as necessary.

gg. RTC 15.j, TRX acknowledges this comment and will modify the table as necessary.

hh. RTC 16.a and b, TRX will modify the table to add a column for the soil type(s) expected across the screened interval of each groundwater monitoring well. If the screen interval crosses the AA/MCF interface, TRX will note which unit the sampled groundwater is expected to represent. For example, if the screened interval was 90% AA and 10 % MCF, TRX would note that the groundwater collected would be expected to represent AA conditions. NDEP clarified that it is interested in determining potential bias of the samples where the well screen covers more than one soil type.

ii. RTC 16.c, TRX acknowledges this comment.

jj. RTC 16.d, TRX will review (see RTC 8a).

kk. RTC 17, TRX acknowledges this comment.

ll. RTC 18, TRX acknowledges this comment and will discuss in revised work plans (see RTC for comment 16.a and b).

mm. RTC 19, TRX acknowledges this comment and will modify the figure as necessary.

nn. RTC 20, TRX acknowledges this comment and will modify the plate as necessary. TRX noted and the NDEP agreed that if TRX updates Plate A of the Phase B Area I SAP, then the individual figures for the Appendix A LOU packets do not need to be revised.

oo. RTC 21.a - k, TRX acknowledges this comments and will modify the overall figure as necessary. Individual LOU figures in the Area I work plan will not be revised. .

pp. RTC 21.l, TRX stated that the former acid drain system is located at 10 – 20 fbgs in places and that excavation with a backhoe is very difficult due to collocated utilities. TRX believes that the former acid drain system is constructed of relatively short segments (approximately 5 to 6 ft lengths) and therefore sampling anywhere along the pipeline should be representative of possible worst case scenario conditions. TRX will check the length of the pipe segments, the construction material of the pipe, and the location of other utilities prior to the advancement of these borings.

qq. RTC 21.m, TRX acknowledges this comment and will revise Plate A in lieu on any revisions to the LOU figures.

3. TRX stated that they will provide errata for the Phase B Area I SAP, as needed.
4. TRX stated that the Phase B, Area VI SAP was being revised per NDEP's comments and would be submitted by May 19, 2008.
5. TRX will consider consolidating Phase B, Areas II and III into one SAP that will be submitted in mid-June.
6. TRX stated that the soil gas field work has commenced.
7. TRX stated that the field work for the Phase B Area I SAP should commence after Memorial Day.

TRONOX

Susan Crowley
Staff Environmental Specialist

(702) 651-2234
Fax (405) 302-4607
susan.crowley@tronox.com

May 30, 2008

Ms. Shannon Harbour, P.E.
Nevada Division of Environmental Protection
2030 East Flamingo Road, Suite 230
Las Vegas, Nevada 89119-0818

Subject: **Additional Documents for Phase B Area I Work Plan**
Tronox LLC, Henderson, Nevada

Dear Ms. Harbour:

Enclosed is the revised Figure A requested for the Tronox LLC Henderson Facility Phase B Area I work plan. This figure is being provided in response to the May 8th conference call and your May 28, 2008 e-mail.

Revised Tables 2 and 3 will be send via e-mail on Monday, June 2. These tables will reflect the changes in sampling and analysis. Table 2 will include a list of the borings that will be sampled for leaching and geotechnical characteristics.

If you have any comments or questions concerning this correspondence, please contact me at your convenience (702) 651-2234.

Sincerely,

Susan Crowley
Staff Environmental Specialist

Overnight Mail
Attachment: as stated
CC: See attached Distribution List

June 18, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Phase B Source Area Investigation Work Plan Area IV (Western and Southern LOUs). Tronox LLC Facility, Henderson, Nevada
Dated May 16, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's Phase B, Area IV Sampling Analysis Plan (SAP) identified above and finds the document acceptable with the conditions and comments provided in Attachment A.

Errata sheets should be submitted based on the comments found in Appendix A. TRX should additionally provide an annotated response-to-comments (RTC) letter as part of the errata submittal. Alternately, in place of an RTC letter, TRX can discuss these comments with the NDEP in a meeting or via phone. Please advise the NDEP regarding the schedule for this submittal. Please note that it is NDEP's intent that TRX should be able to proceed with implementation of this SAP upon submittal of the erratum and RTC letter (or completion of meeting with NDEP in lieu of the RTC letter).

Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Ebrahim Juma, DAQEM, PO Box 551741, Las Vegas, NV, 89155-1741
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, Landwell, 875 West Warm Springs, Henderson, NV 89011
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110
Teri Copeland, 5737 Kanan Road #182, Agoura Hills CA 91301
Paul Hackenberry, Hackenberry Associates, LLC, 550 W. Plumb Lane B425, Reno, NV 89509
Paul Black, Neptune and Company, Inc., 8550 West 14th Street, Suite 100, Lakewood, CO 80215

Attachment A

1. General comment, as stated in NDEP's comments to the Phase B Area I SAP, TRX should revise Table 2 to note that all samples within the 0 – 1 fbgs interval will be collected from 0 – 0.5 fbgs unless the area is paved. If the area is paved it is expected that the sample will be collected from a representative depth beneath the pavement. Alternately, if an unpaved area is within a reasonable distance the sample could simply be moved to the unpaved area. Table 2 should be revised accordingly. These changes should be reflected in the Table 2 errata pages for the Phase B Area IV SAP and any future Sampling Analysis Plans (SAPs) submitted to the NDEP.
2. General comment, for borings located above LOU 60, TRX should log the condition of the pipe, if possible, and collect a sample directly underneath the pipe. This sample may be substituted for the next proposed 10 foot interval in the Phase B SAPs, Table 2. (e.g. if the bottom of the Former Acid Drain System pipe was located at 8 fbgs, then the sample should be collected directly underneath the pipe and not at 10 fbgs). Please note that this comment additionally applies to the Phase B Area I SAP. Please add text and footnotes to future Phase B SAPs that contain sampling for LOU 60 to reflect this change.
3. Section 1.0, page 1-2, 2nd paragraph, "Acid Drawn System" should be "Acid Drain System". Please revise text accordingly.
4. Section 1.1, page 1-3, 3rd paragraph, final sentence, the term "statistical sample population" is not correct and should be revised to "a statistical sample of the population" or "a statistical sample". However, because these collections of samples include both random and judgmental samples, the term "statistical sample" is also not necessarily strictly accurate. Using the term "sample of the population" or just "sample" is probably best under the circumstances of these data.
5. Section 1.1, page 1-4, 3rd bullet, NDEP is unclear how "pathways not applicable in the HHRA" relates to "the evaluation of flux chamber measurements". Please clarify this statement.
6. Section 1.1, page 1-4, 1st paragraph, NDEP could not located description of human health risk assessment (HHRA) work plan in Section 3.0 as stated in this paragraph. TRX should acknowledge this statement for the Phase B Area IV SAP and provide the description in any future Phase B SAPs submitted to the NDEP. In addition, it is noted that the HHRA work plan should be developed as soon as possible.
7. Section 2.1, page 2-1, 3rd bullet, TRX should add the groundwater direction to this statement.
8. Section 2.2.1, page 2-3, 2nd paragraph, TRX states that "if current operations do not exacerbate contamination, future closure for the would not require sampling for the full SRC list (i.e. if a chemical is not detected in the Phase B Investigation and is not a part of the process associated with the LOU, it would not be analyzed for at the time of closure)." The NDEP does not necessarily concur with this statement at this time and will review this issue at the time of closure.
9. Section 2.2.1, page 2-4, 4th paragraph, TRX should include discussion on groundwater as a source of continuing soil contamination.
10. Section 2.3, page 2-5, 1st paragraph, TRX should note that groundwater samples will be collected from 18 wells under the Phase B Area IV SAP not 1 as is stated in the text.
11. Section 2.3, general comment, TRX should additionally discuss surface sampling for dioxin. Please see above general comment about sampling depths.

12. Section 2.3.1, page 2-5, 3rd paragraph the term "statistical sample population" is not correct as discussed above, please correct this issue throughout the document.
13. Section 2.3.2, page 2-6, the NDEP has the following comments:
    a. General comment, TRX does not discuss cyanide analysis. Please add cyanide analysis to this section. Additionally, TRX should note that there is only toxicity data available for free cyanide. If only total cyanide analysis is conducted, then TRX will need to assume that the total cyanide concentration is equal to the free cyanide concentration in the HHRA.
    b. 1st bullet, please note that PCB analyses should include Aroclor and congener analyses.
    c. 5th bullet, it is the NDEP's understanding that TRX will not use gamma spectroscopy for any of the Phase B radionuclides analyses.
14. Section 2.3.3.1, page 2-7, the information presented herein does not need a separate section (Section 2.3.3) and should be incorporated into the preceding section.
15. Section 2.3.4.1, page 2-7, the third bullet (concerning TRX using the reagent water leaching method in addition to "extraction fluid #2") on the original page 2-7 has appears to have been removed. It may have been moved to page 2-8 but no errata page for 2-8 was submitted. TRX should acknowledge this omission for the Phase B Area IV SAP and include the omitted text in any SAPs submitted in the future.
16. Section 2.3.4.1, page 2-8, 1st paragraph, TRX states that "The leachate data derived from the reagent water and that from the pH 5.0 water will be compared to reflect variable wetting conditions at the site." This text should be revised to state that the leachate data will "...reflect variable pH conditions..."
17. Section 2.3.4.2, general comment, NDEP advises TRX to consider how the SPLP data will be used for risk assessment. Additionally, it is expected that TRX will determine whether any modeling will be conducted. Based on these considerations, TRX should evaluate the geotechnical / physical and chemical properties that are being collected to determine if the number of parameters and samples will provide sufficient data.
18. Section 2.3.4.2, page 2-8, TRX should collect the fraction of organic carbon (f_{oc}) in addition to the listed parameters. TRX should acknowledge this omission for the Phase B Area IV SAP and include should this parameter in any future Phase B SAP submitted to the NDEP.
19. Tables, the NDEP has the following comments:
    a. General comment, the NDEP requests that TRX prepare and present a table and corresponding figure that includes well construction details (e.g. casing diameter, age, materials of construction, screened interval, etc.) versus geology. This table may be submitted as an addendum/insert for the Phase B Areas II and III reports and is not necessary for the implementation of the Area IV SAP. This table should include all wells proposed for sampling in the Phase B Area SAPs.
    b. Table 1, TRX should include a footnote referencing the approval date of the SRC list used for this table.
    c. Table 2, the NDEP has the following comments (Please note that the following comments for Table 2 should be addressed by the submittal of errata pages for the Phase B Area IV SAP and incorporated in future Phase B SAPs submittals.):
        i. General comment, the rationale for judgmental samples included in Table 2 of the Phase B Area IV and future Phase B SAPs should be more focused on how the boring will represent the LOU(s) indicated.

ii. General comment, in the HHRA and/or future SAPs, TRX should identify whether judgmental borings should be indicative of worst case scenario conditions for a given LOU by using historic information/data, historic aerial photography, etc.
iii. General comment, Geotechnical Tests column, the boring-depth sample numbers should be removed from Table 2, page 5 of 5. TRX should alternately indicate the depth of geotechnical sample collection at these borings in the main part of the table. Rational for the geotechnical samples can be included in the Location Description and Characterized Area Rationale column. Please note that the mark indicating a geotechnical sample should be footnoted if the sample is proposed as optional.
iv. General comment, Rationale column, TRX should provide additional explanation on the choice of location for each boring in respect to each LOU (i.e. whether the boring represents worst case scenario for a LOU and how this was determined, etc.).
v. The following borings should include the corresponding analyses:
1. SVOCs: SA191
2. Cyanide: all borings located in Area 4 west of column 6 (not inclusive) and all borings associated with LOU 60 downstream of the LOU 63 conveyance piping junction. Please additionally revise and resubmit Phase B Area I SAP, Table 2, as necessary.
3. Radionuclides: SA115-20, SA115-30, and SA115-40

d. Table 3, the NDEP has the following comments (Please note that the following comments for Table 3 should be addressed by the submittal of errata pages for the Phase B Area IV SAP and incorporated in future Phase B SAPs submittals.):
i. General comment, TRX should note that the NDEP does not necessarily agree that the selected wells are representative of the up-gradient, down-gradient and/or cross-gradient conditions as stated in the Appendix A LOU packets. The NDEP does note that the overall coverage of the groundwater sampling plan appears adequate.
ii. General comment, TRX should note the water bearing zone of each of the proposed wells in this table.
iii. General comment, please clarify whether the wells designated as "upgradient" are to be included in the Alluvial Aquifer Background SAP. If TRX is intending that these wells be a part of the Alluvial Aquifer Background SAP, then TRX should remove these wells from the Phase B Area IV SAP.

e. Table 6, TRX should note that this table was not reviewed in detail by the NDEP as it is NDEP's assumption that this table is consistent with the approved QAPP.
f. Table 7, TRX should note that this table was not reviewed in detail by the NDEP as it is NDEP's assumption that this table is consistent with the approved QAPP.

20. Figure 4, the NDEP has the following comments (Please note that the following comments for Figure 4 should be addressed by the submittal of errata pages for the Phase B Area IV SAP and incorporated in future Phase B SAPs submittals.):
a. TRX should clarify which water bearing zone is being represented and review the well construction details to determine that all wells used for this figure are in the targeted water bearing zone.
b. TRX should use groundwater elevation data from additional wells across the site to more accurately and precisely determine the groundwater direction and gradient. If additional wells are used for this figure, then TRX should include them on the map.
c. TRX should illustrate the groundwater direction on this figure.

21. Plate A (Please note that the following comments for Plate A should be addressed by the submittal of errata pages for the Phase B Area IV SAP and incorporated in future Phase B SAPs submittals.):
    a. Add the location of LOU 66.
    b. Update this plate to include the following comments to the Appendix A LOU packets that affect boring placement.
    c. Indicate visually which borings will additionally include geotechnical sample collection.
22. Appendix A, the NDEP has the following comments:
    a. General comment: TRX should indicate in future LOU packages as to whether any proposed or historic borings/samples represent the worst case scenario conditions for the given LOU and how the location(s) for the worst case scenario conditions was/were determined.
    b. General comment, TRX should include discussion on the background radionuclide data in the LOU packages, as appropriate.
    c. General comment, TRX should reference the appropriate ASTDR value for dioxin/furans.
    d. General comment, the NDEP has noted many examples of non-consistent units within the LOU package data tables. TRX should review and revise all data table for the LOU packages for consistent units within each table for future Phase B SAPs submittals.
    e. General comment, the NDEP has noted several examples of TRX referencing EPA Region VI MSSLs and Region IX PRGs in the LOU data packages. TRX should review and revise all LOU data tables to contain only EPA Region VI MSSLs until otherwise directed by the NDEP.
    f. General comment, the NDEP has noted that TRX has not included the DAF 1 and DAF 20 values in the LOU data packages as necessary. TRX should review and revise as necessary for future submittals.
    g. LOU 4 (Hardesty Chemical Company Site), LOU 26 (Trash Storage Area), LOU 27 (PCB Storage Area), and LOU 28 (Hazardous Waste Storage Area), the NDEP has the following comments:
        i. LOU 26, TRX should check using old aerial photography, etc. that the location for SA120 represents the worst case scenario for this LOU. Additional rationale as to the confidence that the location of SA120 represents the worst case scenario sampling should be included in the errata for Table 2.
        ii. LOU 27, wipe and chip samples should be additionally collected in LOU 27 and analyzed for PCBs. TRX should provide a SOP and Work Plan for the collection of the wipe and chip samples. The SOP and Work Plan may be included as errata to the Phase B Area VI SAP or submitted under separate cover. These additions should be indicated in the errata for Plate A and Table 2.
        iii. Table A: See above comments for Table 2 as applicable
        iv. Figure 1, the NDEP has the following comments (The following changes should be included in the revised Plate A.):
            1. SA84 should be relocated over the LOU 60 (Acid Drain System).
            2. SA138 should be relocated to the approximate location of the termination of the above ground pipeline.
            3. SA191 may be moved into LOU 28; otherwise, TRX should place an additional boring in LOU 28 either between the two ASTs or just north of the northernmost AST in the northwest corner of LOU 28.

h. LOU 41, LOU 65a, LOU 65b, LOU 65c, and LOU 65d, SA169 should be relocated to the east directly above the Lou 60 (Acid Drain System).
i. LOU 59 (Storm Drain System Segment), the NDEP has the following comments:
    i. General comment, the borings associated with this LOU should be located immediately adjacent to the storm drain system whenever possible.
    ii. SA116 should be relocated southwest to the western southernmost segment of LOU 59.
    iii. SA118 should be relocated southeast to the approximate location of historic sample location M116 on the eastern southernmost segment of LOU 59.
    iv. An additional boring should be located adjacent to TRX's eastern property boundary on the eastern southernmost segment of LOU 59.
    v. An additional boring should be located adjacent to LOU 59 where it re-enters TRX property across the western property boundary (near SG44).
j. LOU 60 (Former Acid Drain System), the NDEP has the following comments:
    i. General comment, the borings associated with this LOU should be located directly above the former acid drain system whenever possible.
    ii. General comment, TRX should identify the construction material of this LOU.
    iii. An additional boring should be located over LOU 60 where the acid drain system re-enters TRX property across the western property boundary (near SG88).
    iv. Three additional borings should be located one at each junction on the northernmost segment of LOU 60 in Area IV (north of Unit Buildings 1 and 2).
k. LOU 62 (State Industries, Inc. Site), the NDEP has the following comments:
    i. Description, 5th bullet, 2nd sub-bullet, TRX should identify the location of Building T-5. Please submit an errata sheet for this revision.
    ii. Figure A, please submit a revised figure that indicates the location of the following:
        1. Buildings T-4, T-5, and T-8,
        2. Conveyance piping to/from the former ponds
        3. Conveyance piping to the Former Acid Drain System
        4. Sanitary sewer that received the LOU 62 discharge overflow from the Former Acid Drain System
    iii. Please note that additional sampling may be necessary based on the submittal of the above information.
l. LOU 66 (Flintkote Company Lease, Former Aboveground Diesel Tank), please provide additional discussion on the rationale that TRX does not have to sample this LOU. NDEP does not concur at this time.

TRONOX

Susan Crowley
Staff Environmental Specialist

(702) 651-2234
Fax (405) 302-4607
susan.crowley@tronox.com

July 11, 2008

Ms. Shannon Harbour, P.E.
Nevada Division of Environmental Protection
2030 East Flamingo Road, Suite 230
Las Vegas, Nevada 89119-0818

Subject: **Revised Documents for Phase B Area IV Work Plan**
Tronox LLC, Henderson, Nevada

Dear Ms. Harbour:

Enclosed is the revised Plate A Table 2 and Table 3 requested for the Tronox LLC Henderson Facility Phase B Area IV work plan. These revisions are being provided in response to the June 18, 2008 NDEP comments to the Area IV Work Plan and the June 23, 2008 NDEP conference call.

These tables reflect the changes in sampling and analysis requested.

If you have any comments or questions concerning this correspondence, please contact me at your convenience (702) 651-2234.

Sincerely,

SM Crowley

Susan Crowley
Staff Environmental Specialist

Overnight Mail
Attachment: as stated
CC: See attached Distribution List

Distribution list
Area 4 WP.xls

July 21, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Phase B Source Area Investigation Work Plan Area II (Central LOUs). Tronox LLC Facility, Henderson, Nevada
Dated June 27, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's Phase B, Area III Sampling Analysis Plan (SAP) identified above and finds the document acceptable with the conditions and comments provided in Attachment A.

Errata sheets should be submitted based on the comments found in Appendix A. TRX should additionally provide an annotated response-to-comments (RTC) letter as part of the errata submittal. Alternately, in place of an RTC letter, TRX can discuss these comments with the NDEP in a meeting or via phone. Please advise the NDEP regarding the schedule for this submittal. Please note that it is NDEP's intent that TRX should be able to proceed with implementation of this SAP upon submittal of the errata and RTC letter (or completion of meeting with NDEP in lieu of the RTC letter).

Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Ebrahim Juma, DAQEM, PO Box 551741, Las Vegas, NV, 89155-1741
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, Landwell, 875 West Warm Springs, Henderson, NV 89011
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110
Teri Copeland, 5737 Kanan Road #182, Agoura Hills CA 91301
Paul Hackenberry, Hackenberry Associates, LLC, 550 W. Plumb Lane B425, Reno, NV 89509
Paul Black, Neptune and Company, Inc., 8550 West 14th Street, Suite 100, Lakewood, CO 80215

Attachment A

1. General comment, NDEP has noted numerous typographic errors and cross-referencing errors in the text, tables, and figures of this document but will not list these in this response letter. TRX should review documents in greater detail and revise as necessary prior to submittal.
2. General comment, some site-wide changes to the sampling plan have been requested under separate cover. Please refer to separate letter dated July 21, 2008.
3. General comment, NDEP noted numerous errors in the Medium Specific Screening Levels (MSSLs), Maximum Contaminant Levels (MCLs), etc. listed in the tables of the main text and Appendix A LOU packages and notes the following (TRX should note that the following is not an exhaustive list):
   a. TRX should review these values in greater detail and revise as necessary prior to the submittal of future documents.
   b. The non-cancer endpoint MSSL for arsenic is used instead of the cancer endpoint MSSL.
   c. TRX did not include the MSSL for titanium.
   d. TRX did not include the MSSL for thallium.
   e. TRX should use the values listed for the outdoor worker as these are more stringent. Indoor workers will be addressed using the indoor air pathway.
   f. TRX should list the more stringent of the cancer versus non-cancer endpoint MSSLs for each contaminant.
4. Section 1.0, page 1-2, as noted previously, it is the NDEP's expectation that TRX will meet with the NDEP to discuss the format of the final Phase B Source Area Investigation Report prior to submittal.
5. Section 1.1, page 1-3, 4th paragraph, as noted previously, it is the NDEP's expectation that TRX will meet with the NDEP to discuss data usability prior to the submittal of the final Phase B Source Area Investigation Report.
6. Section 1.2, page 1-5, TRX lists the Phase A Investigation Results Report as a document of record. The NDEP did not approve this document but accepted the submittal of the Phase B SAPs in lieu of TRX submitting a revised Phase A Report. TRX should note that while the validated data presented in the Phase A Report was approved by the NDEP, the procedures/methodologies, recommendations, and conclusions in the Phase A Report were neither approved nor rejected by the NDEP.
7. Section 2.2.1, page 2-3, 2nd paragraph, TRX states that "If current operations do not exacerbate contamination, future closure may not require sampling for the full SRC list (i.e., if a chemical is not detected in the Phase B Investigation and is not a part of the process associated with the LOU, it may not be analyzed for at the time of closure)." The NDEP does not necessarily concur with this statement at this time and will review this issue at the time of closure.
8. Section 2.2.1, page 2-4, 3rd paragraph, TRX should include discussion on groundwater as a source of continuing soil contamination.
9. Section 2.3.2, page 2-6, 1st bullet, the NDEP has the following comments:
   a. TRX should note that sampling for PCBs is necessary in several locations in Area II.
   b. TRX should note that PCB analyses should include Aroclor and congener analyses.

c. NDEP has added PCBs and TPH DRO/ORO analysis to any borings located in the vicinity of Western Area Power Administration (WAPA) property. Please see Table 2 comments.

10. Section 2.3.2, page 2-6, last bullet, TRX should note that cyanide sampling should be conducted at all sampling locations located west of column 6 of Plate A, not inclusive, per NDEP's comment in a June 18, 2008 response letter and TRX subsequent response to comments (RTCs) dated June 23, 2008.
11. Section 2.3.4.1, page 2-7, 1st paragraph, based on a review of Table 2, the Muddy Creek formation (MCf) does not seem to be represented in the proposed geotechnical sampling.
12. Tables, the NDEP has the following comments:
    a. General comment, the List of Tables on page iii of the Contents and the actual Tables located in the Tables section are not consistent as follows:
        i. Table 8 is not a List of Soil Screening Levels... but is the Summary of Well Completion Data.
        ii. No Table 9 was located.
        iii. All references in the text of the report to these two tables are erroneous.
    b. Table 2, the NDEP has the following comments
        i. TRX should submit errata pages for Table 2 that addresses the following comments for Table 2 and the comments for Appendix A as appropriate.
        ii. TRX should add a column for PCB analysis.
        iii. TRX should indicate in a footnote that platinum will be added to the analyses for boring SA126.
        iv. The following borings should be advanced to the water table to be consistent with other borings. (If this depth is not feasible or practical, TRX should supply justification/rationale for the difference in boring depth.): SA122, SA151, SA155, SA167, SA170, SA173, SA179, and SA196.
        v. The following borings should include the corresponding analyses:
            1. SVOCs: SA62, SA71, SA144, SA145, SA61, SA158, SA133, SA208, RSAS5, and SA31
            2. Cyanide, please see the following comments:
                a. TRX should note that NDEP requested that "all borings located in Area 4 west of column 6 (not inclusive) and all borings associated with LOU 60 downstream of the LOU 63 conveyance piping junction" in the June 18, 2008 response letter to the Phase B Area IV SAP.
                b. The following borings should include analysis for total cyanide: SA72, SA123, SA73, SA66, SA67, SA65, SA70, SA104, RSAM5, SA64, SA175, RSAM6, SA197, SA198, SA63, SA92, SA155, RSAM7, SA71, SA144, RSAM8, SA58, SA94, SA113, SA196, SA60, SA105, SA49, SA154, SA107, RSAN7, SA158, SA41, SA45, SA50, SA102, SA172, SA187, SA188, SA40, SA42, SA126, RSAQ6, SA30, SA32, SA125, SA161, and RSAR6
            3. PCBs: SA92, SA62, SA71, SA144, SA145, RSAM8, SA151, RSAN7, SA61, SA158, SA122, SA170, SA133, SA208, RSAS5, and SA31
            4. TPH DRO/ORO: SA70, SA104, SA64, SA175, SA198, SA155, SA71, SA49, SA107, SA122, SA170, and SA102

5. TPH GRO: SA131, SA128, SA70, SA104, SA129, RSAM5, SA175, SA86, SA92, SA155, RSAM7, SA71, SA144, RSAM8, SA49, SA154, SA107, RSAN7, SA158, SA50, SA53, SA102, SA51, RSAO6, and SA200
6. 1,4 dioxane: SA133
7. Organophosphorus Pesticides (OPPs): SASA131, SA66, SA67, SA128, SA70, SA104, SA129, SA175, SA86, SA92, SA155, SA71, SA165, SA49, SA154, SA107, RSAN7, SA158

c. Table 3, the NDEP has the following comments:
   i. General comment, TRX should note that the NDEP does not necessarily agree that the selected wells are representative of the up-gradient, down-gradient and/or cross-gradient conditions as stated in the Appendix A LOU packets. The NDEP does note that the overall coverage of the groundwater sampling plan appears adequate.
   ii. TRX should add analysis for 1,4-dioxane for all wells associated with this area.
   iii. TRX has noted that well information for well M-2A has not been located. TRX should note that any data collected from this well without the well information may not be usable.
d. Table 6, TRX should note that this table was not reviewed in detail by the NDEP as it is NDEP's assumption that this table is consistent with the approved QAPP.
e. Table 7, TRX should note that this table was not reviewed in detail by the NDEP as it is NDEP's assumption that this table is consistent with the approved QAPP.

13. Figure 4, NDEP noted that the wells used in this figure are not the same as those listed for the Phase B site-wide groundwater investigation. TRX should at a minimum use these wells in the creation of this figure.
14. Plate A, update this plate to include the following comments to the Appendix A LOU packets that affect boring placement. TRX should additionally submit four copies of a revised map that includes NDEP's requested revisions for Areas I, II, III, and IV. These copies will be places in each of the Phase B SAPs.
15. Appendix A, the NDEP has the following comments:
    a. LOU 5 (Beta Ditch), the NDEP has the following comments (please see the corresponding attached figure as necessary):
       i. TRX should note the depth of this LOU and whether this will affect the comparison of the data collected within the Beta Ditch with the data collected for the rest of the Site (elevation difference in compared samples).
       ii. The table in this Section of the Appendix does not address any of the off-Site sources that were disposed of in the Beta Ditch. This is a global comment which applies to all of the applicable area-specific CSMs that are in Appendix A. NDEP considered this issue during the review of the document and requested additional sampling, as appropriate.
       iii. PCBs analysis should be added to all samples collected for LOU 5. (Please see above comment for Table 2 for specific borings.)
       iv. SA129 should be moved to a location just downstream of where LOU 60 (Acid Drain System) crossed over LOU 5.
       v. SA67 should be moved north to the bottom of LOU 5.
       vi. SA69 (Area I) should include all analytical suites for consistency with LOU 5.

vii. SA165 should be moved in the downstream direction to provide separation from the additional boring requested below. Please note that the sample should still be located well above the confluence of the Western Diversion Ditch and the main channel.
viii. One additional boring should be located at the outfall of LOU 59 (Storm Drain System). The analyses for this boring should include, perchlorate, metals (Phase A List), Hexavalent Chromium, TPH ORO/DRO, TPH GRO, VOCs, Wet Chemistry, Total Cyanide, OCPs, OPPs, SVOCs, Radionuclides, Dioxins/Furans, PCBs, and Asbestos

b. LOU 7, 8, 9, 13, and 14 (Old Ponds P-2 and P-3, New Pond P-3, Ponds S-1, P-1 and associated conveyance piping), the NDEP has the following comments (please see the corresponding attached figure as necessary):
   i. TRX should check volume values reported. Volume calculation seems to be in error based on the small reported change in dimensions and the corresponding large increase in volume. If the volume is correct, please provide additional details (e.g.: was a large berm constructed?).
   ii. SA53 should be moved to the soil stained area west of LOU 9.
   iii. An additional boring should be located in LOU 8 near SB2-8.
   iv. An additional boring should be located in LOU 7 in the vicinity of the observed wall stains.
   v. An additional boring should be located in LOU 7 in the vicinity of the observed "white encrustments".
c. LOU 16, 17, 18, 19, 52, and 57 (AP Plant Area), the NDEP has the following comments (please see the corresponding attached figure as necessary):
   i. General comment, NDEP assumes that characterization of LOU 19, (AP-5 and AP-6) will occur after AP-5 has been decommissioned. NDEP will reserve commenting on these ponds until that time.
   ii. LOU 57 piping (historic and current) should be indicated on this LOU figure. Please revise this figure for inclusion in the Phase B Investigation Report.
   iii. SA65 should move to the area of depression observed off of the northeast corner of LOU 52.
d. LOU 20 (Pond C-1 and Associated Piping in Area II:
   i. TRX reports that electrolytic wastes are associated with this LOU. Please add the following analyses to the borings associated with this LOU: PCB and SVOCs.
   ii. Please provide the materials of construction of the cathodes.
   iii. SA154 should be located as close as possible to the associated piping for this LOU.
e. LOU 29 (Solid Waste Dumpsters)
   i. Please clarify whether SA122 is located on the concrete pad or in the gravel section between the pads.
   ii. Due to the proximity of WAPA property, TRX should add the following analyses to the borings associated with this LOU: PCBs and TPH ORO/DRO.
f. LOU 30 and 56 (AP Area – Pad 35 and Old Building D-1 Washdown), the NDEP has the following comments (please see the corresponding attached figure as necessary):
   i. SA173 should be moved east to be located within LOU 56.
   ii. SA179 should be moved west to be located within LOU 56.
   iii. SA123 should be moved to the north side of LOU 30.

g. LOU 31 (Drum Recycling Area), SA72 should be moved to a location in the former drum storage area. (Please see the corresponding attached figure as necessary.)
h. LOU 36 (Former Satellite Accumulation Point, Unit 3, Maintenance Shop), TRX should add the following analyses to the borings associated with this LOU: PCBs, SVOCs, and 1,4 dioxane.
i. LOU 43, 11, 12, and 15 (Unit 4 Basement and Old Chlorate Plant Decommissioning, Sodium Chlorate Filter Cake Holding Area, Hazardous Waste Storage Area and Platinum Drying Unit), the NDEP has the following comments (please see the corresponding attached figure as necessary):
    i. TRX should include the data for boring SA05 instead of SA07 in the historic data tables.
    ii. TRX reports that electrolytic wastes are associated with this LOU. Please add the following analyses to the borings associated with this LOU: PCB and SVOCs.
    iii. TRX should indicate in a footnote that platinum will be added to the analyses for boring SA126.
    iv. SA126 should be moved to the west of LOU 15.
    v. SA124 should be moved into LOU 11. If this is not feasible, please explain.
    vi. SA 125 should be moved into LOU 12. If this is not feasible, please explain.
j. LOU 45 (Diesel Storage Tanks), SA188 should be moved north to a location above LOU 60. (Please see the corresponding attached figure as necessary.)
k. LOU 55 (Area Affected by July 1990 Fire), RSAL6 should be moved to the soil adjacent to the pad in the direction of drainage.
l. LOU 59 (Storm Drain System Segment), the NDEP has the following comments (please see the corresponding attached figure as necessary):
    i. General comment, the borings associated with this LOU should be located immediately adjacent to the storm drain system whenever possible.
    ii. RSAQ5 should be moved north adjacent to LOU 59 in the vicinity of the southwest corner of ChemStar property.
    iii. RSAR6 should be moved north adjacent to LOU 59 and over LOU 60.
    iv. An additional boring should be located adjacent to LOU 59 at the 90 degree turn just south of ChemStar property.
    v. An additional boring should be located adjacent to LOU 59 just north of ChemStar property, south of LOU 45 and over LOU 60.
    vi. An additional boring should be located adjacent to LOU 59 just south of LOU 34 at the 90 degree turn just north of ChemStar property.
m. LOU 60 (Former Acid Drain System), the NDEP has the following comments (please see the corresponding attached figure as necessary):
    i. General comment, the borings associated with this LOU should be located directly above the former acid drain system whenever possible.
    ii. General comment, for borings located above LOU 60, TRX should log the condition of the pipe, if possible, and collect a sample directly underneath the pipe. This sample may be substituted for the next proposed 10 foot interval in the Phase B SAPs, Table 2 (e.g. if the bottom of the Former Acid Drain System pipe was located at 8 fbgs, then the sample should be collected directly underneath the pipe and not at 10 fbgs). Please note that this comment additionally applies to the Phase B Area I and IV SAPs.

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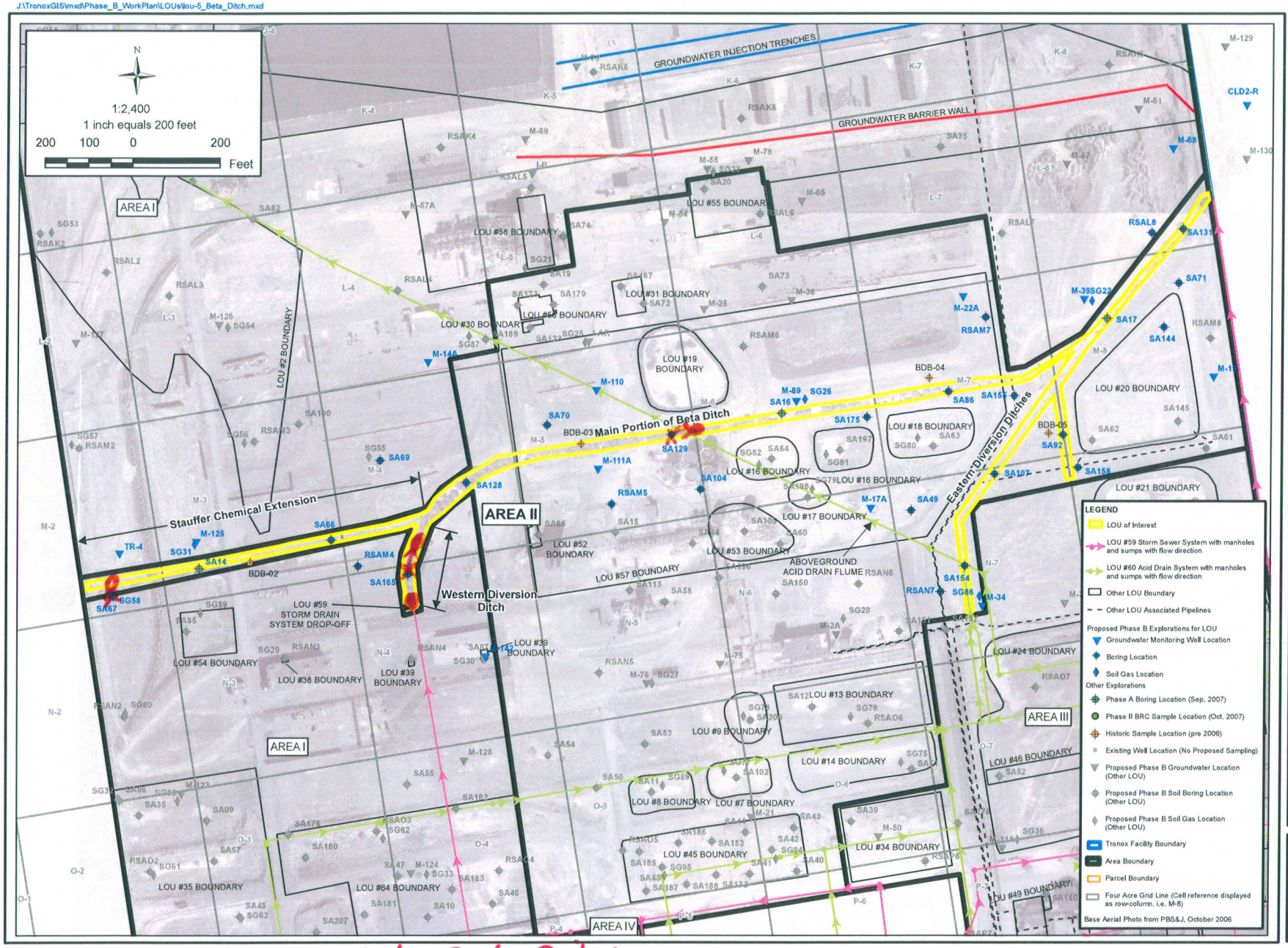

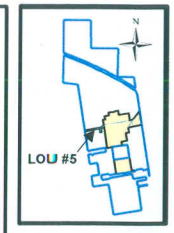

DESIGNED BY	B. Wilson
DRAWN BY	M. Scop
CHECKED BY	C. Schnell
APPROVED BY	B. Ho

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SAMPLE LOCATIONS FOR LOU #5
BETA DITCH
Phase B Area II Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE	DATE	PROJECT NUMBER
AS SHOWN	6/11/2008	04020-023-430

FIGURE NUMBER: 1

SHEET NUMBER: X

- move SA67 N into Beta Ditch
- move SA129 downstream of LOU60
- move SA165 down stream
- additional boring at outfall of LOU59 (just downstream)

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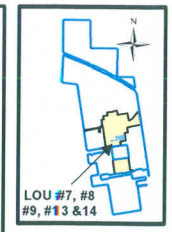

DESIGNED BY	G. Hels
DRAWN BY	M. Scop
CHECKED BY	C. Schnell
APPROVED BY	B. Ho

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SAMPLE LOCATIONS FOR LOU #7, #8, #9, #13 AND #14 OLD PONDS P-2 AND P-3, NEW POND P-3, POND S-1, P-1 AND ASSOCIATED CONVEYANCE PIPING

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

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/13/2008	04020-023-430

FIGURE NUMBER: 1

SHEET NUMBER: X

- move SA53 to white stained soil West of LOU 9
- additional boring near SB2-8 (LOU 8)
- additional boring in LOU 7 where wall stains are noted
- additional boring in LOU 7 where "white encrustments" are located

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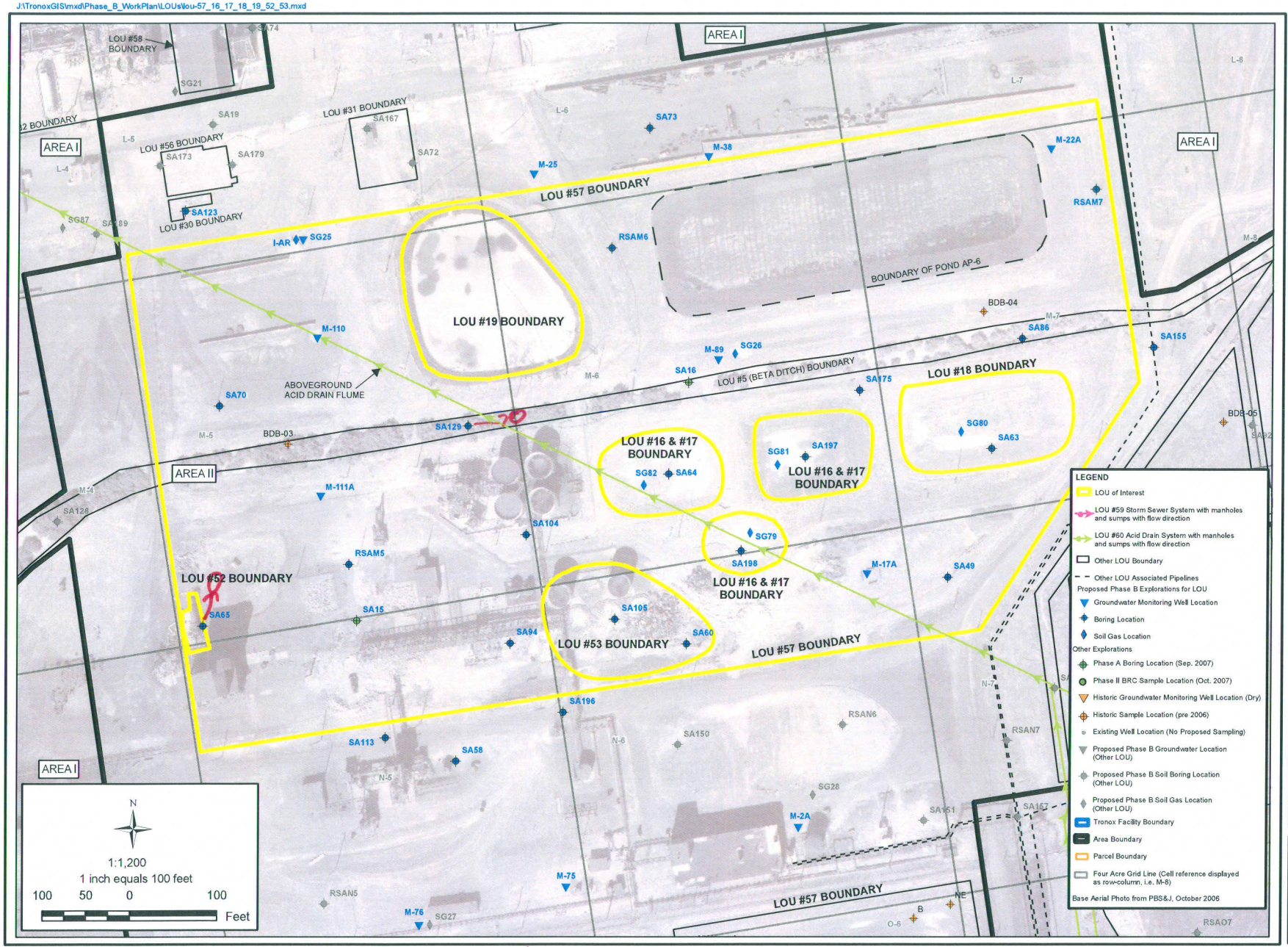

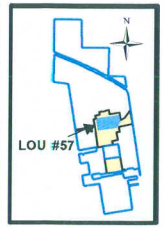

DESIGNED BY:	G. Heis
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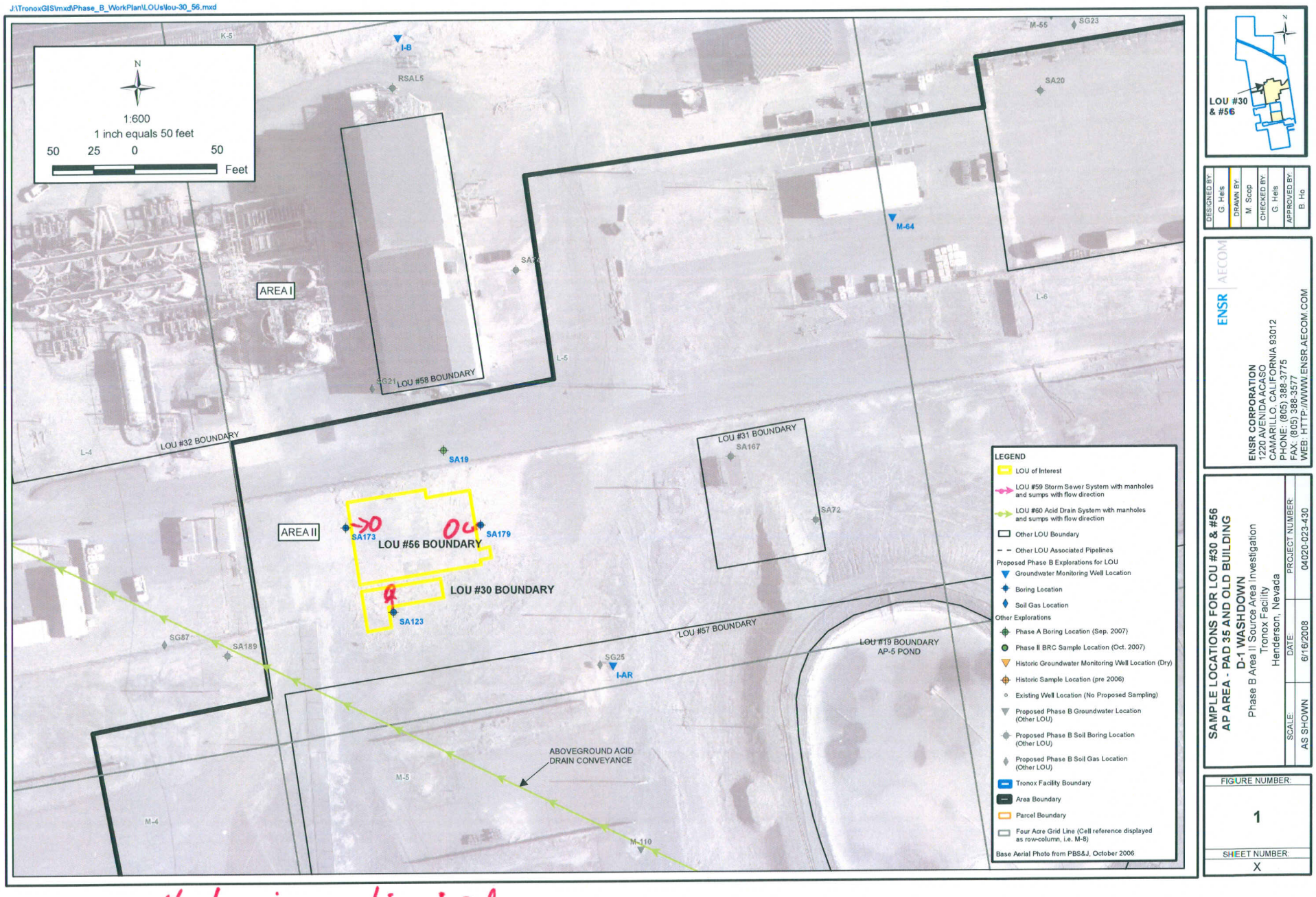
SAMPLE LOCATIONS FOR LOU #57, #16, #17, #18, #19, #52 & #53
AP PLANT AREA
Phase B Area II Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	AS SHOWN
DATE:	6/11/2008
PROJECT NUMBER:	04020-023-430

FIGURE NUMBER: 1

SHEET NUMBER: X

• move SA65 to area of depression off of NEC of Lou52



LOU #30 & #56

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
G. Heis	M. Scop	G. Heis	B. Ho

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SAMPLE LOCATIONS FOR LOU #30 & #56
AP AREA - PAD 35 AND OLD BUILDING
D-1 WASHDOWN
Phase B Area II Source Area Investigation
Tronox Facility
Henderson, Nevada

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

FIGURE NUMBER: 1

SHEET NUMBER: X

• move all boring w/in LOUs

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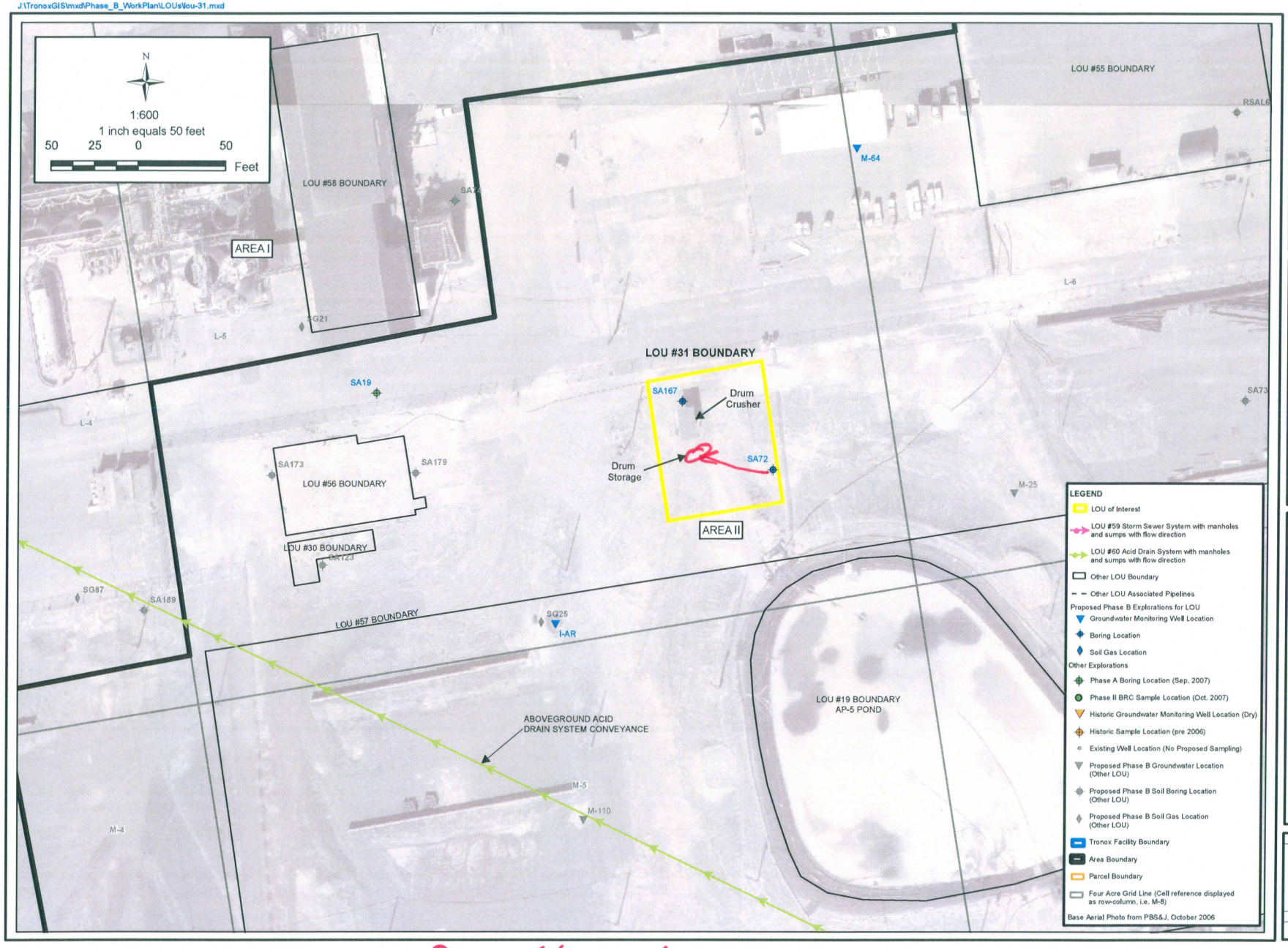

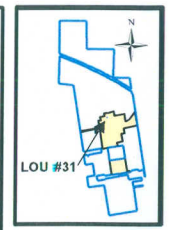

DESIGNED BY:	B. Wilson
DRAWN BY:	M. Scop
CHECKED BY:	C. Schnell
APPROVED BY:	B. Ho

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SAMPLE LOCATIONS FOR LOU #31
DRUM RECYCLING AREA
Phase B Area II Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/11/2008	04020-023-430

FIGURE NUMBER: 1

SHEET NUMBER: X

• move SA72 to Drum Storage Area

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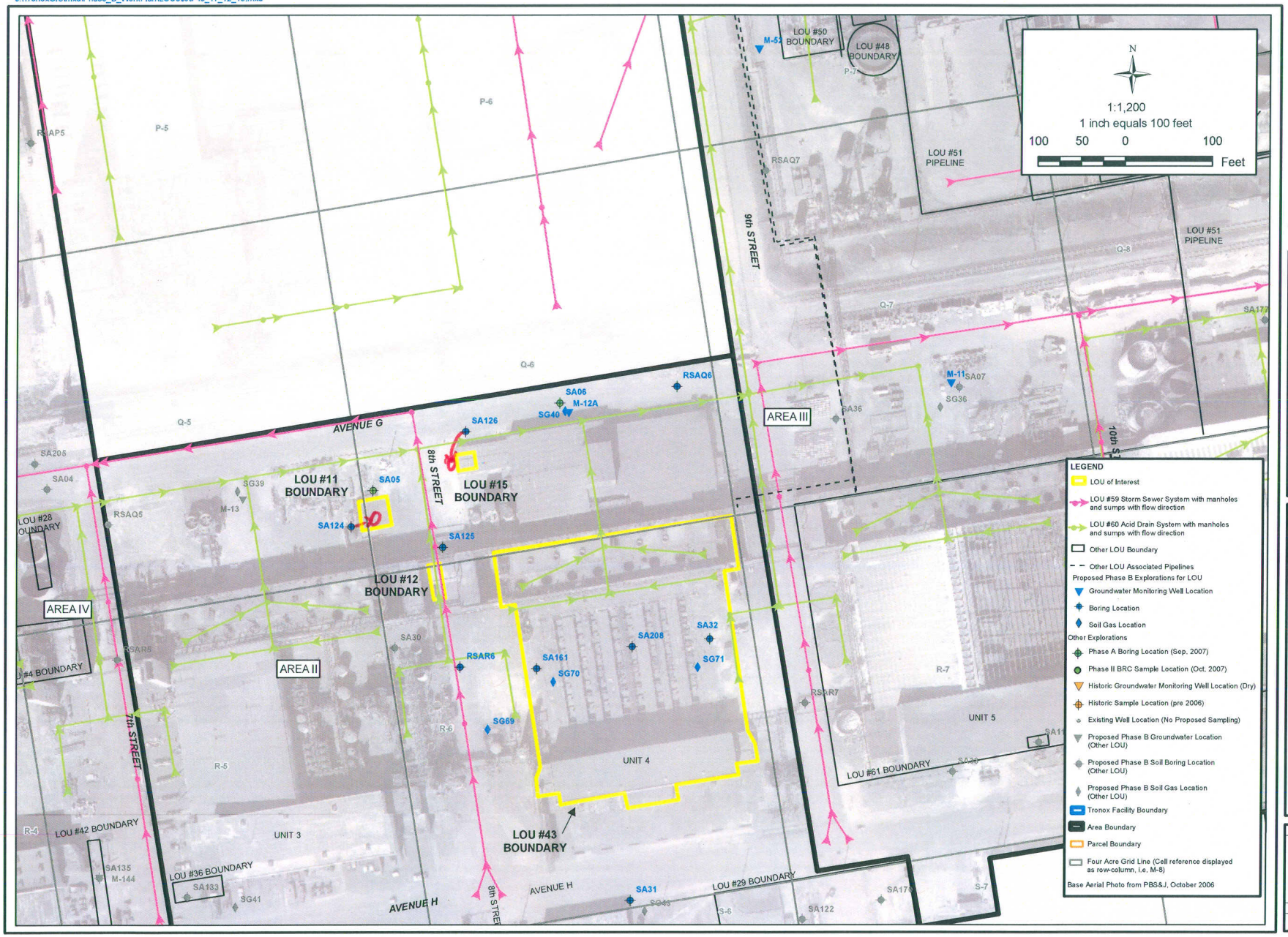

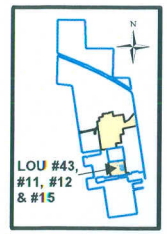

DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
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SAMPLE LOCATIONS FOR LOU #43, #11, #12 & #15
UNIT 4 BASEMENT AND OLD CHLORATE PLANT
DECOMMISSIONING, SODIUM CHLORATE FILTER
CAKE HOLDING AREA, HAZARDOUS WASTE STORAGE
AREA & PLATINUM DRYING UNIT
Phase B Area II Source Area Investigation, Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/13/2008	04020-023-430

FIGURE NUMBER: 1

SHEET NUMBER: X

- move SA124 into LOU 11
- move SA126 adjacent to LOU 15 to the West.

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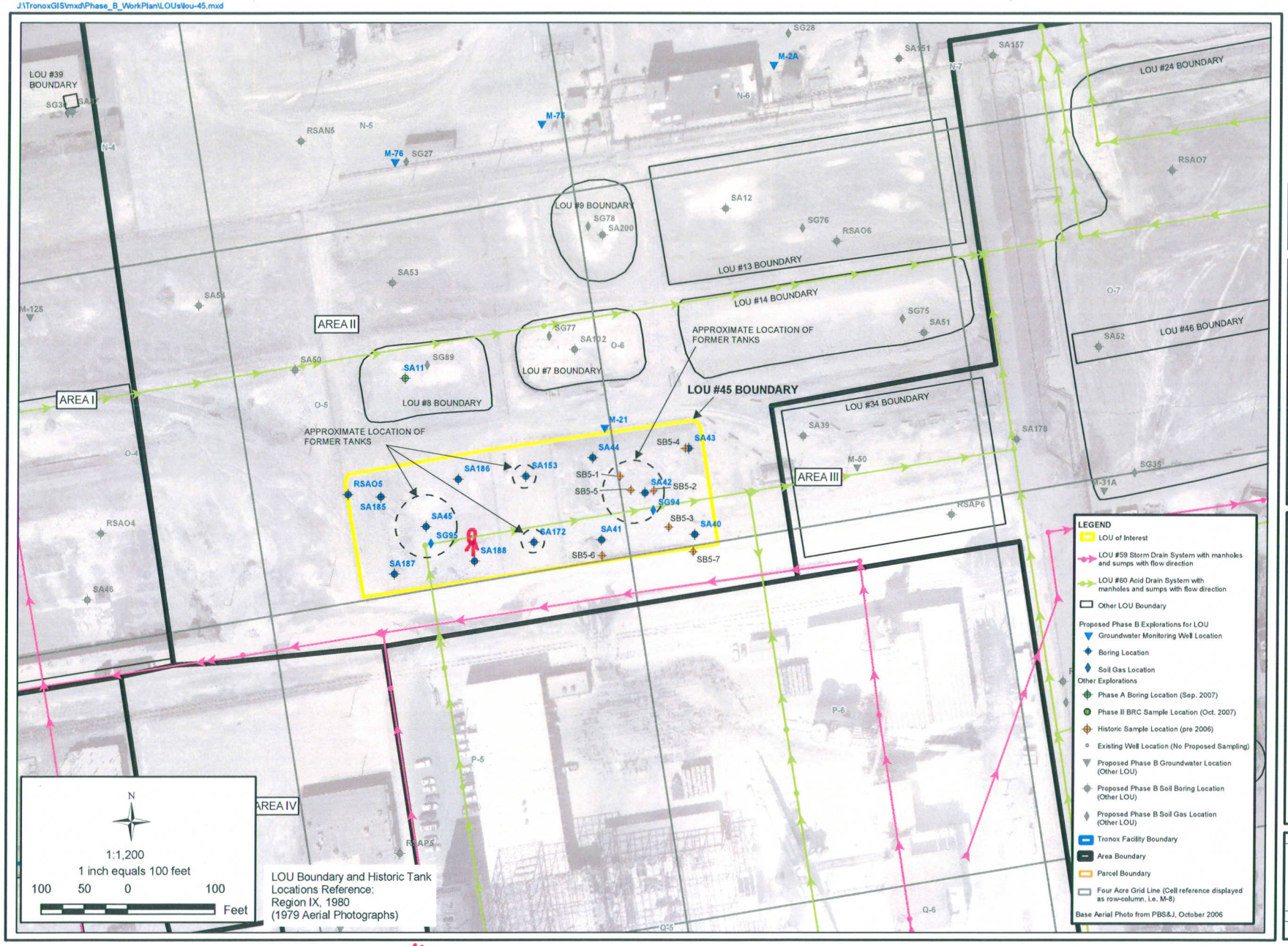

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SAMPLE LOCATIONS FOR LOU #45
DIESEL STORAGE TANKS
Phase B Area II Source Area Investigation
Tronox Facility
Henderson, Nevada

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

FIGURE NUMBER: 1

SHEET NUMBER: X

· Move SA188 north over LOU60.

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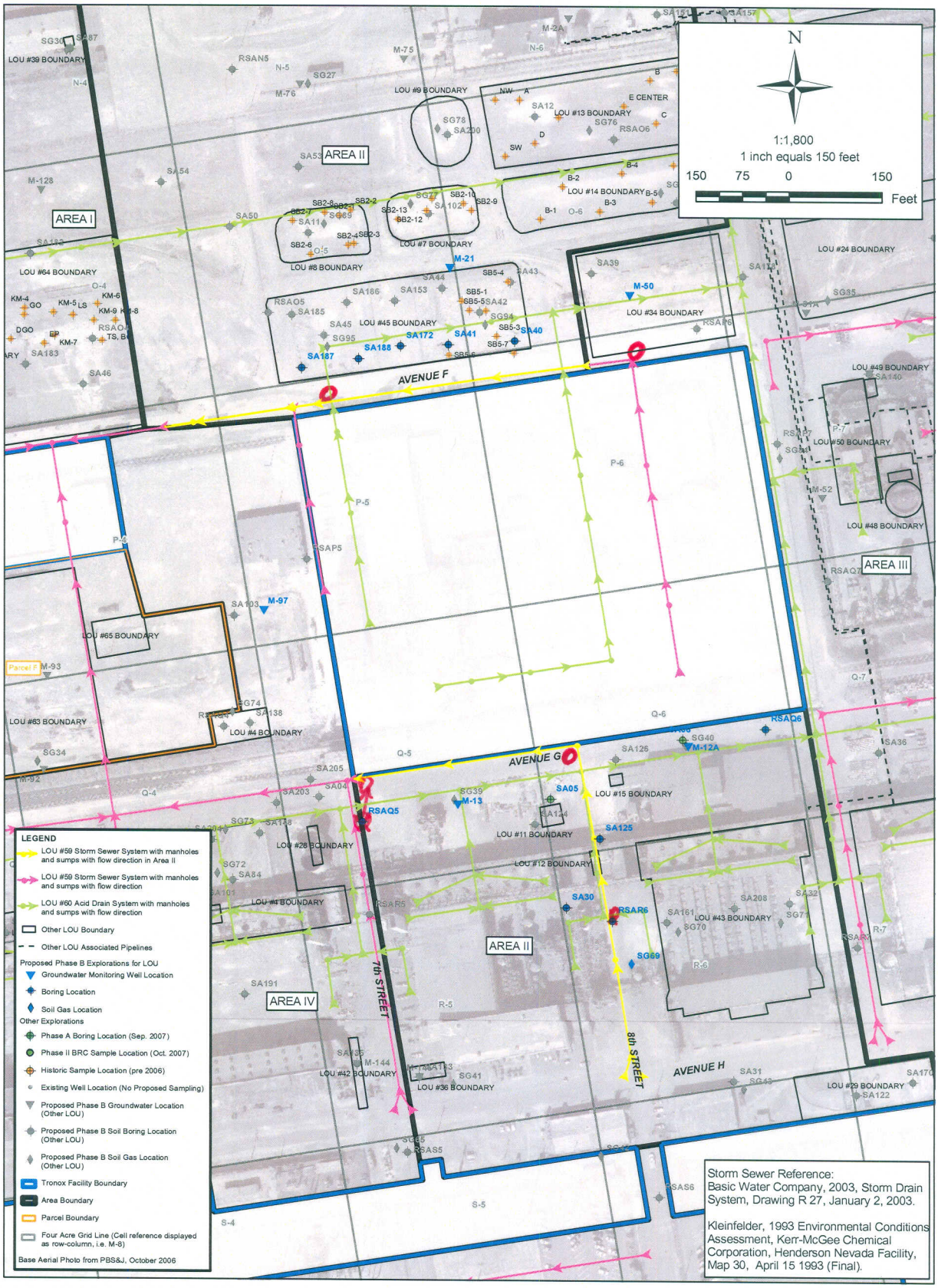

SHEET NUMBER: X | FIGURE NUMBER: 1

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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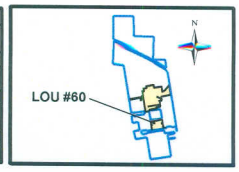

- add additional boring North of Chemstar, south of LOU 45, over LOU 60
- additional boring North of Chemstar, south of LOU 59, at 90° turn
- add additional boring south of Chemstar, at 90° turn
- move RSA 86 over LOU 60 adjacent to LOU 59
- move RSAQ5 to south of SWMU of Chemstar

July 21, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Phase B Source Area Investigation Work Plan Area III (Eastern LOUs). Tronox LLC Facility, Henderson, Nevada
Dated June 27, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's Phase B Area III Sampling Analysis Plan (SAP) identified above and finds the document acceptable with the conditions and comments provided in Attachment A.

Errata sheets should be submitted based on the comments found in Appendix A as noted. TRX should additionally provide an annotated response-to-comments (RTC) letter as part of the errata submittal. Alternately, in place of an RTC letter, TRX can discuss these comments with the NDEP in a meeting or via phone. Please advise the NDEP regarding the schedule for this submittal. Please note that it is NDEP's intent that TRX should be able to proceed with implementation of this SAP upon submittal of the errata and RTC letter (or completion of meeting with NDEP in lieu of the RTC letter).

Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Ebrahim Juma, DAQEM, PO Box 551741, Las Vegas, NV, 89155-1741
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, Landwell, 875 West Warm Springs, Henderson, NV 89011
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110
Teri Copeland, 5737 Kanan Road #182, Agoura Hills CA 91301
Paul Hackenberry, Hackenberry Associates, LLC, 550 W. Plumb Lane B425, Reno, NV 89509
Kelly Black, Neptune and Company, Inc., 8550 West 14th Street, Suite 100, Lakewood, CO 80215

Attachment A

1. General comment, NDEP has noted numerous typographic errors and cross-referencing errors in the text, tables, and figures of this document but will not list these in this response letter. TRX should review documents in greater detail and revise as necessary prior to submittal.
2. General comment, some site-wide changes to the sampling plan have been requested under separate cover. Please refer to separate letter dated July 21, 2008.
3. General comment, NDEP noted numerous errors in the Medium Specific Screening Levels (MSSLs), Maximum Contaminant Levels (MCLs), etc. listed in the tables of the main text and Appendix A LOU packages and notes the following (TRX should note that the following is not an exhaustive list):
   a. TRX should review these values in greater detail and revise as necessary prior to the submittal of future documents.
   b. The non-cancer endpoint MSSL for arsenic is used instead of the cancer endpoint MSSL.
   c. TRX did not include the MSSL for titanium.
   d. TRX did not include the MSSL for thallium.
   e. TRX should use the values listed for the outdoor worker as these are more stringent. Indoor workers will be addressed using the indoor air pathway.
   f. TRX should list the more stringent of the cancer vs. non-cancer endpoint MSSLs for each contaminant.
4. Section 1.0, page 1-2, it is the NDEP's expectation that TRX will meet with the NDEP to discuss the format of the final Phase B Source Area Investigation Report prior to submittal.
5. Section 1.1, page 1-3, 3rd paragraph, it is the NDEP's expectation that TRX will meet with the NDEP to discuss data usability prior to the submittal of the final Phase B Source Area Investigation Report.
6. Section 1.2, page 1-5, TRX lists the Phase A Investigation Results Report as a document of record. TRX should note that the NDEP accepted the submittal of the Phase B SAPs in lieu of TRX submitting a revised Phase A Report. Additionally, while the validated data presented in the Phase A Report was approved by the NDEP, the procedures/methodologies, recommendations, and conclusions in the Phase A Report were neither approved nor rejected by the NDEP.
7. Section 2.2.1, page 2-3, 2nd paragraph, TRX states that "If current operations do not exacerbate contamination, future closure may not require sampling for the full SRC list (i.e., if a chemical is not detected in the Phase B Source Area Investigation and is not a part of the process associated with the LOU, it may not be analyzed for at the time of closure)." The NDEP does not necessarily concur with this statement at this time and will review this issue at the time of closure.
8. Section 2.2.1, page 2-4, 4th paragraph, TRX should include discussion on groundwater as a source of continuing soil contamination.
9. Section 2.3.2, page 2-6, 1st bullet, NDEP has added PCBs and TPH DRO/ORO analysis to any borings located in the vicinity of Western Area Power Administration (WAPA) property. Please see comments below.
10. Tables, the NDEP has the following comments:
    a. Table 2, the NDEP has the following comments

i. TRX should submit errata pages for Table 2 that addresses the following comments for Table 2 and the comments for Appendix A as appropriate.
ii. The analysis indicated for PCBs on the column header is incorrect. This should include Aroclor and congener analysis.
iii. TRX should indicate in a footnote that platinum will be added to the analyses for boring SA132 and SA34.
iv. The following borings should include the corresponding analyses:
    1. SVOCs: SA141, SA142, SA171, SA140, SA36, SA174, SA132, SA112, and SA34
    2. Cyanide:
        a. TRX should note that NDEP requested that "all borings located in Area 4 west of column 6 (not inclusive) and all borings associated with LOU 60 downstream of the LOU 63 conveyance piping junction" in the June 18, 2008 response letter to the Phase B Area IV SAP.
        b. NDEP acknowledges that TRX will analyze all samples collected in Area I for total cyanide.
    3. PCBs: SA177, RSAR8, SA34 and RSAS8
    4. TPH DRO/ORO: SA157, SA178, SA141, SA142, SA171, SA140, SA36, SA174, and SA177
    5. TPH GRO: SA36
    6. 1,4-dioxane: SA177, RSAR8, SA34

b. Table 3, the NDEP has the following comments:
    i. General comment, TRX should note that the NDEP does not necessarily agree that the selected wells are representative of the up-gradient, down-gradient and/or cross-gradient conditions as stated in the Appendix A LOU packets. The NDEP does note that the overall coverage of the groundwater sampling plan appears adequate.
    ii. TRX should add analysis for 1,4-dioxane for all wells associated with this area.
    iii. As noted previously, for wells with unknown lithology TRX should note that the use of this data will be limited. NDEP requests that TRX either determine the lithology (e.g.: through a down-hole camera) or re-drill the wells.
c. Table 4, LOU 20 Appendix A package and Table 4 are not consistent in regards to Goal of Closure.
d. Table 6, TRX should note that this table was not reviewed in detail by the NDEP as it is NDEP's assumption that this table is consistent with the approved QAPP.
e. Table 7, TRX should note that this table was not reviewed in detail by the NDEP as it is NDEP's assumption that this table is consistent with the approved QAPP.

11. Figure 4, NDEP noted that the wells used in this figure are not the same as those listed for the Phase B site-wide groundwater investigation. TRX should at a minimum use these wells in the creation of this figure.
12. Plate A, update this plate to include the following comments to the Appendix A LOU packets that affect boring placement.
13. Appendix A, the NDEP has the following comments:
    a. LOU 20 (Pond C-1 and Associated Piping in Area III), the NDEP has the following comments (please see the corresponding attached figure as necessary):
        i. RSAP7 should be moved north adjacent to LOU 59 just past where LOU 59 crosses LOU 60.

ii. SA36 should be moved north adjacent to LOU 20 piping and over LOU 60.
iii. Significant inconsistencies have been noted between Table A, the text of the area-specific CSM, and the main body of the report. For example, based upon the text, all judgmental samples should include TPH analysis. Table A does not show this, please note that this analysis should be added. Table A includes dioxin/furan analysis, however, this is not described in the text. No change to the table is necessary. SVOC analysis proposed on the Table is also not consistent with the text. SVOC analysis should be added to location SA36. These comments are compiled into the NDEP's comments listed above for Table 2, however, they are included herein as an example.
iv. LOU 24 and 46 (Mn Tailings Area and Old Main Cooling Tower), the NDEP has the following comments (please see the corresponding attached figure as necessary):
v. TRX should clarify if the starting point (i.e. surface) for sample collection located over the Mn tailings pile is at the soil-tailings interface.
vi. SA139 should be moved to a point just north of the Mn tailings pile approximately halfway between wells M-35 and CLD4-R. Additionally, a groundwater monitoring well should be installed at this location.
vii. An additional boring should be located within the surface flow area indicated on Figure A of the LOU.

b. LOU 34E, 47, 48, 49, 50, 51, and Area 70 (Operational Manganese Leach Plant and Former US Vanadium Site)
   i. General comment, TRX should note that the tailings status as non-hazardous waste is not pertinent to Site characterization. This is a comment that applies to other statements within the subject document and will not be repeated for each instance.
   ii. TRX notes that the ore is ½" to 1" in diameter. It is likely that there is a percentage of "fines" within the ore and this should be acknowledged.
   iii. RSAO8 should be converted to an additional groundwater monitoring well.
   iv. An additional boring should be located in the northern portion of LOU 47 (Historical) over LOU 60.
c. LOU 44 and 37 (Unit 6 Basement and Former Satellite Accumulation Point, Unit 6 Maintenance Shop)
   i. TRX should note that characterization under the Unit buildings is not precluded due to continued operations. Angled or directional borings may be used to characterize under the active portions of the buildings.
   ii. TRX should provide additional information of the cathode wash and storage areas adjacent to LOU 44.
   iii. TRX should add the following analyses to the borings associated with this LOU: PCBs and 1,4-dioxane.
   iv. M-122, M-145, and M-139: samples should be collected during boring advancement.
d. LOU 59 (Storm Drain System Segment), the NDEP has the following comments (please see the corresponding attached figure as necessary):
   i. General comment, the borings associated with this LOU should be located immediately adjacent to the storm drain system whenever possible.
   ii. The table in this Section of the Appendix does not address any of the off-Site sources that were disposed of in the Beta Ditch. This is a global comment which applies to all of the applicable area-specific CSMs that are in Appendix A. NDEP considered this

issue during the review of the document and requested additional sampling, as appropriate.

iii. TRX should add the following analyses to the borings associated with this LOU because of the potential Stauffer discharges into this LOU: organophosphate pesticides (OPP) and organic acids. TRX should note that this should apply to all samples within this LOU (including in other Areas, if possible).

iv. TRX should add PCB analysis to any boring located near the WAPA property.

v. An additional boring should be located on the slim portion of the Site near the junction with the southernmost leg of LOU 59 from TIMIET.

vi. An additional boring should be located adjacent to LOU 47 to the east near the junction with the LOU leg within the operation Mn leach plant.

vii. An additional boring should be located adjacent to LOU 59 just north of ChemStar property and south of LOU 34W.

e. LOU 60 (Former Acid Drain System), the NDEP has the following comments (please see the corresponding attached figure as necessary):

i. General comment, the borings associated with this LOU should be located directly above the former Acid Drain system whenever possible.

ii. General comment, for borings located above LOU 60, TRX should log the condition of the pipe, if possible, and collect a sample directly underneath the pipe. This sample may be substituted for the next proposed 10 foot interval in the Phase B SAPs, Table 2 (e.g. if the bottom of the Former Acid Drain System pipe was located at 8 fbgs, then the sample should be collected directly underneath the pipe and not at 10 fbgs). Please note that this comment additionally applies to the Phase B Area I and IV SAPs.

iii. TRX should add the following analyses to the borings associated with this LOU because of the potential Stauffer discharges into this LOU: OPP and organic acids. TRX should note that this should apply to all samples, all areas (if possible) for this LOU.

iv. SA141 should be moved west to the area where two legs of LOU 60 run parallel north of the East Diversion Ditch (west of the Mn tailings pile).

v. SA34 should be moved north adjacent to LOU 59 and over LOU 60.

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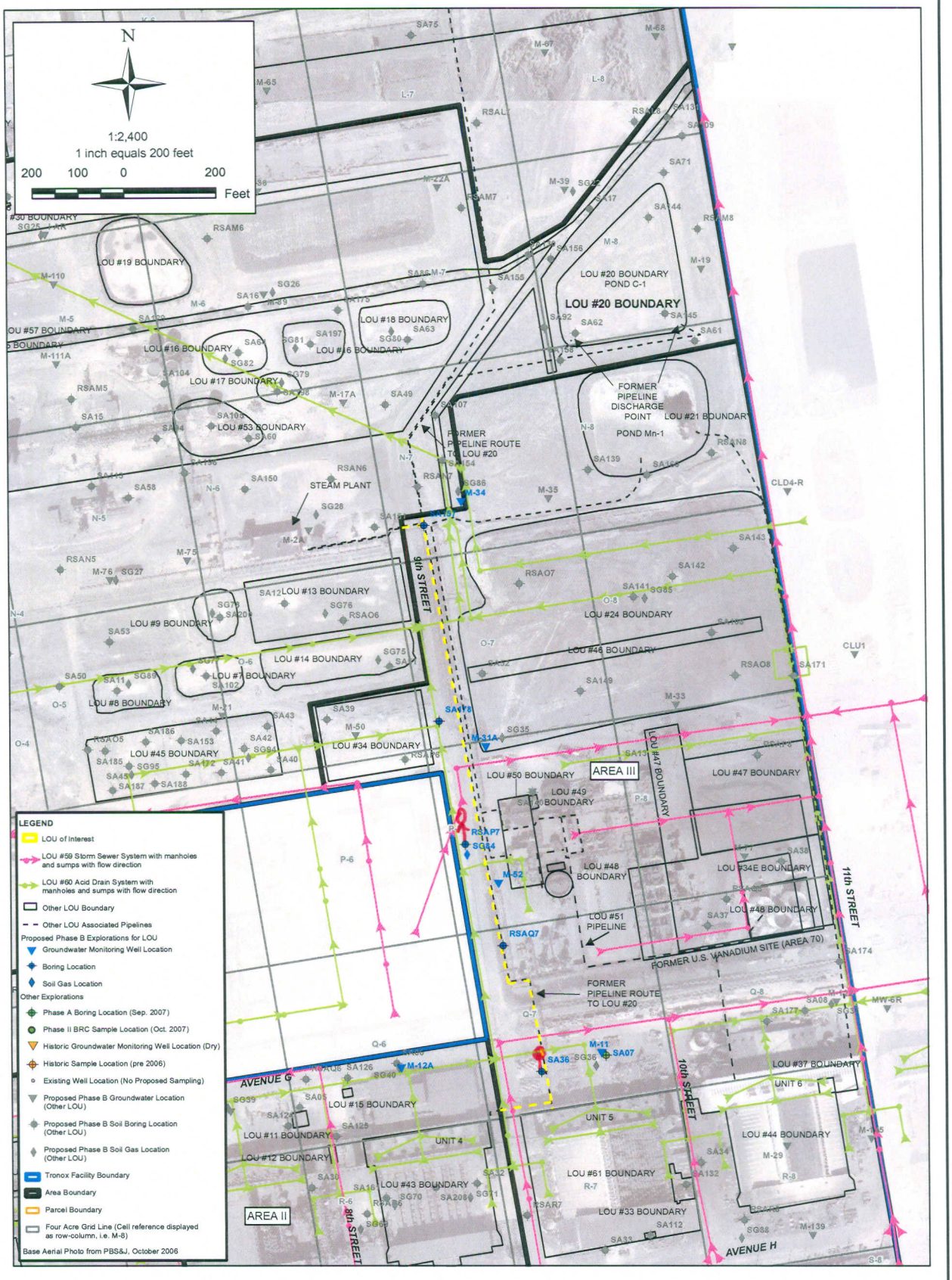

• move RSAP7 adjacent to LOU59 and near intersection with LOU60.
• move SA36 north to be over LOU60.

FIGURE NUMBER: 1
SHEET NUMBER: X

SAMPLE LOCATIONS FOR LOU #20, POND C-1 AND ASSOCIATED PIPING IN AREA III

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

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/4/2008	04020-023-430

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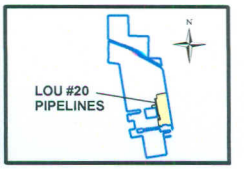

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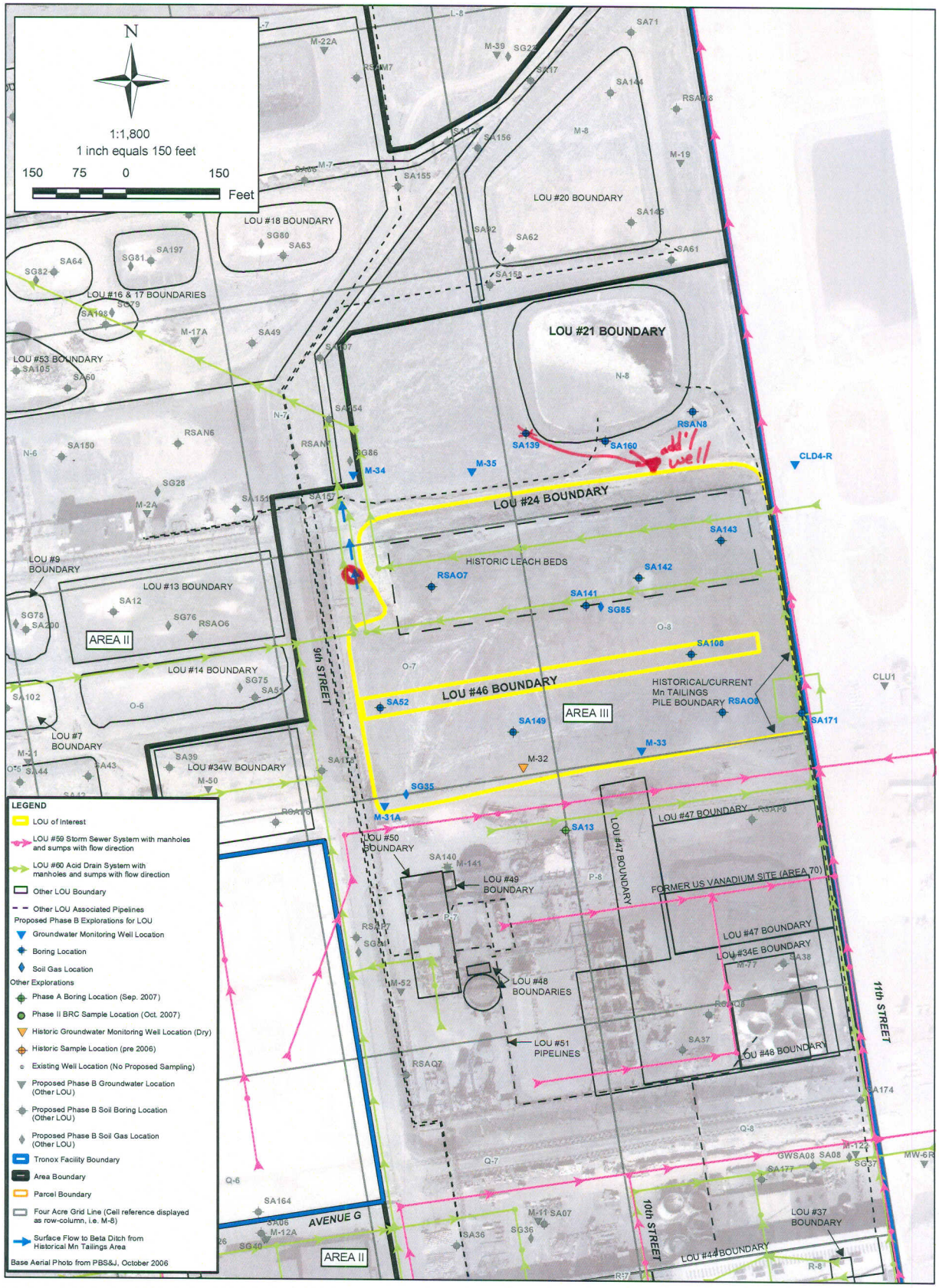

SHEET NUMBER: X | FIGURE NUMBER: 1

SAMPLE LOCATIONS FOR LOU #24 AND #46
MN TAILINGS AREA AND
OLD MAIN COOLING TOWER
Phase B Area III Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/4/2008	04020-023-430

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LOU #24 AND LOU #46

• additional boring located in surface flow from MW TAILINGS Area
• SA139 to just north of LOU 24 & convert to monitoring well.

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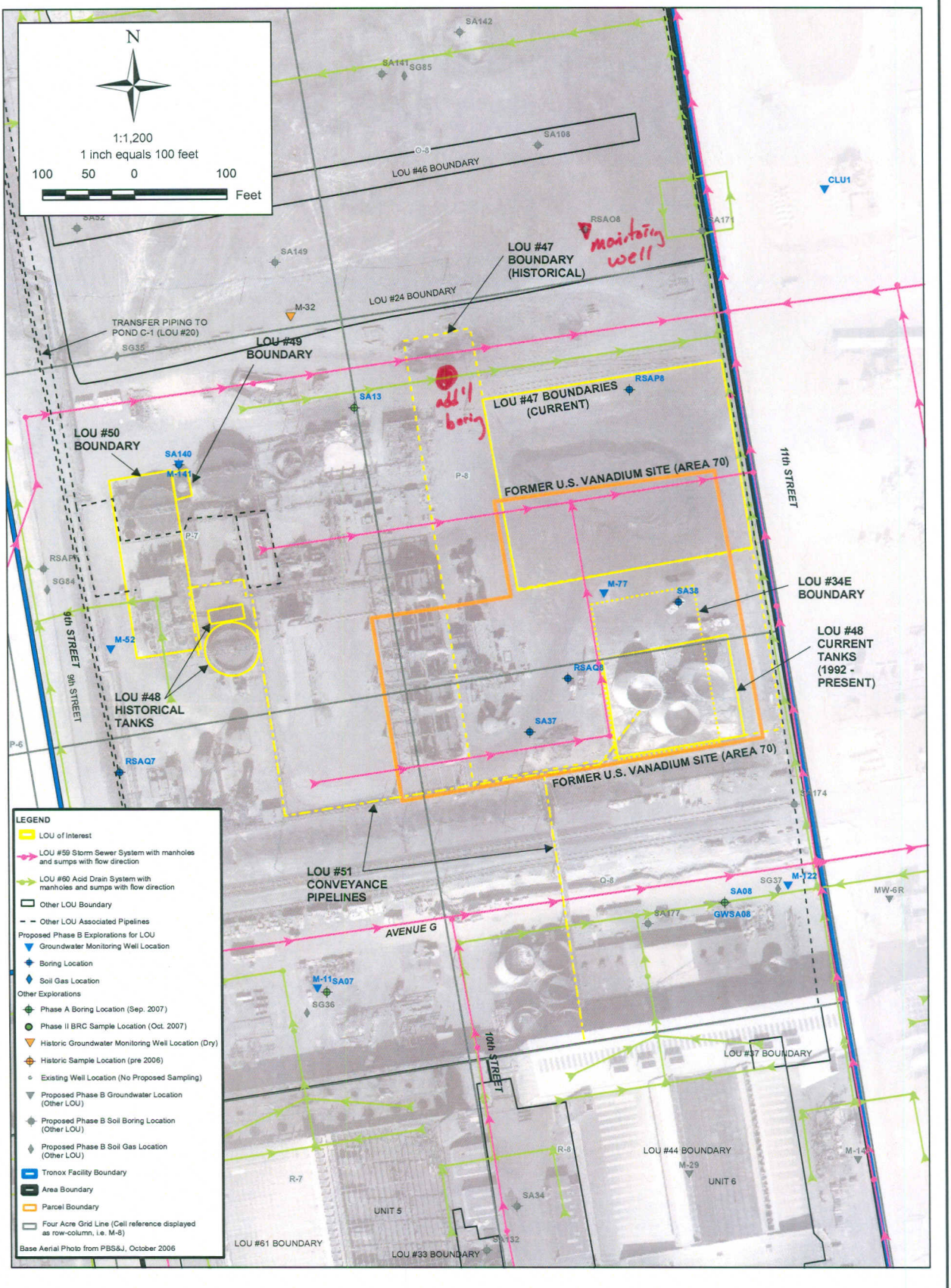

• additional boring on LOU 60 in northern portion of historical LOU 47.

• convert RSA08 to monitoring well.

FIGURE NUMBER:	SHEET NUMBER:
1	X

SAMPLE LOCATIONS FOR LOUs #34E, #47, #48, #49, #50, #51 AND AREA 70 (FORMER U.S. VANADIUM SITE)
Phase B Area III Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/3/2008	04020-023-430

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LOUs #34E, #47, #48, #49, #50, #51 AND AREA 70 (FORMER U.S. VANADIUM SITE)

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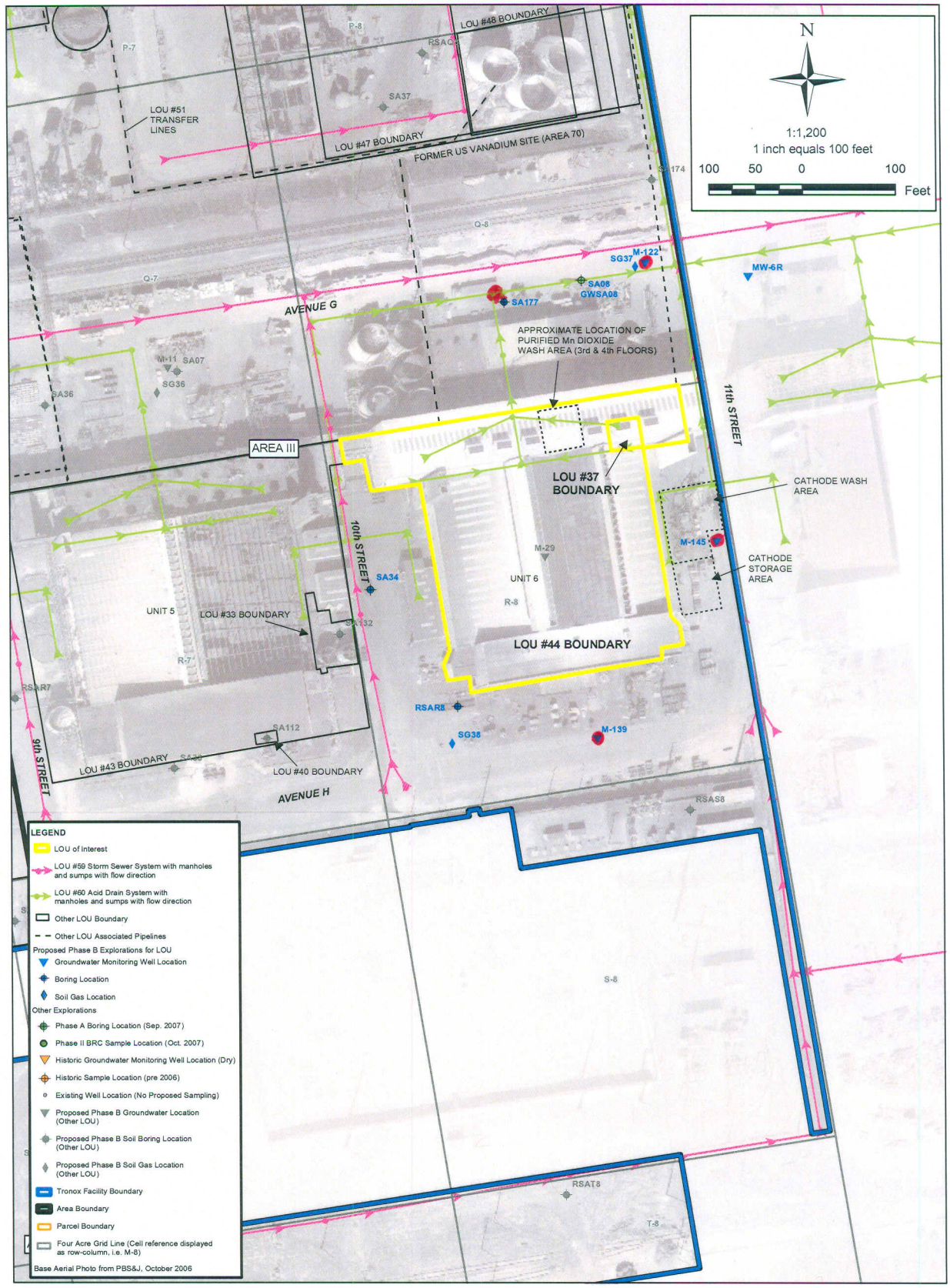

• SA177 move to intersection LOU 60.
• Add borings (collect samples) for M-122, M-145 & M-139

SHEET NUMBER: X | FIGURE NUMBER: 1

SAMPLE LOCATIONS FOR LOUs #44 & #37
UNIT 6 BASEMENT & FORMER SATELLITE ACCUMULATION POINT
- UNIT 6 MAINTENANCE SHOP
Phase B Area III Source Area Investigation
Tronox Facility, Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/4/2008	04020-023-430

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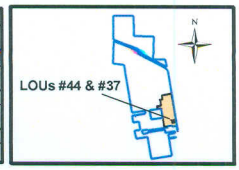

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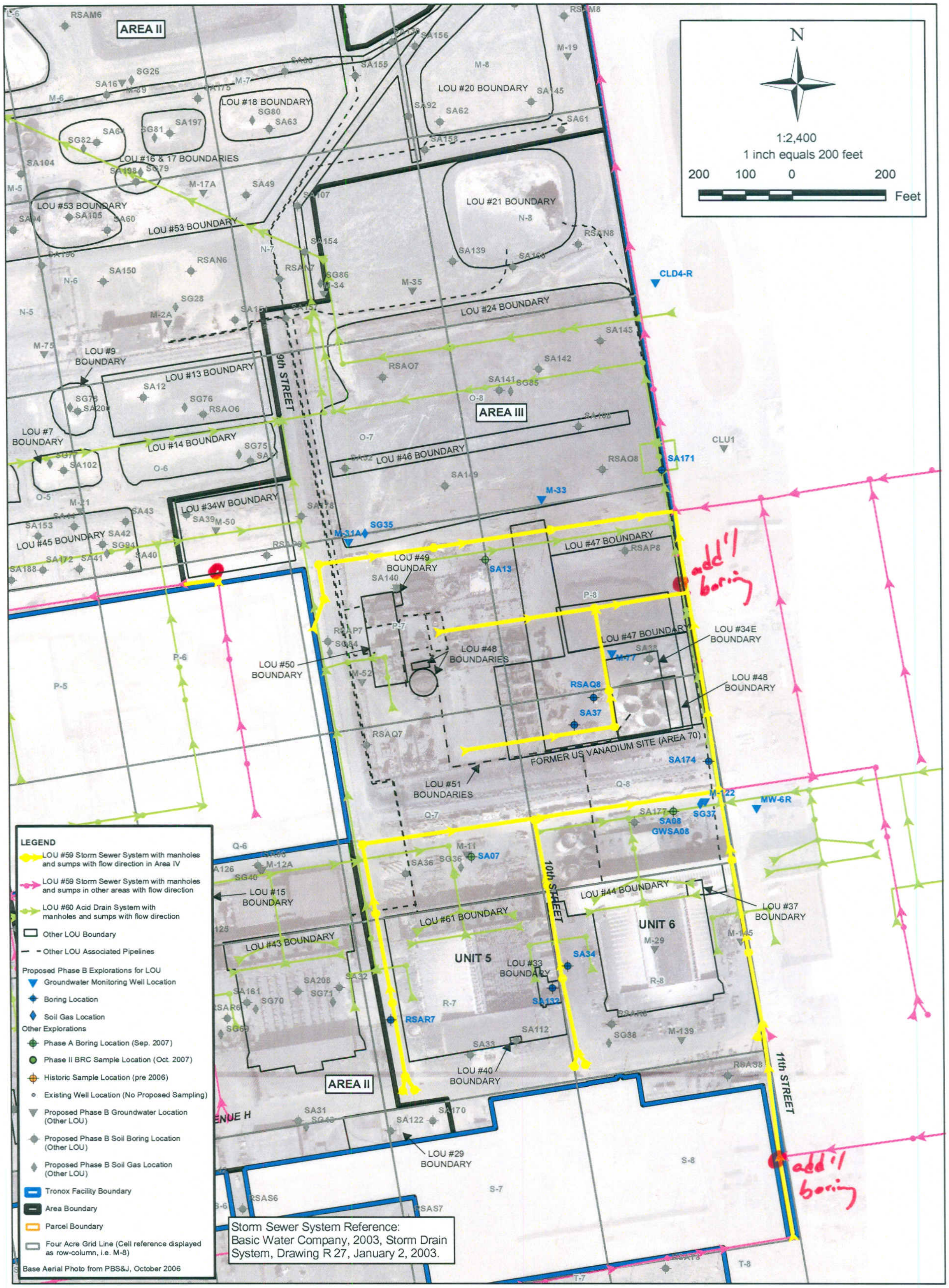
· additional boring southeast portion of LOU
· additional boring at junction on east side of LOU 47.
· additional boring ~~at~~ south of LOU 34W at 90° North of chem star.



SHEET NUMBER:	FIGURE NUMBER:
X	1

SAMPLE LOCATIONS FOR LOU #59 IN AREA III STORM DRAIN SYSTEM SEGMENT

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

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/3/2008	04020-023-430

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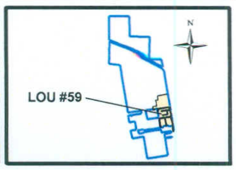

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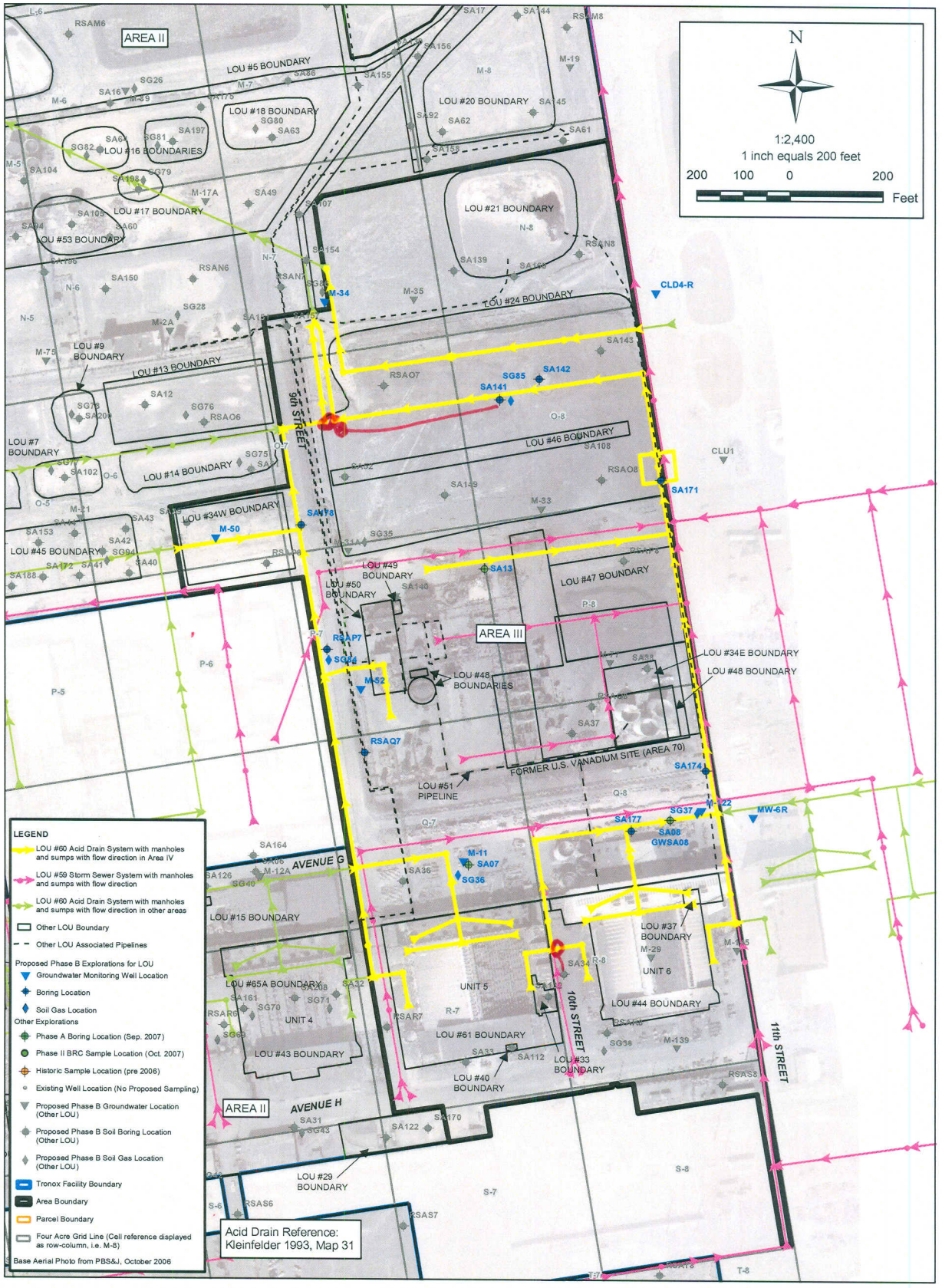
'move SA141 west to the two legs of Lou 60.

'move SA39 north over Lou 60.



SHEET NUMBER:	FIGURE NUMBER:
X	1

SAMPLE LOCATIONS FOR LOU #60 IN AREA III
FORMER ACID DRAIN SYSTEM SEGMENT

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

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/3/2008	04020-023-430

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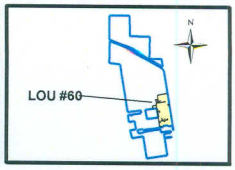
DESIGNED BY:	DRAWN BY:	CHECKED BY:	APPROVED BY:
B. Ho	M. Scop	C. Schnell	B. Ho



July 21, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:

Phase B Source Area Investigation Work Plan, Area I (Northern LOUs), Tronox LLC Facility, Henderson, Nevada
Dated April 3, 2008

Phase B Source Area Investigation Work Plan Area IV (Western and Southern LOUs). Tronox LLC Facility, Henderson, Nevada
Dated May 16, 2008

Phase B Source Area Investigation Work Plan Area II (Central LOUs). Tronox LLC Facility, Henderson, Nevada
Dated June 27, 2008

Phase B Source Area Investigation Work Plan Area III (Eastern LOUs). Tronox LLC Facility, Henderson, Nevada

Dated June 27, 2008

Dear Ms. Crowley,

The NDEP has completed review of four of four Phase B Source Area Sampling Analysis Plans (SAPs). The following are general comments regarding the soil sampling analyses.

- NDEP has added PCBs and TPH DRO/ORO analysis to any borings located in the vicinity of Western Area Power Administration (WAPA) property. For the Phase B SAPs these borings include: SA177, RSAR8, SA34, RSAS8, SA208, RSAS5, SA31, RSAS3, RSAS4, RSAS5, RSAS6, RSAS7, RSAT6, RSAT7, and RSAT8. Please note that PCBs will be sampled at other locations as indicated in the SAPs and the subsequent NDEP response letters to each of the SAPs.
- NDEP has added organophosphorus pesticides (OPP) and organic acid analyses to all borings associated with the sections of LOU 5, LOU 59, and LOU 60 downstream of the western property boundary. For the Phase B SAPs these borings include: SASA131, SA66, SA67,

SA128, SA70, SA104, SA129, SA175, SA86, SA92, SA155, SA71, SA165, SA49, SA154, SA107, RSAN7, SA158, RSAN4, SA55, SA182, SA183, SA176, SA50, SA198, SA64, SA189, RSAL4, SA82, SA134, RSAJ3, SA 192SA126, RSAQ6, RSAP7, SA178, all additional borings for LOU 60 in Area III, all additional borings on LOU 60 for Area VI .

- NDEP has added cyanide to the all of the borings north of Row V and west of Column 6 (not inclusive) of Plate A. Please note that other locations will be sampled for cyanide as indicated in the SAPs and the subsequent NDEP response letters.

TRX should additionally submit four copies of a revised Plate A that addresses the NDEP's comments from the Area I, II, III, and IV response letters. These revised plates will be placed in each of the Phase B Source Area SAPs. Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Ebrahim Juma, DAQEM, PO Box 551741, Las Vegas, NV, 89155-1741
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, Landwell, 875 West Warm Springs, Henderson, NV 89011
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110
Teri Copeland, 5737 Kanan Road #182, Agoura Hills CA 91301
Paul Hackenberry, Hackenberry Associates, LLC, 550 W. Plumb Lane B425, Reno, NV 89509
Kelly Black, Neptune and Company, Inc., 8550 West 14th Street, Suite 100, Lakewood, CO 80215

FINAL

Meeting Minutes

Project:	Tronox (TRX)
Location:	Conference Call
Time and Date:	9:00 AM Monday, August 11, 2008
In Attendance:	NDEP – Brian Rakvica, Shannon Harbour
	Tronox –Susan Crowley
	Environmental Answers – Keith Bailey (for TRX)
	ENSR –Brian Ho, Carmen Schnell, Mike Flack (for TRX)

CC: Jim Najima

1. The meeting was held to discuss TRX's response to comments (RTCs) to three NDEP letters dated July 21, 2008 1) Re: Phase B SAPs Areas I through IV general soil sampling comments 2) Re: Phase B Source Area Investigation Work Plan (SAP) Area II, and 3) Re: Phase B SAP Area III.
2. The following are TRX's RTC to NDEP's July 21, 2008 letter Re: Phase B SAPs Areas I through IV general soil sampling comments:
   a. RTC 1st bullet, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAPs submittal accordingly.
   b. RTC 2nd bullet, TRX and NDEP had the following discussion:
      i. TRX noted that borings SA183 and SA67 in Area I have already been drilled and sampled prior to the receipt of NDEP's comments for additional analyses (for OPPs and organic acids). NDEP acknowledged this and stated that TRX did not have to re-drill and re-sample these borings for the requested analytes.
      ii. TRX inquired whether the four organic acids (4-Chlorobenzene sulfonic acid; Benzenesulfonic acid; O,O-Diethylphosphorodithioic acid; and O,O-Dimethylphosphorodithioic acid) that are listed in BRC's QAPP were sufficient for the TRX site. NDEP indicated that TRX should also test for phthalic acid in addition to the four analytes. TRX stated concern over the costs of the additionally requested analytes (OPP and organic acid analyses).
      iii. NDEP inquired as to how this data gap could be addressed if sampling is not conducted.
      iv. NDEP stated that the organic acids have been detected in the groundwater near TRX's western property boundary.
      v. NDEP stated that these chemicals are relatively non-toxic based on toxicological data; however, the concentrations observed to the west of TRX were of concern.
      vi. NDEP stated that TRX could present an argument against sampling for these compounds based on the relative toxicological criteria, expected concentration based on Stauffer/Montrose data and Conceptual Site Model.
      vii. TRX stated that will look into this topic and may propose alternative sampling, such as sampling for an indicator compound, etc., with the Revised Phase B SAP submittal.
3. The following are TRX's RTC to NDEP's July 21, 2008 letter Re: Phase B SAP Area II:
   a. RTC 1, TRX acknowledges this comment.
   b. RTC 2, TRX acknowledges this comment.
   c. RTC 3.a-f, TRX acknowledges these comments and will address in the Phase B Report.

d. RTC 4, TRX stated that this comment was addressed in the text of the Phase B SAP Area II. NDEP acknowledged.
e. RTC 5, TRX stated that this comment was addressed in the text of the Phase B SAP Area II. NDEP acknowledged.
f. RTC 6, TRX acknowledges this comment.
g. RTC 7, TRX acknowledges this comment.
h. RTC 8, TRX acknowledges this comment and will address in the Phase B Report.
i. RTC 9, a-c, TRX acknowledges these comments and will modify the SAP as requested in subsequent NDEP comments.
j. RTC 10, TRX acknowledges this comment.
k. RTC 11, TRX stated that geotechnical samples of the Muddy Creek formation will be collected.
l. RTC 12.a.i-iii, TRX acknowledges these comments and will address in the Phase B Report.
m. RTC 12.b.i, TRX acknowledges this comment.
n. RTC 12.b.ii-iii, TRX acknowledges these comments and will address in the Revised Phase B SAP submittal.
o. RTC 12.b.iv, TRX acknowledges this comment.
p. RTC 12.b.v.1, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
q. RTC 12.b.v.2.a-b, TRX acknowledges these comments and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
r. RTC 12.b.v.3-7, TRX acknowledges these comments and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
s. RTC 12.c.i, TRX acknowledges this comment.
t. RTC 12.c.ii, TRX stated that 1,4-dioxane is included in the SVOC analyses.
u. RTC 12.c.iii, TRX stated that they will continue to look for the well log for M-2A. If the well log cannot be found, TRX stated that they would likely extrapolate geologic formation data from nearby M-2 and use down-well camera technology to determine well completion information.
v. RTC 12.d-e, TRX acknowledges this comment.
w. RTC 13, TRX stated that the groundwater elevation map (Figure 4) was provided for general elevation and gradient purposes. TRX will be providing a comprehensive groundwater elevation map in the Annual Monitoring Report that is scheduled to be submitted to the NDEP on August 28, 2008 that should address this comment.
x. RTC 14, TRX acknowledges this comment.
y. RTC 15.a.i, TRX stated that they will include text of the Phase B Report that discusses the depth of the beta ditch. Also, TRX stated that the ground surface elevation for each boring will be provided in the Phase B Report.
z. RTC 15.a.ii, TRX acknowledges this comment and will address in the Revised Phase B SAP submittal.
aa. RTC 15.a.iii, TRX acknowledges this comment and clarified that both Aroclor and congener analyses were to be used.
bb. RTC 15.a.iv-vi, TRX acknowledges these comments and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
cc. RTC 15.a.vii, SA165 will be moved closer to the LOU 59 outfall.

dd. RTC 15.a.viii, TRX will not add an additional boring as requested, but will accomplish the goal of the comment (see comment 3.cc above); also SA128 will be moved to the confluence of the Western Diversion Ditch and the main Beta Ditch channel.
ee. RTC 15.b.i, TRX acknowledges this comment and will address in the Phase B Report.
ff. RTC 15.b.ii-iii, TRX acknowledges these comments.
gg. RTC 15.b.iv-v, TRX acknowledges these comments and will address in the Revised Phase B SAP submittal.
hh. RTC 15.c.i, TRX acknowledges this comment and stated that Pond AP-5 is tentatively scheduled for decommissioning in spring 2009. TRX is considering converting AP-6 to an active pond. TRX will be contacting NDEP-BWPC about AP-6, if pond needed.
ii. RTC 15.c.ii, TRX acknowledges this comment and will address in the Phase B Report.
jj. RTC 15.c.iii, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
kk. RTC 15.d.i, TRX stated that the manganese dioxide production process utilizes sulfuric acid rather than chloride and should not generate PCBs. TRX will address this comment more fully in the Revised Phase B SAP submittal.
ll. RTC 15.d.ii, TRX indicated that the cathodes are constructed of copper.
mm. RTC 15.d.iii, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
nn. RTC 15.e.i, TRX will relocate SA122 to the gravel section between the concrete pads.
oo. RTC 15.e.ii, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
pp. RTC 15.f.i-ii, NDEP concurred with TRX's rationale to not move SA173 and SA179 (as requested in NDEP's comments) because the concrete pad for this LOU (LOU 56 – Old D-1 Washdown Building) is still in place. TRX indicated that these borings are located in likely drainage areas from the concrete pad.
qq. RTC 15.f.iii, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
rr. RTC 15.g, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly. TRX indicated that there are numerous above-ground pipelines in the vicinity of this area (Pond AP-5) and that they would try to accommodate NDEP by moving the boring location without damaging the pipelines, but that options are limited.
ss. RTC 15.h, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly. TRX noted that 1,4-dioxane is included in the SVOC analysis.
tt. RTC 15.i.i, TRX acknowledges this comment and will address in the Phase B Report.
uu. RTC 15.i.ii-iii, TRX acknowledges these comments and will address in the Revised Phase B SAP submittal. As with comment kk above, the electrolytic process involves sulfate chemistry and should not generate PCBs.
vv. RTC 15.i.iv, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
ww. RTC 15.i.v, TRX will not move SA124 as this boring is currently proposed to be located in the drainage for the concrete pad of LOU 11.
xx. RTC 15.i.vi, TRX will not move SA125 as it is not feasible because of overhead power transmission lines.

yy. RTC 15.j-k, TRX acknowledges these comments and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
zz. RTC 15.l.i, TRX acknowledges this comment.
aaa. RTC 15.l.ii-iii, TRX acknowledges these comments and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
bbb. RTC 15.l.iv-v, TRX acknowledges these comments and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly. TRX indicated that the additional borings requested by NDEP along Avenue F (north of ChemStar) to evaluate segments of the storm sewer and acid drain systems may not be on TRX property – this area along Avenue F may belong to ChemStar. TRX will search property records and county assessor parcel maps to ascertain ownership of this land.
ccc. RTC 15.l.vi, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
ddd. RTC 15.m.i-ii, TRX acknowledges these comments.

4. The following are TRX's RTC to NDEP's July 21, 2008 letter Re: Phase B SAP Area III:
   a. RTC 1, TRX acknowledges this comment.
   b. RTC 2, TRX acknowledges this comment.
   c. RTC 3.a-f, TRX acknowledges these comments and will address in the Phase B Report.
   d. RTC 4, TRX stated that this comment was addressed in the text of the Phase B SAP Area II. NDEP acknowledged.
   e. RTC 5, TRX stated that this comment was addressed in the text of the Phase B SAP Area II. NDEP acknowledged.
   f. RTC 6, TRX acknowledges this comment.
   g. RTC 7, TRX acknowledges this comment.
   h. RTC 8, TRX acknowledges this comment and will address in the Phase B Report.
   i. RTC 9, TRX acknowledges this comment and will address in the Revised Phase B SAP submittal.
   j. RTC 10.a.i, TRX acknowledges this comment.
   k. RTC 10.a.ii-iii, TRX acknowledges these comments and will address in the Revised Phase B SAP submittal.
   l. RTC 10.a.iv.1, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
   m. RTC 10.a.iv.2.a-b, TRX acknowledges these comments and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
   n. RTC 10.a.iv.3-6, TRX acknowledges these comments and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
   o. RTC 10.b.i, TRX acknowledges this comment.
   p. RTC 10.b.ii, TRX stated that 1,4-dioxane is included in the SVOC analyses.
   q. RTC 10.b.iii, TRX stated that they will continue to look for the well logs. If the well logs cannot be found, TRX stated that they would likely extrapolate geologic formation data from nearby wells and use down-well camera technology to determine well completion information.
   r. RTC 10.c, TRX acknowledges this comment and will address in the Revised Phase B SAP submittal.
   s. RTC 10.d-e, TRX acknowledges these comments.

t. RTC 11, TRX stated that the groundwater elevation map (Figure 4) was provided for general elevation and gradient purposes. TRX will be providing a comprehensive groundwater elevation map in the Annual Monitoring Report that is scheduled to be submitted to the NDEP on August 28, 2008 that should address this comment.
u. RTC 12, TRX acknowledges this comment.
v. RTC 13a.i-ii, TRX acknowledges these comments and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
w. RTC 13.a.iii, TRX acknowledges this comment.
x. RTC 13.a.iv-vii, NDEP did not label RTC 13.a.v-vii properly as they are sub-comments to RTC 13.a.iv. However, TRX acknowledges these comments and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
y. RTC 13.b.i, TRX acknowledges this comment.
z. RTC 13.b.ii, TRX acknowledges that there may be fines in the ore introduced during transportation, etc. but that the percent fines has not been measured.
aa. RTC 13.b.iii, TRX acknowledges this comment and will revise Table 3 and Plate A in the Revised Phase B SAP submittal accordingly.
bb. RTC 13.b.iv, NDEP indicated that the rationale for adding a soil boring at this location was to gather data for airborne emissions (wind-blown dust). NDEP concurred with TRX to collect a surface soil sample at the NDEP-requested location instead of drilling a soil boring. TRX will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
cc. RTC 13.c.i, TRX acknowledges this comment but will not characterize this area at this time because of potential risk to underground utilities and current operations.
dd. RTC 13.c.ii, TRX indicated that the cathode wash utilizes a hexametaphosphate-based cleaning agent. TRX acknowledges they will provide additional information including description of the waste material (e.g., sludge), how the material is characterized for waste disposal, and where the waste material is disposed.
ee. RTC 13.c.iii TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly. TRX noted that 1,4-dioxane is included in analyte list for SVOCs.
ff. RTC 13.c.iv, TRX had the following responses to the NDEP request to collect soil samples during the boring advancement for the following proposed wells:
    i. Well M-122: TRX will not collect soil samples during the advancement of M-122 since the monitoring well will be located adjacent to Phase A soil boring SA08, from which soil samples have already been collected and analyzed.
    ii. Wells M-145 and M-139: TRX agreed to collect soil samples during the advancement of M-145 and M-139. TRX will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
gg. RTC 13.d.i-ii, TRX acknowledges these comments.
hh. RTC 13.d.iii, TRX acknowledges this comment and will address in the Revised Phase B SAP submittal.
ii. RTC 13.d.iv-v, TRX acknowledges these comments and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.
jj. RTC 13.d.vi-vii, TRX acknowledges these comments and will address in the Revised Phase B SAP submittal.
kk. RTC 13.e.i-ii, TRX acknowledges these comments.

ll. RTC 13.e.iii-iv, TRX acknowledges these comments and will address in the Revised Phase B SAP submittal.

mm. RTC 13.e.v, TRX acknowledges this comment and will revise Table 2 and Plate A in the Revised Phase B SAP submittal accordingly.

5. TRX stated that the LOU packages will be revised as necessary and will be appended to the Phase B Report in an electronic format.
6. TRX stated that the Revised Phase B SAP errata pages will be submitted by September 15, 2008.
7. TRX stated that drilling will continue to be suspended until after NDEP approval of the errata. TRX noted that upon receipt of NDEP's approval that drilling would be scheduled, which may result in further delay depending upon the drillers schedule.

FINAL

Meeting Minutes

Project:	Tronox (TRX)
Location:	Conference Call
Time and Date:	11:00 AM, Monday, September 08, 2008
In Attendance:	NDEP – Brian Rakvica, Shannon Harbour
	Tronox –Susan Crowley
	Environmental Answers – Keith Bailey (for TRX)
	ENSR –Brian Ho, Mike Flack (for TRX)

CC: Jim Najima, Paul Hackenberry, Teri Copeland, Kelly Black

1. The meeting was held to discuss changes to TRX's Response to Comments for the Phase B sampling. TRX stated that the current financial situation of TRX did not allow for the additional sampling requested by NDEP and agreed to by TRX. TRX wanted to discuss options to reduce costs of the Phase B Investigation to the previously budgeted $6.2 million.
2. The following were the topics TRX brought up as potential cost savings and the subsequent discussions.
   a. PCB Analysis (Congener – Method 1668)
      i. TRX stated that the cost for the PCB congener analysis is approximately $970 per sample.
      ii. TRX stated that the Phase A Source Area Investigation (Phase A Investigation) did not detect PCBs.
      iii. NDEP stated that the Phase A Investigation only analyzed for Aroclor and not congeners. NDEP stated that these two methods do not exhibit comparable results.
      iv. NDEP stated that TRX should base any justification for sample elimination on the CSM.
         1) For example, PCB sampling on the west side of the facility was driven by the presence of a PCB source to the west; thereby, potentially providing justification for the elimination of PCB analysis to the east.
         2) Additionally, TRX could explain how their electrolytic process does not generate PCBs; thereby, potentially justifying the elimination of PCB analysis for the samples associated with that process.
      v. TRX suggested that only 10% of all of the PCB analyses to the western portion of the facility by Method 1668 (Congener) and that 100% would be Method 8082 (Aroclor).
      vi. TRX also suggested just sampling the capillary fringe based on a transport justification.
      vii. NDEP stated that TRX needed to provide justification using a CSM perspective (process knowledge, pathway (capillary fringe, Beta Ditch, etc.)).
   b. Organic Acid Analysis
      i. TRX stated that the cost for the organic analysis was approximately $400 to $450 per sample.
      ii. TRX stated that organic acids were not on the SRC list for the TRX facility.
      iii. NDEP stated that the elimination of organic acids could be handled similarly as the elimination of the PCB congener analysis.
   c. Organochorine Pesticides (OCPs) / Organophosphorus Pesticides (OPP)

i. TRX stated that they will use the same logic as the PCBs on the western portion of the TRX facility to potentially eliminate these analyses.
ii. TRX stated that they understand that the Hardesty issue (what chemicals were produced at this site) will need to be addressed.
iii. TRX would like to eliminate OCP and OPP analyses from Areas II and III.
iv. NDEP suggested limiting depth based on pathway (surface for wind-blown deposition and capillary fringe for groundwater).

d. Geoprobe
i. TRX stated that they could realize significant savings if Geoprobe technology was used to collect the 0 and 10 foot samples.
ii. TRX will check into whether there is an existing Standard Operating Procedure (SOP) for Geoprobe sampling; otherwise, TRX will develop and submit a SOP. NDEP stated that BRC and TIMET do not have a Geoprobe SOP.

e. Data Validation Summary Reports (DVSRs)
i. TRX stated as an FYI to NDEP that ENSR will no longer conduct the entire data validation.
ii. TRX will switch to LDC for data validation, with ENSR reviewing the information.
iii. NDEP noted that the other BMI facilities are using LDC for data validation.
iv. TRX will make sure that the EDDs from Colombia Laboratories are compatible with LDC's database.

f. Reduction of number of samples collected per borehole
i. TRX noted that the Phase B SAPs have all proposed sampling from the surface to the capillary fringe in 10 foot increments.
ii. TRX suggested that instead of 10 foot increments that sampling at the following depths below ground surface be considered: 0 (surface), 10', 25', 40' or capillary fringe.
iii. TRX stated that this would eliminate about 20% of the soil samples.
iv. NDEP stated that TRX has the potential risk of additional sampling if elevated concentrations of contaminants are found.
v. TRX acknowledged this and stated that they would conduct additional sampling as necessary for risk assessment.

g. Area III Manganese Production Area Sampling
i. TRX stated that in the Phase B SAP for Area III, they stated that if sampling was conducted in the active Mn Production Area that TRX would not have to conduct additional sampling for analytes not associated with the process after production ceased.
ii. NDEP stated in their response letter to the Phase B SAP for Area III that additional sampling may be necessary in the future.
iii. TRX stated that if re-sampling may be necessary in the future, it may be better to minimize the sampling to be conducted now.
iv. TRX suggested that the random samples still be collected but that the judgmental samples should be eliminated.
v. TRX stated that surface sampling for asbestos and dioxin would be conducted for assessment of worker safety.
vi. TRX stated that all proposed and requested monitoring wells in this area would still be installed to allow site-wide groundwater assessment.

vii. NDEP stated that quantification of source to groundwater pathway for this area would not be achieved.
viii. NDEP stated that elimination of samples in this area was a possibility with proper justification since TRX is not currently requesting closure for the active production areas.

3. TRX stated that a request for an extension of the submittal date of September 15, 2008 for the Phase B revised text, tables, and plates and response to comments will be submitted to the NDEP. **ACTION ITEM.**

FINAL

Meeting Minutes

Project:	Tronox (TRX)
Location:	Conference Call
Time and Date:	1:30 PM, Wednesday, October 01, 2008
In Attendance:	NDEP – Brian Rakvica, Shannon Harbour
	Neptune – Kelly Black (for NDEP)
	Hackenberry Assoc. – Paul Hackenberry (for NDEP)
	Teri Copeland (for NDEP)
	Tronox –Susan Crowley
	Environmental Answers – Keith Bailey (for TRX)
	ENSR –Brian Ho, Carmen Schnell, Mike Flack (for TRX)

CC: Jim Najima

1. The meeting was held to discuss TRX's proposed justification for sampling design optimization for the Phase B Site Investigation including Areas I, II, III, and IV.
2. TRX submitted the following for use on this call (TRX stated that updated versions of these items will be included in the Revised Approach to Phase B Site Investigation (Revised Approach):
   a. Draft Table 2, Soil Sampling and Analytical Plan for Area I
   b. Figure 1, Soil Boring Locations Sampled for OCPs, OPPs, and Organic Acids (proposed)
   c. Figure 2, Soil Boring Locations Sampled for PCBs (proposed)
   d. Figure 3, Proposed Groundwater Sample Locations for OPPs, OCPs and Organic Acids
   e. Justification section of the Revised Approach document.
3. NDEP stated that the submitted figures and tables contained inconsistencies. TRX should review the final document for consistency prior to submittal.
4. NDEP stated that the objective of the justification should emphasize optimization of the sampling design for the systematic sampling plan. Financial objectives should be not be emphasized or even mentioned in the justification section in the Revised Approach document.
5. Geoprobe™ sampling, the following points were discussed for this issue:
   a. TRX stated that the use of Geoprobe™ for boring advancement during the Soil Gas Investigation was successful to 5 feet below ground surface (fbgs).
   b. TRX believes that Geoprobe™ advancement for the collection of the 0-0.5 fbgs and the 10 fbgs samples could be achieved more rapidly than by sonic drilling.
   c. TRX will submit a Standard Operating Procedure (SOP) for Geoprobe™ advancement and sample collection with the Phase B SAP Errata for NDEP approval.
   d. TRX stated that sonic drilling will be used for deeper sample collection and for any locations where the Geoprobe™ is not able to accomplish the required sampling.
   e. TRX stated that Geoprobe™ advancement might be conducted in conjunction with asbestos or other sampling to minimize mobilization.
6. Data Validation, TRX will use LDC and ENSR for data validation for future submittals.
7. Organic Acids, the following points were discussed for this issue:
   a. TRX stated that the modifications requested for analysis of the organic acids are based on source location and transport mechanisms.
   b. TRX stated that organic acids are not a site-related chemical for TRX.

c. TRX proposed to limit the analysis for organic acids to the western portion of the TRX facility and along the Beta Ditch based on the source.
d. NDEP stated that TRX should include discussion on the source(s) of the organic acids in the justification section in the Revised Approach document.

8. PCBs and Attachment A, the following points were discussed for this issue:
   a. TRX proposed to perform Arochlor analyses (method 8082) for all soil samples shown on the draft figure submitted for NDEP discussion and referred to NDEP comments that off-site sources of PCBs are from the southwest of the TRX facility as a potential source of PCB congeners. TRX suggested that congener analysis should be limited accordingly.
   b. NDEP stated that TRX should discuss these sources in the justification section of the Revised Approach document. The discussion should include whether Aroclor and/or congener analysis should be conducted including justification.
   c. NDEP had previously asked if PCBs are generated in TRX electrolytic processes. TRX responded that it knows of no mechanism for PCB formation in the TRX electrolytic processes. NDEP stated that TRX should use process knowledge, such as temperature, of the chlorate and perchlorate electrolytic process to explain how or if PCB formation is possible.
   d. NDEP stated that the description of the MnO_2 generation process should be revised so that it is clear that there is no chlorine present for the paraffin wax to come in contact with to enable PCB production.
   e. NDEP will provide additional guidance on PCB formation to TRX. **ACTION ITEM.**
   f. NDEP stated that TRX should discuss PCB source areas in the justification.
   g. TRX stated that boring SA67 (where the Beta Ditch enters the TRX site), has already been advanced and sampled for both Aroclor and congener analyses.
   h. TRX inquired whether WAPA was analyzing for both Aroclors and congeners.
   i. NDEP stated that WAPA was only analyzing for Aroclors; however, TPH is the driver for remediation in that even if the Aroclor concentrations are low, TPH is still greater than the 100 ppm action level.
   j. TRX stated that the rationale for only analyzing three of ten sample points in the Beta Ditch for both Aroclors and congeners is that TRX is looking to measure the PCBs entering the TRX facility from the west via the Beta Ditch, from the stormwater entering the Beta Ditch from the TRX facility, and leaving the TRX facility via the Beta Ditch.
   k. NDEP suggested that TRX investigate the hold times for the congener analysis and if feasible, collect samples for the congener analysis. These samples could be held pending the results of the Aroclor analysis. The congener analysis could then be run based on examination of the Aroclor results.

9. Pesticides and Attachment B, the following points were discussed for this issue:
   a. NDEP indicated that the Phase B Source Area Work Plans stated that random samples were to be sampled for broad suite analysis for site-wide comparison, including OCPs. This contradicts TRX's proposal to eliminate analyses in many of the random samples.
   b. TRX stated that all random samples will be sampled for the broad suite analyses listed in the LOU packages.
   c. TRX stated that it will revise the pesticide sampling figure and generate one figure for proposed OCP sampling locations and a second figure for OPPs and Organic Acids sampling locations.

d. NDEP inquired on the status of the analytical for the borings that were competed and sampled as indicated on the submitted table.
e. TRX stated that the analytical results had been received.
f. NDEP suggested that TRX review the data for additional support for the elimination of sampling locations for pesticides.

10. Reduction of number of samples collected between 10 fbgs and the capillary fringe, the following points were discussed for this issue:
    a. NDEP stated that if the number of sampling depths is limited, TRX should be prepared to make conservative interpolation and assumptions for the leaching model.
    b. NDEP also stated that if additional information is needed in areas of elevated concentrations, TRX may need to resample the area at other depths. TRX stated that this was understood.
11. Limit sampling in Area III production areas, the following points were discussed for this issue:
    a. TRX stated that the random samples proposed in the Area III production areas will still be collected.
    b. TRX stated that the Revised Approach document will request that the judgmental samples be removed from the Area III production areas where closure is not currently being requested. TRX stated that these potential source areas will be addressed after production has ceased.
12. Conclusion, the NDEP advised that TRX focus on the objective of optimization of the sampling design.
13. Attachment B, NDEP stated that TRX should investigate the location of the Acid Drain System relative the Montrose and Stauffer plants in order to support the statements about the Acid Drain location in relation to the former plant locations. NDEP will provide a figure of the locations of these plants and associated piping to TRX. **ACTION ITEM.**
14. Revised Approach Submittal, the following comments were discussed for this topic:
    a. TRX stated that the Revised Approach document will be submitted to the NDEP on October 13, 2008.
    b. TRX stated that the Revised Approach document will contain the justification section and a section for each of the four areas proposing modifications to the approved Phase B Source Area Work Plans, which will include the following:
        i. Color Table with modifications to the sampling plan highlighted.
        ii. Final Table – for field use, will include the requested modifications but will not be annotated.
        iii. Annotated maps detailing the modifications requested. A map will be generated for the following analytes: PCB, OCP, and OPP/OA.
        iv. Final maps – for field use, will include requested modifications but will not be annotated.
        v. Justification section
        vi. Any other requested errata pages.
    c. NDEP requested that TRX add the justification for any changes to each boring to the Rationale column of the color annotated table. TRX agreed.
    d. NDEP requested that the annotated maps also designate which wells TRX has requested to have the represented analysis eliminated

15. TRX indicated that drilling has not yet been scheduled pending approval of the work plan revisions.
16. NDEP indicated that review of the Revised Approach document may take about a month. A response could be issued by mid-November. NDEP additionally stated that the length of the review would be based upon the quality of the submitted document.

Appendix B

Revised Table 3 for Areas I, II, III, and IV

Please note that the Revised Table 2 for Areas I, II, III, and IV are provided as Microsoft Excel files under separate cover

Area I

Table 3
Groundwater Sampling and Analysis Plan for Area I
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

Laboratory [D]:								CAS Kelso, WA		Columbia Analytical Services Rochester, NY							GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical Sparks, NV	Rationale for Revision	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID No.[A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1,B]	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide J. (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	PCBs[8, E] (EPA 8082)	Radionuclides[9.]	PCBs[8, E] (EPA 1668A)	OPPs[10, F] (8141A)	Organic Acids[F]		
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area I (A-3) and ending with the southeastern-most grid covering Area I (O-4).																						
A-3	Parcel A	H-48	H-48B	TD = 41.1 ft	Qal *	6/18/2008	No	X	X	X	X	X	X	X	X		X		X	X	F, K, N	Serves as a stepout, generally upgradient for LOU 67 (Delbert Madsen Site), for general Site coverage and for BRC Parcel A.
A-5	Parcel A	PC-40	PC-40B	15 - 55	Qal	6/18/2008	Yes	X	X	X	X	X	X	X	X		X		X	X	F, N	Located to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I.
B-3	Parcel A	H-49A	H-49AB	TD = 49 ft	Qal *	6/24/2008	No	X	X	X	X	X	X	X	X		X				K, N	Located to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I.
D-3	Parcel A	MC-62	MC-62B	TD = 59 ft	Qal *	6/23/2008	No	X	X	X	X	X	X	X	X		X				K, N	Located for general Site coverage and to evaluate downgradient from Area I.
D-4	Parcel B	PC-72	PC-72B	15 -35	Qal	6/23/2008	No	X	X	X	X	X	X	X	X		X				N	Located to serve as a lateral stepout for M-95 for general Site coverage; and to evaluate downgradient from Area I.
E-1	Parcel D	MC-45	MC-45B	TD = 35.33 ft	Qal *	6/25/2008	Yes	X	X	X	X	X	X	X	X		X		X	X	F, K, N	Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
E-3	Parcel A	MC-65	MC-65B	TD = 41.78 ft	Qal *	6/20/2008	No	X	X	X	X	X	X	X	X		X				K, N	Located for general Site coverage and to evaluate downgradient from Area I.
E-3	Parcel A	MC-66	MC-66B	TD = 47.52 ft	Qal *	6/20/2008	No	X	X	X	X	X	X	X	X		X				K, N	Located for general Site coverage and to evaluate downgradient from Area I.
E-5	Parcel B	M-44	M-44B	5 - 35	Qal/MCfg1	6/24/2008	No	X	X	X	X	X	X	X	X		X		X	X	F, N	Located to evaluate LOU 68 and as a lateral stepout for well M-95 and to evaluate BRC Parcels B and I.
E-6	Parcel I	M-94	M-94B	12 - 22	Qal	6/25/2008	No	X	X	X	X	X	X	X	X		X				N	Located to evaluate LOU 68; BRC Parcels B and I and the downgradient area of the Site.
E-6	Parcel I	M-95	M-95B	12 - 22	Qal	6/24/2008	Yes	X	X	X	X	X	X	X	X		X				N	Located to evaluate LOU 68; BRC Parcel B; and the downgradient area of the Site.
E-7	Parcel I	M-96	M-96B	10.5 - 20.5	Qal	7/9/2008	No	X	X	X	X	X	X	X	X		X				N	Located to evaluate LOU 68; BRC Parcel B; and the downgradient area of the Site.
F-2	Parcel D	MC-53	MC-53B	20 - 40	Qal *	6/25/2008	No	X	X	X	X	X	X	X	X		X				N	Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
F-4	Parcel B	PC-37	PC-37B	16.8 - 41.8	Qal	6/20/2008	No	X	X	X	X	X	X	X	X		X				N	Located to serve as a downgradient stepout for LOU 68; to evaluate downgradient areas; and for general Site coverage.
G-1	Olin	MC-3	MC-3B	TD = 44.25 ft	Qal *		No	X	X	X	X	X	X	X	X		X				K, N	Located offsite to the west for general Site coverage; to evaluate potential offsite sources to the west; and to evaluate BRC Parcels C and E.
G-2	Parcel D	MC-94	MC-94B	TD = 40 ft	Qal *		No	X	X	X	X	X	X	X	X		X				K, N	Located to evaluate potential offsite sources to the west; for general Site coverage; and to evaluate downgradient from Area I.
G-2	Parcel E	MC-97	MC-97B	TD = 42 ft	Qal *	6/25/2008	No	X	X	X	X	X	X	X	X		X				K, N	Located to evaluate potential offsite sources to the west; for general Site coverage; and to evaluate downgradient from Area I.
G-3	Parcel D	MC-55	MC-55B	TD = 23 ft	Qal *		No	X	X	X	X	X	X	X	X		X				K, N	Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
H-2	Parcel C	H-28A	H-28AB	TD = 51 ft	MCfg1 *		No	X	X	X	X	X	X	X	X		X				K, N	Serves as a close stepout downgradient for LOU 1 and LOU 10; for general Site coverage; and to evaluate potential offsite sources to the west.
H-2	Parcel C	MC-32	MC-32B	TD = 34 ft	Qal *	6/25/2008	No	X	X	X	X	X	X	X	X		X				K, N	Located to serve as a downgradient stepout for LOU 10; to evaluate potential offsite sources to the west; to provide general Site coverage; and to evaluate BRC Parcels C and E. This was a dry well - no water sample collected in June 2008.
H-2	I	M-6A	M-6AB	26.8 - 41.5	Qal/MCfg1	6/27/2008	No	X	X	X	X	X	X	X	X	X	X	X	X	X	E, F, G	Located as a downgradient stepout for LOU 1 and LOU 10; to evaluate possible offsite sources to the west; and for general Site coverage.
H-3	I	M-7B	M-7BB	25.5 - 50.5	Qal/MCfg1	6/26/2008	Yes	X	X	X	X	X	X	X	X	X	X	X	X	X	E, F	Located as a downgradient stepout for LOU 1and LOU 10; to evaluate possible offsite sources to the west; and for general Site coverage.
H-3	Parcel D	MC-59	MC-59B	TD = 32.58 ft	Qal *		No	X	X	X	X	X	X	X	X		X				K, N	Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
H-6	Parcel D	M-23	M-23B	9.4 - 37.4	Qal	6/25/2008	No	X	X	X	X	X	X	X	X		X		X	X	F, N	Located to serve as a upgradient stepout for LOU 68; as a downgradient stepout for LOU 1; to evaluate BRC Parcels C and D; and for general Site coverage.
H-8	Parcel J	M-48	M-48B	6.1 - 36.1	Qal/MCfg1	7/9/2008	Yes	X	X	X	X	X	X	X	X		X				N	Located to evaluate LOU 69 and to evaluate BRC Parcels B and J.
I-4	I	M-98	M-98B	19 - 29	Qal		Yes	X	X	X	X	X	X	X	X		X					Located to evaluate LOU 1 and for general Site coverage.
I-5	I	M-99	M-99B	16 - 31	Qal		No	X	X	X	X	X	X	X	X		X					Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
I-6	I	M-100	M-100B	19 - 29	Qal		No	X	X	X	X	X	X	X	X		X					Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
I-7	I	M-101	M-101B	17 - 27	Qal		No	X	X	X	X	X	X	X	X		X					Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
J-2	BRC	AA-BW-02	AA-BW-02B	33 - 53	MCfg1 *		No	X	X	X	X	X	X	X	X		X					Located to evaluate constituents from off-Site sources to the west, and for general Site coverage.
J-8	I	M-102	M-102B	19.4 - 39.4	Qal		No	X	X	X	X	X	X	X	X		X					Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
K-2	I	M-5A	M-5AB	40 - 50	MCfg1	6/26/2008	Yes	X	X	X	X	X	X	X	X	X	X	X	X	X	E, F	Located to evaluate LOU 2 (Open Area South of the Trade Effluent Ponds); as an upgradient stepout for LOU 1 and LOU 10; to evaluate possible offsite sources to the west; and for general Site coverage.

Table 3
Groundwater Sampling and Analysis Plan for Area I
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

								CAS Kelso, WA		Columbia Analytical Services Rochester, NY							GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical Sparks, NV		
Grid Location	Location Area	Monitoring Well No.	Sample ID No.[A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1,B]	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide[J.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	PCBs[8, E] (EPA 8082)	Radionuclides[9.]	PCBs[8, E] (EPA 1668A)	OPPs[10, F] (8141A)	Organic Acids[F]	Rationale for Revision	Location Description and Rationale for Investigation
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area I (A-3) and ending with the southeastern-most grid covering Area I (O-4).																						
K-2	I	TR-2	TR-2B	144.5 - 174.5	MCfg1	7/8/2008	No	X	X	X	X	X	X	X	X	X	X	X	X	X	E, F	To evaluate for SRCs in upper Muddy Creek Fm.
K-3	I	MW-16	MW-16B	24.7 - 39.7	MCfg1	6/26/2008	No	X	X	X	X	X	X	X	X		X					New monitoring well to evaluate SRCs in upper Muddy Creek from offsite sources from west.
K-5	I	M-69	M-69B	19.9 - 39.3	Qal/MCfg1	7/8/2008	No	X	X	X	X	X	X	X	X		X					Located to evaluate LOU 32 and to evaluate the western end of the Groundwater Barrier Wall.
K-5	I	M-79	M-79B	10.8 - 35.4	Qal/MCfg1	6/29/2008	No	X	X	X	X	X	X	X	X		X					Located to evaluate LOU 1; LOU 32 and the western end of the Groundwater Injection Trenches; and for general Site coverage.
K-6	I	M-83	M-83B	10.8-40.3	Qal/MCfg1		No	X	X	X	X	X	X	X	X		X		X	X	F	Located to evaluate LOU 32 and the Groundwater Injection Area; as an upgradient stepout for LOU 1, and LOUs 22 and 23; and for general Site coverage.
K-6	I	M-84	M-84B	11.8 - 34.1	Qal/MCfg1	6/29/2008	No	X	X	X	X	X	X	X	X		X					Located to evaluate LOU 32 and the Groundwater Injection Trench area; as an upgradient stepout for LOU 1 and LOUs 22 and 23; and for general Site coverage.
K-7	I	M-86	M-86B	11.3 -40.9	Qal/MCfg1		No	X	X	X	X	X	X	X	X		X				G	Located to evaluate LOU 32 and the Groundwater Injection Trench area; as an upgradient stepout for LOU 1, LOUs 22 and 23; and for general Site coverage.
K-8	I	M-88	M-88B	7.3 - 36.8	Qal/MCfg1	6/25/2008	No	X	X	X	X	X	X	X	X		X					Located to serve as an upgradient stepout for LOU 1; as a downgradient stepout for LOU 32; to evaluate possible offsite sources to the east; and for general Site coverage.
K-9	I	M-129	M-129B	20 - 40	MCfg1		No	X	X	X	X	X	X	X	X		X				H	Located to evaluate the eastern end of the barrier wall. Well was drilled and installed in March 2008.
K-9	TIMET	CLD1-R	CLD1-RB	25 -35	Qal/MCfg1	7/10/2008	No	X	X	X	X	X	X	X	X		X					Serves as a close stepout downgradient of LOU 5 (Beta Ditch) and general Site coverage. Located on Timet.
L-2	I	M-127	M-127B	35-50	MCfg1		No	X	X	X	X	X	X	X	X	X	X	X	X	X	E, F, H	New monitoring well located to evaluate LOU 2; to evaluate potential offsite sources to the west; and for general Site coverage. Well was drilled and installed in June 2008, but not yet sampled for Phase B.
L-3	I	M-126	M-126B	19.7 - 39.7	MCfg1	6/29/2008	No	X	X	X	X	X	X	X	X		X					New monitoring well located to serve as an up- to crossgradient stepout for LOU 2; to evaluate potential offsite sources from the west; and for general Site coverage.
L-4	I	M-14A	M-14AB	20 - 40	MCfg1	6/30/2008	No	X	X	X	X	X	X	X	X		X					Located as an upgradient stepout for LOUs 30, 56, and 58; as a downgradient well for LOU 39; and for general Site coverage.
L-4	I	M-57A	M-57AB	20 - 40	MCfg1	6/27/2008	No	X	X	X	X	X	X	X	X		X					Located to serve as an upgradient stepout for LOU 32; to evaluate the west end of the Groundwater Barrier Wall; and for general Site coverage.
L-5	I	I-B	I-BB	17.8 - 42.5	Qal/MCfg1	7/8/2008	No	X	X	X	X	X	X	X	X		X					Located as a downgradient stepout for LOU 56 and LOU 58; as an upgradient stepout for LOU 57, and for general Site coverage.
L-6	I	M-55	M-55B	14.6 - 44.6	Qal/MCfg1	7/1/2008	Yes	X	X	X	X	X	X	X	X		X					Located just upgradient of the groundwater barrier wall; to evaluate LOU 32; to serve as a downgradient stepout for LOUs 19, 31, and 55 and for general Site coverage.
L-6	I	M-65	M-65B	14.4 - 39	Qal/MCfg1	7/2/2008	No	X	X	X	X	X	X	X	X		X					Located to serve as an upgradient stepout for LOU 32; as a downgradient stepout for LOU 57; and for general Site coverage.
L-6	I	M-78	M-78B	21.5 - 41.5	Qal/MCfg1		No	X	X	X	X	X	X	X	X		X					Located to evaluate LOU 32; as a downgradient stepout for LOU 55; and for general Site coverage.
L-8	I	M-61	M-61B	9.3 - 38.8	Qal/MCfg1	6/26/2008	No	X	X	X	X	X	X	X	X		X					Located to evaluate LOU 32 and the eastern end of the Groundwater Barrier Wall.
L-8	I	M-67	M-67B	7.8 - 37.8	Qal/MCfg1	6/27/2008	No	X	X	X	X	X	X	X	X		X					Located to serve as an upgradient stepout for LOU 32 and for general Site coverage.
L-8	I	M-68	M-68B	11.2 - 39.8	Qal/MCfg1	6/27/2008	No	X	X	X	X	X	X	X	X		X					Located to serve as a downgradient stepout for LOU 5 and 20; as an upgradient stepout for LOU 32; as an evaluation of the east end of the Groundwater Barrier Wall; and for general Site coverage.
L-9	TIMET	CLD2-R	CLD2-RB	20 - 40.27	Qal	7/10/2008	No	X	X	X	X	X	X	X	X		X				O	Serves as a close stepout downgradient of LOU 5; and a further downgradient stepout for LOU 20 (Pond C-1 and Associated Piping), and for general Site coverage. Located on Timet.
L-9	I	M-130	M-130B	20 - 40	MCfg1		No	X	X	X	X	X	X	X	X		X				H	Located to evaluate LOU 5 and the eastern end of the barrier wall. Well was installed in March 2008 but not yet sampled for Phase B.
L-10	TIMET	CLD3-R	CLD3-RB	nr	MCfg1*	7/10/2008	No	X	X	X	X	X	X	X	X		X				O	Located to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I. Located on Timet.
M-1	Olin	H-38	H-38B	25 - 50	Qal*		No	X	X	X	X	X	X	X	X		X					To evaluate possible offsite sources from the west, as an upgradient stepout to LOU 5 (Beta Ditch) and for general Site coverage. Depth of screen will be confirmed in the field.
M-2	I	TR-4	TR-4B	124.5 - 144.5	MCfg1	7/9/2008	No	X	X	X	X	X	X	X	X	X	X	X	X	X	E, F	Located to serve as a downgradient stepout for LOU 5; to evaluate possible offsite sources to the west (particularly for VOCs); and for general Site coverage.
M-3	I	M-125	M-125B	35-50	MCfg1		No	X	X	X	X	X	X	X	X	X	X	X	X	X	E, H, M, F	New monitoring well located to serve as a downgradient stepout for LOUs 5 and 54; to evaluate potential offsite sources from the west; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phase B.
M-8	I	M-39	M-39B	24.9 - 39.9	Qal/MCfg1	7/8/2008	Yes	X	X	X	X	X	X	X	X		X		X	X	F	Located to serve as a downgradient stepout for LOUs 5, 18, 20, and 21; and for general Site coverage.
N-4	I	M-142	M-142B	30-45	MCfg1		No	X	X	X	X	X	X	X	X		X		X	X	F, H	New monitoring well constructed in borehole for SA87 to evaluate LOU 39 (Satellite Accumulation Point, AP Maintenance Shop). Well was installed in June 2008 but not yet sampled for Phase B.
O-2	I	M-123	M-123B	34-51	MCfg1	7/11/2008	No	X	X	X	X	X	X	X	X	X	X	X	X	X	E, F, H, M	New monitoring well located to evaluate LOU 35; as an upgradient stepout for LOUs 38 and 54; to evaluate potential offsite sources to the west; and for general Site coverage. PCB analysis for groundwater requested by NDEP at this location. Well was installed in June 2008 but not yet sampled for Phase B.
O-4	I	M-124	M-124B	34-49	MCfg1	7/11/2008	No	X	X	X	X	X	X	X	X		X				H	New monitoring well located to evaluate LOU 64; serve as a downgradient stepout for LOU 63; as an upgradient stepout for LOU 39; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phase B.

Table 3
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Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

Laboratory [D]:								CAS Kelso, WA		Columbia Analytical Services Rochester, NY							GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical Sparks, NV	Rationale for Revision	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID No.[A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1,B]	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide[J.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	PCBs[8, E] (EPA 8082)	Radionuclides[9.]	PCBs[8, E] (EPA 1668A)	OPPs[10, F] (8141A)	Organic Acids[F]		
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area I (A-3) and ending with the southeastern-most grid covering Area I (O-4).																						
O-4	I	M-128	M-128B	40-55	MCfg1		No	X	X	X	X	X	X	X	X		X				H	New monitoring well to serve as a downgradient stepout for LOUs 35 and 64; as an upgradient stepout for LOUs 39, 52, and 57; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phase B.
							Number of Field Samples:	**64**	**64**	**64**	**64**	**64**	**64**	**64**	**64**	**8**	**64**	**8**	**16**	**16**		
QA/QC Samples:																						
			Field Duplicates (10%)					7	7	7	7	7	7	7	7	1	7	0	2	2		
			Field Blanks					1	1	1	1	1	1	1	1	1	1	0	1	1		
			Equipment Rinseate Blanks					3	3	3	3	3	3	3	3	0	3	0	1	1		
			Trip Blank Samples					0	0	14	0	0	0	0	0	0	0	0	0	0		
			Matrix Spike (5%)					4	4	4	4	3	3	4	3	1	4	0	1	4		
			Matrix Spike Duplicate (5%)					4	4	4	4	3	3	4	3	1	4	0	1	4		
							Total Samples:	**83**	**83**	**97**	**83**	**81**	**81**	**83**	**81**	**12**	**83**	**8**	**22**	**28**		

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 screen interval information from BMI.
X	Sample will be collected and analyzed.
blank	No sample collected under Phase B sampling plan.
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.	Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, Zinc
3.	VOCs = Volatile organic compounds (to include analysis for naphthalene).
4.	Hexavalent Chromium.
5.	Complete list of wet chemistry parameters is shown on Table 1. All groundwater samples will have pH measured in the field.
6.	OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).
7.	SVOCs = Semi volatile organic compounds.
8.	Polychlorinated Biphenyls.
9.	Radionuclides consists of alpha spec reporting for isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
10.	OPPs = Organophosphorous Pesticides
TBD	To Be Determined when well is constructed.
nr	Not recorded in Tronox database (screen intervals to be acquired from BMI).
Qal	Quaternary Alluvium.
6/25/2008	Yellow indicates sample was collected on the date shown.
MS/MSD	Matrix Spike sample and Matrix Spike Duplicate sample (fill 2nd set of bottles for MS sample and 3rd set of bottles for MSD sample).
MCfg1	Muddy Creek Formation - first fine-grained facies.
X	Green-shading indicates items that have been added or changed from Table 3 in the April 2008 Area I Work Plan originally reviewed by NDEP.
A	Sample ID was added to convey sample ID nomenclature to field sampling team ("B" suffix denotes sample is associated with Phase B).
B	Soil type column was added to conform with NDEP request.
D	Laboratory information was added to assist field sampling personnel in shipping the sample containers to the appropriate laboratory.
E	PCB columns were added per NDEP (May 6, 2008).
F	OPPs and Organic Acids were added per NDEP (July 21, 2008).
G	Well was added to Table 3 per NDEP (May 6 , 2008).
H	Screen interval was added to Table 3 after this well was drilled and installed in July 2008.
J	Column was added by Tronox because it was unclear in previous tables that cyanide will be analyzed in all proposed wells. Cyanide is conducted as part of the Wet Chemistry analysis.
K	For screen intervals marked as "TD=", total well depth is given where screen interval is not known. A downhole camera will be used to determine actual screen intervals.
M	Based on Phase A results, these locations were selected for PCB sampling.
N	The listed location area was revised to more clearly indicate the Parcel ID number (or other location indicator) that the well is in.
O	Well was sampled as part of the Phase B Area I investigation in June-July 2008.

Table 3 (Field Version)
Groundwater Sampling and Analysis Plan for Area I
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

									Laboratory :	CAS Kelso, WA	Columbia Analytical Services Rochester, NY							GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical Sparks, NV	
Grid Location	Location Area	Monitoring Well No.	Sample ID No.[A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1,B]	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide[J.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	PCBs[8,E] (EPA 8082)	Radionuclides[9.]	PCBs[8,E] (EPA 1668A)	OPPs[10,F] (8141A)	Organic Acids[F]	Location Description and Rationale for Investigation
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area I (A-3) and ending with the southeastern-most grid covering Area I (O-4).																						
A-3	Parcel A	H-48	H-48B	TD = 41.1 ft	Qal *	6/18/2008	No		X	X	X	X	X	X	X	X		X		X	X	Serves as a stepout, generally upgradient for LOU 67 (Delbert Madsen Site), for general Site coverage and for BRC Parcel A.
A-5	Parcel A	PC-40	PC-40B	15 - 55	Qal	6/18/2008	Yes		X	X	X	X	X	X	X	X		X		X	X	Located to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I.
			PC-40BD	15 - 55 (dup)					X	X	X	X	X	X	X	X		X		X	X	This is a duplicate sample of PC-40B.
B-3	Parcel A	H-49A	H-49AB	TD = 49 ft	Qal *	6/24/2008	No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I.
D-3	Parcel A	MC-62	MC-62B	TD = 59 ft	Qal *	6/23/2008	No		X	X	X	X	X	X	X	X		X				Located for general Site coverage and to evaluate downgradient from Area I.
D-4	Parcel B	PC-72	PC-72B	15 -35	Qal	6/23/2008	No		X	X	X	X	X	X	X	X		X				Located to serve as a lateral stepout for M-95 for general Site coverage; and to evaluate downgradient from Area I.
E-1	Parcel D	MC-45	MC-45B	TD = 35.33 ft	Qal *	6/25/2008	Yes		X	X	X	X	X	X	X	X		X		X	X	Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
E-3	Parcel A	MC-65	MC-65B	TD = 41.78 ft	Qal *	6/20/2008	No		X	X	X	X	X	X	X	X		X				Located for general Site coverage and to evaluate downgradient from Area I.
E-3	Parcel A	MC-66	MC-66B	TD = 47.52 ft	Qal *	6/20/2008	No		X	X	X	X	X	X	X	X		X				Located for general Site coverage and to evaluate downgradient from Area I.
E-5	Parcel B	M-44	M-44B	5 - 35	Qal/MCfg1	6/24/2008	No		X	X	X	X	X	X	X	X		X		X	X	Located to evaluate LOU 68 and as a lateral stepout for well M-95 and to evaluate BRC Parcels B and I.
E-6	Parcel I	M-94	M-94B	12 - 22	Qal	6/25/2008	No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 68; BRC Parcels B and I and the downgradient area of the Site.
E-6	Parcel I	M-95	M-95B	12 - 22	Qal	6/24/2008	Yes		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 68; BRC Parcel B; and the downgradient area of the Site.
			M-95B	12 - 22				X	X	X	X	X	X	X	X	X		X				This is a matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles for MSD sample. Label both sets of bottles as M-95B.
E-7	Parcel I	M-96	M-96B	10.5 - 20.5	Qal	7/9/2008	No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 68; BRC Parcel B; and the downgradient area of the Site.
F-2	Parcel D	MC-53	MC-53B	20 - 40	Qal *	6/25/2008	No		X	X	X	X	X	X	X	X		X				Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
F-4	Parcel B	PC-37	PC-37B	16.8 - 41.8	Qal	6/20/2008	No		X	X	X	X	X	X	X	X		X				Located to serve as a downgradient stepout for LOU 68; to evaluate downgradient areas; and for general Site coverage.
G-1	Olin	MC-3	MC-3B	TD = 44.25 ft	Qal *		No		X	X	X	X	X	X	X	X		X				Located offsite to the west for general Site coverage; to evaluate potential offsite sources to the west; and to evaluate BRC Parcels C and E.
G-2	Parcel D	MC-94	MC-94B	TD = 40 ft	Qal *		No		X	X	X	X	X	X	X	X		X				Located to evaluate potential offsite sources to the west; for general Site coverage; and to evaluate downgradient from Area I.
G-2	Parcel E	MC-97	MC-97B	TD = 42 ft	Qal *	6/25/2008	No		X	X	X	X	X	X	X	X		X				Located to evaluate potential offsite sources to the west; for general Site coverage; and to evaluate downgradient from Area I.
G-3	Parcel D	MC-55	MC-55B	TD = 23 ft	Qal *		No		X	X	X	X	X	X	X	X		X				Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
H-2	Parcel C	H-28A	H-28AB	TD = 51 ft	MCfg1 *		No		X	X	X	X	X	X	X	X		X				Serves as a close stepout downgradient for LOU 1 and LOU 10; for general Site coverage; and to evaluate potential offsite sources to the west.
H-2	Parcel C	MC-32	MC-32B	TD = 34 ft	Qal *	6/25/2008	No		X	X	X	X	X	X	X	X		X				Located to serve as a downgradient stepout for LOU 10; to evaluate potential offsite sources to the west; to provide general Site coverage; and to evaluate BRC Parcels C and E. This was a dry well - no water sample collected in Ju 2008.
H-2	I	M-6A	M-6AB	26.8 - 41.5	Qal/MCfg1	6/27/2008	No		X	X	X	X	X	X	X	X	X	X	X	X	X	Located as a downgradient stepout for LOU 1 and LOU 10; to evaluate possible offsite sources to the west; and for general Site coverage.
H-3	I	M-7B	M-7BB	25.5 - 50.5	Qal/MCfg1	6/26/2008	Yes		X	X	X	X	X	X	X	X	X	X	X	X	X	Located as a downgradient stepout for LOU 1and LOU 10; to evaluate possible offsite sources to the west; and for general Site coverage.
H-3	Parcel D	MC-59	MC-59B	TD = 32.58 ft	Qal *		No		X	X	X	X	X	X	X	X		X				Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
H-6	Parcel D	M-23	M-23B	9.4 - 37.4	Qal	6/25/2008	No		X	X	X	X	X	X	X	X		X		X	X	Located to serve as a upgradient stepout for LOU 68; as a downgradient stepout for LOU 1; to evaluate BRC Parcel C and D; and for general Site coverage.
			M-23BD	9.4 - 37.4 (dup)					X	X	X	X	X	X	X	X		X		X	X	This is a duplicate sample of M-23B.
H-8	Parcel J	M-48	M-48B	6.1 - 36.1	Qal/MCfg1	7/9/2008	Yes		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 69 and to evaluate BRC Parcels B and J.
I-4	I	M-98	M-98B	19 - 29	Qal		Yes		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 1 and for general Site coverage.
I-5	I	M-99	M-99B	16 - 31	Qal		No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
I-6	I	M-100	M-100B	19 - 29	Qal		No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
I-7	I	M-101	M-101B	17 - 27	Qal		No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.

Table 3 (Field Version)
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Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

									Laboratory :	CAS Kelso, WA		Columbia Analytical Services Rochester, NY							GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical Sparks, NV	
Grid Location	Location Area	Monitoring Well No.	Sample ID No.[A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1,B]	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide[J.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	PCBs[8,E] (EPA 8082)	Radionuclides[9.]	PCBs[8,E] (EPA 1668A)	OPPs[10,F] (8141A)	Organic Acids[F]	Location Description and Rationale for Investigation
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area I (A-3) and ending with the southeastern-most grid covering Area I (O-4).																						
J-2	BRC	AA-BW-02	AA-BW-02B	33 - 53	MCfg1 *		No		X	X	X	X	X	X	X	X		X				Located to evaluate constituents from off-Site sources to the west, and for general Site coverage.
J-8	I	M-102	M-102B	19.4 - 39.4	Qal		No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
K-2	I	M-5A	M-5AB	40 - 50	MCfg1	6/26/2008	Yes		X	X	X	X	X	X	X	X	X	X	X	X	X	Located to evaluate LOU 2 (Open Area South of the Trade Effluent Ponds); as an upgradient stepout for LOU 1 and LOU 10; to evaluate possible offsite sources to the west; and for general Site coverage.
K-2	I	TR-2	TR-2B	144.5 - 174.5	MCfg1	7/8/2008	No		X	X	X	X	X	X	X	X	X	X	X	X	X	To evaluate for SRCs in upper Muddy Creek Fm.
K-3	I	MW-16	MW-16B	24.7 - 39.7	MCfg1	6/26/2008	No		X	X	X	X	X	X	X	X		X				New monitoring well to evaluate SRCs in upper Muddy Creek from offsite sources from west.
			MW-16B	24.7 - 39.7				X	X	X	X	X	X	X	X	X		X				This is a matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles for MSD sample. Label both sets of bottles as MW-16B.
K-5	I	M-69	M-69B	19.9 - 39.3	Qal/MCfg1	7/8/2008	No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 32 and to evaluate the western end of the Groundwater Barrier Wall.
K-5	I	M-79	M-79B	10.8 - 35.4	Qal/MCfg1	6/29/2008	No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 1; LOU 32 and the western end of the Groundwater Injection Trenches; and for general Site coverage.
K-6	I	M-83	M-83B	10.8-40.3	Qal/MCfg1		No		X	X	X	X	X	X	X	X		X		X	X	Located to evaluate LOU 32 and the Groundwater Injection Area; as an upgradient stepout for LOU 1, and LOUs 22 and 23; and for general Site coverage.
K-6	I	M-84	M-84B	11.8 - 34.1	Qal/MCfg1	6/29/2008	No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 32 and the Groundwater Injection Trench area; as an upgradient stepout for LOU 1 and LOUs 22 and 23; and for general Site coverage.
K-7	I	M-86	M-86B	11.3 -40.9	Qal/MCfg1		No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 32 and the Groundwater Injection Trench area; as an upgradient stepout for LOU 1, LOUs 22 and 23; and for general Site coverage.
K-8	I	M-88	M-88B	7.3 - 36.8	Qal/MCfg1	6/25/2008	No		X	X	X	X	X	X	X	X		X				Located to serve as an upgradient stepout for LOU 1; as a downgradient stepout for LOU 32; to evaluate possible offsite sources to the east; and for general Site coverage.
K-9	I	M-129	M-129B	20 - 40	MCfg1		No		X	X	X	X	X	X	X	X		X				Located to evaluate the eastern end of the barrier wall. Well was drilled and installed in March 2008.
K-9	TIMET	CLD1-R	CLD1-RB	25 -35	Qal/MCfg1	7/10/2008	No		X	X	X	X	X	X	X	X		X				Serves as a close stepout downgradient of LOU 5 (Beta Ditch) and general Site coverage. Located on Timet.
L-2	I	M-127	M-127B	35-50	MCfg1		No		X	X	X	X	X	X	X	X	X	X	X	X	X	New monitoring well located to evaluate LOU 2; to evaluate potential offsite sources to the west; and for general Site coverage. Well was drilled and installed in June 2008, but not yet sampled for Phase B.
L-3	I	M-126	M-126B	19.7 - 39.7	MCfg1	6/29/2008	No		X	X	X	X	X	X	X	X		X				New monitoring well located to serve as an up- to crossgradient stepout for LOU 2; to evaluate potential offsite sources from the west; and for general Site coverage.
			M-126BD	19.7-39.7 (dup)					X	X	X	X	X	X	X	X		X				This is a duplicate sample of M-126B.
L-4	I	M-14A	M-14AB	20 - 40	MCfg1	6/30/2008	No		X	X	X	X	X	X	X	X		X				Located as an upgradient stepout for LOUs 30, 56, and 58; as a downgradient well for LOU 39; and for general Site coverage.
L-4	I	M-57A	M-57AB	20 - 40	MCfg1	6/27/2008	No		X	X	X	X	X	X	X	X		X				Located to serve as an upgradient stepout for LOU 32; to evaluate the west end of the Groundwater Barrier Wall; and for general Site coverage.
			M-57ABD	20 - 40 (dup)					X	X	X	X	X	X	X	X		X				This is a duplicate sample of M-57AB.
L-5	I	I-B	I-BB	17.8 - 42.5	Qal/MCfg1	7/8/2008	No		X	X	X	X	X	X	X	X		X				Located as a downgradient stepout for LOU 56 and LOU 58; as an upgradient stepout for LOU 57, and for general Site coverage.
L-6	I	M-55	M-55B	14.6 - 44.6	Qal/MCfg1	7/1/2008	Yes		X	X	X	X	X	X	X	X		X				Located just upgradient of the groundwater barrier wall; to evaluate LOU 32; to serve as a downgradient stepout for LOUs 19, 31, and 55 and for general Site coverage.
L-6	I	M-65	M-65B	14.4 - 39	Qal/MCfg1	7/2/2008	No		X	X	X	X	X	X	X	X		X				Located to serve as an upgradient stepout for LOU 32; as a downgradient stepout for LOU 57; and for general Site coverage.
			M-65BD	14.4 - 39 (dup)					X	X	X	X	X	X	X	X		X				This is a duplicate sample of M-65B.
L-6	I	M-78	M-78B	21.5 - 41.5	Qal/MCfg1		No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 32; as a downgradient stepout for LOU 55; and for general Site coverage.
L-8	I	M-61	M-61B	9.3 - 38.8	Qal/MCfg1	6/26/2008	No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 32 and the eastern end of the Groundwater Barrier Wall.
L-8	I	M-67	M-67B	7.8 - 37.8	Qal/MCfg1	6/27/2008	No		X	X	X	X	X	X	X	X		X				Located to serve as an upgradient stepout for LOU 32 and for general Site coverage.
			M-67BD	7.8 - 37.8 (dup)					X	X	X	X	X	X	X	X		X				This is a duplicate of M-67B.
			M-67B	7.8 - 37.8				X	X	X	X	X	X	X	X	X		X				This is a matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles for MSD sample. Label both sets of bottles as M-67B.
L-8	I	M-68	M-68B	11.2 - 39.8	Qal/MCfg1	6/27/2008	No		X	X	X	X	X	X	X	X		X				Located to serve as a downgradient stepout for LOU 5 and 20; as an upgradient stepout for LOU 32; as an evaluation of the east end of the Groundwater Barrier Wall; and for general Site coverage.
L-9	TIMET	CLD2-R	CLD2-RB	20 - 40.27	Qal	7/10/2008	No		X	X	X	X	X	X	X	X		X				Serves as a close stepout downgradient of LOU 5; and a further downgradient stepout for LOU 20 (Pond C-1 and Associated Piping), and for general Site coverage. Located on Timet.
L-9	I	M-130	M-130B	20 - 40	MCfg1		No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 5 and the eastern end of the barrier wall. Well was installed in March 2008 but not yet sampled for Phase B.
L-10	TIMET	CLD3-R	CLD3-RB	nr	MCfg1*	7/10/2008	No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I. Located on Timet.

Table 3 (Field Version)
Groundwater Sampling and Analysis Plan for Area I
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

									Laboratory :	CAS Kelso, WA	Columbia Analytical Services Rochester, NY							GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical Sparks, NV	
Grid Location	Location Area	Monitoring Well No.	Sample ID No.[A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1,B]	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide[J.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	PCBs[8, E] (EPA 8082)	Radionuclides[9.]	PCBs[8, E] (EPA 1668A)	OPPs[10, F] (8141A)	Organic Acids[F]	Location Description and Rationale for Investigation
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area I (A-3) and ending with the southeastern-most grid covering Area I (O-4).																						
M-1	Olin	H-38	H-38B	25 - 50	Qal*		No		X	X	X	X	X	X	X	X		X				To evaluate possible offsite sources from the west, as an upgradient stepout to LOU 5 (Beta Ditch) and for general Site coverage. Depth of screen will be confirmed in the field.
M-2	I	TR-4	TR-4B	124.5 - 144.5	MCfg1	7/9/2008	No		X	X	X	X	X	X	X	X	X	X	X	X	X	Located to serve as a downgradient stepout for LOU 5; to evaluate possible offsite sources to the west (particularly for VOCs); and for general Site coverage.
M-3	I	M-125	M-125B	35-50	MCfg1		No		X	X	X	X	X	X	X	X	X	X	X	X	X	New monitoring well located to serve as a downgradient stepout for LOUs 5 and 54; to evaluate potential offsite sources from the west; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phase B.
			M-125B	35-50				X	X	X	X	X	X	X	X	X	X	X	X	X	X	This is a matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles for MSD sample. Label both sets of bottles as M-125B.
M-8	I	M-39	M-39B	24.9 - 39.9	Qal/MCfg1	7/8/2008	Yes		X	X	X	X	X	X	X	X		X		X	X	Located to serve as a downgradient stepout for LOUs 5, 18, 20, and 21; and for general Site coverage.
N-4	I	M-142	M-142B	30-45	MCfg1		No		X	X	X	X	X	X	X	X		X		X	X	New monitoring well constructed in borehole for SA87 to evaluate LOU 39 (Satellite Accumulation Point, AP Maintenance Shop). Well was installed in June 2008 but not yet sampled for Phase B.
O-2	I	M-123	M-123B	34-51	MCfg1	7/11/2008	No		X	X	X	X	X	X	X	X	X	X	X	X	X	New monitoring well located to evaluate LOU 35; as an upgradient stepout for LOUs 38 and 54; to evaluate potential offsite sources to the west; and for general Site coverage. PCB analysis for groundwater requested by NDEP at this location. Well was installed in June 2008 but not yet sampled for Phase B.
			M-123BD	34-51 (dup)					X	X	X	X	X	X	X	X	X	X	X	X	X	This is a duplicate sample of M-123B.
O-4	I	M-124	M-124B	34-49	MCfg1	7/11/2008	No		X	X	X	X	X	X	X	X		X				New monitoring well located to evaluate LOU 64; serve as a downgradient stepout for LOU 63; as an upgradient stepout for LOU 39; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phase B
O-4	I	M-128	M-128B	40-55	MCfg1		No		X	X	X	X	X	X	X	X		X				New monitoring well to serve as a downgradient stepout for LOUs 35 and 64; as an upgradient stepout for LOUs 39-52, and 57; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phase B.

Number of Wells: 64

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 screen interval information from BMI.
X	Sample will be collected and analyzed.
blank	No sample collected under Phase B sampling plan.
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.	Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, Zinc
3.	VOCs = Volatile organic compounds (to include analysis for naphthalene).
4.	Hexavalent Chromium.
5.	Complete list of wet chemistry parameters is shown on Table 1. All groundwater samples will have pH measured in the field.
6.	OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).
7.	SVOCs = Semi volatile organic compounds.
8.	Polychlorinated Biphenyls.
9.	Radionuclides consists of alpha spec reporting for isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
10.	OPPs = Organophosphorous Pesticides
TBD	To Be Determined when well is constructed.
nr	Not recorded in Tronox database (screen intervals to be acquired from BMI).
Qal	Quaternary Alluvium.
6/25/2008	Yellow indicates sample was collected on the date shown.
MS/MSD	Matrix Spike sample and Matrix Spike Duplicate sample (fill 2nd set of bottles for MS sample and 3rd set of bottles for MSD sample).
MCfg1	Muddy Creek Formation - first fine-grained facies.

Area II

Table 3
Groundwater Sampling And Analysis Plan for Area II
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson Nevada

							Laboratory [E.] :		CAS - Kelso, WA	CAS - Rochester, NY					GEL - Charleston, SC	STL-Denver	Alpha Analytical	Rationale for Revision	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID No. [A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1.]	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide [F.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	Radionuclides[9.]	OPPs[10.] (8141A)	Organic Acids		
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).																			
L-4	IIE	M-14A	M-14AB	20 - 40	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout to LOU 5; and for general Site coverage.
L-5	IIN	I-B	I-BB	17.8 - 42.5	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout to LOUs 30 and 56 and for general Site coverage.
L-5	II	I-AR	I-ARB	25 - 45	MCfg1	yes	X	X	X	X	X	X	X	X	X			F	Located as an upgradient stepout for LOUs 30, 31, and 56; and LOU 58 and for general Site coverage.
L-6	IIN	M-55	M-55B	14.6 - 44.6	Qal/MCfg1	yes	R	R	R	R	R	R	R	R	R			D (see Area I)	Located as a downgradient stepout to LOU 55; and for general Site coverage.
L-6	IIN	M-78	M-78B	21.5 - 41.5	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located as a downgradient stepout to LOU 55; and for general Site coverage.
L-6	II	M-64	M-64B	12.7 - 37.3	Qal/MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to evaluate LOU 55; as a downgradient stepout for LOUs 30 and 56 and for general Site coverage.
L-6	II	M-25	M-25B	24 - 39	Qal/MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to serve as a downgradient stepout for LOUs 16, 19 and 53; as an upgradient stepout for LOU 55; and for general Site coverage.
L-6	II	M-38	M-38B	20 - 35	MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to serve as a downgradient stepout for LOUs 16, 17, 19, and LOU 57; and for general Site coverage.
L-8	IIN	M-68	M-68B	11.2 - 39.8	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout for LOU 5; and for general Site coverage.
L-9	IIN	CLD2-R	CLD2-RB	20 - 40.27	Qal	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout for LOU 5; and for general Site coverage.
M-2	IIN	TR-4	TR-4B	124.5 - 144.5	MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout for LOU 5; and for general Site coverage.
M-3	IIN	M-125	M-125B	35 - 50	MCfg1	new well	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout for LOU 5; and for general Site coverage.
M-5	II	M-110	M-110B	30 - 40	Qal/MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to evaluate LOU 57 as a downgradient stepout for LOU 5; and for general Site coverage.
M-5	II	M-111A	M-111AB	29.7 - 39.7	MCfg1	no	X	X	X	X	X	X	X	X	X	X	X	B, C, F	Replacement well for M-111 which was destroyed by site grading and located to evaluate LOU 57; a downgradient stepout for LOU 52; as an upgradient stepout for LOUs 5 and 19; and for general Site coverage.
M-6	II	M-89	M-89B	18 - 38.2	Qal/MCfg1	yes	X	X	X	X	X	X	X	X	X	X	X	B, F	Located to evaluate LOU 57; as a downgradient stepout for LOUs 5, 16, 17, and 53; and for general Site coverage.
M-7	II	M-22A	M-22AB	16 - 36	Qal/MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to evaluate LOU 57; as a downgradient stepout for LOUs 5, and 16 through 18; and for general Site coverage.
M-8	IIN	M-39	M-39B	24.9 - 39.9	Qal/MCfg1	yes	R	R	R	R	R	R	R	R	R			D (see Area I)	Located as a downgradient stepout for LOUs 5, 20, 22 (pipelines in Area II) and LOU 23 (pipelines in Area II); and for general Site coverage.
M-8	II	M-19	M-19B	14.5 - 34.5	MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to serve as an upgradient stepout for LOUs 5 and 20; to evaluate LOUs 22 and 23 and potential offsite sources to the east; and as general Site coverage.
N-4	IIN	M-142	M-142B	30 - 45	MCfg1	new well	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as an upgradient stepout for LOU 5; and for general Site coverage.
N-5	II	M-75	M-75B	34.6 - 49.3	Qal/MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to serve as a downgradient stepout for LOUs 7, 8, 9, and 45; as an upgradient stepout for LOUs 16, 17, 19, 53 and 57; and for general Site coverage.
N-5	II	M-76	M-76B	34.6 - 49.3	MCcg1	yes	X	X	X	X	X	X	X	X	X			F	Located to serve as a downgradient stepout for LOUs 8 and 45; as an upgradient stepout for LOUs 53 and 57; and for general Site coverage.
N-6	II	M-2A	M-2AB	30 - 40	Qal	yes	X	X	X	X	X	X	X	X	X			C, F	Located as a downgradient stepout for LOUs 7, 8, 9, 13, 14, 20, 34, and 45; as an upgradient stepout for LOUs 16, 17, 18, 22, 23, 53, and 57; and for general Site coverage.
N-6	II	M-17A	M-17AB	35 - 45	Qal/MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to evaluate LOU 57; as an upgradient stepout for LOUs 5, 16, 17, 18, 22, and 23; and for general Site coverage.
N-7	II	M-34	M-34B	25 - 40	Qal/MCfg1	no	X	X	X	X	X	X	X	X	X	X	X	B, F	Located to evaluate the outfall of the culvert that empties into the Eastern Diversion segment of LOU 5; as a downgradient stepout for LOUs 13 and 14; as an upgradient step out for LOUs 20, 22, and 23; and for general Site coverage.
N-7	IIE	M-35	M-35B	25 - 40	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area III)	Located to evaluate LOUs 5, 20, 22, and 23; and for general Site coverage.
O-2	IIS	M-123	M-123B	34 - 51	MCfg1	new well	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as an upgradient stepout for LOU 5; and for general Site coverage.
O-5	II	M-21	M-21B	18 - 38	MCfg1	no	X	X	X	X	X	x	X	X	X			F	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.
O-6	IIS	M-50	M-50B	39.6 - 59.6	MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area III)	Located to serve as a downgradient well for a segment of LOU 59 located in Area II; as upgradient well for LOUs 13 and 14; and for general Site coverage.
P-5	IIS	M-97	M-97B	35 - 45	MCfg1/MCcg1	yes	R	R	R	R	R	R	R	R	R			D (see Area IV)	Located to serve as an upgradient stepout for LOU 45 and segments of LOU 59 located in Area II; and for general Site coverage.
P-7	II	M-52	M-52B	34.5 - 44.5	MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area III)	Located to evaluate LOUs 43, 11, 12, and 15; and for general Site coverage.

Table 3
Groundwater Sampling And Analysis Plan for Area II
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson Nevada

							Laboratory [E.] :	CAS - Kelso, WA	CAS - Rochester, NY						GEL - Charleston, SC	STL-Denver	Alpha Analytical	Rationale for Revision	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID No. [A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1.]	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide [F.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	Radionuclides[9.]	OPPs[10.] (8141A)	Organic Acids		
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).																			
Q-5	II	M-13	M-13B	28 - 48	MCfg1	yes	X	X	X	X	X	X	X	X	X			F	Located to serve as a downgradient stepout for LOU 60; as an upgradient stepout for LOUs 36 and 45; and for general Site coverage.
Q-6	II	M-12A	M-12AB	40 - 50	MCfg1	yes	X	X	X	X	X	X	X	X	X			F, H	Located as a downgradient stepout for LOUs 12, 15, 29, 36, 43, 59 and 60; and for general Site coverage.
Q-7	IIN	M-11	M-11B	33.3 - 53	Qal/MCfg1	yes	R	R	R	R	R	R	R	R	R			D (see Area III)	Located to serve as a downgradient stepout for LOUs 29 and 43; and for general Site coverage.
R-5	IIS	M-144	M-144B	TBD	Qal/MCfg1	new well	R	R	R	R	R	R	R	R	R			D (see Area IV)	Co-located with Boring SA133 as an upgradient stepout for LOU 60; and for general Site coverage.
R-5	II	M-146	M-146B	TBD	Qal/MCfg1*	no	X	X	X	X	X	X	X	X	X			F, G	Located to evaluate LOU 36; and for general Site coverage.
T-7	IIS	M-10	M10B	43 - 63	MCcg1	no	R	R	R	R	R	R	R	R	R			D (see Area IV)	Located to serve as an upgradient stepout for LOUs 29, 43 and segments of LOU 60 in Area II; and for general Site coverage.
						Number of Field Samples:	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**18**	**3**	**3**		
QA/QC Samples:																			
						Field Duplicates (10%)	2	2	2	2	2	2	2	2	2	1	1		
						Field Blanks	1	1	1	1	1	1	1	1	1	1	1		
						Equipment Rinseate Blanks	2	2	2	2	2	2	2	2	2	1	1		
						Trip Blank Samples	0	0	5	0	0	0	0	0	0	0	0		
						Matrix Spike (5%)	1	1	1	1	1	1	1	1	1	1	1		
						Matrix Spike Duplicate (5%)	1	1	1	1	1	1	1	1	1	1	1		
						Total Samples:	**25**	**25**	**30**	**25**	**25**	**25**	**25**	**25**	**25**	**8**	**8**		

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). Tronox is in the process of obtaining information from BMI.
X	Sample will be collected and analyzed.
blank	No sample collected under Phase B sampling plan.
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.	Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, Zinc
3.	VOCs = Volatile organic compounds (to include analysis for naphthalene).
4.	Hexavalent Chromium.
5.	Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.
6.	OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).
7.	SVOCs = Semi volatile organic compounds.
8.	Polychlorinated Biphenyls.
9.	Radionuclides consists of alpha spec reporting for isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
10.	OPPs = Organophosphorous Pesticides
IIIN/E/W/S	Well located outside (north, east, west, or south) of Area II.
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.
TD	Total Depth of the well determined by Site-wide routine groundwater monitoring.
nr	Not recorded in Tronox database (screen intervals to be acquired from BMI where possible or determined by downhole camera).
Qal	Quaternary Alluvium.
MCfg1	Muddy Creek Formation - first fine-grained facies
MCcg1	Muddy Creek Formation - first coarse-grained facies
X	Green-shading indicates items that have been added or changed from Table 3 in the June 2008 Area II Work Plan originally reviewed by NDEP.
R	Brown-shading indicates items that have been removed from Table 3 in the June 2008 Area II Work Plan originally reviewed by NDEP.
A	Sample ID was added to convey sample ID nomenclature to field sampling team ("B" suffix denotes sample is associated with Phase B sampling event).
B	OPPs and Organic Acids were added per NDEP (July 21, 2008).
C	Asterisks were removed from April 2008 submission
D	Well was removed from Table 3 because this well is not located in Area II.
E	Laboratory information was added to Table 3 to assist field sampling personnel in shipping the sample containers to the appropriate laboratory.
F	Total Cyanide was added per NDEP (July 21, 2008)
G	Expected soil types across expected screen interval based on nearby wells
H	Hyphen inserted to correct typographical error

Table 3 (Field Version)
Groundwater Sampling And Analysis Plan for Area II

Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson Nevada

								Laboratory [E.] :											
								CAS - Kelso, WA		CAS - Rochester, NY						GEL - Charleston, SC	STL-Denver	Alpha Analytical	
Grid Location	Location Area	Monitoring Well No.	Sample ID No. [A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1.]	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide [F.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	Radionuclides[8.]	OPPs[10.] (8141A)	Organic Acids	Location Description and Rationale for Investigation
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area II (L-5) and ending with the southeastern-most grid covering Area II (R-5).																			
L-5	II	I-AR	I-ARB	25 - 45	MCfg1	yes		X	X	X	X	X	X	X	X	X			Located as an upgradient stepout for LOUs 30, 31, and 56; and LOU 58 and for general Site coverage.
L-6	II	M-64	M-64B	12.7 - 37.3	Qal/MCfg1	no		X	X	X	X	X	X	X	X	X			Located to evaluate LOU 55; as a downgradient stepout for LOUs 30 and 56 and for general Site coverage.
L-6	II	M-25	M-25B	24 - 39	Qal/MCfg1	no		X	X	X	X	X	X	X	X	X			Located to serve as a downgradient stepout for LOUs 16, 19 and 53; as an upgradient stepout for LOU 55; and for general Site coverage.
L-6	II	M-38	M-38B	20 - 35	MCfg1	no		X	X	X	X	X	X	X	X	X			Located to serve as a downgradient stepout for LOUs 16, 17, 19, and LOU 57; and for general Site coverage.
M-5	II	M-110	M-110B	30 - 40	Qal/MCfg1	no		X	X	X	X	X	X	X	X	X			Located to evaluate LOU 57 as a downgradient stepout for LOU 5; and for general Site coverage.
M-5	II	M-111A	M-111AB	29.7 - 39.7	MCfg1	no		X	X	X	X	X	X	X	X	X	X	X	Replacement well for M-111 which was destroyed by site grading and located to evaluate LOU 57; a downgradient stepout for LOU 52; as an upgradient stepout for LOUs 5 and 19; and for general Site coverage
M-6	II	M-89	M-89B	18 - 38.2	Qal/MCfg1	yes		X	X	X	X	X	X	X	X	X	X	X	Located to evaluate LOU 57; as a downgradient stepout for LOUs 5, 16, 17, and 53; and for general Site coverage.
			M-89B	18 - 38.2			X	X	X	X	X	X	X	X	X	X	X	X	This is a matirx spike / matirx spike duplicate sample. Fill one set of bottles for MS sample & a second set of bottles for MSD sample. Label both sets of bottles as M-89B.
M-7	II	M-22A	M-22AB	16 - 36	Qal/MCfg1	no		X	X	X	X	X	X	X	X	X			Located to evaluate LOU 57; as a downgradient stepout for LOUs 5, and 16 through 18; and for general Site coverage.
M-8	II	M-19	M-19B	14.5 - 34.5	MCfg1	no		X	X	X	X	X	X	X	X	X			Located to serve as an upgradient stepout for LOUs 5 and 20; to evaluate LOUs 22 and 23 and potential offsite sources to the east; and as general Site coverage.
N-5	II	M-75	M-75B	34.6 - 49.3	Qal/MCfg1	no		X	X	X	X	X	X	X	X	X			Located to serve as a downgradient stepout for LOUs 7, 8, 9, and 45; as an upgradient stepout for LOUs 16, 17, 19, 53 and 57; and for general Site coverage.
N-5	II	M-76	M-76B	34.6 - 49.3	MCcg1	yes		X	X	X	X	X	X	X	X	X			Located to serve as a downgradient stepout for LOUs 8 and 45; as an upgradient stepout for LOUs 53 and 57 and for general Site coverage.
N-6	II	M-2A	M-2AB	30-40	Qal	yes		X	X	X	X	X	X	X	X	X			Located as a downgradient stepout for LOUs 7, 8, 9, 13, 14, 20, 34, and 45; as an upgradient stepout for LOUs 16, 17, 18, 22, 23, 53, and 57; and for general Site coverage.
			M-2ABD	30 - 40 (dup)				X	X	X	X	X	X	X	X	X			This is a duplicate sample of M-2AB.
N-6	II	M-17A	M-17AB	35 - 45	Qal/MCfg1	no		X	X	X	X	X	X	X	X	X			Located to evaluate LOU 57; as an upgradient stepout for LOUs 5, 16, 17, 18, 22, and 23; and for general Site coverage.
N-7	II	M-34	M-34B	25 - 40	Qal/MCfg1	no		X	X	X	X	X	X	X	X	X	X	X	Located to evaluate the outfall of the culvert that empties into the Eastern Diversion segment of LOU 5; as a downgradient stepout for LOUs 13 and 14; as an upgradient step out for LOUs 20, 22, and 23; and for genera Site coverage.
O-5	II	M-21	M-21B	18 - 38	MCfg1	no		X	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.
Q-5	II	M-13	M-13B	28-48	MCfg1	yes		X	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 fo general Site coverage.
			M-13BD	28 - 48 (dup)				X	X	X	X	X	X	X	X	X			This is a duplicate sample of M-13B.
Q-6	II	M-12A	M-12AB	40 - 50	MCfg1	yes		X	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.
R-5	II	M-146	M-146B	TBD	Qal/MCfg1*	no		X	X	X	X	X	X	X	X	X			Located to evaluate LOU 36; and for general Site coverage.

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). Tronox is in the process of obtaining information from BMI.
X	Sample will be collected and analyzed.
blank	No sample collected under Phase B sampling plan.
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.	Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, Zinc
3.	VOCs = Volatile organic compounds (to include analysis for naphthalene).
4.	Hexavalent Chromium.
5.	Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.
6.	OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).

Table 3 (Field Version)
Groundwater Sampling And Analysis Plan for Area II

Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson Nevada

								Laboratory [E.] :		CAS - Kelso, WA		CAS - Rochester, NY						GEL - Charleston, SC	STL-Denver	Alpha Analytical	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID No. [A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1.]	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide [F.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	Radionuclides[9.]	OPPs[10.] (8141A)	Organic Acids	
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area II (L-5) and ending with the southeastern-most grid covering Area II (R-5).																			

7. SVOCs = Semi volatile organic compounds.
8. Polychlorinated Biphenyls.
9. Radionuclides consists of alpha spec reporting for isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
10. OPPs = Organophosphorous Pesticides

IIN/E/W/S Well located outside (north, east, west, or south) of Area II.
TBD To Be Determined when well is constructed.
TD Total Depth of the well determined by Site-wide routine groundwater monitoring.
nr Not recorded in Tronox database (screen intervals to be acquired from BMI where possible or determined by downhole camera).
Qal Quaternary Alluvium.
MCfg1 Muddy Creek Formation - first fine-grained facies
MCcg1 Muddy Creek Formation - first coarse-grained facies

Area III

Table 3
Groundwater Sampling and Analysis Plan - Area III
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

							Laboratory [E.] :	CAS - Kelso, WA	CAS - Rochester, NY						GEL -Charleston, SC	STL - Denver	Alpha Analytical Sparks, NV	Rationale for Revision	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID No.[A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1.]	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide[F.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	Radionuclides[9.]	OPPs[10.B] (8141A)	Organic Acids [C]		
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area III (N-7) and ending with the southeastern-most grid covering Area III (Q-9).																			
M-8	IIIN	M-19	M-19B	14.5 - 34.5	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area II)	Located to serve as a downgradient step out for LOU 21 and for general Site coverage.
N-7	IIIW	M-34	M-34B	25 - 40	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area II)	Located to serve as a downgradient step out for LOU 46; as a crossgradient step out for LOUs 20, 22, 23, and 60; and for general Site coverage.
N-7	III	M-35	M-35B	25 - 40	MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to serve as a downgradient step out for LOUs 24 and 46; as an crossgradient step out for LOU 21; and fo general Site coverage.
N-8	III	M-147	M-147B	TBD	Qal/MCfg1*	new well	X	X	X	X	X	X	X	X	X			F	
N-9	TIMET	CLD-4R	CLD-4RB	nr	Qal/MCfg1*	no	X	X	X	X	X	X	X	X	X			F	Serves as a step out downgradient well for LOUs 24 and 46; as a step out upgradient well for LOU 21; as a cross-gradient step out to LOUs 59 and 60; and general Site coverage located on Timet.
O-6	III	M-50	M-50B	39.6 - 59.6	MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to evaluate LOU 34W; as an upgradient step out for LOU 60; and for general Site coverage.
O-8	III	M-33	M-33B	30 - 45	MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to serve as a downgradient step out for LOU 59; as upgradient step out for LOUs 24 and 46; and for general Site coverage.
O-8	III	M-148	M-148B	TBD	MCfg1*	new well	X	X	X	X	X	X	X	X	X			F	Located south of LOU 46 (Former Old Main Cooling Tower) per NDEP.
O-10	TIMET	CLU1	CLU1B	nr	MCfg1*	no	X	X	X	X	X	X	X	X	X			F	Serves as a step out downgradient for LOUs 34E, 47, 48, 51, and Area 70 (former U.S. Vanadium), and general Site coverage located on Timet.
P-7	III	M-31A	M-31AB	35 - 55	MCfg1	yes	X	X	X	X	X	X	X	X	X			F	Located to serve as a downgradient step out for LOU 59; as an upgradient step out for LOUs 24 and 46; as a crossgradient step out for LOUs 20, 21, 22, and 23; and for general Site coverage.
P-7	III	M-52	M-52B	34.5 - 44.5	MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to evaluate LOUs 34E, 47 through 51, and Area 70 (former U.S. Vanadium); as a crossgradient step out for LOUs 20, 21, 22, 23, and 60; and for general Site coverage.
P-7	III	M-141	M-141B	TBD	MCfg1*	new well	X	X	X	X	X	X	X	X	X			F	New monitoring well co-located with boring SA140 to evaluate LOUs 49 and 50.
P-8	III	M-77	M-77B	29 - 43.8	Qal/MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to evaluate LOUs 34E, 47 through 51 and Area 70 (former U.S. Vanadium); as a downgradient step out fo LOUs 33, 40, and 61; as a crossgradient step out for LOU 59; and for general Site coverage.
Q-6	IIIN	M-12A	M-12AB	28-48	MCfg1	yes	R	R	R	R	R	R	R	R	R			D (see Area II)	Located to serve as a upgradient step out for LOUs 20, 22, and 23 and for general Site coverage.
Q-7	III	M-11	M-11B	33.3 - 53	Qal/MCfg1	yes	X	X	X	X	X	X	X	X	X			F	Located as a downgradient step out for LOU 61; as an upgradient step out for LOUs 34E, 47 through 51 and Area 70 (former U.S. Vanadium); as a crossgradient step out for LOUs 20, 22, 23, and 60, and for general Site coverage.
Q-8	III	M-122	M-122B	TBD	Qal/MCfg1*	new well	X	X	X	X	X	X	X	X	X			F	New monitoring well located to serve as a downgradient step out for LOUs 37, 44, and 60; as an upgradient step out for LOUs 34E, 47, 48, 51, 59 and Area 70 (former U.S. Vanadium); to evaluate possible offsite sources to the east; and for general Site coverage.
Q-9	TIMET	MW-6R	MW-6RB	39.7 - 59.7	Qal/MCfg1*	no	X	X	X	X	X	X	X	X	X			F	Located to serve as a downgradient step out for LOUs 37and 44; as a crossgradient step out for LOUs 59 and 60; to evaluate possible offsite sources to the east; and for general Site coverage.
R-8	III	M-139	M-139B	TBD	MCfg1*	new well	X	X	X	X	X	X	X	X	X			F	Located as an upgradient step out for LOUs 37 and 44, and general Site coverage.
R-8	III	M-145	M-145B	TBD	MCfg1*	new well	X	X	X	X	X	X	X	X	X			F	New monitoring well located to serve as a crossgradient step out for LOU 44, to evaluate possible offsite sources to the east; and for general Site coverage.
R-8	III	M-29	M-29B	22-42	MCfg1	no	X	X	X	X	X	X	X	X	X			F	Located to evaluate groundwater conditions beneath the Unit 6 building for LOUs 44 and 37.
T-7	IIIS	M-10	M-10B	43 - 63	MCcg1	no	R	R	R	R	R	R	R	R	R			D (see Area IV)	Located as a downgradient step out for LOUs 33, 40, and 61; and for general Site coverage.
						Number of Field Samples:	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**0**	**0**		
QA/QC Samples:																			
						Field Duplicates (10%)	2	2	2	2	2	2	2	2	2	0	0		
						Field Blanks	1	1	1	1	1	1	1	1	1	0	0		
						Equipment Rinseate Blanks	1	1	1	1	1	1	1	1	1	0	0		
						Trip Blank Samples	0	0	5	0	0	0	0	0	0	0	0		
						Matrix Spike (5%)	1	1	1	1	1	1	1	1	1	0	0		
						Matrix Spike Duplicate (5%)	1	1	1	1	1	1	1	1	1	0	0		
						Total Samples:	**23**	**23**	**28**	**23**	**23**	**23**	**23**	**23**	**23**	**0**	**0**		

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.
blank	No sample collected under Phase B sampling plan.
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.	Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, and Zinc.
3.	VOCs = Volatile organic compounds (to include analysis for naphthalene).
4.	Hexavalent Chromium.
5.	Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.
6.	OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).
7.	SVOCs = Semi-volatile organic compounds.
8.	Polychlorinated Biphenyls.
9.	Radionuclides consists of alpha spec reporting for isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
10.	OPPs = Organophosphorous Pesticides

Table 3
Groundwater Sampling and Analysis Plan - Area III
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

						Laboratory [E.] :	CAS - Kelso, WA		CAS - Rochester, NY						GEL -Charleston, SC	STL - Denver	Alpha Analytical Sparks, NV	Rationale for Revision	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID No.[A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1.]	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide [F.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	Radionuclides [9.]	OPPs[10.B] (8141A)	Organic Acids [C]		
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area III (N-7) and ending with the southeastern-most grid covering Area III (Q-9).																			
IIIN/E/W/S	Well located outside (north, east, west, or south) of Area III.																		
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.																		
TD	Total Depth of the well determined by Site wide routine groundwater monitoring.																		
nr	Not recorded in the Tronox Database (June 2008) - information will be acquired from BMI or determined by downhole camera.																		
Qal	Quaternary Alluvium.																		
MCfg1	Muddy Creek Formation - first fine-grained facies.																		
MCcg1	Muddy Creek Formation - first coarse-grained facies.																		
X	Green-shading indicates items that have been added or changed from Table 3 in the June 2008 Area III Work Plan originally reviewed by NDEP.																		
R	Brown-shading indicates items that have been removed from Table 3 in the June 2008 Area III Work Plan originally reviewed by NDEP.																		
A	Sample ID was added to convey sample ID nomenclature to field sampling team.																		
B	OPPs were added per NDEP (July 21, 2008).																		
C	Organic Acids were added per NDEP (July 21, 2008).																		
D	Well was removed from Table 3 because this well is not located in Area III.																		
E	Laboratory information was added to Table 3 to assist field sampling personnel in shipping the sample containers to the appropriate laboratory.																		
F	Total cyanide column was added per NDEP (July 21, 2008).																		

Table 3 (Field Version)
Groundwater Sampling and Analysis Plan - Area III
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

								Laboratory [E.] :	CAS - Kelso, WA	CAS - Rochester, NY						GEL -Charleston, SC	STL - Denver	Alpha Analytical Sparks, NV	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID No.[A]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1.]	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate		Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	Total Cyanide[F.] (EPA 9012A)	OCPs[6.] (EPA 8081A)	SVOCs[7.] (EPA 8270C)	Radionuclides[9.]	OPPs[10.B] (8141A)	Organic Acids[C]	
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area III (N-7) and ending with the southeastern-most grid covering Area III (R-8).																			
N-7	III	M-35	M-35B	25 - 40	MCfg1	no			X	X	X	X	X	X	X	X	X			Located to serve as a downgradient step out for LOUs 24 and 46; as an crossgradient step out for LOU 21; and for general Site coverage.
N-8	III	M-147	M-147B	TBD	Qal/MCfg1*	new well			X	X	X	X	X	X	X	X	X			
N-9	TIMET	CLD-4R	CLD-4RB	nr	Qal/MCfg1*	no			X	X	X	X	X	X	X	X	X			Serves as a step out downgradient well for LOUs 24 and 46; as a step out upgradient well for LOU 21; as a cross-gradient step out to LOUs 59 and 60; and general Site coverage located on Timet.
O-6	III	M-50	M-50B	39.6 - 59.6	MCfg1	no			X	X	X	X	X	X	X	X	X			Located to evaluate LOU 34W; as an upgradient step out for LOU 60; and for general Site coverage.
O-8	III	M-33	M-33B	30 - 45	MCfg1	no			X	X	X	X	X	X	X	X	X			Located to serve as a downgradient step out for LOU 59; as upgradient step out for LOUs 24 and 46; and for general Site coverage.
O-8	III	M-148	M-148B	TBD	MCfg1*	new well			X	X	X	X	X	X	X	X	X			Located south of LOU 46 (Former Old Main Cooling Tower) per NDEP.
O-10	TIMET	CLU1	CLU1B	nr	MCfg1*	no			X	X	X	X	X	X	X	X	X			Serves as a step out downgradient for LOUs 34E, 47, 48, 51, and Area 70 (former U.S. Vanadium), and general Site coverage located on Timet.
P-7	III	M-31A	M-31AB	35 - 55	MCfg1	yes			X	X	X	X	X	X	X	X	X			Located to serve as a downgradient step out for LOU 59; as an upgradient step out for LOUs 24 and 46; as a crossgradient step out for LOUs 20, 21, 22, and 23; and for general Site coverage.
P-7	III	M-52	M-52B	34.5 - 44.5	MCfg1	no			X	X	X	X	X	X	X	X	X			Located to evaluate LOUs 34E, 47 through 51, and Area 70 (former U.S. Vanadium); as a crossgradient step out for LOUs 20, 21, 22, 23, and 60; and for general Site coverage.
P-7	III	M-141	M-141B	TBD	MCfg1*	new well			X	X	X	X	X	X	X	X	X			New monitoring well co-located with boring SA140 to evaluate LOUs 49 and 50.
			M-141BD	TBD (dup)					X	X	X	X	X	X	X	X	X			This is a duplicate sample of M-141B.
P-8	III	M-77	M-77B	29 - 43.8	Qal/MCfg1	no			X	X	X	X	X	X	X	X	X			Located to evaluate LOUs 34E, 47 through 51 and Area 70 (former U.S. Vanadium); as a downgradient step out for LOUs 33, 40, and 61; as a crossgradient step out for LOU 59; and for general Site coverage.
			M-77B	29 - 43.8			X		X	X	X	X	X	X	X	X	X			This is a matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles for MSD sample. Label both sets of bottles as M-77B.
Q-7	III	M-11	M-11B	33.3 - 53	Qal/MCfg1	yes			X	X	X	X	X	X	X	X	X			Located as a downgradient step out for LOU 61; as an upgradient step out for LOUs 34E, 47 through 51 and Area 70 (former U.S. Vanadium); as a crossgradient step out for LOUs 20, 22, 23, and 60, and for general Site coverage.
			M-11BD	33.3 - 53 (dup)					X	X	X	X	X	X	X	X	X			This is a duplicate sample of M-11B.
Q-8	III	M-122	M-122B	TBD	Qal/MCfg1*	new well			X	X	X	X	X	X	X	X	X			New monitoring well located to serve as a downgradient step out for LOUs 37, 44, and 60; as an upgradient step out for LOUs 34E, 47, 48, 51, 59 and Area 70 (former U.S. Vanadium); to evaluate possible offsite sources to the east; and for general Site coverage.
Q-9	TIMET	MW-6R	MW-6RB	39.7 - 59.7	Qal/MCfg1*	no			X	X	X	X	X	X	X	X	X			Located to serve as a downgradient step out for LOUs 37and 44; as a crossgradient step out for LOUs 59 and 60; to evaluate possible offsite sources to the east; and for general Site coverage.
R-8	III	M-139	M-139B	TBD	MCfg1*	new well			X	X	X	X	X	X	X	X	X			Located as an upgradient step out for LOUs 37 and 44, and general Site coverage.
R-8	III	M-145	M-145B	TBD	MCfg1*	new well			X	X	X	X	X	X	X	X	X			New monitoring well located to serve as a crossgradient step out for LOU 44, to evaluate possible offsite sources to the east; and for general Site coverage.
R-8	III	M-29	M-29B	22-42	MCfg1	no			X	X	X	X	X	X	X	X	X			Located to evaluate groundwater conditions beneath the Unit 6 building for LOUs 44 and 37.

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.
blank	No sample collected under Phase B sampling plan.
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.	Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, and Zinc.
3.	VOCs = Volatile organic compounds (to include analysis for naphthalene).
4.	Hexavalent Chromium.
5.	Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.
6.	OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene)
7.	SVOCs = Semi-volatile organic compounds.
8.	Polychlorinated Biphenyls.
9.	Radionuclides consists of alpha spec reporting for isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
10.	OPPs = Organophosphorous Pesticides
IIIN/E/W/S	Well located outside (north, east, west, or south) of Area III.
TBD	To be determined when well is constructed.
TD	Total Depth of the well determined by Site wide routine groundwater monitoring.
nr	Not recorded in the Tronox Database (June 2008) - information will be acquired from BMI or determined by downhole camera.
Qal	Quaternary Alluvium.
MCfg1	Muddy Creek Formation - first fine-grained facies.
MCcg1	Muddy Creek Formation - first coarse-grained facies

Area IV

Table 3
Groundwater Sampling and Analysis Plan for Area IV
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

							Laboratory [E.] :	CAS - Kelso, WA		CAS - Rochester, NY							GEL Charleston, SC	CAS - Houston	STL-Denver	Alpha Analytical Sparks, NV	Rationale for Revision	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID Number [K.]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1.]	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals[2.]	VOCs[3.] (EPA 8260)	Hex Cr[4.] (EPA 7199)	Wet Chemistry[5.]	OCPs[6.] (EPA 8081A)	Total Cyanide (EPA 9012A)	SVOCs[7.] (EPA 8270C)	PCBs[8,L] (EPA 8082)	Radionuclides[9.]	PCBs[8,L] (EPA 1668A)	OPPs[10, A] (EPA 8141A)	Organic Acids[B]		
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area 4 (P-2) and ending with the southeastern-most grid covering Area 4 (W-7).																					
P-2	Parcel F	TR-6	TR-6B	60-80	MCcg1	No	X	X	X	X	X	X	X	X	X	X	X	X	X	A, B, C, F, L	Located to evaluate groundwater migrating onto Tronox from the west.
P-4	Parcel F	M-93	M-93B	35.4 - 45.4	MCfg1	No	X	X	X	X	X	X	X	X		X				F	Located to serve as a downgradient stepout for LOUs 41 and 65; as an upgradient stepout for LOU 63; and for general Site coverage.
P-5	IV	M-97	M-97B	35 - 45	MCfg1	Yes	X	X	X	X	X	X	X	X		X		X	X	A, B, F,J	Located to serve as a downgradient stepout for LOUs 4, 26, 27, 28, 42, and 59; and for general Site coverage.
Q-4	Parcel F	M-92	M-92B	34.9 - 44.9	MCfg1	Yes	X	X	X	X	X	X	X	X		X				F	Located to serve as a downgradient stepout for LOUs 25, 41, 59, 60, and 65; as an upgradient stepout for LOU 63; and for general Site coverage.
Q-5	II	M-13	M-13B	40-50	Qal/MCfg1	Yes	R	R	R	R	R	R	R	R		R				D (see Area II)	Located to serve as a downgradient stepout for LOUs 42, 59, and 60; and for general Site coverage.
Q-6	II	M-12A	M-12AB	28-48	MCfg1	Yes	R	R	R	R	R	R	R	R		R				D (see Area II)	Located to serve as a downgradient stepout for LOU 59 and for general Site coverage.
Q-4	IV	M-143	M-143B	TBD	Qal/MCfg1*	new well	X	X	X	X	X	X	X	X		X		X	X	A, B, F, H	New well to be installed; located to evaluate LOUs 4, 25, 26, 27, 28, 42, and 60; and for general Site coverage
R-5	IV	M-144	M-144B	TBD	Qal/MCfg1*	new well	X	X	X	X	X	X	X	X		X				F	New well to be installed; located to evaluate LOU 42, and for general Site coverage.
S-2	Parcel G	TR-8	TR-8B	63 - 93	MCcg1/MCfg2	No	X	X	X	X	X	X	X	X		X		X	X	A, B, I, J	Located to serve as an upgradient stepout for LOUs 41 and 65; to evaluate possible offsite sources to the west (particularly for VOCs); and for general Site coverage.
T-7	IV	M-10	M-10B	43 - 63	Qal/MCfg1	No	X	X	X	X	X	X	X	X		X				F	Located as stepout for LOU 59; and for general Site coverage.
U-4	IV	TR-10	TR-10B	80-100	MCfg1	No	X	X	X	X	X	X	X	X		X				F	Located to evaluate LOU 62 and for general Site coverage.
U-4	IV	M-137	M-137B	TBD	MCcg1*	new well	X	X	X	X	X	X	X	X		X					New well to be installed; located to serve as a downgradient stepout for LOU 62 (former State Industries western pond), and for general Site coverage.
U-5	IV	M-138	M-138B	TBD	MCcg1*	new well	X	X	X	X	X	X	X	X		X					New well to be installed; located to serve as a downgradient stepout for LOU 62 (former State Industries eastern pond) and LOU 59 (Storm Sewer System); and for general Site coverage.
V-7	Parcel H	M-103	M-103B	69.5 - 89.5	MCcg1	No	X	X	X	X	X	X	X	X		X				F, J	Located to evaluate potential onsite sources in the southeastern portion of the Site and possible upgradient sources.
W-1	Olin Chemical	H-11	H-11B	95 - 105	MCcg1	No	X	X	X	X	X	X	X	X		X				F	To provide general area-wide upgradient information.
W-4	Parcel H	M-121	M-121B	77 - 97	MCcg1	No	X	X	X	X	X	X	X	X		X				F, J	Located to evaluate upgradient (southwest) groundwater conditions on the Site.
W-5	Parcel H	M-118	M-118B	138 - 158	MCfg2	No	X	X	X	X	X	X	X	X		X				F	Located to evaluate upgradient (south) groundwater conditions on the Site.
W-6	Parcel H	M-120	M-120B	80 - 100	MCcg1	Yes	X	X	X	X	X	X	X	X		X				F, G	Located to evaluate upgradient (south) groundwater conditions on the Site.
W-7	Parcel H	M-117	M-117B	130 - 150	MCfg2	No	X	X	X	X	X	X	X	X		X				F, G	Located to evaluate upgradient groundwater conditions on the southeast corner of the Site.
						Number of Field Samples:	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**1**	**17**	**1**	**4**	**4**		
QA/QC Samples:																					
Field Duplicates (10%)							2	2	2	2	2	2	2	2	0	2	0	1	1		
Field Blanks							1	1	1	1	1	1	1	1	1	1	1	1	1		
Equipment Rinseate Blanks							1	1	1	1	1	1	1	1	0	1	0	1	1		
Trip Blank Samples							0	0	5	0	0	0	0	0	0	0	0	0	0		
Matrix Spike (5%)							1	1	1	1	1	1	1	1	1	1	1	1	1		
Matrix Spike Duplicate (5%)							1	1	1	1	1	1	1	1	1	1	1	1	1		
						Total Samples:	**23**	**23**	**28**	**23**	**23**	**23**	**23**	**23**	**4**	**23**	**4**	**9**	**9**		

Table 3
Groundwater Sampling and Analysis Plan for Area IV
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

							Laboratory [E.] :	CAS - Kelso, WA	CAS - Rochester, NY							GEL Charleston, SC	CAS - Houston	STL-Denver	Alpha Analytical Sparks, NV	Rationale for Revision	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID Number [K.]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval [1.]	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals [2.]	VOCs [3.] (EPA 8260)	Hex Cr [4.] (EPA 7199)	Wet Chemistry [5.]	OCPs [6.] (EPA 8081A)	Total Cyanide (EPA 9012A)	SVOCs [7.] (EPA 8270C)	PCBs [8,L] (EPA 8082)	Radionuclides [9.]	PCBs [8,L] (EPA 1668A)	OPPs [10, A] (EPA 8141A)	Organic Acids [B]		
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area 4 (P-2) and ending with the southeastern-most grid covering Area 4 (W-7).																					

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).
X	Sample will be collected and analyzed.
blank	No sample collected under Phase B sampling plan.
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.	Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, and Zinc.
3.	VOCs = Volatile organic compounds (to include analysis for naphthalene)
4.	Hexavalent Chromium.
5.	Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.
6.	OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).
7.	SVOCs = Semi volatile organic compounds.
8.	Polychlorinated Biphenyls.
9.	Radionuclides consists of alpha spec reporting for isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
10.	OPPs = Organophosphorous Pesticides
TBD	To Be Determined when well is constructed.
Qal	Quaternary Alluvium.
MCfg1	Muddy Creek Formation - first fine-grained facies
MCcg1	Muddy Creek Formation - first coarse-grained facies
MCfg2	Muddy Creek Formation - second fine-grained facies
(a)	Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.
X	Green-shading indicates items that have been added or changed from Table 3 in the May 2008 Area IV Work Plan originally reviewed by NDEP.
R	Brown-shading indicates items that have been removed from Table 3 in the May 2008 Area IV Work Plan originally reviewed by NDEP.
A	OPPs were added per NDEP (July 21, 2008).
B	Organic Acids were added per NDEP (July 21, 2008).
C	Well was added to evaluate groundwater coming onto Tronox from the west.
D	Well was removed from Table 3 because this well is not located in Area IV.
E	Laboratory information was added to Table 3 to assist field sampling personnel in shipping the sample containers to the appropriate laboratory.
F	Total cyanide was added per NDEP (July 21, 2008).
G	VOCs analysis will be added to these samples as they were inadvertently left off of the Table 3 that was reviewed by NDEP.
H	Grid code was listed incorrectly
I	Location area was revised to reflect the name of the parcel. The parcel is a part of area IV
J	NDEP requested that soil types be inclusive of all types encountered across screening depth, boring logs were reviewed to ensure correct soil types are listed.
K	Sample ID was added to convey sample ID nomenclature to field sampling team ("B" suffix denotes sample is associated with Phase B sampling event).
L	PCB columns were added per NDEP (May 6, 2008)

Table 3 (Field Version)
Groundwater Sampling and Analysis Plan for Area IV
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

Laboratory :								CAS Kelso, WA		Columbia Analytical Services Rochester, NY							GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical Sparks, NV	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID Number K.	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval 1.	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals 2.	VOCs 3. (EPA 8260)	Hex Cr 4. (EPA 7199)	Wet Chemistry 5.	OCPs 6. (EPA 8081A)	Total Cyanide (EPA 9012A)	SVOCs 7. (EPA 8270C)	PCBs 8,L (EPA 8082)	Radionuclides 9.	PCBs 8,L (EPA 1668A)	OPPs 10, A (EPA 8141A)	Organic Acids B	
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area 4 (P-2) and ending with the southeastern-most grid covering Area 4 (W-7).																					
P-2	Parcel F	TR-6	TR-6B	60-80	MCcg1	No		X	X	X	X	X	X	X	X	X	X	X	X	X	Located to evaluate groundwater migrating onto Tronox from the west.
P-4	Parcel F	M-93	M-93B	35.4 - 45.4	MCfg1	No		X	X	X	X	X	X	X	X		X				Located to serve as a downgradient stepout for LOUs 41 and 65; as an upgradient stepout for LOU 63; and for general Site coverage.
P-5	IV	M-97	M-97B	35 - 45	MCfg1	Yes		X	X	X	X	X	X	X	X		X		X	X	Located to serve as a downgradient stepout for LOUs 4, 26, 27, 28, 42, and 59; and for general Site coverage.
Q-4	Parcel F	M-92	M-92B	34.9 - 44.9	MCfg1	Yes		X	X	X	X	X	X	X	X		X				Located to serve as a downgradient stepout for LOUs 25, 41, 59, 60, and 65; as an upgradient stepout for LOU 63; and for general Site coverage.
			M-92B	34.9 - 44.9			X	X	X	X	X	X	X	X	X		X				This is a matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles for MSD sample. Label both sets of bottles as M-92.
Q-4	IV	M-143	M-143B	TBD	Qal/MCfg1*	new well		X	X	X	X	X	X	X	X		X		X	X	New well to be installed; located to evaluate LOUs 4, 25, 26, 27, 28, 42, and 60; and for general Site coverage
			M-143BD	TBD (dup)				X	X	X	X	X	X	X	X		X		X	X	This is a duplicate sample of M-143B.
R-5	IV	M-144	M-144B	TBD	Qal/MCfg1*	new well		X	X	X	X	X	X	X	X		X				New well to be installed; located to evaluate LOU 42, and for general Site coverage.
S-2	Parcel G	TR-8	TR-8B	63 - 93	MCcg1/MCfg2	No		X	X	X	X	X	X	X	X		X		X	X	Located to serve as an upgradient stepout for LOUs 41 and 65; to evaluate possible offsite sources to the west (particularly for VOCs); and for general Site coverage.
T-7	IV	M-10	M-10B	43 - 63	Qal/MCfg1	No		X	X	X	X	X	X	X	X		X				Located as stepout for LOU 59; and for general Site coverage.
U-4	IV	TR-10	TR-10B	80-100	MCfg1	No		X	X	X	X	X	X	X	X		X				Located to evaluate LOU 62 and for general Site coverage.
U-4	IV	M-137	M-137B	TBD	MCcg1*	new well		X	X	X	X	X	X	X	X		X				New well to be installed; located to serve as a downgradient stepout for LOU 62 (former State Industries western pond), and for general Site coverage.
U-5	IV	M-138	M-138B	TBD	MCcg1*	new well		X	X	X	X	X	X	X	X		X				New well to be installed; located to serve as a downgradient stepout for LOU 62 (former State Industries eastern pond) and LOU 59 (Storm Sewer System); and for general Site coverage.
			M-138BD	TBD (dup)				X	X	X	X	X	X	X	X		X				This is a duplicate sample of M-138B.
V-7	Parcel H	M-103	M-103B	69.5 - 89.5	MCcg1	No		X	X	X	X	X	X	X	X		X				Located to evaluate potential onsite sources in the southeastern portion of the Site and possible upgradient sources.
W-1	Olin Chemical	H-11	H-11B	95 - 105	MCcg1	No		X	X	X	X	X	X	X	X		X				To provide general area-wide upgradient information.
W-4	Parcel H	M-121	M-121B	77 - 97	MCcg1	No		X	X	X	X	X	X	X	X		X				Located to evaluate upgradient (southwest) groundwater conditions on the Site.
W-5	Parcel H	M-118	M-118B	138 - 158	MCfg2	No		X	X	X	X	X	X	X	X		X				Located to evaluate upgradient (south) groundwater conditions on the Site.
W-6	Parcel H	M-120	M-120B	80 - 100	MCcg1	Yes		X	X	X	X	X	X	X	X		X				Located to evaluate upgradient (south) groundwater conditions on the Site.
W-7	Parcel H	M-117	M-117B	130 - 150	MCfg2	No		X	X	X	X	X	X	X	X		X				Located to evaluate upgradient groundwater conditions on the southeast corner of the Site.
Number of Wells:		**17**																			

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).
X	Sample will be collected and analyzed.
blank	No sample collected under Phase B sampling plan.
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.	Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, and Zinc.
3.	VOCs = Volatile organic compounds (to include analysis for naphthalene).
4.	Hexavalent Chromium.

Table 3 (Field Version)
Groundwater Sampling and Analysis Plan for Area IV
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

Laboratory :								CAS Kelso, WA		Columbia Analytical Services Rochester, NY							GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical Sparks, NV	Location Description and Rationale for Investigation
Grid Location	Location Area	Monitoring Well No.	Sample ID Number [K.]	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval [1.]	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals [2.]	VOCs [3.] (EPA 8260)	Hex Cr [4.] (EPA 7199)	Wet Chemistry [5.]	OCPs [6.] (EPA 8081A)	Total Cyanide (EPA 9012A)	SVOCs [7.] (EPA 8270C)	PCBs [8,L] (EPA 8082)	Radionuclides [9.]	PCBs [8,L] (EPA 1668A)	OPPs [10, A] (EPA 8141A)	Organic Acids [B]	
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area 4 (P-2) and ending with the southeastern-most grid covering Area 4 (W-7).																					

5. Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.
6. OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).
7. SVOCs = Semi volatile organic compounds.
8. Polychlorinated Biphenyls.
9. Radionuclides consists of alpha spec reporting for isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
10. OPPs = Organophosphorous Pesticides

TBD To Be Determined when well is constructed.
Qal Quaternary Alluvium.
MCfg1 Muddy Creek Formation - first fine-grained facies
MCcg1 Muddy Creek Formation - first coarse-grained facies
MCfg2 Muddy Creek Formation - second fine-grained facies