Waste Site Reclassification Form

Date Submitted: 11/6/06 **Originator**: L. M. Dittmer **Phone**: 372-9664	**Operable Unit(s)**: 100-BC-1 **Waste Site ID**: 128-B-3 **Type of Reclassification Action**: Rejected ☐ Closed Out ☐ Interim Closed Out ☒ No Action ☐	**Control Number**: 2006-058 **Lead Agency**: EPA

This form documents agreement among the parties listed below authorizing classification of the subject unit as rejected, closed out, interim closed out, or no action and authorizing backfill of the site, if appropriate. Final removal from the National Priorities List (NPL) of no action, interim closed-out, or closed-out sites will occur at a future date.

Description of current waste site condition:

The 128-B-3 waste site is a former burn and disposal site for the 100-B/C Area, located adjacent to the Columbia River. The selected remedy identified for the site was "remove, treat, and dispose," as documented in the *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington* (Remaining Sites ROD). The selected action for the site involved (1) remediating the site, (2) demonstrating through verification sampling that cleanup goals have been met, and (3) proposing the site for classification as interim closed out.

Basis for reclassification:

The 128-B-3 waste site has been remediated to meet the remedial action objectives specified in the Remaining Sites ROD. The results of verification sampling demonstrated that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results of sampling at upland areas of the site also showed that residual contaminant concentrations are protective of groundwater and the Columbia River. Evaluation of sampling results for the remediated river embankment concluded that further remedial action to remove soils contaminated slightly above soil remedial action goals for the protection of groundwater and the Columbia River would likely pose a greater risk to human health and the environment than leaving soils in place and backfilling the site. Therefore, an interim closure reclassification is supported for the 128-B-3 waste site, with imposition of institutional controls on the river embankment area to prevent activities that would mobilize residual contaminants to travel to groundwater or the river, to be maintained until the residual contamination can be evaluated in the context of a baseline risk assessment. This site does not have a deep zone and the upland portions of the site do not have residual contaminant concentrations that would warrant any institutional controls. The basis for reclassification is described in detail in the *Remaining Sites Verification Package for the 128-B-3 Burn Pit Site* (attached).

D. C. Smith DOE-RL Project Manager	Signature	11/14/06 Date
NA Ecology Project Manager	Signature	Date
D. A. Faulk EPA Project Manager	Signature	11/17/06 Date

REMAINING SITES VERIFICATION PACKAGE FOR THE 128-B-3 BURN PIT SITE

Attachment to Waste Site Reclassification Form 2006-058

November 2006

REMAINING SITES VERIFICATION PACKAGE FOR THE 128-B-3 BURN PIT SITE

EXECUTIVE SUMMARY

The 128-B-3 waste site, located within the 100-BC-1 Operable Unit and immediately adjacent to the Columbia River, was formerly used as a disposal site for the 100-B/C Area. The site was used for the dumping and burning of miscellaneous wastes, including office waste, paints, solvents, coal ash, and demolition debris. The selected remedy for the 128-B-3 site, as identified in the *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington* (Remaining Sites ROD) (EPA 1999) was "remove, treat, and dispose."

Remediation of the site was performed from November 2004 to May 2006, consisting of the removal of approximately 21,000 BCM (bank cubic meters) (27,500 BCY [bank cubic yards]) of material from four former disposal pits, the river embankment, and the upland surface to disposal at the Environmental Restoration Disposal Facility. Initial remedial efforts at the upland area of the site were extended to include the river embankment following the results of geophysical investigation and focused sampling of visible debris at the embankment. Multiple chemical contaminants were detected above action levels in the in-process and waste characterization samples, including metals, hexavalent chromium, polycyclic aromatic hydrocarbons, total petroleum hydrocarbons (TPH), pesticides, and polychlorinated biphenyls.

Following site remediation, final verification sampling of remediation and waste staging pile footprints was conducted from June 2006 to August 2006. The results indicated that the waste removal action achieved compliance with the remedial action objectives established in the *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (DOE-RL 2005b) and the Remaining Sites ROD (EPA 1999), except at the river embankment area. Residual concentrations of metals, TPH, and aroclor-1254 slightly exceeded soil RAGs for protection of groundwater and the Columbia River at this location. However, further remediation activities to remove trace remaining contamination are likely to inflict greater environmental damage than leaving said contamination in place. The results for the entirety of the site show that residual contaminant concentrations do not exceed cleanup levels for direct exposure (i.e., ingestion of the soil). Accordingly, an interim closure reclassification is supported for the 128-B-3 waste site, with imposition of institutional controls on the river embankment area to prevent activities that would mobilize residual contaminants to travel to groundwater or the river. Institutional controls will be maintained until such time that the results of a baseline risk assessment can be considered (for a final site remedy closure). The remainder of the site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

A summary of the cleanup evaluation for the soil results against the applicable criteria is presented in Table ES-1. The results of the verification sampling are used to make

reclassification decisions for the 128-B-3 waste site in accordance with the TPA-MP-14 (DOE-RL 1998) procedure.

Soil cleanup levels were established in the Remaining Sites ROD (EPA 1999) based on a limited ecological risk assessment. Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels was made for the site contaminants of concern, contaminants of potential concern, and other constituents. Ecological screening levels were exceeded for barium, boron, cadmium, chromium, lead, mercury, and vanadium. Exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. Residual concentrations of cadmium and vanadium are below site background levels, and boron concentrations are consistent with those seen elsewhere at the Hanford Site (no established background value is available). All exceedances at the site will be evaluated in the context of additional lines of evidence for ecological effects following a baseline risk assessment for the river corridor portion of the Hanford Site, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support the final closeout decision for the 128-B-3 waste site.

Table ES-1. Summary of Remedial Action Goals for the 128-B-3 Waste Site. (2 Pages)

Regulatory Requirement	Remedial Action Goals	Results	Remedial Action Objectives Attained?
Direct Exposure – Radionuclides	Attain 15-mrem/yr dose rate above background over 1,000 years.	No radionuclide COCs/COPCs were identified for the 128-B-3 waste site.	N/A
Direct Exposure – Nonradionuclides	Attain individual COPC RAGs.	All individual COC/COPC concentrations are below direct exposure RAGs.	Yes
Risk Requirements – Nonradionuclides	Attain a hazard quotient of <1 for all individual noncarcinogens.	All individual hazard quotients are less than 1.	Yes
	Attain a cumulative hazard quotient of <1 for noncarcinogens.	The cumulative hazard quotient (3.3×10^{-1}) is less than 1.	
	Attain an excess cancer risk of $<1 \times 10^{-6}$ for individual carcinogens.	All individual excess cancer risk values are less than 1×10^{-6}.	
	Attain a cumulative excess cancer risk of $<1 \times 10^{-5}$ for carcinogens.	The total excess cancer risk (2.2×10^{-6}) is less than 1×10^{-5}.	

Table ES-1. Summary of Remedial Action Goals for the 128-B-3 Waste Site. (2 Pages)

Regulatory Requirement	Remedial Action Goals	Results	Remedial Action Objectives Attained?
Groundwater/River Protection – Radionuclides	Attain single-COPC groundwater and river protection RAGs.	No radionuclide COCs/COPCs were identified for the 128-B-3 waste site.	N/A
	Attain national primary drinking water standards:[a] 4 mrem/yr (beta/gamma) dose rate to target receptor/organs.		
	Meet drinking water standards for alpha emitters: the most stringent of 15 pCi/L MCL or 1/25th of the derived concentration guides from DOE Order 5400.5.[b]	No alpha-emitting radionuclide COCs/COPCs were identified for the 128-B-3 waste site.	
	Meet total uranium standard of 30 µg/L (21.2 pCi/L).[c]	Uranium was not identified as a COC/COPC for the 128-B-3 waste site.	N/A
Groundwater/River Protection – Nonradionuclides	Attain individual nonradionuclide groundwater and river cleanup requirements.	Residual concentrations of multiple metals, polychlorinated biphenyls, and chlorinated pesticides are above soil RAGs for groundwater and/or river protection in one or more site sampling areas. However, results of vertical migration modeling indicate that these constituents will not reach groundwater (and, therefore, the Columbia River) within 1,000 years, except at the river embankment area.[d] Additional material removal at the river embankment to remove trace residual contamination is not expected to provide a benefit in consideration of the risk posed to human health and the environment by additional remediation. Therefore, institutional controls will be utilized to prevent activities that would drive residual contamination to groundwater or the river until the results of a baseline risk assessment can be considered.	No

[a] "National Primary Drinking Water Regulations" (40 *Code of Federal Regulations* 141).
[b] *Radiation Protection of the Public and the Environment* (DOE Order 5400.5).
[c] Based on the isotopic distribution of uranium in the 100 Areas, the 30 µg/L MCL corresponds to 21.2 pCi/L. Concentration-to-activity calculations are documented in *Calculation of Total Uranium Activity Corresponding to a Maximum Contaminant Level for Total Uranium of 30 Micrograms per Liter in Groundwater* (BHI 2001).
[d] *100 Area Analogous Sites RESRAD Calculations* (BHI 2005).

COC = contaminant of concern
COPC = contaminant of potential concern
MCL = maximum contaminant level
N/A = not applicable
RAG = remedial action goal

REMAINING SITES VERIFICATION PACKAGE FOR THE 128-B-3 BURN PIT SITE

STATEMENT OF PROTECTIVENESS

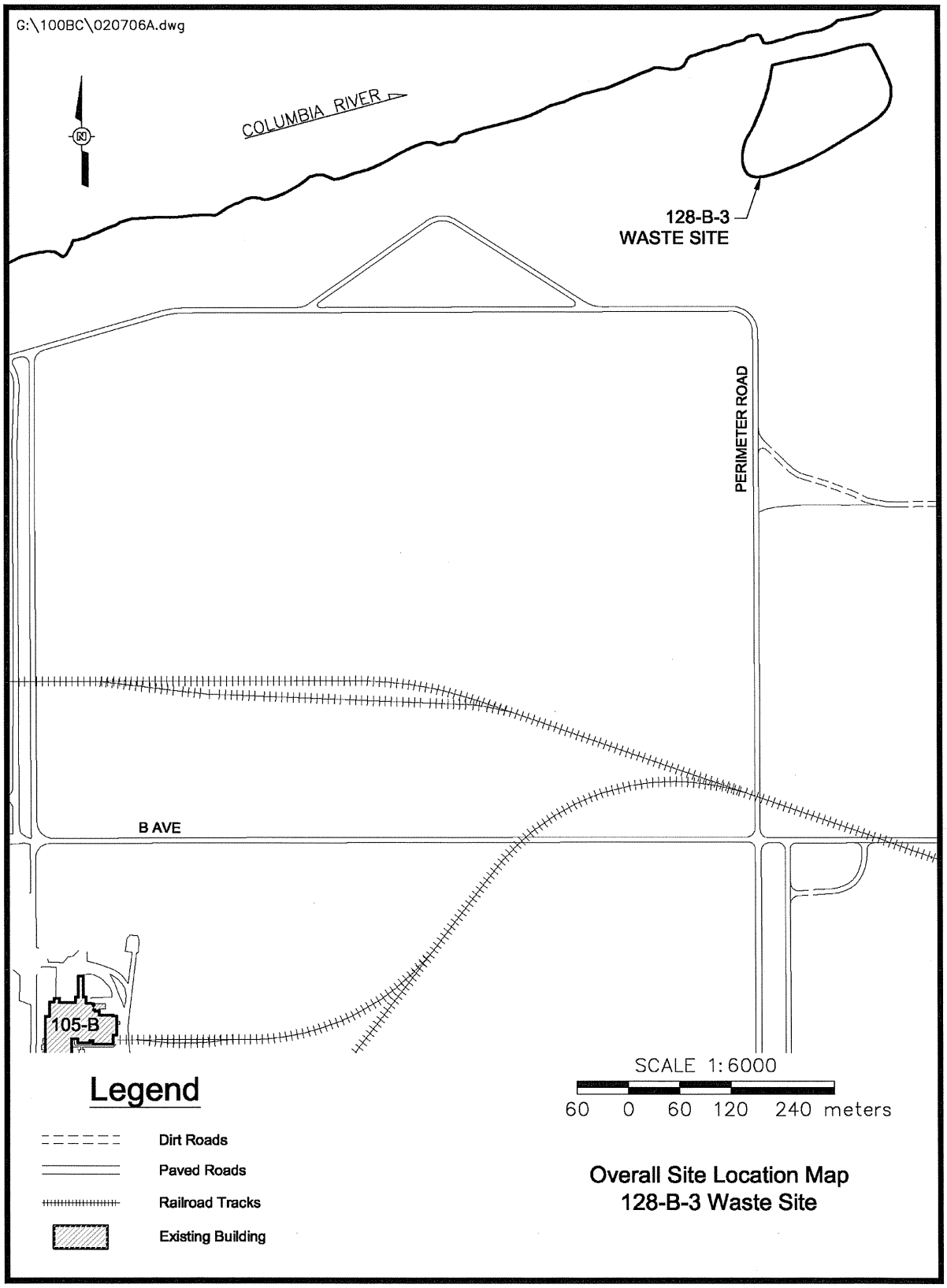
This report demonstrates that the 128-B-3 waste site meets the objectives for interim closure as established in the *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (RDR/RAWP) (DOE-RL 2005b) and the *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington* (Remaining Sites ROD) (EPA 1999). The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are sufficiently protective of groundwater and the Columbia River to preclude further remedial action. Institutional controls are required to prevent activities that would mobilize residual contamination at the river embankment area until residual contaminant concentrations can be evaluated in the context of a baseline risk assessment. No institutional controls are warranted for the upland portions of the site.

Soil cleanup levels were established in the Remaining Sites ROD (EPA 1999) based on a limited ecological risk assessment. Although not required by the Remaining Sites ROD, a comparison against ecological risk screening levels has been made for the site contaminants of concern (COCs), contaminants of potential concern (COPCs), and other constituents. Ecological screening levels were exceeded for barium, boron, cadmium, chromium, lead, mercury, and vanadium. Exceedance of screening values does not necessarily indicate the existence of risk to ecological receptors. Residual concentrations of cadmium and vanadium are below site background levels, and boron concentrations are consistent with those seen elsewhere at the Hanford Site (no established background value is available). All exceedances at the site will be evaluated in the context of additional lines of evidence for ecological effects following a baseline risk assessment for the river corridor portion of the Hanford Site, which includes a more complete quantitative ecological risk assessment. That baseline risk assessment will be used to support the final closeout decision for the 128-B-3 waste site.

GENERAL SITE INFORMATION AND BACKGROUND

The 128-B-3 waste site, part of the 100-BC-1 Operable Unit, is a former disposal site for the 100-B/C Area. The site is located in the northeastern portion of the 100-B/C Area, immediately adjacent to the Columbia River (Figure 1). The operational history of the 128-B-3 waste site is poorly documented, but assumed to be coincident with 100-B/C Area operations from 1943 to 1968. The site was used for the disposal of combustible and noncombustible wastes, including office waste, paints, solvents, coal ash, and demolition debris (DOE-RL 1994). The selected remedy for the 128-B-3 burn pit site was "remove, treat, and dispose," as documented in the Remaining Sites ROD (EPA 1999).

Figure 1. Location of the 128-B-3 Waste Site.



REMEDIAL ACTION SUMMARY

Initial remediation of the 128-B-3 waste site was performed in November 2004, consisting of excavation of four former disposal pits and general surface material removal in the area around the disposal pits. During remedial efforts, a previously unknown prehistoric cultural site, consisting of a shell midden with stone tools, was discovered in the vicinity of one of the former disposal pits. Further remediation of the waste site was performed so as to preclude further impact to this resource. Approximately 8,810 BCM (bank cubic meters) (11,520 BCY [bank cubic yards]) of soil and debris was removed from the site surface and disposal pits and staged onsite before disposal at the Environmental Restoration Disposal Facility (ERDF). Waste staging included special segregation piles for lead, tar, and asbestos materials, as well as general waste staging piles.

A geophysical survey was performed at the site in February 2005, following initial site remediation (WCH 2006e). Data were collected using electromagnetic induction and magnetometry to identify potential residual subsurface debris. Anomalies detected in the site area above the riverbank were determined to result primarily from the large basalt boulders present at the site. No indications of any large concentrations of subsurface debris were observed in this area. Significant geophysical anomalies were detected along the riverbank area, partially attributable to surficial material, but also indicative of subsurface foreign material.

In-process samples collected from stained soils and debris at the river embankment adjacent to the initial remediation footprint (as described below) indicated the presence of hazardous constituents at levels exceeding remedial action goals (RAGs), and the scope of the remedial effort was extended to include this embankment area. Remediation along the river embankment was performed from October to November 2005, with approximately 8,700 BCM (11,380 BCY) of material excavated and disposed ERDF.

Following completion of Calendar Year 2005 remedial activities, statistical sampling was performed at the river embankment and disposal pits to ascertain if remedial action goals had been met (as described below). Sample results indicated residual concentrations of site COCs at concentrations exceeding cleanup criteria. Accordingly, approximately 3,500 BCM (4,600 BCY) of additional material was removed from these areas in April and May 2006.

A pre-excavation topographic survey of the 128-B-3 site is shown in Figure 2. Figure 3 shows the post-excavation survey for the upland area, as well as the boundaries of remedial efforts at the river embankment and the footprints of waste staging piles. Photographs of the site prior to and following remediation are provided in Appendix A.

In-process samples of soil and waste materials were collected during site remediation as needed to support waste characterization and evaluation of the waste profile for disposal of excavated material and to guide remediation efforts. Samples were collected from ash material scattered across the site (J01YT9), suspect roofing tar (J01YV0), suspect dried paint materials (J01YV1), a cylindrical suspect battery component (J02296), a drum containing wood, rock, and glass-like tar (J10LY7), a drum containing suspect oil (J10LY8), yellow-green-stained, fine-grained

Figure 2. Pre-Excavation Topographic Survey of the 128-B-3 Waste Site.

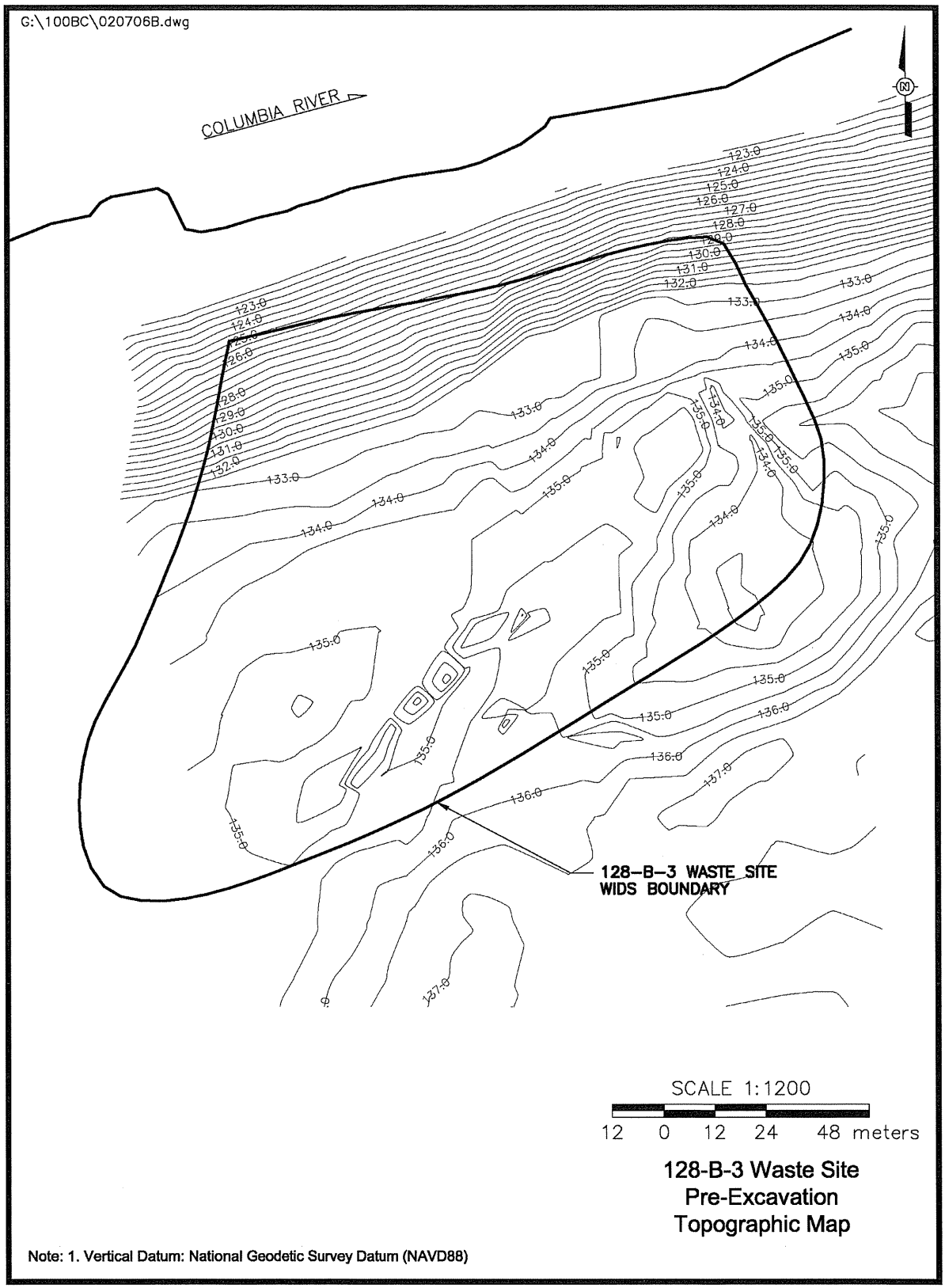
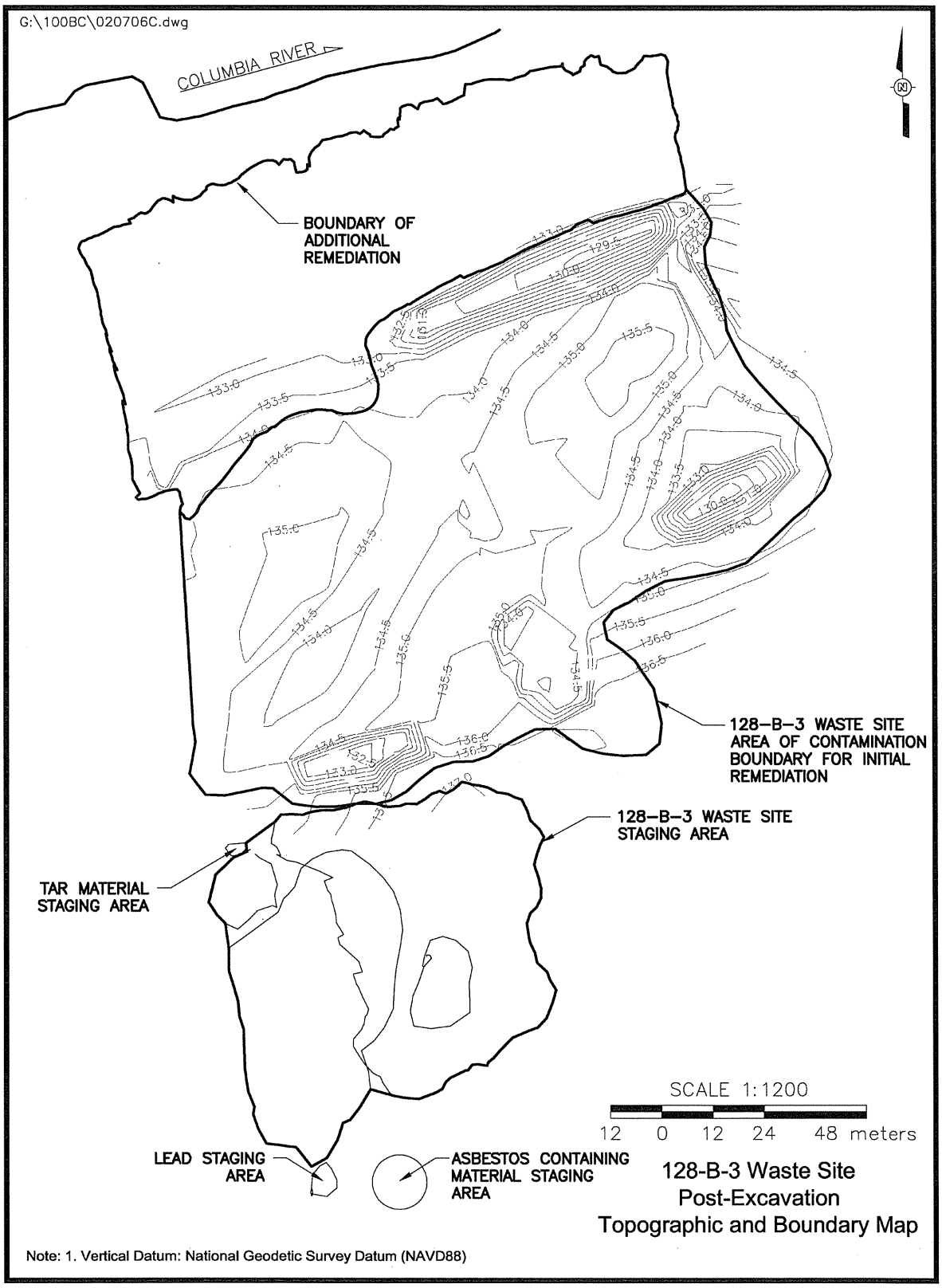


Figure 3. Post-Excavation Civil Survey of the 128-B-3 Waste Site.



soil (J02027), and other stained/discolored soils (J02289 and J10DW8). The analytical results for these samples are provided in Appendix B (Table B-1).

River Embankment Assessment

Following remediation of the four upland disposal pits, six focused sample locations were identified along the river embankment during discussion with the U.S. Environmental Protection Agency (EPA). Samples were collected on March 1, 2005, to determine if remediation of the embankment area was necessary. A summary of the samples collected, and laboratory analyses performed, is provided in Table 1.

Table 1. In-Process Sample Summary for the River Embankment at the 128-B-3 Waste Site.

Sample Location	Sample Number	Depth	Sample Analysis
Area of burned glass and metallic debris	J02J09	Surface	ICP metals (total), ICP metals (TCLP), mercury, TPH, herbicides, pesticides, and SVOA
	J02J09-A		Hexavalent chromium
Soil within exposed 0.61-m (24-in.) carbon-steel pipe segment	J02J10	Surface	ICP metals (total), ICP metals (TCLP), mercury, TPH, herbicides, pesticides, and SVOA
	J02J10-A		Hexavalent chromium
Soil beneath exposed chicken wire	J02J11	Surface	ICP metals (total), ICP metals (TCLP), mercury, TPH, herbicides, pesticides, and SVOA
	J02J11-A		Hexavalent chromium
Suspect asphalt within corroded barrel	J02J12	Surface	ICP metals (total), ICP metals (TCLP), mercury, TPH, herbicides, pesticides, and SVOA
	J02J12-A		Hexavalent chromium
Area of stressed vegetation with metallic and suspect asphaltic debris	J02J13	Surface	ICP metals (total), ICP metals (TCLP), mercury, TPH, herbicides, pesticides, and SVOA
	J02J13-A		Hexavalent chromium
Area with burned metal, glass, and rubber debris	J02J14	Surface	ICP metals (total), ICP metals (TCLP), mercury, TPH, herbicides, pesticides, and SVOA
	J02J14-A		Hexavalent chromium

Source: *100 BC Burial Grounds/Remaining Sites Sampling*, Logbook EFL-1173-4 (WCH 2006a).
ICP = inductively coupled plasma
SVOA = semivolatile organic analysis
TCLP = toxicity characteristic leaching procedure
TPH = total petroleum hydrocarbons

All samples were analyzed at offsite commercial laboratories and the results compared against the cleanup criteria specified in the *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (DOE-RL 2005b). The laboratory results for all samples are provided in Appendix B (Table B-1).

Total petroleum hydrocarbons (TPH), multiple metals, and multiple pesticides were detected above soil RAGs for the protection of groundwater and/or the Columbia River in the samples.

Based on these results, it was determined that remedial activities should be extended to include the river embankment. Details of remediation performed are provided in the remedial action summary above.

In-Process Statistical Sampling (Phase I Verification Sampling)

Following Calendar Year 2005 remedial activities, Phase I verification sampling was performed within the excavated disposal pits and river embankment area at the 128-B-3 waste site to make an initial evaluation of the attainment of remedial action objectives. These areas were delineated in Visual Sample Plan[1] (VSP) and a total of 20 sample locations (see Table 2 and Figure 4) were selected based on random-start systematic grids. Additional details concerning the use of VSP to develop the statistical sampling designs are provided in the 128-B-3 waste site verification sampling work instruction (WCH 2006f).

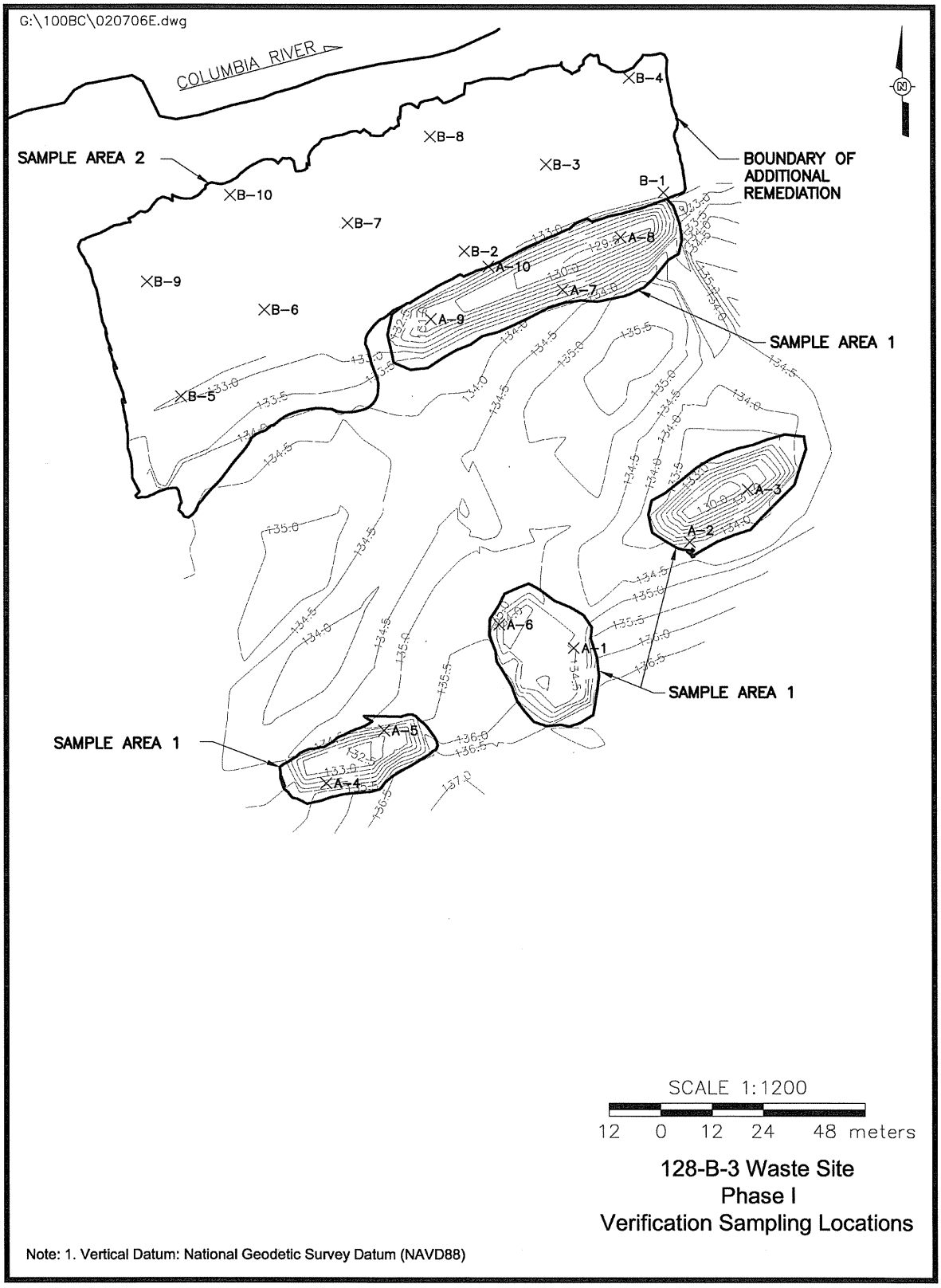
Table 2. 128-B-3 Phase I Verification Sample Location Coordinates.

Disposal Pits Sampling Area			River Embankment Sampling Area		
Sample Location	Sample Number	Washington State Plane Coordinates	Sample Location	Sample Number	Washington State Plane Coordinates
A-1[a]	J11811/J11831[a]	N 145544.4 E 566188.3	B-1	J11821	N 145651.5 E 566209.4
A-2	J11812	N 145569.3 E 566215.4	B-2	J11822	N 145637.7 E 566162.7
A-3	J11813	N 145581.7 E 566229.0	B-3	J11823	N 145658.1 E 566182.0
A-4	J11814	N 145512.6 E 566130.2	B-4	J11824	N 145678.5 E 566201.4
A-5	J11815	N 145525.0 E 566143.7	B-5	J11825	N 145603.5 E 566096.5
A-6	J11816	N 145549.9 E 566170.8	B-6	J11826	N 145623.9 E 566115.9
A-7	J11817	N 145628.6 E 566185.9	B-7	J11827	N 145644.3 E 566135.3
A-8	J11818	N 145641.0 E 566199.4	B-8	J11828	N 145664.7 E 566154.7
A-9	J11819	N 145621.7 E 566154.8	B-9	J11829	N 145630.5 E 566088.6
A-10	J11820	N 145634.1 E 566168.4	B-10	J11830	N 145650.9 E 566107.9
Equipment blank	J11832	N/A	N/A	N/A	N/A

Source: *100 BC Burial Grounds/Remaining Sites Sampling*, Logbook EFL-1173-7 (WCH 2006b).
[a] A field duplicate sample was collected at sample location A-1.
N/A = not applicable

[1] Visual Sample Plan is a site map-based user-interface program that may be downloaded at http://dqo.pnl.gov.

Figure 4. 128-B-3 Phase I Verification Sampling Locations.



All Phase I verification samples that were collected, except for the field equipment blank, were analyzed for inductively coupled plasma (ICP) metals, mercury, hexavalent chromium, TPH, chlorinated pesticides, polychlorinated biphenyls (PCBs), and semivolatile organic compounds (SVOCs). The field equipment blank was analyzed for ICP metals, mercury, and SVOCs. Complete analytical results are provided in Appendix B.

Residual concentrations of chromium, copper, lead, mercury, zinc, multiple pesticides, and multiple polycyclic aromatic hydrocarbons in the remediated disposal pits failed one or more parts of the WAC 173-340-740(7)(e) three-part test in comparison to soil RAGs for groundwater and/or river protection. The residual concentration of aroclor-1254 in one soil sample from the disposal pits also exceeded the direct exposure RAG.

Residual concentrations of arsenic, chromium, copper, nickel, lead, manganese, silver, zinc, aroclor-1254, and TPH at the remediated river embankment failed one or more parts of the WAC 173-340-740(7)(e) three-part test in comparison to soil RAGs for groundwater and/or river protection. Residual concentrations of arsenic and lead also failed one or more parts of the three-part test in comparison to direct exposure RAGs.

Based on these results, it was determined that additional remediation was required at the 128-B-3 site, as described in the remedial action summary above.

VERIFICATION SAMPLING ACTIVITIES

Phase II verification sampling at the 128-B-3 waste site was performed from June to August 2006, to collect data to make a decision whether the remedial action objectives had been reached. Based on statistical evaluation of the resulting data, the residual contaminant concentrations meet the cleanup criteria specified in the RDR/RAWP (DOE-RL 2005b) and the Remaining Sites ROD (EPA 1999). The following subsections provide additional discussion of the information used to develop the verification sampling design. The results of verification sampling are also summarized to support interim closure of the site.

Verification Sample Design

Civil surveys and design boundaries were used to divide the 128-B-3 waste site into seven sampling areas for the purpose of verification sampling, as identified in Table 3 and shown in Figure 5. A statistical sampling design approach was implemented for Sampling Areas 1 through 4, as described below. The sampling designs for Sampling Areas 5 through 7 were based on professional judgment in consideration of conditions particular to these sampling areas and are also described below.

Figure 5. Sampling Areas and Phase II Statistical Sampling Locations at the 128-B-3 Burn Pit Site.

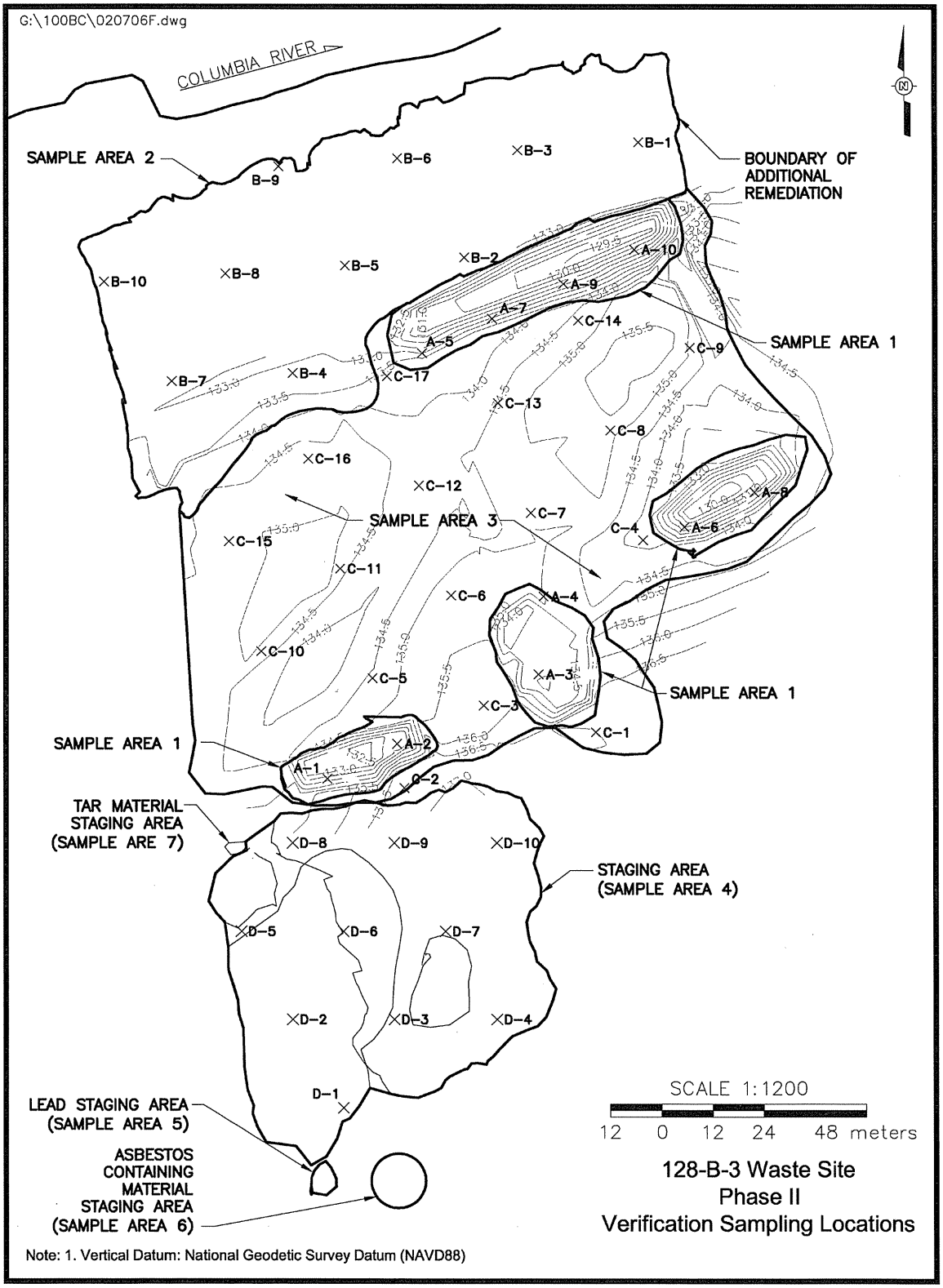


Table 3. 128-B-3 Sampling Areas for Phase II Verification Sampling.

Statistical Sampling Design	Judgmental Sampling Design
1) Four excavated disposal pits	5) Footprint of lead waste staging pile
2) River embankment area	6) Footprint of asbestos waste staging pile
3) Upland site surface	7) Footprint of tar staging pile
4) Footprint of general waste staging piles	

Statistical sampling was performed for the 128-B-3 remediation footprints and general waste staging piles because the spatial distribution of potential residual soil contamination over the study areas was uncertain. The decision rule for demonstrating compliance with the cleanup criteria requires comparison of the true population mean of COCs/COPCs, as estimated by the 95% upper confidence limit on the sample mean, with the cleanup level. The Washington State Department of Ecology publication *Guidance on Sampling and Data Analysis Methods* (Ecology 1995) recommends that systematic sampling with sample locations distributed over the entire study area be used. Therefore, sampling locations were distributed over the entirety of each sampling area on a unit-by-unit basis using random-start systematic grids in an effort to determine the residual presence of contamination.

VSP was used as a tool to develop the statistical sampling design for the 128-B-3 waste site. The sampling areas (Figure 5) were delineated in VSP and used as the basis for location of systematic grids for verification soil sample collection. Ten soil sample locations were identified for each of Sampling Areas 1, 2, and 4; and 17 sample locations were identified for Sampling Area 3 using random-start triangular grids. Additional details concerning the use of VSP to develop the statistical sampling design are provided in the 128-B-3 waste site verification sampling work instruction (WCH 2006f).

Figure 5 provides a map of the 47 statistical soil sample locations that were identified for verification sampling, with coordinates shown in Table 4. The soil sample locations were surveyed and staked prior to sample collection (WCH 2006c, 2006d). All sampling was performed in accordance with ENV-1, *Environmental Monitoring and Management*, to fulfill the requirements of the SAP (DOE-RL 2005a). One soil sample was collected at each location by collecting 30 aliquots of surficial soils from within approximately 1 m (3 ft) of the staked location and combining the aliquots into one sample. Field quality control (QC) samples consisted of three field duplicate samples and one equipment blank; field duplicate sample locations are identified in Table 4. All samples were requested for full protocol laboratory analysis.

Verification sampling at the special waste (lead, tar, and asbestos) staging pile footprints was based on professional judgment rather than statistical sampling designs because there was virtually no potential for contaminant migration into soils underlying the former staging piles (WCH 2006c). Sampling at each special waste staging pile footprint consisted of one sample composed of 30 aliquots of surficial soils collected from locations distributed across the entire staging footprint.

Table 4. 128-B-3 Verification Sample Location Coordinates. (4 Pages)

Sample Location	Sample Number (*SDG*)	Asbestos Analysis Sample Number (*SDG*)	PCB Analysis Sample Number[a] (*SDG*)	Washington State Plane Coordinates
Excavated Disposal Pits				
A-1[b]	J12P05/J12P15[b] (*K0475*)	J12P98/J12R23[b] (*06I-3471-01*)	N/A	N 145513.8 E 566130.4
A-2	J12P06 (*K0475*)	J12P99 (*06I-3471-01*)	N/A	N 145522.0 E 566146.8
A-3	J12P07 (*K0475*)	J12PB0 (*06I-3471-01*)	N/A	N 145538.3 E 566179.8
A-4	J12P08 (*K0475*)	J12PB1 (*06I-3471-01*)	N/A	N 145556.6 E 566181.0
A-5	J12P09 (*K0475*)	J12PB2 (*06I-3471-01*)	N/A	N 145613.7 E 566152.8
A-6	J12P10 (*K0475*)	J12PB3 (*06I-3471-01*)	N/A	N 145572.9 E 566213.9
A-7	J12P11 (*K0475*)	J12PB4 (*06I-3471-01*)	N/A	N 145621.8 E 566169.2
A-8	J12P12 (*K0475*)	J12PB5 (*06I-3471-01*)	N/A	N 145581.1 E 566230.4
A-9	J12P13 (*K0475*)	J12R21 (*06I-3471-01*)	N/A	N 145630.0 E 566185.7
A-10	J12P14 (*K0475*)	J12R22 (*06I-3471-01*)	N/A	N 145638.1 E 566202.2
River Embankment				
B-1	J12P17 (*K0475*)	J12P87 (*06I-3471-01*)	N/A	N 145663.3 E 566203.2
B-2	J12P18 (*K0475*)	J12P88 (*06I-3471-01*)	N/A	N 145636.2 E 566162.7
B-3	J12P19 (*K0475*)	J12P89 (*06I-3471-01*)	N/A	N 145661.4 E 566175.1
B-4	J12P20 (*K0475*)	J12P90 (*06I-3471-01*)	N/A	N 145609.0 E 566122.3
B-5	J12P21 (*K0475*)	J12P91 (*06I-3471-01*)	N/A	N 145634.3 E 566134.6
B-6	J12P22 (*K0475*)	J12P92 (*06I-3471-01*)	N/A	N 145659.5 E 566147.0
B-7	J12P23 (*K0475*)	J12P93 (*06I-3471-01*)	N/A	N 145607.1 E 566094.2
B-8	J12P24 (*K0475*)	J12P94 (*06I-3471-01*)	N/A	N 145632.4 E 566106.6

Table 4. 128-B-3 Verification Sample Location Coordinates. (4 Pages)

Sample Location	Sample Number (*SDG*)	Asbestos Analysis Sample Number (*SDG*)	PCB Analysis Sample Number[a] (*SDG*)	Washington State Plane Coordinates
B-9[b]	J12P25/J12P27[b] (*K0476/K0482*)	J12P95/J12P97[b] (*06I-3471-01*)	N/A	N 145657.6 E 566119.0
B-10	J12P26 (*K0476*)	J12P96 (*06I-3471-01*)	N/A	N 145630.5 E 566078.5
Upland Area				
C-1	J12PW9 (*K0465*)	J12P68 (*06I-3367-01*)	J13564 (*K0530*)	N 145524.7 E 566193.1
C-2	J12PX0 (*K0465*)	J12P69 (*06I-3367-01*)	J13565 (*K0530*)	N 145511.6 E 566148.5
C-3	J12PX1 (*K0465*)	J12P70 (*06I-3367-01*)	J13566 (*K0530*)	N 145531.0 E 566167.1
C-4	J12PX4 (*K0464*)	J12P71 (*06I-3367-01*)	J13567 (*K0530*)	N 145569.8 E 566204.2
C-5	J12PX3 (*K0465*)	J12P74 (*06I-3367-01*)	J13568 (*K0531*)	N 145537.4 E 566141.0
C-6	J12PX2 (*K0465*)	J12P73 (*06I-3367-01*)	J13569 (*K0531*)	N 145556.8 E 566159.5
C-7	J12PX5 (*K0464*)	J12P72 (*06I-3367-01*)	J13570 (*K0531*)	N 145576.2 E 566178.1
C-8	J12PX6 (*K0464*)	J12P75 (*06I-3367-01*)	J13571 (*K0531*)	N 145595.6 E 566196.6
C-9	J12PX8 (*K0464*)	J12P76 (*06I-3367-01*)	J13572 (*K0531*)	N 145615.0 E 566215.2
C-10[b]	J12P49/J12P50[b] (*K0464*)	J12P79/J12P80[b] (*06I-3446-01*)	J13573/J13581[b] (*K0531*)	N 145543.7 E 566114.9
C-11	J12P54 (*K0465*)	J12P84 (*06I-3446-01*)	J13574 (*K0531*)	N 145563.1 E 566133.4
C-12	J12P53 (*K0465*)	J12P83 (*06I-3446-01*)	J13575 (*K0531*)	N 145582.6 E 566152.0
C-13	J12PX7 (*K0464*)	J12P77 (*06I-3367-01*)	J13576 (*K0531*)	N 145602.0 E 566170.5
C-14	J12PX9 (*K0464*)	J12P78 (*06I-3442-01*)	J13577 (*K0531*)	N 145621.4 E 566189.1
C-15	J12P52 (*K0464*)	J12P82 (*06I-3446-01*)	J13578 (*K0531*)	N 145569.5 E 566107.4
C-16	J12P51 (*K0464*)	J12P81 (*06I-3446-01*)	J13579 (*K0531*)	N 145588.9 E 566125.9

Table 4. 128-B-3 Verification Sample Location Coordinates. (4 Pages)

Sample Location	Sample Number (*SDG*)	Asbestos Analysis Sample Number (*SDG*)	PCB Analysis Sample Number[a] (*SDG*)	Washington State Plane Coordinates
C-17	J12P55 (*K0465*)	J12P85 (*06I-3446-01*)	J13580 (*K0531*)	N 145608.3 E 566144.5
Footprint of General Waste Staging Piles				
D-1	J12PY1 (*K0464*)	J12P58 (*06I-3367-01*)	J13553 (*K0530*)	N 145436.4 E 566134.1
D-2	J12PY9 (*K0465*)	J12P59 (*06I-3367-01*)	J13554 (*K0530*)	N 145457.2 E 566122.2
D-3	J12PY5 (*K0464*)	J12P60 (*06I-3367-01*)	J13555 (*K0530*)	N 145457.2 E 566146.1
D-4	J12PY0 (*K0464*)	J12P61 (*06I-3367-01*)	J13556 (*K0530*)	N 145457.2 E 566170.1
D-5	J12PY3 (*K0464*)	J12P62 (*06I-3367-01*)	J13557 (*K0530*)	N 145477.9 E 566110.2
D-6	J12PY4 (*K0464*)	J12P63 (*06I-3367-01*)	J13558 (*K0530*)	N 145477.9 E 566134.1
D-7	J12PY2 (*K0464*)	J12P64 (*06I-3367-01*)	J13559 (*K0530*)	N 145477.9 E 566158.1
D-8	J12PY6 (*K0464*)	J12P65 (*06I-3367-01*)	J13560 (*K0530*)	N 145498.7 E 566122.2
D-9	J12PY7 (*K0464*)	J12P66 (*06I-3367-01*)	J13561 (*K0530*)	N 145498.7 E 566146.1
D-10	J12PY8 (*K0464*)	J12P67 (*06I-3367-01*)	J13562 (*K0530*)	N 145498.7 E 566170.1
Footprints of Special Waste Staging Piles				
Tar staging area	J12P56 (*K0476*)	J12P86 (*06I-3471-01*)	J13563 (*K0530*)	N 145497.4 E 566108.8
Lead staging area	J12P57 (*K0476*)	N/A	N/A	N 145419.6 E 566129.4
Asbestos staging area	N/A	J12PB6 (*06I-3471-01*)	N/A	N 145419.2 E 566147.0
Equipment blank	J12P16 (*K0475*)	N/A	N/A	N/A

Source: *100 BC Burial Grounds/Remaining Sites Sampling*, Logbook EFL-1173-8 (WCH 2006c) and *100BC Remaining Pipeline and Sewers Sampling and Field Services*, Logbook EL-1585-6 (WCH 2006d)

[a] PCB analysis was inadvertently excluded from the analyses initially requested for samples from the upland area and general waste staging piles footprint. Therefore, additional samples were collected and submitted for PCB analysis.

[b] A field duplicate sample was collected at this location.

N/A = not applicable PCB = polychlorinated biphenyl SDG = sample delivery group

Contaminants of Concern and Contaminants of Potential Concern

The COCs and COPCs for verification sampling were determined in consideration of in-process and waste characterization sampling results and the COCs/COPCs identified for similar burn pit waste sites. Residual concentrations of metals (including hexavalent chromium), SVOCs, chlorinated pesticides, TPH, PCBs, and asbestos within the remediation and general waste staging footprints were evaluated for site closure. The COCs/COPCs for the tar waste staging pile footprint were the same as for the remediation footprint, but COCs/COPCs at the lead and asbestos waste staging pile footprints were restricted to metals and asbestos, respectively.

The process history for the 128-B-3 site does not suggest the presence of radiological contamination, and radiological activity was not detected by field screening during site remediation. Therefore, radionuclides are not considered COPCs for the 128-B-3 site.

Volatile organic compounds (VOCs) were not considered site COPCs, pending field measurements with an organic vapor monitor during sampling events (WCH 2006c). However, field-screening was not performed at the time of sampling, and volatile organic analysis was requested for all sampling areas except the lead and asbestos special waste staging areas.

Based on the results of Phase I verification sampling, hexavalent chromium and TPH were removed from further evaluation under Phase II verification sampling for the excavated disposal pits, and SVOCs and pesticides were removed from further evaluation at the river embankment area.

The laboratory analyses performed for Phase II verification sampling at each sampling area are identified in Table 5.

Verification Sampling Results

Verification samples were analyzed using U.S. EPA-approved analytical methods. The 95% upper confidence limits (UCLs) on the true population means for residual concentrations of COCs and COPCs were calculated for sampling areas where statistical sampling was performed as specified by the RDR/RAWP (DOE-RL 2005b), with calculations provided in Appendix C. When a nonradionuclide COC or COPC was detected in fewer than 50% of the verification samples collected for each sampling area, the maximum detected value was used for comparison against RAGs, with the exception of TPH within the upland sampling area. If no detections for a given COC/COPC were reported in a given data set, then no statistical evaluation or calculations were performed for that COC/COPC for the associated sampling area. Evaluation of the verification data from the special waste staging pile footprints was performed by direct comparison of the maximum sample results for each COC/COPC against cleanup criteria for each sampling area.

Table 5. Analyses Performed on Phase II Verification Samples for Site Contaminants of Concern and Contaminants of Potential Concern.

	Disposal Pits	River Embankment	Upland Area	General Waste Staging Piles Footprint	Tar Waste Staging Pile Footprint	Lead Waste Staging Pile Footprint	Asbestos Waste Staging Pile Footprint
ICP metals EPA Method 6010	●	●	●	●	●	●	
Mercury EPA Method 7471	●	●	●	●	●	●	
Hexavalent chromium EPA Method 7196	[a]	●	●	●	●		
PCB EPA Method 8082	●	●	●	●	●		
Pesticide EPA Method 8081	●	[a]	●	●	●		
SVOA EPA Method 8270	●	[a]	●	●	●		
VOA EPA Method 8260	●	●	●	●	●		
TPH EPA Method 418.1	[a]	●	●	●	●		
Bulk asbestos NIOSH Method 7400	●	●	●	●	●		●

[a] Evaluated during Phase I verification sampling.
EPA = U.S. Environmental Protection Agency
ICP = inductively coupled plasma
NIOSH = National Institute for Occupational Safety and Health
PCB = polychlorinated biphenyl
SVOA = semivolatile organic analysis
TPH = total petroleum hydrocarbons
VOA = volatile organic analysis

The bulk parameter TPH was quantified at a maximum concentration of 258 mg/kg, slightly above the WAC 173-340-740 Method A soil remedial action goal for protection of groundwater (200 mg/kg) in one sample from the upland area verification data set. This parameter was not detected (i.e., was censored) in the remaining 94% of the sample data set, and, as described above, the statistical value is typically set equal to the maximum detected concentration under this scenario. However, doing so is a stringent test for compliance with a cleanup level, particularly since the maximum does not violate the compliance criteria of exceeding twice the cleanup level (WAC 173-340-740[7][e]). Handling censored data sets is problematic in calculating the 95% UCL, and both the Washington Department of Ecology and the EPA provide alternative guidance. For the 128-B-3 upland area, the 95% UCL value for TPH was calculated using a method suggested in *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites* (EPA 2002), in which the censored data is set equal to the quantitation limit and the 95% UCL is calculated and reported as a value likely to be considerably higher than the true mean.

Comparisons of the statistical and maximum results for COCs and COPCs and the site RAGs for all sampling areas are summarized in Tables 6a through 6f. Contaminants that were not detected by laboratory analysis are excluded from these tables. Calculated cleanup levels for aluminum, calcium, iron, magnesium, potassium, silicon, and sodium are not presented in the RDR/RAWP (DOE-RL 2005b). Parameters to calculate cleanup levels under WAC 173-340 (1996) are not available from the *Cleanup Levels and Risk Calculations (CLARC) Database* (Ecology 2005) or other reference databases. These analytes are also essential nutrients and can be eliminated from evaluation as human health concerns per EPA guidance (EPA 1989). Therefore, these constituents are not considered COPCs and are not included in the tables. All asbestos analysis results were reported as no asbestos detected or less than 1% total asbestos. The laboratory-reported data results for all constituents are stored in the Environmental Restoration (ENRE) project-specific database prior to being provided to the Hanford Environmental Information System (HEIS) and are presented within the statistical calculations in Appendix C.

Table 6a. Comparison of Statistical Contaminant Concentrations to Action Levels for the 128-B-3 Disposal Pits Remediation Footprint Verification Sampling Event.[*] (2 Pages)

COC/COPC	Statistical Result (mg/kg)	Remedial Action Goals[a] (mg/kg)			Does the Statistical Data Set Exceed RAGs?	Does the Statistical Result Pass RESRAD Modeling?
		Direct Exposure	Soil Cleanup Level for Groundwater Protection	Soil Cleanup Level for River Protection		
Arsenic	3.5 (<BG)	20	20	20	No	--
Barium	88.3 (<BG)	5,600[b]	132[c,d]	224[e]	No	--
Beryllium	0.35 (<BG)	10.4[f]	1.51[d]	1.51[d]	No	--
Boron[g]	2.8	16,000	320	--[h]	No	--
Chromium (total)	13.6 (<BG)	80,000[b]	18.5[d]	18.5[d]	No	--
Chromium (hexavalent)	1.3[i]	2.1	4.8[j]	2	No	--
Cobalt	6.5 (<BG)	1,600	32	--[h]	No	--
Copper	16.7 (<BG)	2,960	59.2	22.0[d]	No	--
Lead	5.6 (<BG)	353	10.2[d]	10.2[d]	No	--
Manganese	309 (<BG)	11,200	512[d]	512[d]	No	--
Mercury	0.07 (<BG)	24	0.33[d]	0.33[d]	No	--
Nickel	13.4 (<BG)	1,600	19.1[d]	27.4	No	--
Vanadium	34.9 (<BG)	560	85.1[d]	--[h]	No	--
Zinc	40.5 (<BG)	24,000	480	67.8[d]	No	--
Total petroleum hydrocarbons	157[i]	--	200[k]	200[k]	No	--
Aroclor-1254	0.19	0.5	0.017[l]	0.017[l]	Yes	Yes[m]
Endrin	0.0024	24	0.2	0.039	No	--
Benzo(a)anthracene	0.024	1.37[n]	0.33[l]	0.33[l]	No	--
Benzo(a)pyrene	0.017	0.33[l]	0.33[l]	0.33[l]	No	--

Table 6a. Comparison of Statistical Contaminant Concentrations to Action Levels for the 128-B-3 Disposal Pits Remediation Footprint Verification Sampling Event.* (2 Pages)

COC/COPC	Statistical Result (mg/kg)	Remedial Action Goals[a] (mg/kg)			Does the Statistical Data Set Exceed RAGs?	Does the Statistical Result Pass RESRAD Modeling?
		Direct Exposure	Soil Cleanup Level for Groundwater Protection	Soil Cleanup Level for River Protection		
Benzo(b)fluoranthene	0.032	1.37[n]	0.33[l]	0.33[l]	No	--
Benzo(k)fluoranthene	0.030	13.7[n]	0.33[l]	0.33[l]	No	--
bis(2-Ethylhexyl)phthalate	0.052	71.4	0.625	0.36	No	--
Chrysene	0.038	137[n]	1.2[n]	0.33[l]	No	--
Di-n-butylphthalate	0.023	8,000	160	540	No	--
Fluoranthene	0.020	3,200	64	18	No	--
Pyrene	0.031	2,400	48	192	No	--
Methylene chloride	0.008	133	0.5	0.94	No	--

* All Table 6 notes are provided at the end of the document body.
-- = not applicable
BG = background (obtained from DOE-RL [2001], unless otherwise noted)
COC = contaminant of concern
COPC = contaminant of potential concern
RAG = remedial action goal
RESRAD = RESidual RADioactivity (dose-assessment model)

Table 6b. Comparison of Statistical Contaminant Concentrations to Action Levels for the 128-B-3 River Embankment Remediation Footprint Verification Sampling Event.* (2 Pages)

COC/COPC	Statistical Result (mg/kg)	Remedial Action Goals[a] (mg/kg)			Does the Statistical Data Set Exceed RAGs?	Does the Statistical Result Pass RESRAD Modeling?
		Direct Exposure	Soil Cleanup Level for Groundwater Protection	Soil Cleanup Level for River Protection		
Arsenic	5.9 (<BG)	20	20	20	No	--
Barium	132 (<BG)	5,600[b]	132[c,d]	224[e]	Yes[o]	No[p]
Beryllium	0.45 (<BG)	10.4[f]	1.51[d]	1.51[d]	No	--
Boron[g]	7.3	16,000	320	--[h]	No	--
Cadmium[q]	0.52 (<BG)	13.9	0.81[d]	0.81[d]	No	--
Chromium (total)	42.4	80,000[b]	18.5[d]	18.5[d]	Yes	No[p]
Chromium (hexavalent)	0.34	2.1	4.8[j]	2	No	--
Cobalt	8.1 (<BG)	1,600	32	--[h]	No	--
Copper	32.9	2,960	59.2	22.0[d]	Yes	No[p]
Lead	19.9	353	10.2[d]	10.2[d]	Yes	No[p]
Manganese	390 (<BG)	11,200	512[d]	512[d]	No	--

Table 6b. Comparison of Statistical Contaminant Concentrations to Action Levels for the 128-B-3 River Embankment Remediation Footprint Verification Sampling Event.* (2 Pages)

COC/COPC	Statistical Result (mg/kg)	Remedial Action Goals[a] (mg/kg)			Does the Statistical Data Set Exceed RAGs?	Does the Statistical Result Pass RESRAD Modeling?
		Direct Exposure	Soil Cleanup Level for Groundwater Protection	Soil Cleanup Level for River Protection		
Mercury	0.12 (<BG)	24	0.33[d]	0.33[d]	No	--
Nickel	17.9 (<BG)	1,600	19.1[d]	27.4	No	--
Silver	0.30 (<BG)	400	8	0.73[d]	No	--
Vanadium	41.1 (<BG)	560	85.1[d]	--[h]	No	--
Zinc	74.6	24,000	480	67.8[d]	Yes	No[p]
Total petroleum hydrocarbons	431	--	200[k]	200[k]	Yes	No[p]
Aroclor-1254	0.011	0.5	0.017[l]	0.017[l]	Yes[o]	No[p]
bis(2-Ethylhexyl)phthalate	0.091[i]	71.4	0.625	0.36	No	--
Di-n-butylphthalate	0.025[i]	8,000	160	540	No	--
Methylene chloride	0.016	133	0.5	0.94	No	--

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-- = not applicable
BG = background (obtained from DOE-RL [2001], unless otherwise noted)
COC = contaminant of concern
COPC = contaminant of potential concern
RAG = remedial action goal
RESRAD = RESidual RADioactivity (dose-assessment model)

Table 6c. Comparison of Statistical Contaminant Concentrations to Action Levels for the 128-B-3 Upland Area Verification Sampling Event.* (3 Pages)

COC/COPC	Statistical Result (mg/kg)	Remedial Action Goals[a] (mg/kg)			Does the Statistical Data Set Exceed RAGs?	Does the Statistical Result Pass RESRAD Modeling?
		Direct Exposure	Soil Cleanup Level for Groundwater Protection	Soil Cleanup Level for River Protection		
Arsenic	3.9 (<BG)	20	20	20	No	--
Barium	101 (<BG)	5,600[b]	132[c,d]	224[e]	No	--
Beryllium	0.43 (<BG)	10.4[f]	1.51[d]	1.51[d]	No	--
Boron[g]	2.6	16,000	320	--[h]	No	--
Cadmium[q]	0.59 (<BG)	13.9	0.81[d]	0.81[d]	No	--
Chromium (total)	15.3 (<BG)	80,000[b]	18.5[d]	18.5[d]	No	--
Chromium (hexavalent)	0.34	2.1	4.8[j]	2	No	--
Cobalt	8.2 (<BG)	1,600	32	--[h]	No	--

Table 6c. Comparison of Statistical Contaminant Concentrations to Action Levels for the 128-B-3 Upland Area Verification Sampling Event.[*] (3 Pages)

COC/COPC	Statistical Result (mg/kg)	Remedial Action Goals[a] (mg/kg)			Does the Statistical Data Set Exceed RAGs?	Does the Statistical Result Pass RESRAD Modeling?
		Direct Exposure	Soil Cleanup Level for Groundwater Protection	Soil Cleanup Level for River Protection		
Copper	17.8 (<BG)	2,960	59.2	22.0[d]	Yes[o]	Yes[r]
Lead	8.4 (<BG)	353	10.2[d]	10.2[d]	No	--
Manganese	380 (<BG)	11,200	512[d]	512[d]	No	--
Mercury	0.08 (<BG)	24	0.33[d]	0.33[d]	No	--
Molybdenum[g]	4.7	400	8	--[h]	No	--
Nickel	13.5 (<BG)	1,600	19.1[d]	27.4	No	--
Silver	0.30 (<BG)	400	8	0.73[d]	No	--
Vanadium	41.3 (<BG)	560	85.1[d]	--[h]	No	--
Zinc	49.4 (<BG)	24,000	480	67.8[d]	No	--
Total petroleum hydrocarbons	153	--	200[k]	200[k]	No	--
Aroclor-1254	0.043	0.5	0.017[l]	0.017[l]	Yes	Yes[r]
Aroclor-1260	0.0069	0.5	0.017[l]	0.017[l]	No	--
Aldrin	0.00037	0.0588	0.00165[l]	0.00165[l]	No	--
4,4'-DDE	0.015	2.94	0.0257	0.005[l]	Yes	Yes[r]
4,4'-DDT	0.012	2.94	0.0257	0.005[l]	Yes	Yes[r]
Endosulfan sulfate	0.0027	480	9.6	0.0112	No	--
Endrin aldehyde	0.0053	24	0.2	0.039	No	--
Endrin ketone	0.0009	24	0.2	0.039	No	--
gamma-Chlordane	0.00033	2.86[s]	0.025[s]	0.0165[l]	No	--
Methoxychlor	0.0042	400	4	1.67	No	--
Benzo(a)anthracene	0.047	1.37[n]	0.33[l]	0.33[l]	No	--
Benzo(a)pyrene	0.053	0.33[l]	0.33[l]	0.33[l]	No	--
Benzo(b)fluoranthene	0.055	1.37[n]	0.33[l]	0.33[l]	No	--
Benzo(g,h,i)perylene[t]	0.090	2,400	48	192	No	--
Benzo(k)fluoranthene	0.043	13.7[n]	0.33[l]	0.33[l]	No	--
bis(2-Ethylhexyl)phthalate	0.24	71.4	0.625	0.36	No	--
Chrysene	0.10	137[n]	1.2[n]	0.33[l]	No	--
Di-n-butylphthalate	0.11	8,000	160	540	No	--
Dibenz(a,h)anthracene	0.056	0.33[l]	0.33[l]	0.33[l]	No	--
Fluoranthene	0.062	3,200	64	18	No	--
Indeno(1,2,3-cd)pyrene	0.050	1.37	0.33[l]	0.33[l]	No	--
Pyrene	0.087	2,400	48	192	No	--

Table 6c. Comparison of Statistical Contaminant Concentrations to Action Levels for the 128-B-3 Upland Area Verification Sampling Event.* (3 Pages)

COC/COPC	Statistical Result (mg/kg)	Remedial Action Goals[a] (mg/kg)			Does the Statistical Data Set Exceed RAGs?	Does the Statistical Result Pass RESRAD Modeling?
		Direct Exposure	Soil Cleanup Level for Groundwater Protection	Soil Cleanup Level for River Protection		
Acetone	0.035	72,000	720	--[h]	No	--
Methylene chloride	0.015	133	0.5	0.94	No	--
Toluene	0.002	6,400	64	1,360	No	--
Xylenes (total)	0.003	16,000	160	--[h]	No	--

* All Table 6 notes are provided at the end of the document body.
-- = not applicable
BG = background (obtained from DOE-RL [2001], unless otherwise noted)
COC = contaminant of concern
COPC = contaminant of potential concern
RAG = remedial action goal
RESRAD = RESidual RADioactivity (dose-assessment model)

Table 6d. Comparison of Statistical Contaminant Concentrations to Action Levels for the 128-B-3 General Waste Staging Pile Footprint Verification Sampling Event.* (2 Pages)

COC/COPC	Statistical Result (mg/kg)	Remedial Action Goals[a] (mg/kg)			Does the Statistical Data Set Exceed RAGs?	Does the Statistical Result Pass RESRAD Modeling?
		Direct Exposure	Soil Cleanup Level for Groundwater Protection	Soil Cleanup Level for River Protection		
Arsenic	3.2 (<BG)	20	20	20	No	--
Barium	130 (<BG)	5,600[b]	132[c,d]	224[e]	Yes[o]	Yes[r]
Beryllium	0.41 (<BG)	10.4[f]	1.51[d]	1.51[d]	No	--
Boron[g]	10.4	16,000	320	--[h]	No	--
Chromium (total)	15.2 (<BG)	80,000[b]	18.5[d]	18.5[d]	No	--
Chromium (hexavalent)	0.27	2.1	4.8[j]	2	No	--
Cobalt	8.0 (<BG)	1,600	32	--[h]	No	--
Copper	23.7	2,960	59.2	22.0[d]	Yes	Yes[r]
Lead	18.9	353	10.2[d]	10.2[d]	Yes	Yes[r]
Manganese	390 (<BG)	11,200	512[d]	512[d]	No	--
Mercury	1.6	24	0.33[d]	0.33[d]	Yes	Yes[r]
Nickel	13.4 (<BG)	1,600	19.1[d]	27.4	No	--
Vanadium	38.7 (<BG)	560	85.1[d]	--[h]	No	--
Zinc	76.3	24,000	480	67.8[d]	Yes	Yes[r]
Total petroleum hydrocarbons	179	--	200[k]	200[k]	No	--

Table 6d. Comparison of Statistical Contaminant Concentrations to Action Levels for the 128-B-3 General Waste Staging Pile Footprint Verification Sampling Event.* (2 Pages)

COC/COPC	Statistical Result (mg/kg)	Remedial Action Goals[a] (mg/kg)			Does the Statistical Data Set Exceed RAGs?	Does the Statistical Result Pass RESRAD Modeling?
		Direct Exposure	Soil Cleanup Level for Groundwater Protection	Soil Cleanup Level for River Protection		
Aroclor-1254	0.15	0.5	0.017[l]	0.017[l]	Yes	Yes[r]
Aroclor-1260	0.055	0.5	0.017[l]	0.017[l]	Yes	Yes[r]
Aldrin	0.00037	0.0588	0.00165[l]	0.00165[l]	No	--
4,4'-DDE	0.027	2.94	0.0257	0.005[l]	Yes	Yes[r]
4,4'-DDT	0.015	2.94	0.0257	0.005[l]	Yes	Yes[r]
Dieldrin	0.012	0.0625	0.003[l]	0.003[l]	Yes	Yes[r]
Endrin aldehyde	0.0138	24	0.2	0.039	No	--
gamma-Chlordane	0.00083	2.86[s]	0.025[s]	0.0165[l]	No	--
Methoxychlor	0.0043	400	4	1.67	No	--
Benzo(a)anthracene	0.043	1.37[n]	0.33[l]	0.33[l]	No	--
Benzo(a)pyrene	0.041	0.33[l]	0.33[l]	0.33[l]	No	--
Benzo(b)fluoranthene	0.041	1.37[n]	0.33[l]	0.33[l]	No	--
Benzo(g,h,i)perylene[t]	0.041	2,400	48	192	No	--
Benzo(k)fluoranthene	0.038	13.7[n]	0.33[l]	0.33[l]	No	--
bis(2-Ethylhexyl)phthalate	0.22	71.4	0.625	0.36	No	--
Chrysene	0.060	137[n]	1.2[n]	0.33[l]	No	--
Di-n-butylphthalate	0.14	8,000	160	540	No	--
Dibenz(a,h)anthracene	0.018	0.33[l]	0.33[l]	0.33[l]	No	--
Fluoranthene	0.054	3,200	64	18	No	--
Indeno(1,2,3-cd)pyrene	0.024	1.37	0.33[l]	0.33[l]	No	--
Phenanthrene[t]	0.037	24,000	240	1,920	No	--
Pyrene	0.075	2,400	48	192	No	--
Acetone	0.013	72,000	720	--[h]	No	--
Methylene chloride	0.018	133	0.5	0.94	No	--
Toluene	0.002	6,400	64	1,360	No	--
Xylenes (total)	0.001	16,000	160	--[h]	No	--

* All Table 6 notes are provided at the end of the document body.
-- = not applicable
BG = background (obtained from DOE-RL [2001], unless otherwise noted)
COC = contaminant of concern
COPC = contaminant of potential concern
RAG = remedial action goal
RESRAD = RESidual RADioactivity (dose-assessment model)

Table 6e. Comparison of Statistical Contaminant Concentrations to Action Levels for the 128-B-3 Tar Waste Staging Pile Footprint Verification Sampling Event.*

COC/COPC	Maximum Result (mg/kg)	Remedial Action Goals[a] (mg/kg)			Does the Maximum Result Exceed RAGs?	Does the Maximum Result Pass RESRAD Modeling?
		Direct Exposure	Soil Cleanup Level for Groundwater Protection	Soil Cleanup Level for River Protection		
Arsenic	3.8 (<BG)	20	20	20	No	--
Barium	279	5,600[b]	132[c,d]	224[e]	Yes	Yes[r]
Beryllium	0.83 (<BG)	10.4[f]	1.51[d]	1.51[d]	No	--
Boron[g]	17.5	16,000	320	--[h]	No	--
Chromium (total)	12.2 (<BG)	80,000[b]	18.5[d]	18.5[d]	No	--
Chromium (hexavalent)	1.1	2.1	4.8[j]	2	No	--
Cobalt	8.0 (<BG)	1,600	32	--[h]	No	--
Copper	17.9 (<BG)	2,960	59.2	22.0[d]	No	--
Lead	10.6	353	10.2[d]	10.2[d]	Yes	Yes[r]
Manganese	390 (<BG)	11,200	512[d]	512[d]	No	--
Mercury	0.09 (<BG)	24	0.33[d]	0.33[d]	No	--
Nickel	12.2 (<BG)	1,600	19.1[d]	27.4	No	--
Vanadium	37.0 (<BG)	560	85.1[d]	--[h]	No	--
Zinc	50.2 (<BG)	24,000	480	67.8[d]	No	--
Aroclor-1254	0.12	0.5	0.017[l]	0.017[l]	Yes	Yes[r]
Aroclor-1260	0.019	0.5	0.017[l]	0.017[l]	Yes	Yes[r]
beta-BHC	0.00054	0.556	0.00486	0.00554	No	--
4,4'-DDE	0.0036	2.94	0.0257	0.005[l]	No	--
Endrin aldehyde	0.00094	24	0.2	0.039	No	--
bis(2-Ethylhexyl)phthalate	0.029	71.4	0.625	0.36	No	--
Methylene chloride	0.011	133	0.5	0.94	No	--

* All Table 6 notes are provided at the end of the document body.
-- = not applicable
BG = background (obtained from DOE-RL [2001], unless otherwise noted)
COC = contaminant of concern
COPC = contaminant of potential concern
RAG = remedial action goal
RESRAD = RESidual RADioactivity (dose-assessment model)

Table 6f. Comparison of Statistical Contaminant Concentrations to Action Levels for the 128-B-3 Lead Waste Staging Pile Footprint Verification Sampling Event.*

COC/COPC	Maximum Result (mg/kg)	Remedial Action Goals[a] (mg/kg)			Does the Maximum Result Exceed RAGs?	Does the Maximum Result Pass RESRAD Modeling?
		Direct Exposure	Soil Cleanup Level for Groundwater Protection	Soil Cleanup Level for River Protection		
Arsenic	3.5 (<BG)	20	20	20	No	--
Barium	173	5,600[b]	132[c,d]	224[e]	Yes	Yes[r]
Beryllium	0.71 (<BG)	10.4[f]	1.51[d]	1.51[d]	No	--
Boron[g]	8.0	16,000	320	--[h]	No	--
Chromium (total)	12.5 (<BG)	80,000[b]	18.5[d]	18.5[d]	No	--
Cobalt	7.3 (<BG)	1,600	32	--[h]	No	--
Copper	15.8 (<BG)	2,960	59.2	22.0[d]	No	--
Lead	14.5	353	10.2[d]	10.2[d]	Yes	Yes[r]
Manganese	372 (<BG)	11,200	512[d]	512[d]	No	--
Mercury	0.12 (<BG)	24	0.33[d]	0.33[d]	No	--
Nickel	11.1 (<BG)	1,600	19.1[d]	27.4	No	--
Silver	0.25 (<BG)	400	8	0.73[d]	No	--
Vanadium	37.2 (<BG)	560	85.1[d]	--[h]	No	--
Zinc	59.5 (<BG)	24,000	480	67.8[d]	No	--

* All Table 6 notes are provided at the end of the document body.
-- = not applicable
BG = background (obtained from DOE-RL [2001], unless otherwise noted)
COC = contaminant of concern
COPC = contaminant of potential concern
RAG = remedial action goal
RESRAD = RESidual RADioactivity (dose-assessment model)

DATA EVALUATION

Residual concentrations of the following were determined to exceed soil RAGs for the protection of groundwater and/or the Columbia River at the 128-B-3 waste site:

- Aroclor-1254 within the disposal pit excavations (Table 6a)
- Aroclor-1254, 4,4'-DDE, and 4,4'-DDT at the upland area (Table 6c)
- Copper, lead, mercury, zinc, aroclor-1254, aroclor-1260, 4,4'-DDE, 4,4'-DDT, and dieldrin within the general waste staging pile footprint (Table 6d)
- Barium, lead, aroclor-1254, and aroclor-1260 within the tar waste staging pile footprint (Table 6e)
- Barium and lead within the lead waste staging pile footprint (Table 6f).

Based on the K_d (soil-partitioning or distribution coefficient) values for these constituents (>22 mL/g), none are expected to migrate further than 3 m (10 ft) vertically in 1,000 years (BHI 2005). The vadose zone underlying the base of the disposal pit excavations is approximately 9-m (30-ft)-thick, and thicker underlying the surface areas of the site; therefore, residual concentrations of these contaminants are protective of groundwater. The only pathway for contaminants to reach the Columbia River is via groundwater migration, so these contaminant concentrations are also protective of the river.

Residual concentrations of total chromium, copper, lead, zinc, and TPH within the site remediation footprint along the river embankment slightly exceeded soil RAGs for the protection of groundwater and/or the Columbia River (Table 6b). Protectiveness cannot be demonstrated using vertical migration modeling for these constituents within this sampling area, due to the immediate proximity of groundwater and the Columbia River. However, the detected concentrations of these constituents are low and further remediation activities to remove trace remaining contamination are likely to inflict greater environmental damage than leaving said contamination in place. Therefore, institutional controls will be used to prevent activities at the river embankment area that would mobilize residual contaminants to travel to groundwater or the river. This restriction will be maintained until a final remedy or closure determination can be made, in consideration of the results of the river corridor baseline risk assessment.

When using a statistical sampling approach, a RAG requirement for nonradionuclides is the WAC 173-340-740(7)(e) three-part test. The application of the three-part test for the 128-B-3 waste site sampling areas where statistical sampling was performed is included in the site-specific statistical calculations (Appendix C). The three-part test is not applicable to the special waste staging pile footprint results since direct evaluation of the maximum detected sampling results was used as the compliance basis. All residual COC/COPC concentrations for the 128-B-3 site pass the three-part test in comparison to direct exposure RAGs. In addition to the exceedances addressed above, residual barium and aroclor-1254 concentrations within the river embankment remediation footprint (Table 6b), residual copper concentrations at the upland area (Table 6c), and residual barium concentrations within the general waste-staging piles' footprint (Table 6d) fail the three-part test in comparison to soil RAGs for the protection of groundwater and/or the Columbia River.

As above, neither copper (K_d = 22 mL/g) nor barium (K_d = 25 mL/g) at the upland area and general waste-staging piles' footprint is predicted to migrate more than 3 m (10 ft) vertically in 1,000 years, as compared to a vadose zone thickness in excess of 9 m (30 ft) beneath the site surface. Therefore, residual concentrations of these metals within these sampling areas are also protective of groundwater and the Columbia River. As above, protectiveness of groundwater and the Columbia River cannot be demonstrated for barium and aroclor-1254 at the river embankment remediation footprint using vertical migration modeling. However, individual detections were only slightly above the statistical background level for barium and the limits of analytical quantitation for aroclor-1254. Again, further remediation to remove these trace residual contaminant levels is not likely to provide additional benefits in consideration of the risk posed to the river and riparian environment posed by potential releases associated with such remediation.

Nonradionuclide risk requirements include an individual hazard quotient of less than 1.0, a cumulative hazard quotient of less than 1.0, an individual contaminant carcinogenic risk of less than 1×10^{-6}, and a cumulative carcinogenic risk of less than 1×10^{-5}. For the 128-B-3 waste site, these risk values were conservatively calculated for the entire site using the highest of the determined concentrations (as summarized in Tables 6a through 6f) for each constituent. These risk values were not calculated for constituents that were either not detected or were detected at concentrations below Hanford Site or Washington State background values. All individual hazard quotients were less than 1.0, and all individual excess carcinogenic risk values were less than 1×10^{-6} (Appendix D). The cumulative hazard quotient for those noncarcinogenic constituents above background or detection levels is 3.3×10^{-1}, and the cumulative excess carcinogenic risk value for these constituents is 2.2×10^{-6}. Therefore, nonradionuclide risk requirements are met.

DATA QUALITY ASSESSMENT

A data quality assessment (DQA) was performed to compare the confirmatory sampling approach and resulting analytical data with the sampling and data requirements specified in the site-specific work instruction (WCH 2006f). This DQA was performed in accordance with site specific data quality objectives found in the SAP (DOE-RL 2005a).

A review of the work instruction (WCH 2006f), the field logbooks (WCH 2006c, 2006d), and applicable analytical data packages has been performed as part of this DQA. All samples were collected per the sample design. To ensure quality data, the SAP data assurance requirements and the data validation procedures for chemical and radiochemical analysis (BHI 2000a, 2000b) were used, as appropriate. This review involves evaluation of the data to determine if they are of the right type, quality, and quantity to support the intended use (i.e., closeout decisions). The DQA completes the data life cycle (i.e., planning, implementation, and assessment) that was initiated by the data quality objectives process (EPA 2000).

Data from Phase II verification samples collected at the 128-B-3 Burn Pit site were provided by the laboratories in sample delivery groups SDGs K0464, K0465, K0475, K0476, K0482, K0530, K0531, 06I-3367-01, 06I-3442-01, 06I-3446-01, and 06I-3471-01. SDG K0465 was submitted for third-party validation. Two major deficiencies are identified in the data for SDGs K0464 and K0482, below. No major deficiencies were identified in the remaining data, all of which is acceptable for decision-making purposes. Major and minor deficiencies, as well as third-party validation qualifiers are discussed by SDG below. The 128-B-3 Burn Pit site was administratively divided into sampling areas; samples from several sampling areas may be included in any one SDG. A cross-reference for samples and SDGs is provided in Table 4.

SDG K0464

This SDG consists of 19 field samples (J12PX4 through J12PX9, J12PY0 through J12PY8, and J12P49 through J12P52). These field samples were analyzed for VOCs, SVOCs, pesticides, ICP metals, mercury, and hexavalent chromium. The work instruction (WCH 2006f) also identified PCB analysis as a requirement for these samples. Because these samples were inadvertently not

analyzed for PCBs, new samples were collected from the same locations and analyzed for PCBs in SDGs K0530 and K0531. A major deficiency was found in SDG K0464. Deficiencies in SDG K0464 are as follows:

In the volatile organic analysis (VOA), 4 of 70 matrix spike/matrix spike duplicate (MS/MSD) recoveries were outside of the acceptance criteria range. The MSDs for cis-1,3-dichloropropane and trans-1,3-dichloropropane were both below the acceptance criteria at 59%. This suggests a low bias for these two analytes and the data is considered estimated but useable for decision-making purposes. The MS and MSD for acetone were above the acceptance criteria at 219% and 193%, respectively. Acetone is considered estimated with a high bias. High-biased data are acceptable for decision-making purposes.

The common laboratory contaminant methylene chloride was found in the VOA method blank (MB) (0.002 mg/kg), and in all of the field samples (0.010 to 0.027 mg/kg). All of these detections are below the required detection limit (RDL) and the lowest RAG. The data are useable for decision-making purposes.

In the semivolatile organic analysis (SVOA), 1 of 128 MS recoveries was below the acceptance criteria. The MS for 2,4-dinitrophenol was below the acceptance criteria range at 1% recovery. The MSD and LCS recoveries for 2,4-dinitrophenol were within the acceptance criteria range. The laboratory cites "erratic chromatographic behavior" as the cause of this deficiency. The project has qualified the 2,4-dinitrophenol data in SDG K0464 as rejected with an "R" flag on the data because of the low matrix spike recovery. The 2,4-dinitrophenol data in SDG K0464 are not useable for decision-making purposes. It should be noted that this analyte has been rejected on a technical basis. There were no associated analytes detected in the samples, such as the related mononitrophenols: 2-nitrophenol and 4-nitrophenol. Solvents such as this are not typically found individually without other detections. There are no known Hanford Site processes that would have resulted exclusively in this analyte. Therefore, there is no reason to assume that 2,4-dinitrophenol was present in the samples.

In the pesticide analysis, 14 of 46 surrogate recoveries, distributed among 11 samples exceeded the laboratory acceptance criteria range (80 to 120%). All of these recoveries were in the range of 120 to 130%, within the project acceptance criteria (70 to 130%). These results suggest a slight high bias in some of the pesticide data. High-biased data are acceptable for decision-making purposes.

One of the continuing calibration verification (CCV) samples in the pesticide analysis was out of criteria. The pesticide analysis is conducted using two analytical columns to confirm detections. Chromatography from the alternate column was used to quantify the samples, such that the sample data are unaffected by this deficiency. The data are useable for decision-making purposes.

In the pesticide analysis, the analyte toxaphene was not included in the MS, MSD, or LCS samples. Toxaphene is actually a mixture of compounds, rather than a discrete analyte. The overall concentration of toxaphene can be calculated using several unobstructed peaks in the chromatography; the inclusion of toxaphene in the spiking mixture would be problematic for the

other pesticide analytes. The laboratory typically quantitates toxaphene but does not include toxaphene in QA(quality assurance)/QC samples. The toxaphene data is, therefore, considered estimated but useable for decision-making purposes.

In the metals analysis, MS recoveries for four analytes (aluminum, iron, antimony, silicon) were outside of acceptance criteria. For these analytes, the spiking concentration was insignificant compared to the concentration in the sample from which the MS was prepared. This deficiency in the MS recovery is more a reflection of the analytical variability, relative to the native sample concentrations, rather than a measure of the spike recovery from the sample. To confirm quantitation, post-digestion spikes (PDSs) and serial dilutions were prepared and analyzed for the four analytes with acceptable results (99.1 to 103.3%). The data are useable for decision-making purposes.

The relative percent difference (RPD) for boron in the laboratory duplicate was above the acceptance criteria (30%) at 31.6%. This result is attributed to difficulty in producing truly homogeneous mixtures in environmental soil samples. The lack of homogenous soil samples often results in enhanced RPDs. It is likely that more essentially inert material (e.g., larger size gravel) was present in one sample. The boron results may be considered estimated, but are useable for decision-making purposes.

SDG K0465

This SDG consists of nine field samples (J12P53 through J12P55, J12PW9, J12PY9, and J12PX0 through J12PX3). These field samples were analyzed for VOCs, SVOCs, pesticides, TPH, hexavalent chromium, ICP metals, and mercury. The work instruction (WCH 2006f) also identified PCB analysis as a requirement for these samples. Because these samples were inadvertently not analyzed for PCBs, new samples were collected from the same locations and analyzed for PCBs in SDGs K0530 and K0531. No major deficiencies were found in SDG K0465. The SDG was also submitted for third-party validation. Minor deficiencies and third-party data qualifiers are as follows:

In the VOA, the common laboratory contaminant methylene chloride was found in the MB and all of the field samples at concentrations less than the RDL. The field sample concentrations are in the range of 0.009 to 0.022 mg/kg and the MB concentration is 0.002 mg/kg. Third-party validation qualified all of the methylene chloride results in SDG K0465 (except for samples J12P53 and J12PY9) as nondetected with "U" flags. The methylene chloride concentration in sample J12P53 was raised to the RDL and qualified as non-detected with a "U" flag. No qualification was added to the methylene chloride result for sample J12PY9. The data are useable for decision-making purposes.

The MS/MSD samples in the VOA analysis were analyzed slightly outside of the tune time established for the analytical equipment (a mass spectrophotometer). The analysis was not repeated because, by the time the discrepancy was identified, the samples were out of hold time. The two MSs had good agreement and the surrogate and analyte recoveries were within criteria. There is no impact on the field sample results. The data are useable for decision-making purposes.

Three RPDs in the VOA laboratory duplicate analysis were above the acceptance criteria. Elevated RPDs are attributed to natural heterogeneities in the sample matrix. Third-party validation qualified all of the acetone, 2-butanone, and 2-hexanone results in SDG K0465 as estimated with "J" flags. The data are useable for decision-making purposes.

In the SVOA, the common laboratory contaminant bis(2-ethylhexyl)phthalate was detected in the MB below the RDL at 0.020 mg/kg.; bis(2-Ethylhexyl)phthalate was also detected in the field samples in the range of 0.017 to 0.100 mg/kg. Third-party validation raised the bis(2-ethylhexyl)phthalate results to the RDL in all of the samples and qualified them all as non-detected with "U" flags. The data are useable for decision-making purposes.

Two of the pesticide surrogate recoveries in sample J12P55 were above the acceptance criteria at 120% and 128%. This suggests a high bias in the J12P55 pesticide data for the associated analytes. Third-party validation qualified the detected analytes that are associated with the elevated surrogates as estimated with "J" flags. This qualification was limited to the endrin aldehyde result for sample J12P55. The data are useable for decision-making purposes.

In the pesticide analysis, the analyte toxaphene was not included in the MS, MSD, or LCS samples. The laboratory typically quantitates toxaphene but does not include toxaphene in QA/QC samples. Third-party validation qualified all of the toxaphene data as estimated with "J" flags. The toxaphene data is useable for decision-making purposes.

The laboratory reported an RPD for hexavalent chromium of 66.2%. The hexavalent chromium results in the main sample and the laboratory duplicate were reported as 0.25 mg/kg and 0.20 mg/kg U, respectively. Because hexavalent chromium was non-detected in 1 of the 2 samples (the laboratory duplicate), the meaning of an RPD calculation is unclear and the calculation is not usually performed. Calculated RPDs for data near the detection limit are usually elevated because of expected increased analytical variability near the detection limit. No qualification has been added. The data are useable for decision-making purposes.

In the ICP metals analysis, the MS for antimony was below the acceptance criteria range at 49.8%. Third-party validation qualified all of the antimony data in SDG K0465 as estimated with "J" flags. The data are useable for decision-making purposes.

Four other analytes (aluminum, iron, manganese, silicon) in the ICP metals analysis had MS results that were outside the acceptance criteria range. For these analytes, the spiking concentration was insignificant compared to the concentration in the sample from which the MS was prepared. This deficiency in the MS recoveries is more of a reflection of the analytical variability relative to the sample concentration than a measure of the recovery of the spike from the sample. To confirm quantitation, PDSs and serial dilutions were prepared and analyzed for the four analytes with acceptable results (96.7 to 101.9%). No qualifications were added due to these results. The data are useable for decision-making purposes.

The ICP metals LCS result for silicon was below the acceptance criteria range at 53.8%. Third-party validation qualified all of the silicon data in SDG K0465 as estimated with "J" flags. The data are useable for decision-making purposes.

SDG K0475

This SDG consists of 19 field samples (J12P05 through J12P24). Because of variable sample needs in different sampling areas, the individual samples were submitted for some or all of the following analyses: VOA, SVOA, pesticides, TPH, hexavalent chromium, ICP metals, mercury, and PCBs. Please refer to Table 4 for a detailed account of the sampling areas, associated sample numbers, and applicable analyses. No major deficiencies were found in SDG K0476. The minor deficiencies are as follows:

The common laboratory contaminant methylene chloroide was found in the VOA MBs (0.003 to 0.005 mg/kg) and in the field samples (0.004 to 0.011 mg/kg) at values less than the RDL. Based on the MB results, these detections are all small enough that methylene chloride can be considered non-detected in the field samples. The data are useable for decision-making purposes.

In the SVOA, 1 of 128 MS recoveries is below the acceptance criteria. The MS recovery for 1,2,4-trichlorobenzene is 58%. This result suggests a low bias in the 1,2,4-trichlorobenzene data. The 1,2,4-trichlorobenzene data are considered estimated but useable for decision-making purposes.

In the SVOA, 2 of 64 LCS recoveries are below the acceptance criteria. The LCS recoveries for 1,2,4-trichlorobenzene and 2-methylnaphthalene are 53% and 59%, respectively. These results suggest a low bias in the data for these analytes. The 1,2,4-trichlorobenzene and 2-methylnaphthalene data are considered estimated but useable for decision-making purposes.

The common laboratory contaminants bis(2-ethylhexyl)phthalate and di-n-butylphthalate were found in the SVOA MB and all of the field samples at concentrations below the RDLs. The data for these two analytes are considered estimated but useable for decision-making purposes.

In the pesticide analysis, 2 of 30 surrogates were below the acceptance criteria. Surrogate recoveries in sample J12P09 were 26% and 28%. There is a 5-fold difference between the practical quantitation limit and the limit of quantitation. Therefore, analytes in the pesticide analysis would still have been detected at the RDL, if they had been present in sample J12P09. The non-detected pesticide analytes (all analytes) in sample J12P09 are considered estimated but useable for decision-making purposes.

In the TPH analysis, an LCS recovery was above the laboratory acceptance criteria (120%) at 120.4 %. This result suggests a slight high bias in the TPH analysis for SDG K0475. The TPH data are considered estimated but useable for decision-making purposes.

In the ICP metals analysis, the LCS recovery for silicon was below the acceptance criteria at 26.2%. Silicon often exhibits low recovery in the LCS, which suggests a low bias in the data for silicon. The silicon data are considered estimated but useable for decision-making purposes.

Four analytes (aluminum, iron, antimony, silicon) in the ICP metals analysis had MS results outside the acceptance criteria range. Analyte concentrations from the spiking mixture are often insignificant compared to the native concentrations found in the sample from which the MS was prepared. This deficiency in the MS recoveries is more of a reflection of the analytical variability relative to the sample concentration than a measure of the recovery of the spike from the sample. To confirm quantitation, PDSs and serial dilutions were prepared and analyzed for the four analytes with acceptable results (97 to 104%). The data are useable for decision-making purposes.

The RPD calculated from the ICP metals laboratory duplicate for copper was above the acceptance criteria at 55.8%. Elevated RPDs are attributed to natural heterogeneities in the sample matrix due to well known problems in producing homogeneous soil samples from environmental matrices. The copper data are considered estimated but useable for decision-making purposes.

SDG K4076

This SDG consists of four field samples (J12P25, J12P26, J12P56, and J12P57). Because of variable sample needs in the different sampling areas, the individual samples were submitted for some or all of the following analyses: VOA, SVOA, pesticides, TPH, hexavalent chromium, ICP metals, mercury, and PCBs. Please refer to Table 4 for a detailed account of the sampling areas, associated sample number, and applicable analyses. No major deficiencies were found in SDG K0476. Minor deficiencies are as follows:

The common laboratory contaminant methylene chloride was found in the VOA MB at a concentration less than the RDL. There is no significant impact on the field sample data. The data are useable for decision-making purposes.

The VOA MS result for 1,1,2,2-tetrachloroethane did not meet the acceptance criteria at 135%. This result suggests a high bias in the 1,1,2,2-tetrachloroethane data. High-biased data are considered estimated but useable for decision-making purposes.

In the VOA, 3 of 70 LCS recoveries were below the acceptance criteria (cis- and trans-1,3-dichloropropane, both at 67%, and 1,1,2,2- tetrachloroethane at 64%). These results suggest a slight low bias in the data for these analytes. The data are considered estimated but useable for decision-making purposes.

The VOA MSD, but not the MS, was analyzed past hold time. The overall hold time was less than twice the prescribed hold time. The field samples were analyzed within hold time. The MSD data are considered estimated, but there is no impact on the field sample data. The data are useable for decision-making purposes.

The common laboratory contaminant bis(2-ethylhexyl)phthalate was found in the SVOA MB at a concentration less than the RDL. There is no significant impact on the field sample data. The data are useable for decision-making purposes.

In the SVOC analysis, 11 of 128 MS recoveries were outside of the acceptance criteria. The analytes and MS recoveries were: bis(2-chloroethyl)ether 38%, 2-chlorophenol 40%, 1,3-dichlorobenzene 26%, 1,4-dichlorobenzene 27%, 1,2-dichlorobenzene 31%, 2-methylphenol 54%, 2,2-oxybis(1-chloropropane) 40%, hexachloroethane 27%, nitrobenzene 44%, 2-nitrophenol 48%, and 1,2,4-trichlorobenzene 41%. The loss of these more volatile analytes in the SVOA suggests a laboratory error during the concentration step of the extraction. The MSD and LCS recoveries are not affected. The field sample data for these analytes may have a low bias and are considered estimated but useable for decision-making purposes.

In the pesticide analysis, a CCV sample exceeded +/- 15% calibration verification on the secondary (confirmatory) column. Quantitation of the samples was performed using data from the primary column. There is no impact on the sample data. The data are useable for decision-making purposes.

In the pesticide analysis, the analyte toxaphene was not included in the MS, MSD, or LCS samples. The laboratory typically quantitates toxaphene but does not include toxaphene in QA/QC samples. The toxaphene data is, therefore, considered estimated but useable for decision-making purposes.

The MS recovery for hexavalent chromium is below the acceptance criteria at 60.2%. The low MS recovery also resulted in an elevated RPD for hexavalent chromium between the MS and the MSD, which does not have a low recovery. The LCS recovery is within acceptance criteria. These findings may suggest a low bias in the data. The hexavalent chromium data are considered estimated but useable for decision-making purposes.

In the ICP metals analysis, 7 analytes (aluminum, cadmium, chromium, iron, lead, antimony, and silicon) in the MS were recovered outside the acceptance criteria. Because sample material is used to make up the MSs and the composition of the sample matrix is not known ahead of time, the added spike can be inappropriate in relation to concentrations of an analyte in the sample. To verify quantitation, PDSs and serial dilutions were prepared from the MSs and analyzed to the analytes mentioned above. The PDSs for these analytes were all within the range of 95 to 107%. The data are considered useable for decision-making purposes.

In the ICP metals analysis, the analytes calcium and lead had elevated RPDs in the laboratory duplicate at 38.2% and 55.1%, respectively. Samples J12P25 and J12P27 are field duplicates which have elevated RPDs for the analytes copper and lead at 71% and 57%, respectively. Difficulty in producing truly homogeneous mixtures of soils is well known. Elevated RPDs such as these are attributed to natural heterogeneities in the sample matrices that make up the samples. The data are useable for decision-making purposes.

The ICP metals LCS result for silicon was below the acceptance criteria at 53.8%. This is a typical result for silicon and may suggest a low bias in the associated data. The silicon data is considered estimated but useable for decision-making purposes.

SDG K0482

This SDG consists of one field sample (J12P27), analyzed for VOCs, TPH, hexavalent chromium, ICP metals, mercury, and PCBs. One major deficiency was found in SDG K0482. Major and minor deficiencies are as follows:

The common laboratory contaminant methylene chloroide was found in the VOA MB at a concentration below the RDL. This detection is small enough that there is no appreciable impact on the methylene chloride data in the field sample. The data are useable for decision-making purposes.

The MS/MSD pair in the VOA was analyzed outside of the established hold time. The field samples were analyzed within the appropriate hold time. Because the MS/MSD pair was analyzed at less than twice the hold time, the resulting data are considered estimated but useable for decision-making purposes.

In the VOA analysis, 1 of 70 MS recoveries was below the acceptance criteria. The MS recovery for 2-hexanone was 7%. This is below the established 10% threshold for estimated data and associated 2-hexanone was therefore rejected by the project. The 2-hexanone data in SDG K0482 is not useable for decision-making purposes. It should be noted that this analyte has been rejected on a technical basis. There were no associated analytes detected in the sample and solvents such as this are not usually found individually without other detections. There are no known Hanford Site processes that would have resulted exclusively in this analyte. Therefore, there is no reason to assume that 2-hexanone was present in the sample.

SDG K0530

This SDG consists of 15 field samples (J13553 through J13567) analyzed for PCBs. Samples in previously collected SDGs were inadvertently not analyzed for PCBs as indicated in the work instruction. The original samples could not be analyzed for PCBs because the discrepancy was discovered too late to meet holding time requirements. These samples were collected from the same locations as the original samples and analyzed for PCBs within the holding time. Please refer to Table 4 for a summary of the associated samples and sample locations. No deficiencies were found in the SDG K0530 data. The data are useable for decision-making purposes.

SDG K0531

This SDG consists of 14 field samples (J13568 through J13581) analyzed for PCBs. Samples in previously collected SDGs were inadvertently not analyzed for PCBs as indicated in the work instruction. The original samples could not be analyzed for PCBs because the discrepancy was discovered too late to meet holding time requirements. These samples were collected from the same locations as the original samples and analyzed for PCBs within the holding time. Please

refer to Table 4 for a summary of the associated samples and sample locations. No deficiencies were found in the SDG K0531 data. The data are useable for decision-making purposes.

SDG 06I-3367-01

This SDG consists of 20 field samples (J12P58 through J12P77) analyzed for asbestos. No deficiencies were found in the SDG 06I-3367-01 data. The data are useable for decision-making purposes.

SDG 06I-3442-01

This SDG consists of one field sample (J12P78) analyzed for asbestos. No deficiencies were found in the SDG 06I-3442-01 data. The data are useable for decision-making purposes.

SDG 06I-3446-01

This SDG consists of seven field samples (J12P79 through J12P85) analyzed for asbestos. No deficiencies were found in the SDG 06I-3446-01 data. The data are useable for decision-making purposes.

SDG 06I-3471-01

This SDG consists of 24 field samples (J12P86 through J12P99, J12PB0 through J12PB6, and J12R21 through J12R23) analyzed for asbestos. No deficiencies were found in the SDG 06I-3471-01 data. The data are useable for decision-making purposes.

Summary

Limited, random, or sample matrix-specific influenced batch QC issues such as those identified above are a potential for any analysis. The number and types seen in these data sets were within expectations for the matrix types and analyses performed. The DQA review of the 128-B-3 verification sampling data found that, with the exception of two instances of data being rejected (see SDG K0464 and SDG K0482), the results are accurate within the standard errors associated with the analytical methods, sampling, and sample handling. The DQA review for 128-B-3 waste site concludes that the reviewed data are of the right type, quality, and quantity to support the intended use. Detection limits, precision, accuracy, and sampling data group completeness were assessed to determine if any analytical results should be rejected as a result of QA and QC deficiencies. Except for the two exceptions mentioned above, the analytical data were found acceptable for decision-making purposes. The verification sample analytical data are stored in the ENRE project-specific database prior to being submitted for inclusion in the HEIS database. The verification sample analytical data are also provided with the statistical calculations in Appendix C.

SUMMARY FOR INTERIM CLOSURE

The 128-B-3 waste site has been remediated in accordance with the Remaining Sites ROD (EPA 1999) and the RDR/RAWP (DOE-RL 2005b). The site was remediated by removing approximately 21,000 BCM (27,500 BCY) of material to disposal at ERDF. Statistical and judgmental sampling to verify the completeness of remediation was performed, and analytical results for upland areas were shown to meet the cleanup objectives for direct exposure, groundwater protection, and river protection. Analytical results for the remediated river embankment were shown to meet the cleanup objectives for direct exposure and to not significantly exceed soil RAGs for protection of groundwater and the Columbia River. This evaluation concluded that further remedial action to remove additional soils would likely pose a greater risk to human health and the environment than leaving soils in place and backfilling the site. Accordingly, an interim closure reclassification is supported for the 128-B-3 waste site, with imposition of institutional controls on the river embankment area to prevent activities that would mobilize residual contaminants to travel to groundwater or the river. Institutional controls will be maintained until such time that the results of a baseline risk assessment can be considered (for a final site remedy or closure). The remainder of the site does not have a deep zone or residual contaminant concentrations that would require any institutional controls.

ENDNOTES

[a] Lookup values and RAGs obtained from the RDR/RAWP (DOE-RL 2005b) or calculated per WAC 173-340-720, 730, and 740, Method B, 1996, unless otherwise noted.

[b] Noncarcinogenic cleanup level calculated from WAC 173-340-740(3), 1996 (Method B for soils) (as presented in the 100 Area RDR/RAWP [DOE-RL 2005b]). Updated oral reference dose values (as provided in the Integrated Risk Information System [IRIS]) yield Method B direct exposure RAG values of 16,000 mg/kg and 120,000 mg/kg for barium and chromium, respectively.

[c] Barium soil cleanup level for groundwater protection calculated from WAC 173-340-740(3)(a)(ii)(A), 1996 ("100 times rule") and WAC 173-340-720(3), 1996 (Method B for groundwater) is 112 mg/kg (as presented in the RDR/RAWP [DOE-RL 2005b]). The updated oral reference dose value (as provided in IRIS) yields a Method B groundwater cleanup criteria of 7 mg/L, as compared to the more restrictive maximum contaminant level (MCL) of 2 mg/L (40 CFR 141). Per WAC 173-340-740(3)(a)(ii)(A), 1996 ("100 times rule"), the most restrictive updated soil cleanup level for groundwater protection would be 200 mg/kg.

[d] Where cleanup levels are less than background, cleanup levels default to background (WAC 173-340-700[4][d]) (1996).

[e] Barium soil cleanup level for river protection calculated from WAC 173-340-740(3)(a)(ii)(A), 1996 ("100 times rule"), a dilution-attenuation factor of 2, and WAC 173-340-720(3), 1996 (Method B for groundwater) is 224 mg/kg (as presented in the RDR/RAWP [DOE-RL 2005b]). No surface water bioconcentration factor is available for barium and no ambient water quality criteria (AWQC) value exists separate from the previous drinking water standard; therefore no WAC 173-340-730(3), 1996 (Method B for surface waters) value can be determined.

[f] Carcinogenic cleanup level calculated based on the inhalation exposure pathway per WAC 173-340-750[3], 1996 (Method B for air quality) and an airborne particulate mass loading rate of 0.0001 g/m^3 (WDOH 1997).

[g] No Hanford Site-specific or Washington State background value available.

[h] No parameters are available from the Ecology Cleanup Levels and Risk Calculations database (Ecology 2005), and no bioconcentration factor or AWQC values are available to calculate cleanup levels (WAC 173-340-730(3)(a)(iii), 1996 [Method B for surface waters]).

[i] Analyte was not retained for evaluation under Phase II verification sampling within the sampling area; value based on quantitation in Phase I verification sampling.

[j] Calculated cleanup level (per WAC 173-340-720(3), 1996 [Method B for groundwater] and WAC 173-340-740(3)(a)(ii)(A), 1996 ["100 times rule"]) presented is lower than that presented in the RDR/RAWP (DOE-RL 2005b), based on updated oral reference dose value (as provided in IRIS).

[k] RAG values for TPH obtained from WAC 173-340-740(2), 1996 (Method A for soils).
[l] Where cleanup levels are less than the RDL, cleanup levels default to the RDL (WAC 173-340-707[2], 1996 and DOE-RL 2005b).
[m] Based on the *100 Area Analogous Sites RESRAD Calculations* (BHI 2005), Aroclor-1254 is not expected to migrate more than 1 m (3.3 ft) vertically in 1,000 years. The vadose zone underlying the disposal pits remediation footprint is approximately 9 m (30 ft) thick.
[n] RAG value listed in the RDR/RAWP (DOE-RL 2005b) is based on the use of benzo(a)pyrene as a surrogate. Compound-specific carcinogenic cleanup level calculated per WAC 173-340-740(3), 1996 (Method B for soils) using Oak Ridge National Laboratory oral cancer potency factors.
[o] The statistical verification data set fails the second and/or third component of the WAC 173-340-740(7)(e) 3-part test in comparison against soil RAGs for groundwater and/or river protection (one or more sample concentrations exceeds twice the soil RAG value and/or more than 10% of the data set exceeds the soil RAG value).
[p] The river embankment sampling area extends to groundwater and the Columbia River; therefore, no uncontaminated zone exists to evaluate the sampling area by the *100 Area Analogous Sites RESRAD Calculations* (BHI 2005).
[q] Hanford Site-specific background value is not available; not evaluated during background study. Value used is from *Natural Background Soil Metals Concentrations in Washington State* (Ecology 1994).
[r] Based on the *100 Area Analogous Sites RESRAD Calculations* (BHI 2005), contaminant is not expected to migrate more than 3 m (10 ft) vertically in 1,000 years. The vadose zone underlying the upland area and waste staging pile footprints is at least 13 m (43 ft) thick.
[s] Direct exposure and groundwater protection RAG values for chlordane were mistakenly calculated based on carcinogenicity data for lindane in the RDR/RAWP (DOE-RL 2005b). Corrected values are presented in this table.
[t] Toxicity data for this chemical are not available. RAGs for benzo(g,h,i)perylene and phenanthrene are based on the surrogate chemicals pyrene and anthracene, respectively.

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APPENDIX A

SITE PHOTOGRAPHY

Photograph 1. 128-B-3 River Embankment Area Prior to Remediation (October 2004).

Photograph 2. 128-B-3 River Embankment Area Prior to Remediation (October 2004).

Photograph 3. 128-B-3 River Embankment Area Prior to Remediation (October 2004).

Photograph 4. 128-B-3 Upland Site Surface Prior to Remediation (October 2004).

Photograph 5. Debris at the 128-B-3 River Embankment Prior to Remediation (November 2004).

Photograph 6. Northern 128-B-3 Disposal Pit Following Excavation (May 2006).

Photograph 7. 128-B-3 River Embankment Area Following Remediation (May 2006).

APPENDIX B

IN-PROCESS AND WASTE CHARACTERIZATION ANALYTICAL RESULTS

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Sample Location	HEIS Number	Sample Date	Aluminum			Antimony			Arsenic			Barium			Beryllium			Boron		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Waste characterization	J10L48	11/7/05							5.0	C	0.73	109	C	0.04						
Waste characterization	J10LY9	11/14/05							5.6	C	0.36	137	C	0.02						
Burned debris	J02J09	3/1/05	5160	C	5.3	106	C	1.2	57.8	C	1.6	266		0.11	0.33	C	0.06	30.3		0.96
Soil in carbon-steel pipe	J02J10	3/1/05	7850	C	0.77	1.2	C	0.18	6.3	C	0.24	102		0.02	0.53	C	0.008	8.8		0.14
Soil beneath chicken wire	J02J11	3/1/05	8820	C	1.1	13.8	C	0.26	7.8	C	0.34	164		0.02	0.54	C	0.01	8.1		0.20
Suspect asphalt in barrel	J02J12	3/1/05	3500	C	0.85	0.65	C	0.2	7.0	C	0.26	588		0.02	0.35	C	0.009	7.2		0.15
Debris / stressed vegetation	J02J13	3/1/05	5330	C	1.9	2.3	C	0.45	7.8	C	0.59	61.5		0.04	0.46	C	0.02	4.4		0.34
Burned debris	J02J14	3/1/05	21900	C	1.7	2.8	C	0.39	11	C	0.51	1860		0.04	2.0	C	0.02	152		0.30
Waste characterization	J10DW8	10/26/05							7.8		2.9	141		0.06						
Suspect tar drum	J10LY7	11/14/05							1.8	C	0.33	36.1		0.02						
Suspect oil drum	J10LY8	11/14/05							0.33	U	0.33	1.7		0.02						

Sample Location	HEIS Number	Sample Date	Bromide			Cadmium			Calcium			Chloride			Chromium			Cobalt		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Waste characterization	J10L48	11/7/05				0.237		0.15							35.7	C	0.34			
Waste characterization	J10LY9	11/14/05				0.25		0.07							29.8		0.17			
Suspect battery component	J02296*	11/8/04	5.5		2.4							1010		122						
Burned debris	J02J09	3/1/05				2.6		0.23	40200	C	4.4				292	C	0.23	14.5		0.39
Soil in carbon-steel pipe	J02J10	3/1/05				0.41		0.03	7780	C	0.64				52.9	C	0.03	8.0		0.06
Soil beneath chicken wire	J02J11	3/1/05				3.1		0.05	5430	C	0.91				78.1	C	0.05	11.0		0.08
Suspect asphalt in barrel	J02J12	3/1/05				2.0		0.04	10300	C	0.7				41.5	C	0.04	7.3		0.06
Debris / stressed vegetation	J02J13	3/1/05				0.08	U	0.08	6790	C	1.6				28.3	C	0.08	8.4		0.14
Burned debris	J02J14	3/1/05				1.0		0.07	40200	C	1.4				28.0	C	0.07	10.9		0.12
Waste characterization	J10DW8	10/26/05				0.588		0.24							29.0		0.43			
Suspect tar drum	J10LY7	11/14/05				0.068	U	0.07							8.1		0.16			
Suspect oil drum	J10LY8	11/14/05				0.07	U	0.07							0.58		0.15			

*Only analyzed for IC anions.

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Sample Location	HEIS Number	Sample Date	Fluoride			Hexavalent Chromium			Iron			Lead			Magnesium			Mercury		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Yellow stained soil	J02027**	11/2/04				0.25		0.21												
Stained soil	J02289**	11/3/04				0.24		0.20												
Waste characterization	J10L48	11/7/05										1240		0.67				0.20		0.02
Waste characterization	J10LY9	11/14/05										31.7		0.32				0.18		0.01
Suspect battery component	J02296*	11/8/04	2.4	U	2.4															
Burned debris	J02J09	3/1/05							222000	C	4.7	2840		1.1	1890	C	3.2	0.77		0.02
Burned debris	J02J09-A**	3/1/05				0.35	U	0.35												
Soil in carbon-steel pipe	J02J10	3/1/05							24700	C	0.68	58.8		0.15	4620	C	0.46	0.6		0.02
Soil in carbon-steel pipe	J02J10-A**	3/1/05				0.35	U	0.35												
Soil beneath chicken wire	J02J11	3/1/05							44400	C	0.98	1200		0.22	4880	C	0.66	1.6		0.02
Soil beneath chicken wire	J02J11-A**	3/1/05				0.35	U	0.35												
Suspect asphalt in barrel	J02J12	3/1/05							43500	C	0.76	346		0.17	2880	C	0.51	0.25		0.02
Suspect asphalt in barrel	J02J12-A**	3/1/05				0.35	U	0.35												
Debris / stressed vegetation	J02J13	3/1/05							70800	C	1.7	89.5		0.39	2830	C	1.2	0.02	U	0.02
Debris / stressed vegetation	J02J13-A**	3/1/05				0.35	U	0.35												
Burned debris	J02J14	3/1/05							48500	C	1.5	99.2		0.34	8120	C	1	0.26		0.02
Burned debris	J02J14-A**	3/1/05				0.35	U	0.35												
Waste characterization	J10DW8	10/26/05										60.8		1.8				0.02		0.02
Suspect tar drum	J10LY7	11/14/05										17.7		0.3						
Suspect oil drum	J10LY8	11/14/05										7.9		0.3				0.17	U	0.17

*Only analyzed for IC anions.

**Only analyzed for hexavalent chromium.

Sample Location	HEIS Number	Sample Date	Molybdenum			Nickel			Nitrate			Nitrite			Phosphate			Potassium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Suspect battery component	J02296*	11/8/04							72.4		2.44	12.2	U	12.2	2.4	U	2.4			
Burned debris	J02J09	3/1/05	46.9		0.96	98.7		0.56										2430	C	4.7
Soil in carbon-steel pipe	J02J10	3/1/05	1.1		0.14	16		0.08										2500	C	4.1
Soil beneath chicken wire	J02J11	3/1/05	7.6		0.20	31.4		0.12										2060	C	5.9
Suspect asphalt in barrel	J02J12	3/1/05	1.8		0.15	27.8		0.09										901	C	4.5
Debris / stressed vegetation	J02J13	3/1/05	8.4		0.34	51.9		0.20										1360	C	5.1
Burned debris	J02J14	3/1/05	5.8		0.30	32.2		0.18										1280	C	4.5

*Only analyzed for IC anions.

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Sample Location	HEIS Number	Sample Date	Selenium			Silicon			Silver			Sodium			Sulfate			Vanadium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
Waste characterization	J10L48	11/7/05	0.78	U	0.78				0.302		0.3									
Waste characterization	J10LY9	11/14/05	0.38	U	0.38				0.15	U	0.15									
Suspect battery component	J02296*	11/8/04													967		122			
Burned debris	J02J09	3/1/05	2.3	U	2.3	444		3.3	10.1		0.28	2200	C	0.85				40.5		0.34
Soil in carbon-steel pipe	J02J10	3/1/05	0.33	U	0.33	219		0.47	0.08		0.04	269	C	0.73				49.0		0.05
Soil beneath chicken wire	J02J11	3/1/05	0.47	U	0.47	150		0.68	0.29		0.06	251	C	1.0				46.0		0.07
Suspect asphalt in barrel	J02J12	3/1/05	0.36	U	0.36	287		0.52	0.13		0.04	192	C	0.81				40.8		0.05
Debris / stressed vegetation	J02J13	3/1/05	0.81	U	0.81	397		1.2	0.10	U	0.10	398	C	0.91				36.4		0.12
Burned debris	J02J14	3/1/05	0.71	U	0.71	536		1.0	0.14		0.09	2080	C	0.8				57.2		0.11
Waste characterization	J10DW8	10/26/05	2.6	U	2.6				0.49	U	0.49									
Suspect tar drum	J10LY7	11/14/05	0.37		0.35				0.136	U	0.14									
Suspect oil drum	J10LY8	11/14/05	0.35	U	0.35				0.13	U	0.13									

*Only analyzed for IC anions.

Sample Location	HEIS Number	Sample Date	Zinc			Total Petroleum Hydrocarbons		
			mg/kg	Q	PQL	mg/kg	Q	PQL
Burned debris	J02J09	3/1/05	1020	C	0.28	51.7		38.5
Soil in carbon-steel pipe	J02J10	3/1/05	163	C	0.24	162		35.3
Soil beneath chicken wire	J02J11	3/1/05	5320	C	0.35	49.3		40.6
Suspect asphalt in barrel	J02J12	3/1/05	2510	C	0.27	49600		6830
Debris / stressed vegetation	J02J13	3/1/05	71.2	C	0.3	38.3	U	38.3
Burned debris	J02J14	3/1/05	157	C	0.27	42.9		35.7
Suspect tar drum	J10LY7	11/14/05	157	C	0.27	158000		26900

Acronyms and notes apply to all of the tables in this appendix.

B = blank contamination (organic constituents)
C = blank contamination (inorganic constituents)
D = diluted
HEIS = Hanford Environmental Information System
IC = ion chromatography
J = estimate
NA = not applicable
PQL = practical quantitation limit
Q = qualifier
TCLP = toxicity characteristic leaching procedure
U = undetected

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Constituents	J10YT9 Ash 11/02/04			J01YV0 Soil/tar 11/02/04			J01YV1 Suspect paint 11/02/04			J02295 Suspect paint 11/08/04		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	35	U	35	36	U	36	570	U	570	1000	U	1000
Aroclor-1221	35	U	35	36	U	36	570	U	570	1000	U	1000
Aroclor-1232	35	U	35	36	U	36	570	U	570	1000	U	1000
Aroclor-1242	35	U	35	36	U	36	570	U	570	1000	U	1000
Aroclor-1248	35	U	35	36	U	36	570	U	570	1000	U	1000
Aroclor-1254	35	U	35	39		36	570	U	570	1000	U	1000
Aroclor-1260	35	U	35	36	U	36	410	J	570	1000	U	1000

Constituents	J02J09 Burned debris 3/01/05			J02J10 Soil in pipe 3/01/05			J02J11 Soil beneath chicken wire 3/01/05			J02J12 Suspect Asphalt 3/01/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Herbicides												
2,4-Dichlorophenoxyacetic acid	39	U	39	36	U	36	41	U	41	34	U	34
2-(2,4,5-Trichlorophenoxy)propionic acid	19	U	19	18	U	18	20	U	20	17	U	17
2-secButyl-4,6-dinitrophenol(DNBP)	19	U	19	18	U	18	20	U	20	17	U	17
4-(2,4-Dichlorophenoxy)butanoic acid	190	U	190	180	U	180	200	U	200	170	U	170
Dalapon	190	U	190	180	U	180	200	U	200	170	U	170
Dicamba	77	U	77	71	U	71	82	U	82	68	U	68
Dichloroprop	190	U	190	180	U	180	200	U	200	170	U	170
Pesticides												
Aldrin	1.9	U	1.9	1.8	U	1.8	2	U	2	68	UD	68
alpha-BHC	1.9	U	1.9	1.8	U	1.8	3.9		2	68	UD	68
alpha-Chlordane	1.9	U	1.9	1.8	U	1.8	2	U	2	68	UD	68
beta-1,2,3,4,5,6-Hexachlorocyclohexane	3.4		1.9	1.8	U	1.8	2	U	2	130	D	68
delta-BHC	1.9	U	1.9	1.8	U	1.8	2	U	2	68	UD	68
Dichlorodiphenyldichloroethane	3.9	U	3.9	3.6	U	3.6	7		4.1	140	UD	140
Dichlorodiphenyldichloroethylene	3.9	U	3.9	3.6	U	3.6	4.1	U	4.1	140	UD	140
Dichlorodiphenyltrichloroethane	3.9	U	3.9	3	J	3.6	7.4		4.1	140	UD	140
Dieldrin	3.9	U	3.9	3.6	U	3.6	4.1	U	4.1	140	UD	140
Endosulfan I	3.7		3.9	3.6	U	3.6	2	U	2	68	UD	68
Endosulfan II	3.9	U	3.9	3.6	U	3.6	2.9	J	4.1	140	UD	140
Endosulfan sulfate	3.9	U	3.9	3.6	U	3.6	3	J	4.1	140	UD	140
Endrin	3.9	U	3.9	3.6	U	3.6	4.1	U	4.1	140	UD	140
Endrin aldehyde	3.9	U	3.9	3.6	U	3.6	3.5	J	4.1	100	JD	140
Endrin ketone	3.9	U	3.9	3.6	U	3.6	3.9	J	4.1	95	JD	95
gamma-BHC (Lindane)	1.9	U	1.9	1.8	U	1.8	2	U	2	68	UD	68
gamma-Chlordane	1.9	U	1.9	1.8	U	1.8	2	U	2	68	UD	68
Heptachlor	1.9	U	1.9	1.8	U	1.8	2	U	2	68	UD	68
Heptachlor epoxide	1.9	U	1.9	1.8	U	1.8	2	U	2	68	UD	68
Methoxychlor	4.1	J	19	18	U	18	20	U	20	680	UD	680
Toxaphene	190	U	190	180	U	180	200	U	200	6800	UD	6800
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
1,2-Dichlorobenzene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
1,3-Dichlorobenzene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
1,4-Dichlorobenzene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
2,4,5-Trichlorophenol	960	U	960	1800	UD	1800	4100	UD	4100	860	U	860

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Constituents	J02J09 Burned debris 3/01/05			J02J10 Soil in pipe 3/01/05			J02J11 Soil beneath chicken wire 3/01/05			J02J12 Suspect Asphalt 3/01/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
2,4,6-Trichlorophenol	390	U	390	710	UD	710	1600	UD	1600	340	U	340
2,4-Dichlorophenol	390	U	390	710	UD	710	1600	UD	1600	340	U	340
2,4-Dimethylphenol	390	U	390	710	UD	710	1600	UD	1600	340	U	340
2,4-Dinitrophenol	960	U	960	1800	UD	1800	4100	UD	4100	860	U	860
2,4-Dinitrotoluene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
2,6-Dinitrotoluene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
2-Chloronaphthalene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
2-Chlorophenol	390	U	390	710	UD	710	1600	UD	1600	340	U	340
2-Methylnaphthalene	25	J	390	710	UD	710	1600	UD	1600	340	U	340
2-Methylphenol (cresol, o-)	390	U	390	710	UD	710	1600	UD	1600	340	U	340
2-Nitroaniline	960	U	960	1800	UD	1800	4100	UD	4100	860	U	860
2-Nitrophenol	390	U	390	710	UD	710	1600	UD	1600	340	U	340
3+4 Methylphenol (cresol, m+p)	390	U	390	710	UD	710	1600	UD	1600	340	U	340
3,3'-Dichlorobenzidine	390	U	390	710	UD	710	1600	UD	1600	340	U	340
3-Nitroaniline	960	U	960	1800	UD	1800	4100	UD	4100	860	U	860
4,6-Dinitro-2-methylphenol	960	U	960	1800	UD	1800	4100	UD	4100	860	U	860
4-Bromophenylphenyl ether	390	U	390	710	UD	710	1600	UD	1600	340	U	340
4-Chloro-3-methylphenol	390	U	390	710	UD	710	1600	UD	1600	340	U	340
4-Chloroaniline	390	U	390	710	UD	710	1600	UD	1600	340	U	340
4-Chlorophenylphenyl ether	390	U	390	710	UD	710	1600	UD	1600	340	U	340
4-Nitroaniline	960	U	960	1800	UD	1800	4100	UD	4100	860	U	860
4-Nitrophenol	960	U	960	1800	UD	1800	4100	UD	4100	860	U	860
Acenaphthene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Acenaphthylene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Anthracene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Benzo(a)anthracene	390	U	390	100	JD	710	1600	UD	1600	340	U	340
Benzo(a)pyrene	390	U	390	77	JD	710	1600	UD	1600	340	U	340
Benzo(b)fluoranthene	390	U	390	130	JD	130	1600	UD	1600	67	J	340
Benzo(ghi)perylene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Benzo(k)fluoranthene	390	U	390	110	JD	110	1600	UD	1600	53	J	340
bis(2-Chloro-1-methylethyl)ether	390	U	390	710	UD	710	1600	UD	1600	340	U	340
bis(2-Chloroethoxy)methane	390	U	390	710	UD	710	1600	UD	1600	340	U	340
bis(2-Chloroethyl) ether	390	U	390	710	UD	710	1600	UD	1600	340	U	340
bis(2-Ethylhexyl) phthalate	33	JB	390	710	UD	710	1600	UD	1600	340	U	340
Butylbenzylphthalate	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Carbazole	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Chrysene	390	U	390	140	JD	710	1600	UD	1600	83	J	340
Di-n-butylphthalate	26	JB	390	710	UD	710	1600	UD	1600	340	U	340
Di-n-octylphthalate	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Dibenz[a,h]anthracene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Dibenzofuran	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Diethylphthalate	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Dimethyl phthalate	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Fluoranthene	24	J	390	150	JD	150	1600	UD	1600	51	J	340
Fluorene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Hexachlorobenzene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Hexachlorobutadiene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Hexachlorocyclopentadiene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Hexachloroethane	390	U	390	710	UD	710	1600	UD	1600	340	U	340

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Constituents	J02J09 Burned debris 3/01/05			J02J10 Soil in pipe 3/01/05			J02J11 Soil beneath chicken wire 3/01/05			J02J12 Suspect Asphalt 3/01/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
Indeno(1,2,3-cd)pyrene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Isophorone	390	U	390	710	UD	710	1600	UD	1600	340	U	340
N-Nitroso-di-n-dipropylamine	390	U	390	710	UD	710	1600	UD	1600	340	U	340
N-Nitrosodiphenylamine	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Naphthalene	110	J	390	36	JD	710	1600	UD	1600	340	U	340
Nitrobenzene	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Pentachlorophenol	960	U	960	1800	UD	1800	4100	UD	4100	860	U	340
Phenanthrene	69	J	390	710	UD	710	1600	UD	1600	53	J	
Phenol	390	U	390	710	UD	710	1600	UD	1600	340	U	340
Pyrene	390	U	390	100	JD	100	1600	UD	1600	55	J	340

Constituents	J02J13 Debris / stressed vegetation 3/01/05			J02J14 Burned Debris 3/01/05			J10DW8 Waste characterization 10/26/05			J10L48 Waste characterization 11/07/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Herbicides												
2,4-Dichlorophenoxyacetic acid	39	U	39	36	U	36						
2-(2,4,5-Trichlorophenoxy)propionic acid	19	U	19	18	U	18						
2-secButyl-4,6-dinitrophenol(DNBP)	19	U	19	18	U	18						
4-(2,4-Dichlorophenoxy)butanoic acid	190	U	190	180	U	180						
Dalapon	190	U	190	180	U	180						
Dicamba	77	U	77	71	U	71						
Dichloroprop	190	U	190	180	U	180						
Pesticides												
Aldrin	1.9	U	1.9	1.8	U	1.8						
alpha-BHC	2.6		1.9	1.8	U	1.8						
alpha-Chlordane	1.9	U	1.9	1.8	U	1.8						
beta-1,2,3,4,5,6-Hexachlorocyclohexane	1.9	U	1.9	1.8	U	1.8						
delta-BHC	6.2		1.9	1.8	U	1.8						
Dichlorodiphenyldichloroethane	3	J	3.9	8		3.6						
Dichlorodiphenyldichloroethylene	3.9	U	3.9	3.6	U	3.6						
Dichlorodiphenyltrichloroethane	3	J	3.9	6.5		3.6						
Dieldrin	3.9	U	3.9	3.6	U	3.6						
Endosulfan I	1.9	U	1.9	1.8	U	1.8						
Endosulfan II	3.9	U	3.9	3.9		3.6						
Endosulfan sulfate	3.3	J	3.3	3.8		3.6						
Endrin	9.4		3.3	3.6	U	3.6						
Endrin aldehyde	12		3.3	3.6	U	3.6						
Endrin ketone	2.7	J	3.3	3.6	U	3.6						
gamma-BHC (Lindane)	3.2		1.9	1.8	U	1.8						
gamma-Chlordane	1.9	U	1.9	1.8	U	1.8						
Heptachlor	1.9	U	1.9	1.8	U	1.8						
Heptachlor epoxide	1.9	U	1.9	1.8	U	1.8						
Methoxychlor	7.6	J	19	5.9	J	18						
Toxaphene	190	U	190	180	U	180						

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Constituents	J02J13 Debris / stressed vegetation 3/01/05			J02J14 Burned Debris 3/01/05			J10DW8 Waste characterization 10/26/05			J10L48 Waste characterization 11/07/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	390	U	390	360	U	360	1100	U	1100	370	U	370
1,2-Dichlorobenzene	390	U	390	360	U	360	1100	U	1100	370	U	370
1,3-Dichlorobenzene	390	U	390	360	U	360	1100	U	1100	370	U	370
1,4-Dichlorobenzene	390	U	390	360	U	360	1100	U	1100	370	U	370
2,4,5-Trichlorophenol	960	U	960	890	U	890	2700	U	2700	920	U	920
2,4,6-Trichlorophenol	390	U	390	360	U	360	1100	U	1100	370	U	370
2,4-Dichlorophenol	390	U	390	360	U	360	1100	U	1100	370	U	370
2,4-Dimethylphenol	390	U	390	360	U	360	1100	U	1100	370	U	370
2,4-Dinitrophenol	960	U	960	890	U	890	2700	U	2700	920	U	920
2,4-Dinitrotoluene	390	U	390	360	U	360	1100	U	1100	370	U	370
2,6-Dinitrotoluene	390	U	390	360	U	360	1100	U	1100	370	U	370
2-Chloronaphthalene	390	U	390	360	U	360	1100	U	1100	370	U	370
2-Chlorophenol	390	U	390	360	U	360	1100	U	1100	370	U	370
2-Methylnaphthalene	140	J	140	66	J	360	1100	U	1100	370	U	370
2-Methylphenol (cresol, o-)	390	U	390	360	U	360	1100	U	1100	370	U	370
2-Nitroaniline	960	U	960	890	U	890	2700	U	2700	920	U	920
2-Nitrophenol	390	U	390	360	U	360	1100	U	1100	370	U	370
3+4 Methylphenol (cresol, m+p)	390	U	390	360	U	360	1100	U	1100	370	U	370
3,3'-Dichlorobenzidine	390	U	390	360	U	360	1100	U	1100	370	U	370
3-Nitroaniline	960	U	960	890	U	890	2700	U	2700	920	U	920
4,6-Dinitro-2-methylphenol	960	U	960	890	U	890	2700	U	2700	920	U	920
4-Bromophenylphenyl ether	390	U	390	360	U	360	1100	U	1100	370	U	370
4-Chloro-3-methylphenol	390	U	390	360	U	360	1100	U	1100	370	U	370
4-Chloroaniline	390	U	390	360	U	360	1100	U	1100	370	U	370
4-Chlorophenylphenyl ether	390	U	390	360	U	360	1100	U	1100	370	U	370
4-Nitroaniline	960	U	960	890	U	890	2700	U	2700	920	U	920
4-Nitrophenol	960	U	960	890	U	890	2700	U	2700	920	U	920
Acenaphthene	390	U	390	360	U	360	1100	U	1100	370	U	370
Acenaphthylene	31	J	390	360	U	360	1100	U	1100	370	U	370
Anthracene	33	J	390	360	U	360	1100	U	1100	370	U	370
Benzo(a)anthracene	45	J	390	19	J	360	1100	U	1100	370	U	370
Benzo(a)pyrene	35	J	390	360	U	360	1100	U	1100	370	U	370
Benzo(b)fluoranthene	84	J	390	360	U	360	1100	U	1100	370	U	370
Benzo(ghi)perylene	21	J	390	360	U	360	1100	U	1100	370	U	370
Benzo(k)fluoranthene	69	J	390	360	U	360	1100	U	1100	370	U	370
bis(2-Chloro-1-methylethyl)ether	390	U	390	360	U	360	1100	U	1100	370	U	370
bis(2-Chloroethoxy)methane	390	U	390	360	U	360	1100	U	1100	370	U	370
bis(2-Chloroethyl) ether	390	U	390	360	U	360	1100	U	1100	370	U	370
bis(2-Ethylhexyl) phthalate	29	JB	390	41	JB	360	110	JB	1100	74	JB	370
Butylbenzylphthalate	390	U	390	360	U	360	1100	U	1100	370	U	370
Carbazole	390	U	390	360	U	360	1100	U	1100	370	U	370
Chrysene	93	J	390	18	J	360	1100	U	1100	370	U	370
Di-n-butylphthalate	27	JB	390	48	JB	360	1100	U	1100	370	U	370
Di-n-octylphthalate	390	U	390	360	U	360	1100	U	1100	370	U	370
Dibenz[a,h]anthracene	390	U	390	360	U	360	1100	U	1100	370	U	370
Dibenzofuran	120	J	120	360	U	360	1100	U	1100	370	U	370
Diethylphthalate	390	U	390	360	U	360	1100	U	1100	370	U	370
Dimethyl phthalate	390	U	390	360	U	360	1100	U	1100	370	U	370
Fluoranthene	200	J	200	28	J	360	1100	U	1100	370	U	370

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Constituents	J02J13 Debris / stressed vegetation 3/01/05			J02J14 Burned Debris 3/01/05			J10DW8 Waste characterization 10/26/05			J10L48 Waste characterization 11/07/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
Fluorene	390	U	390	360	U	360	1100	U	1100	370	U	370
Hexachlorobenzene	390	U	390	360	U	360	1100	U	1100	370	U	370
Hexachlorobutadiene	390	U	390	360	U	360	1100	U	1100	370	U	370
Hexachlorocyclopentadiene	390	U	390	360	U	360	1100	U	1100	370	U	370
Hexachloroethane	390	U	390	360	U	360	1100	U	1100	370	U	370
Indeno(1,2,3-cd)pyrene	24	J	390	360	U	360	1100	U	1100	370	U	370
Isophorone	390	U	390	360	U	360	1100	U	1100	370	U	370
N-Nitroso-di-n-dipropylamine	390	U	390	360	U	360	1100	U	1100	370	U	370
N-Nitrosodiphenylamine	390	U	390	360	U	360	1100	U	1100	370	U	370
Naphthalene	530		530	58	J	360	1100	U	1100	370	U	370
Nitrobenzene	390	U	390	360	U	360	1100	U	1100	370	U	370
Pentachlorophenol	960	U	960	890	U	890	2700	U	2700	920	U	920
Phenanthrene	350	J	390	44	J	360	1100	U	1100	370	U	370
Phenol	390	U	390	360	U	360	1100	U	1100	370	U	370
Pyrene	110	J	390	21	J	360	1100	U	1100	370	U	370

Constituents	J10LY7 Suspect tar drum 11/14/05			J10LY8 Suspect oil drum 11/14/05			J10LY9 Waste designation 11/14/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls									
Aroclor-1016	500	U	500	400	U	400			
Aroclor-1221	500	U	500	400	U	400			
Aroclor-1232	500	U	500	400	U	400			
Aroclor-1242	500	U	500	400	U	400			
Aroclor-1248	500	U	500	400	U	400			
Aroclor-1254	500	U	500	400	U	400			
Aroclor-1260	500	U	500	400	U	400			
Semivolatile Organic Compounds									
1,2,4-Trichlorobenzene	100000	UD	100000	200000	UD	200000	360	U	360
1,2-Dichlorobenzene	100000	UD	100000	200000	UD	200000	360	U	360
1,3-Dichlorobenzene	100000	UD	100000	200000	UD	200000	360	U	360
1,4-Dichlorobenzene	100000	UD	100000	200000	UD	200000	360	U	360
2,4,5-Trichlorophenol	250000	UD	250000	500000	UD	500000	900	U	900
2,4,6-Trichlorophenol	100000	UD	100000	200000	UD	200000	360	U	360
2,4-Dichlorophenol	100000	UD	100000	200000	UD	200000	360	U	360
2,4-Dimethylphenol	100000	UD	100000	200000	UD	200000	360	U	360
2,4-Dinitrophenol	250000	UD	250000	500000	UD	500000	900	U	900
2,4-Dinitrotoluene	100000	UD	100000	200000	UD	200000	360	U	360
2,6-Dinitrotoluene	100000	UD	100000	200000	UD	200000	360	U	360
2-Chloronaphthalene	100000	UD	100000	200000	UD	200000	360	U	360
2-Chlorophenol	100000	UD	100000	200000	UD	200000	360	U	360
2-Methylnaphthalene	100000	UD	100000	200000	UD	200000	360	U	360
2-Methylphenol (cresol, o-)	100000	UD	100000	200000	UD	200000	360	U	360
2-Nitroaniline	250000	UD	250000	500000	UD	500000	900	U	900
2-Nitrophenol	100000	UD	100000	200000	UD	200000	360	U	360
3+4 Methylphenol (cresol, m+p)	100000	UD	100000	200000	UD	200000	360	U	360
3,3'-Dichlorobenzidine	100000	UD	100000	200000	UD	200000	360	U	360

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Constituents	J10LY7 Suspect tar drum 11/14/05			J10LY8 Suspect oil drum 11/14/05			J10LY9 Waste designation 11/14/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)									
3-Nitroaniline	250000	UD	250000	500000	UD	500000	900	U	900
4,6-Dinitro-2-methylphenol	250000	UD	250000	500000	UD	500000	900	U	900
4-Bromophenylphenyl ether	100000	UD	100000	200000	UD	200000	360	U	360
4-Chloro-3-methylphenol	100000	UD	100000	200000	UD	200000	360	U	360
4-Chloroaniline	100000	UD	100000	200000	UD	200000	360	U	360
4-Chlorophenylphenyl ether	100000	UD	100000	200000	UD	200000	360	U	360
4-Nitroaniline	250000	UD	250000	500000	UD	500000	900	U	900
4-Nitrophenol	250000	UD	250000	500000	UD	500000	900	U	900
Acenaphthene	100000	UD	100000	200000	UD	200000	360	U	360
Acenaphthylene	100000	UD	100000	200000	UD	200000	360	U	360
Anthracene	100000	UD	100000	200000	UD	200000	360	U	360
Benzo(a)anthracene	100000	UD	100000	200000	UD	200000	360	U	360
Benzo(a)pyrene	100000	UD	100000	200000	UD	200000	360	U	360
Benzo(b)fluoranthene	100000	UD	100000	200000	UD	200000	360	U	360
Benzo(ghi)perylene	100000	UD	100000	200000	UD	200000	360	U	360
Benzo(k)fluoranthene	100000	UD	100000	200000	UD	200000	360	U	360
bis(2-Chloro-1-methylethyl)ether	100000	UD	100000	200000	UD	200000	360	U	360
bis(2-Chloroethoxy)methane	100000	UD	100000	200000	UD	200000	360	U	360
bis(2-Chloroethyl) ether	100000	UD	100000	200000	UD	200000	360	U	360
bis(2-Ethylhexyl) phthalate	100000	UD	100000	200000	UD	200000	53	JB	360
Butylbenzylphthalate	100000	UD	100000	200000	UD	200000	360	U	360
Carbazole	100000	UD	100000	200000	UD	200000	360	U	360
Chrysene	7700	JD	100000	200000	UD	200000	360	U	360
Di-n-butylphthalate	100000	UD	100000	200000	UD	200000	360	U	360
Di-n-octylphthalate	100000	UD	100000	200000	UD	200000	360	U	360
Dibenz[a,h]anthracene	100000	UD	100000	200000	UD	200000	360	U	360
Dibenzofuran	100000	UD	100000	200000	UD	200000	360	U	360
Diethylphthalate	100000	UD	100000	200000	UD	200000	360	U	360
Dimethyl phthalate	100000	UD	100000	200000	UD	200000	360	U	360
Fluoranthene	100000	UD	100000	200000	UD	200000	360	U	360
Fluorene	100000	UD	100000	200000	UD	200000	360	U	360
Hexachlorobenzene	100000	UD	100000	200000	UD	200000	360	U	360
Hexachlorobutadiene	100000	UD	100000	200000	UD	200000	360	U	360
Hexachlorocyclopentadiene	100000	UD	100000	200000	UD	200000	360	U	360
Hexachloroethane	100000	UD	100000	200000	UD	200000	360	U	360
Indeno(1,2,3-cd)pyrene	100000	UD	100000	200000	UD	200000	360	U	360
Isophorone	100000	UD	100000	200000	UD	200000	360	U	360
N-Nitroso-di-n-dipropylamine	100000	UD	100000	200000	UD	200000	360	U	360
N-Nitrosodiphenylamine	100000	UD	100000	200000	UD	200000	360	U	360
Naphthalene	100000	UD	100000	200000	UD	200000	360	U	360
Nitrobenzene	100000	UD	100000	200000	UD	200000	360	U	360
Pentachlorophenol	250000	UD	250000	500000	UD	500000	900	U	900
Phenanthrene	6200	JD	100000	200000	UD	200000	360	U	360
Phenol	100000	UD	100000	200000	UD	200000	360	U	360
Pyrene	100000	UD	100000	200000	UD	200000	360	U	360
Volatile Organic Compounds									
1,1,1-Trichloroethane	25	U	25	3300	UD	3300			
1,1,2,2-Tetrachloroethane	25	U	25	1700	UD	1700			
1,1,2-Trichloroethane	25	U	25	1700	UD	1700			
1,1-Dichloroethane	25	U	25	1700	UD	1700			

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Constituents	J10LY7 Suspect tar drum 11/14/05			J10LY8 Suspect oil drum 11/14/05			J10LY9 Waste designation 11/14/05		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Volatile Organic Compounds (continued)									
1,1-Dichloroethene	25	U	25	1700	UD	1700			
1,2-Dichloroethane	25	U	25	1700	UD	1700			
1,2-Dichloroethene(Total)	25	U	25	1700	UD	1700			
1,2-Dichloropropane	25	U	25	1700	UD	1700			
2-Butanone	14	J	25	1700	UD	1700			
2-Hexanone	50	U	50	3300	UD	3300			
4-Methyl-2-Pentanone	50	U	50	3300	UD	3300			
Acetone	50	J	25	3300	UD	3300			
Benzene	25	U	25	1700	UD	1700			
Bromodichloromethane	25	U	25	1700	UD	1700			
Bromoform	25	U	25	1700	UD	1700			
Bromomethane	50	U	50	550	JD	1700			
Carbon disulfide	25	U	25	1700	UD	1700			
Carbon tetrachloride	25	U	25	1700	UD	1700			
Chlorobenzene	25	U	25	1700	UD	1700			
Chloroethane	50	U	50	3300	UD	3300			
Chloroform	25	U	25	1700	UD	1700			
Chloromethane	50	U	50	3300	UD	3300			
cis-1,2-Dichloroethylene	25	U	25	1700	UD	1700			
cis-1,3-Dichloropropene	25	U	25	1700	UD	1700			
Dibromochloromethane	25	U	25	1700	UD	1700			
Ethylbenzene	25	U	25	1700	UD	1700			
m-Xylene	5	J	25	1700	UD	1700			
Methylenechloride	56	B	25	1100	JBD	1700			
o-Xylene	25	U	25	1700	UD	1700			
Styrene	25	U	25	1700	UD	1700			
Tetrachloroethene	25	U	25	1700	UD	1700			
Toluene	25	U	25	1700	UD	1700			
trans-1,2-Dichloroethylene	25	U	25	1700	UD	1700			
trans-1,3-Dichloropropene	25	U	25	1700	UD	1700			
Trichloroethene	25	U	25	1700	UD	1700			
Vinyl chloride	50	U	50	3300	UD	3300			
Xylenes (total)	5	J	25	1700	UD	1700			

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Sample Location	HEIS Number	Sample Date	1,1-Dichloroethane (TCLP)			1,2-Dichloroethane (TCLP)			1,4-Dichlorobenzene (TCLP)			2,4,5-Trichlorophenol (TCLP)			2,4,6-Trichlorophenol (TCLP)		
			mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL
Yellow stained soil	J02027	11/2/04							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Stained soil	J02289	11/3/04							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Waste characterization	J10L48	11/7/05							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Waste characterization	J10LY9	11/14/05							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Ash	J01YT9	11/2/04							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Soil/tar	J01YV0	11/2/04							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Yellow suspect paint	J01YV1	11/2/04	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Magenta suspect paint	J02295	11/8/04	0.025	U	0.025	0.025	U	0.025	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Waste characterization	J10DW8	10/26/05							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05
Suspect tar drum	J10LY7	11/14/05							0.05	U	0.05	0.12	U	0.12	0.05	U	0.05

Sample Location	HEIS Number	Sample Date	2,4-Dinitrotoluene (TCLP)			2-Butanone (TCLP)			2-Methylphenol (TCLP)			3+4 Methylphenol (TCLP)			Benzene (TCLP)		
			mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL
Yellow stained soil	J02027	11/2/04	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
Stained soil	J02289	11/3/04	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
Waste characterization	J10L48	11/7/05	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
Waste characterization	J10LY9	11/14/05	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
Ash	J01YT9	11/2/04	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
Soil/tar	J01YV0	11/2/04	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
Yellow suspect paint	J01YV1	11/2/04	0.05	U	0.05	0.05	UD	0.05	0.05	U	0.05	0.02	J	0.05	0.025	UD	0.025
Magenta suspect paint	J02295	11/8/04	0.05	U	0.05	0.12		0.05	0.05	U	0.05	0.05	U	0.05	0.025	U	0.025
Waste characterization	J10DW8	10/26/05	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			
Suspect tar drum	J10LY7	11/14/05	0.05	U	0.05				0.05	U	0.05	0.05	U	0.05			

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Sample Location	HEIS Number	Sample Date	Carbon tetrachloride (TCLP)			Chlorobenzene (TCLP)			Chloroform (TCLP)			Hexachlorobenzene (TCLP)			Hexachlorobutadiene (TCLP)		
			mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL
Yellow stained soil	J02027	11/2/04										0.05	U	0.05	0.05	U	0.05
Stained soil	J02289	11/3/04										0.05	U	0.05	0.05	U	0.05
Waste characterization	J10L48	11/7/05										0.05	U	0.05	0.05	U	0.05
Waste characterization	J10LY9	11/14/05										0.05	U	0.05	0.05	U	0.05
Ash	J01YT9	11/2/04										0.05	U	0.05	0.05	U	0.05
Soil/tar	J01YV0	11/2/04										0.05	U	0.05	0.05	U	0.05
Yellow suspect paint	J01YV1	11/2/04	0.025	UD	0.025	0.025	UD	0.025	0.025	UD	0.025	0.05	U	0.05	0.05	U	0.05
Magenta suspect paint	J02295	11/8/04	0.025	U	0.025	0.025	U	0.025	0.025	U	0.025	0.05	U	0.05	0.05	U	0.05
Waste characterization	J10DW8	10/26/05										0.05	U	0.05	0.05	U	0.05
Suspect tar drum	J10LY7	11/14/05										0.05	U	0.05	0.05	U	0.05

Sample Location	HEIS Number	Sample Date	Hexachloroethane (TCLP)			Nitrobenzene (TCLP)			Pentachlorophenol (TCLP)			Pyridine (TCLP)			Tetrachloroethane (TCLP)		
			mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL	mg/L	Q	PQL
Yellow stained soil	J02027	11/2/04	0.05	U	0.05	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05			
Stained soil	J02289	11/3/04	0.05	U	0.05	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05			
Waste characterization	J10L48	11/7/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05			
Waste characterization	J10LY9	11/14/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05			
Ash	J01YT9	11/2/04	0.05	U	0.05	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05			
Soil/tar	J01YV0	11/2/04	0.05	U	0.05	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05			
Yellow suspect paint	J01YV1	11/2/04	0.05	U	0.05	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05	0.025	UD	0.025
Magenta suspect paint	J02295	11/8/04	0.05	U	0.05	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05	0.025	U	0.025
Waste characterization	J10DW8	10/26/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05			
Suspect tar drum	J10LY7	11/14/05	0.05	U	0.05	0.05	U	0.05	0.12	U	0.12	0.05	U	0.05			

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Sample Location	HEIS Number	Sample Date	Trichloroethane (TCLP)			Vinyl chloride (TCLP)		
			mg/L	Q	PQL	mg/L	Q	PQL
Yellow stained soil	J02027	11/2/04						
Stained soil	J02289	11/3/04						
Waste characterization	J10L48	11/7/05						
Waste characterization	J10LY9	11/14/05						
Ash	J01YT9	11/2/04						
Soil/tar	J01YV0	11/2/04						
Yellow suspect paint	J01YV1	11/2/04	0.025	UD	0.025	0.05	UD	0.05
Magenta suspect paint	J02295	11/8/04	0.025	U	0.025	0.05	U	0.05
Waste characterization	J10DW8	10/26/05						
Suspect tar drum	J10LY7	11/14/05						

Sample Location	HEIS Number	Sample Date	Antimony (TCLP)			Arsenic (TCLP)			Barium (TCLP)			Cadmium (TCLP)			Chromium (TCLP)		
			µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL
Yellow stained soil	J02027	11/2/04				15.6	U	15.6	15.1	C	2.4	1.8	U	1.8	4.8	U	4.8
Stained soil	J02289	11/3/04				15.6	U	15.6	331	C	2.4	1.8	U	1.8	4.8	U	4.8
Waste characterization	J10L48	11/7/05				20.4	U	20.4	377	C	1.2	4.2	U	4.2	14.5	C	9.6
Waste characterization	J10LY9	11/14/05				35.8	U	35.8	387		3	4.9	U	4.9	10.5		5.2
Ash	J01YT9	11/2/04				16.9		15.6	1120	C	2.4	1.8	U	1.8	4.8	U	4.8
Soil/tar	J01YV0	11/2/04				15.6	U	15.6	352	C	2.4	1.8	U	1.8	4.8	U	4.8
Yellow suspect paint	J01YV1	11/2/04				15.6	U	15.6	786	C	2.4	1.8	U	1.8	168		4.8
Magenta suspect paint	J02295	11/8/04				15.6	U	15.6	338		2.4	8.8		1.8	20.9	C	4.8
Suspect battery component	J02296	11/8/04				15.6	U	15.6	694		2.4	44.9		1.8	5.9	C	4.8
Burned debris	J02J09	3/1/05	13.2	U	13.2	17.4	U	17.4	18.7	C	1.2	11.9		2.4	7.5		2.4
Soil in carbon-steel pipe	J02J10	3/1/05				19.9		17.4	176	C	1.2	3.2		2.4	17.4		2.4
Soil beneath chicken wire	J02J11	3/1/05				17.4	U	17.4	341	C	1.2	29.4		2.4	4.4		2.4
Suspect asphalt in barrel	J02J12	3/1/05				22.3		17.4	364	C	1.2	12.9		2.4	6.9		2.4
Debris / stressed vegetation	J02J13	3/1/05				17.4	U	17.4	88.4	C	1.2	2.4	U	2.4	2.4	U	2.4
Burned debris	J02J14	3/1/05				17.4	U	17.4	1210	C	1.2	2.4	U	2.4	2.4	U	2.4
Waste characterization	J10DW8	10/26/05				28.2	U	28.2	409		0.6	2.4	U	2.4	4.2	U	2.4
Suspect tar drum	J10LY7	11/14/05				25.4		20.4	118	C	1.2	4.2	U	4.2	9.6	U	9.6

Table B-1. 128-B-3 Waste Characterization and In-Process Sample Results. (14 Pages)

Sample Location	HEIS Number	Sample Date	Lead (TCLP)			Mercury (TCLP)			Selenium (TCLP)			Silver (TCLP)		
			µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL	µg/L	Q	PQL
Yellow stained soil	J02027	11/2/04	13.2	U	13.2	0.1	U	0.1	22.2	U	22.2	6	U	6
Stained soil	J02289	11/3/04	13.2	U	13.2	0.1	U	0.1	22.2	U	22.2	6	U	6
Waste characterization	J10L48	11/7/05	116		18.6	0.1	U	0.1	21.6	U	21.6	8.4	UC	8.4
Waste characterization	J10LY9	11/14/05	33.1		28.3	0.1	U	0.1	42.1	U	42.1	9.1		4.6
Ash	J01YT9	11/2/04	13.2	U	13.2	0.1	U	0.1	22.2	U	22.2	6	U	6
Soil/tar	J01YV0	11/2/04	13.2	U	13.2	0.1	U	0.1	22.2	U	22.2	6	U	6
Yellow suspect paint	J01YV1	11/2/04	1840		13.2	0.1	U	0.1	22.2	U	22.2	6	U	6
Magenta suspect paint	J02295	11/8/04	3190	C	13.2	0.1	U	0.1	22.2	U	22.2	6	U	6
Suspect battery component	J02296	11/8/04	800	C	13.2	0.1	U	0.1	22.2	U	22.2	6	U	6
Burned debris	J02J09	3/1/05	26300		11.4	0.1	U	0.1	24	U	24	3	U	3
Soil in carbon-steel pipe	J02J10	3/1/05	13.3		11.4	0.1	U	0.1	24	U	24	3	U	3
Soil beneath chicken wire	J02J11	3/1/05	50.6		11.4	0.1	U	0.1	24	U	24	3	U	3
Suspect asphalt in barrel	J02J12	3/1/05	485		11.4	0.1	U	0.1	24	U	24	3	U	3
Debris / stressed vegetation	J02J13	3/1/05	22.6		11.4	0.1	U	0.1	24	U	24	3	U	3
Burned debris	J02J14	3/1/05	122		11.4	0.1	U	0.1	24	U	24	3	U	3
Waste characterization	J10DW8	10/26/05	17.4	U	17.4	0.1	U	0.1	25.8	U	25.8	46	U	46
Suspect tar drum	J10LY7	11/14/05	18.6	U	18.6	0.1	U	0.1	21.6	U	21.6	8.4	U	8.4

Sample Location	HEIS Number	Sample Date	pH			Ignitability		
			pH	Q	PQL	Deg C	Q	PQL
Waste characterization	J10L48	11/7/05	7.84		NA			
Suspect battery component	J02296	11/8/04	8.4		NA			
Waste characterization	J10DW8	10/26/05	7.86		NA			
Suspect oil drum	J10LY8	11/14/05				92.3		15.5

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Sample Location	HEIS Number	Sample Date	Aluminum			Antimony			Arsenic			Barium			Beryllium			Boron		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J11811	2/13/06	5500		2.9	0.38	U	0.38	3.0		0.33	54.0		0.02	0.24		0.02	1.0		0.26
Duplicate of J1181	J11831	2/13/06	5970		3.0	0.39	U	0.39	3.5		0.33	58.9		0.02	0.21		0.02	1.2		0.26
A-2	J11812	2/13/06	5290		2.9	0.39	U	0.39	1.4		0.33	102		0.02	0.24		0.02	0.52		0.26
A-3	J11813	2/13/06	4720		3.0	0.39	U	0.39	1.5		0.33	62.5		0.02	0.22		0.02	0.34		0.26
A-4	J11814	2/13/06	7660		3.2	0.42	U	0.42	3.4		0.36	94.7		0.02	0.39		0.02	1.7		0.28
A-5	J11815	2/13/06	5430		2.9	0.38	U	0.38	2.9		0.32	121		0.02	0.23		0.02	0.45		0.26
A-6	J11816	2/13/06	4820		2.9	0.38	U	0.38	1.7		0.33	53.3		0.02	0.23		0.02	0.64		0.26
A-7	J11817	2/13/06	4950		2.9	0.38	U	0.38	1.4		0.33	67.6		0.02	0.23		0.02	1.4		0.26
A-8	J11818	2/13/06	8360		3.1	0.41	U	0.41	3.6		0.35	130		0.02	0.35		0.02	3.0		0.28
A-9	J11819	2/13/06	6680		3.0	0.39	U	0.39	2.9		0.33	89.7		0.02	0.27		0.02	2.0		0.26
A-10	J11820	2/13/06	7280		3.0	0.40	U	0.40	2.9		0.34	168		0.02	0.38		0.02	9.3		0.27
B-1	J11821	2/13/06	7030		3.2	0.42	U	0.42	3.5		0.35	87.5		0.02	0.35		0.02	3.6		0.28
B-2	J11822	2/13/06	11000		3.3	0.43	U	0.43	7.2		0.36	131		0.02	0.40		0.02	3.2		0.29
B-3	J11823	2/13/06	6620		3.2	0.41	U	0.41	3.2		0.35	84.2		0.02	0.27		0.02	2.5		0.28
B-4	J11824	2/13/06	7480		3.1	0.41	U	0.41	4.4		0.35	113		0.02	0.27		0.02	2.0		0.28
B-5	J11825	2/13/06	8570		3.2	0.42	U	0.42	6.0		0.35	107		0.02	0.37		0.02	3.3		0.28
B-6	J11826	2/13/06	7320		3.0	0.40	U	0.40	3.9		0.34	92.6		0.02	0.28		0.02	1.6		0.27
B-7	J11827	2/13/06	6680		3.2	0.42	U	0.42	3.9		0.35	83.4		0.02	0.25		0.02	2.4		0.28
B-8	J11828	2/13/06	12000		3.1	1.5		0.41	22.4		0.35	264		0.02	0.40		0.02	2.2		0.28
B-9	J11829	2/13/06	7770		3.2	0.41	U	0.41	5.2		0.35	106		0.02	0.26		0.02	2.8		0.28
B-10	J11830	2/13/06	8820		3.2	3.4		0.42	8.7		0.36	178		0.02	0.33		0.02	5.1		0.28
Equipment blank	J11832	2/13/06	41.3		2.9	0.38	U	0.38	0.39		0.32	1.1		0.02	0.02	U	0.02	0.25	U	0.25

Acronyms and notes apply to all of the tables in this appendix.

Note: Data qualified with B, C, D and/or J are considered acceptable values.

B = blank contamination (organic constituents)

C = blank contamination (inorganic constituents)

D = diluted

HEIS = Hanford Environmental Information System

J = estimated

PQL = practical quantitation limit

Q = qualifier

U = undetected

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Sample Location	HEIS Number	Sample Date	Cadmium			Calcium			Chromium			Cobalt			Copper			Hexavalent Chromium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J11811	2/13/06	0.40	U	0.40	5250		1.9	9.9		0.15	4.6		0.12	13.1		0.28	0.35		0.21
Duplicate of J1181	J11831	2/13/06	0.41	U	0.41	5520		1.9	14.0		0.16	5.3		0.12	15.2		0.28	0.23		0.21
A-2	J11812	2/13/06	0.40	U	0.40	3600		1.9	8.1		0.15	4.6		0.12	14.2		0.28	0.21	U	0.21
A-3	J11813	2/13/06	0.41	U	0.41	2830		1.9	9.6		0.15	3.9		0.12	14.2		0.28	0.21	U	0.21
A-4	J11814	2/13/06	0.44	U	0.44	4400		2.0	12.0		0.17	7.4		0.13	17.5		0.30	0.22	U	0.21
A-5	J11815	2/13/06	0.40	U	0.40	3780		1.9	7.4		0.15	4.2		0.11	12.7		0.28	0.24		0.20
A-6	J11816	2/13/06	0.40	U	0.40	4940		1.9	9.1		0.15	4.5		0.12	13.0		0.28	0.30		0.21
A-7	J11817	2/13/06	0.40	U	0.40	2750		1.9	8.9		0.15	3.9		0.11	15.7		0.28	0.47		0.2
A-8	J11818	2/13/06	0.43	U	0.43	4500		2.0	70.6		0.16	7.9		0.12	27.0		0.30	1.8		0.22
A-9	J11819	2/13/06	0.41	U	0.41	4370		1.9	20.1		0.16	5.0		0.12	18.4		0.28	1.0		0.21
A-10	J11820	2/13/06	0.42	U	0.42	5760		1.9	40.2		0.16	6.2		0.12	38.3		0.29	0.40		0.21
B-1	J11821	2/13/06	0.44	U	0.44	3210		2.0	24.5		0.17	5.9		0.12	15.5		0.30	0.41		0.22
B-2	J11822	2/13/06	0.45	U	0.45	8980		2.1	36.2		0.17	8.5		0.13	29.2		0.31	0.56		0.23
B-3	J11823	2/13/06	0.44	U	0.44	3560		2.0	25.2		0.17	6.1		0.12	15.5		0.30	0.26		0.22
B-4	J11824	2/13/06	0.43	U	0.43	3330		2.0	31.0		0.16	5.5		0.12	21.3		0.30	0.37		0.22
B-5	J11825	2/13/06	0.44	U	0.44	8600		2.0	16.7		0.17	7.0		0.12	21.9		0.30	0.38		0.22
B-6	J11826	2/13/06	0.42	U	0.42	6490		1.9	15.0		0.16	5.6		0.12	25.4		0.29	0.28		0.21
B-7	J11827	2/13/06	0.44	U	0.44	7660		2.0	26.9		0.17	6.0		0.13	16.0		0.30	0.30		0.22
B-8	J11828	2/13/06	0.43	U	0.43	2500		2.0	29.6		0.16	9.1		0.12	37.2		0.30	0.28		0.22
B-9	J11829	2/13/06	0.44	U	0.44	7310		2.0	19.9		0.17	6.1		0.12	28.5		0.30	0.37		0.22
B-10	J11830	2/13/06	0.44	U	0.44	4260		2.0	38.1		0.17	6.1		0.13	52.3		0.30	0.31		0.22
Equipment blank	J11832	2/13/06	0.40	U	0.40	17.7		1.8	0.15	U	0.15	0.11	U	0.11	0.27	U	0.27			

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Sample Location	HEIS Number	Sample Date	Iron			Lead			Magnesium			Manganese			Mercury			Molybdenum		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J11811	2/13/06	13500		3.1	2.8		0.30	4040		3.3	220		0.51	0.01	U	0.01	0.13	UC	0.13
Duplicate of J1181	J11831	2/13/06	15200		3.1	3.8		0.30	4520		3.4	243		0.52	0.02	U	0.02	0.38	C	0.13
A-2	J11812	2/13/06	14100		3.1	3.4		0.30	3700		3.3	213		0.51	0.01	U	0.01	0.32	C	0.13
A-3	J11813	2/13/06	12000		3.1	3.0		0.30	3060		3.4	209		0.51	0.02	U	0.02	0.25	C	0.13
A-4	J11814	2/13/06	21000		3.4	6.5		0.32	4590		3.6	350		0.56	0.04		0.02	0.30	C	0.14
A-5	J11815	2/13/06	14200		3.1	2.8		0.30	3490		3.3	220		0.51	0.01	U	0.01	0.32	C	0.12
A-6	J11816	2/13/06	12700		3.1	2.7		0.30	3620		3.3	217		0.51	0.01	U	0.01	0.45	C	0.12
A-7	J11817	2/13/06	13600		3.1	8.5		0.30	3230		3.3	205		0.51	0.02	U	0.02	0.37	C	0.12
A-8	J11818	2/13/06	20700		3.3	13.3		0.32	5490		3.5	357		0.54	0.43		0.02	0.32	C	0.13
A-9	J11819	2/13/06	14300		3.1	4.1		0.30	4030		3.4	257		0.52	0.03		0.02	0.45	C	0.13
A-10	J11820	2/13/06	18400		3.2	37.4		0.31	4180		3.4	299		0.52	0.41		0.02	0.98	C	0.13
B-1	J11821	2/13/06	18100		3.3	9.2		0.32	3600		3.6	322		0.55	0.14		0.01	0.60	C	0.14
B-2	J11822	2/13/06	22400		3.4	7.7		0.33	7030		3.7	375		0.57	0.02	U	0.02	0.57	C	0.14
B-3	J11823	2/13/06	16800		3.3	9.4		0.32	3870		3.6	294		0.55	0.64		0.02	0.48	C	0.13
B-4	J11824	2/13/06	16300		3.3	12.1		0.32	3660		3.5	272		0.54	0.06		0.01	0.75	C	0.13
B-5	J11825	2/13/06	20500		3.3	14.3		0.32	5890		3.6	344		0.55	0.02		0.02	0.65	C	0.14
B-6	J11826	2/13/06	16000		3.2	6.0		0.31	4960		3.5	269		0.53	0.02	U	0.02	0.46	C	0.13
B-7	J11827	2/13/06	16500		3.4	8.4		0.32	4250		3.6	267		0.55	0.02		0.02	0.50	C	0.14
B-8	J11828	2/13/06	21600		3.3	12.2		0.32	4260		3.5	1230		0.54	0.06		0.02	2.5	C	0.13
B-9	J11829	2/13/06	18100		3.3	18.9		0.32	4980		3.6	297		0.55	0.05		0.02	0.62	C	0.13
B-10	J11830	2/13/06	20500		3.4	464		0.32	3680		3.6	389		0.56	0.16		0.02	1.6	C	0.14
Equipment blank	J11832	2/13/06	244		3.0	0.40		0.29	6.3		3.3	3.9		0.50	0.01	U	0.01	0.24	C	0.12

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Sample Location	HEIS Number	Sample Date	Nickel			Potassium			Selenium			Silicon			Silver			Sodium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J11811	2/13/06	11.8		0.13	972		51.9	3.5	U	3.5	528	C	0.81	0.13	U	0.13	114		2.7
Duplicate of J1181	J11831	2/13/06	17.1		0.13	1000		52.4	3.5	U	3.5	508	C	0.82	0.14	U	0.14	121		2.7
A-2	J11812	2/13/06	10.5		0.13	953		52.0	3.5	U	3.5	548	C	0.81	0.13	U	0.13	100		2.7
A-3	J11813	2/13/06	10.4		0.13	1100		52.2	3.5	U	3.5	660	C	0.81	0.14	U	0.14	123		2.7
A-4	J11814	2/13/06	12.9		0.14	1760		56.5	3.8	U	3.8	443	C	0.88	0.15	U	0.15	115		3.0
A-5	J11815	2/13/06	9.0		0.12	1150		51.5	3.5	U	3.5	698	C	0.80	0.13	U	0.13	116		2.7
A-6	J11816	2/13/06	10.7		0.12	919		51.8	3.5	U	3.5	529	C	0.81	0.13	U	0.13	101		2.7
A-7	J11817	2/13/06	10.7		0.12	1020		51.6	3.5	U	3.5	570	C	0.80	0.13	U	0.13	117		2.7
A-8	J11818	2/13/06	18.6		0.13	2240		55.1	3.7	U	3.7	628	C	0.86	0.14	U	0.14	229		2.9
A-9	J11819	2/13/06	11.7		0.13	1180		52.9	3.6	U	3.6	696	C	0.82	0.14	U	0.14	239		2.8
A-10	J11820	2/13/06	15.0		0.13	1660		53.4	3.6	U	3.6	570	C	0.83	0.14	U	0.14	204		2.8
B-1	J11821	2/13/06	11.6		0.14	1550		56.2	3.8	U	3.8	607	C	0.87	0.15	U	0.15	106		2.9
B-2	J11822	2/13/06	23.1		0.14	1370		57.7	3.9	U	3.9	553	C	0.90	0.15	U	0.15	236		3.0
B-3	J11823	2/13/06	14.2		0.13	1370		55.9	3.8	U	3.8	601	C	0.87	0.15	U	0.15	129		2.9
B-4	J11824	2/13/06	14.7		0.13	1220		55.0	3.7	U	3.7	526	C	0.86	0.14	U	0.14	102		2.9
B-5	J11825	2/13/06	17.0		0.14	1330		56.2	3.8	U	3.8	479	C	0.87	0.15	U	0.15	262		2.9
B-6	J11826	2/13/06	17.0		0.13	1240		53.8	3.6	U	3.6	530	C	0.84	0.14	U	0.14	163		2.8
B-7	J11827	2/13/06	15.4		0.14	1490		56.3	3.8	U	3.8	661	C	0.88	0.15	U	0.15	112		2.9
B-8	J11828	2/13/06	26.4		0.13	1120		55.1	3.7	U	3.7	507	C	0.86	0.14	U	0.14	99.3		2.9
B-9	J11829	2/13/06	17.2		0.13	1360		55.9	3.8	U	3.8	563	C	0.87	0.15	U	0.15	185		2.9
B-10	J11830	2/13/06	24.2		0.14	1110		56.5	3.8	U	3.8	508	C	0.88	0.79		0.15	149		3.0
Equipment blank	J11832	2/13/06	0.12	U	0.12	58.3		50.9	3.4	U	3.4	40.4	C	0.79	0.13	U	0.13	7.6		2.7

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Sample Location	HEIS Number	Sample Date	Vanadium			Zinc			Total Petroleum Hydrocarbons		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J11811	2/13/06	30.0		0.09	30.0		0.05	139	U	139
Duplicate of J1181	J11831	2/13/06	33.8		0.09	35.4		0.05	139	U	139
A-2	J11812	2/13/06	32.1		0.09	29.8		0.05	138	U	138
A-3	J11813	2/13/06	28.0		0.09	27.8		0.05	138	U	138
A-4	J11814	2/13/06	48.0		0.09	46.3		0.05	150	U	150
A-5	J11815	2/13/06	29.5		0.09	29.2		0.05	136	U	136
A-6	J11816	2/13/06	28.0		0.09	28.3		0.05	138	U	138
A-7	J11817	2/13/06	28.8		0.09	95.2		0.05	136	U	136
A-8	J11818	2/13/06	40.3		0.09	70.4		0.05	146	U	146
A-9	J11819	2/13/06	30.7		0.09	38.6		0.05	140	U	140
A-10	J11820	2/13/06	39.7		0.09	132		0.05	157		141
B-1	J11821	2/13/06	39.7		0.09	68.7		0.05	146	U	146
B-2	J11822	2/13/06	47.9		0.1	55.0		0.05	150	U	150
B-3	J11823	2/13/06	35.9		0.09	47.7		0.05	146	U	146
B-4	J11824	2/13/06	32.7		0.09	53.7		0.05	144	U	144
B-5	J11825	2/13/06	46.7		0.09	51.4		0.05	146	U	146
B-6	J11826	2/13/06	32.8		0.09	40.4		0.05	141	U	141
B-7	J11827	2/13/06	31.1		0.09	53.0		0.05	148	U	148
B-8	J11828	2/13/06	46.4		0.09	58.7		0.05	145	U	145
B-9	J11829	2/13/06	34.1		0.09	78.9		0.05	291		146
B-10	J11830	2/13/06	38.7		0.09	128		0.05	145	U	145
Equipment blank	J11832	2/13/06	0.11		0.08	0.40		0.05			

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11811 Location A-1 Sample Date 2/13/06			J11831 Duplicate of J11811 Sample Date 2/13/06			J11812 Location A-2 Sample Date 2/13/06			J11813 Location A-3 Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	14	U	14	14	U	14	14	U	14	14	U	14
Aroclor-1221	14	U	14	14	U	14	14	U	14	14	U	14
Aroclor-1232	14	U	14	14	U	14	14	U	14	14	U	14
Aroclor-1242	14	U	14	14	U	14	14	U	14	14	U	14
Aroclor-1248	14	U	14	14	U	14	14	U	14	14	U	14
Aroclor-1254	14	U	14	14	U	14	14	U	14	14	U	14
Aroclor-1260	14	U	14	14	U	14	14	U	14	14	U	14
Pesticides												
Aldrin	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
alpha-BHC	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
alpha-Chlordane	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
beta-BHC	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
delta-BHC	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Dichlorodiphenyldichloroethane	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Dichlorodiphenyldichloroethylene	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Dichlorodiphenyltrichloroethane	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Dieldrin	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endosulfan I	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endosulfan II	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endosulfan sulfate	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endrin	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endrin aldehyde	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endrin ketone	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
gamma-BHC (Lindane)	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
gamma-Chlordane	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Heptachlor	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Heptachlor epoxide	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Methoxychlor	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Toxaphene	14	UD	14	14	UD	14	14	UD	14	14	UD	14
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	350	U	350	350	U	350	340	U	340	350	U	350
1,2-Dichlorobenzene	350	U	350	350	U	350	340	U	340	350	U	350
1,3-Dichlorobenzene	350	U	350	350	U	350	340	U	340	350	U	350
1,4-Dichlorobenzene	350	U	350	350	U	350	340	U	340	350	U	350
2,4,5-Trichlorophenol	870	U	870	870	U	870	860	U	860	860	U	860
2,4,6-Trichlorophenol	350	U	350	350	U	350	340	U	340	350	U	350
2,4-Dichlorophenol	350	U	350	350	U	350	340	U	340	350	U	350
2,4-Dimethylphenol	350	U	350	350	U	350	340	U	340	350	U	350
2,4-Dinitrophenol	870	U	870	870	U	870	860	U	860	860	U	860
2,4-Dinitrotoluene	350	U	350	350	U	350	340	U	340	350	U	350
2,6-Dinitrotoluene	350	U	350	350	U	350	340	U	340	350	U	350
2-Chloronaphthalene	350	U	350	350	U	350	340	U	340	350	U	350
2-Chlorophenol	350	U	350	350	U	350	340	U	340	350	U	350
2-Methylnaphthalene	350	U	350	350	U	350	340	U	340	350	U	350
2-Methylphenol (cresol, o-)	350	U	350	350	U	350	340	U	340	350	U	350
2-Nitroaniline	870	U	870	870	U	870	860	U	860	860	U	860
2-Nitrophenol	350	U	350	350	U	350	340	U	340	350	U	350
3,3'-Dichlorobenzidine	350	U	350	350	U	350	340	U	340	350	U	350
3-Nitroaniline	870	U	870	870	U	870	860	U	860	860	U	860

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11811 Location A-1 Sample Date 2/13/06			J11831 Duplicate of J11811 Sample Date 2/13/06			J11812 Location A-2 Sample Date 2/13/06			J11813 Location A-3 Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
4,6-Dinitro-2-methylphenol	870	U	870	870	U	870	860	U	860	860	U	860
4-Bromophenyl-phenylether	350	U	350	350	U	350	340	U	340	350	U	350
4-Chloro-3-methylphenol	350	U	350	350	U	350	340	U	340	350	U	350
4-Chloroaniline	350	U	350	350	U	350	340	U	340	350	U	350
4-Chlorophenyl-phenylether	350	U	350	350	U	350	340	U	340	350	U	350
4-Methylphenol (p-cresol)	350	U	350	350	U	350	340	U	340	350	U	350
4-Nitroaniline	870	U	870	870	U	870	860	U	860	860	U	860
4-Nitrophenol	870	U	870	870	U	870	860	U	860	860	U	860
Acenaphthene	350	U	350	350	U	350	340	U	340	350	U	350
Acenaphthylene	350	U	350	350	U	350	340	U	340	350	U	350
Anthracene	350	U	350	350	U	350	340	U	340	350	U	350
Benzo(a)anthracene	350	U	350	350	U	350	340	U	340	350	U	350
Benzo(a)pyrene	350	U	350	350	U	350	340	U	340	350	U	350
Benzo(b)fluoranthene	350	U	350	350	U	350	340	U	340	350	U	350
Benzo(g,h,i)perylene	350	U	350	350	U	350	340	U	340	350	U	350
Benzo(k)fluoranthene	350	U	350	350	U	350	340	U	340	350	U	350
bis(2-Chloro-1-methylethyl)ether	350	U	350	350	U	350	340	U	340	350	U	350
bis(2-Chloroethoxy)methane	350	U	350	350	U	350	340	U	340	350	U	350
bis(2-Chloroethyl)ether	350	U	350	350	U	350	340	U	340	350	U	350
bis(2-Ethylhexyl)phthalate	34	JB	350	60	JB	350	88	JB	340	48	JB	350
Butylbenzylphthalate	350	U	350	350	U	350	340	U	340	350	U	350
Carbazole	350	U	350	350	U	350	340	U	340	350	U	350
Chrysene	350	U	350	350	U	350	340	U	340	350	U	350
Di-n-butylphthalate	350	U	350	350	U	350	340	U	340	350	U	350
Di-n-octylphthalate	350	U	350	350	U	350	340	U	340	350	U	350
Dibenz(a,h)anthracene	350	U	350	350	U	350	340	U	340	350	U	350
Dibenzofuran	350	U	350	350	U	350	340	U	340	350	U	350
Diethylphthalate	350	U	350	350	U	350	340	U	340	350	U	350
Dimethylphthalate	350	U	350	350	U	350	340	U	340	350	U	350
Fluoranthene	350	U	350	350	U	350	340	U	340	350	U	350
Fluorene	350	U	350	350	U	350	340	U	340	350	U	350
Hexachlorobenzene	350	U	350	350	U	350	340	U	340	350	U	350
Hexachlorobutadiene	350	U	350	350	U	350	340	U	340	350	U	350
Hexachlorocyclopentadiene	350	U	350	350	U	350	340	U	340	350	U	350
Hexachloroethane	350	U	350	350	U	350	340	U	340	350	U	350
Indeno(1,2,3-cd)pyrene	350	U	350	350	U	350	340	U	340	350	U	350
Isophorone	350	U	350	350	U	350	340	U	340	350	U	350
N-Nitroso-di-n-dipropylamine	350	U	350	350	U	350	340	U	340	350	U	350
N-Nitrosodiphenylamine	350	U	350	350	U	350	340	U	340	350	U	350
Naphthalene	350	U	350	350	U	350	340	U	340	350	U	350
Nitrobenzene	350	U	350	350	U	350	340	U	340	350	U	350
Pentachlorophenol	870	U	870	870	U	870	860	U	860	860	U	860
Phenanthrene	350	U	350	350	U	350	340	U	340	350	U	350
Phenol	350	U	350	350	U	350	340	U	340	350	U	350
Pyrene	350	U	350	350	U	350	340	U	340	350	U	350

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11814 Location A-4 Sample Date 2/13/06			J11815 Location A-5 Sample Date 2/13/06			J11816 Location A-6 Sample Date 2/13/06			J11817 Location A-7 Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	150	UD	150	14	U	14	14	U	14	14	U	14
Aroclor-1221	150	UD	150	14	U	14	14	U	14	14	U	14
Aroclor-1232	150	UD	150	14	U	14	14	U	14	14	U	14
Aroclor-1242	150	UD	150	14	U	14	14	U	14	14	U	14
Aroclor-1248	150	UD	150	14	U	14	14	U	14	14	U	14
Aroclor-1254	1300	D	150	14	U	14	14	U	14	5.4	J	14
Aroclor-1260	150	UD	150	14	U	14	14	U	14	14	U	14
Pesticides												
Aldrin	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
alpha-BHC	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
alpha-Chlordane	1.6	D	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
beta-BHC	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
delta-BHC	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Dichlorodiphenyldichloroethane	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Dichlorodiphenyldichloroethylene	45	D	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Dichlorodiphenyltrichloroethane	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Dieldrin	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endosulfan I	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endosulfan II	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endosulfan sulfate	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endrin	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endrin aldehyde	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Endrin ketone	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
gamma-BHC (Lindane)	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
gamma-Chlordane	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Heptachlor	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Heptachlor epoxide	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Methoxychlor	1.5	UD	1.5	1.4	UD	1.4	1.4	UD	1.4	1.4	UD	1.4
Toxaphene	15	UD	15	14	UD	14	14	UD	14	14	UD	14
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	370	U	370	340	U	340	350	U	350	340	U	340
1,2-Dichlorobenzene	370	U	370	340	U	340	350	U	350	340	U	340
1,3-Dichlorobenzene	370	U	370	340	U	340	350	U	350	340	U	340
1,4-Dichlorobenzene	370	U	370	340	U	340	350	U	350	340	U	340
2,4,5-Trichlorophenol	930	U	930	850	U	850	860	U	860	850	U	850
2,4,6-Trichlorophenol	370	U	370	340	U	340	350	U	350	340	U	340
2,4-Dichlorophenol	370	U	370	340	U	340	350	U	350	340	U	340
2,4-Dimethylphenol	370	U	370	340	U	340	350	U	350	340	U	340
2,4-Dinitrophenol	930	U	930	850	U	850	860	U	860	850	U	850
2,4-Dinitrotoluene	370	U	370	340	U	340	350	U	350	340	U	340
2,6-Dinitrotoluene	370	U	370	340	U	340	350	U	350	340	U	340
2-Chloronaphthalene	370	U	370	340	U	340	350	U	350	340	U	340
2-Chlorophenol	370	U	370	340	U	340	350	U	350	340	U	340
2-Methylnaphthalene	370	U	370	340	U	340	350	U	350	340	U	340
2-Methylphenol (cresol, o-)	370	U	370	340	U	340	350	U	350	340	U	340
2-Nitroaniline	930	U	930	850	U	850	860	U	860	850	U	850
2-Nitrophenol	370	U	370	340	U	340	350	U	350	340	U	340
3,3'-Dichlorobenzidine	370	U	370	340	U	340	350	U	350	340	U	340
3-Nitroaniline	930	U	930	850	U	850	860	U	860	850	U	850

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11814 Location A-4 Sample Date 2/13/06			J11815 Location A-5 Sample Date 2/13/06			J11816 Location A-6 Sample Date 2/13/06			J11817 Location A-7 Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
4,6-Dinitro-2-methylphenol	930	U	930	850	U	850	860	U	860	850	U	850
4-Bromophenyl-phenylether	370	U	370	340	U	340	350	U	350	340	U	340
4-Chloro-3-methylphenol	370	U	370	340	U	340	350	U	350	340	U	340
4-Chloroaniline	370	U	370	340	U	340	350	U	350	340	U	340
4-Chlorophenyl-phenylether	370	U	370	340	U	340	350	U	350	340	U	340
4-Methylphenol (p-cresol)	370	U	370	340	U	340	350	U	350	340	U	340
4-Nitroaniline	930	U	930	850	U	850	860	U	860	850	U	850
4-Nitrophenol	930	U	930	850	U	850	860	U	860	850	U	850
Acenaphthene	370	U	370	340	U	340	350	U	350	340	U	340
Acenaphthylene	370	U	370	340	U	340	350	U	350	340	U	340
Anthracene	370	U	370	340	U	340	350	U	350	340	U	340
Benzo(a)anthracene	370	U	370	340	U	340	350	U	350	340	U	340
Benzo(a)pyrene	370	U	370	340	U	340	350	U	350	340	U	340
Benzo(b)fluoranthene	370	U	370	340	U	340	350	U	350	340	U	340
Benzo(g,h,i)perylene	370	U	370	340	U	340	350	U	350	340	U	340
Benzo(k)fluoranthene	370	U	370	340	U	340	350	U	350	340	U	340
bis(2-Chloro-1-methylethyl)ether	370	U	370	340	U	340	350	U	350	340	U	340
bis(2-Chloroethoxy)methane	370	U	370	340	U	340	350	U	350	340	U	340
bis(2-Chloroethyl)ether	370	U	370	340	U	340	350	U	350	340	U	340
bis(2-Ethylhexyl)phthalate	57	JB	370	47	JB	340	29	JB	350	63	JB	340
Butylbenzylphthalate	370	U	370	340	U	340	350	U	350	340	U	340
Carbazole	370	U	370	340	U	340	350	U	350	340	U	340
Chrysene	370	U	370	340	U	340	350	U	350	340	U	340
Di-n-butylphthalate	22	J	370	340	U	340	350	U	350	340	U	340
Di-n-octylphthalate	370	U	370	340	U	340	350	U	350	340	U	340
Dibenz(a,h)anthracene	370	U	370	340	U	340	350	U	350	340	U	340
Dibenzofuran	370	U	370	340	U	340	350	U	350	340	U	340
Diethylphthalate	370	U	370	340	U	340	350	U	350	340	U	340
Dimethylphthalate	370	U	370	340	U	340	350	U	350	340	U	340
Fluoranthene	370	U	370	340	U	340	350	U	350	340	U	340
Fluorene	370	U	370	340	U	340	350	U	350	340	U	340
Hexachlorobenzene	370	U	370	340	U	340	350	U	350	340	U	340
Hexachlorobutadiene	370	U	370	340	U	340	350	U	350	340	U	340
Hexachlorocyclopentadiene	370	U	370	340	U	340	350	U	350	340	U	340
Hexachloroethane	370	U	370	340	U	340	350	U	350	340	U	340
Indeno(1,2,3-cd)pyrene	370	U	370	340	U	340	350	U	350	340	U	340
Isophorone	370	U	370	340	U	340	350	U	350	340	U	340
N-Nitroso-di-n-dipropylamine	370	U	370	340	U	340	350	U	350	340	U	340
N-Nitrosodiphenylamine	370	U	370	340	U	340	350	U	350	340	U	340
Naphthalene	370	U	370	340	U	340	350	U	350	340	U	340
Nitrobenzene	370	U	370	340	U	340	350	U	350	340	U	340
Pentachlorophenol	930	U	930	850	U	850	860	U	860	850	U	850
Phenanthrene	370	U	370	340	U	340	350	U	350	340	U	340
Phenol	370	U	370	340	U	340	350	U	350	340	U	340
Pyrene	370	U	370	340	U	340	350	U	350	340	U	340

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11818 Location A-8 Sample Date 2/13/06			J11819 Location A-9 Sample Date 2/13/06			J11820 Location A-10 Sample Date 2/13/06			J11821 Location B-1 Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	15	U	15	14	U	14	14	U	14	15	U	15
Aroclor-1221	15	U	15	14	U	14	14	U	14	15	U	15
Aroclor-1232	15	U	15	14	U	14	14	U	14	15	U	15
Aroclor-1242	15	U	15	14	U	14	14	U	14	15	U	15
Aroclor-1248	15	U	15	14	U	14	14	U	14	15	U	15
Aroclor-1254	15	J	15	16		14	170		14	19		15
Aroclor-1260	15	U	15	14	U	14	14	U	14	15	U	15
Pesticides												
Aldrin	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
alpha-BHC	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
alpha-Chlordane	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
beta-BHC	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
delta-BHC	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
Dichlorodiphenyldichloroethane	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
Dichlorodiphenyldichloroethylene	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
Dichlorodiphenyltrichloroethane	1.5	UD	1.5	1.4	UD	1.4	60	D	3.5	1.5	UD	1.5
Dieldrin	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
Endosulfan I	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
Endosulfan II	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
Endosulfan sulfate	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
Endrin	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
Endrin aldehyde	1.5	UD	1.5	1.4	UD	1.4	71	D	3.5	1.5	UD	1.5
Endrin ketone	1.5	UD	1.5	1.4	UD	1.4	110	D	3.5	1.5	UD	1.5
gamma-BHC (Lindane)	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
gamma-Chlordane	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
Heptachlor	1.5	UD	1.5	1.4	UD	1.4	6.8	D	3.5	1.5	UD	1.5
Heptachlor epoxide	1.5	UD	1.5	1.4	UD	1.4	12	D	3.5	1.5	UD	1.5
Methoxychlor	1.5	UD	1.5	1.4	UD	1.4	3.5	UD	3.5	1.5	UD	1.5
Toxaphene	15	UD	15	14	UD	14	35	UD	35	15	UD	15
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	360	U	360	350	U	350	2800	UD	2800	360	U	360
1,2-Dichlorobenzene	360	U	360	350	U	350	2800	UD	2800	360	U	360
1,3-Dichlorobenzene	360	U	360	350	U	350	2800	UD	2800	360	U	360
1,4-Dichlorobenzene	360	U	360	350	U	350	2800	UD	2800	360	U	360
2,4,5-Trichlorophenol	910	U	910	870	U	870	7100	UD	7100	910	U	910
2,4,6-Trichlorophenol	360	U	360	350	U	350	2800	UD	2800	360	U	360
2,4-Dichlorophenol	360	U	360	350	U	350	2800	UD	2800	360	U	360
2,4-Dimethylphenol	360	U	360	350	U	350	2800	UD	2800	360	U	360
2,4-Dinitrophenol	910	U	910	870	U	870	7100	UD	7100	910	U	910
2,4-Dinitrotoluene	360	U	360	350	U	350	2800	UD	2800	360	U	360
2,6-Dinitrotoluene	360	U	360	350	U	350	2800	UD	2800	360	U	360
2-Chloronaphthalene	360	U	360	350	U	350	2800	UD	2800	360	U	360
2-Chlorophenol	360	U	360	350	U	350	2800	UD	2800	360	U	360
2-Methylnaphthalene	360	U	360	350	U	350	2800	UD	2800	360	U	360
2-Methylphenol (cresol, o-)	360	U	360	350	U	350	2800	UD	2800	360	U	360
2-Nitroaniline	910	U	910	870	U	870	7100	UD	7100	910	U	910
2-Nitrophenol	360	U	360	350	U	350	2800	UD	2800	360	U	360
3,3'-Dichlorobenzidine	360	U	360	350	U	350	2800	UD	2800	360	U	360
3-Nitroaniline	910	U	910	870	U	870	7100	UD	7100	910	U	910

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11818 Location A-8 Sample Date 2/13/06			J11819 Location A-9 Sample Date 2/13/06			J11820 Location A-10 Sample Date 2/13/06			J11821 Location B-1 Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
4,6-Dinitro-2-methylphenol	910	U	910	870	U	870	7100	UD	7100	910	U	910
4-Bromophenyl-phenylether	360	U	360	350	U	350	2800	UD	2800	360	U	360
4-Chloro-3-methylphenol	360	U	360	350	U	350	2800	UD	2800	360	U	360
4-Chloroaniline	360	U	360	350	U	350	2800	UD	2800	360	U	360
4-Chlorophenyl-phenylether	360	U	360	350	U	350	2800	UD	2800	360	U	360
4-Methylphenol (p-cresol)	360	U	360	350	U	350	2800	UD	2800	360	U	360
4-Nitroaniline	910	U	910	870	U	870	7100	UD	7100	910	U	910
4-Nitrophenol	910	U	910	870	U	870	7100	UD	7100	910	U	910
Acenaphthene	360	U	360	350	U	350	2800	UD	2800	360	U	360
Acenaphthylene	360	U	360	350	U	350	2800	UD	2800	360	U	360
Anthracene	360	U	360	350	U	350	2800	UD	2800	360	U	360
Benzo(a)anthracene	360	U	360	350	U	350	310	JD	2800	360	U	360
Benzo(a)pyrene	360	U	360	350	U	350	340	JD	2800	360	U	360
Benzo(b)fluoranthene	360	U	360	350	U	350	290	JD	2800	360	U	360
Benzo(g,h,i)perylene	360	U	360	350	U	350	250	JD	2800	360	U	360
Benzo(k)fluoranthene	360	U	360	350	U	350	360	JD	2800	360	U	360
bis(2-Chloro-1-methylethyl)ether	360	U	360	350	U	350	2800	UD	2800	360	U	360
bis(2-Chloroethoxy)methane	360	U	360	350	U	350	2800	UD	2800	360	U	360
bis(2-Chloroethyl)ether	360	U	360	350	U	350	2800	UD	2800	360	U	360
bis(2-Ethylhexyl)phthalate	58	JB	360	52	JB	350	270	JBD	2800	97	JB	360
Butylbenzylphthalate	360	U	360	350	U	350	2800	UD	2800	360	U	360
Carbazole	360	U	360	350	U	350	2800	UD	2800	360	U	360
Chrysene	360	U	360	350	U	350	480	JD	480	360	U	360
Di-n-butylphthalate	360	U	360	350	U	350	2800	UD	2800	25	J	360
Di-n-octylphthalate	360	U	360	350	U	350	2800	UD	2800	360	U	360
Dibenz(a,h)anthracene	360	U	360	350	U	350	2800	UD	2800	360	U	360
Dibenzofuran	360	U	360	350	U	350	2800	UD	2800	360	U	360
Diethylphthalate	360	U	360	350	U	350	2800	UD	2800	360	U	360
Dimethylphthalate	360	U	360	350	U	350	2800	UD	2800	360	U	360
Fluoranthene	360	U	360	350	U	350	300	JD	2800	360	U	360
Fluorene	360	U	360	350	U	350	2800	UD	2800	360	U	360
Hexachlorobenzene	360	U	360	350	U	350	2800	UD	2800	360	U	360
Hexachlorobutadiene	360	U	360	350	U	350	2800	UD	2800	360	U	360
Hexachlorocyclopentadiene	360	U	360	350	U	350	2800	UD	2800	360	U	360
Hexachloroethane	360	U	360	350	U	350	2800	UD	2800	360	U	360
Indeno(1,2,3-cd)pyrene	360	U	360	350	U	350	230	JD	2800	360	U	360
Isophorone	360	U	360	350	U	350	2800	UD	2800	360	U	360
N-Nitroso-di-n-dipropylamine	360	U	360	350	U	350	2800	UD	2800	360	U	360
N-Nitrosodiphenylamine	360	U	360	350	U	350	2800	UD	2800	360	U	360
Naphthalene	360	U	360	350	U	350	2800	UD	2800	360	U	360
Nitrobenzene	360	U	360	350	U	350	2800	UD	2800	360	U	360
Pentachlorophenol	910	U	910	870	U	870	7100	UD	7100	910	U	910
Phenanthrene	360	U	360	350	U	350	200	JD	2800	360	U	360
Phenol	360	U	360	350	U	350	2800	UD	2800	360	U	360
Pyrene	360	U	360	350	U	350	510	JD	2800	360	U	360

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11822 Location B-2 Sample Date 2/13/06			J11823 Location B-3 Sample Date 2/13/06			J11824 Location B-4 Sample Date 2/13/06			J11825 Location B-5 Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	15	U	15	15	U	15	14	U	14	15	U	15
Aroclor-1221	15	U	15	15	U	15	14	U	14	15	U	15
Aroclor-1232	15	U	15	15	U	15	14	U	14	15	U	15
Aroclor-1242	15	U	15	15	U	15	14	U	14	15	U	15
Aroclor-1248	15	U	15	15	U	15	14	U	14	15	U	15
Aroclor-1254	15	U	15	15	U	15	14	U	14	15	U	15
Aroclor-1260	15	U	15	15	U	15	14	U	14	15	U	15
Pesticides												
Aldrin	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
alpha-BHC	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
alpha-Chlordane	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
beta-BHC	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
delta-BHC	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Dichlorodiphenyldichloroethane	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Dichlorodiphenyldichloroethylene	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Dichlorodiphenyltrichloroethane	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Dieldrin	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endosulfan I	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endosulfan II	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endosulfan sulfate	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endrin	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endrin aldehyde	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endrin ketone	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
gamma-BHC (Lindane)	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
gamma-Chlordane	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Heptachlor	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Heptachlor epoxide	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Methoxychlor	1.5	UD	1.5	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Toxaphene	15	UD	15	15	UD	15	14	UD	14	15	UD	15
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	380	U	380	370	U	370	360	U	360	370	U	370
1,2-Dichlorobenzene	380	U	380	370	U	370	360	U	360	370	U	370
1,3-Dichlorobenzene	380	U	380	370	U	370	360	U	360	370	U	370
1,4-Dichlorobenzene	380	U	380	370	U	370	360	U	360	370	U	370
2,4,5-Trichlorophenol	940	U	940	920	U	920	900	U	900	920	U	920
2,4,6-Trichlorophenol	380	U	380	370	U	370	360	U	360	370	U	370
2,4-Dichlorophenol	380	U	380	370	U	370	360	U	360	370	U	370
2,4-Dimethylphenol	380	U	380	370	U	370	360	U	360	370	U	370
2,4-Dinitrophenol	940	U	940	920	U	920	900	U	900	920	U	920
2,4-Dinitrotoluene	380	U	380	370	U	370	360	U	360	370	U	370
2,6-Dinitrotoluene	380	U	380	370	U	370	360	U	360	370	U	370
2-Chloronaphthalene	380	U	380	370	U	370	360	U	360	370	U	370
2-Chlorophenol	380	U	380	370	U	370	360	U	360	370	U	370
2-Methylnaphthalene	380	U	380	370	U	370	360	U	360	370	U	370
2-Methylphenol (cresol, o-)	380	U	380	370	U	370	360	U	360	370	U	370
2-Nitroaniline	940	U	940	920	U	920	900	U	900	920	U	920
2-Nitrophenol	380	U	380	370	U	370	360	U	360	370	U	370
3,3'-Dichlorobenzidine	380	U	380	370	U	370	360	U	360	370	U	370
3-Nitroaniline	940	U	940	920	U	920	900	U	900	920	U	920

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11822 Location B-2 Sample Date 2/13/06			J11823 Location B-3 Sample Date 2/13/06			J11824 Location B-4 Sample Date 2/13/06			J11825 Location B-5 Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
4,6-Dinitro-2-methylphenol	940	U	940	920	U	920	900	U	900	920	U	920
4-Bromophenyl-phenylether	380	U	380	370	U	370	360	U	360	370	U	370
4-Chloro-3-methylphenol	380	U	380	370	U	370	360	U	360	370	U	370
4-Chloroaniline	380	U	380	370	U	370	360	U	360	370	U	370
4-Chlorophenyl-phenylether	380	U	380	370	U	370	360	U	360	370	U	370
4-Methylphenol (p-cresol)	380	U	380	370	U	370	360	U	360	370	U	370
4-Nitroaniline	940	U	940	920	U	920	900	U	900	920	U	920
4-Nitrophenol	940	U	940	920	U	920	900	U	900	920	U	920
Acenaphthene	380	U	380	370	U	370	360	U	360	370	U	370
Acenaphthylene	380	U	380	370	U	370	360	U	360	370	U	370
Anthracene	380	U	380	370	U	370	360	U	360	370	U	370
Benzo(a)anthracene	380	U	380	370	U	370	360	U	360	370	U	370
Benzo(a)pyrene	380	U	380	370	U	370	360	U	360	370	U	370
Benzo(b)fluoranthene	380	U	380	370	U	370	360	U	360	370	U	370
Benzo(g,h,i)perylene	380	U	380	370	U	370	360	U	360	370	U	370
Benzo(k)fluoranthene	380	U	380	370	U	370	360	U	360	370	U	370
bis(2-Chloro-1-methylethyl)ether	380	U	380	370	U	370	360	U	360	370	U	370
bis(2-Chloroethoxy)methane	380	U	380	370	U	370	360	U	360	370	U	370
bis(2-Chloroethyl)ether	380	U	380	370	U	370	360	U	360	370	U	370
bis(2-Ethylhexyl)phthalate	54	JB	380	38	JB	370	210	JB	360	42	JB	370
Butylbenzylphthalate	380	U	380	370	U	370	360	U	360	370	U	370
Carbazole	380	U	380	370	U	370	360	U	360	370	U	370
Chrysene	380	U	380	370	U	370	360	U	360	370	U	370
Di-n-butylphthalate	380	U	380	370	U	370	360	U	360	370	U	370
Di-n-octylphthalate	380	U	380	370	U	370	360	U	360	370	U	370
Dibenz(a,h)anthracene	380	U	380	370	U	370	360	U	360	370	U	370
Dibenzofuran	380	U	380	370	U	370	360	U	360	370	U	370
Diethylphthalate	380	U	380	370	U	370	360	U	360	370	U	370
Dimethylphthalate	380	U	380	370	U	370	360	U	360	370	U	370
Fluoranthene	380	U	380	370	U	370	360	U	360	370	U	370
Fluorene	380	U	380	370	U	370	360	U	360	370	U	370
Hexachlorobenzene	380	U	380	370	U	370	360	U	360	370	U	370
Hexachlorobutadiene	380	U	380	370	U	370	360	U	360	370	U	370
Hexachlorocyclopentadiene	380	U	380	370	U	370	360	U	360	370	U	370
Hexachloroethane	380	U	380	370	U	370	360	U	360	370	U	370
Indeno(1,2,3-cd)pyrene	380	U	380	370	U	370	360	U	360	370	U	370
Isophorone	380	U	380	370	U	370	360	U	360	370	U	370
N-Nitroso-di-n-dipropylamine	380	U	380	370	U	370	360	U	360	370	U	370
N-Nitrosodiphenylamine	380	U	380	370	U	370	360	U	360	370	U	370
Naphthalene	380	U	380	370	U	370	360	U	360	370	U	370
Nitrobenzene	380	U	380	370	U	370	360	U	360	370	U	370
Pentachlorophenol	940	U	940	920	U	920	900	U	900	920	U	920
Phenanthrene	380	U	380	370	U	370	360	U	360	370	U	370
Phenol	380	U	380	370	U	370	360	U	360	370	U	370
Pyrene	380	U	380	370	U	370	360	U	360	370	U	370

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11826 Location B-6 Sample Date 2/13/06			J11827 Location B-7 Sample Date 2/13/06			J11828 Location B-8 Sample Date 2/13/06			J11829 Location B-9 Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	14	U	14	15	U	15	14	U	14	15	U	15
Aroclor-1221	14	U	14	15	U	15	14	U	14	15	U	15
Aroclor-1232	14	U	14	15	U	15	14	U	14	15	U	15
Aroclor-1242	14	U	14	15	U	15	14	U	14	15	U	15
Aroclor-1248	14	U	14	15	U	15	14	U	14	15	U	15
Aroclor-1254	14	U	14	15	U	15	14	U	14	15	U	15
Aroclor-1260	14	U	14	15	U	15	14	U	14	15	U	15
Pesticides												
Aldrin	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
alpha-BHC	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
alpha-Chlordane	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
beta-BHC	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
delta-BHC	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Dichlorodiphenyldichloroethane	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Dichlorodiphenyldichloroethylene	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Dichlorodiphenyltrichloroethane	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Dieldrin	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endosulfan I	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endosulfan II	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endosulfan sulfate	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endrin	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endrin aldehyde	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Endrin ketone	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
gamma-BHC (Lindane)	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
gamma-Chlordane	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Heptachlor	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Heptachlor epoxide	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Methoxychlor	1.4	UD	1.4	1.5	UD	1.5	1.4	UD	1.4	1.5	UD	1.5
Toxaphene	14	UD	14	15	UD	15	14	UD	14	15	UD	15
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	350	U	350	370	U	370	360	U	360	370	U	370
1,2-Dichlorobenzene	350	U	350	370	U	370	360	U	360	370	U	370
1,3-Dichlorobenzene	350	U	350	370	U	370	360	U	360	370	U	370
1,4-Dichlorobenzene	350	U	350	370	U	370	360	U	360	370	U	370
2,4,5-Trichlorophenol	880	U	880	930	U	930	900	U	900	920	U	920
2,4,6-Trichlorophenol	350	U	350	370	U	370	360	U	360	370	U	370
2,4-Dichlorophenol	350	U	350	370	U	370	360	U	360	370	U	370
2,4-Dimethylphenol	350	U	350	370	U	370	360	U	360	370	U	370
2,4-Dinitrophenol	880	U	880	930	U	930	900	U	900	920	U	920
2,4-Dinitrotoluene	350	U	350	370	U	370	360	U	360	370	U	370
2,6-Dinitrotoluene	350	U	350	370	U	370	360	U	360	370	U	370
2-Chloronaphthalene	350	U	350	370	U	370	360	U	360	370	U	370
2-Chlorophenol	350	U	350	370	U	370	360	U	360	370	U	370
2-Methylnaphthalene	350	U	350	370	U	370	360	U	360	370	U	370
2-Methylphenol (cresol, o-)	350	U	350	370	U	370	360	U	360	370	U	370
2-Nitroaniline	880	U	880	930	U	930	900	U	900	920	U	920
2-Nitrophenol	350	U	350	370	U	370	360	U	360	370	U	370
3,3'-Dichlorobenzidine	350	U	350	370	U	370	360	U	360	370	U	370
3-Nitroaniline	880	U	880	930	U	930	900	U	900	920	U	920

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11826 Location B-6 Sample Date 2/13/06			J11827 Location B-7 Sample Date 2/13/06			J11828 Location B-8 Sample Date 2/13/06			J11829 Location B-9 Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
4,6-Dinitro-2-methylphenol	880	U	880	930	U	930	900	U	900	920	U	920
4-Bromophenyl-phenylether	350	U	350	370	U	370	360	U	360	370	U	370
4-Chloro-3-methylphenol	350	U	350	370	U	370	360	U	360	370	U	370
4-Chloroaniline	350	U	350	370	U	370	360	U	360	370	U	370
4-Chlorophenyl-phenylether	350	U	350	370	U	370	360	U	360	370	U	370
4-Methylphenol (p-cresol)	350	U	350	370	U	370	360	U	360	370	U	370
4-Nitroaniline	880	U	880	930	U	930	900	U	900	920	U	920
4-Nitrophenol	880	U	880	930	U	930	900	U	900	920	U	920
Acenaphthene	350	U	350	370	U	370	360	U	360	370	U	370
Acenaphthylene	350	U	350	370	U	370	360	U	360	370	U	370
Anthracene	350	U	350	370	U	370	360	U	360	370	U	370
Benzo(a)anthracene	350	U	350	370	U	370	360	U	360	370	U	370
Benzo(a)pyrene	350	U	350	370	U	370	360	U	360	370	U	370
Benzo(b)fluoranthene	350	U	350	370	U	370	360	U	360	370	U	370
Benzo(g,h,i)perylene	350	U	350	370	U	370	360	U	360	370	U	370
Benzo(k)fluoranthene	350	U	350	370	U	370	360	U	360	370	U	370
bis(2-Chloro-1-methylethyl)ether	350	U	350	370	U	370	360	U	360	370	U	370
bis(2-Chloroethoxy)methane	350	U	350	370	U	370	360	U	360	370	U	370
bis(2-Chloroethyl)ether	350	U	350	370	U	370	360	U	360	370	U	370
bis(2-Ethylhexyl)phthalate	33	JB	350	40	JB	370	31	JB	360	49	JB	370
Butylbenzylphthalate	350	U	350	370	U	370	360	U	360	370	U	370
Carbazole	350	U	350	370	U	370	360	U	360	370	U	370
Chrysene	350	U	350	370	U	370	360	U	360	370	U	370
Di-n-butylphthalate	350	U	350	370	U	370	360	U	360	370	U	370
Di-n-octylphthalate	350	U	350	370	U	370	360	U	360	370	U	370
Dibenz(a,h)anthracene	350	U	350	370	U	370	360	U	360	370	U	370
Dibenzofuran	350	U	350	370	U	370	360	U	360	370	U	370
Diethylphthalate	350	U	350	370	U	370	360	U	360	370	U	370
Dimethylphthalate	350	U	350	370	U	370	360	U	360	370	U	370
Fluoranthene	350	U	350	370	U	370	360	U	360	370	U	370
Fluorene	350	U	350	370	U	370	360	U	360	370	U	370
Hexachlorobenzene	350	U	350	370	U	370	360	U	360	370	U	370
Hexachlorobutadiene	350	U	350	370	U	370	360	U	360	370	U	370
Hexachlorocyclopentadiene	350	U	350	370	U	370	360	U	360	370	U	370
Hexachloroethane	350	U	350	370	U	370	360	U	360	370	U	370
Indeno(1,2,3-cd)pyrene	350	U	350	370	U	370	360	U	360	370	U	370
Isophorone	350	U	350	370	U	370	360	U	360	370	U	370
N-Nitroso-di-n-dipropylamine	350	U	350	370	U	370	360	U	360	370	U	370
N-Nitrosodiphenylamine	350	U	350	370	U	370	360	U	360	370	U	370
Naphthalene	350	U	350	370	U	370	360	U	360	370	U	370
Nitrobenzene	350	U	350	370	U	370	360	U	360	370	U	370
Pentachlorophenol	880	U	880	930	U	930	900	U	900	920	U	920
Phenanthrene	350	U	350	370	U	370	360	U	360	370	U	370
Phenol	350	U	350	370	U	370	360	U	360	370	U	370
Pyrene	350	U	350	370	U	370	360	U	360	370	U	370

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11830 Location B-10 Sample Date 2/13/06			J11832 Equipment Blank Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls						
Aroclor-1016	15	U	15			
Aroclor-1221	15	U	15			
Aroclor-1232	15	U	15			
Aroclor-1242	15	U	15			
Aroclor-1248	15	U	15			
Aroclor-1254	14	J	15			
Aroclor-1260	15	U	15			
Pesticides						
Aldrin	1.5	UD	1.5			
alpha-BHC	1.5	UD	1.5			
alpha-Chlordane	1.5	UD	1.5			
beta-BHC	1.5	UD	1.5			
delta-BHC	1.5	UD	1.5			
Dichlorodiphenyldichloroethane	1.5	UD	1.5			
Dichlorodiphenyldichloroethylene	1.5	UD	1.5			
Dichlorodiphenyltrichloroethane	1.5	UD	1.5			
Dieldrin	1.5	UD	1.5			
Endosulfan I	1.5	UD	1.5			
Endosulfan II	1.5	UD	1.5			
Endosulfan sulfate	1.5	UD	1.5			
Endrin	1.5	UD	1.5			
Endrin aldehyde	1.5	UD	1.5			
Endrin ketone	1.5	UD	1.5			
gamma-BHC (Lindane)	1.5	UD	1.5			
gamma-Chlordane	1.5	UD	1.5			
Heptachlor	1.5	UD	1.5			
Heptachlor epoxide	1.5	UD	1.5			
Methoxychlor	1.5	UD	1.5			
Toxaphene	15	UD	15			
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	370	U	370	330	U	330
1,2-Dichlorobenzene	370	U	370	330	U	330
1,3-Dichlorobenzene	370	U	370	330	U	330
1,4-Dichlorobenzene	370	U	370	330	U	330
2,4,5-Trichlorophenol	920	U	920	830	U	830
2,4,6-Trichlorophenol	370	U	370	330	U	330
2,4-Dichlorophenol	370	U	370	330	U	330
2,4-Dimethylphenol	370	U	370	330	U	330
2,4-Dinitrophenol	920	U	920	830	U	830
2,4-Dinitrotoluene	370	U	370	330	U	330
2,6-Dinitrotoluene	370	U	370	330	U	330
2-Chloronaphthalene	370	U	370	330	U	330
2-Chlorophenol	370	U	370	330	U	330
2-Methylnaphthalene	370	U	370	330	U	330
2-Methylphenol (cresol, o-)	370	U	370	330	U	330
2-Nitroaniline	920	U	920	830	U	830
2-Nitrophenol	370	U	370	330	U	330
3,3'-Dichlorobenzidine	370	U	370	330	U	330
3-Nitroaniline	920	U	920	830	U	830

Table B-2. 128-B-3 Phase I Verification Data Results. (17 Pages)

Constituents	J11830 Location B-10 Sample Date 2/13/06			J11832 Equipment Blank Sample Date 2/13/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)						
4,6-Dinitro-2-methylphenol	920	U	920	830	U	830
4-Bromophenyl-phenylether	370	U	370	330	U	330
4-Chloro-3-methylphenol	370	U	370	330	U	330
4-Chloroaniline	370	U	370	330	U	330
4-Chlorophenyl-phenylether	370	U	370	330	U	330
4-Methylphenol (p-cresol)	370	U	370	330	U	330
4-Nitroaniline	920	U	920	830	U	830
4-Nitrophenol	920	U	920	830	U	830
Acenaphthene	370	U	370	330	U	330
Acenaphthylene	370	U	370	330	U	330
Anthracene	370	U	370	330	U	330
Benzo(a)anthracene	370	U	370	330	U	330
Benzo(a)pyrene	370	U	370	330	U	330
Benzo(b)fluoranthene	370	U	370	330	U	330
Benzo(g,h,i)perylene	370	U	370	330	U	330
Benzo(k)fluoranthene	370	U	370	330	U	330
bis(2-Chloro-1-methylethyl)ether	370	U	370	330	U	330
bis(2-Chloroethoxy)methane	370	U	370	330	U	330
bis(2-Chloroethyl)ether	370	U	370	330	U	330
bis(2-Ethylhexyl)phthalate	29	JB	370	46	JB	330
Butylbenzylphthalate	370	U	370	330	U	330
Carbazole	370	U	370	330	U	330
Chrysene	370	U	370	330	U	330
Di-n-butylphthalate	370	U	370	67	JB	330
Di-n-octylphthalate	370	U	370	330	U	330
Dibenz(a,h)anthracene	370	U	370	330	U	330
Dibenzofuran	370	U	370	330	U	330
Diethylphthalate	370	U	370	330	U	330
Dimethylphthalate	370	U	370	330	U	330
Fluoranthene	370	U	370	330	U	330
Fluorene	370	U	370	330	U	330
Hexachlorobenzene	370	U	370	330	U	330
Hexachlorobutadiene	370	U	370	330	U	330
Hexachlorocyclopentadiene	370	U	370	330	U	330
Hexachloroethane	370	U	370	330	U	330
Indeno(1,2,3-cd)pyrene	370	U	370	330	U	330
Isophorone	370	U	370	330	U	330
N-Nitroso-di-n-dipropylamine	370	U	370	330	U	330
N-Nitrosodiphenylamine	370	U	370	330	U	330
Naphthalene	370	U	370	330	U	330
Nitrobenzene	370	U	370	330	U	330
Pentachlorophenol	920	U	920	830	U	830
Phenanthrene	370	U	370	330	U	330
Phenol	370	U	370	330	U	330
Pyrene	370	U	370	330	U	330

APPENDIX C

CALCULATION OF 95% UCL VALUES FOR VERIFICATION DATA

CALCULATION COVER SHEET

Project Title:	100-B/C Field Remediation	**Job No.**	14655
Area	100-B/C		
Discipline	Environmental	***Calc. No.**	0100B-CA-V0296
Subject	128-B-3 Waste Site Phase I Verification 95% UCL Calculations		
Computer Program	Excel	**Program No.**	Excel 2003

The attached calculations have been generated to document compliance with established cleanup levels. These calculations should be used in conjunction with other relevant documents in the administrative record.

Committed Calculation ☒ **Preliminary** ☐ **Superseded** ☐ **Voided** ☐

Rev.	Sheet Numbers	Originator	Checker	Reviewer	Approval	Date
0	Cover = 1 Sheets = 5 Total = 6	*Approved* *10/17/2006* J. M. Capron	*Approved* *10/19/2006* T. M. Blakley	N/A	*Approved* *10/23/2006* D. N. Strom	
1	Cover = 1 Sheets = 5 Total = 6	J. M. Capron 10/25/06 J. M. Capron	T. M. Blakley 10/26/06 T. M. Blakley	N/A	10-26-06 D. N. Strom	10-26-06

SUMMARY OF REVISIONS

1	Calculation replaced in entirety to replace occurrences of "decision unit" with "sample area" and "sampling location" with "sample node" (primarily in sheet titles and column headers).

WCH-DE-018 (9/01/2006) * Obtain Calc. No. from R&DC and Form from Intranet

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron **Date** 10/25/06 **Calc. No.** 0100B-CA-V0296 **Rev. No.** 1
Project 100-B/C Field Remediation **Job No.** 14655 **Checked** T. M. Blakley **Date** 10/26/06
Subject 128-B-3 Waste Site Phase I Verification 95% UCL Calculations **Sheet No.** 1 of 5

Summary

Purpose:
Calculate the 95% upper confidence limit (UCL) values to evaluate compliance with cleanup standards for analytes detected during Phase I sampling and removed from consideration as contaminants of concern (COCs)/contaminants of potential concern (COPCs) for further sampling at the 128-B-3 waste site. Also, perform the *Washington Administrative Code* (WAC) 173-340-740(7)(e) 3-part test for each such constituent.

Table of Contents:
Sheets 1 to 2 - Summary
Sheet 3 - Sample Area A Phase I Verification Data
Sheet 4 - Sample Area B Phase I Verification Data
Sheet 5 - Ecology Software (MTCAStat) Results

Given/References:
1) Remedial action goals (RAGs) are taken from DOE-RL (2005b) and Ecology (2005).
2) DOE-RL, 2005a, *100 Area Remedial Action Sampling and Analysis Plan* (SAP), DOE/RL-96-22, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
3) DOE-RL, 2005b, *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (RDR/RAWP), DOE/RL-96-17, Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
4) Ecology, 1992, *Statistical Guidance for Ecology Site Managers*, Publication #92-54, Washington Department of Ecology, Olympia, Washington.
5) Ecology, 1993, *Statistical Guidance for Ecology Site Managers, Supplement S-6, Analyzing Site or Background Data with Below-detection Limit or Below-PQL Values (Censored Data Sets),* Publication #92-54, Washington Department of Ecology, Olympia, Washington.
6) Ecology, 2005, *Cleanup Levels and Risk Calculations (CLARC) Database*, Washington State Department of Ecology, Olympia, Washington, <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>.
7) EPA, 1994, *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA 540/R-94/013. U.S. Environmental Protection Agency, Washington, D.C.
8) WAC 173-340, 1996, "Model Toxic Control Act - Cleanup," *Washington Administrative Code.*

Solution:
Calculation methodology is described in Ecology Pub. #92-54 (Ecology 1992, 1993), below, and in the RDR/RAWP (DOE-RL 2005b). Use sample data to perform the 95% UCL calculation for each analyte and the WAC 173-340-740(7)(e) 3-part test. The hazard quotient and carcinogenic risk calculations are located in a separate calculation brief as an appendix to the Remaining Sites Verification Package (RSVP).

Calculation Description:
The subject calculations were performed on data from soil samples from the subject waste site. The data were entered into an EXCEL 2003 spreadsheet and calculations performed by using the built-in spreadsheet functions and/or creating formulae within the cells. The statistical evaluation of data for use in accordance with the RDR/RAWP (DOE-RL 2005b) is documented by this calculation. Duplicate RPD results are used in evaluation of data quality within the RSVP for this site.

Methodology:
For (nonradioactive) analytes with ≤50% of the data below detection limits, the statistical value calculated to estimate the true population mean is the 95% UCL. For (nonradioactive) analytes with >50% of the data below detection limits, the maximum detected value for the data set is used instead of the 95% UCL. No value is determined for data sets with no reported detections. No radioactive analytes were identified as COCs/COPCs for the subject site. Calculations are provided only for those analytes that were detected in at least one sample from a decision unit and were removed from further consideration as COCs/COPCs for additional sampling at that decision unit.

All (nonradionuclide) data reported as being undetected are set to ½ the detection limit value for calculation of the statistics (Ecology 1993). No radioactive analytes were identified as COCs/COPCs for the subject site. For the statistical evaluation of duplicate sample pairs, the samples are averaged before being included in the data set, after adjustments for censored data as described above.

For nonradionuclides, the WAC 173-340 statistical guidance suggests that a test for distributional form be performed on the data and the 95% UCL calculated on the appropriate distribution using Ecology software. For nonradionuclide small data sets (n < 10) and all radionuclide data sets, the calculations are performed assuming nonparametric distribution, so no tests for distribution are performed. For nonradionuclide data sets of ten or greater, as for the subject site, distributional testing and calculation of the

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC **Date** 10/25/06 **Calc. No.** 0100B-CA-V0296 **Rev. No.** 1
Checked T. M. Blakley TMB **Date** 10/26/06 **Job No.** 14655
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Phase I Verification 95% UCL Calculations **Sheet No.** 3 of 5

1 **Sample Area A Phase I Verification Data**

2	Sample Node	Sample Number	Sample Date	Hexavalent Chromium			TPH		
3				mg/kg	Q	PQL	mg/kg	Q	PQL
4	A-1	J11811	2/13/06	0.35		0.21	139	U	139
5	Duplicate of J1181	J11831	2/13/06	0.23		0.21	139	U	139
6	A-2	J11812	2/13/06	0.21	U	0.21	138	U	138
7	A-3	J11813	2/13/06	0.21	U	0.21	138	U	138
8	A-4	J11814	2/13/06	0.22	U	0.21	150	U	150
9	A-5	J11815	2/13/06	0.24		0.20	136	U	136
10	A-6	J11816	2/13/06	0.30		0.21	138	U	138
11	A-7	J11817	2/13/06	0.47		0.2	136	U	136
12	A-8	J11818	2/13/06	1.8		0.22	146	U	146
13	A-9	J11819	2/13/06	1.0		0.21	140	U	140
14	A-10	J11820	2/13/06	0.40		0.21	157		141

15 **Statistical Computation Input Data**

16	Sample Node	Sample Number	Sample Date	Hexavalent Chromium			TPH		
17				mg/kg			mg/kg		
18	A-1	J11811/J11831	2/13/2006	0.29			70		
19	A-2	J11812	2/13/2006	0.11			69		
20	A-3	J11813	2/13/2006	0.11			69		
21	A-4	J11814	2/13/2006	0.11			75		
22	A-5	J11815	2/13/2006	0.24			68		
23	A-6	J11816	2/13/2006	0.30			69		
24	A-7	J11817	2/13/2006	0.47			68		
25	A-8	J11818	2/13/2006	1.8			73		
26	A-9	J11819	2/13/2006	1.0			70		
27	A-10	J11820	2/13/2006	0.40			157		

28 **Statistical Computations**

29		Hexavalent Chromium			TPH		
30	95% UCL value based on	Large data set (n ≥ 10), use MTCAStat lognormal distribution.			Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.		
31	N	10			10		
32	% < Detection limit	30%			90%		
33	Mean	0.48			79		
34	Standard deviation	0.53			28		
35	95% UCL on mean	1.3			93		
36	Maximum detected value	1.8			157		
37	Statistical value	1.3			157		
38	**Most Stringent Cleanup Limit for nonradionuclide and RAG type**	2	River Protection		200	GW Protection	
39	**WAC 173-340 3-PART TEST**						
40	95% UCL > Cleanup Limit?	NO			NO		
41	> 10% above Cleanup Limit?	NO			NO		
42	Any sample > 2X Cleanup Limit?	NO			NO		
43	**WAC 173-340 Compliance? Yes**	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.			The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.		

44 GW = groundwater
45 PQL = practical quantitation limit
46 Q = qualifier
47 RAG = remedial action goal

TPH = total petroleum hydrocarbons
U = undetected
UCL = upper confidence limit
WAC = *Washington Administrative Code*

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC **Date** 10/25/06 **Calc. No.** 0100B-CA-V0296 **Rev. No.** 1
Checked T. M. Blakley TMB **Date** 10/26/06 **Job No.** 14655
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Phase I Verification 95% UCL Calculations **Sheet No.** 4 of 5

1 **Sample Area B Phase I Verification Data**

2				bis(2-Ethylhexyl)phthalate			Di-n-butylphthalate		
3	Sample Node	Sample Number	Sample Date	mg/kg	Q	PQL	mg/kg	Q	PQL
4	B-1	J11821	2/13/06	0.097	JB	0.36	0.025	J	0.36
5	B-2	J11822	2/13/06	0.054	JB	0.38	0.38	U	0.38
6	B-3	J11823	2/13/06	0.038	JB	0.37	0.37	U	0.37
7	B-4	J11824	2/13/06	0.21	JB	0.36	0.36	U	0.36
8	B-5	J11825	2/13/06	0.042	JB	0.37	0.37	U	0.37
9	B-6	J11826	2/13/06	0.033	JB	0.35	0.35	U	0.35
10	B-7	J11827	2/13/06	0.040	JB	0.37	0.37	U	0.37
11	B-8	J11828	2/13/06	0.031	JB	0.36	0.36	U	0.36
12	B-9	J11829	2/13/06	0.049	JB	0.37	0.37	U	0.37
13	B-10	J11830	2/13/06	0.029	JB	0.37	0.37	U	0.37

14 **Statistical Computation Input Data**

15	Sample Node	Sample Number	Sample Date	bis(2-Ethylhexyl)phthalate mg/kg			Di-n-butylphthalate mg/kg		
16									
17	B-1	J11821	2/13/2006	0.097			0.025		
18	B-2	J11822	2/13/2006	0.054			0.19		
19	B-3	J11823	2/13/2006	0.038			0.19		
20	B-4	J11824	2/13/2006	0.21			0.18		
21	B-5	J11825	2/13/2006	0.042			0.19		
22	B-6	J11826	2/13/2006	0.033			0.18		
23	B-7	J11827	2/13/2006	0.040			0.19		
24	B-8	J11828	2/13/2006	0.031			0.18		
25	B-9	J11829	2/13/2006	0.049			0.19		
26	B-10	J11830	2/13/2006	0.029			0.19		

27 **Statistical Computations**

28		bis(2-Ethylhexyl)phthalate			Di-n-butylphthalate		
29	95% UCL value based on	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.			Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.		
30	N	10			10		
31	% < Detection limit	0%			90%		
32	Mean	0.062			0.17		
33	Standard deviation	0.055			0.05		
34	95% UCL on mean	0.091			0.19		
35	Maximum detected value	0.21			0.025		
36	Statistical value	0.091			0.025		
37	**Most Stringent Cleanup Limit for nonradionuclide and RAG type**	0.36	River Protection		160	GW Protection	
38	**WAC 173-340 3-PART TEST**						
39	95% UCL > Cleanup Limit?	NO			NO		
40	> 10% above Cleanup Limit?	NO			NO		
41	Any sample > 2X Cleanup Limit?	NO			NO		
42	**WAC 173-340 Compliance? Yes**	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.			The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.		

43 B = method blank contamination
44 GW = groundwater
45 J = estimate
46 PQL = practical quantitation limit
47 Q = qualifier

RAG = remedial action goal
U = undetected
UCL = upper confidence limit
WAC = *Washington Administrative Code*

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC **Date** 10/25/06 **Calc. No.** 0100B-CA-V0296 **Rev. No.** 1
Project 100-B/C Field Remediation **Job No.** 14655 **Checked** T. M. Blakley **Date** 10/26/06
Subject 128-B-3 Waste Site Phase I Verification 95% UCL Calculations **Sheet No.** 5 of 5

Ecology Software (MTCAStat) Results

Hexavalent Chromium 95% UCL Calculation

DATA	ID
0.29	J11811/J11831
0.11	J11812
0.11	J11813
0.11	J11814
0.24	J11815
0.30	J11816
0.47	J11817
1.8	J11818
1.0	J11819
0.40	J11820

Number of samples		Uncensored values	
Uncensored	10	Mean	0.48
Censored		Lognormal mean	0.49
Detection limit or PQL		Std. devn.	0.53
Method detection limit		Median	0.30
TOTAL	10	Min.	0.11
		Max.	1.8

Lognormal distribution? r-squared is: 0.929
Normal distribution? r-squared is: 0.713
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 1.3

Total Petroleum Hydrocarbons 95% UCL Calculation

DATA	ID
70	J11811/J11831
69	J11812
69	J11813
75	J11814
68	J11815
69	J11816
68	J11817
73	J11818
70	J11819
157	J11820

Number of samples		Uncensored values	
Uncensored	10	Mean	79
Censored		Lognormal mean	78
Detection limit or PQL		Std. devn.	28
Method detection limit		Median	69
TOTAL	10	Min.	68
		Max.	157

Lognormal distribution? r-squared is: 0.435
Normal distribution? r-squared is: 0.400
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 93

bis(2-Ethylhexyl)phthalate 95% UCL Calculation

DATA	ID
0.097	J11821
0.054	J11822
0.038	J11823
0.21	J11824
0.042	J11825
0.033	J11826
0.040	J11827
0.031	J11828
0.049	J11829
0.029	J11830

Number of samples		Uncensored values	
Uncensored	10	Mean	0.062
Censored		Lognormal mean	0.061
Detection limit or PQL		Std. devn.	0.055
Method detection limit		Median	0.041
TOTAL	10	Min.	0.029
		Max.	0.21

Lognormal distribution? r-squared is: 0.801
Normal distribution? r-squared is: 0.601
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 0.091

Di-n-butylphthalate 95% UCL Calculation

DATA	ID
0.025	J11821
0.19	J11822
0.19	J11823
0.18	J11824
0.19	J11825
0.18	J11826
0.19	J11827
0.18	J11828
0.19	J11829
0.19	J11830

Number of samples		Uncensored values	
Uncensored	10	Mean	0.17
Censored		Lognormal mean	0.18
Detection limit or PQL		Std. devn.	0.05
Method detection limit		Median	0.19
TOTAL	10	Min.	0.03
		Max.	0.19

Lognormal distribution? r-squared is:
Normal distribution? r-squared is: 0.404
Recommendations:
Unable to analyze probability plot for lognormal case.
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 0.19

PQL = practical quantitation limit
UCL = upper confidence limit

CALCULATION COVER SHEET

Project Title:	100-B/C Field Remediation	**Job No.**	14655
Area	100-B/C		
Discipline	Environmental	***Calc. No.**	0100B-CA-V0294
Subject	128-B-3 Waste Site Cleanup Verification 95% UCL Calculations		
Computer Program	Excel	**Program No.**	Excel 2003

The attached calculations have been generated to document compliance with established cleanup levels. These calculations should be used in conjunction with other relevant documents in the administrative record.

Committed Calculation ☒ **Preliminary** ☐ **Superseded** ☐ **Voided** ☐

Rev.	Sheet Numbers	Originator	Checker	Reviewer	Approval	Date
0	Cover = 1 Sheets = 36 Attm. 1 = 47 Total = 84	*Approved 10/16/2006* J. M. Capron	*Approved 10/19/2006* T. M. Blakley	N/A	*Approved 10/23/2006* D. N. Strom	
1	Cover = 1 Sheets = 36 Attm. 1 = 47 Total = 84	10/25/06 J. M. Capron	10/26/06 T. M. Blakley	N/A	10-26-06 D. N. Strom	10-26-06

SUMMARY OF REVISIONS

1	Calculation replaced in entirety, with the exception of attachment 1, to replace occurrences of "decision unit" with "sample area" and "sampling location" with "sample node" (primarily in sheet titles and column headers).

WCH-DE-018 (9/01/2006) * Obtain Calc. No. from R&DC and Form from Intranet

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron **Date** 10/25/06 **Calc. No.** 0100B-CA-V0294 **Rev. No.** 1
Project 100-B/C Field Remediation **Job No.** 14655 **Checked** T. M. Blakley **Date** 10/26/06
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations **Sheet No.** 1 of 36

Summary

Purpose:
Calculate the 95% upper confidence limit (UCL) values to evaluate compliance with cleanup standards for the subject site. Also, perform the *Washington Administrative Code* (WAC) 173-340-740(7)(e) 3-part test for each nonradioactive contaminant of concern (COC) and contaminant of potential concern (COPC) and calculate the relative percent difference (RPD) for primary-duplicate sample pairs, as necessary.

Table of Contents:
Sheets 1 to 5 - Summary
Sheets 6 to 7 - Sampling Area A Verification Data
Sheets 8 to 9 - Sampling Area B Verification Data
Sheets 10 to 12 - Sampling Area C Verification Data
Sheets 13 to 15 - Sampling Area D Verification Data
Sheet 16 - Sampling Area A Duplicate Analysis
Sheet 17 - Sampling Area B Duplicate Analysis
Sheet 18 - Sampling Area C Duplicate Analysis
Sheets 19 to 36 - Ecology Software (MTCAStat) Results
Attachment 1 - 128-B-3 Phase II Verification Sampling Results (47 sheets)

Given/References:
1) Sample Results (Attachment 1).
2) Background values and remedial action goals (RAGs) are taken from DOE-RL (2005b), DOE-RL (2001), and Ecology (2005).
3) DOE-RL, 2001, *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes*, DOE/RL-92-24, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
4) DOE-RL, 2005a, *100 Area Remedial Action Sampling and Analysis Plan* (SAP), DOE/RL-96-22, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
5) DOE-RL, 2005b, *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (RDR/RAWP), DOE/RL-96-17, Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
6) Ecology, 1992, *Statistical Guidance for Ecology Site Managers*, Publication #92-54, Washington Department of Ecology, Olympia, Washington.
7) Ecology, 1993, *Statistical Guidance for Ecology Site Managers, Supplement S-6, Analyzing Site or Background Data with Below-detection Limit or Below-PQL Values (Censored Data Sets),* Publication #92-54, Washington Department of Ecology, Olympia, Washington.
8) Ecology, 2005, *Cleanup Levels and Risk Calculations (CLARC) Database*, Washington State Department of Ecology, Olympia, Washington, <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>.
9) EPA, 1994, *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA 540/R-94/013. U.S. Environmental Protection Agency, Washington, D.C.
10) EPA, 2002, *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites*, Office of Solid Waste and Emergency Response, Publication 9285.6-10, U.S. Environmental Protection Agency, Washington, D.C.
11) WAC 173-340, 1996, "Model Toxic Control Act - Cleanup," *Washington Administrative Code.*

Solution:
Calculation methodology is described in Ecology Pub. #92-54 (Ecology 1992, 1993), below, and in the RDR/RAWP (DOE-RL 2005b). Use data from attached worksheets to perform the 95% UCL calculation for each analyte, the WAC 173-340-740(7)(e) 3-part test for nonradionuclides, and the RPD calculations, as required. The hazard quotient and carcinogenic risk calculations are located in a separate calculation brief as an appendix to the Remaining Sites Verification Package (RSVP).

Calculation Description:
The subject calculations were performed on data from soil verification samples from the subject waste site. The data were entered into an EXCEL 2003 spreadsheet and calculations performed by using the built-in spreadsheet functions and/or creating formulae within the cells. The statistical evaluation of data for use in accordance with the RDR/RAWP (DOE-RL 2005b) is documented by this calculation. Duplicate RPD results are used in evaluation of data quality within the RSVP for this site.

Methodology:
For nonradioactive analytes with ≤50% of the data below detection limits and all detected radionuclide analytes, the statistical value calculated to evaluate the effectiveness of cleanup is the 95% UCL. For nonradioactive analytes with >50% of the data below detection limits, the maximum detected value for the data set is used instead of the 95% UCL (with the exception of total

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron **Date** 10/25/06 **Calc. No.** 0100B-CA-V0294 **Rev. No.** 1
Project 100-B/C Field Remediation **Job No.** 14655 **Checked** T. M. Blakley **Date** 10/26/06
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations **Sheet No.** 2 of 36

Summary (continued)

petroleum hydrocarbons [TPH] in Sampling Area C). The 95% UCL is not calculated for data sets with no reported detections. The evaluation of the portion of each analyte's data set below detection limits was performed by direct inspection of the attached sample results, and no further calculations were performed for those data sets where >50% of the data was below detection limits (with the exception of TPH within Sampling Area C). The 95% UCL values were not calculated for aluminum, calcium, iron, magnesium, potassium, silicon, and sodium, as no cleanup values are available in Ecology (2005) under WAC 173-340-740(3), and these constituents are thus not considered site COPCs.

All nonradionuclide data reported as being undetected are set to ½ the detection limit value for calculation of the statistics (Ecology 1993), with the exception of TPH within Sampling Area C. In cases where third-party validation requalified detected results as nondetected due to method blank contamination, but did not change the laboratory quantitation limit (e.g., methylene chloride within Sampling Area C), ½ the reported value was used for calculation of the statistics. For radionuclide data, calculation of the statistics is done using the reported value. In cases where the laboratory does not report a value below the minimum detectable activity (MDA), half of the MDA is used in the calculation. For the statistical evaluation of duplicate sample pairs, the samples are averaged before being included in the data set, after adjustments for censored data as described above.

TPH was detected at a maximum concentration of 258 mg/kg in Sampling Area C, slightly above the soil remedial action goal for protection of groundwater, in one sample from the data set. TPH was not detected (i.e., was censored) in the reaminder (94%) of the sample data set, and, as described previously, the statistical value is typically set equal to the maximum detected concentration under this scenario. However, doing so is a stringent test for compliance with a cleanup level, particularly since the maximum does not violate the compliance criteria of exceeding twice the cleanup level, as described below. Therefore, for Sampling Area C, the 95% UCL value for TPH was calculated using a method suggested in EPA (2002), in which the censored data is set equal to the detection limit and the 95% UCL calculated using the resulting data set.

For nonradionuclides, the WAC 173-340 statistical guidance suggests that a test for distributional form be performed on the data and the 95% UCL calculated on the appropriate distribution using Ecology software. For nonradionuclide small data sets (n < 10) and all radionuclide data sets, the calculations are performed assuming nonparametric distribution, so no tests for distribution are performed. For nonradionuclide data sets of ten or greater, as for the subject site, distributional testing and calculation of the 95% UCL is done using Ecology's MTCAStat software (Ecology 1993). Due to differences in addressing censored data between the RDR/RAWP (DOE-RL 2005b) and MTCAStat coding and due to a limitation in the MTCAStat coding (no direct capability to address variable quantitation limits within a data set), substitutions for censored data are performed before software input and the resulting input set treated as uncensored.

The WAC 173-340-740(7)(e) 3-part test is performed for nonradionuclide analytes only and determines if:
1) the 95% UCL exceeds the most stringent cleanup limit for each COPC/COC,
2) greater than 10% of the raw data exceed the most stringent cleanup limit for each COPC/COC,
3) the maximum value of the raw data set exceeds two times the most stringent cleanup limit for each COPC/COC.

The WAC 173-340-740(7)(e) 3-part test is not performed for COPCs/COCs where the statistical value defaults to the maximum value in the data set. Instead, direct comparison of the maximum value against site RAGs (within the RSVP) is used as the compliance basis.

The RPD is calculated when both the primary value and the duplicate value for a given analyte are above detection limits and are greater than 5 times the target detection limit (TDL). The TDL is a laboratory detection limit pre-determined for each analytical method, listed in Table II-1 of the SAP (DOE-RL 2005a). Where direct evaluation of the attached sample data showed that a given analyte was not detected in the primary and duplicate sample, further evaluation of the RPD value was not performed. The RPD calculations use the following formula:

$$RPD = [\,|M-S|/((M+S)/2)]*100$$

where, M = main sample value S = split (or duplicate) sample value

For quality assurance/quality control (QA/QC) split and duplicate RPD calculations, a value less than 30% indicates the data compare favorably. For regulatory splits, a threshold of 35% is used (EPA 1994). If the RPD is greater than 30% (or 35% for regulatory split data), further investigation regarding the usability of the data is performed. As a matter of good practice, when an analyte is detected in the primary or duplicate sample, but was quantified at less than 5 times the TDL in one or both samples, an additional parameter is evaluated. In this case, if the difference between the primary and duplicate results exceeds a control limit of 2 times the TDL, further assessment regarding the usability of the data is performed. No split samples were collected for cleanup verification of the subject site. Additional discussion is provided in the data quality assessment section of the applicable RSVP, as necessary.

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC **Date** 10/25/06 **Calc. No.** 0100B-CA-V0294 **Rev. No.** 1
Project 100-B/C Field Remediation **Job No.** 14655 **Checked** T. M. Blakley TMB **Date** 10/26/06
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations **Sheet No.** 3 of 36

Summary (continued)

In addition to the statistical samples collected from the remediation footprint at the subject site, multi-aliquot samples were collected from special waste staging areas. Statistical methodology is not applicable to non-statistical sampling, and direct evaluation of detected values within this decision unit will be used as the compliance basis. These maximum detected values are presented in the results summary for use in the RSVP.

Results:
The results presented in the summary tables that follow are for use in risk analysis and the RSVP for the subject site.

Results Summary - Sample Area A			
Analyte	**95% UCL[a]**	**Maximum[b]**	**Units**
Arsenic	3.5		mg/kg
Barium	88.3		mg/kg
Beryllium	0.35		mg/kg
Boron	2.8		mg/kg
Chromium	13.6		mg/kg
Cobalt	6.5		mg/kg
Copper	16.7		mg/kg
Lead	5.6		mg/kg
Manganese	309		mg/kg
Mercury		0.07	mg/kg
Nickel	13.4		mg/kg
Vanadium	34.9		mg/kg
Zinc	40.5		mg/kg
Aroclor-1254		0.19	mg/kg
Endrin		0.0024	mg/kg
Benzo(a)anthracene		0.024	mg/kg
Benzo(a)pyrene		0.017	mg/kg
Benzo(b)fluoranthene		0.032	mg/kg
Benzo(k)fluoranthene		0.030	mg/kg
bis(2-Ethylhexyl)phthalate	0.052		mg/kg
Chrysene		0.038	mg/kg
Di-n-butylphthalate		0.023	mg/kg
Fluoranthene		0.020	mg/kg
Pyrene		0.031	mg/kg
Methylene chloride	0.008		mg/kg
WAC 173-340-740(7)(e) Evaluation			
95% UCL > most stringent RAG?	NO		
> 10% above most stringent RAG?	NO		
Any sample > 2X most stringent RAG?	NO		
All data sets meet the WAC 173-340 3-part test criteria in comparison against the most stringent RAG values.			

Results Summary - Sample Area B			
Analyte	**95% UCL[a]**	**Maximum[b]**	**Units**
Arsenic	5.9		mg/kg
Barium	132		mg/kg
Beryllium	0.45		mg/kg
Boron	7.3		mg/kg
Cadmium		0.52	mg/kg
Chromium	42.4		mg/kg
Cobalt	8.1		mg/kg
Copper	32.9		mg/kg
Hexavalent chromium	0.34		mg/kg
Lead	19.9		mg/kg
Manganese	390		mg/kg
Mercury	0.12		mg/kg
Nickel	17.9		mg/kg
Silver		0.30	mg/kg
Vanadium	41.1		mg/kg
Zinc	74.6		mg/kg
Total petroleum hydrocarbons		431	mg/kg
Aroclor-1254	0.011		mg/kg
Methylene chloride	0.016		mg/kg
WAC 173-340-740(7)(e) Evaluation			
95% UCL > most stringent RAG?	YES		
> 10% above most stringent RAG?	YES		
Any sample > 2X most stringent RAG?	YES		
Because of the "yes" answers to the WAC 173-340 3-part test for barium, chromium, copper, lead, zinc, and Aroclor-1254, additional evaluation of the attainment of cleanup criteria will be performed. All data sets meet the WAC 173-340 3-part test criteria in comparison against direct exposure RAGs.			

[a]For nonradionuclides, where ≤ 50% of a data set is censored (below detection limits), the 95% UCL value is used for a given analyte.
[b]For nonradionuclides, where > 50% of a data set is censored, the statistical value defaults to the maximum detected value in the data set (Attachment 1).
RAG = remedial action goal
UCL = upper confidence level
WAC = *Washington Adminstrative Code*

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC **Date** 10/25/06 **Calc. No.** 0100B-CA-V0294 **Rev. No.** 1
Project 100-B/C Field Remediation **Job No.** 14655 **Checked** T. M. Blakley TMB **Date** 10/26/06
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations **Sheet No.** 4 of 36

Summary (continued)

Results Summary - Sample Area C			
Analyte	**95% UCL[a]**	**Maximum[b]**	**Units**
Arsenic	3.9		mg/kg
Barium	101		mg/kg
Beryllium	0.43		mg/kg
Boron	2.6		mg/kg
Cadmium		0.59	mg/kg
Chromium	15.3		mg/kg
Copper	17.8		mg/kg
Hexavalent chromium		0.34	mg/kg
Lead	8.4		mg/kg
Manganese	380		mg/kg
Mercury		0.08	mg/kg
Molybdenum		4.7	mg/kg
Nickel	13.5		mg/kg
Silver		0.30	mg/kg
Vanadium	41.3		mg/kg
Zinc	49.4		mg/kg
Total petroleum hydrocarbons	153		mg/kg
Aroclor-1254		0.043	mg/kg
Aroclor-1260		0.0069	mg/kg
Aldrin		0.00037	mg/kg
4,4'-DDE		0.015	mg/kg
4,4'-DDT		0.012	mg/kg
Endosulfan sulfate		0.0027	mg/kg
Endrin aldehyde		0.0053	mg/kg
Endrin ketone		0.0009	mg/kg
gamma-Chlordane		0.00033	mg/kg
Methoxychlor		0.0042	mg/kg
Benzo(a)anthracene		0.047	mg/kg
Benzo(a)pyrene		0.053	mg/kg
Benzo(b)fluoranthene		0.055	mg/kg
Benzo(g,h,i)perylene		0.090	mg/kg
Benzo(k)fluoranthene		0.043	mg/kg
bis(2-Ethylhexyl)phthalate	0.24		mg/kg
Chrysene		0.10	mg/kg
Di-n-butylphthalate	0.11		mg/kg
Dibenz(a,h)anthracene		0.056	mg/kg
Fluoranthene		0.062	mg/kg
Indeno(1,2,3-cd)pyrene		0.050	mg/kg
Pyrene		0.087	mg/kg
Acetone		0.035	mg/kg
Methylene chloride	0.015		mg/kg
Toluene		0.002	mg/kg
Xylenes (total)		0.003	mg/kg

WAC 173-340-740(7)(e) Evaluation

95% UCL > most stringent RAG?	NO
> 10% above most stringent RAG?	YES
Any sample > 2X most stringent RAG?	NO

Because of the "yes" answer to the WAC 173-340 3-part test for copper, additional evaluation of the attainment of cleanup criteria will be performed.
All data sets meet the WAC 173-340 3-part test criteria in comparison against direct exposure RAGs.

Results Summary - Sample Area D			
Analyte	**95% UCL[a]**	**Maximum[b]**	**Units**
Arsenic	3.2		mg/kg
Barium	130		mg/kg
Beryllium	0.41		mg/kg
Boron	10.4		mg/kg
Chromium	15.2		mg/kg
Cobalt	8.0		mg/kg
Copper	23.7		mg/kg
Hexavalent chromium	0.27		mg/kg
Lead	18.9		mg/kg
Manganese	390		mg/kg
Mercury	1.6		mg/kg
Nickel	13.4		mg/kg
Vanadium	38.7		mg/kg
Zinc	76.3		mg/kg
Total petroleum hydrocarbons		179	mg/kg
Aroclor-1254	0.15		mg/kg
Aroclor-1260	0.055		mg/kg
Aldrin		0.00037	mg/kg
4,4'-DDE	0.027		mg/kg
4,4'-DDT		0.015	mg/kg
Dieldrin		0.012	mg/kg
Endrin aldehyde	0.0138		mg/kg
gamma-Chlordane		0.00083	mg/kg
Methoxychlor		0.0043	mg/kg
Benzo(a)anthracene		0.043	mg/kg
Benzo(a)pyrene		0.041	mg/kg
Benzo(b)fluoranthene		0.041	mg/kg
Benzo(g,h,i)perylene		0.041	mg/kg
Benzo(k)fluoranthene		0.038	mg/kg
bis(2-Ethylhexyl)phthalate	0.22		mg/kg
Chrysene		0.060	mg/kg
Di-n-butylphthalate	0.14		mg/kg
Dibenz(a,h)anthracene		0.018	mg/kg
Fluoranthene		0.054	mg/kg
Indeno(1,2,3-cd)pyrene		0.024	mg/kg
Phenanthrene		0.037	mg/kg
Pyrene		0.075	mg/kg
Acetone		0.013	mg/kg
Methylene chloride	0.018		mg/kg
Toluene	0.002		mg/kg
Xylenes (total)		0.001	mg/kg

WAC 173-340-740(7)(e) Evaluation

95% UCL > most stringent RAG?	YES
> 10% above most stringent RAG?	YES
Any sample > 2X most stringent RAG?	YES

Because of the "yes" answers to the WAC 173-340 3-part test for barium, copper, lead, mercury, zinc, 4,4'-DDE, additional evaluation of the attainment of cleanup criteria will be performed.
All data sets meet the WAC 173-340 3-part test criteria in comparison against direct exposure RAGs.

[a]For nonradionuclides, where ≤ 50% of a data set is censored (below detection limits), the 95% UCL value is used for a given analyte.
[b]For nonradionuclides, where > 50% of a data set is censored, the statistical value defaults to the maximum detected value in the data set (Attachment 1).
RAG = remedial action goal
UCL = upper confidence level
WAC = *Washington Adminstrative Code*

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron **Date** 10/25/06 **Calc. No.** 0100B-CA-V0294 **Rev. No.** 1
Project 100-B/C Field Remediation **Job No.** 14655 **Checked** T. M. Blakley **Date** 10/26/06
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations **Sheet No.** 5 of 36

Summary (continued)

Results Summary - Tar Staging Area		
Analyte	**Maximum[a]**	**Units**
Arsenic	3.8	mg/kg
Barium	279	mg/kg
Beryllium	0.83	mg/kg
Boron	17.5	mg/kg
Chromium	12.2	mg/kg
Cobalt	8.0	mg/kg
Copper	17.9	mg/kg
Hexavalent chromium	1.1	mg/kg
Lead	10.6	mg/kg
Manganese	390	mg/kg
Mercury	0.09	mg/kg
Nickel	12.2	mg/kg
Vanadium	37.0	mg/kg
Zinc	50.2	mg/kg
Aroclor-1254	0.12	mg/kg
Aroclor-1260	0.019	mg/kg
beta-BHC	0.00054	mg/kg
4,4'-DDE	0.0036	mg/kg
Endrin aldehyde	0.00094	mg/kg
bis(2-Ethylhexyl)phthalate	0.029	mg/kg
Methylene chloride	0.011	mg/kg

Results Summary - Lead Staging Area		
Analyte	**Maximum[a]**	**Units**
Arsenic	3.5	mg/kg
Barium	173	mg/kg
Beryllium	0.71	mg/kg
Boron	8.0	mg/kg
Chromium	12.5	mg/kg
Cobalt	7.3	mg/kg
Copper	15.8	mg/kg
Lead	14.5	mg/kg
Manganese	372	mg/kg
Mercury	0.12	mg/kg
Nickel	11.1	mg/kg
Silver	0.25	mg/kg
Vanadium	37.2	mg/kg
Zinc	59.5	mg/kg

[a]Verification sampling at the special waste staging areas was based on multi-aliquot, rather than statistical, sampling.

Relative Percent Difference Results[a]			
Analyte	**Primary/Duplicate Pair**		
	J12P05/J12P15	**J12P25/J12P27**	**J12P49/J12P50**
Aluminum	7.8%	3.6%	3.6%
Barium	11%	29%	10%
Calcium	17%	10%	15%
Chromium	5.4%	5.7%	3.8%
Copper	14%	71%	2.0%
Iron	8.9%	7.2%	6.3%
Lead		57%	
Magnesium	6.4%	2.8%	0.68%
Manganese	18%	4.6%	1.9%
Silicon	4.4%	27%	4.5%
Vanadium	13%	1.8%	8.2%
Zinc	7.0%	13%	1.4%
Aroclor-1254	17%		

[a]Relative percent difference evaluation was not required for analytes not included in this table.

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations

Date 10/25/06
Job No. 14655

Calc. No. 0100B-CA-V0294
Checked T. M. Blakley TMB

Rev. No. 1
Date 10/26/06
Sheet No. 6 of 36

Sample Area A Verification Data

Sample Node	Sample Number	Sample Date	Arsenic mg/kg	Arsenic Q	Arsenic PQL	Barium mg/kg	Barium Q	Barium PQL	Beryllium mg/kg	Beryllium Q	Beryllium PQL	Boron mg/kg	Boron Q	Boron PQL	Chromium mg/kg	Chromium Q	Chromium PQL	Cobalt mg/kg	Cobalt Q	Cobalt PQL	Copper mg/kg	Copper Q	Copper PQL
A-1	J12P05	7/5/06	2.6		1.7	69.7		0.06	0.33		0.06	2.4	C	0.68	7.2		0.37	5.8		0.39	14.6		0.34
Duplicate of J12P05	J12P15	7/5/06	2.6		1.7	62.4		0.06	0.30		0.06	1.2	C	0.67	7.6		0.36	5.2		0.39	12.7		0.34
A-2	J12P06	7/5/06	2.1		1.7	93.9		0.06	0.30		0.06	1.7	C	0.68	7.6		0.37	5.5		0.39	11.2		0.34
A-3	J12P07	7/5/06	2.9		1.7	73.1		0.06	0.31		0.06	2.1	C	0.67	11.7		0.37	6.3		0.39	15.0		0.34
A-4	J12P08	7/5/06	3.5		1.7	85.0		0.06	0.38		0.06	2.9	C	0.68	11.7		0.37	7.3		0.39	14.9		0.34
A-5	J12P09	7/5/06	4.0		1.7	101		0.06	0.40		0.06	4.5	C	0.67	22.1		0.36	7.1		0.39	22.3		0.33
A-6	J12P10	7/5/06	2.9		1.7	70.4		0.06	0.30		0.06	1.8	C	0.67	11.5		0.36	5.4		0.39	13.6		0.34
A-7	J12P11	7/5/06	3.6		1.7	70.6		0.06	0.35		0.06	1.5	C	0.67	11.1		0.37	6.3		0.39	14.8		0.34
A-8	J12P12	7/5/06	2.1		1.7	81.0		0.06	0.32		0.06	1.7	C	0.68	10.7		0.37	6.1		0.39	16.2		0.34
A-9	J12P13	7/5/06	3.0		1.7	89.4		0.06	0.30		0.06	2.3	C	0.67	11.5		0.36	5.8		0.39	15.1		0.34
A-10	J12P14	7/5/06	3.4		1.7	80.2		0.06	0.30		0.06	1.1	C	0.68	9.7		0.37	6.1		0.39	15.0		0.34

Statistical Computation Input Data

Sample Node	Sample Number	Sample Date	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Boron mg/kg	Chromium mg/kg	Cobalt mg/kg	Copper mg/kg
A-1	J12P05/J12P15	7/5/2006	2.6	66.1	0.32	1.8	7.4	5.5	13.7
A-2	J12P06	7/5/2006	2.1	93.9	0.30	1.7	7.6	5.5	11.2
A-3	J12P07	7/5/2006	2.9	73.1	0.31	2.1	11.7	6.3	15.0
A-4	J12P08	7/5/2006	3.5	85.0	0.38	2.9	11.7	7.3	14.9
A-5	J12P09	7/5/2006	4.0	101	0.40	4.5	22.1	7.1	22.3
A-6	J12P10	7/5/2006	2.9	70.4	0.30	1.8	11.5	5.4	13.6
A-7	J12P11	7/5/2006	3.6	70.6	0.35	1.5	11.1	6.3	14.8
A-8	J12P12	7/5/2006	2.1	81.0	0.32	1.7	10.7	6.1	16.2
A-9	J12P13	7/5/2006	3.0	89.4	0.30	2.3	11.5	5.8	15.1
A-10	J12P14	7/5/2006	3.4	80.2	0.30	1.1	9.7	6.1	15.0

Statistical Computations

	Arsenic	Barium	Beryllium	Boron	Chromium	Cobalt	Copper
95% UCL value based on	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.
N	10	10	10	10	10	10	10
% < Detection limit	0%	0%	0%	0%	0%	0%	0%
Mean	3.0	81.1	0.33	2.1	11.5	6.1	15.2
Standard deviation	0.6	11.4	0.04	1.0	4.1	0.7	2.8
95% UCL on mean	3.5	88.3	0.35	2.8	13.6	6.5	16.7
Maximum detected value	4.0	101	0.40	4.5	22.1	7.3	22.3
Statistical value	3.5	88.3	0.35	2.8	13.6	6.5	16.7
Most Stringent Cleanup Limit for nonradionuclide and RAG type	20 Direct Exposure/GW & River Protection	132 BG/GW Protection	1.51 BG/GW & River Protection	320 GW Protection	18.5 BG/GW & River Protection	32 GW Protection	22.0 BG/River Protection
WAC 173-340 3-PART TEST							
95% UCL > Cleanup Limit?	NA	NA	NA	NO	NO	NA	NO
> 10% above Cleanup Limit?	NA	NA	NA	NO	NO	NA	NO
Any sample > 2X Cleanup Limit?	NA	NA	NA	NO	NO	NA	NO
WAC 173-340 Compliance? Yes	Because all values are below background (6.5 mg/kg), the WAC 173-340 3-part test is not required.	Because all values are below background (132 mg/kg), the WAC 173-340 3-part test is not required.	Because all values are below background (1.51 mg/kg), the WAC 173-340 3-part test is not required.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	Because all values are below background (15.7 mg/kg), the WAC 173-340 3-part test is not required.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.

BG = background
GW = groundwater
NA = not applicable
PQL = practical quantitation limit
Q = qualifier
RAG = remedial action goal
UCL = upper confidence limit
WAC = *Washington Administrative Code*

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations

Date 10/25/06
Job No. 14655

Calc. No. 0100B-CA-V0294
Checked T. M. Blakley TMB

Rev. No. 1
Date 10/26/06
Sheet No. 7 of 36

1 **Sample Area A Verification Data (continued)**

2	Sample	Sample	Sample	Lead			Manganese			Nickel			Vanadium			Zinc			bis(2-Ethylhexyl)phthalate			Methylene Chloride		
3	Node	Number	Date	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
4	A-1	J12P05	7/5/06	4.4		0.87	299		0.08	8.8		0.68	33.5		0.25	32.4		0.45	0.037	JB	0.33	0.009	B	0.005
5	Duplicate of J12P05	J12P15	7/5/06	3.9		0.87	250		0.08	8.6		0.67	29.5		0.25	30.2		0.45	0.033	JB	0.34	0.007	B	0.005
6	A-2	J12P06	7/5/06	3.3		0.87	330		0.08	8.7		0.68	34.1		0.25	30.2		0.45	0.089	JB	0.33	0.007	B	0.005
7	A-3	J12P07	7/5/06	5.1		0.87	305		0.08	14.1		0.67	31.9		0.25	37.1		0.45	0.041	JB	0.33	0.008	B	0.005
8	A-4	J12P08	7/5/06	5.5		0.87	341		0.08	13.1		0.68	37.5		0.25	40.1		0.45	0.018	JB	0.33	0.009	B	0.005
9	A-5	J12P09	7/5/06	6.7		0.86	306		0.08	15.1		0.67	34.6		0.25	48.6		0.45	0.028	JB	0.33	0.009	B	0.005
10	A-6	J12P10	7/5/06	4.5		0.87	271		0.08	12.9		0.67	29.2		0.25	34.4		0.45	0.030	JB	0.34	0.004	JB	0.005
11	A-7	J12P11	7/5/06	3.9		0.87	268		0.08	11.9		0.67	35.8		0.25	37.8		0.45	0.025	JB	0.33	0.006	B	0.005
12	A-8	J12P12	7/5/06	4.3		0.87	286		0.08	12.6		0.68	33.0		0.25	40.4		0.45	0.022	JB	0.33	0.005	B	0.005
13	A-9	J12P13	7/5/06	5.8		0.87	268		0.08	12.7		0.67	31.9		0.25	36.5		0.45	0.024	JB	0.34	0.007	B	0.005
14	A-10	J12P14	7/5/06	5.4		0.87	283		0.08	12.9		0.68	34.8		0.25	36.6		0.45	0.057	JB	0.33	0.008	B	0.005

15 **Statistical Computation Input Data**

16	Sample	Sample	Sample	Lead	Manganese	Nickel	Vanadium	Zinc	bis(2-Ethylhexyl)phthalate	Methylene Chloride
17	Node	Number	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
18	A-1	J12P05/J12P15	7/5/2006	4.2	275	8.7	31.5	31.3	0.035	0.008
19	A-2	J12P06	7/5/2006	3.3	330	8.7	34.1	30.2	0.089	0.007
20	A-3	J12P07	7/5/2006	5.1	305	14.1	31.9	37.1	0.041	0.008
21	A-4	J12P08	7/5/2006	5.5	341	13.1	37.5	40.1	0.018	0.009
22	A-5	J12P09	7/5/2006	6.7	306	15.1	34.6	48.6	0.028	0.009
23	A-6	J12P10	7/5/2006	4.5	271	12.9	29.2	34.4	0.030	0.004
24	A-7	J12P11	7/5/2006	3.9	268	11.9	35.8	37.8	0.025	0.006
25	A-8	J12P12	7/5/2006	4.3	286	12.6	33.0	40.4	0.022	0.005
26	A-9	J12P13	7/5/2006	5.8	268	12.7	31.9	36.5	0.024	0.007
27	A-10	J12P14	7/5/2006	5.4	283	12.9	34.8	36.6	0.057	0.008

28 **Statistical Computations**

29		Lead	Manganese	Nickel	Vanadium	Zinc	bis(2-Ethylhexyl)phthalate	Methylene Chloride
30	95% UCL value based on	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat normal distribution.
31	N	10	10	10	10	10	10	10
32	% < Detection limit	0%	0%	0%	0%	0%	0%	0%
33	Mean	4.9	293	12.3	33.4	37.3	0.037	0.007
34	Standard deviation	1.0	26	2.1	2.4	5.2	0.021	0.002
35	95% UCL on mean	5.6	309	13.4	34.9	40.5	0.052	0.008
36	Maximum detected value	6.7	341	15.1	37.5	48.6	0.089	0.009
37	Statistical value	5.6	309	13.4	34.9	40.5	0.052	0.008
38	**Most Stringent Cleanup Limit for nonradionuclide and RAG type**	10.2 BG/GW & River Protection	512 BG/GW & River Protection	19.1 BG/GW Protection	85.1 BG/GW Protection	67.8 BG/River Protection	0.36 River Protection	0.5 GW Protection
39	**WAC 173-340 3-PART TEST**							
40	95% UCL > Cleanup Limit?	NA	NA	NA	NA	NA	NO	NO
41	> 10% above Cleanup Limit?	NA	NA	NA	NA	NA	NO	NO
42	Any sample > 2X Cleanup Limit?	NA	NA	NA	NA	NA	NO	NO
43	**WAC 173-340 Compliance? Yes**	Because all values are below background (10.2 mg/kg), the WAC 173-340 3-part test is not required.	Because all values are below background (512 mg/kg), the WAC 173-340 3-part test is not required.	Because all values are below background (19.1 mg/kg), the WAC 173-340 3-part test is not required.	Because all values are below background (85.1 mg/kg), the WAC 173-340 3-part test is not required.	Because all values are below background (67.8 mg/kg), the WAC 173-340 3-part test is not required.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.

44 B = method blank contamination (organic constituent)
45 BG = background
46 GW = groundwater
47 J = estimate
48 NA = not applicable

PQL = practical quantitation limit
Q = qualifier
RAG = remedial action goal
UCL = upper confidence limit
WAC = *Washington Administrative Code*

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations

Date 10/25/06
Job No. 14655

Calc. No. 0100B-CA-V0294
Checked T. M. Blakley TMB

Rev. No. 1
Date 10/26/06
Sheet No. 8 of 36

1 **Sample Area B Verification Data**

2	Sample	Sample	Sample	Arsenic			Barium			Beryllium			Boron			Chromium			Cobalt			Copper			Hexavalent Chromium		
3	Node	Number	Date	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
4	B-1	J12P17	7/5/06	3.1		1.7	89.5		0.06	0.36		0.06	3.0	C	0.68	30.3		0.37	7.0		0.39	16.7		0.34	0.22		0.20
5	B-2	J12P18	7/5/06	5.5		1.7	107		0.06	0.42		0.06	2.7	C	0.68	50.2		0.37	8.0		0.40	24.9		0.34	0.20	U	0.20
6	B-3	J12P19	7/5/06	2.8		1.7	84.0		0.06	0.32		0.06	3.0	C	0.68	22.2		0.37	6.6		0.40	17.3		0.34	0.25		0.20
7	B-4	J12P20	7/5/06	7.4		1.7	159		0.06	0.59		0.06	12.0	C	0.67	18.5		0.37	10.7		0.39	26.5		0.34	0.20	U	0.20
8	B-5	J12P21	7/5/06	4.2		1.7	95.3		0.06	0.35		0.06	2.5	C	0.68	59.3		0.37	7.6		0.40	22.5		0.34	0.20	U	0.20
9	B-6	J12P22	7/5/06	2.9		1.8	84.0		0.06	0.27		0.06	0.89	C	0.69	13.7		0.37	5.2		0.40	14.5		0.35	0.25		0.20
10	B-7	J12P23	7/5/06	6.1		1.7	133		0.06	0.46		0.06	4.8	C	0.68	17.2		0.37	8.6		0.40	22.6		0.34	0.23		0.20
11	B-8	J12P24	7/5/06	4.8		1.7	105		0.06	0.35		0.06	2.2	C	0.68	16.1		0.37	5.8		0.40	21.2		0.34	0.31		0.20
12	B-9	J12P25	7/5/06	5.8		1.8	118		0.06	0.51		0.06	4.5	C	0.73	34.3		0.39	6.6		0.42	37.4		0.36	1.2		0.21
13	Duplicate of J12P25	J12P27	7/5/06	4.5		1.8	158		0.06	0.37		0.06	6.8		0.72	32.4		0.39	6.2		0.42	78.9		0.36	0.21	U	0.21
14	B-10	J12P26	7/5/06	2.0		1.7	48.9		0.06	0.24		0.06	1.3	C	0.68	10.4		0.37	2.8		0.40	9.6		0.34	0.30		0.20

15 **Statistical Computation Input Data**

16	Sample	Sample	Sample	Arsenic	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Hexavalent Chromium
17	Node	Number	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
18	B-1	J12P17	7/5/2006	3.1	89.5	0.36	3.0	30.3	7.0	16.7	0.22
19	B-2	J12P18	7/5/2006	5.5	107	0.42	2.7	50.2	8.0	24.9	0.10
20	B-3	J12P19	7/5/2006	2.8	84.0	0.32	3.0	22.2	6.6	17.3	0.25
21	B-4	J12P20	7/5/2006	7.4	159	0.59	12.0	18.5	10.7	26.5	0.10
22	B-5	J12P21	7/5/2006	4.2	95.3	0.35	2.5	59.3	7.6	22.5	0.10
23	B-6	J12P22	7/5/2006	2.9	84.0	0.27	0.89	13.7	5.2	14.5	0.25
24	B-7	J12P23	7/5/2006	6.1	133	0.46	4.8	17.2	8.6	22.6	0.23
25	B-8	J12P24	7/5/2006	4.8	105	0.35	2.2	16.1	5.8	21.2	0.31
26	B-9	J12P25/J12P27	7/5/2006	5.2	138	0.44	5.7	33.4	6.4	58.2	0.65
27	B-10	J12P26	7/5/2006	2.0	48.9	0.24	1.3	10.4	2.8	9.6	0.30

28 **Statistical Computations**

29		Arsenic	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Hexavalent Chromium
30	95% UCL value based on	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat normal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.
31	N	10	10	10	10	10	10	10	10
32	% < Detection limit	0%	0%	0%	0%	0%	0%	0%	30%
33	Mean	4.4	104	0.38	3.8	27.1	6.9	23.4	0.25
34	Standard deviation	1.7	32	0.10	3.2	16.3	2.1	13.2	0.16
35	95% UCL on mean	5.9	132	0.45	7.3	42.4	8.1	32.9	0.34
36	Maximum detected value	7.4	159	0.59	12.0	59.3	10.7	78.9	1.2
37	Statistical value	5.9	132	0.45	7.3	42.4	8.1	32.9	0.34
38	**Most Stringent Cleanup Limit for nonradionuclide and RAG type**	20 Direct Exposure/GW & River Protection	132 BG/GW Protection	1.51 BG/GW & River Protection	320 GW Protection	18.5 BG/GW & River Protection	32 GW Protection	22.0 BG/River Protection	2 River Protection
39	**WAC 173-340 3-PART TEST**								
40	95% UCL > Cleanup Limit?	NO	NO	NA	NO	YES	NA	YES	NO
41	> 10% above Cleanup Limit?	NO	YES	NA	NO	YES	NA	YES	NO
42	Any sample > 2X Cleanup Limit?	NO	NO	NA	NO	YES	NA	YES	NO
43	**WAC 173-340 Compliance? Further assessment required**	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	Because of the "yes" answer to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	Because all values are below background (1.51 mg/kg), the WAC 173-340 3-part test is not required.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	Because of the "yes" answers to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	Because all values are below background (15.7 mg/kg), the WAC 173-340 3-part test is not required.	Because of the "yes" answers to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.

44 BG = background
45 C = method blank contamination (inorganic constituents)
46 GW = groundwater
47 NA = not applicable
48 PQL = practical quantitation limit

Q = qualifier
RAG = remedial action goal
U = undetected
UCL = upper confidence limit
WAC = *Washington Administrative Code*

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations

Date 10/25/06
Job No. 14655

Calc. No. 0100B-CA-V0294
Checked T. M. Blakley TMB

Rev. No. 1
Date 10/26/06
Sheet No. 9 of 36

1 **Sample Area B Verification Data (continued)**

2	Sample	Sample	Sample	Lead			Manganese			Mercury			Nickel			Vanadium			Zinc			Aroclor-1254			Methylene Chloride		
3	Node	Number	Date	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
4	B-1	J12P17	7/5/06	9.4		0.87	320		0.08	0.07		0.01	12.9		0.68	38.7		0.25	48.0		0.45	0.0082	J	0.013	0.009	B	0.005
5	B-2	J12P18	7/5/06	7.3		0.88	348		0.08	0.02	U	0.02	18.4		0.68	43.3		0.25	51.3		0.45	0.013	U	0.013	0.009	B	0.005
6	B-3	J12P19	7/5/06	10.6		0.88	316		0.08	0.06		0.02	12.8		0.68	33.6		0.25	51.2		0.45	0.0042	J	0.013	0.010	B	0.005
7	B-4	J12P20	7/5/06	9.6		0.87	559		0.08	0.04		0.02	20.3		0.67	56.5		0.25	60.0		0.45	0.012	J	0.013	0.011	B	0.005
8	B-5	J12P21	7/5/06	9.1		0.88	332		0.08	0.09		0.02	16.9		0.68	31.3		0.25	48.5		0.45	0.013	U	0.013	0.011	B	0.005
9	B-6	J12P22	7/5/06	5.0		0.89	259		0.09	0.02	U	0.02	12.7		0.69	23.4		0.26	40.0		0.46	0.014	U	0.014	0.008	B	0.005
10	B-7	J12P23	7/5/06	10.6		0.88	426		0.09	0.02		0.02	17.9		0.68	39.9		0.26	52.1		0.46	0.0085	J	0.014	0.011	B	0.005
11	B-8	J12P24	7/5/06	7.9		0.88	284		0.08	0.02		0.01	15.8		0.68	30.2		0.25	42.5		0.45	0.0075	J	0.013	0.010	B	0.005
12	B-9	J12P25	7/5/06	67.8		0.94	356		0.09	0.08		0.02	18.5		0.73	34.0		0.27	161		0.48	0.014	U	0.014	0.011	B	0.005
13	Duplicate of J12P25	J12P27	7/5/06	37.7		0.93	340		0.09	0.13		0.02	17.3		0.72	33.4		0.27	142		0.48	0.036		0.014	0.016	B	0.005
14	B-10	J12P26	7/5/06	2.2		0.88	88.6		0.09	0.02	U	0.02	15.2		0.68	11.8		0.26	16.1		0.46	0.013	U	0.013	0.006	B	0.005

15 **Statistical Computation Input Data**

16	Sample	Sample	Sample	Lead	Manganese	Mercury	Nickel	Vanadium	Zinc	Aroclor-1254	Methylene Chloride
17	Node	Number	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
18	B-1	J12P17	7/5/2006	9.4	320	0.07	12.9	38.7	48.0	0.0082	0.009
19	B-2	J12P18	7/5/2006	7.3	348	0.01	18.4	43.3	51.3	0.0065	0.009
20	B-3	J12P19	7/5/2006	10.6	316	0.06	12.8	33.6	51.2	0.0042	0.010
21	B-4	J12P20	7/5/2006	9.6	559	0.04	20.3	56.5	60.0	0.012	0.011
22	B-5	J12P21	7/5/2006	9.1	332	0.09	16.9	31.3	48.5	0.0065	0.011
23	B-6	J12P22	7/5/2006	5.0	259	0.01	12.7	23.4	40.0	0.0070	0.008
24	B-7	J12P23	7/5/2006	10.6	426	0.02	17.9	39.9	52.1	0.0085	0.011
25	B-8	J12P24	7/5/2006	7.9	284	0.02	15.8	30.2	42.5	0.0075	0.010
26	B-9	J12P25/J12P27	7/5/2006	52.8	348	0.11	17.9	33.7	152	0.022	0.014
27	B-10	J12P26	7/5/2006	2.2	88.6	0.01	15.2	11.8	16.1	0.0065	0.006

28 **Statistical Computations**

29		Lead	Manganese	Mercury	Nickel	Vanadium	Zinc	Aroclor-1254	Methylene Chloride
30	95% UCL value based on	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat normal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.
31	N	10	10	10	10	10	10	10	10
32	% < Detection limit	0%	0%	30%	0%	0%	0%	40%	0%
33	Mean	12.4	328	0.04	16.1	34.2	56.1	0.009	0.010
34	Standard deviation	14.4	119	0.04	2.7	11.9	35.5	0.005	0.002
35	95% UCL on mean	19.9	390	0.12	17.9	41.1	74.6	0.011	0.011
36	Maximum detected value	67.8	559	0.13	20.3	56.5	161	0.036	0.016
37	Statistical value	19.9	390	0.12	17.9	41.1	74.6	0.011	0.011
38	**Most Stringent Cleanup Limit for nonradionuclide and RAG type**	10.2 BG/GW & River Protection	512 BG/GW & River Protection	0.33 BG/GW & River Protection	19.1 BG/GW Protection	85.1 BG/GW Protection	67.8 BG/River Protection	0.017 RDL/GW & River Protection	0.5 GW Protection
39	**WAC 173-340 3-PART TEST**								
40	95% UCL > Cleanup Limit?	YES	NO	NA	NO	NA	YES	NO	NO
41	> 10% above Cleanup Limit?	YES	NO	NA	NO	NA	YES	NO	NO
42	Any sample > 2X Cleanup Limit?	YES	NO	NA	NO	NA	YES	YES	NO
43	**WAC 173-340 Compliance? Further assessment required**	Because of the "yes" answers to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	Because all values are below background (0.33 mg/kg), the WAC 173-340 3-part test is not required.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	Because all values are below background (85.1 mg/kg), the WAC 173-340 3-part test is not required.	Because of the "yes" answers to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	Because of the "yes" answer to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.

44 B = method blank contamination (organic constituents) NA = not applicable RDL = required detection limit
45 BG = background PQL = practical quantitation limit U = undetected
46 GW = groundwater Q = qualifier UCL = upper confidence limit
47 J = estimate RAG = remedial action goal WAC = *Washington Administrative Code*

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations

Date 10/25/06
Job No. 14655

Calc. No. 0100B-CA-V0294
Checked T. M. Blakley JMB

Rev. No. 1
Date 10/26/06
Sheet No. 10 of 36

1 **Sample Area C Verification Data**

2	Sample	Sample	Sample	Arsenic			Barium			Beryllium			Boron			Chromium			Cobalt			Copper			Lead		
3	Node	Number	Date	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
4	C-1	J12PW9	6/29/06	2.2		1.8	88.9		0.06	0.41		0.06	3.2	C	0.70	11.3		0.38	7.8		0.41	14.0		0.35	7.2		0.90
5	C-2	J12PX0	6/29/06	2.4		1.7	91.8		0.06	0.39		0.06	2.2	C	0.69	11.2		0.37	7.4		0.40	14.0		0.34	6.4		0.89
6	C-3	J12PX1	6/29/06	2.8		1.8	91.0		0.06	0.40		0.06	2.1	C	0.69	12.5		0.38	7.3		0.40	15.6		0.35	6.2		0.90
7	C-4	J12PX4	6/29/06	2.8		1.8	92.4		0.06	0.37		0.06	2.2		0.69	12.4		0.38	7.3		0.40	13.2		0.35	6.7		0.90
8	C-5	J12PX3	6/29/06	2.3		1.7	83.7		0.06	0.38		0.06	2.5	C	0.69	11.8		0.37	7.1		0.40	12.5		0.34	5.5		0.89
9	C-6	J12PX2	6/29/06	2.7		1.7	84.0		0.06	0.39		0.06	1.7	C	0.69	11.1		0.37	7.1		0.40	13.2		0.34	5.4		0.89
10	C-7	J12PX5	6/29/06	4.3		1.8	84.5		0.06	0.34		0.06	2.0		0.69	12.5		0.38	6.5		0.40	17.4		0.35	3.6		0.90
11	C-8	J12PX6	6/29/06	3.2		1.7	80.0		0.06	0.46		0.06	1.1		0.69	14.4		0.37	9.2		0.40	16.4		0.34	5.8		0.89
12	C-9	J12PX8	6/29/06	3.1		1.8	76.1		0.06	0.33		0.06	0.69	U	0.69	12.3		0.38	6.8		0.40	12.1		0.35	4.9		0.90
13	C-10	J12P49	6/29/06	3.0		1.8	102		0.06	0.43		0.06	1.1		0.70	12.9		0.38	8.7		0.41	15.0		0.35	5.6		0.90
14	Duplicate of J12P49	J12P50	6/29/06	2.6		1.7	92.3		0.06	0.42		0.06	0.69	U	0.69	13.4		0.37	8.4		0.40	14.7		0.34	5.2		0.89
15	C-11	J12P54	6/29/06	2.4		1.8	81.0		0.06	0.32		0.06	1.5	C	0.70	10.1		0.38	6.8		0.41	13.3		0.35	4.5		0.90
16	C-12	J12P53	6/29/06	2.2		1.8	89.7		0.06	0.35		0.06	3.3	C	0.70	11.5		0.38	7.4		0.41	13.5		0.35	5.0		0.91
17	C-13	J12PX7	6/29/06	7.1		1.8	122		0.06	0.58		0.06	2.1		0.69	17.1		0.37	10.5		0.40	27.6		0.34	7.1		0.89
18	C-14	J12PX9	6/29/06	3.3		1.7	93.9		0.06	0.36		0.06	0.69	U	0.69	11.5		0.37	7.2		0.40	17.4		0.34	7.6		0.89
19	C-15	J12P52	6/29/06	3.3		1.7	86.4		0.06	0.28		0.06	1.3		0.69	18.3		0.37	6.1		0.40	13.6		0.34	9.6		0.89
20	C-16	J12P51	6/29/06	2.3		1.8	102		0.06	0.30		0.06	2.1		0.69	10.7		0.37	6.3		0.40	14.5		0.35	19.0		0.89
21	C-17	J12P55	6/29/06	6.7		1.8	148		0.06	0.55		0.06	6.0	C	0.70	28.2		0.38	10.9		0.41	27.7		0.35	8.9		0.90

22 **Statistical Computation Input Data**

23	Sample	Sample	Sample	Arsenic	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Lead
24	Node	Number	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
25	C-1	J12PW9	6/29/2006	2.2	88.9	0.41	3.2	11.3	7.8	14.0	7.2
26	C-2	J12PX0	6/29/2006	2.4	91.8	0.39	2.2	11.2	7.4	14.0	6.4
27	C-3	J12PX1	6/29/2006	2.8	91.0	0.40	2.1	12.5	7.3	15.6	6.2
28	C-4	J12PX4	6/29/2006	2.8	92.4	0.37	2.2	12.4	7.3	13.2	6.7
29	C-5	J12PX3	6/29/2006	2.3	83.7	0.38	2.5	11.8	7.1	12.5	5.5
30	C-6	J12PX2	6/29/2006	2.7	84.0	0.39	1.7	11.1	7.1	13.2	5.4
31	C-7	J12PX5	6/29/2006	4.3	84.5	0.34	2.0	12.5	6.5	17.4	3.6
32	C-8	J12PX6	6/29/2006	3.2	80.0	0.46	1.1	14.4	9.2	16.4	5.8
33	C-9	J12PX8	6/29/2006	3.1	76.1	0.33	0.35	12.3	6.8	12.1	4.9
34	C-10	J12P49/J12P50	6/29/2006	2.8	97.2	0.43	0.72	13.2	8.6	14.9	5.4
35	C-11	J12P54	6/29/2006	2.4	81.0	0.32	1.5	10.1	6.8	13.3	4.5
36	C-12	J12P53	6/29/2006	2.2	89.7	0.35	3.3	11.5	7.4	13.5	5.0
37	C-13	J12PX7	6/29/2006	7.1	122	0.58	2.1	17.1	10.5	27.6	7.1
38	C-14	J12PX9	6/29/2006	3.3	93.9	0.36	0.35	11.5	7.2	17.4	7.6
39	C-15	J12P52	6/29/2006	3.3	86.4	0.28	1.3	18.3	6.1	13.6	9.6
40	C-16	J12P51	6/29/2006	2.3	102	0.30	2.1	10.7	6.3	14.5	19.0
41	C-17	J12P55	6/29/2006	6.7	148	0.55	6.0	28.2	10.9	27.7	8.9

42 C = method blank contamination (inorganic constituents)
43 PQL = practical quantitation limit
44 Q = qualifier
45 U = undetected

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations

Date 10/25/06
Job No. 14655

Calc. No. 0100B-CA-V0294
Checked T. M. Blakley TMB

Rev. No. 1
Date 10/26/06
Sheet No. 11 of 36

1 **Sample Area C Verification Data (continued)**

2	Sample	Sample	Sample	Manganese			Nickel			Vanadium			Zinc			TPH			bis(2-Ethylhexyl)phthalate			Di-n-butylphthalate			Methylene Chloride		
3	Node	Number	Date	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
4	C-1	J12PW9	6/29/06	382		0.09	11.7		0.70	36.3		0.26	47.5		0.47	258		133	0.66	U	0.33	0.33	U	0.33	0.016	U	0.005
5	C-2	J12PX0	6/29/06	371		0.09	11.2		0.69	35.8		0.26	43.3		0.46	134	U	134	0.66	U	0.33	0.021	J	0.33	0.012	U	0.005
6	C-3	J12PX1	6/29/06	340		0.09	12.8		0.69	38.5		0.26	45.3		0.46	132	U	132	0.66	U	0.33	0.33	U	0.33	0.016	U	0.005
7	C-4	J12PX4	6/29/06	364		0.09	12.5		0.69	36.4		0.26	45.4		0.46	133	U	133	0.047	J	0.33	0.031	J	0.33	0.010	B	0.005
8	C-5	J12PX3	6/29/06	352		0.09	10.9		0.69	35.5		0.26	40.8		0.46	133	U	133	0.66	U	0.33	0.33	U	0.33	0.013	U	0.005
9	C-6	J12PX2	6/29/06	334		0.09	11.2		0.69	37.3		0.26	37.2		0.46	133	U	133	0.66	U	0.33	0.33	U	0.33	0.016	U	0.005
10	C-7	J12PX5	6/29/06	308		0.09	15.1		0.69	31.9		0.26	37.5		0.46	133	U	133	0.021	J	0.33	0.021	J	0.33	0.011	B	0.005
11	C-8	J12PX6	6/29/06	425		0.09	11.7		0.69	43.5		0.26	43.4		0.46	134	U	134	0.033	J	0.33	0.021	J	0.33	0.012	B	0.005
12	C-9	J12PX8	6/29/06	322		0.09	13.1		0.69	36.2		0.26	38.3		0.46	133	U	133	0.027	J	0.33	0.030	J	0.33	0.015	B	0.005
13	C-10	J12P49	6/29/06	380		0.09	13.2		0.70	43.1		0.26	42.3		0.47	135	U	135	0.022	J	0.34	0.34	U	0.34	0.018	B	0.005
14	Duplicate of J12P49	J12P50	6/29/06	373		0.09	12.8		0.69	39.7		0.26	41.7		0.46	133	U	133	0.080	J	0.33	0.029	J	0.33	0.014	B	0.005
15	C-11	J12P54	6/29/06	325		0.09	10.6		0.70	32.2		0.26	34.7		0.47	133	U	133	0.66	U	0.33	0.33	U	0.33	0.015	U	0.005
16	C-12	J12P53	6/29/06	365		0.09	11.2		0.70	34.6		0.26	37.5		0.47	133	U	133	0.66	U	0.34	0.34	U	0.34	0.010	U	0.005
17	C-13	J12PX7	6/29/06	441		0.09	17.9		0.69	55.0		0.26	51.1		0.46	133	U	133	0.033	J	0.34	0.028	J	0.34	0.014	B	0.005
18	C-14	J12PX9	6/29/06	327		0.09	11.9		0.69	35.9		0.26	43.6		0.46	134	U	134	0.078	J	0.33	0.021	J	0.33	0.018	B	0.005
19	C-15	J12P52	6/29/06	309		0.09	10.7		0.69	29.5		0.26	47.0		0.46	134	U	134	0.089	J	0.33	0.021	J	0.33	0.019	B	0.005
20	C-16	J12P51	6/29/06	321		0.09	9.9		0.69	32.2		0.26	57.3		0.46	133	U	133	0.037	J	0.33	0.037	J	0.33	0.027	B	0.005
21	C-17	J12P55	6/29/06	463		0.09	18.0		0.70	57.9		0.26	78.6		0.46	134	U	134	0.66	U	0.34	0.028	J	0.34	0.018	U	0.005

22 **Statistical Computation Input Data**

23	Sample	Sample	Sample	Manganese	Nickel	Vanadium	Zinc	TPH	bis(2-Ethylhexyl)phthalate	Di-n-butylphthalate	Methylene Chloride
24	Node	Number	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
25	C-1	J12PW9	6/29/2006	382	11.7	36.3	47.5	258	0.33	0.17	0.0080
26	C-2	J12PX0	6/29/2006	371	11.2	35.8	43.3	134	0.33	0.021	0.0060
27	C-3	J12PX1	6/29/2006	340	12.8	38.5	45.3	132	0.33	0.17	0.0080
28	C-4	J12PX4	6/29/2006	364	12.5	36.4	45.4	133	0.047	0.031	0.010
29	C-5	J12PX3	6/29/2006	352	10.9	35.5	40.8	133	0.33	0.17	0.0065
30	C-6	J12PX2	6/29/2006	334	11.2	37.3	37.2	133	0.33	0.17	0.0080
31	C-7	J12PX5	6/29/2006	308	15.1	31.9	37.5	133	0.021	0.021	0.011
32	C-8	J12PX6	6/29/2006	425	11.7	43.5	43.4	134	0.033	0.021	0.012
33	C-9	J12PX8	6/29/2006	322	13.1	36.2	38.3	133	0.027	0.030	0.015
34	C-10	J12P49/J12P50	6/29/2006	377	13.0	41.4	42.0	134	0.051	0.10	0.016
35	C-11	J12P54	6/29/2006	325	10.6	32.2	34.7	133	0.33	0.17	0.0075
36	C-12	J12P53	6/29/2006	365	11.2	34.6	37.5	133	0.33	0.17	0.0050
37	C-13	J12PX7	6/29/2006	441	17.9	55.0	51.1	133	0.033	0.028	0.014
38	C-14	J12PX9	6/29/2006	327	11.9	35.9	43.6	134	0.078	0.021	0.018
39	C-15	J12P52	6/29/2006	309	10.7	29.5	47.0	134	0.089	0.021	0.019
40	C-16	J12P51	6/29/2006	321	9.9	32.2	57.3	133	0.037	0.037	0.027
41	C-17	J12P55	6/29/2006	463	18.0	57.9	78.6	134	0.33	0.028	0.0090

42 B = method blank contamination (organic constituents)
43 J = estimate
44 PQL = practical quantitation limit
45 Q = qualifier
46 TPH = total petroleum hydrocarbons
47 U = undetected

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations

Date 10/25/06
Job No. 14655

Calc. No. 0100B-CA-V0294
Checked T. M. Blakley TMB

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Date 10/26/06
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1 **Sample Area C Statistical Computations**

	Arsenic	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Lead
95% UCL value based on	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.
N	17	17	17	17	17	17	17	17
% < Detection limit	0%	0%	0%	12%	0%	0%	0%	0%
Mean	3.3	94	0.39	2.0	13.5	7.7	15.9	7.0
Standard deviation	1.5	17	0.08	1.3	4.4	1.4	4.7	3.5
95% UCL on mean	3.9	101	0.43	2.6	15.3	8.2	17.8	8.4
Maximum detected value	7.1	148	0.58	6.0	28.2	10.9	27.7	19.0
Statistical value	3.9	101	0.43	2.6	15.3	8.2	17.8	8.4
Most Stringent Cleanup Limit for nonradionuclide and RAG type	20 Direct Exposure/GW & River Protection	132 BG/GW Protection	1.51 BG/GW & River Protection	320 GW Protection	18.5 BG/GW & River Protection	32 GW Protection	22.0 BG/River Protection	10.2 BG/GW & River Protection
WAC 173-340 3-PART TEST								
95% UCL > Cleanup Limit?	NO	NO	NA	NO	NO	NA	NO	NO
> 10% above Cleanup Limit?	NO	NO	NA	NO	NO	NA	YES	NO
Any sample > 2X Cleanup Limit?	NO	NO	NA	NO	NO	NA	NO	NO
WAC 173-340 Compliance? **Further assessment required**	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	Because all values are below background (1.51 mg/kg), the WAC 173-340 3-part test is not required.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	Because all values are below background (15.7 mg/kg), the WAC 173-340 3-part test is not required.	Because of the "yes" answer to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.

	Manganese	Nickel	Vanadium	Zinc	TPH	bis(2-Ethylhexyl)phthalate	Di-n-butylphthalate	Methylene Chloride
95% UCL value based on	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.
N	17	17	17	17	17	17	17	17
% < Detection limit	0%	0%	0%	0%	94%	47%	35%	47%
Mean	360	12.6	38.2	45.3	141	0.18	0.08	0.012
Standard deviation	46	2.4	7.7	10.3	30	0.15	0.07	0.006
95% UCL on mean	380	13.5	41.3	49.4	153	0.24	0.11	0.015
Maximum detected value	463	18.0	57.9	78.6	258	0.089	0.037	0.027
Statistical value	380	13.5	41.3	49.4	153	0.24	0.11	0.015
Most Stringent Cleanup Limit for nonradionuclide and RAG type	512 BG/GW & River Protection	19.1 BG/GW Protection	85.1 BG/GW Protection	67.8 BG/River Protection	200 GW Protection	0.36 River Protection	160 GW Protection	0.5 GW Protection
WAC 173-340 3-PART TEST								
95% UCL > Cleanup Limit?	NA	NA	NA	NO	NO	NO	NO	NO
> 10% above Cleanup Limit?	NA	NA	NA	NO	NO	NO	NO	NO
Any sample > 2X Cleanup Limit?	NA	NA	NA	NO	NO	NO	NO	NO
WAC 173-340 Compliance? **Yes**	Because all values are below background (512 mg/kg), the WAC 173-340 3-part test is not required.	Because all values are below background (19.1 mg/kg), the WAC 173-340 3-part test is not required.	Because all values are below background (85.1 mg/kg), the WAC 173-340 3-part test is not required.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.

BG = background
GW = groundwater
NA = not applicable
RAG = remedial action goal
TPH = total petroleum hydrocarbons
UCL = upper confidence limit
WAC = *Washington Administrative Code*

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations

Date 10/25/06
Job No. 14655

Calc. No. 0100B-CA-V0294
Checked T. M. Blakley TMB

Rev. No. 1
Date 10/26/06
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1 **Sample Area D Verification Data**

2	Sample	Sample	Sample	Arsenic			Barium			Beryllium			Boron			Chromium			Cobalt			Copper			Hexavalent Chromium		
3	Node	Number	Date	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
4	D-1	J12PY1	6/29/06	3.6		1.8	104		0.06	0.40		0.06	3.3		0.69	16.0		0.38	7.8		0.40	20.3		0.35	0.25		0.20
5	D-2	J12PY9	6/29/06	2.7		1.7	94.6		0.06	0.37		0.06	2.9	C	0.69	13.0		0.37	8.3		0.40	16.9		0.34	0.22		0.20
6	D-3	J12PY5	6/29/06	3.6		1.7	177		0.06	0.40		0.06	11.3		0.69	16.3		0.37	7.3		0.40	24.4		0.34	0.30		0.20
7	D-4	J12PY0	6/29/06	2.7		1.8	84.1		0.06	0.38		0.06	1.5		0.69	12.0		0.38	7.6		0.40	13.2		0.35	0.35		0.20
8	D-5	J12PY3	6/29/06	2.8		1.7	121		0.06	0.36		0.06	5.3		0.69	18.2		0.37	7.3		0.40	27.3		0.34	0.20	U	0.20
9	D-6	J12PY4	6/29/06	3.4		1.7	132		0.06	0.46		0.06	5.0		0.69	13.3		0.37	8.5		0.40	30.5		0.34	0.26		0.20
10	D-7	J12PY2	6/29/06	2.5		1.7	90.4		0.06	0.36		0.06	0.74		0.69	10.3		0.37	7.8		0.40	13.2		0.34	0.28		0.20
11	D-8	J12PY6	6/29/06	2.9		1.8	156		0.06	0.42		0.06	8.1		0.70	13.5		0.38	7.3		0.41	17.9		0.35	0.20	U	0.20
12	D-9	J12PY7	6/29/06	2.7		1.7	88.6		0.06	0.39		0.06	1.3		0.68	11.0		0.37	7.7		0.40	13.7		0.34	0.20	U	0.20
13	D-10	J12PY8	6/29/06	2.7		1.7	87.1		0.06	0.39		0.06	1.2		0.69	12.5		0.37	8.0		0.40	14.5		0.34	0.28		0.20

14 **Statistical Computation Input Data**

15	Sampling	Sample	Sample	Arsenic	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Hexavalent Chromium
16	Area	Number	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
17	D-1	J12PY1	6/29/2006	3.6	104	0.40	3.3	16.0	7.8	20.3	0.25
18	D-2	J12PY9	6/29/2006	2.7	94.6	0.37	2.9	13.0	8.3	16.9	0.22
19	D-3	J12PY5	6/29/2006	3.6	177	0.40	11.3	16.3	7.3	24.4	0.30
20	D-4	J12PY0	6/29/2006	2.7	84.1	0.38	1.5	12.0	7.6	13.2	0.35
21	D-5	J12PY3	6/29/2006	2.8	121	0.36	5.3	18.2	7.3	27.3	0.10
22	D-6	J12PY4	6/29/2006	3.4	132	0.46	5.0	13.3	8.5	30.5	0.26
23	D-7	J12PY2	6/29/2006	2.5	90.4	0.36	0.74	10.3	7.8	13.2	0.28
24	D-8	J12PY6	6/29/2006	2.9	156	0.42	8.1	13.5	7.3	17.9	0.10
25	D-9	J12PY7	6/29/2006	2.7	88.6	0.39	1.3	11.0	7.7	13.7	0.10
26	D-10	J12PY8	6/29/2006	2.7	87.1	0.39	1.2	12.5	8.0	14.5	0.28

27 **Statistical Computations**

28		Arsenic	Barium	Beryllium	Boron	Chromium	Cobalt	Copper	Hexavalent Chromium
29	95% UCL value based on	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.
30	N	10	10	10	10	10	10	10	10
31	% < Detection limit	0%	0%	0%	0%	0%	0%	0%	30%
32	Mean	3.0	113	0.39	4.1	13.6	7.8	19.2	0.22
33	Standard deviation	0.4	32	0.03	3.4	2.5	0.4	6.3	0.09
34	95% UCL on mean	3.2	130	0.41	10.4	15.2	8.0	23.7	0.27
35	Maximum detected value	3.6	177	0.46	11.3	18.2	8.5	30.5	0.35
36	Statistical value	3.2	130	0.41	10.4	15.2	8.0	23.7	0.27
37	**Most Stringent Cleanup Limit for nonradionuclide and RAG type**	20 Direct Exposure/GW & River Protection	132 BG/GW Protection	1.51 BG/GW & River Protection	320 GW Protection	18.5 BG/GW & River Protection	32 GW Protection	22.0 BG/River Protection	2 River Protection
38	**WAC 173-340 3-PART TEST**								
39	95% UCL > Cleanup Limit?	NA	NO	NA	NO	NA	NA	YES	NO
40	> 10% above Cleanup Limit?	NA	YES	NA	NO	NA	NA	YES	NO
41	Any sample > 2X Cleanup Limit?	NA	NO	NA	NO	NA	NA	NO	NO
42	**WAC 173-340 Compliance? Further assessment required**	Because all values are below background (6.5 mg/kg), the WAC 173-340 3-part test is not required.	Because of the "yes" answer to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	Because all values are below background (1.51 mg/kg), the WAC 173-340 3-part test is not required.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	Because all values are below background (18.5 mg/kg), the WAC 173-340 3-part test is not required.	Because all values are below background (15.7 mg/kg), the WAC 173-340 3-part test is not required.	Because of the "yes" answers to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.

43 BG = background
44 C = method blank contamination (inorganic constituents)
45 GW = groundwater
46 NA = not applicable
47 PQL = practical quantitation limit

Q = qualifier
RAG = remedial action goal
U = undetected
UCL = upper confidence limit
WAC = *Washington Administrative Code*

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations

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Rev. No. 1
Date 10/26/06
Sheet No. 14 of 36

1 **Sample Area D Verification Data (continued)**

2	Sample	Sample	Sample	Lead			Manganese			Mercury			Nickel			Vanadium			Zinc			4,4'-DDE			Endrin Aldehyde		
3	Node	Number	Date	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
4	D-1	J12PY1	6/29/06	9.9		0.90	382		0.09	0.15		0.01	11.3		0.69	39.0		0.26	60.2		0.46	0.026	D	0.0013	0.0080	D	0.0013
5	D-2	J12PY9	6/29/06	7.6		0.89	382		0.09	0.10		0.01	13.8		0.69	37.3		0.26	47.3		0.46	0.0013	UD	0.0013	0.00093	JDI	0.0013
6	D-3	J12PY5	6/29/06	20.5		0.89	374		0.09	0.46		0.02	12.1		0.69	35.2		0.26	84.6		0.46	0.0092	D	0.0013	0.0066	DI	0.0013
7	D-4	J12PY0	6/29/06	5.7		0.90	378		0.09	0.02	U	0.02	11.1		0.69	38.9		0.26	44.4		0.46	0.0039	D	0.0013	0.0080	JD	0.0013
8	D-5	J12PY3	6/29/06	33.0		0.89	384		0.09	0.41		0.01	17.2		0.69	34.2		0.26	133		0.46	0.0059	D	0.0013	0.0028	D	0.0013
9	D-6	J12PY4	6/29/06	8.8		0.89	410		0.09	0.06		0.01	12.8		0.69	40.8		0.26	57.5		0.46	0.0049	D	0.0013	0.0011	JDI	0.0013
10	D-7	J12PY2	6/29/06	11.8		0.89	395		0.09	0.03		0.02	10.7		0.69	35.1		0.26	40.1		0.46	0.0013	UD	0.0013	0.00044	JD	0.0013
11	D-8	J12PY6	6/29/06	13.4		0.90	362		0.09	0.13		0.01	12.3		0.70	35.4		0.26	60.1		0.47	0.0076	D	0.0013	0.0024	DI	0.0013
12	D-9	J12PY7	6/29/06	6.4		0.88	380		0.09	0.01	U	0.01	11.1		0.68	36.6		0.26	42.9		0.45	0.0028	D	0.0013	0.00040	JD	0.0013
13	D-10	J12PY8	6/29/06	6.8		0.89	383		0.09	0.02		0.02	11.6		0.69	40.2		0.26	45.4		0.46	0.0020	D	0.0013	0.0013	UD	0.0013

14 **Statistical Computation Input Data**

15	Sampling	Sample	Sample	Lead	Manganese	Mercury	Nickel	Vanadium	Zinc	4,4'-DDE	Endrin Aldehyde
16	Area	Number	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
17	D-1	J12PY1	6/29/2006	9.9	382	0.15	11.3	39.0	60.2	0.026	0.0080
18	D-2	J12PY9	6/29/2006	7.6	382	0.10	13.8	37.3	47.3	0.00065	0.00093
19	D-3	J12PY5	6/29/2006	20.5	374	0.46	12.1	35.2	84.6	0.0092	0.0066
20	D-4	J12PY0	6/29/2006	5.7	378	0.01	11.1	38.9	44.4	0.0039	0.0080
21	D-5	J12PY3	6/29/2006	33.0	384	0.41	17.2	34.2	133	0.0059	0.0028
22	D-6	J12PY4	6/29/2006	8.8	410	0.06	12.8	40.8	57.5	0.0049	0.0011
23	D-7	J12PY2	6/29/2006	11.8	395	0.03	10.7	35.1	40.1	0.00065	0.00044
24	D-8	J12PY6	6/29/2006	13.4	362	0.13	12.3	35.4	60.1	0.0076	0.0024
25	D-9	J12PY7	6/29/2006	6.4	380	0.005	11.1	36.6	42.9	0.0028	0.00040
26	D-10	J12PY8	6/29/2006	6.8	383	0.02	11.6	40.2	45.4	0.0020	0.00065

27 **Statistical Computations**

28		Lead	Manganese	Mercury	Nickel	Vanadium	Zinc	4,4'-DDE	Endrin Aldehyde
29	95% UCL value based on	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.
30	N	10	10	10	10	10	10	10	10
31	% < Detection limit	0%	0%	20%	0%	0%	0%	20%	10%
32	Mean	12.4	383	0.14	12.4	37.3	61.6	0.006	0.0031
33	Standard deviation	8.5	13	0.17	1.9	2.3	28.3	0.007	0.0032
34	95% UCL on mean	18.9	390	1.6	13.4	38.7	76.3	0.027	0.0138
35	Maximum detected value	33.0	410	0.46	17.2	40.8	133	0.026	0.0080
36	Statistical value	18.9	390	1.6	13.4	38.7	76.3	0.027	0.0138
37	**Most Stringent Cleanup Limit for nonradionuclide and RAG type**	10.2 BG/GW & River Protection	512 BG/GW & River Protection	0.33 BG/GW & River Protection	19.1 BG/GW Protection	85.1 BG/GW Protection	67.8 BG/River Protection	0.005 RDL/River Protection	0.039 River Protection
38	**WAC 173-340 3-PART TEST**								
39	95% UCL > Cleanup Limit?	YES	NA	YES	NA	NA	YES	YES	NO
40	> 10% above Cleanup Limit?	YES	NA	YES	NA	NA	YES	YES	NO
41	Any sample > 2X Cleanup Limit?	YES	NA	NO	NA	NA	NO	YES	NO
42	**WAC 173-340 Compliance? Further assessment required**	Because of the "yes" answers to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	Because all values are below background (512 mg/kg), the WAC 173-340 3-part test is not required.	Because of the "yes" answers to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	Because all values are below background (19.1 mg/kg), the WAC 173-340 3-part test is not required.	Because all values are below background (85.1 mg/kg), the WAC 173-340 3-part test is not required.	Because of the "yes" answers to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	Because of the "yes" answers to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.

43 BG = background
44 D = diluted
45 GW = groundwater
46 I = interference on one analytical column
47 J = estimate

NA = not applicable
PQL = practical quantitation limit
Q = qualifier
RAG = remedial action goal
RDL = required detection limit

U = undetected
UCL = upper confidence limit
WAC = *Washington Administrative Code*

CALCULATION SHEET

Washington Closure Hanford

Originator J. M. Capron JMC
Project 100-B/C Field Remediation
Subject 128-B-3 Waste Site Cleanup Verification 95% UCL Calculations

Date 10/25/06
Job No. 14655

Calc. No. 0100B-CA-V0294
Checked T. M. Blakley JMB

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1 **Sample Area D Verification Data (continued)**

2 Sample Node	Sample Number	Sample Date	bis(2-Ethylhexyl)phthalate mg/kg	Q	PQL	Di-n-butylphthalate mg/kg	Q	PQL	Methylene Chloride mg/kg	Q	PQL	Toluene mg/kg	Q	PQL	Sampling Area	Sample Number	Sample Date	Aroclor-1254 mg/kg	Q	PQL	Aroclor-1260 mg/kg	Q	PQL
4 D-1	J12PY1	6/29/06	0.040	J	0.34	0.022	J	0.34	0.015	B	0.005	0.005	U	0.005	D-1	J13553	8/14/06	0.18		0.015	0.033		0.015
5 D-2	J12PY9	6/29/06	0.66	U	0.33	0.33	U	0.33	0.022	B	0.005	0.001	J	0.005	D-2	J13554	8/14/06	0.071		0.013	0.011	J	0.013
6 D-3	J12PY5	6/29/06	0.050	J	0.34	0.029	J	0.34	0.015	B	0.005	0.005	U	0.005	D-3	J13555	8/14/06	0.26		0.013	0.055		0.013
7 D-4	J12PY0	6/29/06	0.064	J	0.33	0.33	U	0.33	0.015	B	0.005	0.001	J	0.005	D-4	J13556	8/14/06	0.12		0.013	0.020		0.013
8 D-5	J12PY3	6/29/06	0.14	J	0.33	0.030	J	0.33	0.017	B	0.005	0.005	U	0.005	D-5	J13557	8/14/06	0.015		0.013	0.0052	J	0.013
9 D-6	J12PY4	6/29/06	0.027	J	0.33	0.33	U	0.33	0.019	B	0.005	0.005	U	0.005	D-6	J13558	8/14/06	0.14		0.013	0.029		0.013
10 D-7	J12PY2	6/29/06	0.19	J	0.33	0.036	J	0.33	0.017	B	0.005	0.001	J	0.005	D-7	J13559	8/14/06	0.013	U	0.013	0.013	U	0.013
11 D-8	J12PY6	6/29/06	0.045	J	0.34	0.34	U	0.34	0.018	B	0.005	0.005	U	0.005	D-8	J13560	8/14/06	0.17		0.013	0.036		0.013
12 D-9	J12PY7	6/29/06	0.040	J	0.33	0.028	J	0.33	0.017	B	0.005	0.001	J	0.005	D-9	J13561	8/14/06	0.027		0.013	0.0044	J	0.013
13 D-10	J12PY8	6/29/06	0.024	J	0.33	0.33	U	0.33	0.016	B	0.005	0.001	J	0.005	D-10	J13562	8/14/06	0.013	U	0.013	0.013	U	0.013

14 **Statistical Computation Input Data** — **Statistical Computation Input Data**

15 Sample Node	Sample Number	Sample Date	bis(2-Ethylhexyl)phthalate mg/kg	Di-n-butylphthalate mg/kg	Methylene Chloride mg/kg	Toluene mg/kg	Sampling Area	Sample Number	Sample Date	Aroclor-1254 mg/kg	Aroclor-1260 mg/kg
17 D-1	J12PY1	6/29/2006	0.040	0.022	0.015	0.003	D-1	J13553	8/14/2006	0.18	0.033
18 D-2	J12PY9	6/29/2006	0.33	0.17	0.022	0.001	D-2	J13554	8/14/2006	0.071	0.011
19 D-3	J12PY5	6/29/2006	0.050	0.029	0.015	0.003	D-3	J13555	8/14/2006	0.26	0.055
20 D-4	J12PY0	6/29/2006	0.064	0.17	0.015	0.001	D-4	J13556	8/14/2006	0.12	0.020
21 D-5	J12PY3	6/29/2006	0.14	0.030	0.017	0.003	D-5	J13557	8/14/2006	0.015	0.0052
22 D-6	J12PY4	6/29/2006	0.027	0.17	0.019	0.003	D-6	J13558	8/14/2006	0.14	0.029
23 D-7	J12PY2	6/29/2006	0.19	0.036	0.017	0.001	D-7	J13559	8/14/2006	0.0065	0.0065
24 D-8	J12PY6	6/29/2006	0.045	0.17	0.018	0.003	D-8	J13560	8/14/2006	0.17	0.036
25 D-9	J12PY7	6/29/2006	0.040	0.028	0.017	0.001	D-9	J13561	8/14/2006	0.027	0.0044
26 D-10	J12PY8	6/29/2006	0.024	0.17	0.016	0.001	D-10	J13562	8/14/2006	0.0065	0.0065

27 **Statistical Computations**

28	bis(2-Ethylhexyl)phthalate	Di-n-butylphthalate	Methylene Chloride	Toluene		Aroclor-1254	Aroclor-1260
29 95% UCL value based on	Large data set (n ≥ 10), use MTCAStat lognormal distribution.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.	Large data set (n ≥ 10), lognormal and normal distribution rejected, use z-statistic.		Large data set (n ≥ 10), use MTCAStat normal distribution.	Large data set (n ≥ 10), use MTCAStat lognormal distribution.
30 N	10	10	10	10		10	10
31 % < Detection limit	10%	50%	0%	50%		20%	20%
32 Mean	0.10	0.10	0.017	0.002		0.10	0.021
33 Standard deviation	0.10	0.07	0.002	0.001		0.09	0.017
34 95% UCL on mean	0.22	0.14	0.018	0.002		0.15	0.055
35 Maximum detected value	0.19	0.036	0.022	0.001		0.26	0.055
36 Statistical value	0.22	0.14	0.018	0.002		0.15	0.055
37 **Most Stringent Cleanup Limit for nonradionuclide and RAG type**	0.36 River Protection	160 GW Protection	0.5 GW Protection	64 GW Protection		0.017 RDL/GW & River Protection	0.017 RDL/GW & River Protection
38 **WAC 173-340 3-PART TEST**							
39 95% UCL > Cleanup Limit?	NO	NO	NO	NO		YES	YES
40 > 10% above Cleanup Limit?	NO	NO	NO	NO		YES	YES
41 Any sample > 2X Cleanup Limit?	NO	NO	NO	NO		YES	YES
42 **WAC 173-340 Compliance? Further assessment required**	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.	The data set meets the 3-part test criteria when compared to the most stringent cleanup limit.		Because of the "yes" answers to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.	Because of the "yes" answers to the 3-part test, a detailed assessment using RESRAD will be performed. The data set meets the 3-part test criteria when compared to the direct exposure cleanup level.

43 B = method blank contamination (organic constituents)
44 GW = groundwater
45 J = estimate
46 NA = not applicable
47 PQL = practical quantitation limit
48 Q = qualifier

RAG = remedial action goal
RDL = required detection limit
U = undetected
UCL = upper confidence limit
WAC = *Washington Administrative Code*

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Sample Area A Duplicate Analysis

Sample Node	Sample Number	Sample Date	Aluminum			Arsenic			Barium			Beryllium			Boron			Calcium			Chromium			Cobalt		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J12P05	7/5/06	5440		8.1	2.6		1.7	69.7		0.06	0.33		0.06	2.4	C	0.68	3280		4.6	7.2		0.37	5.8		0.39
Duplicate of J12P05	J12P15	7/5/06	5030		8.0	2.6		1.7	62.4		0.06	0.30		0.06	1.2	C	0.67	2760		4.6	7.6		0.36	5.2		0.39

Analysis:

TDL		5	10	2	0.5	2	100	1	2
Duplicate Analysis	Both > PQL?	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**
	Both >5xTDL?	**Yes (calc RPD)**	No - evaluate difference	**Yes (calc RPD)**	No - evaluate difference	No - evaluate difference	**Yes (calc RPD)**	**Yes (calc RPD)**	No - evaluate difference
	RPD	7.8%		11%			17%	5.4%	
	Difference >2xTDL?	Not applicable	No - acceptable	Not applicable	No - acceptable	No - acceptable	Not applicable	Not applicable	No - acceptable

Sample Node	Sample Number	Sample Date	Copper			Iron			Lead			Magnesium			Manganese			Nickel			Potassium			Silicon		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J12P05	7/5/06	14.6		0.34	15300		9.8	4.4		0.87	3070		2.7	299		0.08	8.8		0.68	1100	C	6.4	485		6.4
Duplicate of J12P05	J12P15	7/5/06	12.7		0.34	14000		9.7	3.9		0.87	2880		2.7	250		0.08	8.6		0.67	1060	C	6.3	507		6.3

Analysis:

TDL		1	5	5	75	5	4	400	2
Duplicate Analysis	Both > PQL?	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**
	Both >5xTDL?	**Yes (calc RPD)**	**Yes (calc RPD)**	No - evaluate difference	**Yes (calc RPD)**	**Yes (calc RPD)**	No - evaluate difference	No - evaluate difference	**Yes (calc RPD)**
	RPD	14%	8.9%		6.4%	18%			4.4%
	Difference >2xTDL?	Not applicable	Not applicable	No - acceptable	Not applicable	Not applicable	No - acceptable	No - acceptable	Not applicable

Sample Node	Sample Number	Sample Date	Sodium			Vanadium			Zinc			Aroclor-1254			Endrin			Benzo(a)anthracene			Benzo(b)fluoranthene			Benzo(k)fluoranthene		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
A-1	J12P05	7/5/06	124		2.1	33.5		0.25	32.4		0.45	190		13	2.4	D	1.3	330	U	330	330	U	330	330	U	330
Duplicate of J12P05	J12P15	7/5/06	94.8		2.1	29.5		0.25	30.2		0.45	160		13	1.3	UD	1.3	24	J	340	32	J	340	30	J	340

Analysis:

TDL		50	2.5	1	16.5	3.3	330	330	330
Duplicate Analysis	Both > PQL?	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	No - evaluate difference	No - evaluate difference	No - evaluate difference	No - evaluate difference
	Both >5xTDL?	No - evaluate difference	**Yes (calc RPD)**	**Yes (calc RPD)**	**Yes (calc RPD)**				
	RPD		13%	7.0%	17%				
	Difference >2xTDL?	No - acceptable	Not applicable	Not applicable	Not applicable	No - acceptable	No - acceptable	No - acceptable	No - acceptable

Sample Node	Sample Number	Sample Date	bis(2-Ethylhexyl)phthalate			Chrysene			Di-n-butylphthalate			Methylene Chloride		
			µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
A-1	J12P05	7/5/06	37	JB	330	330	U	330	19	JB	330	9	B	5
Duplicate of J12P05	J12P15	7/5/06	33	JB	340	38	J	340	18	JB	340	7	B	5

Analysis:

TDL		330	330	330	5
Duplicate Analysis	Both > PQL?	No - evaluate difference	No - evaluate difference	No - evaluate difference	**Yes (continue)**
	Both >5xTDL?				No - evaluate difference
	RPD				
	Difference >2xTDL?	No - acceptable	No - acceptable	No - acceptable	No - acceptable

B = method blank contamination (organic constituents)
C = method blank contamination (inorganic constituents)
D = diluted
J = estimated
PQL = practical quantitation limit
Q = qualifier
RPD = relative percent difference
TDL = target detection limit
U = undetected

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1 **Sample Area B Duplicate Analysis**

2				Aluminum			Arsenic			Barium			Beryllium			Boron			Cadmium			Calcium			Chromium		
3	Sample Node	Sample Number	Sample Date	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
4	B-9	J12P25	7/5/06	7850		8.7	5.8		1.8	118		0.06	0.51		0.06	4.5	C	0.73	0.52		0.21	4560	C	5.0	34.3		0.39
5	Duplicate of J12P25	J12P27	7/5/06	8140		8.6	4.5		1.8	158		0.06	0.37		0.06	6.8		0.72	0.36		0.21	5040		4.9	32.4		0.39

6 **Analysis:**

7										
	TDL		5	10	2	0.5	2	0.2	100	1
8	Duplicate Analysis	Both > PQL?	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**
9		Both >5xTDL?	**Yes (calc RPD)**	No - evaluate difference	**Yes (calc RPD)**	No - evaluate difference	No - evaluate difference	No - evaluate difference	**Yes (calc RPD)**	**Yes (calc RPD)**
10		RPD	3.6%		29%				10%	5.7%
11		Difference >2xTDL?	Not applicable	No - acceptable	Not applicable	No - acceptable	No - acceptable	No - acceptable	Not applicable	Not applicable

12

13				Cobalt			Copper			Hexavalent Chromium			Iron			Lead			Magnesium			Manganese			Mercury		
14	Sample Node	Sample Number	Sample Date	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
15	B-9	J12P25	7/5/06	6.6		0.42	37.4		0.36	1.2		0.21	20200		10.5	67.8		0.94	4310		2.9	356		0.09	0.08		0.02
16	Duplicate of J12P25	J12P27	7/5/06	6.2		0.42	78.9		0.36	0.21	U	0.21	18800		10.4	37.7		0.93	4190		2.9	340		0.09	0.13		0.02

17 **Analysis:**

18										
	TDL		2	1	0.5	5	5	75	5	0.2
19	Duplicate Analysis	Both > PQL?	**Yes (continue)**	**Yes (continue)**	No - evaluate difference	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**
20		Both >5xTDL?	No - evaluate difference	**Yes (calc RPD)**		**Yes (calc RPD)**	**Yes (calc RPD)**	**Yes (calc RPD)**	**Yes (calc RPD)**	No - evaluate difference
21		RPD		*71%*		7.2%	*57%*	2.8%	4.6%	
22		Difference >2xTDL?	No - acceptable	Not applicable	No - acceptable	Not applicable	Not applicable	Not applicable	Not applicable	No - acceptable

23

24				Nickel			Potassium			Silicon			Silver			Sodium			Vanadium			Zinc			Aroclor-1254		
25	Sample Node	Sample Number	Sample Date	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	µg/kg	Q	PQL
26	B-9	J12P25	7/5/06	18.5		0.73	1070		6.9	443		6.9	0.30		0.21	159		2.3	34.0		0.27	161		0.48	14	U	14
27	Duplicate of J12P25	J12P27	7/5/06	17.3		0.72	1130		6.8	581		6.8	0.21	U	0.21	236		2.3	33.4		0.27	142		0.48	36		14

28 **Analysis:**

29										
	TDL		4	400	2	0.2	50	2.5	1	16.5
30	Duplicate Analysis	Both > PQL?	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	No - evaluate difference	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	No - evaluate difference
31		Both >5xTDL?	No - evaluate difference	No - evaluate difference	**Yes (calc RPD)**		No - evaluate difference	**Yes (calc RPD)**	**Yes (calc RPD)**	
32		RPD			27%			1.8%	13%	
33		Difference >2xTDL?	No - acceptable	No - acceptable	Not applicable	No - acceptable	No - acceptable	Not applicable	Not applicable	No - acceptable

34

35				Methylene Chloride		
36	Sample Node	Sample Number	Sample Date	µg/kg	Q	PQL
37	B-9	J12P25	7/5/06	11	B	5
38	Duplicate of J12P25	J12P27	7/5/06	16	B	5

39 **Analysis:**

40			
	TDL		5
41	Duplicate Analysis	Both > PQL?	**Yes (continue)**
42		Both >5xTDL?	No - evaluate difference
43		RPD	
44		Difference >2xTDL?	No - acceptable

45 B = method blank contamination (organic constituents)
46 C = method blank contamination (inorganic constituents)
47 PQL = practical quantitation limit
48 Q = qualifier

RPD = relative percent difference
TDL = target detection limit
U = undetected

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1 **Sample Area C Duplicate Analysis**

2 Sample Node	Sample Number	Sample Date	Aluminum			Arsenic			Barium			Beryllium			Boron			Calcium			Chromium			Cobalt		
3			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
4 C-10	J12P49	6/29/06	7880		8.4	3.0		1.8	102		0.06	0.43		0.06	1.1		0.70	3970		4.8	12.9		0.38	8.7		0.41
5 Duplicate of J12P49	J12P50	6/29/06	8170		8.2	2.6		1.7	92.3		0.06	0.42		0.06	0.69	U	0.69	3400		4.7	13.4		0.37	8.4		0.40

6 **Analysis:**

7	TDL	5	10	2	0.5	2	100	1	2
8 Duplicate Analysis	Both > PQL?	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	No - evaluate difference	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**
9	Both >5xTDL?	**Yes (calc RPD)**	No - evaluate difference	**Yes (calc RPD)**	No - evaluate difference		**Yes (calc RPD)**	**Yes (calc RPD)**	No - evaluate difference
10	RPD	3.6%		10%			15%	3.8%	
11	Difference >2xTDL?	Not applicable	No - acceptable	Not applicable	No - acceptable	No - acceptable	Not applicable	Not applicable	No - acceptable

12

13 Sample Node	Sample Number	Sample Date	Copper			Iron			Lead			Magnesium			Manganese			Nickel			Potassium			Silicon		
14			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
15 C-10	J12P49	6/29/06	15.0		0.35	21200		10.2	5.6		0.90	4430		2.8	380		0.09	13.2		0.70	1620		6.6	618		6.6
16 Duplicate of J12P49	J12P50	6/29/06	14.7		0.34	19900		10	5.2		0.89	4400		2.8	373		0.09	12.8		0.69	1700		6.5	591		6.5

17 **Analysis:**

18	TDL	1	5	5	75	5	4	400	2
19 Duplicate Analysis	Both > PQL?	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**
20	Both >5xTDL?	**Yes (calc RPD)**	**Yes (calc RPD)**	No - evaluate difference	**Yes (calc RPD)**	**Yes (calc RPD)**	No - evaluate difference	No - evaluate difference	**Yes (calc RPD)**
21	RPD	2.0%	6.3%		0.68%	1.9%			4.5%
22	Difference >2xTDL?	Not applicable	Not applicable	No - acceptable	Not applicable	Not applicable	No - acceptable	No - acceptable	Not applicable

23

24 Sample Node	Sample Number	Sample Date	Sodium			Vanadium			Zinc			Methoxychlor			bis(2-Ethylhexyl)phthalate			Di-n-butylphthalate			Acetone			Methylene Chloride		
25			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
26 C-10	J12P49	6/29/06	117		2.2	43.1		0.26	42.3		0.47	3.5	D	1.4	22	J	340	340	U	340	10	U	10	15	B	5
27 Duplicate of J12P49	J12P50	6/29/06	119		2.2	39.7		0.26	41.7		0.46	1.3	UD	1.3	80	J	330	29	J	330	21		10	18	B	5

28 **Analysis:**

29	TDL	50	2.5	1	16.5	330	330	20	5
30 Duplicate Analysis	Both > PQL?	**Yes (continue)**	**Yes (continue)**	**Yes (continue)**	No - evaluate difference	No - evaluate difference	No - evaluate difference	No - evaluate difference	**Yes (continue)**
31	Both >5xTDL?	No - evaluate difference	**Yes (calc RPD)**	**Yes (calc RPD)**					No - evaluate difference
32	RPD		8.2%	1.4%					
33	Difference >2xTDL?	No - acceptable	Not applicable	Not applicable	No - acceptable	No - acceptable	No - acceptable	No - acceptable	No - acceptable

34

35 Sample Node	Sample Number	Sample Date	Toluene		
36			µg/kg	Q	PQL
37 C-10	J12P49	6/29/06	1	J	5
38 Duplicate of J12P49	J12P50	6/29/06	1	J	5

39 **Analysis:**

40	TDL	5
41 Duplicate Analysis	Both > PQL?	No - evaluate difference
42	Both >5xTDL?	
43	RPD	
44	Difference >2xTDL?	No - acceptable

45 B = method blank contamination (organic constituents)
46 D = diluted
47 J = estimate
48 PQL = practical quantitation limit

Q = qualifier
RPD = relative percent difference
TDL = target detection limit
U = undetected

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Ecology Software (MTCAStat) Results (Sample Area A)

Arsenic 95% UCL Calculation

DATA	ID
2.6	J12P05/J12P15
2.1	J12P06
2.9	J12P07
3.5	J12P08
4.0	J12P09
2.9	J12P10
3.6	J12P11
2.1	J12P12
3.0	J12P13
3.4	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	3.0
Censored		Lognormal mean	3.0
Detection limit or PQL		Std. devn.	0.6
Method detection limit		Median	3.0
TOTAL	10	Min.	2.1
		Max.	4.0

Lognormal distribution? r-squared is: 0.942
Normal distribution? r-squared is: 0.963
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 3.5

Barium 95% UCL Calculation

DATA	ID
66.1	J12P05/J12P15
93.9	J12P06
73.1	J12P07
85.0	J12P08
101	J12P09
70.4	J12P10
70.6	J12P11
81.0	J12P12
89.4	J12P13
80.2	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	81.1
Censored		Lognormal mean	81.1
Detection limit or PQL		Std. devn.	11.4
Method detection limit		Median	80.6
TOTAL	10	Min.	66.1
		Max.	101

Lognormal distribution? r-squared is: 0.975
Normal distribution? r-squared is: 0.967
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 88.3

Beryllium 95% UCL Calculation

DATA	ID
0.32	J12P05/J12P15
0.30	J12P06
0.31	J12P07
0.38	J12P08
0.40	J12P09
0.30	J12P10
0.35	J12P11
0.32	J12P12
0.30	J12P13
0.30	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	0.33
Censored		Lognormal mean	0.33
Detection limit or PQL		Std. devn.	0.04
Method detection limit		Median	0.31
TOTAL	10	Min.	0.30
		Max.	0.40

Lognormal distribution? r-squared is: 0.805
Normal distribution? r-squared is: 0.791
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 0.35

Boron 95% UCL Calculation

DATA	ID
1.8	J12P05/J12P15
1.7	J12P06
2.1	J12P07
2.9	J12P08
4.5	J12P09
1.8	J12P10
1.5	J12P11
1.7	J12P12
2.3	J12P13
1.1	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	2.1
Censored		Lognormal mean	2.1
Detection limit or PQL		Std. devn.	1.0
Method detection limit		Median	1.8
TOTAL	10	Min.	1.1
		Max.	4.5

Lognormal distribution? r-squared is: 0.916
Normal distribution? r-squared is: 0.787
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 2.8

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area A)

Chromium 95% UCL Calculation

DATA	ID
7.4	J12P05/J12P15
7.6	J12P06
11.7	J12P07
11.7	J12P08
22.1	J12P09
11.5	J12P10
11.1	J12P11
10.7	J12P12
11.5	J12P13
9.7	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	11.5
Censored		Lognormal mean	11.5
Detection limit or PQL		Std. devn.	4.1
Method detection limit		Median	11.3
TOTAL	10	Min.	7.4
		Max.	22.1

Lognormal distribution? r-squared is: 0.806
Normal distribution? r-squared is: 0.687
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 13.6

Cobalt 95% UCL Calculation

DATA	ID
5.5	J12P05/J12P15
5.5	J12P06
6.3	J12P07
7.3	J12P08
7.1	J12P09
5.4	J12P10
6.3	J12P11
6.1	J12P12
5.8	J12P13
6.1	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	6.1
Censored		Lognormal mean	6.1
Detection limit or PQL		Std. devn.	0.7
Method detection limit		Median	6.1
TOTAL	10	Min.	5.4
		Max.	7.3

Lognormal distribution? r-squared is: 0.926
Normal distribution? r-squared is: 0.911
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 6.5

Copper 95% UCL Calculation

DATA	ID
13.7	J12P05/J12P15
11.2	J12P06
15.0	J12P07
14.9	J12P08
22.3	J12P09
13.6	J12P10
14.8	J12P11
16.2	J12P12
15.1	J12P13
15.0	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	15.2
Censored		Lognormal mean	15.2
Detection limit or PQL		Std. devn.	2.8
Method detection limit		Median	15.0
TOTAL	10	Min.	11.2
		Max.	22.3

Lognormal distribution? r-squared is: 0.810
Normal distribution? r-squared is: 0.748
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 16.7

Lead 95% UCL Calculation

DATA	ID
4.2	J12P05/J12P15
3.3	J12P06
5.1	J12P07
5.5	J12P08
6.7	J12P09
4.5	J12P10
3.9	J12P11
4.3	J12P12
5.8	J12P13
5.4	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	4.9
Censored		Lognormal mean	4.9
Detection limit or PQL		Std. devn.	1.0
Method detection limit		Median	4.8
TOTAL	10	Min.	3.3
		Max.	6.7

Lognormal distribution? r-squared is: 0.984
Normal distribution? r-squared is: 0.980
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 5.6

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area A)

Manganese 95% UCL Calculation

DATA	ID
275	J12P05/J12P15
330	J12P06
305	J12P07
341	J12P08
306	J12P09
271	J12P10
268	J12P11
286	J12P12
268	J12P13
283	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	293
Censored		Lognormal mean	293
Detection limit or PQL		Std. devn.	26
Method detection limit		Median	285
TOTAL	10	Min.	268
		Max.	341

Lognormal distribution? r-squared is: 0.900
Normal distribution? r-squared is: 0.890
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 309

Nickel 95% UCL Calculation

DATA	ID
8.7	J12P05/J12P15
8.7	J12P06
14.1	J12P07
13.1	J12P08
15.1	J12P09
12.9	J12P10
11.9	J12P11
12.6	J12P12
12.7	J12P13
12.9	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	12.3
Censored		Lognormal mean	12.3
Detection limit or PQL		Std. devn.	2.1
Method detection limit		Median	12.8
TOTAL	10	Min.	8.7
		Max.	15.1

Lognormal distribution? r-squared is: 0.808
Normal distribution? r-squared is: 0.853
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 13.4

Vanadium 95% UCL Calculation

DATA	ID
31.5	J12P05/J12P15
34.1	J12P06
31.9	J12P07
37.5	J12P08
34.6	J12P09
29.2	J12P10
35.8	J12P11
33.0	J12P12
31.9	J12P13
34.8	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	33.4
Censored		Lognormal mean	33.4
Detection limit or PQL		Std. devn.	2.4
Method detection limit		Median	33.6
TOTAL	10	Min.	29.2
		Max.	37.5

Lognormal distribution? r-squared is: 0.975
Normal distribution? r-squared is: 0.978
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 34.9

Lead 95% UCL Calculation

DATA	ID
31.3	J12P05/J12P15
30.2	J12P06
37.1	J12P07
40.1	J12P08
48.6	J12P09
34.4	J12P10
37.8	J12P11
40.4	J12P12
36.5	J12P13
36.6	J12P14

Number of samples		Uncensored values	
Uncensored	10	Mean	37.3
Censored		Lognormal mean	37.3
Detection limit or PQL		Std. devn.	5.2
Method detection limit		Median	36.9
TOTAL	10	Min.	30.2
		Max.	48.6

Lognormal distribution? r-squared is: 0.939
Normal distribution? r-squared is: 0.912
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 40.5

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area A)

1	**DATA**	**ID**	**bis(2-Ethylhexyl)phthalate 95% UCL Calculation**					**DATA**	**ID**	**Methylene Chloride 95% UCL Calculation**				
2	0.035	J12P05/J12P15						0.008	J12P05/J12P15					
3	0.089	J12P06						0.007	J12P06					
4	0.041	J12P07	Number of samples		Uncensored values			0.008	J12P07	Number of samples		Uncensored values		
5	0.018	J12P08	Uncensored	10	Mean	0.037		0.009	J12P08	Uncensored	10	Mean	0.007	
6	0.028	J12P09	Censored		Lognormal mean	0.037		0.009	J12P09	Censored		Lognormal mean	0.007	
7	0.030	J12P10	Detection limit or PQL		Std. devn.	0.021		0.004	J12P10	Detection limit or PQL		Std. devn.	0.002	
8	0.025	J12P11	Method detection limit		Median	0.029		0.006	J12P11	Method detection limit		Median	0.008	
9	0.022	J12P12	TOTAL	10	Min.	0.018		0.005	J12P12	TOTAL	10	Min.	0.004	
10	0.024	J12P13			Max.	0.089		0.007	J12P13			Max.	0.009	
11	0.057	J12P14						0.008	J12P14					
12														
13			Lognormal distribution?		Normal distribution?					Lognormal distribution?		Normal distribution?		
14			r-squared is:	0.924	r-squared is:	0.774				r-squared is:	0.881	r-squared is:	0.926	
15			Recommendations:							Recommendations:				
16			Use lognormal distribution.							Use normal distribution.				
17														
18														
19			UCL (Land's method) is		0.052					UCL (based on t-statistic) is		0.008		
20														

21 PQL = practical quantitation limit
22 UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area B)

Arsenic 95% UCL Calculation

DATA	ID
3.1	J12P17
5.5	J12P18
2.8	J12P19
7.4	J12P20
4.2	J12P21
2.9	J12P22
6.1	J12P23
4.8	J12P24
5.2	J12P25/J12P27
2.0	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	4.4
Censored		Lognormal mean	4.4
Detection limit or PQL		Std. devn.	1.7
Method detection limit		Median	4.5
TOTAL	10	Min.	2.0
		Max.	7.4

Lognormal distribution? r-squared is: 0.966
Normal distribution? r-squared is: 0.970
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 5.9

Barium 95% UCL Calculation

DATA	ID
89.5	J12P17
107	J12P18
84.0	J12P19
159	J12P20
95.3	J12P21
84.0	J12P22
133	J12P23
105	J12P24
138	J12P25/J12P27
48.9	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	104
Censored		Lognormal mean	105
Detection limit or PQL		Std. devn.	32
Method detection limit		Median	100
TOTAL	10	Min.	48.9
		Max.	159

Lognormal distribution? r-squared is: 0.922
Normal distribution? r-squared is: 0.958
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 132

Beryllium 95% UCL Calculation

DATA	ID
0.36	J12P17
0.42	J12P18
0.32	J12P19
0.59	J12P20
0.35	J12P21
0.27	J12P22
0.46	J12P23
0.35	J12P24
0.44	J12P25/J12P27
0.24	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	0.38
Censored		Lognormal mean	0.38
Detection limit or PQL		Std. devn.	0.10
Method detection limit		Median	0.36
TOTAL	10	Min.	0.24
		Max.	0.59

Lognormal distribution? r-squared is: 0.976
Normal distribution? r-squared is: 0.946
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 0.45

Boron 95% UCL Calculation

DATA	ID
3.0	J12P17
2.7	J12P18
3.0	J12P19
12.0	J12P20
2.5	J12P21
0.89	J12P22
4.8	J12P23
2.2	J12P24
5.7	J12P25/J12P27
1.3	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	3.8
Censored		Lognormal mean	3.9
Detection limit or PQL		Std. devn.	3.2
Method detection limit		Median	2.9
TOTAL	10	Min.	0.89
		Max.	12.0

Lognormal distribution? r-squared is: 0.958
Normal distribution? r-squared is: 0.743
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 7.3

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area B)

Chromium 95% UCL Calculation

DATA	ID
30.3	J12P17
50.2	J12P18
22.2	J12P19
18.5	J12P20
59.3	J12P21
13.7	J12P22
17.2	J12P23
16.1	J12P24
33.4	J12P25/J12P27
10.4	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	27.1
Censored		Lognormal mean	27.4
Detection limit or PQL		Std. devn.	16.3
Method detection limit		Median	20.4
TOTAL	10	Min.	10.4
		Max.	59.3

Lognormal distribution? r-squared is: 0.967
Normal distribution? r-squared is: 0.871
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 42.4

Cobalt 95% UCL Calculation

DATA	ID
7.0	J12P17
8.0	J12P18
6.6	J12P19
10.7	J12P20
7.6	J12P21
5.2	J12P22
8.6	J12P23
5.8	J12P24
6.4	J12P25/J12P27
2.8	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	6.9
Censored		Lognormal mean	7.0
Detection limit or PQL		Std. devn.	2.1
Method detection limit		Median	6.8
TOTAL	10	Min.	2.8
		Max.	10.7

Lognormal distribution? r-squared is: 0.876
Normal distribution? r-squared is: 0.962
Recommendations:
Use normal distribution.

UCL (based on t-statistic) is 8.1

Copper 95% UCL Calculation

DATA	ID
16.7	J12P17
24.9	J12P18
17.3	J12P19
26.5	J12P20
22.5	J12P21
14.5	J12P22
22.6	J12P23
21.2	J12P24
58.2	J12P25/J12P27
9.6	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	23.4
Censored		Lognormal mean	23.4
Detection limit or PQL		Std. devn.	13.2
Method detection limit		Median	21.9
TOTAL	10	Min.	9.6
		Max.	58.2

Lognormal distribution? r-squared is: 0.901
Normal distribution? r-squared is: 0.713
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 32.9

Hexavalent Chromium 95% UCL Calculation

DATA	ID
0.22	J12P17
0.10	J12P18
0.25	J12P19
0.10	J12P20
0.10	J12P21
0.25	J12P22
0.23	J12P23
0.31	J12P24
0.65	J12P25/J12P27
0.30	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	0.25
Censored		Lognormal mean	0.26
Detection limit or PQL		Std. devn.	0.16
Method detection limit		Median	0.24
TOTAL	10	Min.	0.10
		Max.	0.65

Lognormal distribution? r-squared is: 0.886
Normal distribution? r-squared is: 0.776
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 0.34

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area B)

Lead 95% UCL Calculation

DATA	ID
9.4	J12P17
7.3	J12P18
10.6	J12P19
9.6	J12P20
9.1	J12P21
5.0	J12P22
10.6	J12P23
7.9	J12P24
52.8	J12P25/J12P27
2.2	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	12.4
Censored		Lognormal mean	12.1
Detection limit or PQL		Std. devn.	14.4
Method detection limit		Median	9.3
TOTAL	10	Min.	2.2
		Max.	52.8

Lognormal distribution? r-squared is: 0.808
Normal distribution? r-squared is: 0.505
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 19.9

Manganese 95% UCL Calculation

DATA	ID
320	J12P17
348	J12P18
316	J12P19
559	J12P20
332	J12P21
259	J12P22
426	J12P23
284	J12P24
348	J12P25/J12P27
88.6	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	328
Censored		Lognormal mean	339
Detection limit or PQL		Std. devn.	119
Method detection limit		Median	326
TOTAL	10	Min.	88.6
		Max.	559

Lognormal distribution? r-squared is: 0.748
Normal distribution? r-squared is: 0.886
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 390

Mercury 95% UCL Calculation

DATA	ID
0.07	J12P17
0.01	J12P18
0.06	J12P19
0.04	J12P20
0.09	J12P21
0.01	J12P22
0.02	J12P23
0.02	J12P24
0.11	J12P25/J12P27
0.01	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	0.04
Censored		Lognormal mean	0.05
Detection limit or PQL		Std. devn.	0.04
Method detection limit		Median	0.03
TOTAL	10	Min.	0.01
		Max.	0.11

Lognormal distribution? r-squared is: 0.908
Normal distribution? r-squared is: 0.887
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 0.12

Nickel 95% UCL Calculation

DATA	ID
12.9	J12P17
18.4	J12P18
12.8	J12P19
20.3	J12P20
16.9	J12P21
12.7	J12P22
17.9	J12P23
15.8	J12P24
17.9	J12P25/J12P27
15.2	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	16.1
Censored		Lognormal mean	16.1
Detection limit or PQL		Std. devn.	2.7
Method detection limit		Median	16.4
TOTAL	10	Min.	12.7
		Max.	20.3

Lognormal distribution? r-squared is: 0.925
Normal distribution? r-squared is: 0.937
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 17.9

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area B)

Vanadium 95% UCL Calculation

DATA	ID
38.7	J12P17
43.3	J12P18
33.6	J12P19
56.5	J12P20
31.3	J12P21
23.4	J12P22
39.9	J12P23
30.2	J12P24
33.7	J12P25/J12P27
11.8	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	34.2
Censored		Lognormal mean	34.9
Detection limit or PQL		Std. devn.	11.9
Method detection limit		Median	33.7
TOTAL	10	Min.	11.8
		Max.	56.5

Lognormal distribution? r-squared is: 0.855
Normal distribution? r-squared is: 0.949
Recommendations:
Use normal distribution.

UCL (based on t-statistic) is 41.1

Zinc 95% UCL Calculation

DATA	ID
48.0	J12P17
51.3	J12P18
51.2	J12P19
60.0	J12P20
48.5	J12P21
40.0	J12P22
52.1	J12P23
42.5	J12P24
152	J12P25/J12P27
16.1	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	56.1
Censored		Lognormal mean	56.7
Detection limit or PQL		Std. devn.	35.5
Method detection limit		Median	49.9
TOTAL	10	Min.	16.1
		Max.	152

Lognormal distribution? r-squared is: 0.781
Normal distribution? r-squared is: 0.624
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 74.6

Aroclor-1254 95% UCL Calculation

DATA	ID
0.0082	J12P17
0.0065	J12P18
0.0042	J12P19
0.012	J12P20
0.0065	J12P21
0.0070	J12P22
0.0085	J12P23
0.0075	J12P24
0.022	J12P25/J12P27
0.0065	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	0.009
Censored		Lognormal mean	0.009
Detection limit or PQL		Std. devn.	0.005
Method detection limit		Median	0.007
TOTAL	10	Min.	0.0042
		Max.	0.022

Lognormal distribution? r-squared is: 0.854
Normal distribution? r-squared is: 0.690
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 0.011

Methylene Chloride 95% UCL Calculation

DATA	ID
0.009	J12P17
0.009	J12P18
0.010	J12P19
0.011	J12P20
0.011	J12P21
0.008	J12P22
0.011	J12P23
0.010	J12P24
0.014	J12P25/J12P27
0.006	J12P26

Number of samples		Uncensored values	
Uncensored	10	Mean	0.010
Censored		Lognormal mean	0.010
Detection limit or PQL		Std. devn.	0.002
Method detection limit		Median	0.010
TOTAL	10	Min.	0.006
		Max.	0.014

Lognormal distribution? r-squared is: 0.910
Normal distribution? r-squared is: 0.942
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 0.011

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area C)

Arsenic 95% UCL Calculation

DATA	ID
2.2	J12PW9
2.4	J12PX0
2.8	J12PX1
2.8	J12PX4
2.3	J12PX3
2.7	J12PX2
4.3	J12PX5
3.2	J12PX6
3.1	J12PX8
2.8	J12P49/J12P50
2.4	J12P54
2.2	J12P53
7.1	J12PX7
3.3	J12PX9
3.3	J12P52
2.3	J12P51
6.7	J12P55

Number of samples		Uncensored values	
Uncensored	17	Mean	3.3
Censored		Lognormal mean	3.3
Detection limit or PQL		Std. devn.	1.5
Method detection limit		Median	2.8
TOTAL	17	Min.	2.2
		Max.	7.1

Lognormal distribution? r-squared is: 0.810
Normal distribution? r-squared is: 0.689
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 3.9

Barium 95% UCL Calculation

DATA	ID
88.9	J12PW9
91.8	J12PX0
91.0	J12PX1
92.4	J12PX4
83.7	J12PX3
84.0	J12PX2
84.5	J12PX5
80.0	J12PX6
76.1	J12PX8
97.2	J12P49/J12P50
81.0	J12P54
89.7	J12P53
122	J12PX7
93.9	J12PX9
86.4	J12P52
102	J12P51
148	J12P55

Number of samples		Uncensored values	
Uncensored	17	Mean	94
Censored		Lognormal mean	94
Detection limit or PQL		Std. devn.	17
Method detection limit		Median	90
TOTAL	17	Min.	76.1
		Max.	148

Lognormal distribution? r-squared is: 0.807
Normal distribution? r-squared is: 0.728
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 101

Beryllium 95% UCL Calculation

DATA	ID
0.41	J12PW9
0.39	J12PX0
0.40	J12PX1
0.37	J12PX4
0.38	J12PX3
0.39	J12PX2
0.34	J12PX5
0.46	J12PX6
0.33	J12PX8
0.43	J12P49/J12P50
0.32	J12P54
0.35	J12P53
0.58	J12PX7
0.36	J12PX9
0.28	J12P52
0.30	J12P51
0.55	J12P55

Number of samples		Uncensored values	
Uncensored	17	Mean	0.39
Censored		Lognormal mean	0.39
Detection limit or PQL		Std. devn.	0.08
Method detection limit		Median	0.38
TOTAL	17	Min.	0.28
		Max.	0.58

Lognormal distribution? r-squared is: 0.955
Normal distribution? r-squared is: 0.901
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 0.43

Boron 95% UCL Calculation

DATA	ID
3.2	J12PW9
2.2	J12PX0
2.1	J12PX1
2.2	J12PX4
2.5	J12PX3
1.7	J12PX2
2.0	J12PX5
1.1	J12PX6
0.35	J12PX8
0.72	J12P49/J12P50
1.5	J12P54
3.3	J12P53
2.1	J12PX7
0.35	J12PX9
1.3	J12P52
2.1	J12P51
6.0	J12P55

Number of samples		Uncensored values	
Uncensored	17	Mean	2.0
Censored		Lognormal mean	2.2
Detection limit or PQL		Std. devn.	1.3
Method detection limit		Median	2.1
TOTAL	17	Min.	0.35
		Max.	6.0

Lognormal distribution? r-squared is: 0.896
Normal distribution? r-squared is: 0.845
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 2.6

PQL = practical quantitation limit
UCL = upper confidence limit

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Chromium 95% UCL Calculation

DATA	ID
11.3	J12PW9
11.2	J12PX0
12.5	J12PX1
12.4	J12PX4
11.8	J12PX3
11.1	J12PX2
12.5	J12PX5
14.4	J12PX6
12.3	J12PX8
13.2	J12P49/J12P50
10.1	J12P54
11.5	J12P53
17.1	J12PX7
11.5	J12PX9
18.3	J12P52
10.7	J12P51
28.2	J12P55

Number of samples		Uncensored values	
Uncensored	17	Mean	13.5
Censored		Lognormal mean	13.5
Detection limit or PQL		Std. devn.	4.4
Method detection limit		Median	12.3
TOTAL	17	Min.	10.1
		Max.	28.2

Lognormal distribution? r-squared is: 0.754
Normal distribution? r-squared is: 0.634
Recommendations:
Reject BOTH lognormal and normal distributions.
UCL (based on Z-statistic) is 15.3

Cobalt 95% UCL Calculation

DATA	ID
7.8	J12PW9
7.4	J12PX0
7.3	J12PX1
7.3	J12PX4
7.1	J12PX3
7.1	J12PX2
6.5	J12PX5
9.2	J12PX6
6.8	J12PX8
8.6	J12P49/J12P50
6.8	J12P54
7.4	J12P53
10.5	J12PX7
7.2	J12PX9
6.1	J12P52
6.3	J12P51
10.9	J12P55

Number of samples		Uncensored values	
Uncensored	17	Mean	7.7
Censored		Lognormal mean	7.7
Detection limit or PQL		Std. devn.	1.4
Method detection limit		Median	7.3
TOTAL	17	Min.	6.1
		Max.	10.9

Lognormal distribution? r-squared is: 0.881
Normal distribution? r-squared is: 0.832
Recommendations:
Reject BOTH lognormal and normal distributions.
UCL (based on Z-statistic) is 8.2

Copper 95% UCL Calculation

DATA	ID
14.0	J12PW9
14.0	J12PX0
15.6	J12PX1
13.2	J12PX4
12.5	J12PX3
13.2	J12PX2
17.4	J12PX5
16.4	J12PX6
12.1	J12PX8
14.9	J12P49/J12P50
13.3	J12P54
13.5	J12P53
27.6	J12PX7
17.4	J12PX9
13.6	J12P52
14.5	J12P51
27.7	J12P55

Number of samples		Uncensored values	
Uncensored	17	Mean	15.9
Censored		Lognormal mean	15.9
Detection limit or PQL		Std. devn.	4.7
Method detection limit		Median	14.0
TOTAL	17	Min.	12.1
		Max.	27.7

Lognormal distribution? r-squared is: 0.765
Normal distribution? r-squared is: 0.674
Recommendations:
Reject BOTH lognormal and normal distributions.
UCL (based on Z-statistic) is 17.8

Lead 95% UCL Calculation

DATA	ID
7.2	J12PW9
6.4	J12PX0
6.2	J12PX1
6.7	J12PX4
5.5	J12PX3
5.4	J12PX2
3.6	J12PX5
5.8	J12PX6
4.9	J12PX8
5.4	J12P49/J12P50
4.5	J12P54
5.0	J12P53
7.1	J12PX7
7.6	J12PX9
9.6	J12P52
19.0	J12P51
8.9	J12P55

Number of samples		Uncensored values	
Uncensored	17	Mean	7.0
Censored		Lognormal mean	6.9
Detection limit or PQL		Std. devn.	3.5
Method detection limit		Median	6.2
TOTAL	17	Min.	3.6
		Max.	19.0

Lognormal distribution? r-squared is: 0.875
Normal distribution? r-squared is: 0.655
Recommendations:
Reject BOTH lognormal and normal distributions.
UCL (based on Z-statistic) is 8.4

PQL = practical quantitation limit
UCL = upper confidence limit

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	DATA	ID	Manganese 95% UCL Calculation			
1	DATA	ID	Manganese 95% UCL Calculation			
2	382	J12PW9				
3	371	J12PX0				
4	340	J12PX1	Number of samples		Uncensored values	
5	364	J12PX4	Uncensored	17	Mean	360
6	352	J12PX3	Censored		Lognormal mean	360
7	334	J12PX2	Detection limit or PQL		Std. devn.	46
8	308	J12PX5	Method detection limit		Median	352
9	425	J12PX6	TOTAL	17	Min.	308
10	322	J12PX8			Max.	463
11	377	J12P49/J12P50				
12	325	J12P54				
13	365	J12P53	Lognormal distribution?		Normal distribution?	
14	441	J12PX7	r-squared is:	0.926	r-squared is:	0.901
15	327	J12PX9	Recommendations:			
16	309	J12P52	Use lognormal distribution.			
17	321	J12P51				
18	463	J12P55				
19			UCL (Land's method) is		380	
20						

	DATA	ID	Nickel 95% UCL Calculation			
	DATA	ID	Nickel 95% UCL Calculation			
	11.7	J12PW9				
	11.2	J12PX0				
	12.8	J12PX1	Number of samples		Uncensored values	
	12.5	J12PX4	Uncensored	17	Mean	12.6
	10.9	J12PX3	Censored		Lognormal mean	12.6
	11.2	J12PX2	Detection limit or PQL		Std. devn.	2.4
	15.1	J12PX5	Method detection limit		Median	11.7
	11.7	J12PX6	TOTAL	17	Min.	9.9
	13.1	J12PX8			Max.	18.0
	13.0	J12P49/J12P50				
	10.6	J12P54				
	11.2	J12P53	Lognormal distribution?		Normal distribution?	
	17.9	J12PX7	r-squared is:	0.866	r-squared is:	0.810
	11.9	J12PX9	Recommendations:			
	10.7	J12P52	Reject BOTH lognormal and normal distributions.			
	9.9	J12P51				
	18.0	J12P55				
			UCL (based on Z-statistic) is		13.5	

	DATA	ID	Vanadium 95% UCL Calculation			
21	DATA	ID	Vanadium 95% UCL Calculation			
22	36.3	J12PW9				
23	35.8	J12PX0				
24	38.5	J12PX1	Number of samples		Uncensored values	
25	36.4	J12PX4	Uncensored	17	Mean	38.2
26	35.5	J12PX3	Censored		Lognormal mean	38.2
27	37.3	J12PX2	Detection limit or PQL		Std. devn.	7.7
28	31.9	J12PX5	Method detection limit		Median	36.2
29	43.5	J12PX6	TOTAL	17	Min.	29.5
30	36.2	J12PX8			Max.	57.9
31	41.4	J12P49/J12P50				
32	32.2	J12P54				
33	34.6	J12P53	Lognormal distribution?		Normal distribution?	
34	55.0	J12PX7	r-squared is:	0.848	r-squared is:	0.781
35	35.9	J12PX9	Recommendations:			
36	29.5	J12P52	Reject BOTH lognormal and normal distributions.			
37	32.2	J12P51				
38	57.9	J12P55				
39			UCL (based on Z-statistic) is		41.3	
40						

	DATA	ID	Zinc 95% UCL Calculation			
	DATA	ID	Zinc 95% UCL Calculation			
	47.5	J12PW9				
	43.3	J12PX0				
	45.3	J12PX1	Number of samples		Uncensored values	
	45.4	J12PX4	Uncensored	17	Mean	45.3
	40.8	J12PX3	Censored		Lognormal mean	45.3
	37.2	J12PX2	Detection limit or PQL		Std. devn.	10.3
	37.5	J12PX5	Method detection limit		Median	43.4
	43.4	J12PX6	TOTAL	17	Min.	34.7
	38.3	J12PX8			Max.	78.6
	42.0	J12P49/J12P50				
	34.7	J12P54				
	37.5	J12P53	Lognormal distribution?		Normal distribution?	
	51.1	J12PX7	r-squared is:	0.849	r-squared is:	0.744
	43.6	J12PX9	Recommendations:			
	47.0	J12P52	Reject BOTH lognormal and normal distributions.			
	57.3	J12P51				
	78.6	J12P55				
			UCL (based on Z-statistic) is		49.4	

41 PQL = practical quantitation limit
42 UCL = upper confidence limit

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	DATA	ID	Total Petroleum Hydrocarbons 95% UCL Calculation			
1	DATA	ID	Total Petroleum Hydrocarbons 95% UCL Calculation			
2	258	J12PW9				
3	134	J12PX0				
4	132	J12PX1	Number of samples		Uncensored values	
5	133	J12PX4	Uncensored	17	Mean	141
6	133	J12PX3	Censored		Lognormal mean	140
7	133	J12PX2	Detection limit or PQL		Std. devn.	30
8	133	J12PX5	Method detection limit		Median	133
9	134	J12PX6	TOTAL	17	Min.	132
10	133	J12PX8			Max.	258
11	134	J12P49/J12P50				
12	133	J12P54				
13	133	J12P53	Lognormal distribution?		Normal distribution?	
14	133	J12PX7	r-squared is:	0.254	r-squared is:	0.247
15	134	J12PX9	Recommendations:			
16	134	J12P52	Reject BOTH lognormal and normal distributions.			
17	133	J12P51				
18	134	J12P55				
19			UCL (based on Z-statistic) is		153	
20						

	DATA	ID	bis(2-Ethylhexyl)phthalate 95% UCL Calculation			
	DATA	ID	bis(2-Ethylhexyl)phthalate 95% UCL Calculation			
	0.33	J12PW9				
	0.33	J12PX0				
	0.33	J12PX1	Number of samples		Uncensored values	
	0.047	J12PX4	Uncensored	17	Mean	0.18
	0.33	J12PX3	Censored		Lognormal mean	0.21
	0.33	J12PX2	Detection limit or PQL		Std. devn.	0.15
	0.021	J12PX5	Method detection limit		Median	0.09
	0.033	J12PX6	TOTAL	17	Min.	0.021
	0.027	J12PX8			Max.	0.33
	0.051	J12P49/J12P50				
	0.33	J12P54				
	0.33	J12P53	Lognormal distribution?		Normal distribution?	
	0.033	J12PX7	r-squared is:	0.814	r-squared is:	0.730
	0.078	J12PX9	Recommendations:			
	0.089	J12P52	Reject BOTH lognormal and normal distributions.			
	0.037	J12P51				
	0.33	J12P55				
			UCL (based on Z-statistic) is		0.24	

	DATA	ID	Di-n-butylphthalate 95% UCL Calculation			
21	DATA	ID	Di-n-butylphthalate 95% UCL Calculation			
22	0.17	J12PW9				
23	0.021	J12PX0				
24	0.17	J12PX1	Number of samples		Uncensored values	
25	0.031	J12PX4	Uncensored	17	Mean	0.08
26	0.17	J12PX3	Censored		Lognormal mean	0.08
27	0.17	J12PX2	Detection limit or PQL		Std. devn.	0.07
28	0.021	J12PX5	Method detection limit		Median	0.03
29	0.021	J12PX6	TOTAL	17	Min.	0.021
30	0.030	J12PX8			Max.	0.17
31	0.10	J12P49/J12P50				
32	0.17	J12P54				
33	0.17	J12P53	Lognormal distribution?		Normal distribution?	
34	0.028	J12PX7	r-squared is:	0.784	r-squared is:	0.732
35	0.021	J12PX9	Recommendations:			
36	0.021	J12P52	Reject BOTH lognormal and normal distributions.			
37	0.037	J12P51				
38	0.028	J12P55				
39			UCL (based on Z-statistic) is		0.11	
40						

	DATA	ID	Methylene Chloride 95% UCL Calculation			
	DATA	ID	Methylene Chloride 95% UCL Calculation			
	0.0080	J12PW9				
	0.0060	J12PX0				
	0.0080	J12PX1	Number of samples		Uncensored values	
	0.010	J12PX4	Uncensored	17	Mean	0.012
	0.0065	J12PX3	Censored		Lognormal mean	0.012
	0.0080	J12PX2	Detection limit or PQL		Std. devn.	0.006
	0.011	J12PX5	Method detection limit		Median	0.010
	0.012	J12PX6	TOTAL	17	Min.	0.0050
	0.015	J12PX8			Max.	0.027
	0.016	J12P49/J12P50				
	0.0075	J12P54				
	0.0050	J12P53	Lognormal distribution?		Normal distribution?	
	0.014	J12PX7	r-squared is:	0.979	r-squared is:	0.891
	0.018	J12PX9	Recommendations:			
	0.019	J12P52	Use lognormal distribution.			
	0.027	J12P51				
	0.0090	J12P55				
			UCL (Land's method) is		0.015	

41 PQL = practical quantitation limit
42 UCL = upper confidence limit

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Washington Closure Hanford

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Ecology Software (MTCAStat) Results (Sample Area D)

Arsenic 95% UCL Calculation

DATA	ID
3.6	J12PY1
2.7	J12PY9
3.6	J12PY5
2.7	J12PY0
2.8	J12PY3
3.4	J12PY4
2.5	J12PY2
2.9	J12PY6
2.7	J12PY7
2.7	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	3.0
Censored		Lognormal mean	3.0
Detection limit or PQL		Std. devn.	0.4
Method detection limit		Median	2.8
TOTAL	10	Min.	2.5
		Max.	3.6

Lognormal distribution? r-squared is: 0.835
Normal distribution? r-squared is: 0.817
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 3.2

Barium 95% UCL Calculation

DATA	ID
104	J12PY1
94.6	J12PY9
177	J12PY5
84.1	J12PY0
121	J12PY3
132	J12PY4
90.4	J12PY2
156	J12PY6
88.6	J12PY7
87.1	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	113
Censored		Lognormal mean	114
Detection limit or PQL		Std. devn.	32
Method detection limit		Median	99
TOTAL	10	Min.	84.1
		Max.	177

Lognormal distribution? r-squared is: 0.896
Normal distribution? r-squared is: 0.861
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 130

Beryllium 95% UCL Calculation

DATA	ID
0.40	J12PY1
0.37	J12PY9
0.40	J12PY5
0.38	J12PY0
0.36	J12PY3
0.46	J12PY4
0.36	J12PY2
0.42	J12PY6
0.39	J12PY7
0.39	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	0.39
Censored		Lognormal mean	0.39
Detection limit or PQL		Std. devn.	0.03
Method detection limit		Median	0.39
TOTAL	10	Min.	0.36
		Max.	0.46

Lognormal distribution? r-squared is: 0.916
Normal distribution? r-squared is: 0.895
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 0.41

Boron 95% UCL Calculation

DATA	ID
3.3	J12PY1
2.9	J12PY9
11.3	J12PY5
1.5	J12PY0
5.3	J12PY3
5.0	J12PY4
0.74	J12PY2
8.1	J12PY6
1.3	J12PY7
1.2	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	4.1
Censored		Lognormal mean	4.3
Detection limit or PQL		Std. devn.	3.4
Method detection limit		Median	3.1
TOTAL	10	Min.	0.74
		Max.	11.3

Lognormal distribution? r-squared is: 0.972
Normal distribution? r-squared is: 0.875
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 10.4

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area D)

Chromium 95% UCL Calculation

DATA	ID
16.0	J12PY1
13.0	J12PY9
16.3	J12PY5
12.0	J12PY0
18.2	J12PY3
13.3	J12PY4
10.3	J12PY2
13.5	J12PY6
11.0	J12PY7
12.5	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	13.6
Censored		Lognormal mean	13.6
Detection limit or PQL		Std. devn.	2.5
Method detection limit		Median	13.2
TOTAL	10	Min.	10.3
		Max.	18.2

Lognormal distribution? r-squared is: 0.968
Normal distribution? r-squared is: 0.947
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 15.2

Cobalt 95% UCL Calculation

DATA	ID
7.8	J12PY1
8.3	J12PY9
7.3	J12PY5
7.6	J12PY0
7.3	J12PY3
8.5	J12PY4
7.8	J12PY2
7.3	J12PY6
7.7	J12PY7
8.0	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	7.8
Censored		Lognormal mean	7.8
Detection limit or PQL		Std. devn.	0.4
Method detection limit		Median	7.8
TOTAL	10	Min.	7.3
		Max.	8.5

Lognormal distribution? r-squared is: 0.934
Normal distribution? r-squared is: 0.930
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 8.0

Copper 95% UCL Calculation

DATA	ID
20.3	J12PY1
16.9	J12PY9
24.4	J12PY5
13.2	J12PY0
27.3	J12PY3
30.5	J12PY4
13.2	J12PY2
17.9	J12PY6
13.7	J12PY7
14.5	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	19.2
Censored		Lognormal mean	19.3
Detection limit or PQL		Std. devn.	6.3
Method detection limit		Median	17.4
TOTAL	10	Min.	13.2
		Max.	30.5

Lognormal distribution? r-squared is: 0.925
Normal distribution? r-squared is: 0.897
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 23.7

Hexavalent Chromium 95% UCL Calculation

DATA	ID
0.25	J12PY1
0.22	J12PY9
0.30	J12PY5
0.35	J12PY0
0.10	J12PY3
0.26	J12PY4
0.28	J12PY2
0.10	J12PY6
0.10	J12PY7
0.28	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	0.22
Censored		Lognormal mean	0.23
Detection limit or PQL		Std. devn.	0.09
Method detection limit		Median	0.26
TOTAL	10	Min.	0.10
		Max.	0.35

Lognormal distribution? r-squared is: 0.802
Normal distribution? r-squared is: 0.877
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 0.27

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area D)

Lead 95% UCL Calculation

DATA	ID
9.9	J12PY1
7.6	J12PY9
20.5	J12PY5
5.7	J12PY0
33.0	J12PY3
8.8	J12PY4
11.8	J12PY2
13.4	J12PY6
6.4	J12PY7
6.8	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	12.4
Censored		Lognormal mean	12.3
Detection limit or PQL		Std. devn.	8.5
Method detection limit		Median	9.4
TOTAL	10	Min.	5.7
		Max.	33.0

Lognormal distribution? r-squared is: 0.918
Normal distribution? r-squared is: 0.757
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 18.9

Manganese 95% UCL Calculation

DATA	ID
382	J12PY1
382	J12PY9
374	J12PY5
378	J12PY0
384	J12PY3
410	J12PY4
395	J12PY2
362	J12PY6
380	J12PY7
383	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	383
Censored		Lognormal mean	383
Detection limit or PQL		Std. devn.	13
Method detection limit		Median	382
TOTAL	10	Min.	362
		Max.	410

Lognormal distribution? r-squared is: 0.889
Normal distribution? r-squared is: 0.883
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 390

Mercury 95% UCL Calculation

DATA	ID
0.15	J12PY1
0.10	J12PY9
0.46	J12PY5
0.01	J12PY0
0.41	J12PY3
0.06	J12PY4
0.03	J12PY2
0.13	J12PY6
0.005	J12PY7
0.02	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	0.14
Censored		Lognormal mean	0.19
Detection limit or PQL		Std. devn.	0.17
Method detection limit		Median	0.08
TOTAL	10	Min.	0.01
		Max.	0.46

Lognormal distribution? r-squared is: 0.975
Normal distribution? r-squared is: 0.778
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 1.6

Nickel 95% UCL Calculation

DATA	ID
11.3	J12PY1
13.8	J12PY9
12.1	J12PY5
11.1	J12PY0
17.2	J12PY3
12.8	J12PY4
10.7	J12PY2
12.3	J12PY6
11.1	J12PY7
11.6	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	12.4
Censored		Lognormal mean	12.4
Detection limit or PQL		Std. devn.	1.9
Method detection limit		Median	11.9
TOTAL	10	Min.	10.7
		Max.	17.2

Lognormal distribution? r-squared is: 0.824
Normal distribution? r-squared is: 0.770
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 13.4

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area D)

DATA	ID
39.0	J12PY1
37.3	J12PY9
35.2	J12PY5
38.9	J12PY0
34.2	J12PY3
40.8	J12PY4
35.1	J12PY2
35.4	J12PY6
36.6	J12PY7
40.2	J12PY8

Vanadium 95% UCL Calculation

Number of samples		Uncensored values	
Uncensored	10	Mean	37.3
Censored		Lognormal mean	37.3
Detection limit or PQL		Std. devn.	2.3
Method detection limit		Median	37.0
TOTAL	10	Min.	34.2
		Max.	40.8

Lognormal distribution? r-squared is: 0.947
Normal distribution? r-squared is: 0.944
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 38.7

DATA	ID
60.2	J12PY1
47.3	J12PY9
84.6	J12PY5
44.4	J12PY0
133	J12PY3
57.5	J12PY4
40.1	J12PY2
60.1	J12PY6
42.9	J12PY7
45.4	J12PY8

Zinc 95% UCL Calculation

Number of samples		Uncensored values	
Uncensored	10	Mean	61.6
Censored		Lognormal mean	61.4
Detection limit or PQL		Std. devn.	28.3
Method detection limit		Median	52.4
TOTAL	10	Min.	40.1
		Max.	133

Lognormal distribution? r-squared is: 0.835
Normal distribution? r-squared is: 0.714
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 76.3

DATA	ID
0.026	J12PY1
0.00065	J12PY9
0.0092	J12PY5
0.0039	J12PY0
0.0059	J12PY3
0.0049	J12PY4
0.00065	J12PY2
0.0076	J12PY6
0.0028	J12PY7
0.0020	J12PY8

4,4'-DDE 95% UCL Calculation

Number of samples		Uncensored values	
Uncensored	10	Mean	0.006
Censored		Lognormal mean	0.007
Detection limit or PQL		Std. devn.	0.007
Method detection limit		Median	0.004
TOTAL	10	Min.	0.00065
		Max.	0.026

Lognormal distribution? r-squared is: 0.957
Normal distribution? r-squared is: 0.698
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 0.027

DATA	ID
0.0080	J12PY1
0.00093	J12PY9
0.0066	J12PY5
0.0080	J12PY0
0.0028	J12PY3
0.0011	J12PY4
0.00044	J12PY2
0.0024	J12PY6
0.00040	J12PY7
0.00065	J12PY8

Endrin Aldehyde 95% UCL Calculation

Number of samples		Uncensored values	
Uncensored	10	Mean	0.0031
Censored		Lognormal mean	0.0036
Detection limit or PQL		Std. devn.	0.0032
Method detection limit		Median	0.0018
TOTAL	10	Min.	0.00040
		Max.	0.0080

Lognormal distribution? r-squared is: 0.929
Normal distribution? r-squared is: 0.810
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 0.0138

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area D)

bis(2-Ethylhexyl)phthalate 95% UCL Calculation

DATA	ID
0.040	J12PY1
0.33	J12PY9
0.050	J12PY5
0.064	J12PY0
0.14	J12PY3
0.027	J12PY4
0.19	J12PY2
0.045	J12PY6
0.040	J12PY7
0.024	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	0.10
Censored		Lognormal mean	0.09
Detection limit or PQL		Std. devn.	0.10
Method detection limit		Median	0.05
TOTAL	10	Min.	0.024
		Max.	0.33

Lognormal distribution? r-squared is: 0.907
Normal distribution? r-squared is: 0.727
Recommendations:
Use lognormal distribution.

UCL (Land's method) is 0.22

Di-n-butylphthalate 95% UCL Calculation

DATA	ID
0.022	J12PY1
0.17	J12PY9
0.029	J12PY5
0.17	J12PY0
0.030	J12PY3
0.17	J12PY4
0.036	J12PY2
0.17	J12PY6
0.028	J12PY7
0.17	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	0.10
Censored		Lognormal mean	0.11
Detection limit or PQL		Std. devn.	0.07
Method detection limit		Median	0.10
TOTAL	10	Min.	0.022
		Max.	0.17

Lognormal distribution? r-squared is: 0.764
Normal distribution? r-squared is: 0.727
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 0.14

Methylene Chloride 95% UCL Calculation

DATA	ID
0.015	J12PY1
0.022	J12PY9
0.015	J12PY5
0.015	J12PY0
0.017	J12PY3
0.019	J12PY4
0.017	J12PY2
0.018	J12PY6
0.017	J12PY7
0.016	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	0.017
Censored		Lognormal mean	0.017
Detection limit or PQL		Std. devn.	0.002
Method detection limit		Median	0.017
TOTAL	10	Min.	0.015
		Max.	0.022

Lognormal distribution? r-squared is: 0.893
Normal distribution? r-squared is: 0.864
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 0.018

Toluene 95% UCL Calculation

DATA	ID
0.003	J12PY1
0.001	J12PY9
0.003	J12PY5
0.001	J12PY0
0.003	J12PY3
0.003	J12PY4
0.001	J12PY2
0.003	J12PY6
0.001	J12PY7
0.001	J12PY8

Number of samples		Uncensored values	
Uncensored	10	Mean	0.002
Censored		Lognormal mean	0.002
Detection limit or PQL		Std. devn.	0.001
Method detection limit		Median	0.002
TOTAL	10	Min.	0.001
		Max.	0.003

Lognormal distribution? r-squared is: 0.688
Normal distribution? r-squared is: 0.688
Recommendations:
Reject BOTH lognormal and normal distributions.

UCL (based on Z-statistic) is 0.002

PQL = practical quantitation limit
UCL = upper confidence limit

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Ecology Software (MTCAStat) Results (Sample Area D)

	DATA	ID	Aroclor-1254 95% UCL Calculation				DATA	ID	Aroclor-1260 95% UCL Calculation			
1	DATA	ID	Aroclor-1254 95% UCL Calculation				DATA	ID	Aroclor-1260 95% UCL Calculation			
2	0.18	J12PY1					0.033	J12PY1				
3	0.071	J12PY9					0.011	J12PY9				
4	0.26	J12PY5	Number of samples		Uncensored values		0.055	J12PY5	Number of samples		Uncensored values	
5	0.12	J12PY0	Uncensored	10	Mean	0.10	0.020	J12PY0	Uncensored	10	Mean	0.021
6	0.015	J12PY3	Censored		Lognormal mean	0.14	0.0052	J12PY3	Censored		Lognormal mean	0.022
7	0.14	J12PY4	Detection limit or PQL		Std. devn.	0.09	0.029	J12PY4	Detection limit or PQL		Std. devn.	0.017
8	0.0065	J12PY2	Method detection limit		Median	0.10	0.0065	J12PY2	Method detection limit		Median	0.016
9	0.17	J12PY6	TOTAL	10	Min.	0.0065	0.036	J12PY6	TOTAL	10	Min.	0.0044
10	0.027	J12PY7			Max.	0.26	0.0044	J12PY7			Max.	0.055
11	0.0065	J12PY8					0.0065	J12PY8				
12												
13			Lognormal distribution?		Normal distribution?				Lognormal distribution?		Normal distribution?	
14			r-squared is:	0.895	r-squared is:	0.922			r-squared is:	0.928	r-squared is:	0.882
15			Recommendations:						Recommendations:			
16			Use normal distribution.						Use lognormal distribution.			
17												
18												
19			UCL (based on t-statistic) is		0.15				UCL (Land's method) is		0.055	
20												

21 PQL = practical quantitation limit
22 UCL = upper confidence limit

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Sample Location	Sample Number	Sample Date	Aluminum			Antimony			Arsenic			Barium			Beryllium			Boron		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J12P05	7/5/06	5440		8.1	1.2	U	1.2	2.6		1.7	69.7		0.06	0.33		0.06	2.4	C	0.68
Duplicate of J12P05	J12P15	7/5/06	5030		8.0	1.2	U	1.2	2.6		1.7	62.4		0.06	0.30		0.06	1.2	C	0.67
A-2	J12P06	7/5/06	5530		8.1	1.2	U	1.2	2.1		1.7	93.9		0.06	0.30		0.06	1.7	C	0.68
A-3	J12P07	7/5/06	6460		8.1	1.2	U	1.2	2.9		1.7	73.1		0.06	0.31		0.06	2.1	C	0.67
A-4	J12P08	7/5/06	6700		8.1	1.2	U	1.2	3.5		1.7	85.0		0.06	0.38		0.06	2.9	C	0.68
A-5	J12P09	7/5/06	7210		8.0	1.2	U	1.2	4.0		1.7	101		0.06	0.40		0.06	4.5	C	0.67
A-6	J12P10	7/5/06	6050		8.1	1.2	U	1.2	2.9		1.7	70.4		0.06	0.30		0.06	1.8	C	0.67
A-7	J12P11	7/5/06	6070		8.1	1.2	U	1.2	3.6		1.7	70.6		0.06	0.35		0.06	1.5	C	0.67
A-8	J12P12	7/5/06	6230		8.1	1.2	U	1.2	2.1		1.7	81.0		0.06	0.32		0.06	1.7	C	0.68
A-9	J12P13	7/5/06	6400		8.1	1.2	U	1.2	3.0		1.7	89.4		0.06	0.30		0.06	2.3	C	0.67
A-10	J12P14	7/5/06	6240		8.1	1.2	U	1.2	3.4		1.7	80.2		0.06	0.30		0.06	1.1	C	0.68
B-1	J12P17	7/5/06	6990		8.1	1.2	U	1.2	3.1		1.7	89.5		0.06	0.36		0.06	3.0	C	0.68
B-2	J12P18	7/5/06	9480		8.1	1.2	U	1.2	5.5		1.7	107		0.06	0.42		0.06	2.7	C	0.68
B-3	J12P19	7/5/06	6730		8.1	1.2	U	1.2	2.8		1.7	84.0		0.06	0.32		0.06	3.0	C	0.68
B-4	J12P20	7/5/06	10600		8.1	1.2	U	1.2	7.4		1.7	159		0.06	0.59		0.06	12.0	C	0.67
B-5	J12P21	7/5/06	7550		8.1	1.2	U	1.2	4.2		1.7	95.3		0.06	0.35		0.06	2.5	C	0.68
B-6	J12P22	7/5/06	6210		8.3	1.3	U	1.3	2.9		1.8	84.0		0.06	0.27		0.06	0.89	C	0.69
B-7	J12P23	7/5/06	9190		8.2	1.3	U	1.3	6.1		1.7	133		0.06	0.46		0.06	4.8	C	0.68
B-8	J12P24	7/5/06	8070		8.2	1.2	U	1.2	4.8		1.7	105		0.06	0.35		0.06	2.2	C	0.68
B-9	J12P25	7/5/06	7850		8.7	1.3	U	1.3	5.8		1.8	118		0.06	0.51		0.06	4.5	C	0.73
Duplicate of J12P25	J12P27	7/5/06	8140		8.6	1.3	U	1.3	4.5		1.8	158		0.06	0.37		0.06	6.8		0.72
B-10	J12P26	7/5/06	3740		8.2	1.3	U	1.3	2.0		1.7	48.9		0.06	0.24		0.06	1.3	C	0.68

Note: The following abbreviations apply to all Attachment 1 tables.

Note: Data qualified with B, C, D, I and/or J are considered acceptable values.

B = method blank contamination (organic constituents)
C = method blank contamination (inorganic constituents)
D = diluted (organic constituents)
I = interference on one analytical column
J = estimated

PQL = practical quantitation limit
Q = qualifier
R = rejected
U = undetected

Attachment	1	Sheet No.	1 of 47
Originator	J. M. Capron JMC	Date	10/16/06
Checked	T. M. Blakley TMB	Date	10/19/06
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Verification Sampling Results.

Sample Location	Sample Number	Sample Date	Cadmium			Calcium			Chromium			Cobalt			Copper			Hexavalent Chromium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J12P05	7/5/06	0.20	U	0.20	3280		4.6	7.2		0.37	5.8		0.39	14.6		0.34			
Duplicate of J12P05	J12P15	7/5/06	0.20	U	0.20	2760		4.6	7.6		0.36	5.2		0.39	12.7		0.34			
A-2	J12P06	7/5/06	0.20	U	0.20	3070		4.6	7.6		0.37	5.5		0.39	11.2		0.34			
A-3	J12P07	7/5/06	0.20	U	0.20	4180		4.6	11.7		0.37	6.3		0.39	15.0		0.34			
A-4	J12P08	7/5/06	0.20	U	0.20	4120		4.6	11.7		0.37	7.3		0.39	14.9		0.34			
A-5	J12P09	7/5/06	0.20	U	0.20	5300		4.6	22.1		0.36	7.1		0.39	22.3		0.33			
A-6	J12P10	7/5/06	0.20	U	0.20	3970		4.6	11.5		0.36	5.4		0.39	13.6		0.34			
A-7	J12P11	7/5/06	0.20	U	0.20	3630		4.6	11.1		0.37	6.3		0.39	14.8		0.34			
A-8	J12P12	7/5/06	0.20	U	0.20	3670		4.6	10.7		0.37	6.1		0.39	16.2		0.34			
A-9	J12P13	7/5/06	0.20	U	0.20	5070		4.6	11.5		0.36	5.8		0.39	15.1		0.34			
A-10	J12P14	7/5/06	0.20	U	0.20	3430		4.6	9.7		0.37	6.1		0.39	15.0		0.34			
B-1	J12P17	7/5/06	0.20	U	0.20	3740		4.6	30.3		0.37	7.0		0.39	16.7		0.34	0.22		0.20
B-2	J12P18	7/5/06	0.20	U	0.20	9080		4.6	50.2		0.37	8.0		0.40	24.9		0.34	0.20	U	0.20
B-3	J12P19	7/5/06	0.20	U	0.20	3900		4.6	22.2		0.37	6.6		0.40	17.3		0.34	0.25		0.20
B-4	J12P20	7/5/06	0.20	U	0.20	11900		4.6	18.5		0.37	10.7		0.39	26.5		0.34	0.20	U	0.20
B-5	J12P21	7/5/06	0.20	U	0.20	6980		4.6	59.3		0.37	7.6		0.40	22.5		0.34	0.20	U	0.20
B-6	J12P22	7/5/06	0.20	U	0.20	2200		4.7	13.7		0.37	5.2		0.40	14.5		0.35	0.25		0.20
B-7	J12P23	7/5/06	0.20	U	0.20	7450		4.7	17.2		0.37	8.6		0.40	22.6		0.34	0.23		0.20
B-8	J12P24	7/5/06	0.20	U	0.20	4880		4.6	16.1		0.37	5.8		0.40	21.2		0.34	0.31		0.20
B-9	J12P25	7/5/06	0.52		0.21	4560	C	5.0	34.3		0.39	6.6		0.42	37.4		0.36	1.2		0.21
Duplicate of J12P25	J12P27	7/5/06	0.36		0.21	5040		4.9	32.4		0.39	6.2		0.42	78.9		0.36	0.21	U	0.21
B-10	J12P26	7/5/06	0.20	U	0.20	1180	C	4.7	10.4		0.37	2.8		0.40	9.6		0.34	0.30		0.20

Attachment	1	Sheet No.	2 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Verification Sampling Results.

Sample Location	Sample Number	Sample Date	Iron			Lead			Magnesium			Manganese			Mercury			Molybdenum		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J12P05	7/5/06	15300		9.8	4.4		0.87	3070		2.7	299		0.08	0.02	U	0.02	0.82	U	0.82
Duplicate of J12P05	J12P15	7/5/06	14000		9.7	3.9		0.87	2880		2.7	250		0.08	0.01	U	0.01	0.81	U	0.81
A-2	J12P06	7/5/06	15400		9.8	3.3		0.87	3450		2.7	330		0.08	0.01	U	0.01	0.82	U	0.82
A-3	J12P07	7/5/06	15600		9.8	5.1		0.87	4170		2.7	305		0.08	0.02	U	0.02	0.82	U	0.82
A-4	J12P08	7/5/06	17500		9.8	5.5		0.87	4220		2.7	341		0.08	0.01	U	0.01	0.82	U	0.82
A-5	J12P09	7/5/06	16000		9.7	6.7		0.86	5110		2.7	306		0.08	0.06		0.01	0.81	U	0.81
A-6	J12P10	7/5/06	14200		9.8	4.5		0.87	4240		2.7	271		0.08	0.01	U	0.01	0.81	U	0.81
A-7	J12P11	7/5/06	15100		9.8	3.9		0.87	4100		2.7	268		0.08	0.02	U	0.02	0.82	U	0.82
A-8	J12P12	7/5/06	15000		9.8	4.3		0.87	4540		2.7	286		0.08	0.01	U	0.01	0.82	U	0.82
A-9	J12P13	7/5/06	14100		9.8	5.8		0.87	4430		2.7	268		0.08	0.02	U	0.02	0.81	U	0.81
A-10	J12P14	7/5/06	15100		9.8	5.4		0.87	4010		2.7	283		0.08	0.07		0.02	0.82	U	0.82
B-1	J12P17	7/5/06	17900		9.8	9.4		0.87	4000		2.7	320		0.08	0.07		0.01	0.82	U	0.82
B-2	J12P18	7/5/06	20300		9.9	7.3		0.88	6160		2.7	348		0.08	0.02	U	0.02	0.82	U	0.82
B-3	J12P19	7/5/06	15600		9.9	10.6		0.88	4080		2.7	316		0.08	0.06		0.02	0.82	U	0.82
B-4	J12P20	7/5/06	24800		9.8	9.6		0.87	7340		2.7	559		0.08	0.04		0.02	0.82	U	0.82
B-5	J12P21	7/5/06	15900		9.9	9.1		0.88	5280		2.7	332		0.08	0.09		0.02	0.82	U	0.82
B-6	J12P22	7/5/06	12500		10.1	5.0		0.89	3620		2.8	259		0.09	0.02	U	0.02	0.84	U	0.84
B-7	J12P23	7/5/06	20000		9.9	10.6		0.88	6560		2.8	426		0.09	0.02		0.02	0.83	U	0.83
B-8	J12P24	7/5/06	15600		9.9	7.9		0.88	4920		2.7	284		0.08	0.02		0.01	0.82	U	0.82
B-9	J12P25	7/5/06	20200		10.5	67.8		0.94	4310		2.9	356		0.09	0.08		0.02	0.88	U	0.88
Duplicate of J12P25	J12P27	7/5/06	18800		10.4	37.7		0.93	4190		2.9	340		0.09	0.13		0.02	0.87	U	0.87
B-10	J12P26	7/5/06	6980		10	2.2		0.88	2680		2.8	88.6		0.09	0.02	U	0.02	0.83	U	0.83

Attachment	1	Sheet No.	3 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Verification Sampling Results.

Sample Location	Sample Number	Sample Date	Nickel			Potassium			Selenium			Silicon			Silver			Sodium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J12P05	7/5/06	8.8		0.68	1100	C	6.4	1.3	U	1.3	485		6.4	0.20	U	0.20	124		2.1
Duplicate of J12P05	J12P15	7/5/06	8.6		0.67	1060	C	6.3	1.3	U	1.3	507		6.3	0.20	U	0.20	94.8		2.1
A-2	J12P06	7/5/06	8.7		0.68	999	C	6.4	1.3	U	1.3	521		6.4	0.20	U	0.20	154		2.1
A-3	J12P07	7/5/06	14.1		0.67	1250	C	6.4	1.3	U	1.3	513		6.4	0.20	U	0.20	101		2.1
A-4	J12P08	7/5/06	13.1		0.68	1230	C	6.4	1.3	U	1.3	601		6.4	0.20	U	0.20	136		2.1
A-5	J12P09	7/5/06	15.1		0.67	1550	C	6.3	1.3	U	1.3	465		6.3	0.20	U	0.20	232		2.1
A-6	J12P10	7/5/06	12.9		0.67	1420	C	6.3	1.3	U	1.3	589		6.3	0.20	U	0.20	116		2.1
A-7	J12P11	7/5/06	11.9		0.67	993	C	6.4	1.3	U	1.3	793		6.4	0.20	U	0.20	141		2.1
A-8	J12P12	7/5/06	12.6		0.68	1250	C	6.4	1.3	U	1.3	544		6.4	0.20	U	0.20	147		2.1
A-9	J12P13	7/5/06	12.7		0.67	1280	C	6.3	1.3	U	1.3	612		6.3	0.20	U	0.20	128		2.1
A-10	J12P14	7/5/06	12.9		0.68	928	C	6.4	1.3	U	1.3	494		6.4	0.20	U	0.20	114		2.1
B-1	J12P17	7/5/06	12.9		0.68	1370	C	6.4	1.3	U	1.3	569		6.4	0.20	U	0.20	127		2.1
B-2	J12P18	7/5/06	18.4		0.68	1540	C	6.4	1.3	U	1.3	465		6.4	0.20	U	0.20	249		2.1
B-3	J12P19	7/5/06	12.8		0.68	1430	C	6.4	1.3	U	1.3	563		6.4	0.20	U	0.20	126		2.1
B-4	J12P20	7/5/06	20.3		0.67	1510	C	6.4	1.3	U	1.3	553		6.4	0.20	U	0.20	352		2.1
B-5	J12P21	7/5/06	16.9		0.68	1320	C	6.4	1.3	U	1.3	616		6.4	0.20	U	0.20	220		2.1
B-6	J12P22	7/5/06	12.7		0.69	990	C	6.5	1.4	U	1.4	640		6.5	0.20	U	0.20	66.6		2.2
B-7	J12P23	7/5/06	17.9		0.68	1690	C	6.5	1.3	U	1.3	631		6.5	0.20	U	0.20	753		2.2
B-8	J12P24	7/5/06	15.8		0.68	1310	C	6.4	1.3	U	1.3	549		6.4	0.20	U	0.20	306		2.2
B-9	J12P25	7/5/06	18.5		0.73	1070		6.9	1.4	U	1.4	443		6.9	0.30		0.21	159		2.3
Duplicate of J12P25	J12P27	7/5/06	17.3		0.72	1130		6.8	1.4	U	1.4	581		6.8	0.21	U	0.21	236		2.3
B-10	J12P26	7/5/06	15.2		0.68	612		6.5	1.3	U	1.3	264		6.5	0.21		0.20	59.0		2.2

Attachment	1	Sheet No.	4 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Verification Sampling Results.

Sample Location	Sample Number	Sample Date	Total Petroleum Hydrocarbons			Vanadium			Zinc		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
A-1	J12P05	7/5/06				33.5		0.25	32.4		0.45
Duplicate of J12P05	J12P15	7/5/06				29.5		0.25	30.2		0.45
A-2	J12P06	7/5/06				34.1		0.25	30.2		0.45
A-3	J12P07	7/5/06				31.9		0.25	37.1		0.45
A-4	J12P08	7/5/06				37.5		0.25	40.1		0.45
A-5	J12P09	7/5/06				34.6		0.25	48.6		0.45
A-6	J12P10	7/5/06				29.2		0.25	34.4		0.45
A-7	J12P11	7/5/06				35.8		0.25	37.8		0.45
A-8	J12P12	7/5/06				33.0		0.25	40.4		0.45
A-9	J12P13	7/5/06				31.9		0.25	36.5		0.45
A-10	J12P14	7/5/06				34.8		0.25	36.6		0.45
B-1	J12P17	7/5/06	211		134	38.7		0.25	48.0		0.45
B-2	J12P18	7/5/06	431		133	43.3		0.25	51.3		0.45
B-3	J12P19	7/5/06	134	U	134	33.6		0.25	51.2		0.45
B-4	J12P20	7/5/06	135	U	135	56.5		0.25	60.0		0.45
B-5	J12P21	7/5/06	134	U	134	31.3		0.25	48.5		0.45
B-6	J12P22	7/5/06	147		137	23.4		0.26	40.0		0.46
B-7	J12P23	7/5/06	135	U	135	39.9		0.26	52.1		0.46
B-8	J12P24	7/5/06	133	U	133	30.2		0.25	42.5		0.45
B-9	J12P25	7/5/06	137	U	137	34.0		0.27	161		0.48
Duplicate of J12P25	J12P27	7/5/06	139	U	139	33.4		0.27	142		0.48
B-10	J12P26	7/5/06	134	U	134	11.8		0.26	16.1		0.46

Attachment	1	Sheet No.	5 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Verification Sampling Results.

Sample Location	Sample Number	Sample Date	Aluminum			Antimony			Arsenic			Barium			Beryllium			Boron		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
C-1	J12PW9	6/29/06	7460		8.4	1.3	UJ	1.3	2.2		1.8	88.9		0.06	0.41		0.06	3.2	C	0.70
C-2	J12PX0	6/29/06	7120		8.3	1.3	UJ	1.3	2.4		1.7	91.8		0.06	0.39		0.06	2.2	C	0.69
C-3	J12PX1	6/29/06	7490		8.3	1.3	UJ	1.3	2.8		1.8	91.0		0.06	0.40		0.06	2.1	C	0.69
C-4	J12PX4	6/29/06	7060		8.3	1.3	U	1.3	2.8		1.8	92.4		0.06	0.37		0.06	2.2		0.69
C-5	J12PX3	6/29/06	7070		8.2	1.3	UJ	1.3	2.3		1.7	83.7		0.06	0.38		0.06	2.5	C	0.69
C-6	J12PX2	6/29/06	6970		8.2	1.3	UJ	1.3	2.7		1.7	84.0		0.06	0.39		0.06	1.7	C	0.69
C-7	J12PX5	6/29/06	7050		8.3	1.3	U	1.3	4.3		1.8	84.5		0.06	0.34		0.06	2.0		0.69
C-8	J12PX6	6/29/06	8330		8.3	1.3	U	1.3	3.2		1.7	80.0		0.06	0.46		0.06	1.1		0.69
C-9	J12PX8	6/29/06	6810		8.3	1.3	U	1.3	3.1		1.8	76.1		0.06	0.33		0.06	0.69	U	0.69
C-10	J12P49	6/29/06	7880		8.4	1.3	U	1.3	3.0		1.8	102		0.06	0.43		0.06	1.1		0.70
Duplicate of J12P49	J12P50	6/29/06	8170		8.2	1.3	U	1.3	2.6		1.7	92.3		0.06	0.42		0.06	0.69	U	0.69
C-11	J12P54	6/29/06	6330		8.4	1.3	UJ	1.3	2.4		1.8	81.0		0.06	0.32		0.06	1.5	C	0.70
C-12	J12P53	6/29/06	6930		8.4	1.3	UJ	1.3	2.2		1.8	89.7		0.06	0.35		0.06	3.3	C	0.70
C-13	J12PX7	6/29/06	10500		8.3	1.3	U	1.3	7.1		1.8	122		0.06	0.58		0.06	2.1		0.69
C-14	J12PX9	6/29/06	6560		8.3	1.3	U	1.3	3.3		1.7	93.9		0.06	0.36		0.06	0.69	U	0.69
C-15	J12P52	6/29/06	5830		8.3	1.3	U	1.3	3.3		1.7	86.4		0.06	0.28		0.06	1.3		0.69
C-16	J12P51	6/29/06	6150		8.3	1.3	U	1.3	2.3		1.8	102		0.06	0.30		0.06	2.1		0.69
C-17	J12P55	6/29/06	10700		8.4	1.3	UJ	1.3	6.7		1.8	148		0.06	0.55		0.06	6.0	C	0.70
D-1	J12PY1	6/29/06	7410		8.3	1.3	U	1.3	3.6		1.8	104		0.06	0.40		0.06	3.3		0.69
D-2	J12PY9	6/29/06	7520		8.3	1.3	UJ	1.3	2.7		1.7	94.6		0.06	0.37		0.06	2.9	C	0.69
D-3	J12PY5	6/29/06	7160		8.2	1.3	U	1.3	3.6		1.7	177		0.06	0.40		0.06	11.3		0.69
D-4	J12PY0	6/29/06	7250		8.3	1.3	U	1.3	2.7		1.8	84.1		0.06	0.38		0.06	1.5		0.69
D-5	J12PY3	6/29/06	6460		8.3	1.3	U	1.3	2.8		1.7	121		0.06	0.36		0.06	5.3		0.69
D-6	J12PY4	6/29/06	7980		8.3	1.3	U	1.3	3.4		1.7	132		0.06	0.46		0.06	5.0		0.69
D-7	J12PY2	6/29/06	6320		8.3	1.3	U	1.3	2.5		1.7	90.4		0.06	0.36		0.06	0.74		0.69
D-8	J12PY6	6/29/06	7000		8.4	1.3	U	1.3	2.9		1.8	156		0.06	0.42		0.06	8.1		0.70
D-9	J12PY7	6/29/06	6830		8.2	1.2	U	1.2	2.7		1.7	88.6		0.06	0.39		0.06	1.3		0.68
D-10	J12PY8	6/29/06	7070		8.3	1.3	U	1.3	2.7		1.7	87.1		0.06	0.39		0.06	1.2		0.69
Tar staging area	J12P56	7/5/06	7690		8.3	1.3	U	1.3	3.8		1.7	279		0.06	0.83		0.06	17.5	C	0.69
Lead staging area	J12P57	7/5/06	7140		8.3	1.3	U	1.3	3.5		1.7	173		0.06	0.71		0.06	8.0	C	0.69
Equipment blank	J12P16	7/5/06	45.3		2.7	0.41	U	0.41	0.56	U	0.56	1.2		0.02	0.02	U	0.02	0.61	C	0.22

Attachment	1	Sheet No.	6 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Verification Sampling Results.

Sample Location	Sample Number	Sample Date	Cadmium			Calcium			Chromium			Cobalt			Copper			Hexavalent Chromium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
C-1	J12PW9	6/29/06	0.20	U	0.20	3770	C	4.8	11.3		0.38	7.8		0.41	14.0		0.35	0.20	U	0.20
C-2	J12PX0	6/29/06	0.20	U	0.20	3990	C	4.7	11.2		0.37	7.4		0.40	14.0		0.34	0.20	U	0.20
C-3	J12PX1	6/29/06	0.20	U	0.20	4010	C	4.7	12.5		0.38	7.3		0.40	15.6		0.35	0.25		0.20
C-4	J12PX4	6/29/06	0.20	U	0.20	3370		4.7	12.4		0.38	7.3		0.40	13.2		0.35	0.34		0.20
C-5	J12PX3	6/29/06	0.20	U	0.20	3620	C	4.7	11.8		0.37	7.1		0.40	12.5		0.34	0.31		0.20
C-6	J12PX2	6/29/06	0.20	U	0.20	3470	C	4.7	11.1		0.37	7.1		0.40	13.2		0.34	0.20	U	0.20
C-7	J12PX5	6/29/06	0.20	U	0.20	4020		4.7	12.5		0.38	6.5		0.40	17.4		0.35	0.20	U	0.20
C-8	J12PX6	6/29/06	0.20	U	0.20	3380		4.7	14.4		0.37	9.2		0.40	16.4		0.34	0.20	U	0.20
C-9	J12PX8	6/29/06	0.20	U	0.20	3300		4.7	12.3		0.38	6.8		0.40	12.1		0.35	0.28		0.20
C-10	J12P49	6/29/06	0.20	U	0.20	3970		4.8	12.9		0.38	8.7		0.41	15.0		0.35	0.20	U	0.20
Duplicate of J12P49	J12P50	6/29/06	0.20	U	0.20	3400		4.7	13.4		0.37	8.4		0.40	14.7		0.34	0.20	U	0.20
C-11	J12P54	6/29/06	0.20	U	0.20	3280	C	4.8	10.1		0.38	6.8		0.41	13.3		0.35	0.32		0.20
C-12	J12P53	6/29/06	0.20	U	0.20	3240	C	4.8	11.5		0.38	7.4		0.41	13.5		0.35	0.25		0.20
C-13	J12PX7	6/29/06	0.20	U	0.20	4340		4.7	17.1		0.37	10.5		0.40	27.6		0.34	0.20	U	0.20
C-14	J12PX9	6/29/06	0.20	U	0.20	3340		4.7	11.5		0.37	7.2		0.40	17.4		0.34	0.29		0.20
C-15	J12P52	6/29/06	0.59		0.20	3080		4.7	18.3		0.37	6.1		0.40	13.6		0.34	0.20	U	0.20
C-16	J12P51	6/29/06	0.20	U	0.20	3380		4.7	10.7		0.37	6.3		0.40	14.5		0.35	0.20	U	0.20
C-17	J12P55	6/29/06	0.20	U	0.20	6860	C	4.8	28.2		0.38	10.9		0.41	27.7		0.35	0.20	U	0.20
D-1	J12PY1	6/29/06	0.20	U	0.20	5450		4.7	16.0		0.38	7.8		0.40	20.3		0.35	0.25		0.20
D-2	J12PY9	6/29/06	0.20	U	0.20	3990	C	4.7	13.0		0.37	8.3		0.40	16.9		0.34	0.22		0.20
D-3	J12PY5	6/29/06	0.20	U	0.20	5290		4.7	16.3		0.37	7.3		0.40	24.4		0.34	0.30		0.20
D-4	J12PY0	6/29/06	0.20	U	0.20	3280		4.7	12.0		0.38	7.6		0.40	13.2		0.35	0.35		0.20
D-5	J12PY3	6/29/06	0.20	U	0.20	4310		4.7	18.2		0.37	7.3		0.40	27.3		0.34	0.20	U	0.20
D-6	J12PY4	6/29/06	0.20	U	0.20	5030		4.7	13.3		0.37	8.5		0.40	30.5		0.34	0.26		0.20
D-7	J12PY2	6/29/06	0.20	U	0.20	3310		4.7	10.3		0.37	7.8		0.40	13.2		0.34	0.28		0.20
D-8	J12PY6	6/29/06	0.20	U	0.20	5510		4.8	13.5		0.38	7.3		0.41	17.9		0.35	0.20	U	0.20
D-9	J12PY7	6/29/06	0.20	U	0.20	3410		4.6	11.0		0.37	7.7		0.40	13.7		0.34	0.20	U	0.20
D-10	J12PY8	6/29/06	0.20	U	0.20	3330		4.7	12.5		0.37	8.0		0.40	14.5		0.34	0.28		0.20
Tar staging area	J12P56	7/5/06	0.20	U	0.20	7640	C	4.7	12.2		0.37	8.0		0.40	17.9		0.34	1.1		0.20
Lead staging area	J12P57	7/5/06	0.20	U	0.20	5400	C	4.7	12.5		0.37	7.3		0.40	15.8		0.34			
Equipment blank	J12P16	7/5/06	0.06	U	0.06	22.5		1.5	0.14		0.12	0.13	U	0.13	0.11	U	0.11			

Attachment	1	Sheet No.	7 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Verification Sampling Results.

Sample Location	Sample Number	Sample Date	Iron			Lead			Magnesium			Manganese			Mercury			Molybdenum		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
C-1	J12PW9	6/29/06	18200		10.2	7.2		0.90	4020		2.8	382		0.09	0.07		0.02	0.84	U	0.84
C-2	J12PX0	6/29/06	17100		10.0	6.4		0.89	3910		2.8	371		0.09	0.02		0.01	0.83	U	0.83
C-3	J12PX1	6/29/06	18000		10.1	6.2		0.90	4400		2.8	340		0.09	0.02	U	0.02	0.84	U	0.84
C-4	J12PX4	6/29/06	17500		10.1	6.7		0.90	4110		2.8	364		0.09	0.01	U	0.01	0.84	U	0.84
C-5	J12PX3	6/29/06	17700		10	5.5		0.89	3760		2.8	352		0.09	0.02	U	0.02	0.83	U	0.83
C-6	J12PX2	6/29/06	17100		10	5.4		0.89	3930		2.8	334		0.09	0.01	U	0.01	0.83	U	0.83
C-7	J12PX5	6/29/06	16000		10.1	3.6		0.90	4990		2.8	308		0.09	0.02		0.01	0.84	U	0.84
C-8	J12PX6	6/29/06	21000		10.0	5.8		0.89	4010		2.8	425		0.09	0.02	U	0.02	0.83	U	0.83
C-9	J12PX8	6/29/06	17100		10.1	4.9		0.90	4060		2.8	322		0.09	0.01	U	0.01	0.84	U	0.84
C-10	J12P49	6/29/06	21200		10.2	5.6		0.90	4430		2.8	380		0.09	0.01	U	0.01	0.84	U	0.84
Duplicate of J12P49	J12P50	6/29/06	19900		10	5.2		0.89	4400		2.8	373		0.09	0.02	U	0.02	0.83	U	0.83
C-11	J12P54	6/29/06	15800		10.2	4.5		0.90	3660		2.8	325		0.09	0.01	U	0.01	0.85	U	0.85
C-12	J12P53	6/29/06	16900		10.2	5.0		0.91	3820		2.8	365		0.09	0.02	U	0.02	0.85	U	0.85
C-13	J12PX7	6/29/06	25000		10.0	7.1		0.89	5910		2.8	441		0.09	0.02	U	0.02	0.83	U	0.83
C-14	J12PX9	6/29/06	16600		10	7.6		0.89	4050		2.8	327		0.09	0.04		0.02	0.83	U	0.83
C-15	J12P52	6/29/06	16300		10.0	9.6		0.89	3330		2.8	309		0.09	0.02	U	0.02	4.7		0.83
C-16	J12P51	6/29/06	15700		10.1	19.0		0.89	3520		2.8	321		0.09	0.02	U	0.02	0.84	U	0.84
C-17	J12P55	6/29/06	26400		10.1	8.9		0.90	6520		2.8	463		0.09	0.08		0.02	0.84	U	0.84
D-1	J12PY1	6/29/06	18700		10.1	9.9		0.90	3980		2.8	382		0.09	0.15		0.01	0.84	U	0.84
D-2	J12PY9	6/29/06	19000		10.0	7.6		0.89	4630		2.8	382		0.09	0.10		0.01	0.83	U	0.83
D-3	J12PY5	6/29/06	17300		10	20.5		0.89	4050		2.8	374		0.09	0.46		0.02	0.83	U	0.83
D-4	J12PY0	6/29/06	18400		10.1	5.7		0.90	3870		2.8	378		0.09	0.02	U	0.02	0.84	U	0.84
D-5	J12PY3	6/29/06	16900		10.0	33.0		0.89	3820		2.8	384		0.09	0.41		0.01	0.83	U	0.83
D-6	J12PY4	6/29/06	20200		10.0	8.8		0.89	4580		2.8	410		0.09	0.06		0.01	0.83	U	0.83
D-7	J12PY2	6/29/06	17000		10.0	11.8		0.89	3610		2.8	395		0.09	0.03		0.02	0.83	U	0.83
D-8	J12PY6	6/29/06	17500		10.1	13.4		0.90	4070		2.8	362		0.09	0.13		0.01	0.84	U	0.84
D-9	J12PY7	6/29/06	18300		9.9	6.4		0.88	3860		2.7	380		0.09	0.01	U	0.01	0.82	U	0.82
D-10	J12PY8	6/29/06	18900		10.0	6.8		0.89	3920		2.8	383		0.09	0.02		0.02	0.83	U	0.83
Tar staging area	J12P56	7/5/06	18500		10.0	10.6		0.89	4410		2.8	390		0.09	0.09		0.01	0.83	U	0.83
Lead staging area	J12P57	7/5/06	17800		10	14.5		0.89	3780		2.8	372		0.09	0.12		0.01	0.83	U	0.83
Equipment blank	J12P16	7/5/06	93.8		3.2	0.32		0.29	8.8		0.90	3.1		0.03	0.01	U	0.01	0.27	U	0.27

Attachment	1	Sheet No.	8 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Verification Sampling Results.

Sample Location	Sample Number	Sample Date	Nickel			Potassium			Selenium			Silicon			Silver			Sodium		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
C-1	J12PW9	6/29/06	11.7		0.70	1960		6.6	1.4	U	1.4	516	J	6.6	0.20	U	0.20	122		2.2
C-2	J12PX0	6/29/06	11.2		0.69	1890		6.5	1.3	U	1.3	582	J	6.5	0.20	U	0.20	122		2.2
C-3	J12PX1	6/29/06	12.8		0.69	1870		6.6	1.4	U	1.4	455	J	6.6	0.30		0.20	132		2.2
C-4	J12PX4	6/29/06	12.5		0.69	1880		6.6	1.4	U	1.4	649		6.6	0.20	U	0.20	93.2		2.2
C-5	J12PX3	6/29/06	10.9		0.69	1960		6.5	1.3	U	1.3	472	J	6.5	0.20	U	0.20	111		2.2
C-6	J12PX2	6/29/06	11.2		0.69	1640		6.5	1.3	U	1.3	487	J	6.5	0.20	U	0.20	99.0		2.2
C-7	J12PX5	6/29/06	15.1		0.69	1090		6.6	1.4	U	1.4	723		6.6	0.20	U	0.20	129		2.2
C-8	J12PX6	6/29/06	11.7		0.69	2130		6.5	1.3	U	1.3	532		6.5	0.20	U	0.20	94.2		2.2
C-9	J12PX8	6/29/06	13.1		0.69	1150		6.6	1.4	U	1.4	574		6.6	0.20	U	0.20	103		2.2
C-10	J12P49	6/29/06	13.2		0.70	1620		6.6	1.4	U	1.4	618		6.6	0.20	U	0.20	117		2.2
Duplicate of J12P49	J12P50	6/29/06	12.8		0.69	1700		6.5	1.3	U	1.3	591		6.5	0.20	U	0.20	119		2.2
C-11	J12P54	6/29/06	10.6		0.70	1390		6.6	1.4	U	1.4	494	J	6.6	0.20	U	0.20	106		2.2
C-12	J12P53	6/29/06	11.2		0.70	1570		6.6	1.4	U	1.4	570	J	6.6	0.20	U	0.20	110		2.2
C-13	J12PX7	6/29/06	17.9		0.69	1310		6.5	1.3	U	1.3	454		6.5	0.20	U	0.20	162		2.2
C-14	J12PX9	6/29/06	11.9		0.69	1330		6.5	1.3	U	1.3	498		6.5	0.20	U	0.20	112		2.2
C-15	J12P52	6/29/06	10.7		0.69	1840		6.5	1.3	U	1.3	570		6.5	0.20	U	0.20	85.4		2.2
C-16	J12P51	6/29/06	9.9		0.69	1790		6.5	1.4	U	1.4	570		6.5	0.20	U	0.20	121		2.2
C-17	J12P55	6/29/06	18.0		0.70	2070		6.6	1.4	U	1.4	437	J	6.6	0.20	U	0.20	205		2.2
D-1	J12PY1	6/29/06	11.3		0.69	1870		6.6	1.4	U	1.4	594		6.6	0.20	U	0.20	167		2.2
D-2	J12PY9	6/29/06	13.8		0.69	1570		6.5	1.3	U	1.3	481	J	6.5	0.20	U	0.20	146		2.2
D-3	J12PY5	6/29/06	12.1		0.69	1750		6.5	1.3	U	1.3	617		6.5	0.20	U	0.20	307		2.2
D-4	J12PY0	6/29/06	11.1		0.69	2200		6.6	1.4	U	1.4	693		6.6	0.20	U	0.20	105		2.2
D-5	J12PY3	6/29/06	17.2		0.69	2050		6.5	1.3	U	1.3	728		6.5	0.20	U	0.20	156		2.2
D-6	J12PY4	6/29/06	12.8		0.69	1860		6.5	1.3	U	1.3	673		6.5	0.20	U	0.20	209		2.2
D-7	J12PY2	6/29/06	10.7		0.69	1820		6.5	1.3	U	1.3	686		6.5	0.20	U	0.20	102		2.2
D-8	J12PY6	6/29/06	12.3		0.70	1720		6.6	1.4	U	1.4	669		6.6	0.20	U	0.20	216		2.2
D-9	J12PY7	6/29/06	11.1		0.68	1930		6.4	1.3	U	1.3	589		6.4	0.20	U	0.20	117		2.2
D-10	J12PY8	6/29/06	11.6		0.69	1880		6.5	1.3	U	1.3	538		6.5	0.20	U	0.20	106		2.2
Tar staging area	J12P56	7/5/06	12.2		0.69	1680		6.5	1.3	U	1.3	660		6.5	0.20	U	0.20	333		2.2
Lead staging area	J12P57	7/5/06	11.1		0.69	1780		6.5	1.3	U	1.3	498		6.5	0.25		0.20	187		2.2
Equipment blank	J12P16	7/5/06	0.25		0.22	19.8	C	2.1	0.44	U	0.44	37.8		2.1	0.06	U	0.06	8.0		0.70

Attachment	1	Sheet No.	9 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
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Attachment 1. 128-B-3 Verification Sampling Results.

Sample Location	Sample Number	Sample Date	Total Petroleum Hydrocarbons			Vanadium			Zinc		
			mg/kg	Q	PQL	mg/kg	Q	PQL	mg/kg	Q	PQL
C-1	J12PW9	6/29/06	258		133	36.3		0.26	47.5		0.47
C-2	J12PX0	6/29/06	134	U	134	35.8		0.26	43.3		0.46
C-3	J12PX1	6/29/06	132	U	132	38.5		0.26	45.3		0.46
C-4	J12PX4	6/29/06	133	U	133	36.4		0.26	45.4		0.46
C-5	J12PX3	6/29/06	133	U	133	35.5		0.26	40.8		0.46
C-6	J12PX2	6/29/06	133	U	133	37.3		0.26	37.2		0.46
C-7	J12PX5	6/29/06	133	U	133	31.9		0.26	37.5		0.46
C-8	J12PX6	6/29/06	134	U	134	43.5		0.26	43.4		0.46
C-9	J12PX8	6/29/06	133	U	133	36.2		0.26	38.3		0.46
C-10	J12P49	6/29/06	135	U	135	43.1		0.26	42.3		0.47
Duplicate of J12P49	J12P50	6/29/06	133	U	133	39.7		0.26	41.7		0.46
C-11	J12P54	6/29/06	133	U	133	32.2		0.26	34.7		0.47
C-12	J12P53	6/29/06	133	U	133	34.6		0.26	37.5		0.47
C-13	J12PX7	6/29/06	133	U	133	55.0		0.26	51.1		0.46
C-14	J12PX9	6/29/06	134	U	134	35.9		0.26	43.6		0.46
C-15	J12P52	6/29/06	134	U	134	29.5		0.26	47.0		0.46
C-16	J12P51	6/29/06	133	U	133	32.2		0.26	57.3		0.46
C-17	J12P55	6/29/06	134	U	134	57.9		0.26	78.6		0.46
D-1	J12PY1	6/29/06	134	U	134	39.0		0.26	60.2		0.46
D-2	J12PY9	6/29/06	133	U	133	37.3		0.26	47.3		0.46
D-3	J12PY5	6/29/06	134	U	134	35.2		0.26	84.6		0.46
D-4	J12PY0	6/29/06	133	U	133	38.9		0.26	44.4		0.46
D-5	J12PY3	6/29/06	133	U	133	34.2		0.26	133		0.46
D-6	J12PY4	6/29/06	134	U	134	40.8		0.26	57.5		0.46
D-7	J12PY2	6/29/06	134	U	134	35.1		0.26	40.1		0.46
D-8	J12PY6	6/29/06	134	U	134	35.4		0.26	60.1		0.47
D-9	J12PY7	6/29/06	154		133	36.6		0.26	42.9		0.45
D-10	J12PY8	6/29/06	179		132	40.2		0.26	45.4		0.46
Tar staging area	J12P56	7/5/06	133	U	133	37.0		0.26	50.2		0.46
Lead staging area	J12P57	7/5/06				37.2		0.26	59.5		0.46
Equipment blank	J12P16	7/5/06				0.08		0.08	0.70		0.15

Attachment	1	Sheet No.	10 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Verification Sampling Results.

Sample Location	Sample Number	Sample Date	Asbestos Result
A-1	J12P98	7/5/06	None detected
Duplicate of J12P98	J12R23	7/5/06	None detected
A-2	J12P99	7/5/06	None detected
A-3	J12PB0	7/5/06	None detected
A-4	J12PB1	7/5/06	None detected
A-5	J12PB2	7/5/06	None detected
A-6	J12PB3	7/5/06	None detected
A-7	J12PB4	7/5/06	None detected
A-8	J12PB5	7/5/06	None detected
A-9	J12R21	7/5/06	None detected
A-10	J12R22	7/5/06	None detected
B-1	J12P87	7/5/06	None detected
B-2	J12P88	7/5/06	None detected
B-3	J12P89	7/5/06	None detected
B-4	J12P90	7/5/06	None detected
B-5	J12P91	7/5/06	None detected
B-6	J12P92	7/5/06	None detected
B-7	J12P93	7/5/06	None detected
B-8	J12P94	7/5/06	None detected
B-9	J12P95	7/5/06	None detected
Duplicate of J12P95	J12P97	7/5/06	<1% chrysotile asbestos, <1% amosite asbestos (<1% total asbestos)
B-10	J12P96	7/5/06	None detected

Sample Location	Sample Number	Sample Date	Asbestos Result
C-1	J12P68	6/28/05	None detected
C-2	J12P69	6/28/05	None detected
C-3	J12P70	6/28/05	None detected
C-4	J12P71	6/28/05	None detected
C-5	J12P74	6/28/05	None detected
C-6	J12P73	6/28/05	None detected
C-7	J12P72	6/28/05	None detected
C-8	J12P75	6/28/05	None detected
C-9	J12P76	6/28/05	None detected
C-10	J12P79	6/29/05	None detected
Duplicate of J12P79	J12P80	6/29/05	None detected
C-11	J12P84	6/29/05	None detected
C-12	J12P83	6/29/05	<1% chysotile asbestos
C-13	J12P77	6/28/05	None detected
C-14	J12P78	6/28/05	None detected
C-15	J12P82	6/29/05	None detected
C-16	J12P81	6/29/05	None detected
C-17	J12P85	6/29/05	None detected
D-1	J12P58	6/28/05	None detected
D-2	J12P59	6/28/05	<1% chrysotile asbestos, <1% amosite asbestos
D-3	J12P60	6/28/05	<1% chrysotile asbestos, <1% amosite asbestos (<1% total asbestos)
D-4	J12P61	6/28/05	None detected
D-5	J12P62	6/28/05	<1% chrysotile asbestos, <1% amosite asbestos
D-6	J12P63	6/28/05	None detected
D-7	J12P64	6/28/05	None detected
D-8	J12P65	6/28/05	None detected
D-9	J12P66	6/28/05	None detected
D-10	J12P67	6/28/05	None detected
Tar staging area	J12P86	7/5/06	<1% Chrysotile Asbestos
Asbestos staging area	J12PB6	7/5/06	None detected

Attachment	1	Sheet No.	11 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P05 Location A-1 Sample Date 7/5/06			J12P15 Duplicate of J12P05 Sample Date 7/5/06			J12P06 Location A-2 Sample Date 7/5/06			J12P07 Location A-3 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1254	190		13	160		13	13	U	13	13	U	13
Aroclor-1260	13	U	13	13	U	13	13	U	13	13	U	13
Pesticides												
Aldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
beta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
delta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethylene	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyltrichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dieldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan I	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan II	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan sulfate	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin	2.4	D	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin aldehyde	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin ketone	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-BHC (Lindane)	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor epoxide	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Methoxychlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Toxaphene	13	UD	13	13	UD	13	13	UD	13	13	UD	13
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
1,2-Dichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
1,3-Dichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
1,4-Dichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
2,4,5-Trichlorophenol	840	U	840	840	U	840	840	U	840	840	U	840
2,4,6-Trichlorophenol	330	U	330	340	U	340	330	U	330	330	U	330
2,4-Dichlorophenol	330	U	330	340	U	340	330	U	330	330	U	330
2,4-Dimethylphenol	330	U	330	340	U	340	330	U	330	330	U	330
2,4-Dinitrophenol	840	U	840	840	U	840	840	U	840	840	U	840
2,4-Dinitrotoluene	330	U	330	340	U	340	330	U	330	330	U	330
2,6-Dinitrotoluene	330	U	330	340	U	340	330	U	330	330	U	330
2-Chloronaphthalene	330	U	330	340	U	340	330	U	330	330	U	330
2-Chlorophenol	330	U	330	340	U	340	330	U	330	330	U	330
2-Methylnaphthalene	330	U	330	340	U	340	330	U	330	330	U	330
2-Methylphenol (cresol, o-)	330	U	330	340	U	340	330	U	330	330	U	330
2-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
2-Nitrophenol	330	U	330	340	U	340	330	U	330	330	U	330

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Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
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Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P05 Location A-1 Sample Date 7/5/06			J12P15 Duplicate of J12P05 Sample Date 7/5/06			J12P06 Location A-2 Sample Date 7/5/06			J12P07 Location A-3 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
3,3'-Dichlorobenzidine	330	U	330	340	U	340	330	U	330	330	U	330
3-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	840	U	840	840	U	840	840	U	840	840	U	840
4-Bromophenyl-phenylether	330	U	330	340	U	340	330	U	330	330	U	330
4-Chloro-3-methylphenol	330	U	330	340	U	340	330	U	330	330	U	330
4-Chloroaniline	330	U	330	340	U	340	330	U	330	330	U	330
4-Chlorophenyl-phenylether	330	U	330	340	U	340	330	U	330	330	U	330
4-Methylphenol (p-cresol)	330	U	330	340	U	340	330	U	330	330	U	330
4-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
4-Nitrophenol	840	U	840	840	U	840	840	U	840	840	U	840
Acenaphthene	330	U	330	340	U	340	330	U	330	330	U	330
Acenaphthylene	330	U	330	340	U	340	330	U	330	330	U	330
Anthracene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(a)anthracene	330	U	330	24	J	340	330	U	330	330	U	330
Benzo(a)pyrene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(b)fluoranthene	330	U	330	32	J	340	330	U	330	330	U	330
Benzo(g,h,i)perylene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(k)fluoranthene	330	U	330	30	J	340	330	U	330	330	U	330
bis(2-Chloro-1-methylethyl)ether	330	U	330	340	U	340	330	U	330	330	U	330
bis(2-Chloroethoxy)methane	330	U	330	340	U	340	330	U	330	330	U	330
bis(2-Chloroethyl)ether	330	U	330	340	U	340	330	U	330	330	U	330
bis(2-Ethylhexyl)phthalate	37	JB	330	33	JB	340	89	JB	330	41	JB	330
Butylbenzylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Carbazole	330	U	330	340	U	340	330	U	330	330	U	330
Chrysene	330	U	330	38	J	340	330	U	330	330	U	330
Di-n-butylphthalate	19	JB	330	18	JB	340	330	U	330	330	U	330
Di-n-octylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Dibenz(a,h)anthracene	330	U	330	340	U	340	330	U	330	330	U	330
Dibenzofuran	330	U	330	340	U	340	330	U	330	330	U	330
Diethylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Dimethylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Fluoranthene	330	U	330	340	U	340	330	U	330	330	U	330
Fluorene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachlorobutadiene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachlorocyclopentadiene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachloroethane	330	U	330	340	U	340	330	U	330	330	U	330
Indeno(1,2,3-cd)pyrene	330	U	330	340	U	340	330	U	330	330	U	330
Isophorone	330	U	330	340	U	340	330	U	330	330	U	330
N-Nitroso-di-n-dipropylamine	330	U	330	340	U	340	330	U	330	330	U	330
N-Nitrosodiphenylamine	330	U	330	340	U	340	330	U	330	330	U	330
Naphthalene	330	U	330	340	U	340	330	U	330	330	U	330
Nitrobenzene	330	U	330	340	U	340	330	U	330	330	U	330
Pentachlorophenol	840	U	840	840	U	840	840	U	840	840	U	840
Phenanthrene	330	U	330	340	U	340	330	U	330	330	U	330
Phenol	330	U	330	340	U	340	330	U	330	330	U	330
Pyrene	330	U	330	340	U	340	330	U	330	330	U	330

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Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P05 Location A-1 Sample Date 7/5/06			J12P15 Duplicate of J12P05 Sample Date 7/5/06			J12P06 Location A-2 Sample Date 7/5/06			J12P07 Location A-3 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	10	U	10	10	U	10	10	U	10	10	U	10
2-Hexanone	10	U	10	10	U	10	10	U	10	10	U	10
4-Methyl-2-Pentanone	10	U	10	10	U	10	10	U	10	10	U	10
Acetone	10	U	10	10	U	10	10	U	10	10	U	10
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	10	U	10	10	U	10	10	U	10	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	10	U	10	10	U	10	10	U	10	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	10	U	10	10	U	10	10	U	10	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylene chloride	9	B	5	7	B	5	7	B	5	8	B	5
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	10	U	10	10	U	10	10	U	10	10	U	10
Xylenes (total)	5	U	5	5	U	5	5	U	5	5	U	5

Attachment	1	Sheet No.	14 of 47
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Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P08 Location A-4 Sample Date 7/5/06			J12P09 Location A-5 Sample Date 7/5/06			J12P10 Location A-6 Sample Date 7/5/06			J12P11 Location A-7 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1254	13	U	13	32		13	13	U	13	13	U	13
Aroclor-1260	13	U	13	13	U	13	13	U	13	13	U	13
Pesticides												
Aldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
beta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
delta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethylene	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyltrichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dieldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan I	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan II	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan sulfate	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin aldehyde	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin ketone	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-BHC (Lindane)	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor epoxide	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Methoxychlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Toxaphene	13	UD	13	13	UD	13	13	UD	13	13	UD	13
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	330	U	330	330	U	330	340	U	340	330	U	330
1,2-Dichlorobenzene	330	U	330	330	U	330	340	U	340	330	U	330
1,3-Dichlorobenzene	330	U	330	330	U	330	340	U	340	330	U	330
1,4-Dichlorobenzene	330	U	330	330	U	330	340	U	340	330	U	330
2,4,5-Trichlorophenol	840	U	840	840	U	840	840	U	840	840	U	840
2,4,6-Trichlorophenol	330	U	330	330	U	330	340	U	340	330	U	330
2,4-Dichlorophenol	330	U	330	330	U	330	340	U	340	330	U	330
2,4-Dimethylphenol	330	U	330	330	U	330	340	U	340	330	U	330
2,4-Dinitrophenol	840	U	840	840	U	840	840	U	840	840	U	840
2,4-Dinitrotoluene	330	U	330	330	U	330	340	U	340	330	U	330
2,6-Dinitrotoluene	330	U	330	330	U	330	340	U	340	330	U	330
2-Chloronaphthalene	330	U	330	330	U	330	340	U	340	330	U	330
2-Chlorophenol	330	U	330	330	U	330	340	U	340	330	U	330
2-Methylnaphthalene	330	U	330	330	U	330	340	U	340	330	U	330
2-Methylphenol (cresol, o-)	330	U	330	330	U	330	340	U	340	330	U	330
2-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
2-Nitrophenol	330	U	330	330	U	330	340	U	340	330	U	330

Attachment	1	Sheet No.	15 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P08 Location A-4 Sample Date 7/5/06			J12P09 Location A-5 Sample Date 7/5/06			J12P10 Location A-6 Sample Date 7/5/06			J12P11 Location A-7 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
3,3'-Dichlorobenzidine	330	U	330	330	U	330	340	U	340	330	U	330
3-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	840	U	840	840	U	840	840	U	840	840	U	840
4-Bromophenyl-phenylether	330	U	330	330	U	330	340	U	340	330	U	330
4-Chloro-3-methylphenol	330	U	330	330	U	330	340	U	340	330	U	330
4-Chloroaniline	330	U	330	330	U	330	340	U	340	330	U	330
4-Chlorophenyl-phenylether	330	U	330	330	U	330	340	U	340	330	U	330
4-Methylphenol (p-cresol)	330	U	330	330	U	330	340	U	340	330	U	330
4-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
4-Nitrophenol	840	U	840	840	U	840	840	U	840	840	U	840
Acenaphthene	330	U	330	330	U	330	340	U	340	330	U	330
Acenaphthylene	330	U	330	330	U	330	340	U	340	330	U	330
Anthracene	330	U	330	330	U	330	340	U	340	330	U	330
Benzo(a)anthracene	330	U	330	330	U	330	340	U	340	330	U	330
Benzo(a)pyrene	330	U	330	17	J	330	340	U	340	330	U	330
Benzo(b)fluoranthene	330	U	330	18	J	330	340	U	340	330	U	330
Benzo(g,h,i)perylene	330	U	330	330	U	330	340	U	340	330	U	330
Benzo(k)fluoranthene	330	U	330	19	J	330	340	U	340	330	U	330
bis(2-Chloro-1-methylethyl)ether	330	U	330	330	U	330	340	U	340	330	U	330
bis(2-Chloroethoxy)methane	330	U	330	330	U	330	340	U	340	330	U	330
bis(2-Chloroethyl)ether	330	U	330	330	U	330	340	U	340	330	U	330
bis(2-Ethylhexyl)phthalate	18	JB	330	28	JB	330	30	JB	340	25	JB	330
Butylbenzylphthalate	330	U	330	330	U	330	340	U	340	330	U	330
Carbazole	330	U	330	330	U	330	340	U	340	330	U	330
Chrysene	330	U	330	20	J	330	340	U	340	330	U	330
Di-n-butylphthalate	20	JB	330	19	JB	330	23	JB	340	330	U	330
Di-n-octylphthalate	330	U	330	330	U	330	340	U	340	330	U	330
Dibenz(a,h)anthracene	330	U	330	330	U	330	340	U	340	330	U	330
Dibenzofuran	330	U	330	330	U	330	340	U	340	330	U	330
Diethylphthalate	330	U	330	330	U	330	340	U	340	330	U	330
Dimethylphthalate	330	U	330	330	U	330	340	U	340	330	U	330
Fluoranthene	330	U	330	20	J	330	340	U	340	330	U	330
Fluorene	330	U	330	330	U	330	340	U	340	330	U	330
Hexachlorobenzene	330	U	330	330	U	330	340	U	340	330	U	330
Hexachlorobutadiene	330	U	330	330	U	330	340	U	340	330	U	330
Hexachlorocyclopentadiene	330	U	330	330	U	330	340	U	340	330	U	330
Hexachloroethane	330	U	330	330	U	330	340	U	340	330	U	330
Indeno(1,2,3-cd)pyrene	330	U	330	330	U	330	340	U	340	330	U	330
Isophorone	330	U	330	330	U	330	340	U	340	330	U	330
N-Nitroso-di-n-dipropylamine	330	U	330	330	U	330	340	U	340	330	U	330
N-Nitrosodiphenylamine	330	U	330	330	U	330	340	U	340	330	U	330
Naphthalene	330	U	330	330	U	330	340	U	340	330	U	330
Nitrobenzene	330	U	330	330	U	330	340	U	340	330	U	330
Pentachlorophenol	840	U	840	840	U	840	840	U	840	840	U	840
Phenanthrene	330	U	330	330	U	330	340	U	340	330	U	330
Phenol	330	U	330	330	U	330	340	U	340	330	U	330
Pyrene	330	U	330	31	J	330	340	U	340	330	U	330

Attachment	1	Sheet No.	16 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P08 Location A-4 Sample Date 7/5/06			J12P09 Location A-5 Sample Date 7/5/06			J12P10 Location A-6 Sample Date 7/5/06			J12P11 Location A-7 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	10	U	10	10	U	10	10	U	10	10	U	10
2-Hexanone	10	U	10	10	U	10	10	U	10	10	U	10
4-Methyl-2-Pentanone	10	U	10	10	U	10	10	U	10	10	U	10
Acetone	10	U	10	10	U	10	10	U	10	10	U	10
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	10	U	10	10	U	10	10	U	10	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	10	U	10	10	U	10	10	U	10	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	10	U	10	10	U	10	10	U	10	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylene chloride	9	B	5	9	B	5	4	JB	5	6	B	5
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	10	U	10	10	U	10	10	U	10	10	U	10
Xylenes (total)	5	U	5	5	U	5	5	U	5	5	U	5

Attachment	1	Sheet No.	17 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P12 Location A-8 Sample Date 7/5/06			J12P13 Location A-9 Sample Date 7/5/06			J12P14 Location A-10 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls									
Aroclor-1016	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13
Aroclor-1254	13	U	13	13	U	13	13	U	13
Aroclor-1260	13	U	13	13	U	13	13	U	13
Pesticides									
Aldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
beta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
delta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethylene	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyltrichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dieldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan I	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan II	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan sulfate	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin aldehyde	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin ketone	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-BHC (Lindane)	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor epoxide	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Methoxychlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Toxaphene	13	UD	13	13	UD	13	13	UD	13
Semivolatile Organic Compounds									
1,2,4-Trichlorobenzene	330	U	330	340	U	340	330	U	330
1,2-Dichlorobenzene	330	U	330	340	U	340	330	U	330
1,3-Dichlorobenzene	330	U	330	340	U	340	330	U	330
1,4-Dichlorobenzene	330	U	330	340	U	340	330	U	330
2,4,5-Trichlorophenol	840	U	840	840	U	840	840	U	840
2,4,6-Trichlorophenol	330	U	330	340	U	340	330	U	330
2,4-Dichlorophenol	330	U	330	340	U	340	330	U	330
2,4-Dimethylphenol	330	U	330	340	U	340	330	U	330
2,4-Dinitrophenol	840	U	840	840	U	840	840	U	840
2,4-Dinitrotoluene	330	U	330	340	U	340	330	U	330
2,6-Dinitrotoluene	330	U	330	340	U	340	330	U	330
2-Chloronaphthalene	330	U	330	340	U	340	330	U	330
2-Chlorophenol	330	U	330	340	U	340	330	U	330
2-Methylnaphthalene	330	U	330	340	U	340	330	U	330
2-Methylphenol (cresol, o-)	330	U	330	340	U	340	330	U	330
2-Nitroaniline	840	U	840	840	U	840	840	U	840
2-Nitrophenol	330	U	330	340	U	340	330	U	330

Attachment	1	Sheet No.	18 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P12 Location A-8 Sample Date 7/5/06			J12P13 Location A-9 Sample Date 7/5/06			J12P14 Location A-10 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)									
3,3'-Dichlorobenzidine	330	U	330	340	U	340	330	U	330
3-Nitroaniline	840	U	840	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	840	U	840	840	U	840	840	U	840
4-Bromophenyl-phenylether	330	U	330	340	U	340	330	U	330
4-Chloro-3-methylphenol	330	U	330	340	U	340	330	U	330
4-Chloroaniline	330	U	330	340	U	340	330	U	330
4-Chlorophenyl-phenylether	330	U	330	340	U	340	330	U	330
4-Methylphenol (p-cresol)	330	U	330	340	U	340	330	U	330
4-Nitroaniline	840	U	840	840	U	840	840	U	840
4-Nitrophenol	840	U	840	840	U	840	840	U	840
Acenaphthene	330	U	330	340	U	340	330	U	330
Acenaphthylene	330	U	330	340	U	340	330	U	330
Anthracene	330	U	330	340	U	340	330	U	330
Benzo(a)anthracene	330	U	330	340	U	340	330	U	330
Benzo(a)pyrene	330	U	330	340	U	340	330	U	330
Benzo(b)fluoranthene	330	U	330	340	U	340	330	U	330
Benzo(g,h,i)perylene	330	U	330	340	U	340	330	U	330
Benzo(k)fluoranthene	330	U	330	340	U	340	330	U	330
bis(2-Chloro-1-methylethyl)ether	330	U	330	340	U	340	330	U	330
bis(2-Chloroethoxy)methane	330	U	330	340	U	340	330	U	330
bis(2-Chloroethyl)ether	330	U	330	340	U	340	330	U	330
bis(2-Ethylhexyl)phthalate	22	JB	330	24	JB	340	57	JB	330
Butylbenzylphthalate	330	U	330	340	U	340	330	U	330
Carbazole	330	U	330	340	U	340	330	U	330
Chrysene	330	U	330	340	U	340	330	U	330
Di-n-butylphthalate	330	U	330	340	U	340	330	U	330
Di-n-octylphthalate	330	U	330	340	U	340	330	U	330
Dibenz(a,h)anthracene	330	U	330	340	U	340	330	U	330
Dibenzofuran	330	U	330	340	U	340	330	U	330
Diethylphthalate	330	U	330	340	U	340	330	U	330
Dimethylphthalate	330	U	330	340	U	340	330	U	330
Fluoranthene	330	U	330	340	U	340	330	U	330
Fluorene	330	U	330	340	U	340	330	U	330
Hexachlorobenzene	330	U	330	340	U	340	330	U	330
Hexachlorobutadiene	330	U	330	340	U	340	330	U	330
Hexachlorocyclopentadiene	330	U	330	340	U	340	330	U	330
Hexachloroethane	330	U	330	340	U	340	330	U	330
Indeno(1,2,3-cd)pyrene	330	U	330	340	U	340	330	U	330
Isophorone	330	U	330	340	U	340	330	U	330
N-Nitroso-di-n-dipropylamine	330	U	330	340	U	340	330	U	330
N-Nitrosodiphenylamine	330	U	330	340	U	340	330	U	330
Naphthalene	330	U	330	340	U	340	330	U	330
Nitrobenzene	330	U	330	340	U	340	330	U	330
Pentachlorophenol	840	U	840	840	U	840	840	U	840
Phenanthrene	330	U	330	340	U	340	330	U	330
Phenol	330	U	330	340	U	340	330	U	330
Pyrene	330	U	330	340	U	340	330	U	330

Attachment	1	Sheet No.	19 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P12 Location A-8 Sample Date 7/5/06			J12P13 Location A-9 Sample Date 7/5/06			J12P14 Location A-10 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Volatile Organic Compounds									
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5
2-Butanone	10	U	10	10	U	10	10	U	10
2-Hexanone	10	U	10	10	U	10	10	U	10
4-Methyl-2-Pentanone	10	U	10	10	U	10	10	U	10
Acetone	10	U	10	10	U	10	10	U	10
Benzene	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5
Bromomethane	10	U	10	10	U	10	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5
Chloroethane	10	U	10	10	U	10	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5
Chloromethane	10	U	10	10	U	10	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5
Methylene chloride	5	B	5	7	B	5	8	B	5
Styrene	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	5	U	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5
Vinyl chloride	10	U	10	10	U	10	10	U	10
Xylenes (total)	5	U	5	5	U	5	5	U	5

Attachment	1	Sheet No.	20 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P17 Location B-1 Sample Date 7/5/06			J12P18 Location B-2 Sample Date 7/5/06			J12P19 Location B-3 Sample Date 7/5/06			J12P20 Location B-4 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1254	8.2	J	13	13	U	13	4.2	J	13	12	J	13
Aroclor-1260	13	U	13	13	U	13	13	U	13	13	U	13
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	10	U	10	10	U	10	10	U	10	10	U	10
2-Hexanone	10	U	10	10	U	10	10	U	10	10	U	10
4-Methyl-2-Pentanone	10	U	10	10	U	10	10	U	10	10	U	10
Acetone	10	U	10	10	U	10	10	U	10	10	U	10
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	10	U	10	10	U	10	10	U	10	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	10	U	10	10	U	10	10	U	10	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	10	U	10	10	U	10	10	U	10	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylene chloride	9	B	5	9	B	5	10	B	5	11	B	5
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	10	U	10	10	U	10	10	U	10	10	U	10
Xylenes (total)	5	U	5	5	U	5	5	U	5	5	U	5

Attachment	1	Sheet No.	21 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P21 Location B-5 Sample Date 7/5/06			J12P22 Location B-6 Sample Date 7/5/06			J12P23 Location B-7 Sample Date 7/5/06			J12P24 Location B-8 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	13	U	13	14	U	14	14	U	14	13	U	13
Aroclor-1221	13	U	13	14	U	14	14	U	14	13	U	13
Aroclor-1232	13	U	13	14	U	14	14	U	14	13	U	13
Aroclor-1242	13	U	13	14	U	14	14	U	14	13	U	13
Aroclor-1248	13	U	13	14	U	14	14	U	14	13	U	13
Aroclor-1254	13	U	13	14	U	14	8.5	J	14	7.5	J	13
Aroclor-1260	13	U	13	14	U	14	14	U	14	13	U	13
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	10	U	10	10	U	10	10	U	10	10	U	10
2-Hexanone	10	U	10	10	U	10	10	U	10	10	U	10
4-Methyl-2-Pentanone	10	U	10	10	U	10	10	U	10	10	U	10
Acetone	10	U	10	10	U	10	10	U	10	10	U	10
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	10	U	10	10	U	10	10	U	10	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	10	U	10	10	U	10	10	U	10	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	10	U	10	10	U	10	10	U	10	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylene chloride	11	B	5	8	B	5	11	B	5	10	B	5
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	10	U	10	10	U	10	10	U	10	10	U	10
Xylenes (total)	5	U	5	5	U	5	5	U	5	5	U	5

Attachment	1	Sheet No.	22 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P25 Location B-9 Sample Date 7/5/06			J12P27 Duplicate of J12P25 Sample Date 7/5/06			J12P26 Location B-10 Sample Date 7/5/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls									
Aroclor-1016	14	U	14	14	U	14	13	U	13
Aroclor-1221	14	U	14	14	U	14	13	U	13
Aroclor-1232	14	U	14	14	U	14	13	U	13
Aroclor-1242	14	U	14	14	U	14	13	U	13
Aroclor-1248	14	U	14	14	U	14	13	U	13
Aroclor-1254	14	U	14	36		14	13	U	13
Aroclor-1260	14	U	14	14	U	14	13	U	13
Volatile Organic Compounds									
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5
2-Butanone	10	U	10	10	U	10	10	U	10
2-Hexanone	10	U	10	10	R	10	10	U	10
4-Methyl-2-Pentanone	10	U	10	10	U	10	10	U	10
Acetone	10	U	10	10	U	10	10	U	10
Benzene	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5
Bromomethane	10	U	10	10	U	10	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5
Chloroethane	10	U	10	10	U	10	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5
Chloromethane	10	U	10	10	U	10	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5
Methylene chloride	11	B	5	16	B	5	6	B	5
Styrene	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	5	U	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5
Vinyl chloride	10	U	10	10	U	10	10	U	10
Xylenes (total)	5	U	5	5	U	5	5	U	5

Attachment	1	Sheet No.	23 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J13564 Location C-1 Sample Date 8/14/06			J13565 Location C-2 Sample Date 8/14/06			J13566 Location C-3 Sample Date 8/14/06			J13567 Location C-4 Sample Date 8/14/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1254	10	J	13	28		13	25		13	13	U	13
Aroclor-1260	13	U	13	13	U	13	4.4	J	13	13	U	13

Constituents	J12PW9 Location C-1 Sample Date 6/29/06			J12PX0 Location C-2 Sample Date 6/29/06			J12PX1 Location C-3 Sample Date 6/29/06			J12PX4 Location C-4 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Pesticides												
Aldrin	1.3	UD	1.3	0.37	JDI	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
beta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
delta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethylene	1.3	UD	1.3	15	D	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyltrichloroethane	7.0	D	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dieldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan I	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan II	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan sulfate	2.7	D	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin aldehyde	1.9	D	1.3	5.3	ID	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin ketone	0.90	JDI	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-BHC (Lindane)	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-Chlordane	1.3	UD	1.3	1.3	UD	1.3	0.33	JD	1.3	1.3	UD	1.3
Heptachlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor epoxide	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Methoxychlor	4.2	ID	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Toxaphene	13	UDJ	13	13	UDJ	13	13	UDJ	13	13	UD	13
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	330	U	330	330	U	330	330	U	330	330	U	330
1,2-Dichlorobenzene	330	U	330	330	U	330	330	U	330	330	U	330
1,3-Dichlorobenzene	330	U	330	330	U	330	330	U	330	330	U	330
1,4-Dichlorobenzene	330	U	330	330	U	330	330	U	330	330	U	330
2,4,5-Trichlorophenol	830	U	830	840	U	840	830	U	830	840	U	840
2,4,6-Trichlorophenol	330	U	330	330	U	330	330	U	330	330	U	330
2,4-Dichlorophenol	330	U	330	330	U	330	330	U	330	330	U	330
2,4-Dimethylphenol	330	U	330	330	U	330	330	U	330	330	U	330
2,4-Dinitrophenol	830	U	830	840	U	840	830	U	830	840	R	840
2,4-Dinitrotoluene	330	U	330	330	U	330	330	U	330	330	U	330
2,6-Dinitrotoluene	330	U	330	330	U	330	330	U	330	330	U	330
2-Chloronaphthalene	330	U	330	330	U	330	330	U	330	330	U	330

Attachment	1	Sheet No.	24 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12PW9 Location C-1 Sample Date 6/29/06			J12PX0 Location C-2 Sample Date 6/29/06			J12PX1 Location C-3 Sample Date 6/29/06			J12PX4 Location C-4 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
2-Chlorophenol	330	U	330	330	U	330	330	U	330	330	U	330
2-Methylnaphthalene	330	U	330	330	U	330	330	U	330	330	U	330
2-Methylphenol (cresol, o-)	330	U	330	330	U	330	330	U	330	330	U	330
2-Nitroaniline	830	U	830	840	U	840	830	U	830	840	U	840
2-Nitrophenol	330	U	330	330	U	330	330	U	330	330	U	330
3,3'-Dichlorobenzidine	330	U	330	330	U	330	330	U	330	330	U	330
3-Nitroaniline	830	U	830	840	U	840	830	U	830	840	U	840
4,6-Dinitro-2-methylphenol	830	U	830	840	U	840	830	U	830	840	U	840
4-Bromophenyl-phenylether	330	U	330	330	U	330	330	U	330	330	U	330
4-Chloro-3-methylphenol	330	U	330	330	U	330	330	U	330	330	U	330
4-Chloroaniline	330	U	330	330	U	330	330	U	330	330	U	330
4-Chlorophenyl-phenylether	330	U	330	330	U	330	330	U	330	330	U	330
4-Methylphenol (p-cresol)	330	U	330	330	U	330	330	U	330	330	U	330
4-Nitroaniline	830	U	830	840	U	840	830	U	830	840	U	840
4-Nitrophenol	830	U	830	840	U	840	830	U	830	840	U	840
Acenaphthene	330	U	330	330	U	330	330	U	330	330	U	330
Acenaphthylene	330	U	330	330	U	330	330	U	330	330	U	330
Anthracene	330	U	330	330	U	330	330	U	330	330	U	330
Benzo(a)anthracene	21	J	330	330	U	330	330	U	330	330	U	330
Benzo(a)pyrene	53	J	330	330	U	330	330	U	330	330	U	330
Benzo(b)fluoranthene	55	J	330	330	U	330	330	U	330	330	U	330
Benzo(g,h,i)perylene	90	J	330	330	U	330	330	U	330	330	U	330
Benzo(k)fluoranthene	25	J	330	330	U	330	330	U	330	330	U	330
bis(2-Chloro-1-methylethyl)ether	330	U	330	330	U	330	330	U	330	330	U	330
bis(2-Chloroethoxy)methane	330	U	330	330	U	330	330	U	330	330	U	330
bis(2-Chloroethyl)ether	330	U	330	330	U	330	330	U	330	330	U	330
bis(2-Ethylhexyl)phthalate	660	U	330	660	U	330	660	U	330	47	J	330
Butylbenzylphthalate	330	U	330	330	U	330	330	U	330	330	U	330
Carbazole	330	U	330	330	U	330	330	U	330	330	U	330
Chrysene	100	J	330	330	U	330	330	U	330	330	U	330
Di-n-butylphthalate	330	U	330	21	J	330	330	U	330	31	J	330
Di-n-octylphthalate	330	U	330	330	U	330	330	U	330	330	U	330
Dibenz(a,h)anthracene	56	J	330	330	U	330	330	U	330	330	U	330
Dibenzofuran	330	U	330	330	U	330	330	U	330	330	U	330
Diethylphthalate	330	U	330	330	U	330	330	U	330	330	U	330
Dimethylphthalate	330	U	330	330	U	330	330	U	330	330	U	330
Fluoranthene	17	J	330	330	U	330	330	U	330	330	U	330
Fluorene	330	U	330	330	U	330	330	U	330	330	U	330
Hexachlorobenzene	330	U	330	330	U	330	330	U	330	330	U	330
Hexachlorobutadiene	330	U	330	330	U	330	330	U	330	330	U	330
Hexachlorocyclopentadiene	330	U	330	330	U	330	330	U	330	330	U	330
Hexachloroethane	330	U	330	330	U	330	330	U	330	330	U	330
Indeno(1,2,3-cd)pyrene	50	J	330	330	U	330	330	U	330	330	U	330
Isophorone	330	U	330	330	U	330	330	U	330	330	U	330
N-Nitroso-di-n-dipropylamine	330	U	330	330	U	330	330	U	330	330	U	330
N-Nitrosodiphenylamine	330	U	330	330	U	330	330	U	330	330	U	330
Naphthalene	330	U	330	330	U	330	330	U	330	330	U	330

Attachment	1	Sheet No.	25 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12PW9 Location C-1 Sample Date 6/29/06			J12PX0 Location C-2 Sample Date 6/29/06			J12PX1 Location C-3 Sample Date 6/29/06			J12PX4 Location C-4 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
Nitrobenzene	330	U	330	330	U	330	330	U	330	330	U	330
Pentachlorophenol	830	U	830	840	U	840	830	U	830	840	U	840
Phenanthrene	330	U	330	330	U	330	330	U	330	330	U	330
Phenol	330	U	330	330	U	330	330	U	330	330	U	330
Pyrene	25	J	330	330	U	330	330	U	330	330	U	330
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	9	UJ	9	10	UJ	10	9	UJ	9	10	U	10
2-Hexanone	9	UJ	9	10	UJ	10	9	UJ	9	10	U	10
4-Methyl-2-Pentanone	9	U	9	10	U	10	9	U	9	10	U	10
Acetone	9	UJ	9	10	UJ	10	9	UJ	9	10	U	10
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	9	U	9	10	U	10	9	U	9	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	9	U	9	10	U	10	9	U	9	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	9	U	9	10	U	10	9	U	9	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylene chloride	16	U	5	12	U	5	16	U	5	10	B	5
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	1	J	5	2	J	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	9	U	9	10	U	10	9	U	9	10	U	10
Xylenes (total)	5	U	5	2	J	5	3	J	5	2	J	5

Attachment	1	Sheet No.	26 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J13568 Location C-5 Sample Date 8/14/06			J13569 Location C-6 Sample Date 8/14/06			J13570 Location C-7 Sample Date 8/14/06			J13571 Location C-8 Sample Date 8/14/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1254	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1260	13	U	13	13	U	13	13	U	13	13	U	13

Constituents	J12PX3 Location C-5 Sample Date 6/29/06			J12PX2 Location C-6 Sample Date 6/29/06			J12PX5 Location C-7 Sample Date 6/29/06			J12PX6 Location C-8 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Pesticides												
Aldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
beta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
delta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethylene	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyltrichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dieldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan I	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan II	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan sulfate	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin aldehyde	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin ketone	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-BHC (Lindane)	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor epoxide	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Methoxychlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Toxaphene	13	UDJ	13	13	UDJ	13	13	UD	13	13	UD	13
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	330	U	330	330	U	330	330	U	330	330	U	330
1,2-Dichlorobenzene	330	U	330	330	U	330	330	U	330	330	U	330
1,3-Dichlorobenzene	330	U	330	330	U	330	330	U	330	330	U	330
1,4-Dichlorobenzene	330	U	330	330	U	330	330	U	330	330	U	330
2,4,5-Trichlorophenol	830	U	830	830	U	830	840	U	840	840	U	840
2,4,6-Trichlorophenol	330	U	330	330	U	330	330	U	330	330	U	330
2,4-Dichlorophenol	330	U	330	330	U	330	330	U	330	330	U	330
2,4-Dimethylphenol	330	U	330	330	U	330	330	U	330	330	U	330
2,4-Dinitrophenol	830	U	830	830	U	830	840	R	840	840	R	840
2,4-Dinitrotoluene	330	U	330	330	U	330	330	U	330	330	U	330
2,6-Dinitrotoluene	330	U	330	330	U	330	330	U	330	330	U	330
2-Chloronaphthalene	330	U	330	330	U	330	330	U	330	330	U	330

Attachment	1	Sheet No.	27 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12PX3 Location C-5 Sample Date 6/29/06			J12PX2 Location C-6 Sample Date 6/29/06			J12PX5 Location C-7 Sample Date 6/29/06			J12PX6 Location C-8 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
2-Chlorophenol	330	U	330	330	U	330	330	U	330	330	U	330
2-Methylnaphthalene	330	U	330	330	U	330	330	U	330	330	U	330
2-Methylphenol (cresol, o-)	330	U	330	330	U	330	330	U	330	330	U	330
2-Nitroaniline	830	U	830	830	U	830	840	U	840	840	U	840
2-Nitrophenol	330	U	330	330	U	330	330	U	330	330	U	330
3,3'-Dichlorobenzidine	330	U	330	330	U	330	330	U	330	330	U	330
3-Nitroaniline	830	U	830	830	U	830	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	830	U	830	830	U	830	840	U	840	840	U	840
4-Bromophenyl-phenylether	330	U	330	330	U	330	330	U	330	330	U	330
4-Chloro-3-methylphenol	330	U	330	330	U	330	330	U	330	330	U	330
4-Chloroaniline	330	U	330	330	U	330	330	U	330	330	U	330
4-Chlorophenyl-phenylether	330	U	330	330	U	330	330	U	330	330	U	330
4-Methylphenol (p-cresol)	330	U	330	330	U	330	330	U	330	330	U	330
4-Nitroaniline	830	U	830	830	U	830	840	U	840	840	U	840
4-Nitrophenol	830	U	830	830	U	830	840	U	840	840	U	840
Acenaphthene	330	U	330	330	U	330	330	U	330	330	U	330
Acenaphthylene	330	U	330	330	U	330	330	U	330	330	U	330
Anthracene	330	U	330	330	U	330	330	U	330	330	U	330
Benzo(a)anthracene	330	U	330	330	U	330	330	U	330	330	U	330
Benzo(a)pyrene	330	U	330	330	U	330	330	U	330	330	U	330
Benzo(b)fluoranthene	330	U	330	330	U	330	330	U	330	330	U	330
Benzo(g,h,i)perylene	330	U	330	330	U	330	330	U	330	330	U	330
Benzo(k)fluoranthene	330	U	330	330	U	330	330	U	330	330	U	330
bis(2-Chloro-1-methylethyl)ether	330	U	330	330	U	330	330	U	330	330	U	330
bis(2-Chloroethoxy)methane	330	U	330	330	U	330	330	U	330	330	U	330
bis(2-Chloroethyl)ether	330	U	330	330	U	330	330	U	330	330	U	330
bis(2-Ethylhexyl)phthalate	660	U	330	660	U	330	21	J	330	33	J	330
Butylbenzylphthalate	330	U	330	330	U	330	330	U	330	330	U	330
Carbazole	330	U	330	330	U	330	330	U	330	330	U	330
Chrysene	330	U	330	330	U	330	330	U	330	330	U	330
Di-n-butylphthalate	330	U	330	330	U	330	21	J	330	21	J	330
Di-n-octylphthalate	330	U	330	330	U	330	330	U	330	330	U	330
Dibenz(a,h)anthracene	330	U	330	330	U	330	330	U	330	330	U	330
Dibenzofuran	330	U	330	330	U	330	330	U	330	330	U	330
Diethylphthalate	330	U	330	330	U	330	330	U	330	330	U	330
Dimethylphthalate	330	U	330	330	U	330	330	U	330	330	U	330
Fluoranthene	330	U	330	330	U	330	330	U	330	330	U	330
Fluorene	330	U	330	330	U	330	330	U	330	330	U	330
Hexachlorobenzene	330	U	330	330	U	330	330	U	330	330	U	330
Hexachlorobutadiene	330	U	330	330	U	330	330	U	330	330	U	330
Hexachlorocyclopentadiene	330	U	330	330	U	330	330	U	330	330	U	330
Hexachloroethane	330	U	330	330	U	330	330	U	330	330	U	330
Indeno(1,2,3-cd)pyrene	330	U	330	330	U	330	330	U	330	330	U	330
Isophorone	330	U	330	330	U	330	330	U	330	330	U	330
N-Nitroso-di-n-dipropylamine	330	U	330	330	U	330	330	U	330	330	U	330
N-Nitrosodiphenylamine	330	U	330	330	U	330	330	U	330	330	U	330
Naphthalene	330	U	330	330	U	330	330	U	330	330	U	330

Attachment	1	Sheet No.	28 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12PX3 Location C-5 Sample Date 6/29/06			J12PX2 Location C-6 Sample Date 6/29/06			J12PX5 Location C-7 Sample Date 6/29/06			J12PX6 Location C-8 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
Nitrobenzene	330	U	330	330	U	330	330	U	330	330	U	330
Pentachlorophenol	830	U	830	830	U	830	840	U	840	840	U	840
Phenanthrene	330	U	330	330	U	330	330	U	330	330	U	330
Phenol	330	U	330	330	U	330	330	U	330	330	U	330
Pyrene	330	U	330	330	U	330	330	U	330	330	U	330
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	9	UJ	9	10	UJ	10	10	U	10	10	U	10
2-Hexanone	9	UJ	9	10	UJ	10	10	U	10	10	U	10
4-Methyl-2-Pentanone	9	U	9	10	U	10	10	U	10	10	U	10
Acetone	9	UJ	9	10	UJ	10	10	U	10	10	U	10
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	9	U	9	10	U	10	10	U	10	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	9	U	9	10	U	10	10	U	10	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	9	U	9	10	U	10	10	U	10	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylene chloride	13	U	5	16	U	5	11	B	5	12	B	5
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	2	J	5	5	U	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	9	U	9	10	U	10	10	U	10	10	U	10
Xylenes (total)	5	U	5	3	J	5	2	J	5	5	U	5

Attachment	1	Sheet No.	29 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J13572 Location C-9 Sample Date 8/14/06			J13573 Location C-10 Sample Date 8/14/06			J13581 Duplicate of J13573 Sample Date 8/14/06			J13574 Location C-11 Sample Date 8/14/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	13	U	13	13	U	13	16	U	16	13	U	13
Aroclor-1221	13	U	13	13	U	13	16	U	16	13	U	13
Aroclor-1232	13	U	13	13	U	13	16	U	16	13	U	13
Aroclor-1242	13	U	13	13	U	13	16	U	16	13	U	13
Aroclor-1248	13	U	13	13	U	13	16	U	16	13	U	13
Aroclor-1254	13	U	13	13	U	13	16	U	16	13	U	13
Aroclor-1260	13	U	13	13	U	13	16	U	16	13	U	13

Constituents	J12PX8 Location C-9 Sample Date 6/29/06			J12P49 Location C-10 Sample Date 6/29/06			J12P50 Duplicate of J12P49 Sample Date 6/29/06			J12P54 Location C-11 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Pesticides												
Aldrin	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
alpha-BHC	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
alpha-Chlordane	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
beta-BHC	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
delta-BHC	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethane	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethylene	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyltrichloroethane	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Dieldrin	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Endosulfan I	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Endosulfan II	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Endosulfan sulfate	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Endrin	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Endrin aldehyde	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Endrin ketone	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
gamma-BHC (Lindane)	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
gamma-Chlordane	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Heptachlor	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Heptachlor epoxide	1.3	UD	1.3	1.4	UD	1.4	1.3	UD	1.3	1.3	UD	1.3
Methoxychlor	1.3	UD	1.3	3.5	D	1.4	1.3	UD	1.3	1.3	UD	1.3
Toxaphene	13	UD	13	14	UD	14	13	UD	13	13	UDJ	13
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
1,2-Dichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
1,3-Dichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
1,4-Dichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
2,4,5-Trichlorophenol	840	U	840	850	U	850	830	U	830	840	U	840
2,4,6-Trichlorophenol	330	U	330	340	U	340	330	U	330	330	U	330
2,4-Dichlorophenol	330	U	330	340	U	340	330	U	330	330	U	330
2,4-Dimethylphenol	330	U	330	340	U	340	330	U	330	330	U	330
2,4-Dinitrophenol	840	R	840	850	R	850	830	R	830	840	U	840
2,4-Dinitrotoluene	330	U	330	340	U	340	330	U	330	330	U	330
2,6-Dinitrotoluene	330	U	330	340	U	340	330	U	330	330	U	330
2-Chloronaphthalene	330	U	330	340	U	340	330	U	330	330	U	330

Attachment	1	Sheet No.	30 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12PX8 Location C-9 Sample Date 6/29/06			J12P49 Location C-10 Sample Date 6/29/06			J12P50 Duplicate of J12P49 Sample Date 6/29/06			J12P54 Location C-11 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
2-Chlorophenol	330	U	330	340	U	340	330	U	330	330	U	330
2-Methylnaphthalene	330	U	330	340	U	340	330	U	330	330	U	330
2-Methylphenol (cresol, o-)	330	U	330	340	U	340	330	U	330	330	U	330
2-Nitroaniline	840	U	840	850	U	850	830	U	830	840	U	840
2-Nitrophenol	330	U	330	340	U	340	330	U	330	330	U	330
3,3'-Dichlorobenzidine	330	U	330	340	U	340	330	U	330	330	U	330
3-Nitroaniline	840	U	840	850	U	850	830	U	830	840	U	840
4,6-Dinitro-2-methylphenol	840	U	840	850	U	850	830	U	830	840	U	840
4-Bromophenyl-phenylether	330	U	330	340	U	340	330	U	330	330	U	330
4-Chloro-3-methylphenol	330	U	330	340	U	340	330	U	330	330	U	330
4-Chloroaniline	330	U	330	340	U	340	330	U	330	330	U	330
4-Chlorophenyl-phenylether	330	U	330	340	U	340	330	U	330	330	U	330
4-Methylphenol (p-cresol)	330	U	330	340	U	340	330	U	330	330	U	330
4-Nitroaniline	840	U	840	850	U	850	830	U	830	840	U	840
4-Nitrophenol	840	U	840	850	U	850	830	U	830	840	U	840
Acenaphthene	330	U	330	340	U	340	330	U	330	330	U	330
Acenaphthylene	330	U	330	340	U	340	330	U	330	330	U	330
Anthracene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(a)anthracene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(a)pyrene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(b)fluoranthene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(g,h,i)perylene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(k)fluoranthene	330	U	330	340	U	340	330	U	330	330	U	330
bis(2-Chloro-1-methylethyl)ether	330	U	330	340	U	340	330	U	330	330	U	330
bis(2-Chloroethoxy)methane	330	U	330	340	U	340	330	U	330	330	U	330
bis(2-Chloroethyl)ether	330	U	330	340	U	340	330	U	330	330	U	330
bis(2-Ethylhexyl)phthalate	27	J	330	22	J	340	80	J	330	660	U	330
Butylbenzylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Carbazole	330	U	330	340	U	340	330	U	330	330	U	330
Chrysene	330	U	330	340	U	340	330	U	330	330	U	330
Di-n-butylphthalate	30	J	330	340	U	340	29	J	330	330	U	330
Di-n-octylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Dibenz(a,h)anthracene	330	U	330	340	U	340	330	U	330	330	U	330
Dibenzofuran	330	U	330	340	U	340	330	U	330	330	U	330
Diethylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Dimethylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Fluoranthene	330	U	330	340	U	340	330	U	330	330	U	330
Fluorene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachlorobutadiene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachlorocyclopentadiene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachloroethane	330	U	330	340	U	340	330	U	330	330	U	330
Indeno(1,2,3-cd)pyrene	330	U	330	340	U	340	330	U	330	330	U	330
Isophorone	330	U	330	340	U	340	330	U	330	330	U	330
N-Nitroso-di-n-dipropylamine	330	U	330	340	U	340	330	U	330	330	U	330
N-Nitrosodiphenylamine	330	U	330	340	U	340	330	U	330	330	U	330
Naphthalene	330	U	330	340	U	340	330	U	330	330	U	330

Attachment	1	Sheet No.	31 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12PX8 Location C-9 Sample Date 6/29/06			J12P49 Location C-10 Sample Date 6/29/06			J12P50 Duplicate of J12P49 Sample Date 6/29/06			J12P54 Location C-11 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
Nitrobenzene	330	U	330	340	U	340	330	U	330	330	U	330
Pentachlorophenol	840	U	840	850	U	850	830	U	830	840	U	840
Phenanthrene	330	U	330	340	U	340	330	U	330	330	U	330
Phenol	330	U	330	340	U	340	330	U	330	330	U	330
Pyrene	330	U	330	340	U	340	330	U	330	330	U	330
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	10	U	10	10	U	10	10	U	10	10	UJ	10
2-Hexanone	10	U	10	10	U	10	10	U	10	10	UJ	10
4-Methyl-2-Pentanone	10	U	10	10	U	10	10	U	10	10	U	10
Acetone	10	U	10	10	U	10	21		10	10	J	10
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	10	U	10	10	U	10	10	U	10	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	10	U	10	10	U	10	10	U	10	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	10	U	10	10	U	10	10	U	10	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylene chloride	15	B	5	18	B	5	14	B	5	15	U	5
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	1	J	5	1	J	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	10	U	10	10	U	10	10	U	10	10	U	10
Xylenes (total)	2	J	5	5	U	5	5	U	5	5	U	5

Attachment	1	Sheet No.	32 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J13575 Location C-12 Sample Date 8/14/06			J13576 Location C-13 Sample Date 8/14/06			J13577 Location C-14 Sample Date 8/14/06			J13578 Location C-15 Sample Date 8/14/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	13	U	13	13	U	13	13	U	13	16	U	16
Aroclor-1221	13	U	13	13	U	13	13	U	13	16	U	16
Aroclor-1232	13	U	13	13	U	13	13	U	13	16	U	16
Aroclor-1242	13	U	13	13	U	13	13	U	13	16	U	16
Aroclor-1248	13	U	13	13	U	13	13	U	13	16	U	16
Aroclor-1254	13	U	13	13	U	13	28		13	16	U	16
Aroclor-1260	13	U	13	13	U	13	6.5	J	13	16	U	16

Constituents	J12P53 Location C-12 Sample Date 6/29/06			J12PX7 Location C-13 Sample Date 6/29/06			J12PX9 Location C-14 Sample Date 6/29/06			J12P52 Location C-15 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Pesticides												
Aldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
beta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
delta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethylene	1.3	UD	1.3	1.3	UD	1.3	2.0	D	1.3	12	D	1.3
Dichlorodiphenyltrichloroethane	1.3	UD	1.3	1.3	UD	1.3	7.6	D	1.3	12	D	1.3
Dieldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan I	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan II	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan sulfate	1.3	UD	1.3	0.34	JD	1.3	2.0	D	1.3	0.50	JD	1.3
Endrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin aldehyde	1.3	UD	1.3	1.3	UD	1.3	0.80	JD	1.3	1.7	JD	1.3
Endrin ketone	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-BHC (Lindane)	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor epoxide	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Methoxychlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Toxaphene	13	UDJ	13	13	UD	13	13	UD	13	13	UD	13
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	340	U	340	340	U	340	330	U	330	330	U	330
1,2-Dichlorobenzene	340	U	340	340	U	340	330	U	330	330	U	330
1,3-Dichlorobenzene	340	U	340	340	U	340	330	U	330	330	U	330
1,4-Dichlorobenzene	340	U	340	340	U	340	330	U	330	330	U	330
2,4,5-Trichlorophenol	840	U	840	840	U	840	840	U	840	840	U	840
2,4,6-Trichlorophenol	340	U	340	340	U	340	330	U	330	330	U	330
2,4-Dichlorophenol	340	U	340	340	U	340	330	U	330	330	U	330
2,4-Dimethylphenol	340	U	340	340	U	340	330	U	330	330	U	330
2,4-Dinitrophenol	840	U	840	840	R	840	840	R	840	840	R	840
2,4-Dinitrotoluene	340	U	340	340	U	340	330	U	330	330	U	330
2,6-Dinitrotoluene	340	U	340	340	U	340	330	U	330	330	U	330
2-Chloronaphthalene	340	U	340	340	U	340	330	U	330	330	U	330

Attachment	1	Sheet No.	33 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P53 Location C-12 Sample Date 6/29/06			J12PX7 Location C-13 Sample Date 6/29/06			J12PX9 Location C-14 Sample Date 6/29/06			J12P52 Location C-15 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
2-Chlorophenol	340	U	340	340	U	340	330	U	330	330	U	330
2-Methylnaphthalene	340	U	340	340	U	340	330	U	330	330	U	330
2-Methylphenol (cresol, o-)	340	U	340	340	U	340	330	U	330	330	U	330
2-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
2-Nitrophenol	340	U	340	340	U	340	330	U	330	330	U	330
3,3'-Dichlorobenzidine	340	U	340	340	U	340	330	U	330	330	U	330
3-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	840	U	840	840	U	840	840	U	840	840	U	840
4-Bromophenyl-phenylether	340	U	340	340	U	340	330	U	330	330	U	330
4-Chloro-3-methylphenol	340	U	340	340	U	340	330	U	330	330	U	330
4-Chloroaniline	340	U	340	340	U	340	330	U	330	330	U	330
4-Chlorophenyl-phenylether	340	U	340	340	U	340	330	U	330	330	U	330
4-Methylphenol (p-cresol)	340	U	340	340	U	340	330	U	330	330	U	330
4-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
4-Nitrophenol	840	U	840	840	U	840	840	U	840	840	U	840
Acenaphthene	340	U	340	340	U	340	330	U	330	330	U	330
Acenaphthylene	340	U	340	340	U	340	330	U	330	330	U	330
Anthracene	340	U	340	340	U	340	330	U	330	330	U	330
Benzo(a)anthracene	340	U	340	340	U	340	330	U	330	330	U	330
Benzo(a)pyrene	340	U	340	340	U	340	330	U	330	330	U	330
Benzo(b)fluoranthene	340	U	340	340	U	340	330	U	330	330	U	330
Benzo(g,h,i)perylene	340	U	340	340	U	340	330	U	330	330	U	330
Benzo(k)fluoranthene	340	U	340	340	U	340	330	U	330	330	U	330
bis(2-Chloro-1-methylethyl)ether	340	U	340	340	U	340	330	U	330	330	U	330
bis(2-Chloroethoxy)methane	340	U	340	340	U	340	330	U	330	330	U	330
bis(2-Chloroethyl)ether	340	U	340	340	U	340	330	U	330	330	U	330
bis(2-Ethylhexyl)phthalate	660	U	340	33	J	340	78	J	330	89	J	330
Butylbenzylphthalate	340	U	340	340	U	340	330	U	330	330	U	330
Carbazole	340	U	340	340	U	340	330	U	330	330	U	330
Chrysene	340	U	340	340	U	340	330	U	330	330	U	330
Di-n-butylphthalate	340	U	340	28	J	340	21	J	330	21	J	330
Di-n-octylphthalate	340	U	340	340	U	340	330	U	330	330	U	330
Dibenz(a,h)anthracene	340	U	340	340	U	340	330	U	330	330	U	330
Dibenzofuran	340	U	340	340	U	340	330	U	330	330	U	330
Diethylphthalate	340	U	340	340	U	340	330	U	330	330	U	330
Dimethylphthalate	340	U	340	340	U	340	330	U	330	330	U	330
Fluoranthene	340	U	340	340	U	340	330	U	330	330	U	330
Fluorene	340	U	340	340	U	340	330	U	330	330	U	330
Hexachlorobenzene	340	U	340	340	U	340	330	U	330	330	U	330
Hexachlorobutadiene	340	U	340	340	U	340	330	U	330	330	U	330
Hexachlorocyclopentadiene	340	U	340	340	U	340	330	U	330	330	U	330
Hexachloroethane	340	U	340	340	U	340	330	U	330	330	U	330
Indeno(1,2,3-cd)pyrene	340	U	340	340	U	340	330	U	330	330	U	330
Isophorone	340	U	340	340	U	340	330	U	330	330	U	330
N-Nitroso-di-n-dipropylamine	340	U	340	340	U	340	330	U	330	330	U	330
N-Nitrosodiphenylamine	340	U	340	340	U	340	330	U	330	330	U	330
Naphthalene	340	U	340	340	U	340	330	U	330	330	U	330

Attachment	1	Sheet No.	34 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P53 Location C-12 Sample Date 6/29/06			J12PX7 Location C-13 Sample Date 6/29/06			J12PX9 Location C-14 Sample Date 6/29/06			J12P52 Location C-15 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
Nitrobenzene	340	U	340	340	U	340	330	U	330	330	U	330
Pentachlorophenol	840	U	840	840	U	840	840	U	840	840	U	840
Phenanthrene	340	U	340	340	U	340	330	U	330	330	U	330
Phenol	340	U	340	340	U	340	330	U	330	330	U	330
Pyrene	340	U	340	340	U	340	26	J	330	330	U	330
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	10	UJ	10	10	U	10	10	U	10	10	U	10
2-Hexanone	10	UJ	10	10	U	10	10	U	10	10	U	10
4-Methyl-2-Pentanone	10	U	10	10	U	10	10	U	10	10	U	10
Acetone	10	UJ	10	10	U	10	10	U	10	10	U	10
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	10	U	10	10	U	10	10	U	10	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	10	U	10	10	U	10	10	U	10	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	10	U	10	10	U	10	10	U	10	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylene chloride	10	U	5	14	B	5	18	B	5	19	B	5
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	5	U	5	1	J	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	10	U	10	10	U	10	10	U	10	10	U	10
Xylenes (total)	5	U	5	2	J	5	1	J	5	5	U	5

Attachment	1	Sheet No.	35 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J13579 Location C-16 Sample Date 8/14/06			J13580 Location C-17 Sample Date 8/14/06			J13553 Location D-1 Sample Date 8/14/06			J13554 Location D-2 Sample Date 8/14/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	15	U	15	16	U	16	15	U	15	13	U	13
Aroclor-1221	15	U	15	16	U	16	15	U	15	13	U	13
Aroclor-1232	15	U	15	16	U	16	15	U	15	13	U	13
Aroclor-1242	15	U	15	16	U	16	15	U	15	13	U	13
Aroclor-1248	15	U	15	16	U	16	15	U	15	13	U	13
Aroclor-1254	15	U	15	43		16	180		15	71		13
Aroclor-1260	15	U	15	6.9	J	16	33		15	11	J	13

Constituents	J12P51 Location C-16 Sample Date 6/29/06			J12P55 Location C-17 Sample Date 6/29/06			J12PY1 Location D-1 Sample Date 6/29/06			J12PY9 Location D-2 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Pesticides												
Aldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
beta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
delta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethylene	2.4	D	1.3	1.3	UD	1.3	26	D	1.3	1.3	UD	1.3
Dichlorodiphenyltrichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	15	D	1.3
Dieldrin	1.3	UD	1.3	1.3	UD	1.3	12	DI	1.3	1.3	UD	1.3
Endosulfan I	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan II	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan sulfate	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin aldehyde	0.60	JD	1.3	1.8	DJ	1.3	8.0	D	1.3	0.93	JDI	1.3
Endrin ketone	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-BHC (Lindane)	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	0.83	JDI	1.3
Heptachlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor epoxide	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Methoxychlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	3.5	D	1.3
Toxaphene	13	UD	13	13	UDJ	13	13	UD	13	13	UDJ	13
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	330	U	330	340	U	340	340	U	340	330	U	330
1,2-Dichlorobenzene	330	U	330	340	U	340	340	U	340	330	U	330
1,3-Dichlorobenzene	330	U	330	340	U	340	340	U	340	330	U	330
1,4-Dichlorobenzene	330	U	330	340	U	340	340	U	340	330	U	330
2,4,5-Trichlorophenol	830	U	830	840	U	840	840	U	840	840	U	840
2,4,6-Trichlorophenol	330	U	330	340	U	340	340	U	340	330	U	330
2,4-Dichlorophenol	330	U	330	340	U	340	340	U	340	330	U	330
2,4-Dimethylphenol	330	U	330	340	U	340	340	U	340	330	U	330
2,4-Dinitrophenol	830	R	830	840	U	840	840	R	840	840	R	840
2,4-Dinitrotoluene	330	U	330	340	U	340	340	U	340	330	U	330
2,6-Dinitrotoluene	330	U	330	340	U	340	340	U	340	330	U	330
2-Chloronaphthalene	330	U	330	340	U	340	340	U	340	330	U	330

Attachment	1	Sheet No.	36 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P51 Location C-16 Sample Date 6/29/06			J12P55 Location C-17 Sample Date 6/29/06			J12PY1 Location D-1 Sample Date 6/29/06			J12PY9 Location D-2 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
2-Chlorophenol	330	U	330	340	U	340	340	U	340	330	U	330
2-Methylnaphthalene	330	U	330	340	U	340	340	U	340	330	U	330
2-Methylphenol (cresol, o-)	330	U	330	340	U	340	340	U	340	330	U	330
2-Nitroaniline	830	U	830	840	U	840	840	U	840	840	U	840
2-Nitrophenol	330	U	330	340	U	340	340	U	340	330	U	330
3,3'-Dichlorobenzidine	330	U	330	340	U	340	340	U	340	330	U	330
3-Nitroaniline	830	U	830	840	U	840	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	830	U	830	840	U	840	840	U	840	840	U	840
4-Bromophenyl-phenylether	330	U	330	340	U	340	340	U	340	330	U	330
4-Chloro-3-methylphenol	330	U	330	340	U	340	340	U	340	330	U	330
4-Chloroaniline	330	U	330	340	U	340	340	U	340	330	U	330
4-Chlorophenyl-phenylether	330	U	330	340	U	340	340	U	340	330	U	330
4-Methylphenol (p-cresol)	330	U	330	340	U	340	340	U	340	330	U	330
4-Nitroaniline	830	U	830	840	U	840	840	U	840	840	U	840
4-Nitrophenol	830	U	830	840	U	840	840	U	840	840	U	840
Acenaphthene	330	U	330	340	U	340	340	U	340	330	U	330
Acenaphthylene	330	U	330	340	U	340	340	U	340	330	U	330
Anthracene	330	U	330	340	U	340	340	U	340	330	U	330
Benzo(a)anthracene	330	U	330	47	J	340	340	U	340	23	J	330
Benzo(a)pyrene	330	U	330	40	J	340	24	J	340	28	J	330
Benzo(b)fluoranthene	330	U	330	30	J	340	340	U	340	330	U	330
Benzo(g,h,i)perylene	330	U	330	21	J	340	18	J	340	41	J	330
Benzo(k)fluoranthene	330	U	330	43	J	340	340	U	340	330	U	330
bis(2-Chloro-1-methylethyl)ether	330	U	330	340	U	340	340	U	340	330	U	330
bis(2-Chloroethoxy)methane	330	U	330	340	U	340	340	U	340	330	U	330
bis(2-Chloroethyl)ether	330	U	330	340	U	340	340	U	340	330	U	330
bis(2-Ethylhexyl)phthalate	37	J	330	660	U	340	40	J	340	660	U	330
Butylbenzylphthalate	330	U	330	340	U	340	340	U	340	330	U	330
Carbazole	330	U	330	340	U	340	340	U	340	330	U	330
Chrysene	330	U	330	57	J	340	33	J	340	52	J	330
Di-n-butylphthalate	37	J	330	28	J	340	22	J	340	330	U	330
Di-n-octylphthalate	330	U	330	340	U	340	340	U	340	330	U	330
Dibenz(a,h)anthracene	330	U	330	340	U	340	340	U	340	330	U	330
Dibenzofuran	330	U	330	340	U	340	340	U	340	330	U	330
Diethylphthalate	330	U	330	340	U	340	340	U	340	330	U	330
Dimethylphthalate	330	U	330	340	U	340	340	U	340	330	U	330
Fluoranthene	330	U	330	62	J	340	340	U	340	17	J	330
Fluorene	330	U	330	340	U	340	340	U	340	330	U	330
Hexachlorobenzene	330	U	330	340	U	340	340	U	340	330	U	330
Hexachlorobutadiene	330	U	330	340	U	340	340	U	340	330	U	330
Hexachlorocyclopentadiene	330	U	330	340	U	340	340	U	340	330	U	330
Hexachloroethane	330	U	330	340	U	340	340	U	340	330	U	330
Indeno(1,2,3-cd)pyrene	330	U	330	18	J	340	340	U	340	330	U	330
Isophorone	330	U	330	340	U	340	340	U	340	330	U	330
N-Nitroso-di-n-dipropylamine	330	U	330	340	U	340	340	U	340	330	U	330
N-Nitrosodiphenylamine	330	U	330	340	U	340	340	U	340	330	U	330
Naphthalene	330	U	330	340	U	340	340	U	340	330	U	330

Attachment	1	Sheet No.	37 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P51 Location C-16 Sample Date 6/29/06			J12P55 Location C-17 Sample Date 6/29/06			J12PY1 Location D-1 Sample Date 6/29/06			J12PY9 Location D-2 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
Nitrobenzene	330	U	330	340	U	340	340	U	340	330	U	330
Pentachlorophenol	830	U	830	840	U	840	840	U	840	840	U	840
Phenanthrene	330	U	330	340	U	340	340	U	340	330	U	330
Phenol	330	U	330	340	U	340	340	U	340	330	U	330
Pyrene	330	U	330	87	J	340	23	J	340	21	J	330
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	9	U	9	10	UJ	10	10	U	10	10	UJ	10
2-Hexanone	9	U	9	10	UJ	10	10	U	10	10	UJ	10
4-Methyl-2-Pentanone	9	U	9	10	U	10	10	U	10	10	U	10
Acetone	35		9	10	UJ	10	10	U	10	13	J	10
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	9	U	9	10	U	10	10	U	10	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	9	U	9	10	U	10	10	U	10	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	9	U	9	10	U	10	10	U	10	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylene chloride	27	B	5	18	U	5	15	B	5	22	B	5
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	2	J	5	1	J	5	5	U	5	1	J	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	9	U	9	10	U	10	10	U	10	10	U	10
Xylenes (total)	5	U	5	5	U	5	5	U	5	5	U	5

Attachment	1	Sheet No.	38 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J13555 Location D-3 Sample Date 8/14/06			J13556 Location D-4 Sample Date 8/14/06			J13557 Location D-5 Sample Date 8/14/06			J13558 Location D-6 Sample Date 8/14/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1254	260		13	120		13	15		13	140		13
Aroclor-1260	55		13	20		13	5.2	J	13	29		13

Constituents	J12PY5 Location D-3 Sample Date 6/29/06			J12PY0 Location D-4 Sample Date 6/29/06			J12PY3 Location D-5 Sample Date 6/29/06			J12PY4 Location D-6 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Pesticides												
Aldrin	1.3	UD	1.3	1.3	UD	1.3	0.37	JD	1.3	1.3	UD	1.3
alpha-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
beta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
delta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethylene	9.2	D	1.3	3.9	D	1.3	5.9	D	1.3	4.9	D	1.3
Dichlorodiphenyltrichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dieldrin	4.9	DI	1.3	1.3	UD	1.3	1.3	UD	1.3	1.4	JDI	1.3
Endosulfan I	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan II	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan sulfate	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin aldehyde	6.6	DI	1.3	0.80	JD	1.3	2.8	D	1.3	1.1	JDI	1.3
Endrin ketone	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-BHC (Lindane)	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor epoxide	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Methoxychlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	4.3	DI	1.3
Toxaphene	13	UD	13	13	UD	13	13	UD	13	13	UD	13
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	340	U	340	330	U	330	330	U	330	330	U	330
1,2-Dichlorobenzene	340	U	340	330	U	330	330	U	330	330	U	330
1,3-Dichlorobenzene	340	U	340	330	U	330	330	U	330	330	U	330
1,4-Dichlorobenzene	340	U	340	330	U	330	330	U	330	330	U	330
2,4,5-Trichlorophenol	840	U	840	840	U	840	840	U	840	840	U	840
2,4,6-Trichlorophenol	340	U	340	330	U	330	330	U	330	330	U	330
2,4-Dichlorophenol	340	U	340	330	U	330	330	U	330	330	U	330
2,4-Dimethylphenol	340	U	340	330	U	330	330	U	330	330	U	330
2,4-Dinitrophenol	840	R	840	840	R	840	840	R	840	840	R	840
2,4-Dinitrotoluene	340	U	340	330	U	330	330	U	330	330	U	330
2,6-Dinitrotoluene	340	U	340	330	U	330	330	U	330	330	U	330
2-Chloronaphthalene	340	U	340	330	U	330	330	U	330	330	U	330

Attachment	1	Sheet No.	39 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12PY5 Location D-3 Sample Date 6/29/06			J12PY0 Location D-4 Sample Date 6/29/06			J12PY3 Location D-5 Sample Date 6/29/06			J12PY4 Location D-6 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
2-Chlorophenol	340	U	340	330	U	330	330	U	330	330	U	330
2-Methylnaphthalene	340	U	340	330	U	330	330	U	330	330	U	330
2-Methylphenol (cresol, o-)	340	U	340	330	U	330	330	U	330	330	U	330
2-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
2-Nitrophenol	340	U	340	330	U	330	330	U	330	330	U	330
3,3'-Dichlorobenzidine	340	U	340	330	U	330	330	U	330	330	U	330
3-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	840	U	840	840	U	840	840	U	840	840	U	840
4-Bromophenyl-phenylether	340	U	340	330	U	330	330	U	330	330	U	330
4-Chloro-3-methylphenol	340	U	340	330	U	330	330	U	330	330	U	330
4-Chloroaniline	340	U	340	330	U	330	330	U	330	330	U	330
4-Chlorophenyl-phenylether	340	U	340	330	U	330	330	U	330	330	U	330
4-Methylphenol (p-cresol)	340	U	340	330	U	330	330	U	330	330	U	330
4-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
4-Nitrophenol	840	U	840	840	U	840	840	U	840	840	U	840
Acenaphthene	340	U	340	330	U	330	330	U	330	330	U	330
Acenaphthylene	340	U	340	330	U	330	330	U	330	330	U	330
Anthracene	340	U	340	330	U	330	330	U	330	330	U	330
Benzo(a)anthracene	43	J	340	330	U	330	36	J	330	330	U	330
Benzo(a)pyrene	41	J	340	330	U	330	36	J	330	330	U	330
Benzo(b)fluoranthene	41	J	340	330	U	330	28	J	330	330	U	330
Benzo(g,h,i)perylene	27	J	340	330	U	330	28	J	330	330	U	330
Benzo(k)fluoranthene	38	J	340	330	U	330	26	J	330	330	U	330
bis(2-Chloro-1-methylethyl)ether	340	U	340	330	U	330	330	U	330	330	U	330
bis(2-Chloroethoxy)methane	340	U	340	330	U	330	330	U	330	330	U	330
bis(2-Chloroethyl)ether	340	U	340	330	U	330	330	U	330	330	U	330
bis(2-Ethylhexyl)phthalate	50	J	340	64	J	330	140	J	330	27	J	330
Butylbenzylphthalate	340	U	340	330	U	330	330	U	330	330	U	330
Carbazole	340	U	340	330	U	330	330	U	330	330	U	330
Chrysene	60	J	340	330	U	330	43	J	330	330	U	330
Di-n-butylphthalate	29	J	340	330	U	330	30	J	330	330	U	330
Di-n-octylphthalate	340	U	340	330	U	330	330	U	330	330	U	330
Dibenz(a,h)anthracene	340	U	340	330	U	330	18	J	330	330	U	330
Dibenzofuran	340	U	340	330	U	330	330	U	330	330	U	330
Diethylphthalate	340	U	340	330	U	330	330	U	330	330	U	330
Dimethylphthalate	340	U	340	330	U	330	330	U	330	330	U	330
Fluoranthene	54	J	340	330	U	330	36	J	330	330	U	330
Fluorene	340	U	340	330	U	330	330	U	330	330	U	330
Hexachlorobenzene	340	U	340	330	U	330	330	U	330	330	U	330
Hexachlorobutadiene	340	U	340	330	U	330	330	U	330	330	U	330
Hexachlorocyclopentadiene	340	U	340	330	U	330	330	U	330	330	U	330
Hexachloroethane	340	U	340	330	U	330	330	U	330	330	U	330
Indeno(1,2,3-cd)pyrene	23	J	340	330	U	330	24	J	330	330	U	330
Isophorone	340	U	340	330	U	330	330	U	330	330	U	330
N-Nitroso-di-n-dipropylamine	340	U	340	330	U	330	330	U	330	330	U	330
N-Nitrosodiphenylamine	340	U	340	330	U	330	330	U	330	330	U	330
Naphthalene	340	U	340	330	U	330	330	U	330	330	U	330

Attachment	1	Sheet No.	40 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12PY5 Location D-3 Sample Date 6/29/06			J12PY0 Location D-4 Sample Date 6/29/06			J12PY3 Location D-5 Sample Date 6/29/06			J12PY4 Location D-6 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
Nitrobenzene	340	U	340	330	U	330	330	U	330	330	U	330
Pentachlorophenol	840	U	840	840	U	840	840	U	840	840	U	840
Phenanthrene	340	U	340	330	U	330	37	J	330	330	U	330
Phenol	340	U	340	330	U	330	330	U	330	330	U	330
Pyrene	75	J	340	330	U	330	52	J	330	330	U	330
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	10	U	10	10	U	10	9	U	9	10	U	10
2-Hexanone	10	U	10	10	U	10	9	U	9	10	U	10
4-Methyl-2-Pentanone	10	U	10	10	U	10	9	U	9	10	U	10
Acetone	10	U	10	10	U	10	9	U	9	10	U	10
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	10	U	10	10	U	10	9	U	9	10	U	10
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	10	U	10	10	U	10	9	U	9	10	U	10
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	10	U	10	10	U	10	9	U	9	10	U	10
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylene chloride	15	B	5	15	B	5	17	B	5	19	B	5
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	5	U	5	1	J	5	5	U	5	5	U	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	10	U	10	10	U	10	9	U	9	10	U	10
Xylenes (total)	5	U	5	5	U	5	5	U	5	5	U	5

Attachment	1	Sheet No.	41 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J13559 Location D-7 Sample Date 8/14/06			J13560 Location D-8 Sample Date 8/14/06			J13561 Location D-9 Sample Date 8/14/06			J13562 Location D-10 Sample Date 8/14/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Polychlorinated Biphenyls												
Aroclor-1016	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1221	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1232	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1242	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1248	13	U	13	13	U	13	13	U	13	13	U	13
Aroclor-1254	13	U	13	170		13	27		13	13	U	13
Aroclor-1260	13	U	13	36		13	4.4	J	13	13	U	13

Constituents	J12PY2 Location D-7 Sample Date 6/29/06			J12PY6 Location D-8 Sample Date 6/29/06			J12PY7 Location D-9 Sample Date 6/29/06			J12PY8 Location D-10 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Pesticides												
Aldrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
alpha-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
beta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
delta-BHC	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Dichlorodiphenyldichloroethylene	1.3	UD	1.3	7.6	D	1.3	2.8	D	1.3	2.0	D	1.3
Dichlorodiphenyltrichloroethane	1.3	UD	1.3	1.3	UD	1.3	8.7	D	1.3	1.3	UD	1.3
Dieldrin	1.3	UD	1.3	3.6	DI	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan I	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan II	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endosulfan sulfate	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Endrin aldehyde	0.44	JD	1.3	2.4	DI	1.3	0.40	JD	1.3	1.3	UD	1.3
Endrin ketone	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-BHC (Lindane)	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
gamma-Chlordane	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Heptachlor epoxide	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3	1.3	UD	1.3
Methoxychlor	1.3	UD	1.3	1.3	UD	1.3	2.3	DI	1.3	1.3	UD	1.3
Toxaphene	13	UD	13	13	UD	13	13	UD	13	13	UD	13
Semivolatile Organic Compounds												
1,2,4-Trichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
1,2-Dichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
1,3-Dichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
1,4-Dichlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
2,4,5-Trichlorophenol	840	U	840	840	U	840	840	U	840	840	U	840
2,4,6-Trichlorophenol	330	U	330	340	U	340	330	U	330	330	U	330
2,4-Dichlorophenol	330	U	330	340	U	340	330	U	330	330	U	330
2,4-Dimethylphenol	330	U	330	340	U	340	330	U	330	330	U	330
2,4-Dinitrophenol	840	R	840	840	R	840	840	R	840	840	R	840
2,4-Dinitrotoluene	330	U	330	340	U	340	330	U	330	330	U	330
2,6-Dinitrotoluene	330	U	330	340	U	340	330	U	330	330	U	330
2-Chloronaphthalene	330	U	330	340	U	340	330	U	330	330	U	330

Attachment	1	Sheet No.	42 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12PY2 Location D-7 Sample Date 6/29/06			J12PY6 Location D-8 Sample Date 6/29/06			J12PY7 Location D-9 Sample Date 6/29/06			J12PY8 Location D-10 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
2-Chlorophenol	330	U	330	340	U	340	330	U	330	330	U	330
2-Methylnaphthalene	330	U	330	340	U	340	330	U	330	330	U	330
2-Methylphenol (cresol, o-)	330	U	330	340	U	340	330	U	330	330	U	330
2-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
2-Nitrophenol	330	U	330	340	U	340	330	U	330	330	U	330
3,3'-Dichlorobenzidine	330	U	330	340	U	340	330	U	330	330	U	330
3-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
4,6-Dinitro-2-methylphenol	840	U	840	840	U	840	840	U	840	840	U	840
4-Bromophenyl-phenylether	330	U	330	340	U	340	330	U	330	330	U	330
4-Chloro-3-methylphenol	330	U	330	340	U	340	330	U	330	330	U	330
4-Chloroaniline	330	U	330	340	U	340	330	U	330	330	U	330
4-Chlorophenyl-phenylether	330	U	330	340	U	340	330	U	330	330	U	330
4-Methylphenol (p-cresol)	330	U	330	340	U	340	330	U	330	330	U	330
4-Nitroaniline	840	U	840	840	U	840	840	U	840	840	U	840
4-Nitrophenol	840	U	840	840	U	840	840	U	840	840	U	840
Acenaphthene	330	U	330	340	U	340	330	U	330	330	U	330
Acenaphthylene	330	U	330	340	U	340	330	U	330	330	U	330
Anthracene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(a)anthracene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(a)pyrene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(b)fluoranthene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(g,h,i)perylene	330	U	330	340	U	340	330	U	330	330	U	330
Benzo(k)fluoranthene	330	U	330	340	U	340	330	U	330	330	U	330
bis(2-Chloro-1-methylethyl)ether	330	U	330	340	U	340	330	U	330	330	U	330
bis(2-Chloroethoxy)methane	330	U	330	340	U	340	330	U	330	330	U	330
bis(2-Chloroethyl)ether	330	U	330	340	U	340	330	U	330	330	U	330
bis(2-Ethylhexyl)phthalate	190	J	330	45	J	340	40	J	330	24	J	330
Butylbenzylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Carbazole	330	U	330	340	U	340	330	U	330	330	U	330
Chrysene	330	U	330	340	U	340	330	U	330	330	U	330
Di-n-butylphthalate	36	J	330	340	U	340	28	J	330	330	U	330
Di-n-octylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Dibenz(a,h)anthracene	330	U	330	340	U	340	330	U	330	330	U	330
Dibenzofuran	330	U	330	340	U	340	330	U	330	330	U	330
Diethylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Dimethylphthalate	330	U	330	340	U	340	330	U	330	330	U	330
Fluoranthene	330	U	330	340	U	340	330	U	330	330	U	330
Fluorene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachlorobenzene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachlorobutadiene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachlorocyclopentadiene	330	U	330	340	U	340	330	U	330	330	U	330
Hexachloroethane	330	U	330	340	U	340	330	U	330	330	U	330
Indeno(1,2,3-cd)pyrene	330	U	330	340	U	340	330	U	330	330	U	330
Isophorone	330	U	330	340	U	340	330	U	330	330	U	330
N-Nitroso-di-n-dipropylamine	330	U	330	340	U	340	330	U	330	330	U	330
N-Nitrosodiphenylamine	330	U	330	340	U	340	330	U	330	330	U	330
Naphthalene	330	U	330	340	U	340	330	U	330	330	U	330

Attachment	1	Sheet No.	43 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12PY2 Location D-7 Sample Date 6/29/06			J12PY6 Location D-8 Sample Date 6/29/06			J12PY7 Location D-9 Sample Date 6/29/06			J12PY8 Location D-10 Sample Date 6/29/06		
	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)												
Nitrobenzene	330	U	330	340	U	340	330	U	330	330	U	330
Pentachlorophenol	840	U	840	840	U	840	840	U	840	840	U	840
Phenanthrene	330	U	330	340	U	340	330	U	330	330	U	330
Phenol	330	U	330	340	U	340	330	U	330	330	U	330
Pyrene	330	U	330	340	U	340	330	U	330	330	U	330
Volatile Organic Compounds												
1,1,1-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1,2-Trichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,1-Dichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethane	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloroethene (total)	5	U	5	5	U	5	5	U	5	5	U	5
1,2-Dichloropropane	5	U	5	5	U	5	5	U	5	5	U	5
2-Butanone	10	U	10	10	U	10	10	U	10	9	U	9
2-Hexanone	10	U	10	10	U	10	10	U	10	9	U	9
4-Methyl-2-Pentanone	10	U	10	10	U	10	10	U	10	9	U	9
Acetone	10	U	10	10	U	10	10	U	10	9	U	9
Benzene	5	U	5	5	U	5	5	U	5	5	U	5
Bromodichloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Bromoform	5	U	5	5	U	5	5	U	5	5	U	5
Bromomethane	10	U	10	10	U	10	10	U	10	9	U	9
Carbon disulfide	5	U	5	5	U	5	5	U	5	5	U	5
Carbon tetrachloride	5	U	5	5	U	5	5	U	5	5	U	5
Chlorobenzene	5	U	5	5	U	5	5	U	5	5	U	5
Chloroethane	10	U	10	10	U	10	10	U	10	9	U	9
Chloroform	5	U	5	5	U	5	5	U	5	5	U	5
Chloromethane	10	U	10	10	U	10	10	U	10	9	U	9
cis-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
cis-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Dibromochloromethane	5	U	5	5	U	5	5	U	5	5	U	5
Ethylbenzene	5	U	5	5	U	5	5	U	5	5	U	5
Methylene chloride	17	B	5	18	B	5	17	B	5	16	B	5
Styrene	5	U	5	5	U	5	5	U	5	5	U	5
Tetrachloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Toluene	1	J	5	5	U	5	1	J	5	1	J	5
trans-1,2-Dichloroethylene	5	U	5	5	U	5	5	U	5	5	U	5
trans-1,3-Dichloropropene	5	U	5	5	U	5	5	U	5	5	U	5
Trichloroethene	5	U	5	5	U	5	5	U	5	5	U	5
Vinyl chloride	10	U	10	10	U	10	10	U	10	9	U	9
Xylenes (total)	1	J	5	5	U	5	5	U	5	1	J	5

Attachment	1	Sheet No.	44 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J13563 Tar Staging Area Sample Date 8/14/06		
	µg/kg	Q	PQL
Polychlorinated Biphenyls			
Aroclor-1016	13	U	13
Aroclor-1221	13	U	13
Aroclor-1232	13	U	13
Aroclor-1242	13	U	13
Aroclor-1248	13	U	13
Aroclor-1254	120		13
Aroclor-1260	19		13

Constituents	J12P56 Tar Staging Area Sample Date 7/5/06		
	µg/kg	Q	PQL
Pesticides			
Aldrin	1.3	UD	1.3
alpha-BHC	1.3	UD	1.3
alpha-Chlordane	1.3	UD	1.3
beta-BHC	0.54	JD	1.3
delta-BHC	1.3	UD	1.3
Dichlorodiphenyldichloroethane	1.3	UD	1.3
Dichlorodiphenyldichloroethylene	3.6	D	1.3
Dichlorodiphenyltrichloroethane	1.3	UD	1.3
Dieldrin	1.3	UD	1.3
Endosulfan I	1.3	UD	1.3
Endosulfan II	1.3	UD	1.3
Endosulfan sulfate	1.3	UD	1.3
Endrin	1.3	UD	1.3
Endrin aldehyde	0.94	JD	1.3
Endrin ketone	1.3	UD	1.3
gamma-BHC (Lindane)	1.3	UD	1.3
gamma-Chlordane	1.3	UD	1.3
Heptachlor	1.3	UD	1.3
Heptachlor epoxide	1.3	UD	1.3
Methoxychlor	1.3	UD	1.3
Toxaphene	13	UD	13
Semivolatile Organic Compounds			
1,2,4-Trichlorobenzene	330	U	330
1,2-Dichlorobenzene	330	U	330
1,3-Dichlorobenzene	330	U	330
1,4-Dichlorobenzene	330	U	330
2,4,5-Trichlorophenol	840	U	840
2,4,6-Trichlorophenol	330	U	330
2,4-Dichlorophenol	330	U	330
2,4-Dimethylphenol	330	U	330
2,4-Dinitrophenol	840	U	840
2,4-Dinitrotoluene	330	U	330
2,6-Dinitrotoluene	330	U	330
2-Chloronaphthalene	330	U	330

Constituents	J12P56 Tar Staging Area Sample Date 7/5/06		
	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)			
2-Chlorophenol	330	U	330
2-Methylnaphthalene	330	U	330
2-Methylphenol (cresol, o-)	330	U	330
2-Nitroaniline	840	U	840
2-Nitrophenol	330	U	330
3,3'-Dichlorobenzidine	330	U	330
3-Nitroaniline	840	U	840
4,6-Dinitro-2-methylphenol	840	U	840
4-Bromophenyl-phenylether	330	U	330
4-Chloro-3-methylphenol	330	U	330
4-Chloroaniline	330	U	330
4-Chlorophenyl-phenylether	330	U	330
4-Methylphenol (p-cresol)	330	U	330
4-Nitroaniline	840	U	840
4-Nitrophenol	840	U	840
Acenaphthene	330	U	330
Acenaphthylene	330	U	330
Anthracene	330	U	330
Benzo(a)anthracene	330	U	330
Benzo(a)pyrene	330	U	330
Benzo(b)fluoranthene	330	U	330
Benzo(g,h,i)perylene	330	U	330
Benzo(k)fluoranthene	330	U	330
bis(2-Chloro-1-methylethyl)ether	330	U	330
bis(2-Chloroethoxy)methane	330	U	330
bis(2-Chloroethyl)ether	330	U	330
bis(2-Ethylhexyl)phthalate	29	JB	330
Butylbenzylphthalate	330	U	330
Carbazole	330	U	330
Chrysene	330	U	330
Di-n-butylphthalate	330	U	330
Di-n-octylphthalate	330	U	330
Dibenz(a,h)anthracene	330	U	330
Dibenzofuran	330	U	330
Diethylphthalate	330	U	330
Dimethylphthalate	330	U	330
Fluoranthene	330	U	330
Fluorene	330	U	330
Hexachlorobenzene	330	U	330
Hexachlorobutadiene	330	U	330
Hexachlorocyclopentadiene	330	U	330
Hexachloroethane	330	U	330
Indeno(1,2,3-cd)pyrene	330	U	330
Isophorone	330	U	330
N-Nitroso-di-n-dipropylamine	330	U	330
N-Nitrosodiphenylamine	330	U	330
Naphthalene	330	U	330

Attachment 1
Originator J. M. Capron
Checked T. M. Blakley
Calc. No. 0100B-CA-V0294

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Date 10/16/06
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Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P56 Tar Staging Area Sample Date 7/5/06		
	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)			
Nitrobenzene	330	U	330
Pentachlorophenol	840	U	840
Phenanthrene	330	U	330
Phenol	330	U	330
Pyrene	330	U	330
Volatile Organic Compounds			
1,1,1-Trichloroethane	5	U	5
1,1,2,2-Tetrachloroethane	5	U	5
1,1,2-Trichloroethane	5	U	5
1,1-Dichloroethane	5	U	5
1,1-Dichloroethene	5	U	5
1,2-Dichloroethane	5	U	5
1,2-Dichloroethene (total)	5	U	5
1,2-Dichloropropane	5	U	5
2-Butanone	10	U	10
2-Hexanone	10	U	10
4-Methyl-2-Pentanone	10	U	10
Acetone	10	U	10
Benzene	5	U	5
Bromodichloromethane	5	U	5
Bromoform	5	U	5

Constituents	J12P56 Tar Staging Area Sample Date 7/5/06		
	µg/kg	Q	PQL
Volatile Organic Compounds (continued)			
Bromomethane	10	U	10
Carbon disulfide	5	U	5
Carbon tetrachloride	5	U	5
Chlorobenzene	5	U	5
Chloroethane	10	U	10
Chloroform	5	U	5
Chloromethane	10	U	10
cis-1,2-Dichloroethylene	5	U	5
cis-1,3-Dichloropropene	5	U	5
Dibromochloromethane	5	U	5
Ethylbenzene	5	U	5
Methylene chloride	11	B	5
Styrene	5	U	5
Tetrachloroethene	5	U	5
Toluene	5	U	5
trans-1,2-Dichloroethylene	5	U	5
trans-1,3-Dichloropropene	5	U	5
Trichloroethene	5	U	5
Vinyl chloride	10	U	10
Xylenes (total)	5	U	5

Attachment	1	Sheet No.	46 of 47
Originator	J. M. Capron	Date	10/16/06
Checked	T. M. Blakley	Date	
Calc. No.	0100B-CA-V0294	Rev. No.	0

Attachment 1. 128-B-3 Phase II Verification Sampling Results.

Constituents	J12P16 Equipment Blank Sample Date 7/5/06		
	µg/kg	Q	PQL
Semivolatile Organic Compounds			
1,2,4-Trichlorobenzene	330	U	330
1,2-Dichlorobenzene	330	U	330
1,3-Dichlorobenzene	330	U	330
1,4-Dichlorobenzene	330	U	330
2,4,5-Trichlorophenol	830	U	830
2,4,6-Trichlorophenol	330	U	330
2,4-Dichlorophenol	330	U	330
2,4-Dimethylphenol	330	U	330
2,4-Dinitrophenol	830	U	830
2,4-Dinitrotoluene	330	U	330
2,6-Dinitrotoluene	330	U	330
2-Chloronaphthalene	330	U	330
2-Chlorophenol	330	U	330
2-Methylnaphthalene	330	U	330
2-Methylphenol (cresol, o-)	330	U	330
2-Nitroaniline	830	U	830
2-Nitrophenol	330	U	330
3,3'-Dichlorobenzidine	330	U	330
3-Nitroaniline	830	U	830
4,6-Dinitro-2-methylphenol	830	U	830
4-Bromophenyl-phenylether	330	U	330
4-Chloro-3-methylphenol	330	U	330
4-Chloroaniline	330	U	330
4-Chlorophenyl-phenylether	330	U	330
4-Methylphenol (p-cresol)	330	U	330
4-Nitroaniline	830	U	830
4-Nitrophenol	830	U	830
Acenaphthene	330	U	330
Acenaphthylene	330	U	330
Anthracene	330	U	330
Benzo(a)anthracene	330	U	330
Benzo(a)pyrene	330	U	330

Constituents	J12P16 Equipment Blank Sample Date 7/5/06		
	µg/kg	Q	PQL
Semivolatile Organic Compounds (continued)			
Benzo(b)fluoranthene	330	U	330
Benzo(g,h,i)perylene	330	U	330
Benzo(k)fluoranthene	330	U	330
bis(2-Chloro-1-methylethyl)ether	330	U	330
bis(2-Chloroethoxy)methane	330	U	330
bis(2-Chloroethyl)ether	330	U	330
bis(2-Ethylhexyl)phthalate	40	JB	330
Butylbenzylphthalate	330	U	330
Carbazole	330	U	330
Chrysene	330	U	330
Di-n-butylphthalate	46	JB	330
Di-n-octylphthalate	330	U	330
Dibenz(a,h)anthracene	330	U	330
Dibenzofuran	330	U	330
Diethylphthalate	330	U	330
Dimethylphthalate	330	U	330
Fluoranthene	330	U	330
Fluorene	330	U	330
Hexachlorobenzene	330	U	330
Hexachlorobutadiene	330	U	330
Hexachlorocyclopentadiene	330	U	330
Hexachloroethane	330	U	330
Indeno(1,2,3-cd)pyrene	330	U	330
Isophorone	330	U	330
N-Nitroso-di-n-dipropylamine	330	U	330
N-Nitrosodiphenylamine	330	U	330
Naphthalene	330	U	330
Nitrobenzene	330	U	330
Pentachlorophenol	830	U	830
Phenanthrene	330	U	330
Phenol	330	U	330
Pyrene	330	U	330

Attachment 1
Originator J. M. Capron
Checked T. M. Blakley
Calc. No. 0100B-CA-V0294

Sheet No. 47 of 47
Date 10/16/06
Date
Rev. No. 0

APPENDIX D

CALCULATION OF HAZARD QUOTIENTS AND EXCESS CARCINOGENIC RISK VALUES

CALCULATION COVER SHEET

Project Title 100-B/C Field Remediation **Job No.** 14655
Area 100-B/C
Discipline Environmental *__Calc. No.__ 0100B-CA-V0295
Subject 128-B-3 Waste Site Hazard Quotient and Carcinogenic Risk Calculations
Computer Program Excel **Program No.** Excel 2003

The attached calculations have been generated to document compliance with established cleanup levels. These calculations should be used in conjunction with other relevant documents in the administrative record.

Committed Calculation ☒ **Preliminary** ☐ **Superseded** ☐ **Voided** ☐

Rev.	Sheet Numbers	Originator	Checker	Reviewer	Approval	Date
0	Cover = 1 Summary = 4 Total = 5	*J. M. Capron* *Approved 10/17/06*	*T. M. Blakley* *Approved 10/19/06*	*N/A*	*D. N. Strom* *Approved 10/23/06*	*10/23/06*
1	Cover = 1 Summary = 4 Total = 5	J. M. Capron 10/26/06	T. M. Blakley 10/26/06	N/A	D. N. Strom 10-26-06	10-26-06

SUMMARY OF REVISION

1	Cover page replaced in entirety for convenience. Sheet 2, Lines 28 and 29: Values listed in text corrected to reflect values in Table 1.

WCH-DE-018 (9/01/2006) * Obtain Calc. No. from R&DC and Form from Intranet

Washington Closure Hanford CALCULATION SHEET

Originator:	J. M. Capron JMC	Date:	10/17/06	Calc. No.:	0100B-CA-V0295	Rev.:	0
Project:	100-B/C Field Remediation	Job No:	14655	Checked:	T. M. Blakley TMB	Date:	10/19/06
Subject:	128-B-3 Waste Site Hazard Quotient and Carcinogenic Risk Calculations					Sheet No.	1 of 4

PURPOSE:

Provide documentation to support the calculation of the hazard quotient (HQ) and excess carcinogenic risk values for the 128-B-3 remediation verification sampling results. In accordance with the remedial action goals (RAGs) in the remedial design report/remedial action work plan (RDR/RAWP) (DOE-RL 2005), the following criteria must be met:

1) An HQ of <1.0 for all individual noncarcinogens
2) A cumulative HQ of <1.0 for noncarcinogens
3) An excess carcinogenic risk of $<1 \times 10^{-6}$ for individual carcinogens
4) A cumulative excess carcinogenic risk of $<1 \times 10^{-5}$ for carcinogens.

GIVEN/REFERENCES:

1) DOE-RL, 2005, *Remedial Design Report/Remedial Action Work Plan for the 100 Areas,* DOE/RL-96-17, Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

2) EPA, 1994, *Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for Lead in Children*, EPA/540/R-93/081, Publication No. 9285.7-15-1, U.S. Environmental Protection Agency, Washington, D.C.

3) WAC 173-340, "Model Toxics Control Act – Cleanup," *Washington Administrative Code*, 1996.

4) WCH, 2006a, *128-B-3 Waste Site Cleanup Verification 95% UCL Calculations*, Calculation No. 0100B-CA-V0294, Rev. 0, Washington Closure Hanford, Richland, Washington.

5) WCH, 2006b, *128-B-3 Waste Site Cleanup Phase I Verification 95% UCL Calculations*, Calculation No. 0100B-CA-V0296, Rev. 0, Washington Closure Hanford, Richland, Washington.

SOLUTION:

1) Calculate an HQ for each noncarcinogenic constituent detected above background and compare to the individual HQ of <1.0 (DOE-RL 2005).

2) Sum the HQs and compare to the cumulative HQ criterion of <1.0.

3) Calculate an excess carcinogenic risk value for each carcinogenic constituent detected above background and compare to the individual excess carcinogenic risk criterion of $<1 \times 10^{-6}$ (DOE-RL 2005).

4) Sum the excess carcinogenic risk values and compare to the cumulative excess carcinogenic risk criterion of $<1 \times 10^{-5}$.

Washington Closure Hanford CALCULATION SHEET

Originator:	J. M. Capron JMC	Date:	10/26/06	Calc. No.:	0100B-CA-V0295	Rev.:	1
Project:	100-B/C Field Remediation	Job No:	14655	Checked:	T. M. Blakley TMB	Date:	10/26/06
Subject:	128-B-3 Waste Site Hazard Quotient and Carcinogenic Risk Calculations					Sheet No.	2 of 4

METHODOLOGY:

Hazard quotient and carcinogenic risk calculations for the 128-B-3 waste site were conservatively performed using the highest of the statistical/maximum values from all decision units for each analyte detected above background, as calculated in WCH (2006a, 2006b). Of the contaminants of concern (COCs) and contaminants of potential concern (COPCs) for the site, boron and molybdenum require the HQ calculations because they were detected and Washington State or Hanford Site background values are not available. Barium, chromium (total), copper, lead, mercury, and zinc were included because they were quantified above the Hanford Site background value in one or more decision units. Hexavalent chromium, Aroclor-1254, Aroclor-1260, and multiple chlorinated pesticides, semivolatile organic compounds, and volatile organic compounds (as identified in Table 1) are included because they were detected in one or more decision units by laboratory analysis and cannot be attributed to natural occurrence. All other site nonradionuclide COCs and COPCs were not detected or were detected below background levels. An example of the HQ and risk calculations is presented below:

1) For example, the maximum value for boron is 17.5 mg/kg, divided by the noncarcinogenic RAG value of 16,000 mg/kg (calculated in accordance with the noncarcinogenic toxics effects formula in WAC 173-340-740[3]), is 1.1×10^{-3}. Comparing this value, and all other individual values, to the requirement of <1.0, this criterion is met.

2) After the HQ calculations are completed for the appropriate analytes, the cumulative HQ is obtained by summing the individual values. (To avoid errors due to intermediate rounding, the individual HQ values prior to rounding are used for this calculation.) The sum of the HQ values is 3.3×10^{-1}. Comparing this value to the requirement of <1.0, this criterion is met.

3) To calculate the excess carcinogenic risk, the highest determined value for each carcinogenic analyte is divided by the carcinogenic RAG value, then multiplied by 1×10^{-6}. For example, the maximum value for hexavalent chromium is ~~1.1~~ 1.3 mg/kg; divided by 2.1 mg/kg and multiplied as indicated is ~~5.2~~6.2 $\times 10^{-7}$. Comparing this value, and all other individual values, to the requirement of $<1 \times 10^{-6}$, this criterion is met.

4) After these calculations are completed for the carcinogenic analytes, the cumulative excess carcinogenic risk is obtained by summing the individual values. (To avoid errors due to intermediate rounding, the individual values prior to rounding are used for this calculation.) The sum of the excess carcinogenic risk values is 2.2×10^{-6}. Comparing this value to the requirement of $<1 \times 10^{-5}$, this criterion is met.

RESULTS:

1) List individual noncarcinogens and corresponding HQs >1.0: None
2) List the cumulative noncarcinogenic HQ >1.0: None
3) List individual carcinogens and corresponding excess cancer risk $>1 \times 10^{-6}$: None
4) List the cumulative excess cancer risk for carcinogens $>1 \times 10^{-5}$: None.

Table 1 shows the results of the HQ and excess carcinogenic risk calculations for the 128-B-3 waste site.

Washington Closure Hanford CALCULATION SHEET

Originator:	J. M. Capron	Date:	10/17/06	Calc. No.:	0100B-CA-V0295	Rev.:	0
Project:	100-B/C Field Remediation	Job No:	14655	Checked:	T. M. Blakley	Date:	10/19/06
Subject:	128-B-3 Waste Site Hazard Quotient and Carcinogenic Risk Calculations					Sheet No.	3 of 4

Table 1. Hazard Quotient and Excess Cancer Risk Results for the 128-B-3 Waste Site.

Contaminants of Concern / Contaminants of Potential Concern	Highest Determined Value from All Decision Units[a] (mg/kg)	Noncarcinogen RAG[b] (mg/kg)	Hazard Quotient	Carcinogen RAG[b] (mg/kg)	Carcinogen Risk
Metals					
Barium	279	5,600	5.0E-02	--	--
Boron	17.5	16,000	1.1E-03	--	--
Chromium, total	42.4	80,000	5.3E-04		
Chromium, hexavalent[c]	1.3	240	5.4E-03	2.1	6.2E-07
Copper	32.9	2,960	1.1E-02	--	--
Lead[d]	19.9	353	5.6E-02	--	--
Mercury	1.6	24	6.7E-02	--	--
Molybdenum	4.7	400	1.2E-02	--	--
Zinc	76.3	24,000	3.2E-03	--	--
Semivolatiles					
Benzo(a)anthracene	0.047	--	--	1.37	3.4E-08
Benzo(a)pyrene	0.053	--	--	0.137	3.9E-07
Benzo(b)fluoranthene	0.055	--	--	1.37	4.0E-08
Benzo(k)fluoranthene	0.043	--	--	13.7	3.1E-09
Benzo(g,h,i)perylene[e]	0.090	2,400	3.8E-05	--	--
Bis(2-ethylhexyl) phthalate	0.24	1,600	1.5E-04	71.4	3.4E-09
Chrysene	0.10	--	--	137	7.3E-10
Dibenzo(a,h)anthracene	0.056	--	--	0.137	4.1E-07
Di-n-butylphthalate	0.14	8,000	1.8E-05	--	--
Fluoranthene	0.062	3,200	1.9E-05	--	--
Indeno(1,2,3-cd) pyrene	0.050	--	--	1.37	3.6E-08
Phenanthrene[e]	0.037	24,000	1.5E-06	--	--
Pyrene	0.087	2,400	3.6E-05	--	--
Pesticides					
Aldrin	0.00037	2.40	1.5E-04	0.0588	6.3E-09
BHC, beta-	0.00054	--	--	0.556	9.7E-10
Chlordane (alpha and gamma)	0.00083	40	2.1E-05	2.86	2.9E-10
DDE, 4,4'-	0.027	--	--	2.94	9.2E-09
DDT, 4,4'-	0.015	40	3.8E-04	2.94	5.1E-09
Dieldrin	0.012	4	3.0E-03	0.0625	1.9E-07
Endosulfan (I, II, sulfate)	0.0027	480	5.6E-06	--	--
Endrin (and ketone, aldehyde)	0.0171	24	7.1E-04	--	--
Methoxychlor	0.0043	400	1.1E-05	--	--
Polychlorinated Biphenyls					
Aroclor-1254	0.19	1.6	1.2E-01	0.5	3.8E-07
Aroclor-1260	0.055	--	--	0.5	1.1E-07
Volatile Organic Compounds					
Acetone	0.035	72,000	4.9E-07	--	--
Methylene chloride	0.018	4,800	3.8E-06	133	1.4E-10
Toluene	0.002	6,400	3.1E-07	--	--
Xylenes (total)	0.003	16,000	1.9E-07	--	--
Totals					
Cumulative Hazard Quotient:			**3.3E-01**		
Cumulative Excess Cancer Risk:					**2.2E-06**

Notes:

RAG = remedial action goal

-- = not applicable

[a] = From WCH (2006a, 2006b).

[b] = Value obtained from *Washington Administrative Code* (WAC) 173-340-740(3), Method B, 1996.

[c] = Value for the carcinogen RAG calculated based on the inhalation exposure pathway (WAC) 173-340-750(3), 1996.

[d] = Value for the noncarcinogen RAG obtained from EPA (1994).

[e] = Toxicity data are not available for this constituent. RAGs for benzo(g,h,i)perylene and phenanthrene are based on the surrogate chemicals pyrene and anthracene, respectively.

Washington Closure Hanford CALCULATION SHEET

Originator:	J. M. Capron JMC	Date:	10/17/06	Calc. No.:	0100B-CA-V0295	Rev.:	0
Project:	100-B/C Field Remediation	Job No:	14655	Checked:	T. M. Blakley	Date:	10/19/06
Subject:	128-B-3 Waste Site Hazard Quotient and Carcinogenic Risk Calculations					Sheet No.	4 of 4

CONCLUSION:

This calculation demonstrates that the 128-B-3 waste site meets the requirements for hazard quotient and excess carcinogenic risk as identified in the RDR/RAWP (DOE-RL 2005).