DEPARTMENT OF THE ARMY
INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, PICATINNY
PICATINNY ARSENAL, NEW JERSEY 07806-5000

April 6, 2012

REPLY TO
ATTENTION OF
Environmental Affairs Division

SUBJECT: Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)/Interagency Agreement (IAG) Administrative Docket No. II-CERCLA-FFA-001-04: Submittal of ***Final Lakes Feasibility Study***: Review is ER,A-eligible

Mr. William Roach
U.S. Environmental Protection Agency
Region 2
290 Broadway, 18th Floor
New York, NY 10007-1866

Ms. Anne Pavelka, Case Manager
New Jersey Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Case Management,
401 East State Street, Floor 5
P.O. Box 420. Mail Code 401-05F
Trenton, New Jersey 08625-0028

Dear Sir and Madam:

Enclosed for your review are copies of the ***Final Lakes Feasibility Study***.

The tracked-changed version of this FS had previously been approved by Bill Roach in the attached email dated November 09, 2010.

Revision to this FS are the largely the result of the additional sampling completed last year (***Appendix D: Results of November 2011 Sampling Event***) and a revised risk assessment (***Appendix E: Risk Assessment Memorandum***.) These two appendices have previously not been submitted. The FS has also changed as the Army agreed at the October 2011 meeting to include fishing restrictions as part of an LUC and that the alternative included in the previous FS for sediment removal in Lake Picatinny has been removed since there is acceptable risk for that site.

Any questions or requests for additional copies of the document please give me a call or email me at ted.gabel@us.army.mil.

Sincerely,

Project Manager for
Environmental Restoration

Enclosures
CC:
Mr. Jim Kealy, NJDEP
Mr. Joe Marchesani, NJDEP FTP only
Ms. Barbara Dolce, TAPP Contractor

Copy of email from Bill Roach approving the tracked changed document.

From: Roach.Bill@epamail.epa.gov [mailto:Roach.Bill@epamail.epa.gov]
Sent: Tuesday, November 09, 2010 2:18 PM
To: Gabel, Ted Mr CIV USA IMCOM
Cc: Greg Zalaskus; Jim Kealy; Joe Marchesani
Subject: Re: Responses to Comments on the Lake and Tracked Changes (UNCLASSIFIED)

Ted, EPA approves the tracked changes for the Lakes FS. However, the proposed plan will have to do a better job at identifying the lakes and pond by name (PIcatinny Lake, Lake Denmark and EOD Pond) in the figures not just in the title block. Bill

From: "Gabel, Ted Mr CIV USA IMCOM" <ted.gabel@us.army.mil>
To: Bill Roach/R2/USEPA/US@EPA, "Greg Zalaskus" <Greg.Zalaskus@dep.state.nj.us>, "Jim Kealy" <Jim.Kealy@dep.state.nj.us>, "Joe Marchesani" <Joe.Marchesani@dep.state.nj.us>
Date: 11/04/2010 04:31 PM
Subject: Responses to Comments on the Lake and Tracked Changes (UNCLASSIFIED)

Comments and Responses on the
Lakes Feasibility Study
PICAs 015, 057, and 195
Picatinny Arsenal, Morris County, New Jersey
December 13, 2010

Commenter: Jim Kealy, NJDEP
Comments Dated: June 22, 2011

Item No.	Report Reference	Comment	Response
1.	Site Summaries: PICA 015, 057 and 195	Previously, NJDEP stated "the Army states that 'for soils, the NJDEP Non-Residential Soil Remediation Standards (NRSRS) were used as the LOC for preliminary screening criteria.' In ecologically sensitive areas, the screening values found in the *NJDEP Ecological Screening Criteria Table* at http://www.nj.gov/dep/srp/guidance/ecoscreening/, should be used. This comment is reiterated for sediment and surface water as the referenced table lists criteria for each media." The Army's response is that the only soil evaluated around the lake consists of "areas that would not be considered ecologically sensitive areas … therefore, the NJDEP Ecological Screening Criteria are not applicable to soils in this FS." Provided that no ecologically sensitive areas (ESA) exist that could be impacted by the site, this response is acceptable; however, if an ESA could be affected by contaminant migration, then the contaminant levels must be compared to the ecological screening criteria (ESC).	Comment noted. The Army continues to believe that the use of the NRSRS is correct and ecologically sensitive areas are not impacted in that specific area.

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Item No.	Report Reference	Comment	Response
2.	Section 3.2.3.1 Sediment: page 28:	Previously, NJDEP stated "the Army states that 'acetone is a common laboratory contaminant, and as such, its presence may not be indicative [of] an environmental impact from site activities.' The Army should state whether acetone was detected in the QA/QC trip, field and/or method blank samples." The Army's response is that "acetone detections were footnoted in the RI report as, 'Compound is a CLP common contaminant, an often encountered analytical trap degradation product. Results should be considered suspect.'" ETRA is not questioning whether acetone is a common contaminant, but rather whether acetone was detected in the QA/QC trip, field and/or method blank samples. It is NJDEP policy that sample concentrations of common laboratory contaminants greater than 10 times the method blank are considered actual concentrations. Sample concentrations between three and 10 times the method blank are considered qualified. The Army's response did not address the question.	As indicated in the FS, the concentrations of acetone in sediments are very low, with 1 mg/kg as a maximum detection. In the RI, the acetone concentrations are noted as suspect due to the fact that acetone is a common laboratory contaminant. The RI was approved by the EPA and NJDEP with no comments regarding these statements, and the FS is simply restating this noncontested RI information. In addition, there are no unacceptable ecological or human health risks based on concentrations of acetone in the sediments. With the low concentrations, no impacts to surface water (as evidenced with no surface water LOC exceedances), and no unacceptable risks, acetone concentrations in sediments are not an issue in Picatinny Lake.
3.	Section 4.2.1 Chemical Specific ARARs and TBC Guidance: Page 48	Previously, NJDEP stated "the Army states that 'the State of New Jersey has promulgated surface water quality standards [SWQS; 7:9B] and soil remediation standards [NJAC 7:26D].' The SWQS contain criteria for both human health and ecological receptors, whereas the soil remediation standards (SRS) only contain human health standards. In ecologically sensitive areas, the soil ecological screening criteria at http://www.nj.gov/dep/srp/guidance/ecoscreening/ should be used in place of the SRS." The Army's response is "see response to Comment #1." See NJDEP/ ETRA's response to Item No. 1.	See response to Comment #1.

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Item No.	Report Reference	Comment	Response
4.	Section 4.6 Area of Attainment: Page 51:	Previously, NJDEP stated "the Army states that sediment excavation will occur in Picatinny Lake in a '20-ft by 60-ft area surrounding locations I-40-SD-003 and I-40-SD-005.' The Army should specify whether delineation or post-excavation sediment samples will be collected and what criteria will be used to determine that the remedial action is complete. The Army should also state whether the excavation will be backfilled or left open." The Army's response is "see response to Comment # 5." See ETRA's response to Item No. 5.	See response to Comment #5.

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Item No.	Report Reference	Comment	Response
5.	Section 6.1.3 Response Action SD-3	Previously, NJDEP stated "the Army states that 'pre-delineation and/or post-excavation samples will be collected.' See comments in **4.6 Area of Attainment**, above." The Army's response is that the resampling was conducted in the locations where the two samples exhibited elevated levels of explosives. According the summary presented, sample 1-40-SD-003, which had a detection of 1,100 ppm 2,4,6-TNT and 2,500 ppm RDX, had detections of 0.738 ppm 2,4,6-TNT and ND levels of RDX in the resampling effort. Sample 1-40-SD-005, which had a detection of 7,680 ppm RDX had a detection of ND for RDX in the resampling effort. The Army states that "it is recommended that no action is necessary to remediate sediments near Site 40 at Picatinny Lake." Given the dramatic reduction in concentrations, a third round of sampling is warranted to determine whether analytical or sampling error was involved in one of the sampling rounds, particularly given that the bioassay data indicated that Site 40 sediments are toxic to benthic receptors. NJDEP recommends that additional sediment samples be collected from the vicinity of previous sample locations 1-40-SD-003 and 1-40-SD-005 and at least one other location approximately midway between these two previous sample locations.	Disagree. The Army has collected six rounds of sediment data from the near shore environment at Site 40, including the original samples, the February 2010 samples, and those discussed in further detail below. The samples collected in February 2010 were validated and had very low levels of explosives, or non-detect for the compounds. As was noted previously, although a 20 by 60 foot area was outlined in the RI for action, only 2 of 15 samples within that area had elevated detections for explosives, which are now not above standards. Further, as was previously noted, although the lab test indicated a high toxicity, the actual sample collected had a very high benthic population and the results of the lab study are inconclusive at best. Four sediment samples were collected in 2008, with two nearby (within 40 to 90 feet), with non-detects for explosive compounds at the locations provided on the attached figure. Since the groundwater and soils remedy was installed at Site 40, sediment sampling at these location for explosives is conducted on a quarterly basis (frequency of sampling will decline to semi-annual after two years and annual after 5-year). The quarterly data collected in September 2010, December 2010, and March 2011 indicate non-detect for explosives. These data are provided to the NJDEP in regular quarterly reports.

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Item No.	Report Reference	Comment	Response
6.	Section 7.2.3, Alternative SD-3 – Sediment Removal and Off-site Disposal with LUCs Page 78::	Previously, NJDEP stated "the Army states that 'the LOCs in Appendix B were used to determine the area of sediment for evaluation of an active remedy.' The ecological screening criteria at http://www.nj.gov/dep/srp/guidance/ecoscreening/ should be used to determine the area of sediment for evaluation of an active remedy." The Army's response is that RDX and TNT are not included in the NJDEP ESC Table. Alternate ESC are to be used in the event that the NJDEP ESC Table does not provide criteria for contaminants; however, the table should be used for all contaminants where criteria are provided.	Comment noted.
7.	Section 8, Summary of Recommended Alternatives: Page 82:	Previously, NJDEP stated "the Army states that active remediation will include 'removal of 1 ft of sediment in the vicinity of samples I-40-SD-003 and I-40-SD-005.' The Army should state whether the pre-delineation or post-excavation sampling effort will include bottom samples to determine whether the 1 ft depth is adequate. See comments in **4.6 Area of Attainment**, above." The Army's response is "see response to Comment#5." See ETRA's response to Item No. 5.	See response to Comment #5.

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Item No.	Report Reference	Comment	Response
8.	Vicinity of Former Building 561, Propellant Plant:	Previously, NJDEP stated "elevated metals detected in Lake sediments in this area particularly 113SD-1 (copper 18,000 ppm, mercury 21 ppm, lead 287 ppm, and antimony 12 ppm.) A sediment bioassay at 113SD-1 exhibited no survival or emergence of the test organisms. NJDEP had previously requested additional sampling at this location. The Army must provide some rationale why additional assessment is not planned in this area." The Army's response is "these small, localized areas are not representative of the overall health of the Picatinny Lake ecosystem, which is why a holistic approach has been used to evaluate Picatinny Lake rather than a site-by-site approach." It has been the long-standing policy of NJDEP to require 'hot spot' removal of highly elevated contaminants, especially persistent, biomagnifying toxins (PBTs) such as Hg. Therefore, this area should be evaluated for 'hot spot' removal.	Disagree. Responses to comments on the approved RI already addressed the additional work requested, and we continue to believe that the significant mortality observed in the toxicity bioassays are indicative of a potential for contaminants to adversely affect benthic receptors, and do not necessarily accurately reflect the diversity of pollution-sensitve species collected from the native, non-sterilized sediments, as noted in the ERA. In addition, the bioassay results of nearby locations indicate that the significant mortality observed in the one sample is very limited in area and that the overall health of Picatinny Lake, and even this specific area of Picatinny Lake, is good. The human health risk assessment for Picatinny Lake overall and for this Site, when evaluated separately, did not have unacceptable risk for the elevated constituents identified (copper, mercury, lead, or antimony). Using a site-wide evaluation of risk is consistant with the CERCLA process when evaluating the need for an action.

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Comments Dated: June 22, 2011

Item No.	Report Reference	Comment	Response
9.	Vicinity of Building 506, Power Plant:	Previously, NJDEP stated "Sediment and Surface water Contamination in Picatinny Lake near shore sediments adjacent to Site 63/65 – Building 506, Steam and Power Plant has contamination that has been detected in the RI sampling. Sediments contain elevated concentrations of mercury (up to 10 ppm), lead (up to 212 ppm), copper (up to 189 ppm) arsenic (up to 28 ppm), and PAHs (bap up to 3 ppm.) the RI report stated that 'the vertical extent of the contamination has not been completed and may be significant at the outfall locations'. A sediment bioassay conducted on sample 65Sd-2 exhibited 100% mortality in one test species and significant difference in the % emergence of the other test species. The ERA concluded that definitive toxic spots exist in the lake. The FS should discuss some rationale why additional assessment is not planned." The Army's response is similar to Item No. 8. See ETRA's response to Item No. 8.	Disagree. Responses to comments on the approved RI already addressed the additional work requested, and we continue to believe that the significant mortality observed in the toxicity bioassays are indicative of a potential for contaminants to adversely affect benthic receptors, and do not necessarily accurately reflect the diversity of pollution-sensitve species collected from the native, non-sterilized sediments, as noted in the ERA. As previously presented, one of the benthic macroinvertebrate survey locations was co-located with sample 65SD-2, which is a sample for which the NJDEP has called out as a concern, and the survey results did not indicate biologically significant risks to benthic biota. In addition, the bioassay results of nearby locations indicate that the significant mortality observed in the one sample is very limited in area and that the overall health of Picatinny Lake, and even this specific area of Picatinny Lake, is good. The human health risk assessment for Picatinny Lake overall and for this Site, when evaluated separately, did not have unacceptable risk. Using a site-wide evaluation of risk is consistant with the CERCLA process when evaluating the need for an action.

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Comments Dated: June 22, 2011

Item No.	Report Reference	Comment	Response
10.	Vicinity of Building 908, X-Ray Photo processing Laboratory:	Previously, NJDEP stated "Metal Contamination of the Sediment and surface water in Picatinny Lake near Site 82 – Building 908, X-Ray Photo processing laboratory: Sediment and surface water samples contain elevated silver (up to 1,100 ppm) in sediment samples and surface water (up to 16.2 ppb). The samples were reportedly collected near the outfall of the former overflow line from the spent silver collection unit. Surface water samples also contain elevated radium-226 (up to 13.7 ppb). Surface water and sediment bioassays also did show significant differences in mortality versus control and reference samples in the ERA. The ERA report states that there is some potential risk to benthic receptors at Site 82. NJDEP had requested additional horizontal and vertical delineation in this area near the plant outfall pipes. This was apparently never accomplished. The FS should provide some rationale why additional assessment is not planned in this area." The Army's response is similar to Item No. 8. See ETRA's response to Item No. 8.	Disagree. Responses to comments on the approved RI already addressed the additional work requested, and we continue to believe that the significant mortality observed in the toxicity bioassays are indicative of a potential for contaminants to adversely affect benthic receptors, and do not necessarily accurately reflect the diversity of pollution-sensitve species collected from the native, non-sterilized sediments, as noted in the ERA. In addition, the bioassay results of nearby locations indicate that the significant mortality observed in the one sample is very limited in area and that the overall health of Picatinny Lake, and even this specific area of Picatinny Lake, is good. The human health risk assessment for Picatinny Lake overall and for this Site, when evaluated separately, did not have unacceptable risk. Using a site-wide evaluation of risk is consistant with the CERCLA process when evaluating the need for an action.

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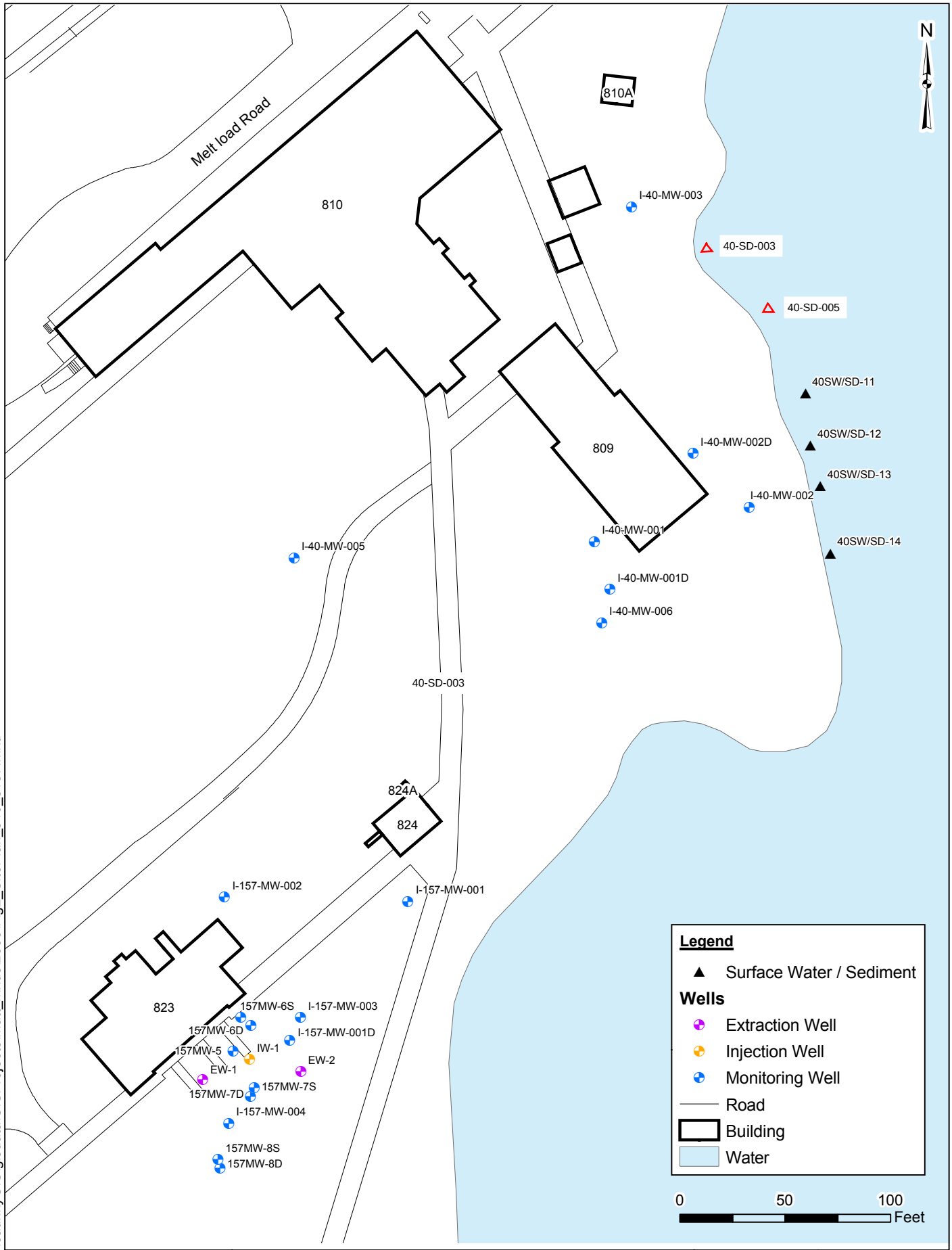
Item No.	Report Reference	Comment	Response
11.	Sediments in the Vicinity of Site 108 – Buildings 717, 722 and 732, Ordnance Facilities and Flare Testing Laboratory and Flare Island:	Previously, NJDEP stated "The RI data indicates significant contamination in the surface soils and near shore sediments in the vicinity of this site. The ERA also detected significant toxicity in this area. NJDEP had previously requested additional horizontal and vertical delineation of sediment contamination in this area. The FS should provide some rationale why additional assessment / remediation is not planned in this area." The Army's response is similar to Item No. 8. See ETRA's response to Item No. 8.	Disagree. Responses to comments on the approved RI already addressed the additional work requested, and we continue to believe that the significant mortality observed in the toxicity bioassays are indicative of a potential for contaminants to adversely affect benthic receptors, and do not necessarily accurately reflect the diversity of pollution-sensitve species collected from the native, non-sterilized sediments, as noted in the ERA. In addition, the bioassay results of nearby locations indicate that the significant mortality observed in the one sample is very limited in area and that the overall health of Picatinny Lake, and even this specific area of Picatinny Lake, is good. The human health risk assessment for Picatinny Lake overall and for this Site, when evaluated separately, did not have unacceptable risk Using a site-wide evaluation of risk is consistant with the CERCLA process when evaluating the need for an action. The source of potential pollutants that may be contributing to elevated concentrations in near shore sediment (contaminated soil on Flare Island) will be eliminated through capping planned for Flare Island.



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PICATINNY ARSENAL
PRE-DESIGN TECHNICAL MEMORANDUM
FOR GROUP 1 SITES
SITE PLAN
PICATINNY ARSENAL, DOVER, NEW JERSEY

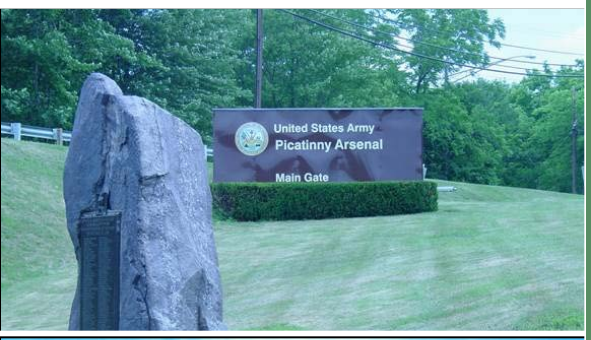
PROJECT DIRECTOR T. LLEWELLYN	TASK MANAGER D. WISBECK
DRAWN M. GRESS	CHECKED D. WISBECK
PROJECT NUMBER GP06PICA.0079	DRAWING NUMBER 1

Final Lakes Feasibility Study

Site 54/PICA 015, Site 53/PICA 057, and Site 103/PICA 164

U.S. Army Garrison Picatinny Arsenal, New Jersey

April 2012



Final Lakes Feasibility Study Site 54/PICA 015, Site 53/PICA 057, and Site 103/PICA 164

Picatinny Arsenal, New Jersey

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GP06PICA.P057.EA001

Date:
April 2012

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Acronyms and Abbreviations

AA	Area of Attainment
AIC	Acres International Corporation
ANL	Argonne National Laboratory
ARAR	Applicable or Relevant and Appropriate Requirement
ARCADIS	Arcadis U.S., Inc.
BERA	Baseline Ecological Risk Assessment
BHC	Benzenehexachloride
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (1980)
CFR	Code of Federal Regulations
COPC	Chemical of Potential Concern
COPEC	Chemical of Potential Ecological Concern
DDD	Dichlorodiphenyldichloroethane
DEH	Division of Engineering and Housing
EOD	Explosive Ordnance Demolition
EPC	Exposure Point Concentration
EPIC	Environmental Photographic Interpretation Center
ERA	Ecological Risk Assessment
FEMA	Federal Emergency Management Agency
FS	Feasibility Study
ft	Feet
GIS	Geographic Information System
GRA	General Response Action
HHRA	Human Health Risk Assessment
HI	Hazard Index
HMX	Cyclo-tetramethylene tetranitramine

IC	Institutional Control
ICFKE	ICF Kaiser Engineers
IRP	Installation Restoration Program
IRSL	Industrial Regional Screening Level
ISQGs	Interim Sediment Quality Guidelines
IT	IT Corporation
LBSWA	Lakes and Brooks Surface Water Area
LCV	Lowest Chronic Value
LOC	Level of Concern
LUC	Land Use Control
MEC	Munitions or Explosives of Concern
mg/kg	Milligram per Kilogram
mm	Millimeter
MMRP	Military Munitions Response Program
msl	Mean Sea Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NG	Nitroglycerine
NJDEP	New Jersey Department of Environmental Protection
NPL	National Priorities List
NRSRS	Non-residential Soil Remediation Standards
NWI	National Wetland Inventory
O&M	Operation & Maintenance
PA	Preliminary Assessment
PAH	Polynuclear (or polycyclic) Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyls
PETN	Pentaerythritol tetranitrate

PICA	Picatinny Arsenal Site
PRG	Preliminary Remediation Goals
RA	Response Action
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RDX	Cyclo-trimethylene trinitramine
RI	Remedial Investigation
ROD	Record of Decision
RSL	Regional Screening Level
SARA	Superfund Amendments and Reauthorization Act (1986)
SBPSWA	Small Basins and Ponds Surface Water Area
SHAW	Shaw Environmental
SI	Site Investigation
SLERA	Screening Level Ecological Risk Assessment
SQBs	Sediment Quality Benchmark
SVOC	Semivolatile Organic Compound
SWA	Surface Water Area
TBC	To-Be-Considered
TOC	Total Organic Carbon
TNT	Trinitrotoluene
TRV	Toxicity Reference Value
ug/L	Micrograms per Liter
U.S.	United States
USAEHA	U.S. Army Environmental Hygiene Agency
USATHAMA	U.S. Army Toxic and Hazardous Materials Agency
USEPA	United States Environmental Protection Agency

USFWS	U.S. Fish & Wildlife Service
USGS	United States Geological Survey
VOC	Volatile Organic Compound
WWI	World War I
WWII	World War II

Executive Summary

This report presents the methodology and results of a focused Feasibility Study (FS) conducted to address soil, sediment, and surface water contamination at the following three sites:

- Site 54/PICA 015 – Lake Denmark;
- Site 53/PICA 057 – Picatinny Lake; and
- Site 103/PICA 164 –Explosive Ordnance Demolition Pond (EOD Pond).

Site 54 (Lake Denmark) is an individual site that encompasses surface water, sediment, and soil surrounding the lake. Site 53 (Picatinny Lake) and Site 103 (EOD Pond), however, consist only of the surface water and sediments of the water bodies. The soils located around the perimeter of Picatinny Lake have been partitioned into 12 PICA/Sites. The soils at the perimeter sites are addressed through separate FSs, but the sediment and surface water samples collected within Picatinny Lake in association with these perimeter sites are integrated with the Site 53 evaluation in this FS. Similarly, the soils around the EOD Pond are addressed in two PICA/Sites that are addressed through separate FSs, but the sediment and surface water samples collected within the EOD Pond in association with these perimeter sites are integrated with the Site 103 evaluation in this FS. This FS was performed in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the substantive requirements of the New Jersey Technical requirements for Site Remediation.

A Human Health Risk Assessment (HHRA) and a Screening-Level Ecological Risk Assessment (SLERA) were developed for the sites during the Remedial Investigation (RI). The HHRA quantified potential risks and hazards associated with exposure to Chemicals of Potential Concern (COPCs) in soil, surface water, and sediment at each site. The SLERA quantified potential risks associated with terrestrial and aquatic wildlife exposure to Chemicals of Potential Ecological Concern (COPECs) in soil, sediment, and surface water. Depending on results of the SLERAs, Baseline Ecological Risk Assessments (BERAs) were also performed for some of the sites.

The HHRA for Picatinny Lake surface water and sediment was supplemented in 2009 because previous HHRA evaluations conducted at Picatinny Lake were conducted for individual sites around the perimeter of the lake on a site by site basis, rather than evaluating the lake as a whole. The reevaluation of Picatinny Lake as a whole was

conducted to more accurately assess the potential risks and hazards associated with recreational exposure to surface water and sediments. The holistic evaluation of Picatinny Lake accounts for the mobile behavior of recreational users of the lake (i.e., those participating in recreation activities, like fishing, are unlikely to remain solely at one site). The memorandum describing the supplemental evaluation of Picatinny Lake surface water and sediments is detailed in Appendix E. These risk assessments were again updated based on additional surface water and sediment data collected from Picatinny Lake in 2011 at the request of the New Jersey Department of Environmental Protection (NJDEP).

As part of the CERCLA investigations at Picatinny a separate site-wide study was conducted in 2004 to evaluate the potential risks and hazards associated with fish ingestion from the surface water bodies on the Installation. While fish tissue data were collected for individual water bodies, risk assessment calculations were performed on groupings of sites. Lake Denmark, Green Pond Brook, and Picatinny Lake were assessed as a group known as the Lakes and Brook Surface Water Area (LBSWA) since fish can easily migrate between these water bodies. Similarity, data from the EOD Pond was grouped with tissue data from Fishers Pond and, and the North and South Basins into one area called the Small Basins and Ponds Surface Water Area (SBPSWA). Although not all of these water bodies are interconnected, they are located in the same general vicinity, with similar surrounding land use and similar fishing pressure; therefore, even though fish cannot migrate between all of these water bodies, they are representative of similar conditions.

In each case, the risk assessments indicate the surface water bodies are suitable for unrestricted use with the exception of Land Use Controls for the ingestion of fish. The drivers for these Land Use Controls are mercury and polychlorinated biphenyls (PCBs) within fish tissue. Both of these chemicals drive similar fish advisories across the state and, while it remains unclear if the issue is site related, it is probable that it is a result of ubiquitous issues affecting fish throughout the state.

The risk assessment results for each lake are summarized below.

Lake Denmark: The results of the HHRA indicate that constituents in soil, sediment, and surface water at this site do not pose an unacceptable risk or hazard to human health under the current and reasonably anticipated future land-use scenarios (military/industrial and recreational). Specifically, potential risks to the industrial/research worker and on-site youth visitor (recreational) were within or lower than the United States Environmental Protection Agency (USEPA) generally acceptable risk range of 1E-4 to 1E-6, and hazard indices (HIs) were less than the

threshold of 1. In addition, the HHRA results indicate that soils data included in the site do not pose an unacceptable risk or hazard to human health under residential land use, although this is not an anticipated future use of this site. The results of the Phase III and I 2A/3A Ecological Risk Assessment (ERA) for this site as a whole indicated no significant adverse effects.

Picatinny Lake: The residential scenario is not relevant for this site because it only includes the water body itself and not surrounding soil. The most relevant scenario for unrestricted use is the on-site youth visitor (recreational) scenario, which was included in the evaluations for this site, as mentioned above. The results of the HHRA indicate that constituents in sediment, and surface water evaluated as a whole at Picatinny Lake do not pose an unacceptable risk or hazard to human health under the recreational scenario. Specifically, potential risks to the industrial/research worker, and on-site youth visitor (recreational) were within or lower than USEPA generally acceptable risk range of 1E-4 to 1E-6, and HIs were less than the threshold of 1. The results of the Phase II ERA for this site as a whole indicated no significant adverse effects.

EOD Pond: The residential scenario is also not relevant for this site because it only includes the water body itself and not surrounding soil. The most relevant scenario for unrestricted use is the on-site youth visitor (recreational) scenario, which was included in the evaluations for this site, as mentioned above. The results of the HHRA indicate that constituents in sediment, and surface water evaluated as a whole at the EOD Pond do not pose an unacceptable risk or hazard to human health under the recreational scenario. Specifically, potential risks to the on-site youth visitor (recreational) were within or lower than the USEPA generally acceptable risk range of 1E-4 to 1E-6, and HIs were less than the threshold of 1. The results of the Phase III ERA for this site as a whole indicated no significant adverse effects.

Site 63/65, Site 82, Site 108, and Site 113 were also re-sampled in November. The data collected from all of the November 2011 sites were used to reevaluate the HHRA and ERA, as discussed in Attachment 1 of the Results Letter included in Appendix D. The results of the HHRA and ERA reevaluations support the conclusions of the 2009 HHRA/ERA, which indicate that human and ecological risk are within the generally accepted risk range.

Based on the results of the remedial investigation and risk assessments, the proposed Remedial Action Objective (RAO) for Site 54/PICA 015 – Lake Denmark, Site 53/PICA 057 – Picatinny Lake; and Site 103/PICA 164 – EOD Pond is:

- Control consumption of fish with concentrations of chemical driving unacceptable risk or hazard.

Response Action (RA) evaluations for the exposure pathways driving unacceptable risk or hazard have been developed for these sites and are presented in this FS. Because of the limited exposure pathway only two RAs could be appropriately evaluated:

- Alternative-1 – No Action. No remedial action of any kind would be employed for any media. The no action alternative was evaluated to establish a baseline for comparison regarding future performance and risk against the remaining alternatives.

- Alternative-2 –Land Use Controls (LUCs). This alternative consists of maintaining administrative and institutional means to control consumption of fish within these surface water bodies. The proposed LUCs may include: governmental controls, proprietary controls, enforcement and permitting, signage, access controls, and informational devices.

Seven evaluation criteria were applied to compare the anticipated performance of each alternative against the remaining alternatives. The comparative analyses are designed to expose the strengths and weaknesses of each RA and provide a detailed basis for comparison and identification of the most likely candidate for implementation. The seven criteria include: 1) overall protection of human health and the environment; 2) compliance with applicable or relevant and appropriate requirements (ARARs); 3) long-term effectiveness and permanence; 4) reduction of toxicity, mobility, or volume of wastes; 5) short-term effectiveness; 6) implementability; and 7) cost. State and community acceptance will be evaluated in the Proposed Plan and documented in the Record of Decision (ROD).

For comparative purposes, ratings of poor, acceptable, good, or excellent were assigned to each of the evaluation criteria used in the analysis of the alternatives. Ratings were assigned based on a subjective appraisal of the degree to which each alternative met the criteria, and an overall score was determined for each alternative with Alternative 2 being rated the highest.

1. Introduction

ARCADIS U.S. Inc. (ARCADIS) has been retained by the U.S. Army Environmental Command to perform Installation Restoration Program (IRP) activities at Picatinny Arsenal, located in Morris County, New Jersey. This work is being conducted under a Performance Based Contract that encompasses 47 Picatinny Arsenal (PICA) sites. The full scope of services for this contract is defined in Contract W91ZLK-05-D-0015.

This document has been prepared pursuant to United States Environmental Protection Agency (USEPA) guidance (USEPA 1998) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) [40 Code of Federal Regulations (CFR) 300]; the National Environmental Policy Act of 1969; the President's Council on Environmental Quality regulations (40 CFR 1500 – 1508); and the substantive requirements of the New Jersey Department of Environmental Protection (NJDEP) guidance documents (NJDEP 1992 and 1997).

1.1 Purpose of Report

This report presents the methodology and results of a focused Feasibility Study (FS) conducted to address soil, sediment, and surface water contamination at these three sites containing surface water bodies:

- Site 54/PICA 015 – Lake Denmark;
- Site 53/PICA 057 – Picatinny Lake; and
- Site 103/PICA 164 – Reservoir near Building 3159/Explosive Ordnance Demolition Pond (EOD Pond).

Sites 54 (Lake Denmark) is an individual site that encompasses surface water, sediment, and soil surrounding the lake. Site 53 (Picatinny Lake) and Site 103 (EOD Pond), however, consist only of the surface water and sediments of the water bodies. The soils located around the perimeter of Picatinny Lake have been partitioned into 12 PICA/Sites. The soils at the perimeter sites are addressed through separate FSs and will be included in future Decision Documents, but the sediment and surface water samples collected within Picatinny Lake in association with these perimeter sites are integrated with the Site 53 evaluation in this FS. Similarly, the soils around the EOD

Pond are addressed in two PICA/Sites that are addressed through separate FSs, but the sediment and surface water samples collected within the EOD Pond in association with these perimeter sites are integrated with the Site 103 evaluation in this FS.

The purpose of the FS is to develop and evaluate remedial options to assist in the selection of an appropriate remedy for these three lake sites. This FS addresses environmental media through the completion of the following tasks:

- Development of a remedial action objective (RAO) for the specific contaminants, affected media, and exposure pathways;
- Identification of remedial technologies that, alone or in combination, can treat, contain, or dispose of contaminated media;
- Screening of the remedial technologies to eliminate those that are not able to be technically implemented;
- As required by CERCLA/SARA, assembly of the remedial technologies into RA alternatives which, to the maximum extent practicable, utilize permanent solutions and alternative technologies; and
- Performance of a detailed analysis of the remedial alternatives using the nine evaluation criteria listed in the NCP.

1.2 Report Organization

In addition to this introduction, this report is divided into eight sections as follows:

- Section 2 – Background: This section presents information regarding Picatinny Arsenal and individual site characteristics. The facility history, geology, topography, hydrogeology, surface water, and wetlands are discussed.
- Section 3 – Site Summaries: The site summary section provides information regarding the site characteristics, site description, and site history. The scope and results of previous environmental investigations are summarized, as are the evaluations of human health risk and ecological risk resulting from exposure to constituents present in these lake sites.

- Section 4 – Remedial Action Objectives: A Remedial Action Objective is identified and Applicable or Relevant and Appropriate Requirements (ARARs) are identified where applicable.

- Section 5 – Identification and Screening of Remedial Technologies: General Response Actions (GRAs) applicable to these lake sites are identified. These general response actions are broken down into technologies and process options, which are then screened based on ability to be implemented, effectiveness, and cost.

- Section 6 – Development of Response Action Alternatives: Remedial alternatives for the sites are developed by combining the remedial technologies that remain after screening.

- Section 7 – Detailed Evaluation of Response Actions: Using the seven criteria identified in the NCP [40 CFR 300.430(e)], a detailed evaluation of remedial alternatives is conducted.

- Section 8 – References: The references used to develop this report are provided.

2. Site Background

This section provides a summary of the history of Picatinny Arsenal and the environmental setting of the facility and sites.

2.1 Site Location and History

Picatinny Arsenal is a 5,853 -acre government-operated munitions research and development facility located in Morris County, New Jersey, approximately 40 miles west of New York City and 4 miles northeast of Dover, New Jersey. The Arsenal sits in the Highlands of the state of New Jersey. The site location is provided on Figure 2-1.

Picatinny Arsenal was established in 1880 by the United States (U.S.) War Department as a storage and powder depot. Later it was expanded to assemble powder charges for cannons and to fill projectiles with maximite (a propellant). During World War I (WWI), Picatinny Arsenal produced all sizes of projectiles. In the years following WWI, Picatinny Arsenal began projectile melt-loading operations and began to manufacture pyrotechnic signals and flares on a production basis. During World War II (WWII), Picatinny Arsenal produced artillery ammunition, bombs, high explosives, pyrotechnics, and other ordnance. After WWII, Picatinny Arsenal's primary role became the research and engineering of new ordnance. However, during the Korean and Vietnam conflicts, Picatinny Arsenal resumed the production and development of explosives, ammunition and mine systems.

In recent years, Picatinny Arsenal's mission has shifted to conducting and managing research development, life-cycle engineering, and support of other military weapons and weapon systems. The facility has responsibility for the research and development of armament items. The Base Realignment and Closure process in 2005 resulted in Picatinny being designated to remain open, and take on expansion in mission.

2.2 Geology and Topography

Picatinny lies within Green Pond Valley, a glaciated river valley bounded by Green Pond Mountain on the west, Green Pond and Copperas Mountains on the northwest, and an unnamed hill on the southeast. Elevations at Picatinny range from approximately 1,000 feet (ft) above mean sea level (msl) to 700 ft above msl at Green Pond Brook at the southern installation boundary. Green Pond Valley is filled with glacially-derived sediments surrounded and underlain by bedrock. The basement rocks are faulted by a series of northeast/southwest trending faults. Lake Denmark and

Picatinny Lake are fed by Green Pond Brook within the valley while the EOD Pond is on the southeasterly upland area.

2.3 Area of Feasibility Study

The sites addressed in the FS are located in Areas I, L, and O (see Figure 2-2), as designated in the Remedial Investigation (RI) Concept Plan (Argonne National Laboratory [ANL] 1991).

- Area I: Site 53/PICA 057 – Picatinny Lake;
- Area L: Site 103/PICA164 – EOD Pond; and
- Area O: Site 54/PICA 015 – Lake Denmark.

Area I is located at the approximate center of Picatinny and consists of Picatinny Lake and production and storage facilities located around the shore of the lake. Area L is located near the southeast border of the facility and consists of explosives manufacturing facilities. Area O is located in the northern section of Picatinny and primarily consists of Lake Denmark. Figure 2-2 presents the location of Areas I, L, and O. Figures 2-3 through 2-5 present the specific sites in Areas I, L, and O, respectively.

The Army maintains the Army Environmental Database - Restoration system [formerly the Defense Sites Environmental Restoration Tracking System] for organizing all of the sites in the IRP. In this database, the three sites covered in this FS are designated PICA 015 (Site 54) – Lake Denmark, PICA 057 (Site 53) – Picatinny Lake, and PICA 164 (Site 103) – EOD Pond.

2.3.1 Site Descriptions of PICA 015, 057, and 164

Area I: Operations in this area include explosives manufacturing, loading and storage, shell washout, and research and development. Area I encircles Picatinny Lake and the associated flood plain that is present in the main valley floor. The area is bounded to the northwest by Green Pond Mountain and to the southeast by the unnamed ridge. To both the northeast and southwest of the area, the main valley floor continues. Following regional topographic trends, the elevated ridges slope into the valley floor, and the valley floor then slopes gently to the southwest.

Area L: This area is located near the southeast border of the facility on the gently rising hillside and the unnamed ridge near the Mt. Hope entrance. Area L is bordered by the facility boundary to the southeast, Area F in Phase I to the northwest, and Areas I and K in Phase II to the north.

Area L consists of several different former explosives production, storage and testing areas and contains buildings in the 1000, 1300, 1400, and 3100 number series. The 1000 series buildings were associated with the production of high explosives; 1300 series buildings were associated with nitroglycerin production; 1400 series buildings predominantly supported propellant production; and 3100 series buildings were used for storage and testing of ordnance items.

Area O: This area includes a large area in the northern section of the facility and is primarily comprised of Lake Denmark, a man-made lake. Bordering Lake Denmark is an explosives storage area, undeveloped wetlands, and an off-post CERCLA site unrelated to the Army. The storage magazines in the 1200 Building area are the only development around Lake Denmark and have been used for at least 70 years to store explosive materials. Lake Denmark has also been used as an impact area for experimental mortar rounds and other explosive or pyrotechnic munitions.

2.3.2 Surface Water and Wetlands of PICA 015, 057, and 164

Area I: Surface water bodies in Area I, which include Picatinny Lake and Green Pond Brook, act as groundwater discharge areas and drain the installation. Picatinny Lake was formed by damming Green Pond Brook and has an approximate capacity of 165 million gallons of water. The primary tributary to Picatinny Lake is Green Pond Brook, which enters the lake from the north and exits from the south. This site is located in the 100-year floodplain as specified by the Federal Emergency Management Agency (FEMA).

Area L: Robinson Run, a tributary of Green Pond Brook, flows westward through the central portion of Area L and serves as the primary surface water discharge point in the central portion of Area L. Robinson Run originates from a spring/seep in a marshy headwaters area and proceeds in a westerly direction. An unnamed, intermittent tributary originating at Fisher's Pond feeds Robinson Run from the south. Additionally, the EOD Pond of Site 103/PICA 164 is located in Area L and has an approximate capacity of 16 million gallons of water. The pond was constructed in an undeveloped marsh area and is encased by a berm.

Area O: Lake Denmark is located in Area O and encompasses the majority of the area. Lake Denmark was man-made from a natural occurring marsh area, and it is the largest water body at Picatinny Arsenal with an approximate capacity of 331 million gallons of water with an average depth of 6 to 7 feet. Lake Denmark is fed by Burnt Meadow Brook and discharges into Green Pond Brook. A large wetlands marsh still borders the northern side of the Lake. Lake Denmark serves as drainage for the runoff from the surrounding areas. Gravel Dam Cove located directly south of Lake Demark is also located in Area O.

Site 54/PICA 015 is located in a wetland specified by the National Wetlands Inventory (NWI) and within the 100-year floodplain.

3. Site Summaries: PICA 015, 057, and 164

This section summarizes the operational history, previous investigations, nature and extent of contamination, and risk assessment results for each of the three sites addressed in this FS. Historical data for these sites is included in Appendix A. Current and anticipated future land use of these sites is military/industrial and recreational.

For soils, the NJDEP Non-Residential Soil Remediation Standards (NRSRS) were used as the level of concern (LOC) for preliminary screening criteria. In the absence of state criteria, the USEPA Industrial Regional Screening Levels (IRSLs) were used as screening criteria.

For sediments, the LOC was selected as the lower of the Interim Sediment Quality Guideline (ISQGs), NY Sediment Criteria, and Sediment Quality Benchmark (SQBs). In the absence of the aforementioned guidance values, the ER-Ls from NJDEP were used. If there were also no ER-Ls, the lower of IRSL and NRSRS were selected for the preliminary screening criteria. If the Picatinny-specific background value was higher than the selected guidance criteria, the background value was selected as the screening criteria.

For surface water, the promulgated New Jersey Surface Water Quality Criteria were selected as the LOC for preliminary screening criteria. If state criteria were absent, the USEPA Water Quality Criteria were selected as LOCs. Only in the absence of water quality criteria was the USEPA Tap Water (1E-06) RSL selected as the LOC. If the Picatinny-specific background value was higher than the selected guidance criteria, the background value was selected as the screening criteria.

The criteria considered during development of soil, sediment, and surface water LOCs are summarized in Appendix B.

3.1 Site 54/PICA 015 – Lake Denmark

3.1.1 Site History

Site 54 consists of Lake Denmark, a man-made lake located in the northeastern portion of Picatinny Arsenal. The lake was created by damming a naturally occurring marsh in the early 1900s. The lake has a surface area of approximately 174 acres and a storage capacity of approximately 331 million gallons with an average depth of 6 to 7 ft. Burnt Meadow Brook and a large wetland marsh located at its northern border feed

Lake Denmark. The outfall from the lake flows into Burnt Meadow Brook, which flows into Green Pond Brook, and then discharges to Picatinny Lake. The northern portion of Lake Denmark consists of marsh and wetlands. Gravel Dam Cove is located directly south of Lake Denmark and is also included as part of Site 54. The site layout is shown on Figure 3-1.

The Lake Denmark watershed encompasses approximately 2,600 acres. Because the majority of the land surrounding Lake Denmark is undeveloped, most of the drainage into the lake consists of overland runoff and streams. The developed areas contributing to the runoff to the lake include the Radiation Technology area, a National Priorities List (NPL) site, and residential homes. The Radiation Technology area is located on the northeast shore of the lake, and its historical operations included rocket engine testing, propellant loading, and machine shop-related activities.

Historical activities at Picatinny have generally occurred near the southern, open-water area of Lake Denmark. Storage magazines in the 1200 Area have been used for more than 70 years to store explosive materials. A 1947 Division of Engineering and Housing (DEH) engineering drawing indicated that a 20-millmeter (mm) Rifle Testing Range was located across Lake Denmark. The firing point of the range was located on the southwestern side of the lake near the area currently used as a softball field. The impact area was approximately 5,300 ft across the lake on the northeastern side just northeast of Magazine 1211. In 1926, a building explosion located near Lake Denmark (hence forth referred to as the Lake Denmark Explosion) scattered unexploded munitions about the surrounding area and into the lake (ANL 1991). Historically, the lake has been used as an impact area for experimental mortar rounds and other explosive or pyrotechnic munitions; however, this is no longer the case.

There are no tanks or bulk storage areas associated with Lake Denmark. A fill/excavation area was identified through aerial photographs along the west side of Lake Denmark. This fill/excavation area existed from 1951 until 1987.

The DEH Land Management Division and the Morale Support Activity currently manage Lake Denmark as a recreational resource. Despite the potential presence of Munitions or Explosives of Concern (MEC) in the lake (to be addressed by separate CERCLA decision documents under the Military Munitions Response Program (MMRP), the lake is accessible for various recreational activities, which are specified in the Recreational Hunting, Trapping, Fishing, and Boating document (Regulation 200-3 dated August 2006). Fishing is allowed from the Lake Denmark shore (except for the western bank), by boat, or, if seasonal conditions allow, fishing can be conducted from

the ice. Fish consumption is restricted for various fish species at Lake Denmark due to a state-wide fishing advisory (NJDEP 2009), which is a result of mercury and polychlorinated biphenyl (PCB) contamination throughout the state. The fishing advisory is not believed to be associated with site impacts at Lake Denmark although institutional controls (IC's) may be implemented under the CERCLA program. Both gasoline-powered boats and non-motorized boats are allowed on Lake Denmark, but speeds of gasoline-powered boats are limited such that wake generation is not permitted. Boats may be launched from permissible areas, but boat launches are not limited to ramps/docks. No swimming or sail boarding is allowed in Lake Denmark. Although wading in Lake Denmark is not specifically mentioned, the recreational manager indicates that wading would be covered by the no swimming regulation.

A review of the Master Plan indicates that there are no future construction or development plans for Lake Denmark.

3.1.2 Previous Investigations

Seven environmental investigations were conducted at Site 54/PICA 015 – Lake Denmark from 1976 to 2001.

In 1976 and 1981, surface water samples from the outfall of Lake Denmark were collected and analyzed for volatile organic compounds (VOCs) and dissolved mineral matter. In 1985, another surface water sample was collected from the Lake Denmark outfall and analyzed for pesticides/PCBs.

The USEPA conducted an interpretation of the Picatinny Arsenal aerial photograph as part of the Environmental Photographic Interpretation Center (EPIC) report and indicated that a fill/excavation area was located along the west side of Lake Denmark from 1951 until 1987.

An RI/FS was conducted in the area known as Rockaway Industrial Park to investigate contamination related to the Radiation Technology operations (Acres International Corporation [AIC] 1991). As part of this investigation, five sediment samples (SD-24 through SD-28) were collected inside Lake Denmark to assess the potential for migration of contaminants from the Radiation Technology to the Lake (AIC 1993). Samples were collected in July 1992 and were analyzed for VOCs, Freon 11, and Freon 113.

A Preliminary Assessment /Site Inspection (PA/SI) was conducted in 1996 at Lake Denmark (ICF Kaiser Engineers, Inc. [ICFKE] 1996). Four surface soil samples (LDENSS-A through D), four surface water samples (LDENSW-A trough D), and four sediment samples (LDENSD-A through D) were collected and analyzed for VOCs, semivolatile organic compounds (SVOCs), explosives, pesticide/PCBs, anions, and metals. Surface soil samples were collected in the gunmount area and the impact area of the 20 mm Rifle Testing Range and on the western shore of Lake Denmark in the fill/excavation area, located in the vicinity of the soft ball field located north of Gravel Dam Cove. Soil samples were collected at various locations near the lake. Sample LDENSS-A was collected from the softball field, which is located on the peninsula created by Lake Denmark and the Gravel Dam Cove at the southwestern portion of Lake Denmark. Samples LDENSS-B to LDENSS-D are located along the northwestern side of Lake Denmark. Surface water and sediment samples were collected along the western shore of Lake Denmark where dumping or firing of munitions reportedly occurred, and along the eastern shore of Lake Denmark near the Radiation Technology site.

As part of the Picatinny Facility-Wide Background Investigation, (IT Corporation [IT] 2000a), three surface soil samples (BKGSS-01A, 41A, and 42A), one surface water sample (BKGSW-09), and one sediment sample (BKGSD-09) were collected upgradient of Lake Denmark. All samples were analyzed for metals, inorganic anions, and radiological constituents. A co-located background sediment/surface water sample (SWBG-26) was previously collected at the northern side of the lake in 1993 and was analyzed for VOCs, SVOCs, explosives, inorganic, PCBs, anions, and pesticides.

As part of the Phase III-1A RI activities, a geophysical survey and sampling program were conducted at Lake Denmark. A SLERA was performed at Site 54/PICA 015 – Lake Denmark (IT 2001). The geophysical survey was performed in order to determine the presence of large ferrous anomalies that would be indicative of the possible presence of large quantities of MEC within Lake Denmark and Gravel Dam Cove. A large number of anomalies were detected. Two areas within Lake Denmark and one within Gravel Dam cove were interpreted as possible metallic deposits. Many of the anomalies present within Lake Denmark were linear features located along the 20 mm firing line. The majority of these anomalies were attributed to the geologic formations that run in a northeastern-southwestern direction throughout the region, though metallic deposits might be present that are being masked by regional geologic conditions.

The Phase III-1A sampling program was conducted in 1998, 1999, and 2001. The sampling program consisted of collection of 43 sediment samples (SD-001 through

043), 7 surface water samples (SW-001 through 004 and SW-041 through 043) and four surface soil samples (SS-001 through 4) Shaw Environmental [Shaw] 2005a). Surface water and sediment samples were analyzed for VOCs, SVOCs, explosives, and metals. These soil samples were only analyzed for arsenic. A total of 4 surface water samples and 15 of the sediment samples collected during this phase were biased to the locations of the geophysical anomalies. Three sediment samples were collected in the marshy area along the northwestern bank, another sediment sample was collected in the area where beryllium contamination was previously identified, and the remaining samples were collected in different locations distributed throughout the lake. Sediment samples collected in the vicinity of anomalies identified by the survey indicated no contamination was attributed to either of these anomalies or to the former firing line.

Site 54/PICA 015 – Lake Denmark was included in the Indiana Bat Ecological Risk Assessment (Shaw 2003a). Nine insect tissues were collected in 2001 in the Lake Denmark area as part of this investigation. Samples were analyzed for pesticides, PCBs, mercury, and general chemistry (lipids and percentage solids).

In 2004 a study was conducted at the surface water bodies at Picatinny to evaluate the potential risks and hazards associated with fish ingestion. While fish tissue data were collected for individual water bodies, including Lake Denmark, fish tissue data collected from Picatinny Lake, Lake Denmark, and Green Pond Brook were combined into one area called the Lakes and Brook Surface Water Area (LBSWA). Lake Denmark is the most upgradient of these three interconnected water bodies. Because they are interconnected, it is anticipated that fish can migrate between these water bodies, which supports evaluating risks/hazards for these water bodies as a group. The data from the LBSWA were used to evaluate potential risks and derive species-specific Exposure Point Concentrations (EPCs) for these water bodies.

3.1.3 Nature and Extent of Contamination

The analytical data available in the Picatinny database are included in Appendix A. Figure 3-2 and 3-3 depicts the location and concentrations where one or more constituent exceeded a sediment or surface water LOC, respectively.

3.1.3.1 Surface Soil

No constituents were detected at concentrations greater than their respective LOCs in surface soils.

3.1.3.2 Sediment

A total of 53 sediment samples have been collected at Site 54/PICA 015 – Lake Denmark. VOCs, SVOCs, and metals were detected at concentrations exceeding the LOCs. Six VOCs were detected at concentrations greater than the LOCs. The most common VOC detected was acetone, which exceeded the LOC (0.0087 milligram per kilogram (mg/kg)) in sixteen samples with a maximum concentration of 1.60 mg/kg at 54-SD-1, which was collected in the western side of the lake. 2-Butanone was detected at concentrations greater than the LOC (0.27 mg/kg) in four samples; three of the samples were collected in the southwestern side of the lake. The maximum concentration of 0.82 mg/kg was detected at 54-SD-004. Carbon disulfide was detected at concentrations exceeding the LOC (0.00065 mg/kg) in three sediment samples mainly located at the northern side of the lake with a maximum concentration of 3.1 mg/kg (54-SD-043). The maximum concentrations for the remaining three VOCs were 0.43 mg/kg cis-1,2-dichloroethene (LOC = 0.4 mg/kg) at 54-SD-034, 0.27 mg/kg trichloroethene (LOC = 0.22 mg/kg) at 54-SD-034, and 0.58 mg/kg toluene (LOC = 0.05 mg/kg) at locations 54-SD-034 and 54-SD-043. The Radiation Technology facility, an NPL Site, may be a potential source for these VOC constituents as this facility had improperly stored and disposed of waste drums containing solvents and other organic chemicals.

Acetone and 2-butanone were detected in many of the samples collected. However, both of these compounds are common laboratory contaminants. As previously described, Lake Denmark is predominantly upstream from other Picatinny Sites, largely undeveloped, and there is no documentation to indicate that laboratory or laboratory waste storage activities have occurred in this area. Therefore, it is likely that the detection of these constituents is not indicative of an environmental impact related to activities at Picatinny.

A total of nine SVOCs exceeded the LOCs, and the maximum concentrations for eight of these constituents were detected at 54-SD-002: 0.28 mg/kg benzo(a)anthracene (LOC = 0.0317 mg/kg), 0.33 mg/kg benzo(a)pyrene (LOC = 0.0319 mg/kg), 0.41 mg/kg benzo(b)fluoranthene (LOC = 0.0272 mg/kg), 0.44 mg/kg benzo(k)fluoranthene (LOC = 0.0272 mg/kg), 0.47 mg/kg chrysene (LOC = 0.0571 mg/kg , 0.88 mg/kg fluoranthene (LOC = 0.06423 mg/kg), 0.58 mg/kg phenanthrene (LOC = 0.0419 mg/kg), and 0.65 mg/kg pyrene (LOC = 0.0530 mg/kg). The maximum concentration for bis (2-ethylhexyl) phthalate (LOC = 2 mg/kg) was 7.88 mg/kg at 54-SD-023. Semivolatile Organic Compound impacts are generally limited to sample 54-SD-002, which is located on the southwest portion of Lake Denmark along the shoreline.

Nine metals were detected at concentrations greater than their respective LOCs throughout the lake sediments: arsenic, cadmium, chromium, copper, lead, manganese, mercury, silver, and zinc. Lead was the most common metal observed exceeding the LOC (LOC = 38.8 mg/kg) in twelve sediment samples. The distribution of lead does not correlate to any specific geographical location. There is no discernible pattern of lead within Lake Denmark sediments. The maximum concentration of lead (210 mg/kg) was detected at 54-SD-030.

The remaining metals are concentrated primarily within three locations at Lake Denmark: (1) north of Gravel Cove Dam, (2) east of the 12th Avenue bridge, and (3) east of Pilot road in the marsh area. Copper was detected exceeding the LOC (LOC = 28 mg/kg) in seven sediment samples with a maximum concentration of 175 mg/kg detected at 54-SD-006. The maximum concentrations observed for the remaining metals were 17.50 mg/kg arsenic (LOC = 16 mg/kg) at 54-SD-001, 3.37 mg/kg cadmium (LOC = 1.70 mg/kg) at 54-SD-002, 138 mg/kg chromium (LOC = 37.3 mg/kg at 54-SD-009, 3640 mg/kg manganese (LOC = 1,673 mg/kg) at 54-SD-030, 1.5 mg/kg mercury (LOC = 0.249 mg/kg) at 54-SD-006, 1.19 mg/kg silver (LOC = 1 mg/kg) 54-SD-002), and 661 mg/kg zinc (LOC = 171 mg/kg) at 54-SD-030.

Three pesticides were observed exceeding the LOCs in the background sediment sample (SDBG-26) collected at the northern side of the lake: 0.02 mg/kg 4, 4'-dichlorodiphenyldichloroethane (DDD) (LOC = 0.00354 mg/kg), 0.01 mg/kg endosulfan sulfate (LOC = 0.0003 mg/kg), and 0.01 mg/kg endrin ketone (LOC = 0.00267 mg/kg).

3.1.3.3 Surface Water

Twelve surface water samples have been collected at Lake Denmark. Four sample locations contained concentrations of metals slightly exceeding their LOCs in surface water: aluminum (2 sample locations) and mercury (2 sample locations). The maximum concentrations detected were 400 micrograms per liter (ug/L) aluminum (LOC = 190 ug/L) at O-54-SW-041 and 0.11 ug/L mercury (LOC = 0.05 ug/L) at O-54SW-043.

Four pesticides were observed exceeding the LOCs in the background sample (SWBG-26) collected at the northern portion of the lake: 0.56 ug/L alpha-benzenehexachloride (BHC), (LOC = 0.0026 ug/L), 0.73 ug/L delta-BHC (LOC = 0.0091 ug/L), 0.35 ug/L endosulfan I (LOC = 0.056 ug/L), and 0.31 ug/L endrin ketone (LOC = 0.036 ug/L). This sample is located near the shoreline on the northwest corner of the lake within the marshy area. The other surface water samples that were analyzed for

pesticides did not exceed the pesticide LOCs, which would indicate that pesticides are not problematic throughout the lake.

There were no exceedences of VOCs, SVOCs, polynuclear (or polycyclic) aromatic hydrocarbons (PAHs), PCBs, or explosives LOCs in the surface water of Lake Denmark. The sample results of Lake Denmark suggest that anthropogenic impacts due to site activities at Picatinny Arsenal are minimal. Overall water quality in Lake Denmark is good.

3.1.4 MEC Survey

Upon review of regional geologic maps and individual magnetic profile data, there may be three possible significant geophysical anomalies in the lake, possibly indicative of MEC. These locations are shown on Figure 3-4, and are not located along the line of fire from the former 20 mm Rifle Range. Issues related purely to MEC within the lake are being handled under the MMRP.

3.1.5 Summary of Risk Assessments

3.1.5.1 Human Health

A Human Health Risk Assessment (HHRA) was completed for receptors and provided previously in the Phase III-1A RI Report – Area O (Shaw 2005b). The results of the HHRA for the site are summarized Table 3-1.

Arsenic in surface soil was identified as the primary chemical contributing to the risk for the industrial research worker scenario; however, arsenic concentrations are less than the LOC, and the resulting risk is within the generally acceptable risk range. Similarly, arsenic was identified as the primary chemical contributing to the risk for the On-site Youth Visitor exposure scenario, but again, there were no samples exceeding the LOC, and the resulting risk is within the generally acceptable risk range.

Human health risks under current and reasonably anticipated future use scenarios are:

- Current and Future Industrial/Research Worker exposure to surface soil (from soil samples collected along western shore of Lake Denmark): potential carcinogenic risk of 1E-5/ noncarcinogenic HI of <1.

- Current and Future On-site Youth Visitor (recreational) with potential exposure to sediment and surface water: potential carcinogenic risk of 2 E-6/ noncarcinogenic HI of <1.

Additionally, human health risks were calculated for use residential scenarios which are not expected in the future:

- Current and Future Adult Resident with potential exposure to surface soil, sediment, and surface water: potential carcinogenic risk of 6E-5/ noncarcinogenic HI of <1.

- Current and Future Child Resident with potential exposure to surface soil, sediment, and surface water: potential carcinogenic risk of 4E-5/ noncarcinogenic HI of <1.

- Current and Future Adult+Child Resident with potential exposure to surface soil, sediment, and surface water: potential carcinogenic risk of 8E-5.

Human health risk assessment from fish consumption evaluated by Shaw in 2004 for the LBSWA were used to evaluate potential risks and derive species-specific EPCs for these water bodies. The EPCs were then used to estimate exposures associated with the following pathways:

- Consumption of fish by current and future on-site Army personnel and/or local retired Army personnel;

- Consumption of fish by current and future children of on-site Army personnel and/or local retired Army personnel; and

- Consumption of fish by future adult and child residents (hypothetical receptor).

The LBSWA results indicated that the potential cancer risks for the current use receptors were within the generally acceptable risk range while some of the noncancer hazards were greater than 1. As shown in Table 3-2, the noncancer hazards that exceeded 1 did so primarily due to the presence of mercury, with some contribution from PCBs in yellow perch.

Results were the same for the hypothetical future resident who could consume fish from these water bodies. Mercury was a hazard driver in four species, with additional

contribution to noncancer hazards in largemouth bass and yellow perch by PCBs (Aroclor 1254), which for both species had a hazard index (HI) of 1.

Of the water bodies in the LBSWA group, the Lake Denmark fish tissue concentrations were the lowest of the group. However, although some Lake Denmark fish exceeded the mercury LOC, mercury is not found in high concentrations in Lake Denmark sediments or surface water. While Picatinny Lake had the highest fish tissue concentrations of the LBSWA group the interconnectedness of the LBSWA water bodies and mobility of the fish would indicate that these water bodies are best evaluated together. Additionally, data from the background fish tissue samples indicate little difference between tissues collected on-site and those of the off-site background data-set.

Alternative 2 evaluates formalizing these advisories as CERCLA IC's.

3.1.5.2 Lead Blood Model Results

Blood lead concentrations were not estimated as part of the RI report as lead was not identified as a COPC in soil, sediment, or surface water at this site.

3.1.5.3 Ecological

The SLERA for Lake Denmark (IT 2001) indicated that potential ecological risks from COPECs were minimal. The receptors evaluated in the SLERA include aquatic biota (represented by the fish and aquatic invertebrate community), benthic biota (represented by the benthic macroinvertebrate community), semi-aquatic wildlife (represented by great blue heron and mink), and the Indiana bat. The available evidence for each of these receptors at Lake Denmark is summarized in Table 3-3 and briefly discussed below.

3.1.5.4 Aquatic Biota

Potential risks to fish and aquatic invertebrates at Lake Denmark were evaluated by comparing measured surface water concentrations to LOCs, which represent the lowest applicable screening levels in surface water based on protection of freshwater aquatic life. Only three constituents exceeded their respective LOC: aluminum, barium, and lead. The LOC for barium is 4 µg/L (Suter and Tsao 1996) while measured concentrations ranged from 10.6 to 13.1 µg/L with an average of 11.35 µg/L. However, there are studies indicating that most effects occur at higher concentrations. Similarly,

the LOC for aluminum (87 µg/L) is based on tests in water with very low hardness. The majority of data for aluminum show no effects at much higher concentrations in harder waters. Lead was detected in only two surface water samples, the highest of which was approximately 10 times the LOC. However, the surface water samples were analyzed for total lead, while the LOC is based on dissolved concentrations of lead, which are more bioavailable than total lead. In summary, significant adverse effects to aquatic biota are not expected due to the constituents measured in surface water.

Lake Denmark was surveyed by the US Fish and Wildlife Service (USFWS), which reported that Lake Denmark contained a warm water fish population typical of the region. Recruitment of largemouth bass and sunfish in Lake Denmark was reported as poor. However, the report notes that this may be due to competition with other species and the abundant vegetation, which provides cover for forage fish, which may also have interfered with fish collection. It should be noted that these fish community surveys were not specifically designed for the purpose of determining either the potential for adverse effects or establishing causality of observed differences. Overall, the results of the qualitative fish assessment did not indicate that overt adverse effects were occurring.

Based on the weight of evidence, constituents in surface water do not appear to pose a significant risk to aquatic biota in Lake Denmark. The limited exceedences of conservative surface water LOCs are not indicative of significant effects on the Lake Denmark aquatic community.

3.1.5.5 Benthic Biota

Risks to benthic biota were evaluated by comparison of sediment concentrations to conservative screening values (i.e., LOCs) recommended at the time the assessment was conducted. It should be noted that the LOC values have been modified since 2001 when the SLERA was completed. Using the values recommended in 2001 the SLERA reported that, arsenic, antimony, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, silver, and zinc exceed their LOCs in at least one sediment sample. However, although some of these inorganic COPECs are associated with historical activities at several sites bordering the lake, their concentrations were low with respect to their existing LOCs and many were comparable to background levels. In addition, average concentrations of all COPECs were below the LOCs, except for copper and mercury, which only exceeded their respective LOCs slightly. Based on this assessment the SLERA concluded that while there was the potential for risk in isolated

areas, overall risk to benthic invertebrates in Lake Denmark is low. Using the current LOCs, there are even fewer exceedences, further supporting this conclusion.

The results of the screening comparison were corroborated by the benthic macroinvertebrate survey results for Lake Denmark. Although it must be noted that the surveys were not designed to determine the potential for adverse effects or to establish causality of observed differences in the benthic community, the results of the surveys indicate that the diversity of aquatic insects at Lake Denmark is high. Specifically, there are reported to be 94 species of *Odonata sp.* (damselflies and dragonflies), usually considered sensitive species, which indicates that the sediment and water quality at Lake Denmark is unimpaired.

Based on the weight of evidence, constituents in sediment do not appear to pose widespread risks to the Lake Denmark benthic invertebrate community. Relatively low exceedence of conservative screening values combined with evidence of high diversity and the presence of pollution sensitive species supports the conclusion that risks to the benthic community in the Lake are low.

3.1.5.6 Semi-Aquatic Wildlife

Based on the results of the food chain analysis, there appears to be little potential risk to birds and mammals foraging in Lake Denmark. Fish tissue data are available for Lake Denmark. A total of six samples (plus one duplicate sample) were analyzed. These samples were composite samples, of harvestable and legal size, consisting of the following numbers of fish in each composite sample analyzed:

- black crappie - 1 composite of 2 fish
- largemouth bass - 1 composite of 3 fish
- largemouth bass – 1 composite of two fish
- brown bullhead - 1 composite of 3 fish
- brown bullhead – 1 composite of 2 fish
- carp – 1 composite 2 fish

According to the Fish Consumption Human Health Risk Assessment Report (Shaw 2004), the fish collected from Lake Denmark were combined with the fish obtained from Picatinny Lake and Green Pond Brook to derive the species-specific exposure point concentrations for the “Lakes and Brook Area”. This was done because the water bodies are interconnected and it was stated that the fish would move among the three water bodies. Thus results are not provided separately for each water body.

Concentrations in prey were modeled using bioaccumulation factors and measured concentrations in sediment and water. Note that this approach increases the uncertainty associated with the modeled food chain results. However, the use of conservative assumptions in this modeling is expected to result in over-estimates of the potential risk.

For the great blue heron, results of the food chain analysis indicated that only one constituent, bis(2-ethylhexyl)phthalate, exceeded the toxicity reference value (TRV). However, bis(2-ethylhexyl)phthalate was detected in only 1 of 42 sediment samples, and it is a common laboratory contaminant. Therefore, exposure to bis(2-ethylhexyl)phthalate is very limited, and it is unlikely that bis(2-ethylhexyl)phthalate would result in adverse effects to birds foraging in Lake Denmark.

For the mink, results of the food chain analysis for typical exposures indicated that aluminum and bis(2-ethylhexyl)phthalate were the only constituents that exceeded the TRVs. As discussed above, bis(2-ethylhexyl)phthalate was detected in only 1 of 42 sediment samples; therefore, it is unlikely that bis(2-ethylhexyl)phthalate would result in adverse effects. The modeled risks of aluminum to mink are driven by the estimated incidental ingestion of sediment, rather than by elevated concentrations in prey. Aluminum in sediment will be much less bioavailable than aluminum in fish tissue. Therefore, modeled risks to mink are likely over-estimated.

These results suggest that significant adverse effects are not expected for carnivorous birds and mammals at Lake Denmark.

3.1.5.7 Conclusions of Ecological Risk Assessment

Based on the information presented in the SLERA and summarized above, the BERA for the Phase III and Phase I 2A/3A sites (Shaw 2006) concluded overall risks to ecological receptors associated with Lake Denmark were low and that a full baseline ecological risk assessment was not warranted for Lake Denmark.

3.1.5.8 Indiana Bat

A summer roost for the Indiana bat, a federally-endangered species has been documented at the Picatinny arsenal and therefore it is likely that this species forages on-site. Therefore, a BERA was specifically prepared to evaluate risks to the Indiana bat from exposures to site-related contaminants. This assessment was not related to a specific location or area, but rather dietary exposure for this species were estimated based on surface water data and tissue concentrations measured in emergent insects (e.g., Caddis flies) collected from a number of water-bodies at the site, including Lake Denmark. Based on these data, the study concluded that no adverse effects to the bats were expected to result from site conditions at Picatinny (Shaw 2003a).

3.1.5.9 Summary of Site Risks

Based on the risk assessments performed for this site for current and reasonably anticipated future use:

- The potential risk is within the USEPA target range of 1E-4 to 1E-6 for industrial/research worker, and the noncancer hazard is less than the threshold of 1;

- The potential risk is within the USEPA target range of 1E-4 to 1E-6 for the on-site youth visitor (recreational) and the noncancer hazard is less than the threshold of 1;

- The fish consumption HI is greater than the threshold of 1. Restrictions stated within the Recreational Hunting, Trapping, Fishing, and Boating document (2006) on the consumption of fish are consistent with the state-wide fish consumption advisory due to mercury and PCB impacts;

- Lead was not identified as a COPC at this Site; and

- Based on the weight of evidence evaluated, potential risks to ecological communities are unlikely at this site.

Overall site risks and hazards are within the acceptable range for current military/industrial and recreational scenarios, as well as residential scenarios, as described in Section 3.1.5.1. The fish consumption HI is greater than the threshold of 1, which is consistent with state-wide fish consumption advisories.

3.2 Site 53/PICA 057 – Picatinny Lake

3.2.1 Site History

Picatinny Lake, which is located approximately in the center of Picatinny Arsenal, was formed in the 1880s by damming up Green Pond Brook. The lake has a surface area of approximately 108 acres and a storage capacity of approximately 165 million gallons with a maximum depth of 15 ft. Water flows into the lake from Lake Denmark and through Green Pond Brook. Water flows out of the lake over a spillway into Green Pond Brook. The site layout is shown on Figure 3-5.

Many active, inactive, and demolished buildings surround Picatinny Lake. Surrounding land use includes propellant and munitions research and development, production, and storage; steam and electric power generation (Building 506); chemical laboratories and a betatron and x-ray laboratory (Building 908). Previous land use includes smokeless powder production and testing and abandoned munitions production buildings, such as Building 920 that was used to store lead azide and pentaerythritol tetranitrate (PETN); Buildings 527 and 561 that housed a blender operation; and Buildings 823 and 824, which housed operations for the reclamation of explosive scrap waste and the screening of explosives. The majority of the 500 Area Buildings around the lake have been demolished.

Historically, water from Picatinny Lake has been used for many operations. To supplement Picatinny Arsenal drinking water supply, a 6-inch pipe leads from the lake near Building 506 to Building 3013, which housed five pumps with a total pumping capability of 7,480 gallons per minute. Also, water was pumped to storage tanks and reservoirs located above the lake for use in the lower portion of Picatinny. Water from Picatinny Lake is no longer used as a potable source. Lake water was also used for industrial and fire-fighting uses, including non-contact cooling water for the power plant, which has been demolished. All historical industrial discharges to Picatinny Lake have now been diverted to the Picatinny Arsenal sewer system or the Rockaway Valley Regional Sewer Authority wastewater treatment plant.

Reportedly, Picatinny Lake may have been used as an impact area for experimental mortar rounds and other explosives or pyrotechnic munitions; underwater storage for smokeless powder, standard ammunition boxes, and explosives; and as a disposal location. Although there are no documents available to substantiate this information, it is likely that Picatinny Lake contains munitions, unexploded ordnance, explosives, and other objects resulting from Picatinny operations. The types and quantity of munitions

that may have been fired, or may have fallen, into the lake are not recorded or quantified.

In addition, from WWII through the 1970s, pyrotechnics were tested on Whiley's Island, also known as Flare Island, near the southwestern shore of Picatinny Lake and near Building 717 (PICA 143/Site 108). Pyrotechnics were tested in this undeveloped area to reduce the potential of fire. During pyrotechnic tests, the burned material was carried by the wind and possibly deposited into the lake.

There have been several incidents near Picatinny Lake that may have also caused contamination and spread ordnance into the lake. Some of these events include the 1926 explosion in Building 521, frequent explosive-related accidents in Building 800, located on the southwestern portion of the lake, and an oil spill of 5,500 gallons of No. 6 Fuel Oil near Building 506 (ANL 1991). MEC issues will be addressed in future CERCLA decision documents under the MMRP.

The DEH Land Management Division and the Morale Support Activity currently manage Picatinny Lake as a recreational resource. Despite the potential presence of MEC in the lake, the lake is accessible for various recreational activities, which are specified in the Recreational Hunting, Trapping, Fishing, and Boating document (Regulation 200-3 dated August 2006). Fishing is allowed from the lake shore (except certain areas, which are restricted due to site activities, such as near propellant mixing buildings), by boat, or, if seasonal conditions allow, fishing can be conducted from the ice. Due to state-wide mercury, PCB, and dioxin contamination, a fishing advisory is in place to control consumption of Picatinny Lake fish. Both gasoline-powered boats and nonmotorized boats are allowed on the lake, but speeds of gasoline-powered boats are limited such that wake generation is not permitted. Under the existing program, boats may be launched from permissible areas, which are not limited to ramps/docks. No swimming or sail boarding is allowed in Picatinny Lake.

Historical releases and discharges from buildings located near Picatinny Lake have also contributed to debris or potential contamination in the lake. Former permitted, discharges to Picatinny Lake include:

- From 1985 until 1988, permitted discharges occurred from Building 809 at Site 40 (PICA 079). These were associated with wastewater generated from cleaning explosive materials. Although there was a treatment plant at this location, untreated and explosive-contaminated water may have periodically been discharged form Site 40 via several pipes into the lake.

- From 1985 until 1988, permitted discharges occurred from Building 506 (the former Power Plant) and included boiler blown-down, storm water from roof drain downspouts, surface runoff, and non-contract cooling water. The Power Plant has been demolished and these discharges have ceased.

- Storm water from roof drain downspouts and surface runoff.

- Discharge from Buildings 823, 824, and cooling water from Building 920.

Former non-permitted releases and discharges from buildings located near Picatinny Lake include:

- Debris from the 1926 Lake Denmark Explosion, including (reportedly) a portion of Building 527 which originally housed a printing plant (ANL 1991).

- Plumbing items and other solid waste disposed of by maintenance personnel from the 1940s to the 1980s.

- Photo-processing chemicals from sinks and drains located in Building 722, which discharged directly to the lake. This building was also used for flare testing, and the flare tunnel ash cleanout trench discharged via the same pipe. These discharges ceased in the mid-1980s.

- Nitrocellulose from the Guncotton Line (PICA 006/Site 16) may have flowed inadvertently to Picatinny Lake in the vicinity of Building 506.

- Ordinance and explosives may have been dispersed to the lake during up to four explosive related accidents in the back room of Building 800 (PICA 079/Site 93).

- A 1981 fuel oil spill occurred near Building 506 (PICA 057/Site 63/65) and migrated into the lake and nearby sewage drains. A floating boom was installed at the southwest corner of the lake to prevent oil from entering the main portion of the lake from the sewage drain discharge.

- A sump located in Building 506 may have received byproducts of burnt waste oil and reportedly drained to Picatinny Lake. The sump was sampled and contained 13 to 18 parts per million of PCBs.

- Untreated explosive-contaminated water may have periodically flowed from the Building 809 explosives wastewater treatment plant.

- Washdown from Building 824 (PICA 079/Site 157) was reportedly discharged directly to the ground and then to the lake.

A manhole near Building 3013 (PICA 136/Site 79) is known to have periodically overflowed in the past. Similarly, water from backed up sewer lines has historically flowed into storm drains and into Picatinny Lake. The sewer lines have been upgraded to 8-inch diameter to prevent overflows. A review of the Master Plan indicates that there is the potential for future construction at Picatinny Lake. Specifically, the Future Development Plan depicts upgrades to the dam, which is located at the outfall of the lake, some of which have been initiated.

3.2.2 Previous Investigations

Several investigations and monitoring activities have been conducted at the site from 1976 through 2008.

In 1976, surface water samples were collected from the south end of Picatinny Lake during the Installation Assessment of Picatinny Arsenal (U.S. Army Toxic and Hazardous Material Agency [USATHAMA] 1976). Samples were analyzed for explosives and metals. The assessment stated that the results indicated that the surface water leaving the arsenal was good quality and met trout maintenance standards.

In 1980, the information from the Installation Assessment was re-evaluated and updated (USATHAMA 1980). A surface water monitoring program was performed to assess the water quality of the area. Samples were tested for nitrates, nitrites, cyanide, and metals. The addendum reported that, although several parameters yielded an increase in analyte concentrations, none of the analytes exceeded levels that were likely to cause ecological problems.

In 1985, analyses on whole fish caught within Picatinny boundaries including Picatinny Lake (Resource Conservation and Recovery Act [RCRA] 1988) were performed. Trace amounts of pesticides, herbicides, PCBs, and heavy metals were found in the fish tissues.

In 1991, sediment and surface water sampling was conducted in Green Pond Brook (United States Geological Survey [USGS] 1991). Elevated concentrations of PAHs and PCBs were reported in sediments near the outflow of Picatinny Lake. No significant surface water contamination was encountered in Green Pond Brook.

Phase II, Round 1 RI sampling activities at the site were conducted between May 1995 and August 1996 and comprised the collection of 23 co-located surface water samples (53SW-1 to 53SW-23) and 23 sediment samples (53SD-1 to 53SD-23) (Shaw 2005d). Samples were collected from Picatinny Lake at sampling locations selected based on the results of a geophysical survey within the lake. Surface water samples were analyzed for VOCs, SVOCs, inorganics, anions, Total Petroleum Hydrocarbons and explosives. Two surface water samples (53SW-5 and 53SW-15) were also analyzed for radiological compounds, PCBs, pesticides, and dioxins. Sediment samples were analyzed for VOCs, SVOCs, pesticides, inorganics, anions, total organic carbon (TOC), fuel, explosives and PCBs. Two sediment samples (53SD-5 and 53SD-15) were also analyzed for radiological compounds.

An Ecological Risk Assessment (ERA) was performed for the Phase II RI Sites including Picatinny Lake (IT 2000b). Chemical analytical data from surface water and sediments collected during the Phase II RI were evaluated in this assessment. Additional sampling was performed specifically for the ERA in 1998. Two surface water samples (53SW-24 and 26) and two sediment samples (53SD-24 and 26) were collected from Picatinny Lake. Samples were analyzed for SVOCs, pesticides, explosives, metals, PCBs, and anions. Surface water and sediment bioassays were also collected at these locations. An additional sediment bioassay was collected at location 53SD-20. Approximately 360 fish tissue samples were collected from different areas of the lake and analyzed for SVOCs, explosives, pesticides, PCBs, metals, and radiological parameters.

As part of the Fish Consumption HHRA, fish were collected from fishable surface water bodies at Picatinny, including Picatinny Lake, from 2000 to 2004. Fish tissues were analyzed for PCBs, pesticides, arsenic, and mercury to assess the potential contamination in fish that may be related to suspected source areas at Picatinny (IT 2002, Shaw 2004a).

Surface water and sediment samples have also been collected from the lake during investigations of 12 separate sites that are located along the perimeter of Picatinny Lake. Selected sites were also sampled for specific parameters at NJDEP's request in November 2011 including Site 63/65, Site 82, Site 108, and Site 113. The results of the

recent sampling at these sites are presented in detail by Appendix D. In general, the results confirm that concentrations are consistent with previous findings, with the exception of those at Site 40, with resulting risks continuing to be in the generally acceptable range. At Site 40, the September 2011 data confirmed that explosive compounds reported in sediments at that site earlier are no longer present above LOCs.

The surface water and sediment data collected from these sites are included and evaluated as part of Picatinny Lake. The soil and groundwater data for these sites are evaluated for the individual sites in separate FSs. The following samples and data, from other sites, were evaluated as part of this FS:

- Site 33/PICA 057
    - Three sediment samples (33SD-1 to 33SD-3) were analyzed for VOCs, SVOCs, pesticides, explosives, and PCBs
    - Three co-located surface water samples (33SW-1 to 33SW-3) were analyzed for VOCs, SVOCs, explosives, inorganics, and anions

- Site 40/ PICA 079
    - Three sediment samples were analyzed for VOCs, SVOCs, explosives, pesticides, and PCBs (40SD-01 to 40SD-03)
    - Five sediment samples were analyzed for SVOCs, explosives, pesticides, PCBs, inorganics, anions, TOC, and toxicity (40SD-06 to 40SD-10)
    - Five sediment samples were analyzed for SVOCs, explosives, and inorganics
    - Three surface water samples were analyzed for explosives, inorganics, and anions (40SW-1 to 40SW-3)
    - One surface water sample was analyzed for toxicity
    - Three surface water samples were analyzed for explosives and inorganics (40SW-4 to 40SW-6)
    - Four co-located surface water and sediment samples were analyzed for explosives (40-SW/SW-11 to 40-SW/SD-14)

- Site 65/PICA 047
    - Four sediment samples (65SD-1 to 65SD-4) were analyzed for VOCs, SVOCs, explosives, fuel, pesticides, PCBs, inorganics, and anions
    - One sediment sample (65SD-5) was analyzed for SVOCs, explosives, inorganics, and anions

- Four co-located surface water samples (65SW-1 to 65SW-4) were analyzed for VOCs, SVOCs, explosives, fuel, PCBs, and inorganics

- Site 71/PICA 135
  - One sediment sample (71SD-001) was analyzed for VOCs, SVOCs, explosives, pesticides, and PCBs
  - One surface water sample (71SW-001) was analyzed SVOCs, explosives, inorganics, and anions

- Site 82/PICA 137
  - Two sediment samples (82SD-1 and 82SD-2) were analyzed for VOCs, SVOCs, explosives, pesticides, PCBs, metals, anions, and TOC
  - Two co-located surface water samples (82SW-1 and 82SW-2)were analyzed for VOCs, explosives, inorganics, anions, and radiological parameters
  - One sediment sample (82SD-3) was analyzed for arsenic

- Site 108/PICA 143
  - Two sediment samples analyzed for VOCs, SVOCs, explosives, pesticides, and PCBs
  - Five sediment samples analyzed for SVOCs and inorganics
  - Two surface water samples analyzed for SVOCs, explosives, inorganics, and anions
  - One surface water sample analyzed for Semivolatile Organic Compound (SVOC) and inorganics

- Site 113/PICA 085
  - Three sediment samples (113SD-1 to 113SD-3) were analyzed for VOCs, SVOCs, explosives, pesticides, PCBs, inorganics, TOC, and anions
  - Three co-located surface water samples (113SW-1 to 113SW-3) were analyzed for VOCs, SVOCs, explosives, pesticides, PCBs, inorganics and anions

- Site 148/ PICA 148
  - Three sediment samples (148SD-1 to 148SD-3) were analyzed for SVOCs, explosives, and inorganics

- Site 156/PICA 079
  - Eight sediment samples (156SD-1 to 156SD-8) were analyzed for VOCs, SVOCs, explosives, pesticides, PCBs, inorganics, TOC, and anions
  - Five co-located surface water samples were analyzed for SVOCs, explosives, inorganics, and anions

- Site 157/PICA 079
  - Six sediment samples (157SD-1 to 157SD-6) were analyzed for VOCs, SVOCs, explosives, pesticides, PCBs, inorganics, TOC, and anions
  - Three co-located surface water samples (157SW-1 to 157SW-3) were analyzed for explosives, inorganics, and anions

- Site 158/PICA135
  - Two sediment samples were analyzed for VOCs, SVOCs, explosives, pesticides, PCBs, inorganics, TOC, and anions
  - Eight sediment samples were analyzed for inorganics
  - Two surface water samples were analyzed for explosives, inorganics, and anions
  - Three surface water samples were analyzed for inorganics

- Site 159/PICA 135
  - Two sediment samples were analyzed for VOCs, SVOCs, explosives, pesticides, PCBs, inorganics, TOC, and anions
  - One sediment sample was analyzed for SVOCs and inorganics
  - Two co-located surface water samples (159SW-1 and 159SW-2) were analyzed for VOCs, SVOCs, explosives, pesticides, PCBs, inorganics, and anions

3.2.3 Nature and Extent of Contamination

The analytical data available through the Picatinny database are included in Appendix A. Figures 3-6 and 3-7 show the location and concentrations where one or more constituent exceeded a LOC in sediment samples and surface water samples, respectively.

3.2.3.1 Sediment

Only three VOCs were detected in the sediment samples at concentrations exceeding the LOCs. Acetone was the most frequent VOC observed exceeding its LOC (0.0087 mg/kg). It was detected in 18 samples collected throughout the lake with a maximum

concentration of 1.0 mg/kg at 53-SD-013. Acetone is a common laboratory contaminant, and as such, its presence may not be indicative an environmental impact from site activities. Toluene exceeded the LOC (0.05 mg/kg) in three samples with a maximum concentration of 0.76 mg/kg at 53-SD-014. Methylene chloride, a common laboratory contaminant, exceeded the LOC (0.37 mg/kg) in one sample: 53-SD-006 (0.42 mg/kg). In general, VOC impacts to the sediment are minimal. Of the three VOCs that exceeded the LOCs, two of them are common laboratory contaminants (acetone and methylene chloride). Toluene LOC exceedences are confined to the southern portion of the lake.

Twenty-two SVOCs, primarily PAHs, were detected at concentrations greater than the LOCs. The highest concentrations for fourteen of these compounds were associated with one sample (108-SD-001), which was collected at the southwestern side of Picatinny Lake. Two additional samples exhibited SVOC levels greater than LOCs: 65-SD-003, located in the southeastern side of the lake, and 159-SD-002, located in the north western side of the lake. SVOC levels in other samples were generally similar to the LOCs.

Two explosives were detected at concentrations exceeding their LOC: Cyclo-trimethylene trinitramine (RDX) and 2,4,6- Trinitrotoluene (TNT). RDX was detected in two samples (I-40-SD-003 and I-40-SD-005) with respective concentrations of 2,500 mg/kg and 7,680 mg/kg, compared to the LOC of 24 mg/kg. The second explosive; 2,4,6-TNT exceeded the LOC (95 mg/kg) at I-40-SD-003 with a concentration of 1,100 mg/kg. Samples I-40-SD-003 and I-40-SD-005 were collected on the western shoreline adjacent to buildings 809 and 810. These two buildings were used in the manufacturing of explosive projectiles and for the washing of explosives from projectile shells. It is likely these elevated concentration are associated with former pipe discharges to the lake at this location. Explosive components used in the shell loading contained the following: TNT, RDX, Cyclo-tetramethylene tetranitramine (HMX), PETN, and aluminum powder. Wash operations from this location may have contributed to the explosives detected in the immediate vicinity of Picatinny Lake. Additional sampling conducted in 2010 and 2011 indicate concentrations of the explosives were non-detect or less than the screening levels. At the request of the NJDEP, these locations were sampled again in November 2011 to confirm the February 2011 results, and an additional sample was collected half-way between the original two samples. The results of the November 2011 corroborated the February results.

Five pesticides were detected in concentrations greater than the LOCs. 4,4-DDD (LOC = 0.00354 mg/kg) was detected at two locations (I-40-SD-004 and I-40-SD-005) with

respective concentrations of 0.6 mg/kg and 0.01 mg/kg. 4,4-DDE (LOC = 0.00142 mg/kg) was detected at two locations (I-53-SD-026 and I-159-SD-001) at concentrations of 0.26 mg/kg and 0.03 mg/kg; respectively. 4,4-DDT (LOC = 0.00119 mg/kg) was detected at two locations (I-53-SD-026 and I-159-SD-001) with a concentration of 0.45 mg/kg and 0.01 mg/kg; respectively. Endosulfan sulfate (LOC = 0.0003 mg/kg) was detected at I-40-SD-005 with a concentration of 0.20 mg/kg. Finally, mirex (LOC = 0.007 mg/kg) was detected I-108-SD-002 a concentration of 10.00 mg/kg.

Eleven samples were analyzed for PCB in Picatinny Lake sediments. Only one PCB, Aroclor 1260 (LOC = 0.0341 mg/kg), was detected at the south side of Picatinny Lake (I-65-SD-002) at a concentration of 0.14 mg/kg.

Eleven metals were detected at concentrations greater than the LOCs in sediment samples collected from Picatinny Lake. Arsenic (LOC = 16 mg/kg) exceeded the LOC in eight samples with a maximum concentration of 243 mg/kg occurring at location 108-SD-005. Cadmium (LOC = 1.7 mg/kg) was detected in eleven samples. The majority of cadmium detections occurred up-gradient of Picatinny Lake, within the northern marsh area. The maximum cadmium concentration is 13.70 mg/kg at location 158-SD-006. Chromium (LOC = 37.3 mg/kg) exceeded the LOC in three locations with the highest concentration of 81.20 mg/kg at location 108-SD-004. Copper exceeded the LOC (28 mg/kg) in a 36 of the locations, with the maximum concentration of 18,000 mg/kg observed at location 113-SD-001. Lead (LOC = 38.8 mg/kg exceeded the LOC at 35 locations with the maximum concentration of 706 mg/kg occurring at location 108-SD-005. Mercury exceeded the LOC (0.249 mg/kg) at 38 of the locations sampled; the maximum detection of 113 mg/kg occurred at location 108-SD-005. Nickel (LOC = 39.6 mg/kg) exceeded the LOC in two locations (108-SD-001 and 158-SD-006) with a concentration of 66 mg/kg and 42.5 mg/kg, respectively. Silver (LOC = 1.0 mg/kg) exceeded the LOC in 19 of the locations with a maximum concentration of 1,100 mg/kg at location 82-SD-002. Strontium (LOC = 16.0 mg/kg) exceeded the LOC in a 39 of the samples analyzed, with a maximum exceedence in sample location I-53-SD-022 with a concentration of 110 mg/kg. Thallium (LOC = 2.0 mg/kg) exceeded the LOC in one location (158-SD-001) with a concentration of 2.10 mg/kg. Finally, zinc (LOC = 171 mg/kg) exceeded the LOC in 17 locations with a maximum concentration of 5,656 mg/kg at location 108-SD-005.

3.2.3.2 Surface Water

Methylene chloride was the only VOC detected in surface water samples at a concentration exceeding the LOC. It exceeded the LOC (2.5 ug/L) in 14 of the surface water samples with the maximum concentration of 17 ug/L at sample I-53-SW-002. Methylene chloride is a common laboratory contaminant, thus its presence in the samples may not be indicative of a site specific source or anthropogenic environmental impacts.

Bis(2-ethylhexyl)phthalate, another common laboratory contaminant, was the only SVOC detected at concentrations greater than its LOC (1.2 ug/L) in two surface water samples: 11 ug/L at 53-SW-001 and 15 ug/L at 53-SW-020. The samples are not within close proximity, as 53-SW-001 is located on the northern portion of the lake, whereas 53-SW-020 is located on the southern portion of the lake. Therefore, no correlation between the two is apparent.

One pesticide, alpha-BHC, was detected exceeding the LOC (0.000049 ug/L) at background sample SWBG-29 at a concentration of 0.45 ug/L.

The following explosives exceeded their respective LOCs: 2,4-DNT, nitroglycerine (NG), RDX, and TNT. Historical data indicate that 2,4-DNT exceeded the LOC (0.11 ug/L) at only one sample location (I-159-SW-002) with a concentration of 0.20 ug/L. This occurrence is located at the northern portion of Picatinny Lake located within the marsh area. The remaining exceedences occur in close proximity to buildings 809 and 823. Historical data show that NG exceeded the LOC (3.7 ug/L) at only one sample location (I-40-SW-003) with a concentration of 250 ug/L. RDX exceeded the LOC (2.0 ug/L) at sample location I-40-SW-003, at a concentration of 24.5 ug/L. Finally, TNT exceeded the LOC (2.0 ug/L) at I-40-SW-003 with a concentration of 5.77 ug/L. There is a correlation for sample location I-40-SW/SD-003 in that both the surface water and sediment samples have exceeded the LOC for TNT in the past. These samples are located near the outfalls of discharge pipes, which are no longer active, and the distribution is expected to be limited. There are no other correlations between surface water and sediment for any other of the explosives that exceed the LOC.

More recently, surface water samples I-40-SW-011 through -014 were collected in 2008, and on a continuing basis at a subset of locations, from Picatinny Lake near the former discharge pipe locations. None of these samples exceeded the LOCs for explosives.

Eight metals were detected at concentrations greater than the LOCs for surface water samples. The maximum concentrations detected were: 232 ug/L aluminum (LOC = 190 ug/L) at 53-SW-26; 0.54 ug/L cadmium (LOC = 0.28 ug/L) at 40-SW-006; 59.90 ug/L chromium (LOC = 11.4 ug/L) at 53-SW-016; 24.2 ug/L copper (LOC = 9.4 ug/L) at SW-53-4; 79.3 ug/L lead (LOC = 3.2 ug/L) at 40-SW-03; 1480 ug/L manganese (LOC = 383 ug/L) at 108-SW-002; 0.38 ug/L mercury (LOC = 0.05 ug/L) at SW-65-1 and 16.20 ug/L silver (LOC = 3.8 ug/L) at SW-82-2. Sulfide was detected in concentrations exceeding the LOC (2,200 ug/L) only in sample 53-SW-024 at concentration of 4,500 ug/L.

The only other constituent detected in surface water at a concentration greater than the LOC is cyanide, which was detected at a concentration of 18.6 ug/L (LOC = 5.2) at 40-SW-003.

The overall water quality of Picatinny Lake is good. One area, along a portion of the western shoreline in the vicinity of I-40-SW-003, has historical LOC exceedences for explosives that correlate with co-located sediment sample I-40-SD-003, which also has LOC exceedences for explosives. Surface water sampling conducted in the vicinity of these samples indicates that surface water no longer exceeds LOCs for explosives.

At the request of NJDEP, surface water in the area of Site 82, at locations I-82-SW-001 and I-82-SW-002, was collected and analyzed for silver and/or radium-226. The results of the surface water sampling are included in the Results Letter in Appendix D. All of the surface water data were non-detect.

3.2.3.3 Magnetic Survey Results

Pursuant to the 1996 Phase II RI, the magnetic survey revealed several small anomalies that are likely due to metallic debris on the bottom, which could potentially be MEC, as well as several anomalies with linear features extending over the lake that may represent pipelines. There were also several broader magnetic anomalies in the data that are interpreted to be geologic features, such as faulting in the underlying bedrock and variations in magnetite content in lake sediments. The bathymetric survey showed evidence of an old stream channel in the southern part of the lake (Green Pond Brook), as well as evidence of dredging around the water intakes of the electrical plant and dam. Typical water depths in the center of the lake range from 9 ft to 15 ft.

3.2.4 Summary of Risk Assessments

The initial risk evaluation of sediment and surface water at Picatinny Lake was conducted in the Phase II, Round 1 RI – Area I (Shaw 2005d). For the sediment screening, the sediment samples collected from the deeper, interior portions of Picatinny Lake (Site 53) were combined with additional sediment samples collected from sites surrounding the lake (Sites 33, 40, 63/65, 71, 82, 108, 113, 156, 157, and 158) to identify COPCs.

The Phase II, Round 1 RI initial risk evaluation included an evaluation of the lake surface water as a whole for the industrial/research worker scenario, but sediments were not addressed on a lake-wide basis. Rather, sediments and some additional surface water scenarios were evaluated on a site basis for sites located around the perimeter of Picatinny Lake. The results of these initial scenarios for these 'sub-sites' of Site 53 are included in Table 3-1. These site-specific evaluations are not considered representative of true exposure scenarios for the recreational use of the lake because it is unlikely that recreational users will remain or only frequent a single site. These visitors are likely to be exposed to several areas of the lake in any single visit, particularly those in boats.

Therefore, a supplemental risk evaluation was conducted (Appendix E) to evaluate exposures to Picatinny Lake as a whole for the on-site youth visitor (i.e., recreational user) scenarios. All surface water data were utilized in the supplemental risk evaluation of surface water; however, because exposure to deeper sediments is not a reasonable scenario (there is no swimming/diving allowed and boats are limited to no-wake speeds, which will not stir up deeper sediments), only sediment samples located within 100 ft of the shoreline were included in the evaluation of exposure to sediment. Results of the supplemental evaluations are detailed in Appendix E and summarized in Table 3-1 under Picatinny Lake (Site 53). In addition, in light of the recent data collected from Picatinny Lake in February and November 2011, the lake-wide HHRA and ERA were re-evaluated to include the recent data. The reevaluation is included in Attachment 1 of the Results Letter included in Appendix D and indicated that the human and ecological risks are consistent with the conclusions drawn below (i.e. risks within the generally accepted risk range/HI of 1).

3.2.4.1 Human Health

A HHRA was completed for site receptors and provided previously in the Phase II, Round 1 RI – Area I (Shaw 2005d). The results of the HHRA calculations for

carcinogenic risk and noncarcinogenic hazard at Picatinny Lake are summarized in Table 3-1. As previously mentioned, this site consists only of the lake sediment and surface water; therefore, a residential HHRA scenario is not relevant. The most relevant scenario for unrestricted use of this site is the on-site youth visitor (recreational) scenario. Human health risks under current and reasonably anticipated future use scenarios are:

- Current and Future Industrial/Research Worker with potential for contact with surface water: potential carcinogenic chemical risk of 2E-8/ noncarcinogenic HI of <1.

- Current and Future Industrial/Research Worker with potential for contact with surface water: potential carcinogenic radiological risk of 2E-6, associated with radiological COPCs.

Potential recreational exposures and risks associated with Picatinny Lake sediments and surface water were evaluated using two approaches. Quantitative risk calculations for recreation exposure to deep sediments and surface water from the lake were not conducted because it was not expected that the On-Site Youth Visitor (i.e., recreational exposure) would have potential for contact with sediment and surface water at depth. Instead potential human health risks resulting from recreational exposures of the On-Site Youth Visitor to deeper sediment and surface water at Picatinny Lake were evaluated by comparison of maximum concentrations of COPCs in deep sediment (arsenic) and surface water (seven COPCs), with risk results for the same scenario, which was evaluated for the same constituents at other sites (IT 2001). This comparison indicated that all potential cancer risks associated with this scenario are within the generally acceptable risk range and that the noncarcinogenic hazard is less than 1. These qualitative comparisons were conservative and appropriate for evaluation of exposures to deeper sediment and surface water that could potentially be experienced during recreational activities at Picatinny Lake (IT 2001). Lead was not identified as a COPC in the deeper sediment and surface water of the lake.

As previously described, potential recreational exposures to surface water and sediment were evaluated at the individual sites surrounding the Lake. Those individual risk assessments are summarized in Table 3-1.

In addition, the previous risk assessments did not evaluate potential risks associated with exposures to constituents in surface water and sediment on a lake-wide basis (IT 2001). Previous risk assessments also did not consider that the On-Site Youth Visitors

may not be restricted to a single site along the lake but instead may move around to different portions of the lake during their visits, thereby potentially experiencing exposure to sediments and surface water from a number of different areas on a given day of exposure. As a result, a supplemental evaluation was conducted in 2009 in order to evaluate potential risks and hazards to the same group of receptors (e.g., current/future On-Site Youth Visitors) who may have contact with these media from all portions of the lake. This supplemental HHRA is included in Appendix E.

Human health risks under current and reasonably anticipated future evaluated in the supplemental HHRA (Appendix E) use scenarios are:

- On-Site Youth Visitor with potential for contact with sediment and surface water during recreational activities at Picatinny Lake: potential carcinogenic risk of 4E-5/ noncarcinogenic HI of 2, which when separated by target organ results in HI <1.

In addition, human health risks from fish consumption were evaluated (Shaw 2004a). While fish tissue data were collected for individual water bodies, including Picatinny Lake, fish tissue data collected from Picatinny Lake, Lake Denmark, and Green Pond Brook were combined into one area called the LBSWA because it is likely that fish can migrate between these water bodies, which supports evaluating risks/hazards for these water bodies as a group. The data from the LBSWA were used to evaluate potential risks and derive species-specific EPCs for these water bodies. The EPCs were then used to estimate exposures associated with the following pathways:

- Consumption of fish by current and future on-site Army personnel and/or local retired Army personnel;

- Consumption of fish by current and future children of on-site Army personnel and/or local retired Army personnel; and

- Consumption of fish by future adult and child residents (hypothetical receptor).

The LBSWA results indicated that the potential cancer risks for the current use receptors were within the generally acceptable risk range while some of the noncancer hazards were greater than 1. As shown in Table 3-2, the noncancer hazards that exceeded 1 did so primarily due to the presence of mercury, with some contribution from PCBs in yellow perch.

Results were the same for the hypothetical future resident who could consume fish from these water bodies. Mercury was a hazard driver in four species, with additional contribution to noncancer hazards in largemouth bass and yellow perch by PCBs (Aroclor 1254), which for both species had a HI of 1.

Of the water bodies in the LBSWA group, Picatinny Lake had the highest fish tissue concentrations. Mercury concentrations were not high, however, in Picatinny Lake surface water. It is important to note that concentrations of the aforementioned elevated constituents from Picatinny fish tissue samples were generally similar to the concentrations detected in the background fish tissue samples, which were collected from a location at Green Pond Brook upgradient of the Picatinny facility. This information supports the argument that mercury is a ubiquitous contaminant for which the State of New Jersey has already instituted a state-wide fish consumption advisory (NJDEP 2009). Mercury can be released in the environment from natural sources, such as volcanic and geothermal activity, marine environments or forest fires, or it can be released from anthropogenic sources like coal-fired power plants and other industrial activities. Recent studies suggest that human activity contributes 50-70% of the mercury in the environment globally (USEPA, 1997). In addition, there are state-wide fish consumption advisories due to PCBs. Therefore, as noted in the fish tissue evaluation (Shaw 2004a), it is not clear if the calculated risks/hazards are directly related to site-specific sources or if they are due to other, wide-spread anthropogenic influences or natural background (in the case of inorganics). The fish tissue evaluation indicates that due to the “uncertain source of the elevated compound in the fish, the analytical data were evaluated in consultation with the NJDEP to determine the State’s recommendation for institution of additional fishing advisories at Picatinny.” The conclusions of this review indicated that only mercury concentrations exceeded NJDEP guidelines, and the NJDEP recommended fish consumption advisories for Picatinny, which were incorporated into Appendix F of the Recreational Hunting, Trapping, Fishing, and Boating Regulation (2006). The NJDEP letter of recommended advisories is included in Appendix C. Alternative 2 evaluates formalizing these advisories as CERCLA IC’s.

3.2.4.2 Lead Blood Model Results

The lead blood model was not calculated as part of the RI Report as lead was not identified as a COPC at this site.

3.2.4.3 Ecological

Ecological risks associated with exposure to surface water and sediment in Picatinny Lake were evaluated in the Phase II ERA (IT 2000c). Sediment and surface water samples collected at the following sites were included as part of the Picatinny Lake (PICA 057) assessment: Sites 33, 40, 53, 65, 71, 82, 108, 113, 156, 157, and 158. The results of the Phase II ERA indicate that ecological risks are not significant for Picatinny Lake as a whole. The receptors evaluated include aquatic biota (represented by the fish community), benthic biota (represented by the benthic macroinvertebrate community), and semi-aquatic wildlife (represented by Great Blue Heron, mink, and muskrat populations). The available evidence for each of these receptors at Lake Picatinny is summarized in Table 3-4 and briefly discussed below.

3.2.4.4 Aquatic Biota

Comparison of the measured constituent concentrations in surface water with conservative screening values did not indicate widespread or substantial risks for aquatic biota. The only constituents that exceeded a TRV by more than a factor of 10 were barium (by a factor of 17) and boron (by a factor 45). TRVs are conservative screening values below which adverse effects are unlikely and above which adverse effects are possible, though not necessarily likely. The TRVs for barium (4 µg/L) and boron (1.6 µg/L) are from Suter and Tsao (1996), which also provides lowest chronic values (LCVs) of 5,800 µg/L for barium and 8,830 µg/L for boron. Chronic Values are more realistic screening values, and the maximum detected concentrations of boron and barium are well below the LCVs. Therefore, adverse effects are not expected to result from measured concentrations of these constituents in surface water.

The bioassay results did not indicate biologically significant risks to aquatic biota. Surface water bioassays were performed for five samples from various shoreline locations in Picatinny Lake. Some of the fathead minnow (*Pimephales promelas*) test results were statistically significantly different compared to laboratory control or reference samples. However, none of these results were determined to be biologically significant.

The results of fish surveys conducted within Picatinny Lake were considered in the BERA; however, it should be noted that they were not designed to determine the potential for adverse effects or to establish causality of observed differences in the fish community. Picatinny Lake was surveyed by the USFWS four times in the 1980s and in 1996. Based on these surveys, USFWS concluded that overall the fishery resources

were of good quality with a desirable mix of species and good size distribution (IT 2000c). Fish surveys were also conducted in three near-shore zones (Picatinny Dam, Explosives Peninsula, and the RAD Peninsula) in 1998 as part of the Phase II ERA (IT 2000c). Consistent with the USFWS results, the Phase II surveys provided a qualitative indication that there are no overt adverse effects were occurring in any of the Phase II ponds.

Bioassays and fish surveys are the most relevant and realistic lines of evidence; neither indicated biologically significant adverse effects were occurring. Based on the weight of evidence, constituents in surface water do not appear to pose a significant risk to aquatic biota in Picatinny Lake.

3.2.4.5 Benthic Biota

Comparison of the measured constituent concentrations in sediment with conservative screening values indicated that various organic and inorganic constituents may pose a risk to benthic invertebrates in isolated areas along the shoreline, but not to the Picatinny Lake benthic community overall. Elevated constituent concentrations occurred primarily in near-shore samples associated with specific sites (e.g., PAH maximums generally associated with PICA 047/Site 65, the powerhouse). Samples collected from the interior of the lake were typically less contaminated. Most constituents had at least one result that exceeded the TRV. However, exceedences were not widespread and the maximum detected concentrations were generally within one or two orders of magnitude of the conservative LOCs. The results of the benthic surveys do not indicate that the elevated concentrations of explosives are associated with significant ecological impacts.

Toxicity tests were performed on 19 sediment samples from Picatinny Lake. Six of those samples were severely toxic to the test organisms, resulting in 100 percent mortality of at least one of the two test species. Co-located chemical results were available for only four of the bioassays, but chemical results were available for samples previously collected in the immediate proximity of 13 of the remaining bioassay samples. Three of the severely toxic samples were collected near PICA 079/Site 40 (Group 1 site); two of those samples (40SD-3 and 40SD-5) were associated with high concentrations of numerous explosive compounds, some of which exceeded the TRVs by five and six orders of magnitude. These explosives have now been shown to be below the LOC or absent. The three other samples exhibiting 100 percent mortality were each from different locations and none were associated with similarly high constituent concentrations compared to TRVs (i.e., all detected constituents were

within one or two orders of magnitude of the conservative TRVs). Only sample 65SD-2 was associated with numerous constituents that exceeded the TRVs, nearly all of which were PAHs. However, sample 65SD-3 was associated with similar or higher PAH concentrations and exhibited no toxicity in the sediment bioassays. The lack of concordance between toxicity and elevated constituent concentrations may indicate that the test organisms are responding to something other than exposure to site-related constituents. In summary, the bioassays indicated that only isolated sediment locations near the Group 1 Sites posed a potential risk to benthic biota due to exposure to site-related constituents, but those constituents have since been shown to have dissipated to below LOCs or are absent.

Benthic macroinvertebrate survey results did not indicate biologically significant risks to benthic biota. Benthic macrofauna were collected from four near-shore locations in Picatinny Lake. No significant perturbations were noted in the benthic macroinvertebrate survey. In fact, metrics calculated from the survey indicate the Picatinny Lake benthic invertebrate community is in better condition than that of the reference locations. For example, total and sensitive-species richness (number of different taxa) were greater in Picatinny Lake than at all the reference locations. Two of the benthic survey locations were co-located with two of the severely toxic sediment bioassays (i.e., 40SD-3 and 65SD-2), one of which (40SD-3) also had concentrations of multiple explosives that exceeded the LOCs by 5 and 6 orders of magnitude at that time, although those concentrations are no longer present. It is also noted that many of the benthic metrics for 40SD-3 were the highest in the lake.

Based on the weight of evidence, constituents in sediment do not appear to pose widespread risks to the Picatinny Lake benthic invertebrate community.

3.2.4.6 Semi-Aquatic Wildlife

Based on the results of the food chain analysis, there appears to be little potential risk to birds and mammals foraging in Picatinny Lake. Game and forage fish were collected from three near-shore zones in Picatinny Lake (Picatinny Dam, Group 1 Sites Area, and the RAD Peninsula) as part of the 1998 Phase II fish surveys (IT 2000c). Fish tissue was analyzed for semivolatile organics (including pesticides and PCBs), explosives, metals, and other selected constituents. Detected constituents included various pesticides and metals and one PCB mixture (Aroclor 1260). Explosives were not detected in fish tissue, supporting the conclusion that these compounds are not bioaccumulative. The fish tissue concentrations were used in food chain models for representative carnivorous semi-aquatic species to estimate exposure concentrations,

which were compared with TRVs for dietary exposures. Dietary exposure concentrations for semi-aquatic herbivores were estimated using modeled tissue concentrations for aquatic macrophytes. Measured constituent concentrations in surface water and sediment were also used in the food chain models for semi-aquatic wildlife.

For the Great Blue Heron, results of the food chain analyses indicated that none of the constituents detected in fish tissue exceed the available dietary TRVs. The potential risks of cobalt and 2-methylphenol are uncertain because TRVs were not available for those constituents. For mink, only arsenic exceeded the TRV by a factor of two. These results suggest that significant adverse effects are not expected for carnivorous birds and mammals at Picatinny Lake.

For muskrat, six metals and two explosives had modeled exposure concentrations greater than the dietary TRVs. However, only arsenic exceeded the TRVs by more than a factor of 10 (Environmental Effects Quotient = 143). However, the modeled dietary exposure rate for arsenic is driven by the estimated concentration in macrophytes, which is based on conservatively modeled uptake factors rather than measured concentrations, introducing a source of uncertainty. In addition, the maximum concentration of arsenic (26.4 mg/kg at 65SD-2) was used in the food chain model; however, the average and 95th percentile upper confidence limit are much lower (4.66 mg/kg and 5.65 mg/kg, respectively), indicating that elevated concentrations of arsenic are not widespread in Picatinny Lake. Based on these results, arsenic in Picatinny Lake sediment is not likely to be associated with ecologically significant risks to semi-aquatic herbivores in Picatinny Lake.

3.2.4.7 Summary of Site Risks

Based on the risk assessments performed for this site, for current and reasonably anticipated future use:

- The potential risk is within the generally acceptable risk range of 1E-4 to 1E-6 for industrial/research worker, and the noncancer hazard is less than the threshold of 1;

- The potential risk is within the generally acceptable risk range of 1E-4 to 1E-6 for the on-site youth visitor (recreational) for exposure to sediments and surface water across Picatinny Lake as a whole (Appendix D and E) during recreational

activities, and the noncancer hazard is less than the threshold of 1 when separated by target organ;

- The fish consumption HI is greater than the threshold of 1. Restrictions stated within the Recreational Hunting, Trapping, Fishing, and Boating document (2006) on the consumption of fish are consistent with the state-wide fish consumption advisory due to mercury and PCB impacts;

- Lead is not a concern in any media at the site; and

- Ecological impacts are expected to be minimal based on the good quality of the water and the extensive range of receptors.

Overall site risks and hazards are within the acceptable range for current military/industrial and recreational scenarios. The fish consumption HI is greater than the threshold of 1, which is consistent with state-wide fish consumption advisories.

3.3 Site 103/PICA 164 - Reservoir near Building 3159/ Explosive Ordnance Demolition Pond

3.3.1 Site History

The EOD Pond is a 160 million-gallon reservoir located near Building 3159 and is about 9 acres in size with an average depth of 6 to 7 ft. It was constructed between 1945 and 1953. Before this date, the area was an undeveloped marsh. Buildings 3137, 3155, and 3159 surround the reservoir. A berm, which varies in height from one foot to greater than ten feet, surrounds the reservoir. There are two inlets to the reservoir, which are located at the south and southeast of the reservoir, and two outlets from the reservoir, which are located to the east and to the north. The outlet to the east discharged to an intermittent stream, while the discharge at the north outlet is controlled by an overflow valve. The EOD Pond is a designated fishing area open to permitted fishermen. The Site layout is shown on Figure 3-8.

This Site is currently inactive. In the past, however, various pesticides, flammable materials, and PCBs were stored in the nearby buildings. Additionally, it is possible that ordnance may have been placed in the reservoir after the 1926 explosion.

The DEH Land Management Division and the Morale Support Activity currently manage the EOD Pond as a recreational resource. Despite the potential presence of

MEC in the pond, it is accessible for various recreational activities, which are specified in the Recreational Hunting, Trapping, Fishing, and Boating document (Regulation 200-3 dated August 2006). Fishing is allowed from the EOD Pond shore, by boat, or, if seasonal conditions allow, fishing can be conducted from the ice. Due to state wide mercury contamination, a fish consumption advisory is in place and managed through the site Regulation 200-3 (August 2006) program. Under the current program managed by the Regulation 200-3 program, only nonmotorized boats are allowed on the EOD Pond, and boat launching is not restricted to ramps/docks. Additionally, no swimming or sail boarding is allowed in the pond; although wading in the pond is not specifically mentioned, the recreational manager indicates that wading would be covered by the no swimming regulation. Due to the potential for encountering MEC, land use controls for Picatinny may require revisions to restrict boat launches to ramps, docks, and/or other posted locations previously cleared of MECs and other activities, such as wading.

Construction of the Child Development/School Age Service Center was recently completed and is within close proximity of the EOD Pond.

3.3.2 Previous Investigations

Five investigations have been conducted at Site 103/ PICA 164 – Reservoir near Building 3159/Explosive Ordnance Demolition Pond: the 1984 USAEHA Reservoir Investigation, the 1988 USAEHA Pesticide Risk Management Study, the Phase III PA/SI (ICFKE 1996), the Phase III-1A RI activities (Shaw 2005j), and the Fish Consumption Human Health Risk Assessment (IT 2002). The sampling locations at Site 103 are included on Figure 3-9.

In 1984, an investigation of the reservoir identified levels of chromium and copper in the sediment that were greater than the control samples collected from Green Pond Brook. In 1988, a sediment sample and surface soil samples were collected from and near the reservoir as part of the Pesticide Risk Management Study for nearby PICA Site 43/PICA 82 (USAEHA 1988).

As part of the 1996 Phase III PA/SI, 1 surface soil sample (RESS-A), 2 co-located surface water samples (RESSW-A and B), and 2 sediment samples (RESSD-A and B) were collected (ICFKE 1996). The surface soil sample was collected at the stream outlet from the reservoir. The surface water/sediment samples were collected near the reservoir outlet and near Building 3137. Samples were analyzed for VOCs, SVOCs, explosives, pesticides, PCBs, metals, and anions.

As part of Phase III-1A RI (Shaw 2005h), sampling activities were conducted from 1998 through 2000. Field activities included a geophysical survey and the collection of 21 sediment samples and 9 surface water samples. The geophysical survey was performed to locate ordnance or dumped material within the reservoir. Many of the sample locations were biased to reflect the survey findings. Fifteen of the sediment samples were analyzed for VOCs, pesticides/PCBs, explosives, metals, and cyanide; and 6 samples were analyzed only for VOCs and cyanide. Three of the surface water samples were analyzed for VOCs, pesticides, PCBs, explosives, and metals. Six surface water samples were analyzed for VOCs and cyanide.

In 2001, as part of the Fish Consumption Health Risk Assessment fish samples from the pond were collected and analyzed for SVOCs, pesticides/PCBs, inorganics, explosives, lipids, and radiological isotopes (IT 2002).

3.3.3 Nature and Extent of Contamination

The analytical data available from the Picatinny database are included in Appendix A. Figures 3-9 and 3-10 depicts the location and concentrations where one or more constituents exceeded a sediment or surface water LOC, respectively.

3.3.3.1 Soil

No constituents were detected at concentrations greater than the LOCs.

3.3.3.2 Sediment

Pesticides were detected at 7 sediment locations at levels greater than their respective LOCs. A total of ten pesticides exceeded the LOCs, and the maximum concentrations detected were: 0.30 mg/kg aldrin (LOC = 0.002 mg/kg), 0.37 mg/kg dieldrin (LOC = 0.00285 mg/kg), 0.90 mg/kg endosulfan I (LOC = 0.0003 mg/kg) , 0.01 mg/kg endosulfan II (LOC = 0.0003 mg/kg), and 0.08 mg/kg methoxychlor (LOC = 0.006 mg/kg) at 103-SD-001; 0.27 mg/kg 4,4-DDE (LOC = 0.00142 mg/kg), 0.37 mg/kg 4,4-DDT (LOC = 0.00119 mg/kg), 0.04 mg/kg chlordane (LOC = 0.0003 mg/kg), and 0.24 mg/kg endrin ketone (LOC = 0.00267 mg/kg) at 103-SD-004; and 0.73 mg/kg 4,4-DDD (LOC = 0.00354 mg/kg) at 103-SD-014.

A total of three metals (copper, lead, and zinc) were detected at levels greater than their LOCs in sediment. Zinc (LOC = 171 mg/kg) was detected in six samples (103-SD-001, SD-002, SD-004, SD-007, SD-014, and SD-015) with concentrations ranging from

252 mg/kg to 628 mg/kg with the maximum concentration detected at 103-SD-001. Copper (LOC = 28 mg/kg) was detected in four samples (103 -SD-002, SD-004, SD-009, and SD-014) with concentrations ranging from 29.60 mg/kg to 48.20 mg/kg with the maximum concentration detected at 103-SD-014. Lead (LOC = 38.8 mg/kg) was detected in two samples exceeding the LOCs: 103-SD-002, and 103-SD-014 at concentrations of 47.50 mg/kg, and 649 mg/kg respectively.

Aroclor-1254 was detected at levels exceeding the LOC (0.060 mg/kg) in two sediment samples from the outlet at the north side of the reservoir. Aroclor 1254 was detected in sediment samples 103-SD-001 and 103-SD-007 at concentrations of 0.26 mg/kg and 0.07 mg/kg, respectively.

Sediment samples with LOC exceedences are not closely grouped together. The constituent that exceeds the LOC in samples located around the EOD Pond, as well as samples up and down stream of the pond, is 4,4-DDD.

3.3.3.3 Surface Water

The only surface water sample that has an LOC exceedence is sample 103-SW-003. This sample location is north of the EOD Pond, and appears to be located in the outfield of a softball field that is located well within Site 176. The 2007 aerial does not appear to have indications of an intermittent stream running through the field, so it is not clear what this ‘surface water’ sample actually represents. Four metals were detected in this sample at concentrations exceeding the LOCs: 470 ug/L aluminum (LOC = 190 ug/L); 19,800 ug/L iron (LOC = 1,790 ug/L); 1,200 ug/L manganese (LOC = 383 ug/L); and 450 ug/L zinc (LOC = 120 ug/L).

No constituents are detected in surface water from the EOD Pond in concentrations greater than the LOCs. The overall water quality of the EOD Pond is good.

3.3.3.4 Geophysical Survey

Several anomalies were detected within the reservoir during the geophysical survey that is indicative of ferrous material. The largest concentration of these anomalies was found to be present within 100 ft of the shoreline.

3.3.3.5 Groundwater

Groundwater samples were not collected as part of historic sampling activities.

3.3.4 Summary of Risk Assessments

3.3.4.1 Human Health

A HHRA was completed for Site 103 receptors and provided previously in the Phase III – 1A RI Report (Shaw 2005h). The results of the HHRA for Site 103 are summarized Table 3-1. Shaw calculated human health risks for additional scenarios that it stated were not reasonably anticipated to occur, however, because recreational use of the EOD Pond (for fishing) is allowed, the On-Site Youth Visitor scenario was retained as a reasonably anticipated (recreational) scenario. The estimated potential carcinogenic risk and noncancer HI for this scenario are:

- Current and Future On-site Youth Visitor exposure to sediment: potential carcinogenic risk of 1E-6/ noncarcinogenic HI of <1.

- Current and Future On-site Youth Visitor exposure to surface water: noncarcinogenic HI of <1 (no carcinogenic COPCs were identified in surface water).

In all cases, the chemical of potential concern was arsenic.

In addition, human health risks from fish consumption were evaluated (Shaw 2004a). While fish tissue data were collected for individual water bodies, including the EOD Pond, fish tissue data collected from the EOD Pond, Fishers Pond, and the North and South Basins were combined into one area called the Small Basins and Ponds Surface Water Area (SBPSWA). Although not all of these water bodies are interconnected, they are located in the same general vicinity, with similar surrounding land use and similar fishing pressure; therefore, even though fish cannot migrate between all of these water bodies, they are representative of similar conditions. The data from the SBPSWA were used to evaluate potential risks and derive species-specific EPCs for these water bodies. The EPCs were then used to estimate exposures associated with the following pathways:

- Consumption of fish by current and future on-site Army personnel and/or local retired Army personnel;

- Consumption of fish by current and future children of on-site Army personnel and/or local retired Army personnel; and

- Consumption of fish by future adult and child residents (hypothetical receptor).

The SBPSWA results indicated that the potential cancer risks for the current use receptors were within the generally acceptable risk range while some of the noncancer hazards were greater than 1. As shown in Table 3-5, the noncancer hazards that exceeded 1 did so due to the presence of mercury.

Results were the same for the hypothetical future resident who could consume fish from these water bodies. Mercury was a hazard driver in all species for which the HI exceeded 1, but in all species, the mercury EPC was based on the maximum mercury concentration detected in each species.

Of the water bodies evaluated with the in the SBPSWA, concentrations in the EOD Pond are lowest. Mercury is not found in high concentrations in the EOD Pond sediments or sediments; although, some EOD Pond fish tissue concentrations exceed the mercury LOC.

It is important to note that concentrations of the aforementioned elevated constituents from EOD Pond fish tissue samples were generally similar to the concentrations detected in the background fish tissue samples, which were collected from a location at Green Pond Brook upgradient of the Picatinny facility. This information supports the argument that mercury is a ubiquitous contaminant for which the State of New Jersey has already instituted a state-wide fish consumption advisory (NJDEP 2009). Mercury can be released in the environment from natural sources, such as volcanic and geothermal activity, marine environments or forest fires, or it can be released from anthropogenic sources like coal-fired power plants and other industrial activities. Recent studies suggest that human activity contributes 50-70% of the mercury in the environment globally (USEPA, 1997). In addition, there are state-wide fish consumption advisories due to PCBs. Therefore, as noted in the fish tissue evaluation (Shaw 2004a), it is not clear if the calculated risks/hazards are directly related to site-specific sources or if they are due to other, wide-spread anthropogenic influences or natural background (in the case of inorganics). The fish tissue evaluation indicates that due to the “uncertain source of the elevated compound in the fish, the analytical data were evaluated in consultation with the NJDEP to determine the State’s recommendation for institution of additional fishing advisories at Picatinny.” The conclusions of this review indicated that only mercury concentrations exceeded NJDEP guidelines and the NJDEP recommended fish consumption advisories for Picatinny, which were incorporated into Appendix F of the Recreational Hunting, Trapping, Fishing, and Boating Regulation (2006). The NJDEP letter of recommended advisories

is included in Appendix C. Alternative 2 evaluates formalizing these advisories as CERCLA IC's.

3.3.4.2 Lead Blood Model Results

Additionally, potential hazards due to lead were evaluated in 2005 as part of the RI for Site103/PICA 164. Human health risk associated with lead exposures were calculated for use scenarios reasonably anticipated and are as follows:

- Current On-Site Youth Visitor (Sediment): No concern - Average lead concentration of 57 mg/kg compared to a calculated Preliminary Remediation Goal (PRG) range of 1,496 to 2,603.

- Current On-Site Youth Visitor (Surface Water): Lead was not a COPC in this medium.

Additionally, human health risks associated with lead exposures were calculated for use scenarios not reasonably anticipated and are as follows:

- Current Adult Resident (Sediment): No concern –average lead concentration of 57 mg/kg was less than the calculated PRG range.

- Current Adult Resident (Surface Water): Lead was not a COPC in this medium.

3.3.4.3 Ecological

Metals were identified as COPECs in the EOD Pond surface water. Several pesticides, PCBs, and some metals were identified as COPECs in sediment, with highest concentrations located near the inlet and outlet of the pond. Potential risks to benthic invertebrates were evaluated during the Phase III ERA through a benthic community assessment (Shaw 2006). A total of twelve benthic macroinvertebrate metrics were calculated for each of six composited samples from the EOD Pond and compared to data from a reference pond. Based on this analysis, the benthic community does not appear to be at any significant risk from the potential presence of contaminants in the surface water or sediment, or at surrounding sites.

3.3.4.4 Summary of Site Risks

Based on the risk assessment performed for this site for current and reasonably anticipated future use:

- Potential Carcinogenic risk to the On-Site Youth Visitor (exposure to sediment) is within the generally acceptable risk range of 1E-4 to 1E-6;
- Noncancer HI for the On-Site Youth Visitor was <1;
- The fish consumption HI is greater than the threshold of 1. Restrictions stated within the Recreational Hunting, Trapping, Fishing, and Boating document (2006) on the consumption of fish are consistent with the state-wide fish consumption advisory due to mercury and PCB impacts;
- Lead was not present at a level of concern and did not exceed PRGs; and
- Risks to ecological receptors are minimal.

Overall site risks and hazards are within the acceptable range for current military/industrial and recreational scenarios. The fish consumption HI is greater than the threshold of 1, which is consistent with state-wide fish consumption advisories.

4. Remedial Action Objectives

The purpose of the FS is to evaluate alternatives that will result in continued protection of human health and the environment.

4.1 Scope of the Remedial Action

Based on the results of the updated site-specific HHRAs, constituents in soil, sediment, and surface water at Sites 54, 53, and 103 do not pose an unacceptable risk or hazard to human health under the current and planned future land-use scenarios. Specifically, potential risks at these sites were found to be either lower than or within the generally acceptable risk range of 1E-04 and 1E-06 or HI of 1 for the current and reasonably anticipated future use (military/industrial and recreational). However, as discussed for each lake in Section 3, elevated concentrations of contaminants in fish tissue do pose a potential health risk for ingestion.

4.2 Identification of ARARs

This section describes the regulatory standards and guidance that may be applied to the CERCLA remedial actions at these three sites. These regulatory standards and guidance are divided into three categories: chemical-specific, action-specific, and location-specific requirements.

In order to be classified as an ARAR, the NCP states that federal and/or state laws must meet one of the following two requirements: (1) applicability or (2) relevance and appropriateness. “Applicable” requirements are “those cleanups standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental, state environmental, or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at CERCLA site” [40 C.F.R. 300.5]. “Relevant and appropriate” requirements are “those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental, state environmental, or facility siting laws that, while not ‘applicable’ to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site” [40 C.F.R. 300.5].

The NCP identifies a third category, termed “information to-be-considered” (TBC). TBCs are guidelines or advisories that are issued by the federal or state government, but which are neither legally binding nor promulgated (USEPA 1990). However, these guidelines may be used when they are necessary to ensure protection of public health and the environment (USEPA 1990). If ARARs do not address a particular circumstance at a CERCLA site, then TBCs can be used to establish remedial guidelines or targets although their use is discretionary rather than mandatory. Even when TBCs are used, the requirements imposed on the remedy, including cost-effectiveness, still apply (55 Fed. Reg. 8745, March 9, 1990).

4.2.1 Chemical-Specific ARARs and TBC Guidance

Chemical-specific requirements establish health- or risk-based concentration limits or ranges for specific hazardous substances in various environmental media. These standards provide media cleanup levels or a basis for calculating cleanup levels for chemicals of concern. Chemical-specific standards are also used to indicate an acceptable level of discharge, to determine treatment and disposal requirements for a particular remedial activity, and to assess the effectiveness of a RA.

The potential chemical-specific ARARs and TBC guidance identified for remedial action at the site are presented in Table 4-1. These include the New Jersey promulgated surface water quality standards [SWQS; 7:9B] (potential ARAR) and the sediment standards (ISQGs, NY Sediment Criteria, and SQBs), which are non-promulgated and, therefore, are TBC’s. In addition, the USEPA has developed a water quality criterion for methylmercury in fish tissue (0.3 mg/kg fish) (USEPA, 2001), which is also a TBC.

4.2.2 Location-Specific ARARs and TBC Guidance

Location-specific requirements set restrictions on the types of remedial activities that can be performed based on specific site characteristics or location. Location-specific standards provide a basis for assessing restrictions during the formulation and evaluation of site-specific remedies. Remedial actions may be restricted or precluded based on citing laws for hazardous waste facilities and based on proximity to wetlands, riparian areas, floodplains, or man-made features such as landfill, disposal area, and/or local historical buildings. Current site conditions and anticipated future non-intrusive activities will not likely trigger any of the potential location-specific standards which are identified in Table 4-2.

4.2.3 Action-Specific ARARs and TBC Guidance

Action-specific requirements set controls or restrictions on the design, implementation, and performance of waste management actions. These standards specify performance levels, actions, or technologies and specific levels for discharge of residual chemicals. They also provide a basis for assessing the feasibility and effectiveness of the RAs. There are no potential action-specific standards identified for the corrective actions considered in this FS.

4.3 Remedial Action Objectives

The RAO is based on the continued management of human health risk that drive the formulation and development of response actions. The RAO has been developed based on the criteria outlined in Section 300.430(e)(2) of the NCP and Section 12 of SARA.

All media evaluated at this site, as a whole, have risks and hazards that are within the USEPA generally acceptable risk range or threshold under 1 for the current and reasonably anticipated future land-use scenarios (military/industrial and recreational). However, HIs above 1 associated with ingestion of fish require controls.

The proposed RAO is the following:

- Control consumption of fish with concentrations of chemical driving unacceptable risk or hazard.

4.4 Identification of Chemicals of Concern

Because the human and ecological health risks are within the generally accepted risk range/HI less than 1, the driver for instituting an action at these three water bodies is due to the presence of fish species that may be caught and consumed by recreational lake users. The chemicals of concern are specifically related to those chemicals that have been found to have unacceptable accumulation of contaminants in edible fish species. As noted in Sections 3.1.5.1, 3.2.4.1, and 3.3.4.1, the primary constituents found elevated in fish tissue were mercury and PCBs. As noted in these sections, these are contaminants for which state-wide fishing advisories exist and are not necessarily due to site-specific sources.

4.5 Identification of Cleanup Goals

In this FS, the risks and hazards for the current and future anticipated use of the site (military/industrial and recreational) are within the generally acceptable risk range and less than the HI threshold of 1, with the exception of the HI for the consumption of fish, which is greater than 1. The goal of the response action will be to address the consumption of fish species containing elevated concentrations of contaminants in their tissue driving an unacceptable health risk or hazard.

4.6 Area of Attainment

The area of attainment (AA) is defined as the area over which the RAO is to be obtained. The AA for the action at each lake is the extent of the waters of each site.

5. Identification and Screening of Remedial Technologies

This section presents the identification and screening of potentially applicable remedial technologies for addressing the sediment and surface water at these three lakes.

5.1 General Response Actions

General response actions (GRAs) are categories of remedial action that may be implemented alone or in combination to satisfy the remediation goals. Appropriate GRAs are developed in this section based on the RAO developed in Section 4.1, site-specific conditions, and contaminant characteristics. Potential remedial technologies and process options are identified and evaluated based on technical feasibility. The retained process options are screened based on effectiveness, implementability, and cost to determine which process options should be used in the development of the RAs. The No Action alternative will not meet the RAO; however, it must be retained with the applicable GRAs as a baseline for comparison.

5.2 Identification of Response Actions

The GRAs are broad categories of remedial actions that could be selected to achieve the RAO for the media and COCs at the site. Some response actions are sufficiently broad in effect that they are capable of meeting the RAO alone. The GRAs provide the basis for identifying remedial technologies and process options for screening. Potential GRAs that may be used to meet the RAO for this site and include the following:

- No Action; and
- LUCs.

This initial screening of technologies is based on technical feasibility only. There may be multiple process options associated with one type of technology. Any process options that are not technologically feasible or will not achieve the RAO are eliminated at this stage, and will not be retained for further evaluation. All GRAs are retained for evaluation and are discussed further below.

5.2.1 No Action

The no-action alternative will be evaluated to establish a baseline for the comparison of the remaining alternatives. No response action of any kind would be employed at the site under this category.

5.2.2 Land Use Controls

LUCs consist of both administrative (institutional) and physical (engineering) means to control activities at the site. The implementation and/or maintenance of LUCs will not cause any reduction in the volume, toxicity, or mobility of contamination; however, if contamination will remain at the site, it may be necessary in order to limit the potential for exposure. In such cases, LUCs can limit unauthorized access to the site, minimizing the potential for exposure without actually treating the contaminated media.

LUCs include any restrictions on the current and future use of the property in order to maintain an appropriate level of protection. Property access restrictions as a component of LUCs, such as site security and restrictions on future site activities are already in place. Some restrictions are in place at Picatinny by virtue of it being an active military installation. Continued enforcement of these restrictions will ensure the protection of human health. However, in the event that Picatinny would be closed and declared excess property, the land use restrictions would be legally recorded (e.g., in zoning ordinances, property deeds, etc.) and incorporated into the provisions for the new land use. A change of land use would result in the re-evaluation of clean-up requirements.

ICs are administrative measurements put in place to affect human activity in order to control undesirable land use. Engineering controls, such as placement of signage, are also a component of LUCs. LUCs would be established to control activities that could lead to unacceptable human exposure to environmental contaminants.

Picatinny has many safeguards in place to ensure protection of the environment and the health and safety of arsenal personnel and the public. These controls include a soil clearance policy, MEC policies, fishing advisories, lake and pond access prohibitions, and master plan regulations. In addition to these controls, Picatinny maintains a Geographic Information System (GIS) that maps contaminated areas and associated land use restrictions. The GIS is used as a tool to ensure that LUCs are properly maintained and implemented. Base access regulations and an Army Safety Program are in place and enforced. Revisions may be required in addition to the existing

safeguards to further restrict access to and activities in the Picatinny water bodies, such as specific boat launch locations and no wading.

5.3 Screening Criteria

This screening was based on three criteria: effectiveness, implementability, and cost. Each of the technology types have already been screened based on technological implementability. This evaluation of process options focused on effectiveness factors and institutional implementability with less emphasis on cost evaluation. This initial screening analysis evaluated the feasibility of each technology as it related to site characteristics, specific contaminant types and concentrations (effectiveness), implementability, past performance, and relative cost. Of these criteria, implementability and effectiveness of the technology are the most critical. Technologies judged to be inferior in meeting the implementability and effectiveness criteria were eliminated from further consideration.

5.3.1 Implementability

The implementability criterion addresses the technical and administrative feasibility of implementing a technology and the availability of various materials and services required during its implementation. In addition, the acceptance of a technology by regulatory agencies and the community is an important component in considering the implementability of any technology. Technical feasibility includes the consideration of the reliability, maturity, prior application, and operational difficulties of a technology as well as logistical, climate, and terrain limitations. Administrative feasibility includes the consideration of coordinating activities with regulatory agencies and obtaining permits, easements, right-of-way agreements, and zoning variances. The availability of materials and services includes considering the availability and distance to off-site treatment, storage, and disposal facilities, and required utility connections.

5.3.2 Effectiveness

The effectiveness criterion addresses the ability of a technology to meet the RAO, including overall protection of human health and the environment, compliance with regulations, long-term effectiveness and permanence, short-term effectiveness, and reduction of toxicity, mobility, or volume by treatment. The protection of human health and the environment considers the reduction, control, or elimination of risks at the site through the use of treatment, engineering, or ICs. Compliance with regulations considers the ability of a technology to meet regulatory requirements. Long-term

effectiveness and permanence includes the consideration of the magnitude of risk associated with residuals or untreated waste at the site and the adequacy and reliability of post-closure activities required to maintain the integrity of the response action. Short-term effectiveness includes the consideration of community protection from air quality impacts and the transportation of hazardous materials; worker protection during implementation; environmental impacts; and the timeframe required to achieve protection. Reduction of toxicity, mobility, or volume includes the consideration of the USEPA policy of preference for treatment and the extent and irreversibility of treatment.

5.3.3 Cost

The cost criterion addresses the relative magnitude of capital and operation and maintenance (O&M) costs. Capital costs consist of direct and indirect costs. Direct costs include costs associated with construction, equipment, materials, transportation, disposal, analytical services, treatment, and operation. Indirect costs include expenses related to engineering, design, legal fees, permits, and start-up. O&M costs include costs associated with operation, maintenance, energy, residual disposal, monitoring, and support.

5.4 Technology Screening

This section contains an evaluation of the process options retained from the initial preliminary screening stage in Section 5.2. Each process option will be compared only with the other process options within that technology type. The best-rated process option will be retained for development of remedial action alternatives. If there is only one process option for a type of technology, this step is unnecessary and that process option will be taken directly to the development of remedial action alternatives.

5.4.1 No Action

The risks are currently within the generally acceptable risk range for the current and reasonably anticipated future land use (military/industrial and recreational) for the lake as a whole; however, under this RA there is no mechanism to address the potential for fish consumption from any of the lakes that drives an unacceptable hazard. The following summarizes the evaluation of this remedial technology with respect to the evaluation criteria.

Implementability:

- Readily implementable.
- Generally unacceptable to regulatory agencies and public.

Effectiveness:

- Does not provide controls to maintain current site use for which conditions are protective.

Cost:

- None.

Conclusion:

Under a no action scenario there are no restrictions on site to guide or notify recreational fishermen that consumption of specific fish species. This option is eliminated from further consideration as a remedial technology because it does not meet the RAO. It was retained as a baseline for comparison with other technologies.

5.4.2 Institutional Controls

This alternative serves to maintain the current land use until site residual media concentrations area at levels that allow unrestricted use and unlimited exposure. The USEPA requires LUCs when site contaminant levels do not allow unrestricted use and unlimited exposure. They also can serve to notify current and future users about the environmental conditions of the property. Annual land use certification reports documenting that land use continues to be protective and consistent with the assumptions in the risk assessment will be signed by the Installation Commander and provided to the NJDEP and USEPA. LUCs may be appropriate to use when complete remediation is technically or economically impracticable, risks of current use are within the generally acceptable range but the site cannot be released for unrestricted use, remediation risks to worker health and safety are high, or collateral ecological damage associated with remediation would be substantial. LUCs are often used to supplement active remediation measures. Their primary purpose is to prevent unacceptable exposure.

According to the NCP, LUCs may be used during the conduct of the RI/FS and implementation of the remedial action and, where necessary, as a component of the completed remedy [40 CFR 300.430 (a)(iii)(D)]. The use of LUCs shall not substitute for active response measures (e.g., treatment and/or containment of source material, restoration of groundwaters to their beneficial uses) as the sole remedy unless such active measures are determined not to be practicable, based on the balancing of trade-offs among alternatives that is conducted during the selection of the remedy [40 CFR 300.430 (a)(iii)(D)]. The NCP regulation specifies the conditions under which LUCs can be incorporated into a remedy, but it does not provide specific guidance on how to incorporate them into the remedy selection process. The USEPA directive entitled Land Use in the CERCLA Remedy Selection Process provides insight into USEPA's position on LUCs (USEPA 1995). USEPA specifies that LUCs should be evaluated and implemented with the same degree of care as is given to other elements of the remedy. The directive states that in evaluating a remedy that includes an IC, USEPA should determine (USEPA 1995):

- The type of IC to be used;
- The existence of the authority to implement the IC; and
- The appropriate entities' resolve and ability to implement the IC.

The four general categories of ICs screened for or already in use at the Picatinny Arsenal are as follows: governmental controls, proprietary controls, and enforcement and permitting, which are supported by informational devices (USEPA 2000a). These institutional technologies are discussed in more detail in Section 6.1.2. Most of these measures have been addressed in seven elements of the Land Use Restriction policy for Picatinny. The seven elements are Site Clearance and Soil Management Procedures; Unexploded Ordnance Clearance Procedures; Master Plan Regulations; Picatinny GIS Database; Picatinny Base Access Restrictions; Picatinny Safety Program; and Army Military Construction Program. These controls and informational devices have been developed with a consideration of all reasonably anticipated land uses at the base; these include administrative and industrial military operations, outdoor recreation/golf course, and residential.

Additionally, engineering controls screened for or already in use at the Picatinny Arsenal include signage and security (including fencing). These engineering controls are discussed in more detail in Section 6.1.2.

Implementability:

- Implementable.

Effectiveness:

- Generally effective in managing future exposure.

Cost:

- Low capital and low O&M costs.

Conclusion:

Institutional controls are retained for further consideration as a stand-alone remedial technology because it would meet the RAO even in the absence of other actions because it is unclear that the mercury and PCB concentrations in the fish tissue are site related there are no actions that can be taken to address a source, which is likely to be a regional issue unrelated to former operations at Picatinny. Further, both surface water and sediment media have been found to have acceptable risks and hazards.

5.5 Summary of Technology Screening

Based on the effectiveness, implementability, and cost screening evaluation, the following process options are retained for the development of remedial action alternatives:

- No Action; and
- LUCs.

6. Development of Response Action Alternatives

Response Actions were developed from the technologies retained in the initial screening process discussed in Section 5.4. This section describes the alternatives that are further evaluated for the lake sites.

6.1 Identification of Response Actions

The only alternatives evaluated included:

- Response Action -1 – No Action; and
- Response Action -2 – LUCs.

Each of these alternatives is described in detail in the following sections.

6.1.1 Response Action -1 – No Action

Under RA -1, no corrective action of any kind would be employed for surface water/sediment. The no-action RA was evaluated to establish a baseline for comparison regarding future performance and risk against the remaining alternatives, even though no-action could not be employed as a viable alternative itself because, despite acceptable lake-wide risks/HI, the potential for exposure to/consumption of fish tissue with elevated concentrations of contaminants would still pose a potential health risk without any controls or notifications in place. There is no cost associated with this alternative.

6.1.2 Response Action -2 – LUCs

Under RA -2, existing LUCs for controlling the ingestion of fish would be directly implemented as a CERCLA action instead of reliance solely on state-wide advisories or facility regulations. Land use controls are administrative measurements put in place to affect human activity, in order to control future land use. The LUCs are incorporated into the Master Plan and supported/documented in the Installation GIS. The RA-2 alternative will provide a method to notify recreational fishermen of the hazards potentially posed by overconsumption of specific fish species in these lakes.

As mentioned previously, the DEH Land Management Division and the Morale Support Activity currently manage Picatinny Lake as a recreational resource. Despite the

potential presence of MEC in the lake, the lake is accessible for various recreational activities, which are specified in the Recreational Hunting, Trapping, Fishing, and Boating document (Regulation 200-3 dated August 2006). Fishing is allowed from the lake shore (except certain areas, which are restricted due to site activities, such as the western shore of the lake,), by boat, or, if seasonal conditions allow, fishing can be conducted from the ice. Due to exceedences of NJ state fish tissue criteria a fish consumption advisory is in place at the facility and enforced through Regulation 200-3 to prevent consumption of fish from facility lakes; however, under this alternative, additional details will be added for the results from the fish tissue studies conducted at these lakes and the NJDEP fish consumption recommendations, included in Appendix C, will be formalized as CERCLA ICs.

Engineering controls, including signage (warning signs) describing restrictions of site use at the major access points of sites included in this FS, to augment the existing perimeter fence surrounding Picatinny Arsenal. Annual Inspections will be performed to establish that all on-site LUCs (for example, signage) are in good condition and to confirm that the land use of the site has not changed. The inspections will be documented in annual reports and during the 5-year CERCLA reviews.

7. Detailed Evaluation of Response Actions

7.1 Evaluation Criteria

This section presents a detailed analysis of each remedial action alternative developed in Section 6. These analyses are intended to aid in the selection of an RA that best satisfies the criteria identified in the NCP (USEPA 1990), and the specific RAO, ARARs, and cleanup goals for the sites included in this FS.

Section 300.430(e) of the NCP lists nine criteria against which each RA must be assessed. The first two criteria are threshold criteria that must be met by each alternative. The next five criteria are the primary balancing criteria upon which the analysis is based. The final two criteria are referred to as modifying criteria and are applied after the subsequent public comment period to evaluate state and community acceptance. The acceptability or performance of each RA against the criteria is evaluated individually so that relative strengths and weaknesses may be identified.

The two threshold criteria are:

- Protection of human health and the environment; and
- Compliance with ARARs.

The five primary balancing criteria upon which the analysis is based on are:

- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume through treatment;
- Short-term effectiveness;
- Implementability; and
- Cost.

Two modifying criteria will be evaluated following comments on the Proposed Plan and will be described in the ROD. The modifying criteria are not addressed in this FS. These criteria are:

- State acceptance; and
- Community acceptance.

The preferred RA for each of the target media will be the RA which satisfies the first two criteria and achieves the best combination of the remaining seven.

7.1.1 Overall Protection of Human Health and the Environment

This criterion addresses the extent and manner in which the RA achieves protection of human health and the environment over time. Protection of human health and the environment is met if each human health and ecological exposure pathway identified in the risk assessment as potentially resulting in adverse effects is eliminated, reduced to an acceptable level, or controlled through treatment or engineering and LUCs. Site use restrictions after remediation are also considered under this criterion.

7.1.2 Compliance with Applicable or Relevant and Appropriate Requirements

This criterion addresses whether the RA complies with ARARs or TBCs.

7.1.3 Long-Term Effectiveness and Permanence

The long-term reliability and effectiveness criterion addresses the extent and manner in which the RA continues to protect human health and the environment in terms of residual risk remaining at the site after the corrective action objectives have been met. This criterion considers the residuals following completion of the actions, expected duration of the remedy, and the degree of controls required to ensure protectiveness of the remedy.

7.1.4 Reduction of Toxicity, Mobility, or Volume of Wastes

This criterion relates to the extent to which RAs permanently reduce the toxicity, mobility, and volume of contaminants present at the site. Factors for this criterion include the degree of permanence of the remedial action, the amount of hazardous materials destroyed, and the type and quantity of residuals remaining after treatment.

7.1.5 Short-Term Effectiveness

Short-term effectiveness addresses the effects of the RA during construction and implementation until the corrective action objectives are met. This criterion considers the protection of the community and workers, including the air-quality effects and hazards from excavation, transportation, and on-site treatment. In addition, the expected length of time for completion of the remedial action is considered.

7.1.6 Implementability

The technical and administrative feasibility of implementing each RA and the availability of services and materials are addressed by this criterion. This criterion also considers the degree of coordination required by the regulatory agencies, successful implementation of the remedial action at similar sites, and research to realistically predict field implementability.

7.1.7 Cost

This criterion addresses the capital costs, the operation and maintenance costs, and the present worth analysis of costs anticipated for the implementation of the remedy. Capital costs are divided into direct costs (construction) and indirect costs (non-construction and overhead). Direct capital costs include construction, equipment, land and site development, relocation, and disposal costs. Indirect capital costs include engineering expenses, legal fees, license or permit costs, start-up costs, and contingency allowances. Operation and maintenance costs consist of costs associated with post construction activities necessary to properly operate, maintain, and monitor a given remedy.

A detailed present-worth cost was developed for each RA. The opinions of probable cost presented in this FS were developed in accordance with USEPA guidance (USEPA, 2000b), vendor quotes, and previous project costs. The opinions of probable cost presented in this report were prepared with an anticipated accuracy range of +50 to -30 percent.

Cost as a criterion may also be used to screen RAs where each RA is found to equally meet or exceed the RAO. The cost analyses were developed applying the criteria detailed in the following sections.

7.1.7.1 Direct Capital Cost

Direct capital costs are comprised of the following components:

- Construction Costs - Costs for materials, labor, and equipment necessary to implement the RA;
- Equipment Costs - Cost of the equipment and/or services necessary to implement the response action; these are permanent equipment costs that continue for the duration of the operational period;
- Land and Site Development Costs - Costs associated with site or building preparation;
- Building and Service Costs - Costs for process and non-process buildings, utility connections, and purchased services; and
- Disposal Costs - Costs for the off-site disposal of wastes generated during any supplemental investigation (if necessary), remediation, and monitoring activities.

7.1.7.2 Indirect Capital Cost

Indirect capital costs are comprised of the following components:

- Engineering Expenses - Costs for project administrative, design, drafting, and construction supervision;
- Legal Fees and License or Permit Costs - Administrative, legal, and technical support costs to obtain licenses and permits for installation and operation of the remedy;
- Startup and Shakedown Costs - Costs incurred during startup of permanent systems;
- Contingency Allowances - Funds allocated and budgeted to cover unforeseen circumstances or scope modifications; and

- Shutdown Costs - Costs necessary for the termination of operations after the acceptance of the response action.

7.1.7.3 Operation and Maintenance Cost

Operation and maintenance costs are comprised of the following components:

- Operating Labor Costs - Wages, salaries, overhead, fringe benefits, and profit associated with the labor force required to implement post-construction operations;

- Maintenance Materials and Labor Costs - Costs for labor, equipment, materials, parts and other resources required for routine maintenance of facilities and equipment;

- Auxiliary Materials and Energy - Cost of items such as expendable chemicals and electricity for treatment plant operations, water, sewer service, and fuel;

- Purchased Services - Sampling costs, laboratory fees, and professional fees for monitoring purposes;

- Disposal and Treatment Costs - Costs for the treatment and disposal of wastes generated in on-site treatment processes;

- Administrative Costs - Costs associated with administration of the response action operations, including financing, accounting and general overhead and management;

- Insurance, Taxes, and Licensing Costs - Costs such as liability and sudden accident insurance, licensing fees, or permit renewal and reporting costs;

- Maintenance Reserve and Contingency Funds - Costs for the anticipated replacement or rebuilding of equipment or unanticipated operations and maintenance costs; and

- Other Costs - Items not otherwise assignable to the above categories.

7.2 Individual Analysis of Alternatives

This section provides detailed analysis of each RA presented in Section 6. Table 7-1 presents the individual analysis of the RAs.

7.2.1 Alternative -1 - No Action

According to the NCP, the level of protectiveness achieved must be compared to the required expenditure of time and materials as an integral portion of the remedy selection process. The No Action alternative is intended to serve as a baseline by which to compare the risk reduction effectiveness of other potential alternatives. In this alternative, no remedial actions would be performed. No efforts would be undertaken to contain, remove, or monitor any contaminated areas at the site. The sites would remain without any additional actions.

- Overall Protection of Human Health and the Environment: The No Action alternative provides no control of potential exposure to elevated concentrations of contaminants in fish tissue through consumption of fish. No mechanism would be instituted to notify or implement a fish consumption advisory to recreational fishermen; and would therefore not be protective of human health.

- Compliance with ARARs: There are no ARARs associated with the No Action alternative Long-Term Effectiveness and Permanence: The No Action alternative does not provide any controls for protecting recreational users from potential exposure to contaminants in fish tissue.

- Reduction of Toxicity, Mobility, and Volume of Waste: This alternative does not employ any treatment that would reduce the toxicity, mobility, or volume of COCs, Short-Term Effectiveness: Implementation of this alternative does not pose any additional risks to the community, the workers, or the environment since there are no remedial activities associated with it.

- Implementability: There are no implementability concerns posed by this option.

- Cost: There are no present worth costs and capital costs for the No Action alternative because there would be no action taken.

7.2.2 Alternative -2 - LUCs

Alternative -2 consists of LUCs, which apply to the extent of each lake's surface water.. The human health risks are in the generally acceptable range of 1E-6 to 1E-4, and the HI is less than 1 for the current reasonably anticipated future uses of Picatinny Lake overall, which is military/industrial and recreational. Overall ecological risks are not significant for these sites. However, there is potential exposure to contaminants in fish tissue if species with elevated concentrations of contaminants are over-consumed, particularly by sensitive population groups. Therefore, ICs would be implemented to provide notification of the fish consumption advisory recommendations of the NJDEP (Appendix C). The Department of Defense is responsible for implementing, maintaining, monitoring, reporting on, and enforcing the LUCs that will be included in the remedial design. Elements of the ICs at Picatinny, including specific LUC implementation descriptions, will be included as part of the remedial design. The LUC objectives are the following:

- Ensure protection of human health through LUCs.

Discussion of the evaluation criteria for this alternative is below:

- Overall Protection of Human Health and the Environment: Alternative -2 will protect human health by posting and formally instituting fish consumption advisory information for recreational users as indicated in the NJDEP letter included in Appendix C.

- Compliance with ARARs: The implementation of the fish consumption advisory (Appendix C) will meet TBC guidance as well as action and location specific ARARs.

- Long-Term Effectiveness and Permanence: The actions described in Section 6.1.2 will be included in the LUC remedial design to provide long term effectiveness. Many of the exhibits required (maps, engineering drawings, location maps) are already incorporated into the Army's plans.

- Reduction of Toxicity, Mobility, and Volume of Waste: This alternative does not employ any treatment that would reduce the toxicity, mobility, or volume of COCs, but based on the HHRA and ERA, remaining concentrations of materials do not pose an unacceptable risk to human health or the environment with the exception of fish tissue and contamination may not be site related.

- Short-Term Effectiveness: Implementation of this alternative does not pose any additional short-term risks to the community, the workers, or the environment. This alternative is effective in providing appropriate notification to lake users of the potential for exposure to elevated concentrations of contaminants in fish tissue through the use of ICs.

- Implementability: There are no implementability concerns posed by this option.

- Cost: The cost associated with the implementation of LUCs is summarized in Table 7-2; and the detailed assumptions are presented in Appendix F. The costs associated with the implementation of LUCs are based on the best available information regarding the anticipated scope of the RA. The projected present-worth cost of the RA is $188,000.

7.3 Comparative Analysis of Alternatives

In Section 7.2, each of the alternatives for the lake sites was evaluated on an individual basis. This section provides a comparative analysis of the expected performance of each alternative relative to the other alternatives to identify their respective advantages and disadvantages. A comparative analysis of the alternatives is presented within this section.

In order to compare the response action alternatives, ratings of poor, acceptable, good or excellent were assigned to each of the evaluation criteria used in the analysis of the alternatives. Ratings were assigned based on a subjective appraisal of the degree to which each alternative met the criteria. The ratings and overall score for each alternative are presented in Table 7-3.

7.3.1 Overall Protection of Human Health and the Environment

Alternative -1 does not provide protection of human health or the environment because there are no restrictions to limit or notify lake users of the potential for exposure to elevated concentrations of contaminants in fish tissue. Alternative -2 does provide overall protection of human health and the environment because LUCs will be employed to provide appropriate notification and enforcement of the fish consumption advisories for these water bodies. Therefore, Alternative -1 is rated poor and Alternative -2 is rated excellent.

7.3.1.1 Compliance with ARARs

Alternative -2 complies with chemical-, location, and action-specific ARARs/TBCs. There are no ARARs for the No Action alternative.

7.3.1.2 Long-Term Reliability and Effectiveness

Alternative -1 does not provide effective protection to recreational users regarding the potential for exposure to contaminants in fish tissue, whereas, Alternative -2 does provide effective protection and provides protection through the Army's maintenance of the ICs over the long-term since there are no plans to change the land use/ownership of this facility. Therefore, Alternative -1 is rated poor and Alternative -2 is rated excellent.

7.3.1.3 Reduction of Toxicity, Mobility, or Volume of Wastes

Alternatives -1 and -2 do not contribute to the reduction in the toxicity, mobility, or volume of wastes present; however, because the HHRA and ERA indicate that there are no unacceptable risks, reduction of toxicity, mobility, or volume of wastes is not relevant. The nature of the elevated concentrations of contaminants in fish tissue is not attributable to site-specific sources based on the state-wide fish consumption advisories that are in place across the state. Therefore, these alternatives are rated as adequate.

7.3.1.4 Short-Term Effectiveness

There are no additional short-term risks or hazards to the community, workers, or recreational users for implementation of either of the two alternatives. Alternative -1 does not provide effective protection to recreational users regarding the potential for exposure to contaminants in fish tissue, however. Alternative -2 does provide effective protection and provides protection through the Army's maintenance of the ICs over the long-term since there are no plans to change the land use/ownership of this facility. Therefore, Alternative -1 is rated poor and Alternative -2 is rated excellent.

7.3.1.5 Implementability

There are no implementability concerns with either of these two alternatives; therefore, both alternatives are rated as excellent.

7.3.1.6 Cost

There are no costs associated with Alternative -1, so this alternative is rated excellent. Alternative -2 is the most costly alternative, but the cost is reasonable, and is, therefore, rated as good.

The final overall rating for Alternatives 1 and 2 are poor and excellent, respectively.

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Tables

Table 3-1
Summary of Human Health Risk Assessment Conclusions: PICA 015, 057, and 164
Picatinny Arsenal, New Jersey

Major PICA (Minor PICA)/Site	Media	Land Use Scenario	Population	Carcinogenic Risk*	Primary Risk Drivers**	Noncarcinogenic Hazard	Hazard Drivers	Lead
015/54	Surface Soil	Current/Future	Industrial/Research Worker	1E-05	As	<1	NH	Not a COPC at this Site
	Sediment	Current/Future	On-Site Youth Visitor	2E-06	As	<1	NH	
	Surface Water	Current/Future	On-Site Youth Visitor	NE	-	<1	NH	
057/53	Surface Water	Current/Future	Industrial/Research Worker Chemical Risk	2E-08	NR	<1	NH	Not a COPC at this Site
	Surface Water	Current/Future	Industrial/Research Worker Radiological Risk	2E-06	Pb-210	Not relevant	-	
	Sediment	Current/Future	On-Site Youth Visitor Chemical Risk	4E-05	RDX	1	RDX	
	Surface Water	Current/Future	On-Site Youth Visitor Chemical Risk	2E-06	Mirex	<1	NH	
	Sediment	Current/Future	On-Site Youth Visitor Radiological Risk	NE	-	Not relevant	-	
	Surface Water	Current/Future	On-Site Youth Visitor Radiological Risk	NE	-	Not relevant	-	
47/63-65	Sediment	Current/Future	On-Site Youth Visitor	3E-05	BaP	<1	NH	Not a COPC in this Medium
	Surface Water	Current/Future	On-Site Youth Visitor	NE	-	<1	NH	Not a COPC in this Medium
079/40	Sediment	Current	Industrial/Research Worker	2E-09	NR	<1	NH	Not a COPC in this Medium
	Sediment	Future	Industrial/Research Worker	4E-09	NR	<1	NH	Not a COPC in this Medium
	Sediment	Current/Future	On-Site Youth Visitor	9E-05	RDX	15	TNT	Not a COPC in this Medium
	Surface Water	Current	Industrial/Research Worker	5E-09	NR	<1	NH	No concern
	Surface Water	Future	Industrial/Research Worker	1E-08	NR	<1	NH	No concern
	Surface Water	Current/Future	On-Site Youth Visitor	2E-07	NR	<1	NH	No concern

Table 3-1
Summary of Human Health Risk Assessment Conclusions: PICA 015, 057, and 164
Picatinny Arsenal, New Jersey

Major PICA (Minor PICA)/Site	Media	Land Use Scenario	Population	Carcinogenic Risk*	Primary Risk Drivers**	Noncarcinogenic Hazard	Hazard Drivers	Lead
079/156	Sediment	Current/Future	On-Site Youth Visitor	3E-06	As	<1	NH	Not a COPC in this Medium
	Surface Water	Current/Future	On-Site Youth Visitor	NE	-	<1	NH	Not a COPC in this Medium
079/157	Sediment	Current/Future	Industrial/Research Worker	3E-06	As	<1	NH	Not a COPC in this Medium
	Surface Water	Current/Future	Industrial/Research Worker	4E-10	NR	<1	NH	Not a COPC in this Medium
	Sediment	Current/Future	On-Site Youth Visitor	4E-06	As	<1	NH	Not a COPC in this Medium
	Surface Water	Current/Future	On-Site Youth Visitor	1E-08	NR	<1	NH	Not a COPC in this Medium
085/33	Sediment	Current/Future	On-Site Youth Visitor	4E-07	NR	<1	NH	
085/113	Surface Soil	Current/Future	Industrial/Research Worker	4E-06	As	<1	NH	
	Subsurface Soil	Current/Future	Construction/Excavation Worker	5E-07	NR	<1	NH	
	Sediment	Current/Future	On-Site Youth Visitor	2E-06	As	<1	NH	
	Surface Water	Current/Future	On-Site Youth Visitor	NE	-	<1	NH	
135/71	Sediment	Current/Future	On-Site Youth Visitor	2E-06	As	<1	NH	
	Surface Water	Current/Future	On-Site Youth Visitor	NE	-	<1	NH	
135/158	Sediment	Current/Future	On-Site Youth Visitor	4E-06	As	<1	NH	
	Surface Water	Current/Future	On-Site Youth Visitor	NE	-	<1	NH	
135/159	Sediment	Current/Future	On-Site Youth Visitor	2E-05	BaP	<1	NH	Not a COPC in this Medium
	Surface Water	Current/Future	On-Site Youth Visitor	4E-08	NR	<1	NH	Not a COPC in this Medium

Table 3-1
Summary of Human Health Risk Assessment Conclusions: PICA 015, 057, and 164
Picatinny Arsenal, New Jersey

Major PICA (Minor PICA)/Site	Media	Land Use Scenario	Population	Carcinogenic Risk*	Primary Risk Drivers**	Noncarcinogenic Hazard	Hazard Drivers	Lead
137/82	Sediment	Current/Future	On-Site Youth Visitor	3E-06	As	<1	NH	
	Surface Water	Current/Future	On-Site Youth Visitor	1E-09	NR	<1	NH	
143/108	Sediment	Current/Future	On-Site Youth Visitor	7E-07	NR	<1	NH	Not a COPC in this Medium
	Surface Water	Current/Future	On-Site Youth Visitor	3E-08	NR	<1	NH	Not a COPC in this Medium
164/103	Sediment	Current	On-Site Youth Visitor	1E-06	As	<1	NH	No Concern
	Surface Water	Current	On-Site Youth Visitor	NE	-	<1	NH	Not a COPC in this Medium

*All reported cancer risks are based on chemical risks unless otherwise indicated.

**BAP = Benzo(a)pyrene; BAP TE=Toxic equivalents of Benzo(a)pyrene; TCDD TE = Toxic Equivalents of 2,3,7,8-tetrachlorodibenzo-p-dioxin

NE = Not evaluated

NR = Not relevant. Cancer risk driver not present because risk is below USEPA's target cancer risk range of 1E-4 to 1E-6 for the evaluated receptors.

NH = No Hazard

Shaded rows are not reasonably anticipated future use of the site.

Table 3-2
Fish Consumption Risk Evaluation for Picatinny Lake, Lake Denmark, and Green Pond Brook
Picatinny Arsenal, New Jersey

Area/Species	Adult Army Personnel		Child of Army Personnel	
Lakes and Brook Area	Estimated Cancer Risk	Estimated Hazard Index	Estimated Cancer Risk	Estimated Hazard Index
Brown Bullhead	NE	≤1	NE	1
Black Crappie	NE	2 (mercury)	NE	4 (mercury)
Carp	6.00E-06	≤1	3.00E-06	1
Chain Pickerel	3.00E-05	3 (mercury)	1.00E-05	5 (mercury)
Largemouth Bass	3.00E-05	4 (mercury)	1.00E-05	8 (mercury, PCBs)
Yellow Perch	4.00E-05	2 (mercury)	2.00E-05	5 (mercury, PCBs)

NE=Not evaluated as there were no carcinogenic COPCs in fish tissue

Source: Table 4-5, Shaw 2004a.

Table 3-3
Lines of Evidence for Ecological Risk Assessment of Lake Denmark
Picatinny Arsenal, New Jersey

Receptors (Representative); Exposure pathway	**Lines of Evidence**	**Conclusions**	
Aquatic Biota (Fish Community); Surface Water – Direct contact	Constituent Concentrations in Water	(-)	Limited exceedances of very conservative screening values
	Biosurvey Results	(+/-)	Survey results did not indicate significant effects to fish population
	Weight of Evidence	(-)	Constituents do not pose significant risks
Benthic Biota (Benthic Invertebrate Community); Sediment – Direct Contact	Constituent Concentrations in Sediment	(-)	Generally limited exceedances of conservative screening values; some moderate (though not severe) exceedances occurred in isolated areas along the western shoreline; exposures for lake-wide community are minimal
	Biosurvey Results	(+/-)	Results are only qualitative, but dragonfly and damselfly species richness is exceptional, including a relatively rare species.
	Weight of Evidence	(-)	Constituents do not appear to pose significant risks to benthic community
Semi-Aquatic Carnivores (Great Blue Heron and Mink Populations); Bioaccumulation – Indirect via food chain	Constituent Concentrations in Water, sediment, and prey.	(-)	Constituents do not pose significant risks
Aerial Insectivores (Indian bat population); Bioaccumulation – Indirect via food chain	Modeled exposure via ingestion of emergent insects from lakes and ponds at Picatinny.	(-)	Constituents do not pose significant risks

(-) Indicates evidence is not consistent with adverse effects of constituents
(+) Indicates evidence is consistent with adverse effects of constituents
(+/-) Indicates evidence is ambiguous with respect to adverse effects of constituents

Table 3-4
Lines of Evidence for Ecological Risk Assessment of Picatinny Lake
Picatinny Arsenal, New Jersey

Receptors (Representative); Exposure pathway	**Lines of Evidence**	**Conclusions**	
Aquatic Biota (Fish Community); Surface Water – Direct contact	Constituent Concentrations in Water	(-)	Limited exceedances of very conservative screening values
	Bioassay Results	(-)	No biologically significant effects
	Biosurvey Results	(+/-)	Survey results did not indicate significant effects to fish population
	Weight of Evidence	(-)	No significant ecological risks
Benthic Biota (Benthic Invertebrate Community); Sediment – Direct Contact	Constituent Concentrations in Sediment	(+)	Generally moderate exceedances of very conservative screening values; however, explosives in two samples exceeded screening values by 5 to 6 orders of magnitude
	Bioassay Results	(+)	Severe toxicity observed in 6 samples, 2 of which also had elevated concentrations of explosives
	Biosurvey Results	(-)	Picatinny Lake has a more diverse benthic community compared to reference communities
	Weight of Evidence	(+)	Constituents do not appear to pose significant risks to the overall benthic community; however, isolated hot spots along the Explosive Peninsula pose potentially severe risks
Semi-Aquatic Carnivores (Great Blue Heron and Mink Populations); Bioaccumulation – Indirect via food chain	Constituent Concentrations in Water, sediment, and prey.	(-)	Constituents do not pose significant ecological risks
Semi-Aquatic Herbivores (Muskrat Populations); Bioaccumulation – Indirect via food chain	Constituent Concentrations in Water, sediment, and modeled uptake by aquatic plants.	(+/-)	Modeling results indicate that arsenic is the only chemical associated with an Environmental Effects Quotient greater than 10; however, population-level ecological risks are unlikely

(-) Indicates evidence is not consistent with adverse effects of constituents
(+) Indicates evidence is consistent with adverse effects of constituents
(+/-) Indicates evidence is ambiguous with respect to adverse effects of constituents

Table 3-5
Fish Consumption Risk Evaluation for Small Basins and Ponds Surface Water Area (including the EOD Pond, Fisher's Pond, North Basin and South Basin)
Picatinny Arsenal, New Jersey

Area/Species	Adult Army Personnel		Child of Army Personnel	
Small Basins and Ponds SWA	Estimated Cancer Risk	Estimated Hazard Index	Estimated Cancer Risk	Estimated Hazard Index
Black Crappie	8.00E-07	<1	4.00E-07	1
Channel Catfish	3.00E-05	<1	1.00E-05	2 (mercury)
Chain Pickerel	8.00E-05		4.00E-05	3 (mercury)
Largemouth Bass	2.00E-05	2 (mercury)	7.00E-06	4 (mercury)
Yellow Perch	4.00E-06	2 (mercury)	2.00E-06	3 (mercury)

Source: Table 4-5, Shaw 2004a.

Table 4-1
Potential Chemical-Specific ARARs and TBC Guidance
Picatinny Arsenal, New Jersey

Media	Authority	Requirement	Requirement Synopsis	ARAR or TBC
Fish Tissue	Federal Criteria, Advisories, and Guidance	USEPA Methylmercury Water Quality Criterion (EPA-823-R-01-001)	USEPA has developed a water quality criterion for the protection of human health based on concentration of methylmercury in fish tissue as 0.3 mg/kg fish.	TBC

Notes:

ARAR – Applicable or Relevant and Appropriate
TBC – To Be Considered
USEPA – United States Environmental Protection Agency

Table 4-2
Potential Location-Specific ARARs and TBC Guidance
Picatinny Arsenal, New Jersey

Authority	Requirement	Requirement Synopsis	ARAR or TBC
State Regulatory Requirement	NJDEP and NJDHSS Fish Advisories	The NJDEP and NJDHSS have developed statewide and waterbody-specific fish consumption advisories to protect the population from potential chemicals which have been identified as bioaccummulating in fish tissue.	TBC

Notes:
NJDEP – New Jersey Department of Environmental Protection
NJDHSS – New Jersey Department of Health and Senior Services

Table 7-1
Summary of Individual Analysis of Remedial Actions
Picatinny Arsenal, New Jersey

Alternative	Overall Protection of Human Health and the Environment	Compliance with ARARs	Long Term Effectiveness and Permanence	Reduction of Toxicity, Mobility, and Volume through Treatment	Short-Term Effectiveness	Implementability	Cost
1 - No Action	Overall risks to human health and the environment are within the generally accepted risk range; however, this alternative does not provide protection against potential exposure to contaminants through fish consumption.	Complies with ARARs.	Does not provide effective or permanent protection against potential exposure to contaminants through fish consumption.	Reduction of toxicity, mobility, and volume through treatment is not achieved, but is not required based on HHRA and ERA.	Does not pose any additional risks to the community, the workers, or the environment, but does not provide effective or permanent protection against potential exposure to contaminants through fish consumption.	No implementability concerns .	$0
2 - LUCs	Overall risks to human health and the environment are within the generally accepted risk range. This alternative does, however, provide protection against potential exposure to contaminants through fish consumption.	Complies with ARARs.	Effective and permanent alternative for the long term for maintaining fish consumption advisory.	Reduction of toxicity, mobility, and volume through treatment is not achieved, but is not required based on HHRA and ERA.	Does not pose any additional risks to the community, the workers, or the environment, and does provide effective or permanent protection against potential exposure to contaminants through fish consumption.	No implementability concerns.	$188,000

ARAR - applicable or relevant, and appropriate requirement

ERA - Ecological Risk Assessment

HHRA - Human Health Risk Assessment

LUC - land use control

Table 7-2
Projected Costs for Response Action 2: ICs
Picatinny Arsenal, New Jersey

ITEM		QUANTITY	UNITS	UNIT COST	CAPITAL COST	ANNUAL O & M COST	PRESENT WORTH COST
I. ADMINISTRATIVE ACTIONS							
1. Land-Use Controls		1.0	LS	$58,800	$58,800		
Subtotal:					$58,800	$0	$0
II. ANNUAL INSPECTION AND FIVE YEAR REVIEW							
1. Annual Inspection and Reporting		30.0	Each	$3,800		$114,000	$47,200
2. Five Year Review		6.0	Each	$15,000		$90,000	$37,200
Subtotal:					$0	$204,000	$84,400
SUBTOTAL (I and II)					$58,800	$204,000	$84,400
III. IMPLEMENTATION COSTS							
1. Administration and Legal	5% of Capital Costs				$2,900		
2. Remedial Design		1.0	LS	$10,000	$10,000		
3. Completion Report		1.0	LS	$10,000	$10,000		
4. Cost Contingency	15% of Capital Costs				$8,800		
5. O&M Contingency	15% of O&M Costs					$30,600	$12,700
Subtotal:					$31,700	$30,600	$12,700
A. TOTAL CAPITAL COSTS					$90,500		
B. TOTAL ANNUAL COSTS						$234,600	
C. TOTAL PRESENT WORTH OF ANNUAL COSTS							$97,100
TOTAL PRESENT WORTH OF CAPITAL AND ANNUAL COSTS (A + C)							$188,000

LS - Lump Sum

Present worth cost is calculated using 7.0% interest in 2012 dollars.

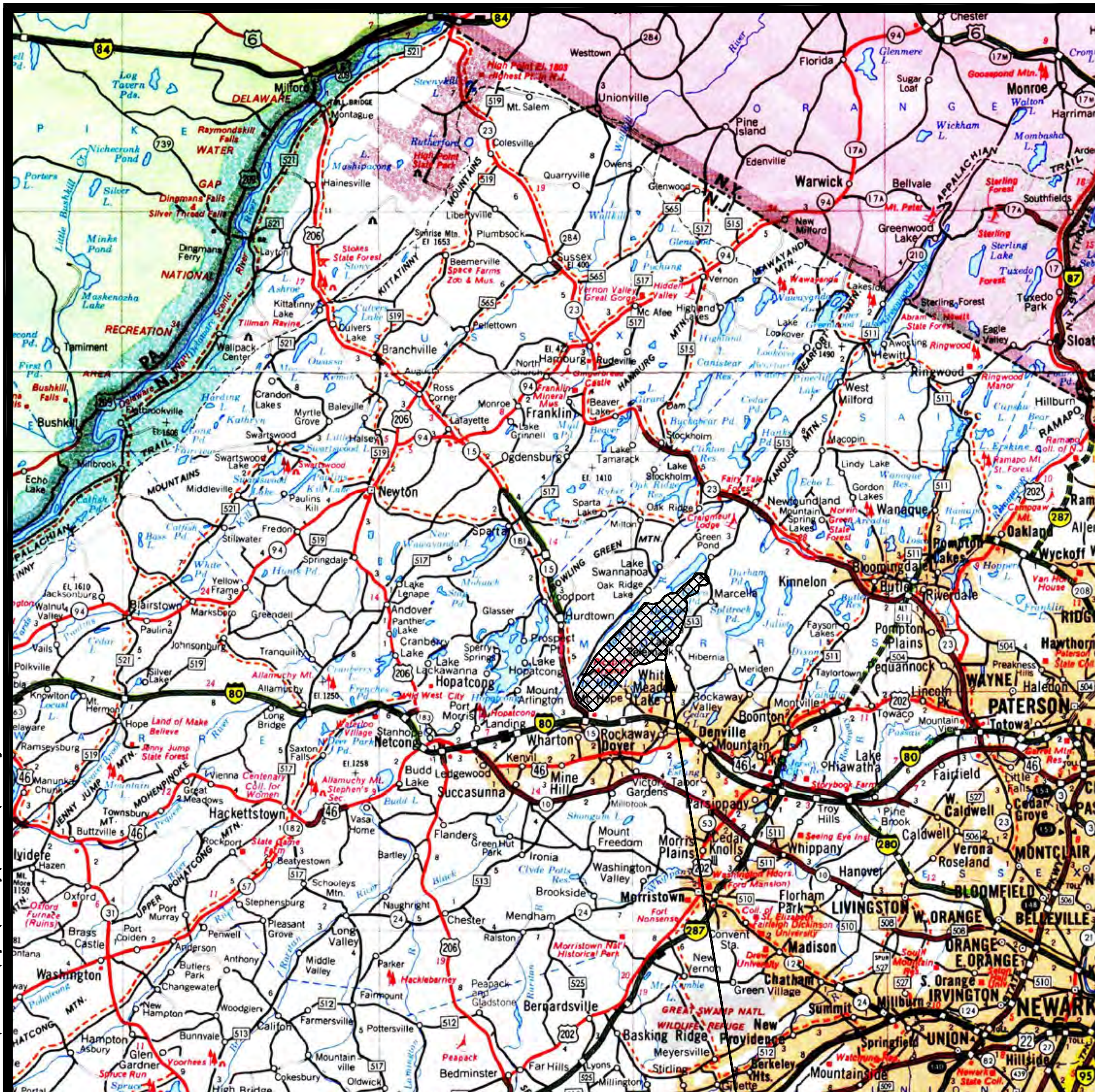
Table 7-3
Comparative Analysis of Remedial Actions
Picatinny Arsenal, New Jersey

Criteria	Alternative 1 No Action	Alternative 2 Land Use Controls
Threshold Criteria		
Overall Protection of Human Health and the Environment	X	●
Compliance with ARARs	◓	◓
Balancing Criteria		
Long-Term Effectiveness and Permanence	X	●
Reduction of Toxicity, Mobility, or Volume through Treatment	○	○
Short-Term Effectiveness	X	●
Implementability	●	●
Cost	●	◓
Overall Rating	○	●

Relative Ratings

●	Excellent
◓	Good
○	Adequate
X	Poor

Figures



MAP SOURCE: RAND McNALLY, NEW JERSEY STATE ROAD MAP 1991

NEW JERSEY

SITE LOCATION

0	1000	2000

SCALE: FEET

ARCADIS

105 Fieldcrest Avenue, Suite 305
Edison, New Jersey 08837
Tel (732) 225-5061 Fax (732) 225-5067

SITE LOCATION MAP

PICATINNY ARSENAL
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER
TL	PJS
DRAFTER	CHECKED
JSG	GSK
PROJECT NUMBER	DRAWING NUMBER
GP06PICA.P057	2-1

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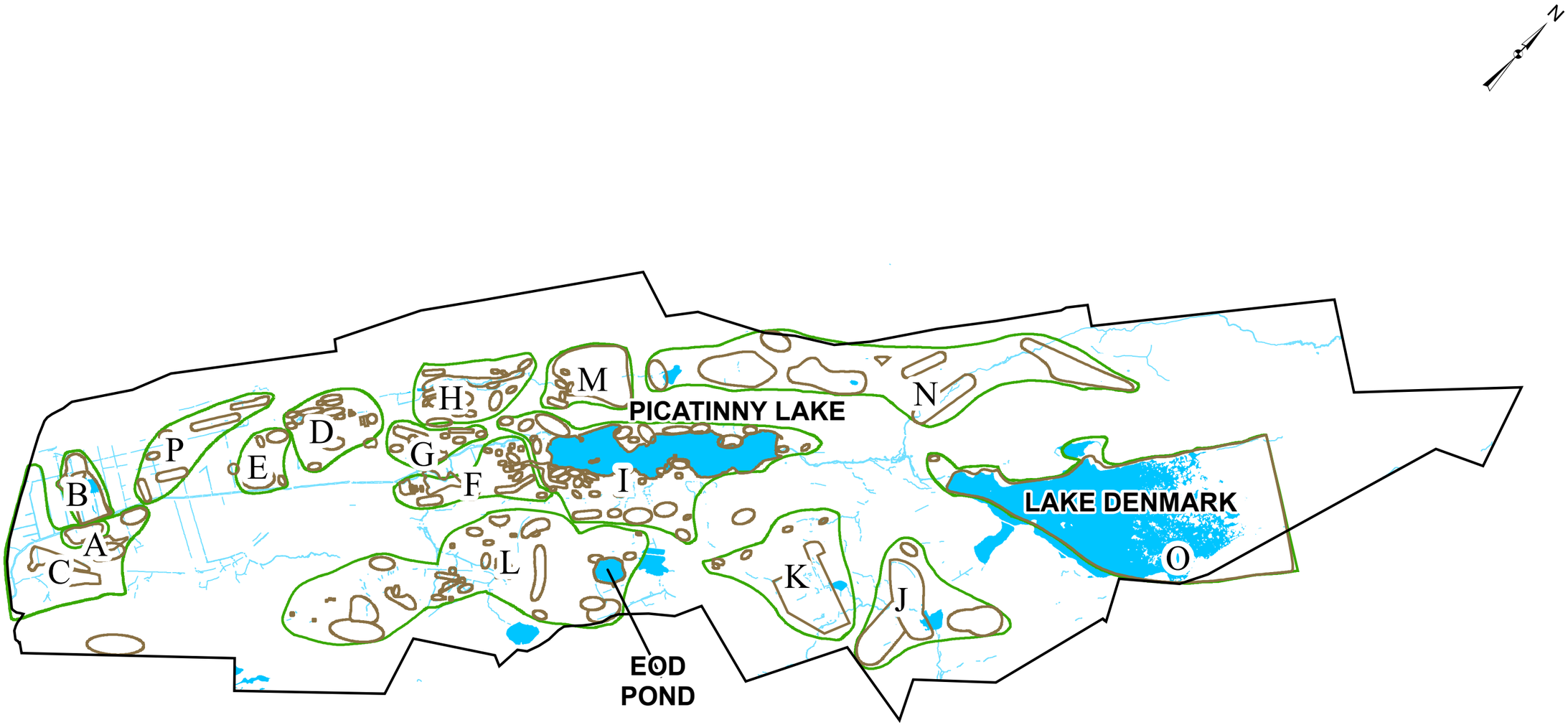
Date\Time : Thu, 31 Aug 2006 – 9:46am



Legend

- Boundary
- Approximate Site Locations
- ANL RI Concept Plan Areas
- Surface Water Features
- Water Bodies

0 750 1,500 3,000 4,500 6,000 Feet

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PICATINNY RI CONCEPT PLAN STUDY AREAS
PICATINNY ARSENAL, NEW JERSEY

PROJECT MANAGER T. LLEWELLYN	DEPARTMENT MANAGER M. MOHIUDDIN
DRAWN M. GRESS	CHECKED K. TIPTON
PROJECT NUMBER GP06PICAPO57.NJ01	DRAWING NUMBER 2-2

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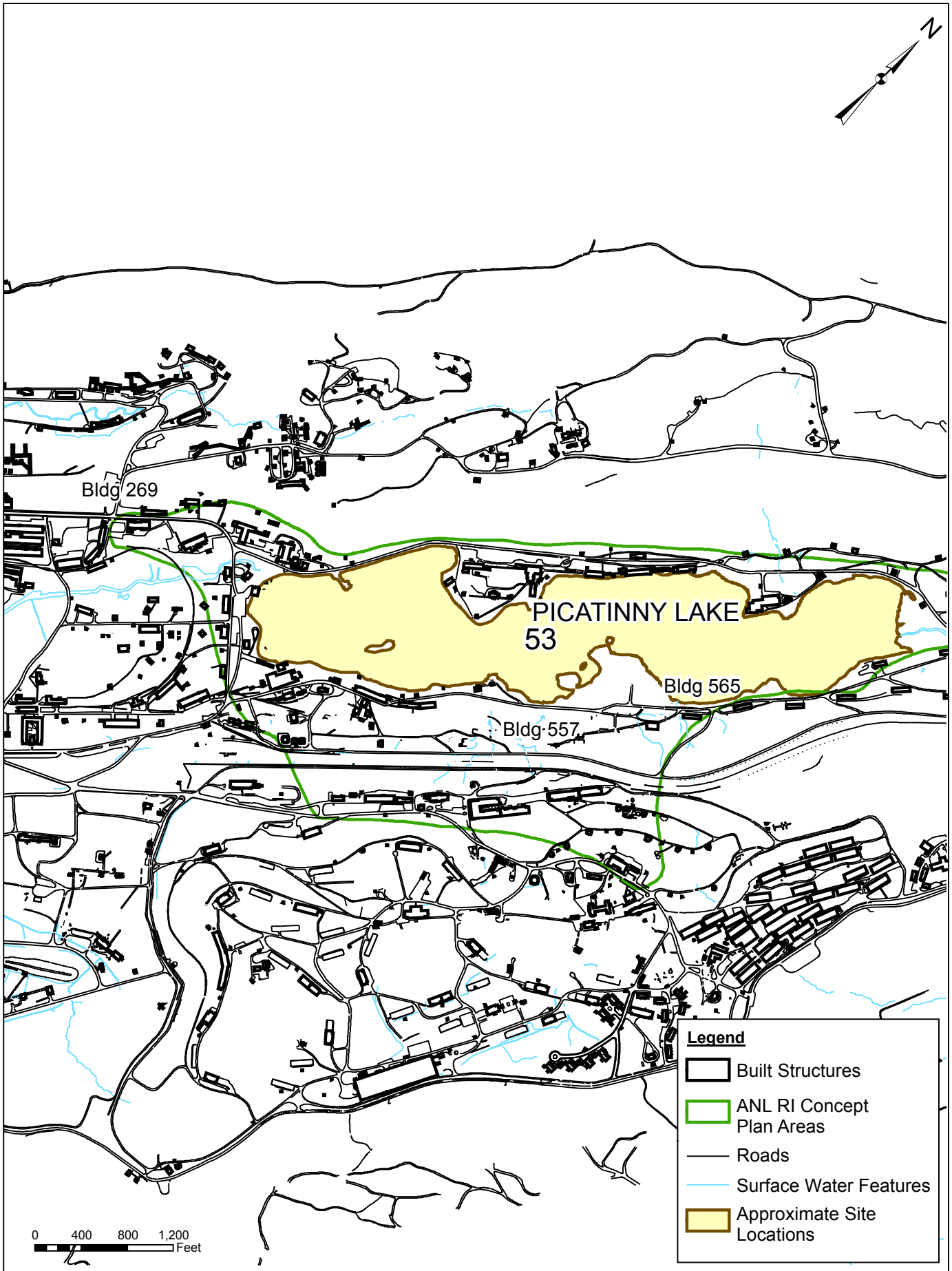

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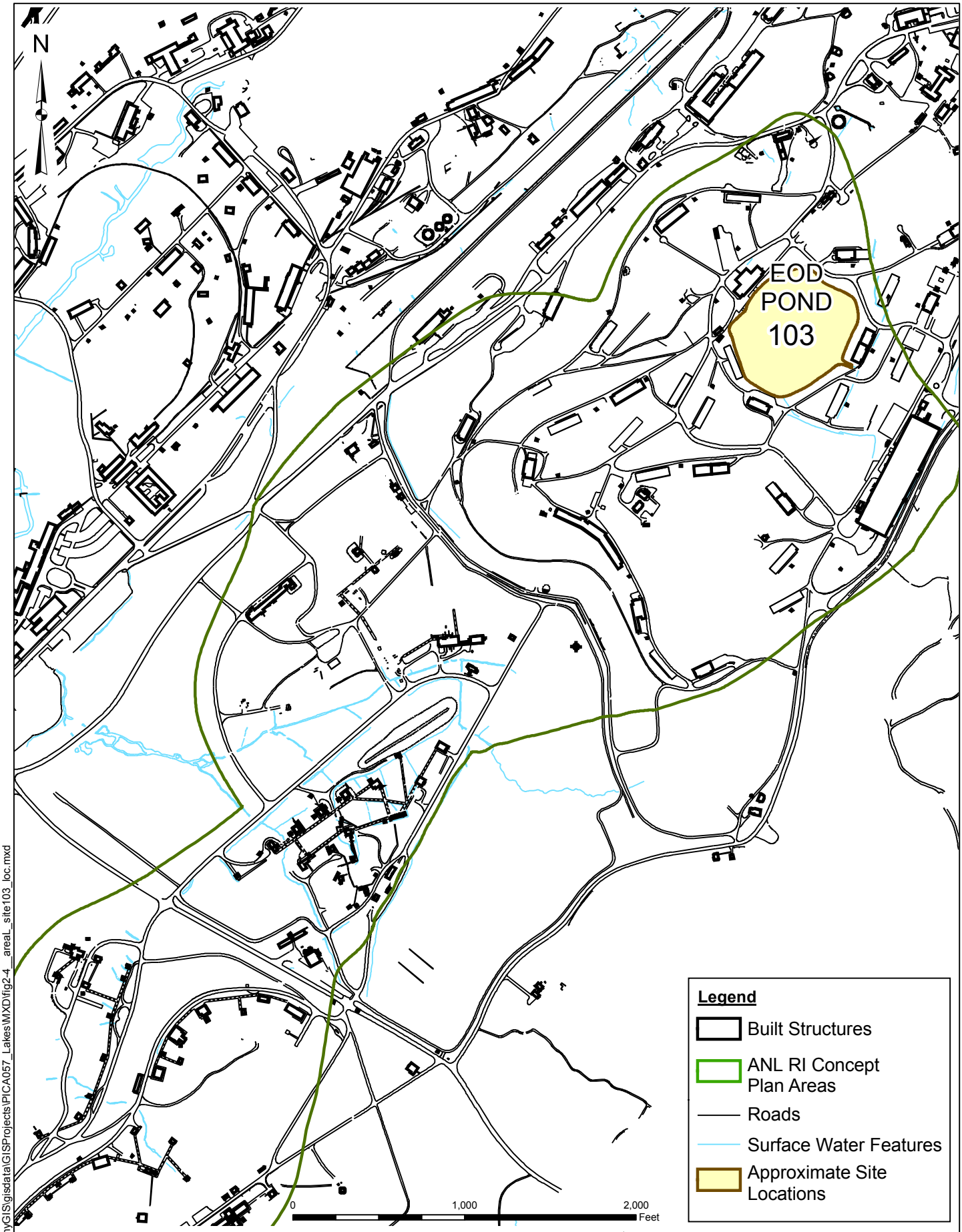
LOCATION MAP AREA I,
SITE 53 / PICA 057 - PICATINNY LAKE
PICATINNY ARSENAL, NEW JERSEY

PROJECT MANAGER T. LLEWELLYN	DEPARTMENT MANAGER M. MOHUIDDIN
DRAWN M.GRESS	CHECKED K. TIPTON
PROJECT NUMBER GP06PICAP057.NJ001	DRAWING NUMBER 2-3



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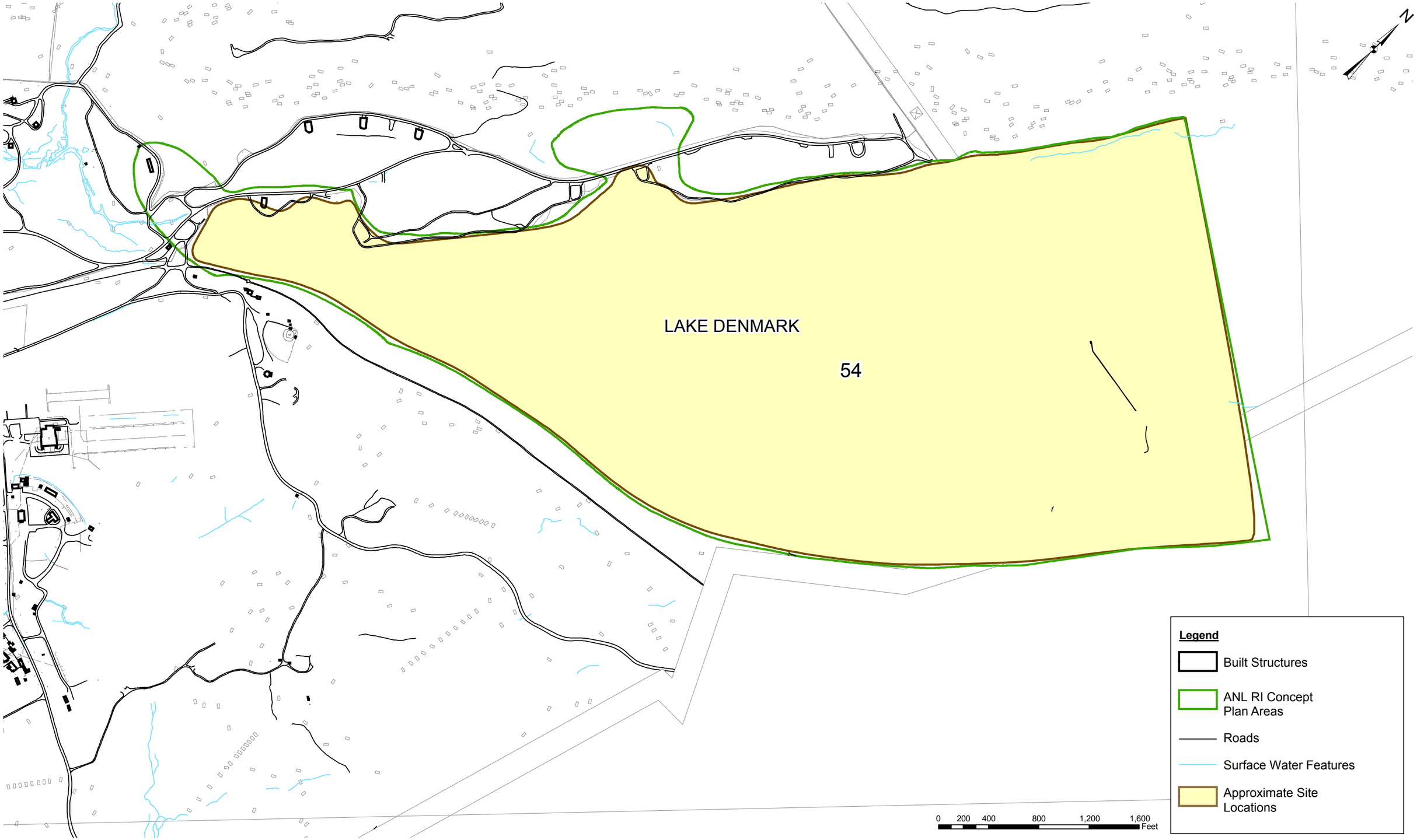
LOCATION MAP AREA L
SITE 103/PICA164 - EOD POND
PICATINNY ARSENAL, NEW JERSEY

PROJECT MANAGER T. LLEWELLYN	DEPARTMENT MANAGER M. MOHUIDDIN
DRAWN M. GRESS	CHECKED K. TIPTON
PROJECT NUMBER GP06PICA.P057.NJ001	DRAWING NUMBER 2-4



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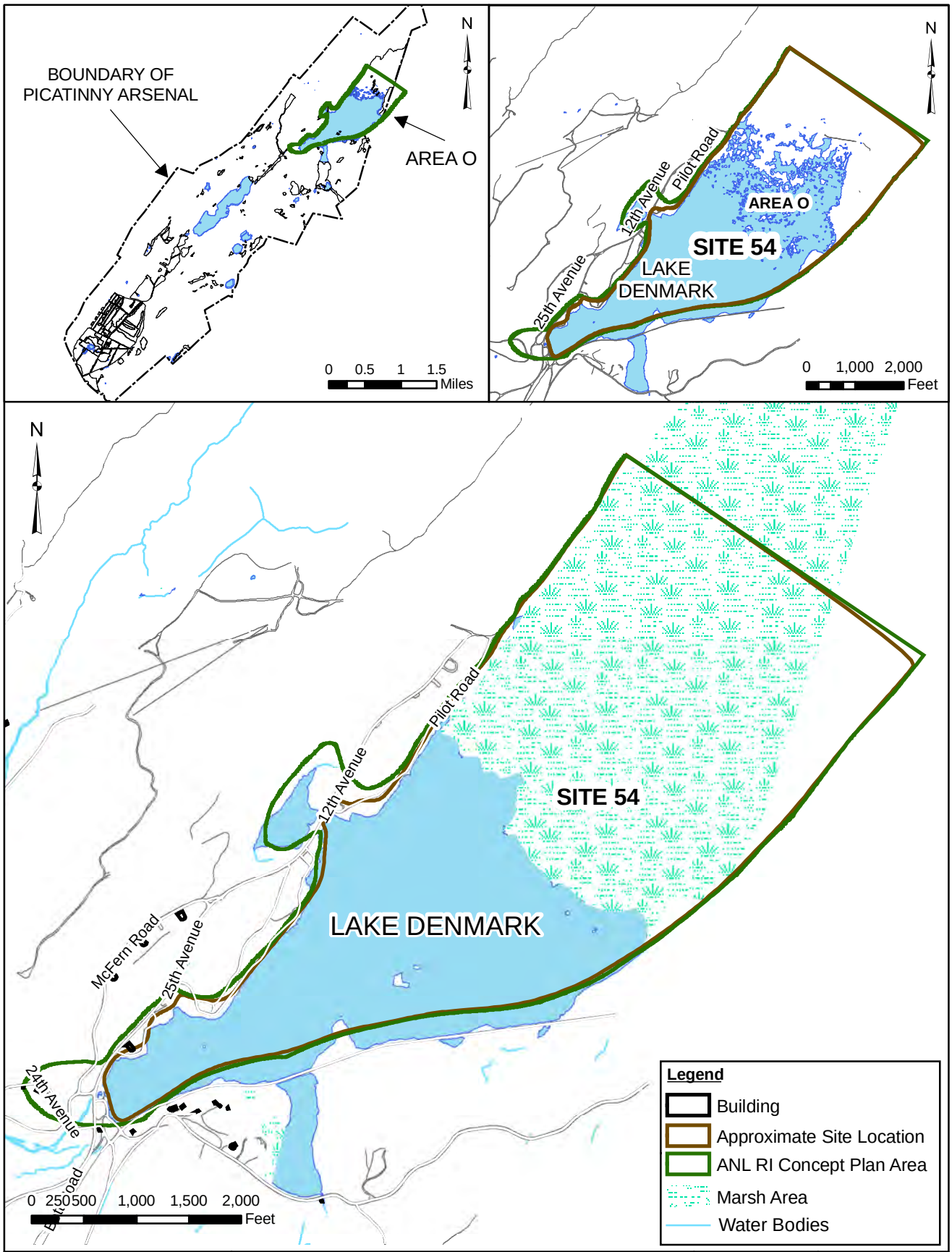
LOCATION MAP AREA O
SITE 54 / PICA 015 - LAKE DENMARK
PICATINNY ARSENAL, NEW JERSEY

PROJECT MANAGER T. LLEWELLYN	DEPARTMENT MANAGER M. MOHIUDDIN
DRAWN M. GRESS	CHECKED K. TIPTON
PROJECT NUMBER GP06PICA.P057.NJ001	DRAWING NUMBER 2-5



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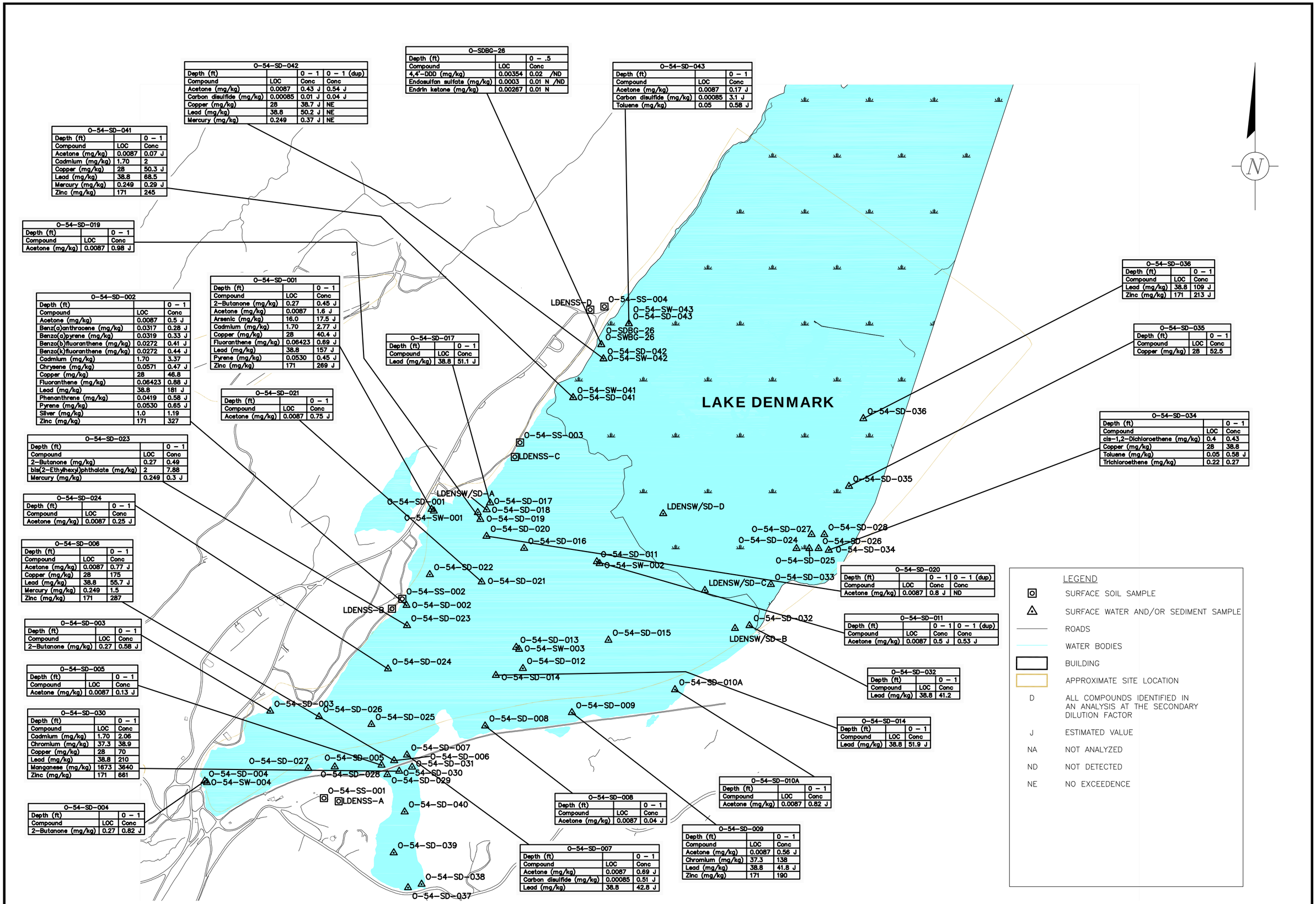
Fax: (732) 225-5067

LAYOUT OF SITE 54 / PICA 015
LAKE DENMARK
PICATINNY ARSENAL, NEW JERSEY

PROJECT MANAGER T. LLEWELLYN	DEPARTMENT MANAGER M. MOHIUDDIN
DRAWN M. GRESS	CHECKED K. TIPTON
PROJECT NUMBER GP06PICA.P057.NJ001	DRAWING NUMBER 3-1



O-54-SD-042			
Depth (ft)		0 – 1	0 – 1 (dup)
Compound	LOC	Conc	Conc
Acetone (mg/kg)	0.0087	0.43 J	0.54 J
Carbon disulfide (mg/kg)	0.00085	0.01 J	0.04 J
Copper (mg/kg)	28	38.7 J	NE
Lead (mg/kg)	38.8	50.2 J	NE
Mercury (mg/kg)	0.249	0.37 J	NE

O-SDBG-26		
Depth (ft)		0 – .5
Compound	LOC	Conc
4,4'-DDD (mg/kg)	0.00354	0.02 /ND
Endosulfan sulfate (mg/kg)	0.0003	0.01 N /ND
Endrin ketone (mg/kg)	0.00267	0.01 N

O-54-SD-043		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.17 J
Carbon disulfide (mg/kg)	0.00085	3.1 J
Toluene (mg/kg)	0.05	0.58 J

O-54-SD-041		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.07 J
Cadmium (mg/kg)	1.70	2
Copper (mg/kg)	28	50.3 J
Lead (mg/kg)	38.8	68.5
Mercury (mg/kg)	0.249	0.29 J
Zinc (mg/kg)	171	245

O-54-SD-019		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.98 J

O-54-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
2-Butanone (mg/kg)	0.27	0.45 J
Acetone (mg/kg)	0.0087	1.6 J
Arsenic (mg/kg)	16.0	17.5 J
Cadmium (mg/kg)	1.70	2.77 J
Copper (mg/kg)	28	40.4 J
Fluoranthene (mg/kg)	0.06423	0.69 J
Lead (mg/kg)	38.8	157 J
Pyrene (mg/kg)	0.0530	0.45 J
Zinc (mg/kg)	171	269 J

O-54-SD-002		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.5 J
Benz(a)anthracene (mg/kg)	0.0317	0.28 J
Benzo(a)pyrene (mg/kg)	0.0319	0.33 J
Benzo(b)fluoranthene (mg/kg)	0.0272	0.41 J
Benzo(k)fluoranthene (mg/kg)	0.0272	0.44 J
Cadmium (mg/kg)	1.70	3.37
Chrysene (mg/kg)	0.0571	0.47 J
Copper (mg/kg)	28	46.8
Fluoranthene (mg/kg)	0.06423	0.88 J
Lead (mg/kg)	38.8	181 J
Phenanthrene (mg/kg)	0.0419	0.58 J
Pyrene (mg/kg)	0.0530	0.65 J
Silver (mg/kg)	1.0	1.19
Zinc (mg/kg)	171	327

O-54-SD-017		
Depth (ft)		0 – 1
Compound	LOC	Conc
Lead (mg/kg)	38.8	51.1 J

O-54-SD-021		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.75 J

O-54-SD-036		
Depth (ft)		0 – 1
Compound	LOC	Conc
Lead (mg/kg)	38.8	109 J
Zinc (mg/kg)	171	213 J

O-54-SD-035		
Depth (ft)		0 – 1
Compound	LOC	Conc
Copper (mg/kg)	28	52.5

O-54-SD-034		
Depth (ft)		0 – 1
Compound	LOC	Conc
cis-1,2-Dichloroethene (mg/kg)	0.4	0.43
Copper (mg/kg)	28	38.8
Toluene (mg/kg)	0.05	0.58 J
Trichloroethene (mg/kg)	0.22	0.27

O-54-SD-023		
Depth (ft)		0 – 1
Compound	LOC	Conc
2-Butanone (mg/kg)	0.27	0.49
bis(2-Ethylhexyl)phthalate (mg/kg)	2	7.88
Mercury (mg/kg)	0.249	0.3 J

O-54-SD-024		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.25 J

O-54-SD-006		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.77 J
Copper (mg/kg)	28	175
Lead (mg/kg)	38.8	55.7 J
Mercury (mg/kg)	0.249	1.5
Zinc (mg/kg)	171	287

O-54-SD-020			
Depth (ft)		0 – 1	0 – 1 (dup)
Compound	LOC	Conc	Conc
Acetone (mg/kg)	0.0087	0.8 J	ND

O-54-SD-003		
Depth (ft)		0 – 1
Compound	LOC	Conc
2-Butanone (mg/kg)	0.27	0.58 J

O-54-SD-011			
Depth (ft)		0 – 1	0 – 1 (dup)
Compound	LOC	Conc	Conc
Acetone (mg/kg)	0.0087	0.5 J	0.53 J

O-54-SD-005		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.13 J

O-54-SD-032		
Depth (ft)		0 – 1
Compound	LOC	Conc
Lead (mg/kg)	38.8	41.2

O-54-SD-030		
Depth (ft)		0 – 1
Compound	LOC	Conc
Cadmium (mg/kg)	1.70	2.06
Chromium (mg/kg)	37.3	38.9
Copper (mg/kg)	28	70
Lead (mg/kg)	38.8	210
Manganese (mg/kg)	1673	3640
Zinc (mg/kg)	171	661

O-54-SD-014		
Depth (ft)		0 – 1
Compound	LOC	Conc
Lead (mg/kg)	38.8	51.9 J

O-54-SD-010A		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.82 J

O-54-SD-004		
Depth (ft)		0 – 1
Compound	LOC	Conc
2-Butanone (mg/kg)	0.27	0.82 J

O-54-SD-008		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.04 J

O-54-SD-009		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.56 J
Chromium (mg/kg)	37.3	138
Lead (mg/kg)	38.8	41.8 J
Zinc (mg/kg)	171	190

O-54-SD-007		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.69 J
Carbon disulfide (mg/kg)	0.00085	0.51 J
Lead (mg/kg)	38.8	42.8 J

LEGEND

- SURFACE SOIL SAMPLE
- SURFACE WATER AND/OR SEDIMENT SAMPLE
- ROADS
- WATER BODIES
- BUILDING
- APPROXIMATE SITE LOCATION
- D — ALL COMPOUNDS IDENTIFIED IN AN ANALYSIS AT THE SECONDARY DILUTION FACTOR
- J — ESTIMATED VALUE
- NA — NOT ANALYZED
- ND — NOT DETECTED
- NE — NO EXCEEDENCE

0 600
SCALE IN FEET

PLOT SIZE: 17x22

REV. ISSUED DATE DESCRIPTION

SEAL

ARCADIS

1114 Benfield Blvd.
Suite A
Millersville, MD 21108
Tel: 410-987-4392 Fax: 410-987-0032
www.arcadis-us.com

PROJECT TITLE

PICATINNY ARSENAL
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
T. LLEWELLYN	M. MOHIUDDIN	K. PANHORST	T. LLEWELLYN

SHEET TITLE

HISTORICAL SEDIMENT LOC EXCEEDENCES AT SITE 54/PICA 015 LAKE DENMARK

TASK/PHASE NUMBER	DRAWN BY
EA001	A. FOX
PROJECT NUMBER	DRAWING NUMBER
GP06PICA.P057	3-2

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Date\Time : Tue, 10 Aug 2010 – 11:56am
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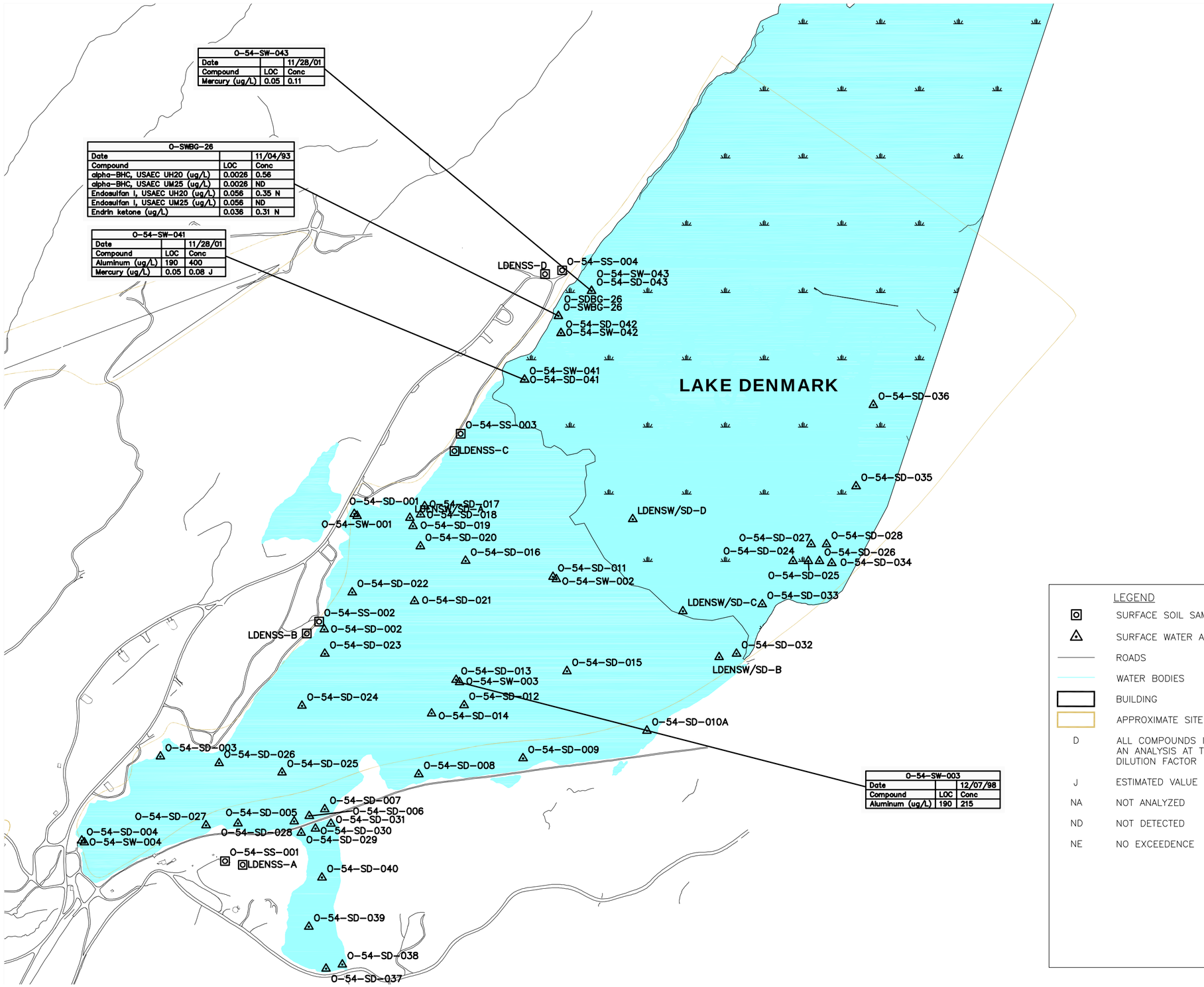
Acad Version : R18.0s (LMS Tech)
User Name : AFOX



N

LEGEND

- SURFACE SOIL SAMPLE
- SURFACE WATER AND/OR SEDIMENT SAMPLE
- ROADS
- WATER BODIES
- BUILDING
- APPROXIMATE SITE LOCATION
- D — ALL COMPOUNDS IDENTIFIED IN AN ANALYSIS AT THE SECONDARY DILUTION FACTOR
- J — ESTIMATED VALUE
- NA — NOT ANALYZED
- ND — NOT DETECTED
- NE — NO EXCEEDENCE

0 600
SCALE IN FEET

PLOT SIZE: 17x22

REV. ISSUED DATE DESCRIPTION

SEAL

ARCADIS

1114 Benfield Blvd.
Suite A
Millersville, MD 21108
Tel: 410-987-4392 Fax: 410-987-0032
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PROJECT TITLE

PICATINNY ARSENAL
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
T. LLEWELLYN	M. MOHIUDDIN	K. PANHORST	T. LLEWELLYN

SHEET TITLE
HISTORICAL SURFACE WATER LOC EXCEEDENCES AT SITE 54/PICA 015 LAKE DENMARK

TASK/PHASE NUMBER	DRAWN BY
EA001	A. FOX

PROJECT NUMBER	DRAWING NUMBER
GP06PICA.P057	3-3

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Date\Time : Tue, 10 Aug 2010 - 11:57am
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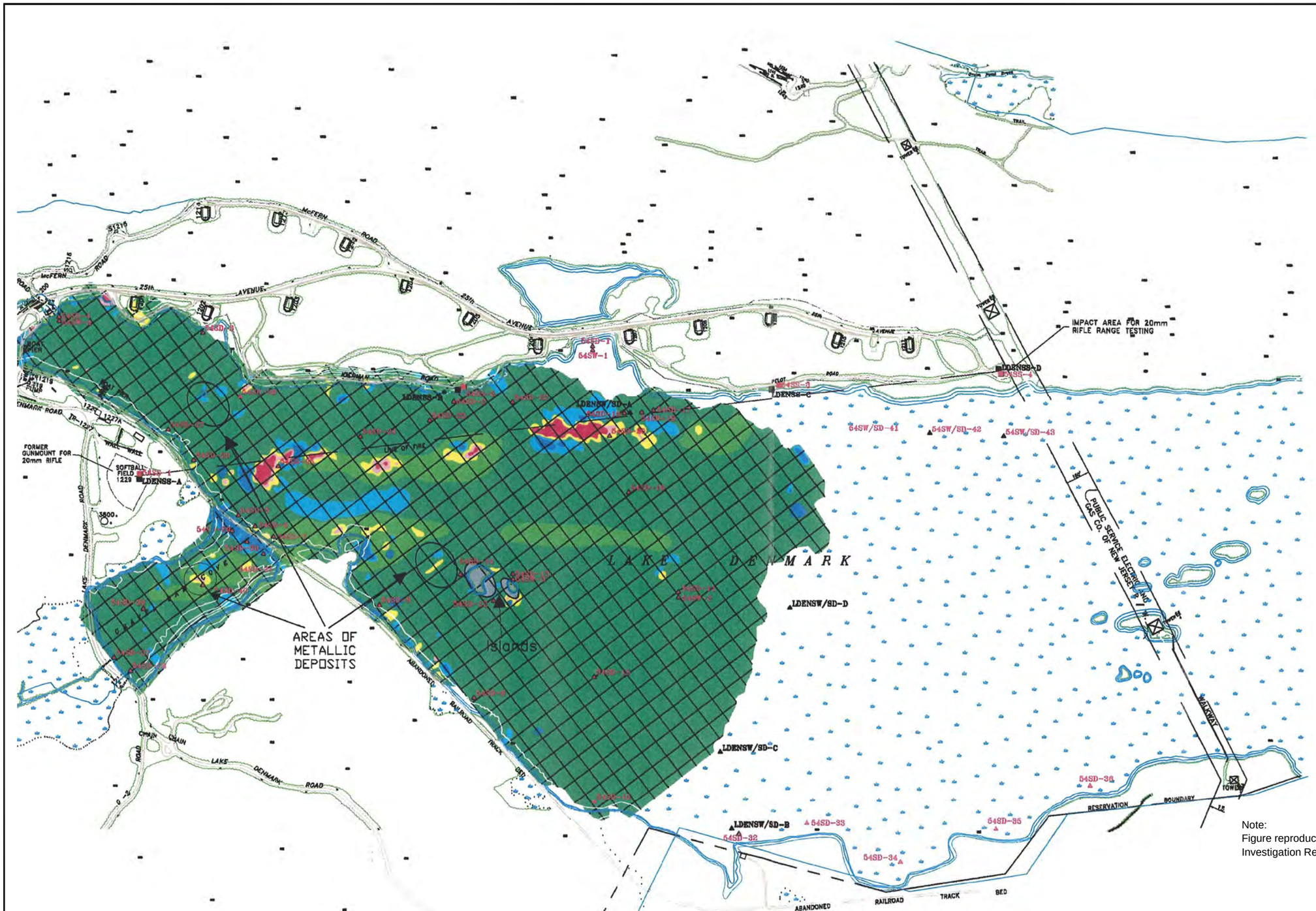
Acad Version : R18.0s (LMS Tech)
User Name : AFOX



LEGEND

- BUILDING
- SWAMP
- WATER
- RAILROAD
- TREE LINE
- FENCE
- GEOPHYSICAL SURVEY GRID

PHASE III-1A RI SAMPLING LOCATIONS	
▲	SURFACE WATER/SEDIMENT
■	SURFACE SOIL

PA/SI SAMPLING LOCATIONS	
▲	SURFACE WATER/SEDIMENT
■	SURFACE SOIL

Note:
Figure reproduced from Phase III-1A Sites Remedial Investigation Report, Shaw Environmental Inc., April 2005

0 625
SCALE IN FEET

REV. ISSUED DATE DESCRIPTION

KEYPLAN

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1114 Benfield Blvd. Suite A
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Tel: 410-987-4392 Fax: 410-987-0032
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PROJECT TITLE
PICATINNY ARSENAL
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED
T. LLEWELLYN	M. MOHIUDDIN	K. TIPTON	T. LLEWELLYN
SHEET TITLE: MAGNETIC DEPOSITS IN LAKE DENMARK, SITE 54/PICA 015		TASK/PHASE NUMBER: EA001	DRAWN BY: A.FOX
		PROJECT NUMBER: GP06PICA.P057	DRAWING NUMBER: 3-4

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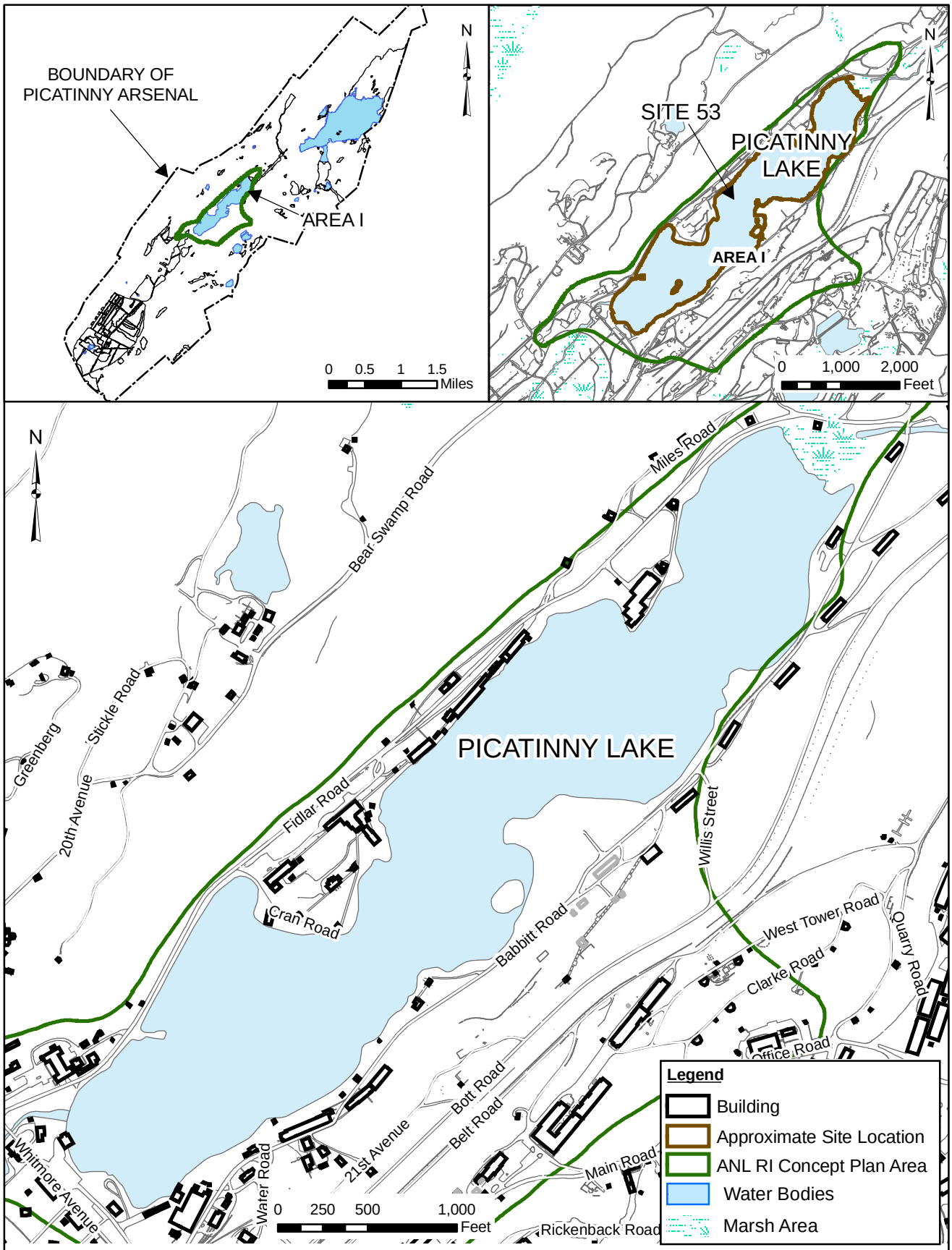
Path\Name : G:\ENVCAD\BRIGHTON\ACT\PICATINNY\picatinny 057\site 54\FIG 3-5 SITE 54.DWG - Layout Tab : 17X11H
User Name : AFOX



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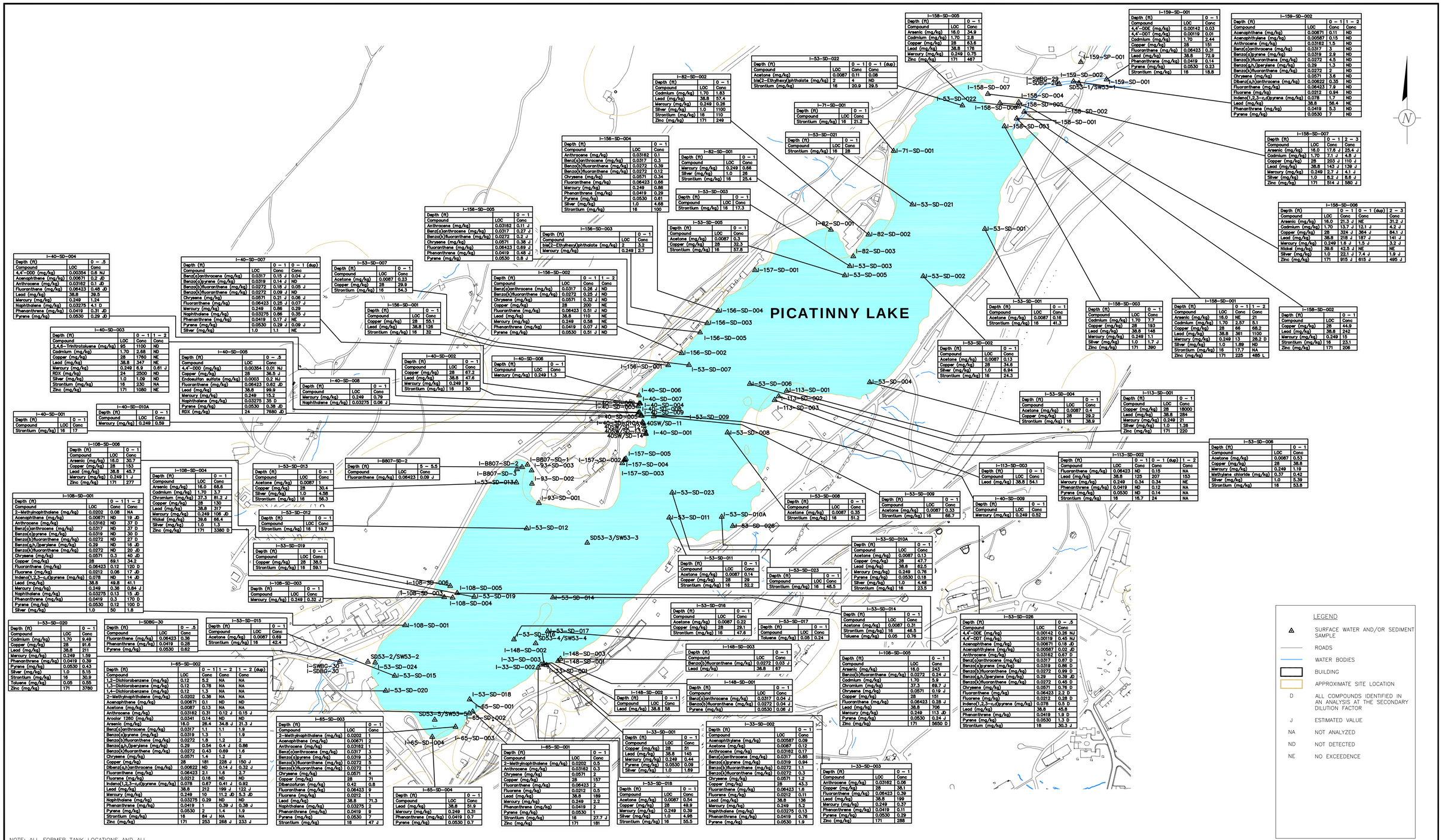
LAYOUT OF SITE 53 / PICA 057
PICATINNY LAKE
PICATINNY ARSENAL, NEW JERSEY

PROJECT MANAGER T. LLEWELLYN	DEPARTMENT MANAGER M. MOHIUDDIN
DRAWN M. GRESS	CHECKED K. TIPTON
PROJECT NUMBER GP06PICA.P057.NJ001	DRAWING NUMBER 3-5



I-40-SD-004		
Depth (ft)		0 – .5
Compound	LOC	Conc
4,4'-DDD (mg/kg)	0.00354	0.6 NJ
Acenaphthene (mg/kg)	0.00671	0.2 JD
Anthracene (mg/kg)	0.03162	0.1 JD
Fluoranthene (mg/kg)	0.06423	0.48 JD
Lead (mg/kg)	38.8	38.5
Mercury (mg/kg)	0.249	1.24
Naphthalene (mg/kg)	0.03275	4.1 D
Phenanthrene (mg/kg)	0.0419	0.31 JD
Pyrene (mg/kg)	0.0530	0.29 JD

I-40-SD-007			
Depth (ft)		0 – 1	0 – 1 (dup)
Compound	LOC	Conc	Conc
Benz(a)anthracene (mg/kg)	0.0317	0.15 J	0.04 J
Benzo(a)pyrene (mg/kg)	0.0319	0.14 J	ND
Benzo(b)fluoranthene (mg/kg)	0.0272	0.18 J	0.05 J
Benzo(k)fluoranthene (mg/kg)	0.0272	0.09 J	ND
Chrysene (mg/kg)	0.0571	0.21 J	0.06 J
Fluoranthene (mg/kg)	0.06423	0.25 J	0.07 J
Mercury (mg/kg)	0.249	0.86	0.29
Naphthalene (mg/kg)	0.03275	0.86	0.35 J
Phenanthrene (mg/kg)	0.0419	0.17 J	NE
Pyrene (mg/kg)	0.0530	0.29 J	0.09 J
Silver (mg/kg)	1.0	1.1	NE

I-53-SD-007		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.23
Copper (mg/kg)	28	29.9
Strontium (mg/kg)	16	54.3

I-156-SD-005		
Depth (ft)		0 – 1
Compound	LOC	Conc
Anthracene (mg/kg)	0.03162	0.11 J
Benz(a)anthracene (mg/kg)	0.0317	0.27 J
Benzo(b)fluoranthene (mg/kg)	0.0272	0.2 J
Chrysene (mg/kg)	0.0571	0.38 J
Fluoranthene (mg/kg)	0.06423	0.69 J
Phenanthrene (mg/kg)	0.0419	0.48 J
Pyrene (mg/kg)	0.0530	0.8 J

I-156-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
Copper (mg/kg)	28	55.1
Lead (mg/kg)	38.8	126
Strontium (mg/kg)	16	32

I-156-SD-003		
Depth (ft)		0 – 1
Compound	LOC	Conc
bis(2-Ethylhexyl)phthalate (mg/kg)	2	3.2
Mercury (mg/kg)	0.249	2.7

I-156-SD-002			
Depth (ft)		0 – 1	1 – 2
Compound	LOC	Conc	Conc
Benz(a)anthracene (mg/kg)	0.0317	0.26 J	ND
Benzo(k)fluoranthene (mg/kg)	0.0272	0.25 J	ND
Chrysene (mg/kg)	0.0571	0.32 J	ND
Copper (mg/kg)	28	200	NE
Fluoranthene (mg/kg)	0.06423	0.51 J	ND
Lead (mg/kg)	38.8	110	NE
Mercury (mg/kg)	0.249	0.58	NE
Phenanthrene (mg/kg)	0.0419	0.07 J	ND
Pyrene (mg/kg)	0.0530	0.51 J	ND

I-40-SD-003			
Depth (ft)		0 – 1	1 – 2
Compound	LOC	Conc	Conc
2,4,6-Trinitrotoluene (mg/kg)	95	1100	ND
Cadmium (mg/kg)	1.70	2.68	ND
Copper (mg/kg)	28	1760	NE
Lead (mg/kg)	38.8	347	NE
Mercury (mg/kg)	0.249	6.9	0.61 J
RDX (mg/kg)	24	2500	ND
Silver (mg/kg)	1.0	1.09	ND
Strontium (mg/kg)	16	230	NA
Zinc (mg/kg)	171	1080	NE

I-40-SD-005		
Depth (ft)		0 – .5
Compound	LOC	Conc
4,4'-DDD (mg/kg)	0.00354	0.01 NJ
Copper (mg/kg)	28	36.5 J
Endosulfan sulfate (mg/kg)	0.0003	0.2 NJ
Fluoranthene (mg/kg)	0.06423	0.62 JD
Lead (mg/kg)	38.8	99.9
Mercury (mg/kg)	0.249	15.2
Naphthalene (mg/kg)	0.03275	35 D
Pyrene (mg/kg)	0.0530	0.38 JD
RDX (mg/kg)	24	7880 JD

I-40-SD-002		
Depth (ft)		0 – 1
Compound	LOC	Conc
Copper (mg/kg)	28	67.2
Lead (mg/kg)	38.8	47.6
Mercury (mg/kg)	0.249	9
Strontium (mg/kg)	16	30

I-40-SD-006		
Depth (ft)		0 – 1
Compound	LOC	Conc
Mercury (mg/kg)	0.249	1.3

I-40-SD-008		
Depth (ft)		0 – 1
Compound	LOC	Conc
Mercury (mg/kg)	0.249	0.79
Naphthalene (mg/kg)	0.03275	0.06 J

I-40-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
Strontium (mg/kg)	16	17

I-40-SD-010A		
Depth (ft)		0 – 1
Compound	LOC	Conc
Mercury (mg/kg)	0.249	0.59

I-108-SD-006		
Depth (ft)		0 – 1
Compound	LOC	Conc
Arsenic (mg/kg)	16.0	30.7
Copper (mg/kg)	28	153
Lead (mg/kg)	38.8	45.7
Mercury (mg/kg)	0.249	1 J
Zinc (mg/kg)	171	277

I-108-SD-001			
Depth (ft)		0 – 1	1 – 2
Compound	LOC	Conc	Conc
2-Methylnaphthalene (mg/kg)	0.0202	0.08	NA
Acenaphthene (mg/kg)	0.00671	ND	19 JD
Anthracene (mg/kg)	0.03162	ND	37 D
Benz(a)anthracene (mg/kg)	0.0317	ND	37 D
Benzo(a)pyrene (mg/kg)	0.0319	ND	30 D
Benzo(b)fluoranthene (mg/kg)	0.0272	ND	27 D
Benzo(ghi)perylene (mg/kg)	0.29	ND	16 JD
Benzo(k)fluoranthene (mg/kg)	0.0272	ND	20 JD
Chrysene (mg/kg)	0.0571	0.3	40 JD
Copper (mg/kg)	28	69.1	34.2
Fluoranthene (mg/kg)	0.06423	0.12	120 D
Fluorene (mg/kg)	0.0212	0.06	17 JD
Indeno(1,2,3-cd)pyrene (mg/kg)	0.078	ND	14 JD
Lead (mg/kg)	38.8	49.8	41.1
Mercury (mg/kg)	0.249	0.36	0.84 J
Naphthalene (mg/kg)	0.03275	0.13	15 JD
Phenanthrene (mg/kg)	0.0419	0.3	170 D
Pyrene (mg/kg)	0.0530	0.12	100 D
Silver (mg/kg)	1.0	50	1.8

I-108-SD-004		
Depth (ft)		0 – 1
Compound	LOC	Conc
Arsenic (mg/kg)	16.0	68.6
Cadmium (mg/kg)	1.70	3.7
Chromium (mg/kg)	37.3	81.2 J
Copper (mg/kg)	28	130
Lead (mg/kg)	38.8	317
Mercury (mg/kg)	0.249	108 JD
Nickel (mg/kg)	39.6	56.4
Silver (mg/kg)	1.0	1.3
Zinc (mg/kg)	171	3380 D

I-53-SD-013		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	
Copper (mg/kg)	28	30.4
Silver (mg/kg)	1.0	4.58
Strontium (mg/kg)	16	56.3

I-53-SD-012		
Depth (ft)		0 – 1
Compound	LOC	Conc
Strontium (mg/kg)	16	19.7

I-53-SD-019		
Depth (ft)		0 – 1
Compound	LOC	Conc
Copper (mg/kg)	28	38.5
Strontium (mg/kg)	16	59.1

I-108-SD-003		
Depth (ft)		0 – 1
Compound	LOC	Conc
Mercury (mg/kg)	0.249	0.32 J

I-B807-SD-2		
Depth (ft)		5 – 5.5
Compound	LOC	Conc
Fluoranthene (mg/kg)	0.06423	0.09 J

I-53-SD-020		
Depth (ft)		0 – 1
Compound	LOC	Conc
Cadmium (mg/kg)	1.70	9.49
Copper (mg/kg)	28	91.6
Lead (mg/kg)	38.8	211
Mercury (mg/kg)	0.249	1.59
Phenanthrene (mg/kg)	0.0419	0.39
Pyrene (mg/kg)	0.0530	0.43
Silver (mg/kg)	1.0	5.15
Strontium (mg/kg)	16	30.9
Toluene (mg/kg)	0.05	0.55
Zinc (mg/kg)	171	3780

I-SDBG-30		
Depth (ft)		0 – .5
Compound	LOC	Conc
Fluoranthene (mg/kg)	0.06423	0.36
Phenanthrene (mg/kg)	0.0419	0.28
Pyrene (mg/kg)	0.0530	0.62

I-53-SD-015		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.69
Strontium (mg/kg)	16	42.4

I-65-SD-002				
Depth (ft)		0 – 1	1 – 2	1 – 2 (dup)
Compound	LOC	Conc	Conc	Conc
1,2-Dichlorobenzene (mg/kg)	0.12	5.2	NA	NA
1,3-Dichlorobenzene (mg/kg)	0.12	0.78	NA	NA
1,4-Dichlorobenzene (mg/kg)	0.12	1.3	NA	NA
2-Methylnaphthalene (mg/kg)	0.0202	0.36	NA	NA
Acenaphthene (mg/kg)	0.00671	0.1	ND	ND
Acetone (mg/kg)	0.0087	0.13	NA	NA
Anthracene (mg/kg)	0.03162	0.31	0.12 J	0.15 J
Aroclor 1260 (mg/kg)	0.0341	0.14	ND	ND
Arsenic (mg/kg)	16.0	26.4	34.8 J	21.3 J
Benz(a)anthracene (mg/kg)	0.0317	1.1	1.1	1.9
Benzo(a)pyrene (mg/kg)	0.0319	1.3	1.1	1.9
Benzo(b)fluoranthene (mg/kg)	0.0272	1.8	1.2	2
Benzo(ghi)perylene (mg/kg)	0.29	0.54	0.4 J	0.86
Benzo(k)fluoranthene (mg/kg)	0.0272	0.43	0.69	1.6
Chrysene (mg/kg)	0.0571	1.4	1.2	2
Copper (mg/kg)	28	181	228 J	150 J
Dibenz(a,h)anthracene (mg/kg)	0.00622	ND	0.14 J	0.32 J
Fluoranthene (mg/kg)	0.06423	2.1	1.6	2.7
Fluorene (mg/kg)	0.0212	0.16	ND	ND
Indeno(1,2,3-cd)pyrene (mg/kg)	0.078	0.67	0.41 J	0.92
Lead (mg/kg)	38.8	212	199 J	122 J
Mercury (mg/kg)	0.249	10	11.2 JD	5.3 JD
Naphthalene (mg/kg)	0.03275	0.29	ND	ND
Phenanthrene (mg/kg)	0.0419	1	0.39 J	0.38 J
Pyrene (mg/kg)	0.0530	2	1.4	1.9
Strontium (mg/kg)	16	84 J	NA	NA
Zinc (mg/kg)	171	253	268 J	233 J

I-65-SD-003		
Depth (ft)		0 – 1
Compound	LOC	Conc
2-Methylnaphthalene (mg/kg)	0.0202	1
Acenaphthene (mg/kg)	0.00671	2
Anthracene (mg/kg)	0.03162	1
Benz(a)anthracene (mg/kg)	0.0317	3
Benzo(a)pyrene (mg/kg)	0.0319	3
Benzo(b)fluoranthene (mg/kg)	0.0272	5
Benzo(k)fluoranthene (mg/kg)	0.0272	1
Chrysene (mg/kg)	0.0571	4
Copper (mg/kg)	28	71
Dibenzofuran (mg/kg)	0.42	0.8
Fluoranthene (mg/kg)	0.06423	9
Fluorene (mg/kg)	0.0212	1
Lead (mg/kg)	38.8	71.3
Naphthalene (mg/kg)	0.03275	2
Phenanthrene (mg/kg)	0.0419	9
Pyrene (mg/kg)	0.0530	7
Strontium (mg/kg)	16	47 J

I-65-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
2-Methylnaphthalene (mg/kg)	0.0202	0.5
Anthracene (mg/kg)	0.03162	0.3
Chrysene (mg/kg)	0.0571	2
Copper (mg/kg)	28	157
Fluoranthene (mg/kg)	0.06423	2
Fluorene (mg/kg)	0.0212	0.5
Lead (mg/kg)	38.8	189
Mercury (mg/kg)	0.249	2.2
Phenanthrene (mg/kg)	0.0419	2
Pyrene (mg/kg)	0.0530	1
Strontium (mg/kg)	16	27.7 J
Zinc (mg/kg)	171	181

I-65-SD-004		
Depth (ft)		0 – 1
Compound	LOC	Conc
Lead (mg/kg)	38.8	51.9
Mercury (mg/kg)	0.249	0.31
Phenanthrene (mg/kg)	0.0419	0.7
Pyrene (mg/kg)	0.0530	0.7

I-82-SD-002		
Depth (ft)		0 – 1
Compound	LOC	Conc
Cadmium (mg/kg)	1.70	1.83
Lead (mg/kg)	38.8	57.4
Mercury (mg/kg)	0.249	0.28
Silver (mg/kg)	1.0	1100
Strontium (mg/kg)	16	110
Zinc (mg/kg)	171	249

I-156-SD-004		
Depth (ft)		0 – 1
Compound	LOC	Conc
Anthracene (mg/kg)	0.03162	0.1
Benz(a)anthracene (mg/kg)	0.0317	0.3
Benzo(b)fluoranthene (mg/kg)	0.0272	0.39
Benzo(k)fluoranthene (mg/kg)	0.0272	0.12
Chrysene (mg/kg)	0.0571	0.34
Fluoranthene (mg/kg)	0.06423	0.66
Mercury (mg/kg)	0.249	0.86
Phenanthrene (mg/kg)	0.0419	0.29
Pyrene (mg/kg)	0.0530	0.61
Silver (mg/kg)	1.0	4.68
Strontium (mg/kg)	16	100

I-82-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
Mercury (mg/kg)	0.249	0.66
Silver (mg/kg)	1.0	26
Strontium (mg/kg)	16	25.4

I-53-SD-003		
Depth (ft)		0 – 1
Compound	LOC	Conc
Strontium (mg/kg)	16	17.3

I-53-SD-005		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.3
Copper (mg/kg)	28	32.3
Strontium (mg/kg)	16	57.8

I-53-SD-022			
Depth (ft)		0 – 1	0 – 1 (dup)
Compound	LOC	Conc	Conc
Acetone (mg/kg)	0.0087	0.11	0.08
bis(2-Ethylhexyl)phthalate (mg/kg)	2	4	ND
Strontium (mg/kg)	16	20.9	29.5

I-71-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
Strontium (mg/kg)	16	21.2

I-53-SD-021		
Depth (ft)		0 – 1
Compound	LOC	Conc
Strontium (mg/kg)	16	28

I-158-SD-005		
Depth (ft)		0 – 1
Compound	LOC	Conc
Arsenic (mg/kg)	16.0	34.9
Cadmium (mg/kg)	1.70	2.8
Copper (mg/kg)	28	63.6
Lead (mg/kg)	38.8	178
Mercury (mg/kg)	0.249	0.75
Zinc (mg/kg)	171	467

I-159-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
4,4'-DDE (mg/kg)	0.00142	0.03
4,4'-DDT (mg/kg)	0.00119	0.01
Cadmium (mg/kg)	1.70	2.44
Copper (mg/kg)	28	151
Fluoranthene (mg/kg)	0.06423	0.31
Lead (mg/kg)	38.8	72.9
Phenanthrene (mg/kg)	0.0419	0.14
Pyrene (mg/kg)	0.0530	0.23
Strontium (mg/kg)	16	18.8

I-159-SD-002			
Depth (ft)		0 – 1	1 – 2
Compound	LOC	Conc	Conc
Acenaphthene (mg/kg)	0.00671	0.11	ND
Acenaphthylene (mg/kg)	0.00587	0.15	ND
Anthracene (mg/kg)	0.03162	1.5	ND
Benz(a)anthracene (mg/kg)	0.0317	3	ND
Benzo(a)pyrene (mg/kg)	0.0319	2.9	ND
Benzo(b)fluoranthene (mg/kg)	0.0272	4.5	ND
Benzo(ghi)perylene (mg/kg)	0.29	1.3	ND
Benzo(k)fluoranthene (mg/kg)	0.0272	2	ND
Chrysene (mg/kg)	0.0571	3.6	ND
Dibenz(a,h)anthracene (mg/kg)	0.00622	0.35	ND
Fluoranthene (mg/kg)	0.06423	7.9	ND
Fluorene (mg/kg)	0.0212	0.94	ND
Indeno(1,2,3-cd)pyrene (mg/kg)	0.078	1.7	ND
Lead (mg/kg)	38.8	56.4	NE
Phenanthrene (mg/kg)	0.0419	5.3	ND
Pyrene (mg/kg)	0.0530	7	ND

I-158-SD-007			
Depth (ft)		0 – 1	2 – 3
Compound	LOC	Conc	Conc
Arsenic (mg/kg)	16.0	17.6 J	25.4 J
Cadmium (mg/kg)	1.70	7.1 J	4.8 J
Copper (mg/kg)	28	203 J	110 J
Lead (mg/kg)	38.8	143 J	139 J
Mercury (mg/kg)	0.249	2.7 J	4.1 J
Silver (mg/kg)	1.0	8.2 J	6.6 J
Zinc (mg/kg)	171	514 J	580 J

I-158-SD-006				
Depth (ft)		0 – 1	0 – 1 (dup)	2 – 3
Compound	LOC	Conc	Conc	Conc
Arsenic (mg/kg)	16.0	21.3 J	NE	31.2 J
Cadmium (mg/kg)	1.70	13.7 J	12.1 J	4.2 J
Copper (mg/kg)	28	324 J	364 J	84.1 J
Lead (mg/kg)	38.8	218 J	187 J	141 J
Mercury (mg/kg)	0.249	1.6 J	1.5 J	3.2 J
Nickel (mg/kg)	39.6	42.5 J	NE	NE
Silver (mg/kg)	1.0	22.1 J	7.4 J	1.9 J
Zinc (mg/kg)	171	915 J	615 J	495 J

I-53-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.16
Strontium (mg/kg)	16	41.3

I-158-SD-003		
Depth (ft)		0 – 1
Compound	LOC	Conc
Cadmium (mg/kg)	1.70	7.7
Copper (mg/kg)	28	193
Lead (mg/kg)	38.8	148
Mercury (mg/kg)	0.249	1.1
Silver (mg/kg)	1.0	1.7 J
Zinc (mg/kg)	171	390

I-158-SD-001			
Depth (ft)		0 – 1	1 – 2
Compound	LOC	Conc	Conc
Arsenic (mg/kg)	16.0	NE	21
Cadmium (mg/kg)	1.70	2.57	5.1
Copper (mg/kg)	28	66	68.2
Lead (mg/kg)	38.8	361	1100
Mercury (mg/kg)	0.249	13	28.2 D
Silver (mg/kg)	1.0	1.89	ND
Strontium (mg/kg)	16	17.7	NA
Zinc (mg/kg)	171	225	485 L

I-158-SD-002		
Depth (ft)		0 – 1
Compound	LOC	Conc
Copper (mg/kg)	28	44.9
Lead (mg/kg)	38.8	242
Mercury (mg/kg)	0.249	15
Strontium (mg/kg)	16	23.1
Zinc (mg/kg)	171	206

I-53-SD-002		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.13
Copper (mg/kg)	28	34.6
Silver (mg/kg)	1.0	6.94
Strontium (mg/kg)	16	24.3

I-53-SD-004		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.4
Copper (mg/kg)	28	29.2
Strontium (mg/kg)	16	38.9

I-113-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
Copper (mg/kg)	28	18000
Lead (mg/kg)	38.8	284
Mercury (mg/kg)	0.249	21
Silver (mg/kg)	1.0	1.26
Zinc (mg/kg)	171	220

I-53-SD-006		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.53
Copper (mg/kg)	28	38.8
Mercury (mg/kg)	0.249	1.19
Methylene chloride (mg/kg)	0.37	0.42
Silver (mg/kg)	1.0	5.39
Strontium (mg/kg)	16	53.8

I-113-SD-002				
Depth (ft)		0 – 1	0 – 1 (dup)	1 – 2
Compound	LOC	Conc	Conc	Conc
Fluoranthene (mg/kg)	0.06423	ND	0.15	NA
Lead (mg/kg)	38.8	125	207	153
Mercury (mg/kg)	0.249	0.34	0.34	NE
Phenanthrene (mg/kg)	0.0419	ND	0.12	NA
Pyrene (mg/kg)	0.0530	ND	0.14	NA
Strontium (mg/kg)	16	16.7	24	NA

I-113-SD-003		
Depth (ft)		0 – 1
Compound	LOC	Conc
Lead (mg/kg)	38.8	54.1

I-53-SD-009		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.33
Strontium (mg/kg)	16	66.7

I-40-SD-009		
Depth (ft)		0 – 1
Compound	LOC	Conc
Mercury (mg/kg)	0.249	0.52

I-53-SD-008		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.35
Strontium (mg/kg)	16	51.2

I-53-SD-011		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.14
Copper (mg/kg)	28	29
Strontium (mg/kg)	16	52.2

I-53-SD-023		
Depth (ft)		0 – 1
Compound	LOC	Conc
Strontium (mg/kg)	16	48.5

I-53-SD-010A		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.13
Copper (mg/kg)	28	47.7
Lead (mg/kg)	38.8	62.5
Mercury (mg/kg)	0.249	0.76
Pyrene (mg/kg)	0.0530	0.18
Silver (mg/kg)	1.0	4.48
Strontium (mg/kg)	16	23.5

I-53-SD-016		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.22
Copper (mg/kg)	28	29.1
Strontium (mg/kg)	16	47.6

I-53-SD-017		
Depth (ft)		0 – 1
Compound	LOC	Conc
Toluene (mg/kg)	0.05	0.24

I-53-SD-014		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.31
Strontium (mg/kg)	16	46.5
Toluene (mg/kg)	0.05	0.76

I-53-SD-026		
Depth (ft)		0 – .5
Compound	LOC	Conc
4,4'-DDE (mg/kg)	0.00142	0.26 NJ
4,4'-DDT (mg/kg)	0.00119	0.45 NJ
Acenaphthene (mg/kg)	0.00671	0.18 JD
Acenaphthylene (mg/kg)	0.00587	0.02 JD
Anthracene (mg/kg)	0.03162	0.67 D
Benz(a)anthracene (mg/kg)	0.0317	0.87 D
Benzo(a)pyrene (mg/kg)	0.0319	0.86 D
Benzo(b)fluoranthene (mg/kg)	0.0272	0.99 D
Benzo(ghi)perylene (mg/kg)	0.29	0.39 JD
Benzo(k)fluoranthene (mg/kg)	0.0272	0.45 D
Chrysene (mg/kg)	0.0571	0.76 D
Fluoranthene (mg/kg)	0.06423	2.2 D
Fluorene (mg/kg)	0.0212	0.28 D
Indeno(1,2,3-cd)pyrene (mg/kg)	0.078	0.5 D
Lead (mg/kg)	38.8	45.8
Phenanthrene (mg/kg)	0.0419	1.9 D
Pyrene (mg/kg)	0.0530	1.3 D
Strontium (mg/kg)	16	30.3 J

I-148-SD-003		
Depth (ft)		0 – 1
Compound	LOC	Conc
Benzo(b)fluoranthene (mg/kg)	0.0272	0.03 J
Lead (mg/kg)	38.8	67

I-148-SD-002		
Depth (ft)		0 – 1
Compound	LOC	Conc
Lead (mg/kg)	38.8	58

I-148-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
Benz(a)anthracene (mg/kg)	0.0317	0.04 J
Benzo(b)fluoranthene (mg/kg)	0.0272	0.04 J
Pyrene (mg/kg)	0.0530	0.06 J

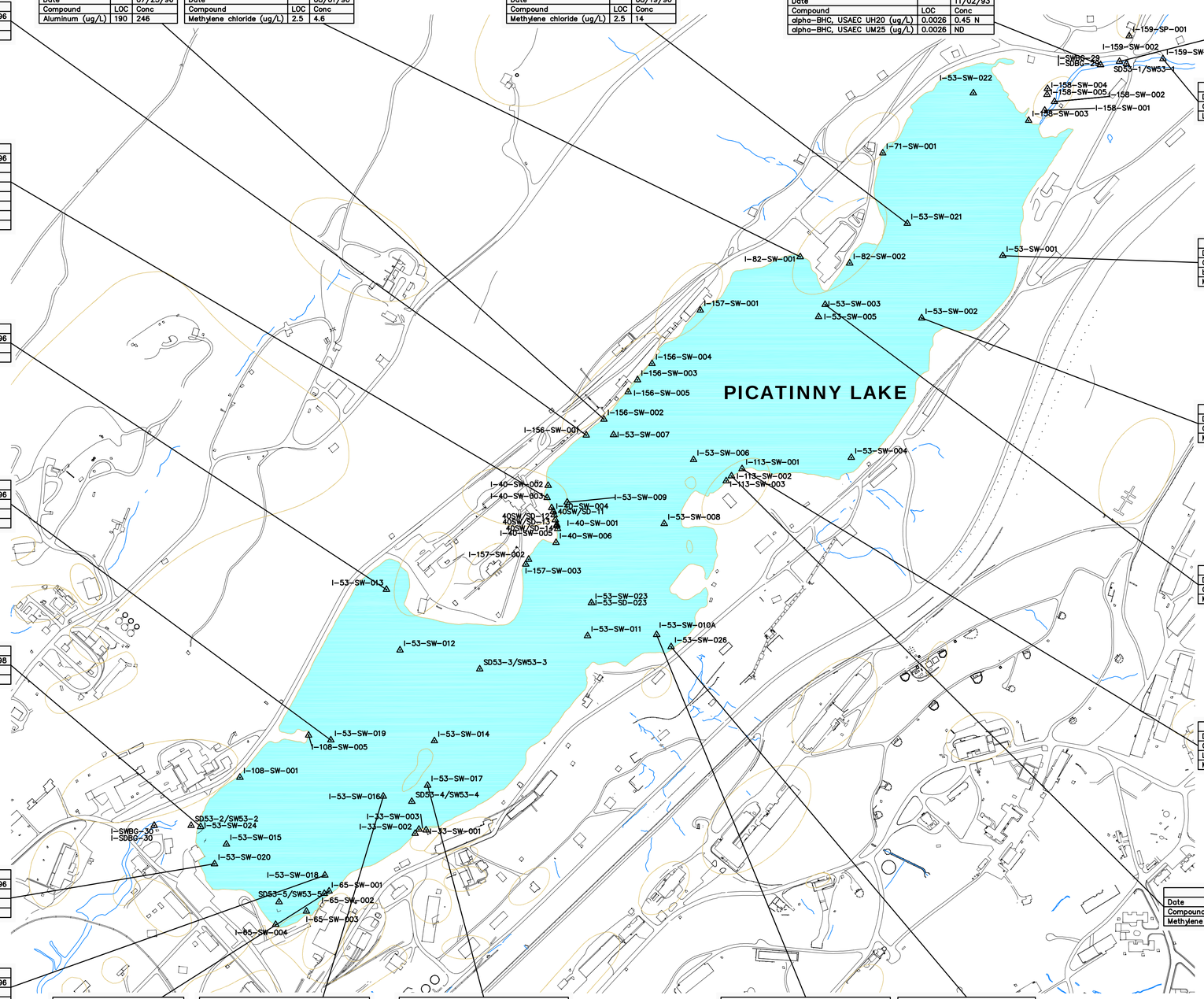
I-108-SD-005		
Depth (ft)		0 – 1
Compound	LOC	Conc
Arsenic (mg/kg)	16.0	243
Benzo(b)fluoranthene (mg/kg)	0.0272	0.24 J
Cadmium (mg/kg)	1.70	5.9
Chromium (mg/kg)	37.3	69.7 J
Chrysene (mg/kg)	0.0571	0.19 J
Copper (mg/kg)	28	151
Fluoranthene (mg/kg)	0.06423	0.28 J
Lead (mg/kg)	38.8	706
Mercury (mg/kg)	0.249	113 JD
Pyrene (mg/kg)	0.0530	0.24 J
Zinc (mg/kg)	171	5650 D

I-33-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
Copper (mg/kg)	28	51
Lead (mg/kg)	38.8	145
Mercury (mg/kg)	0.249	0.44
Pyrene (mg/kg)	0.0530	0.09
Silver (mg/kg)	1.0	1.69

I-53-SD-018		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acetone (mg/kg)	0.0087	0.54
Copper (mg/kg)	28	49.9
Mercury (mg/kg)	0.249	0.39
Silver (mg/kg)	1.0	4.98
Strontium (mg/kg)	16	55.5

I-33-SD-002		
Depth (ft)		0 – 1
Compound	LOC	Conc
Acenaphthylene (mg/kg)	0.00587	0.09
Acetone (mg/kg)	0.0087	0.12
Anthracene (mg/kg)	0.03162	0.17
Benz(a)anthracene (mg/kg)	0.0317	0.85
Benzo(a)pyrene (mg/kg)	0.0319	0.94
Benzo(b)fluoranthene (mg/kg)	0.0272	1.1
Benzo(k)fluoranthene (mg/kg)	0.0272	0.3
Chrysene (mg/kg)	0.0571	1.2
Copper (mg/kg)	28	43.3
Fluoranthene (mg/kg)	0.06423	1.6
Fluorene (mg/kg)	0.0212	0.11
Lead (mg/kg)	38.8	136
Mercury (mg/kg)	0.249	5.2
Naphthalene (mg/kg)	0.03275	0.13
Phenanthrene (mg/kg)	0.0419	0.76
Pyrene (mg/kg)	0.0530	1.9

I-33-SD-003		
Depth (ft)		0 – 1
Compound	LOC	Conc
Anthracene (mg/kg)	0.03162	0.06
Copper (mg/kg)	28	38.1
Fluoranthene (mg/kg)	0.06423	0.39
Lead (mg/k



I-156-SW-001		
Date		07/23/96
Compound	LOC	Conc
Lead (ug/L)	3.2	4.6

I-156-SW-002		
Date		07/23/96
Compound	LOC	Conc
Aluminum (ug/L)	190	246

I-82-SW-001		
Date		08/01/96
Compound	LOC	Conc
Methylene chloride (ug/L)	2.5	4.6

I-53-SW-021		
Date		08/19/96
Compound	LOC	Conc
Methylene chloride (ug/L)	2.5	14

I-SWBG-29		
Date		11/02/93
Compound	LOC	Conc
alpha-BHC, USAEC UH20 (ug/L)	0.0026	0.45 N
alpha-BHC, USAEC UM25 (ug/L)	0.0026	ND

I-159-SW-002		
Date		08/09/96
Compound	LOC	Conc
2,4-Dinitrotoluene (ug/L)	0.11	0.2
Aluminum (ug/L)	190	295
Methylene chloride (ug/L)	2.5	11

I-159-SW-001		
Date		08/09/96
Compound	LOC	Conc
Lead (ug/L)	5	21.5

I-40-SW-003		
Date		07/18/96
Compound	LOC	Conc
2,4,6-Trinitrotoluene (ug/L)	2.2	5.77
Aluminum (ug/L)	190	389
Cyanide (ug/L)	5.2	18.6
Lead (ug/L)	5	43.6
Nitroglycerin (ug/L)	3.7	250
RDX (ug/L)	2	24.5

I-53-SW-001		
Date		08/19/96
Compound	LOC	Conc
bis(2-Ethylhexyl)phthalate (ug/L)	1.2	11
Methylene chloride (ug/L)	2.5	16

I-53-SW-013		
Date		08/14/96
Compound	LOC	Conc
Methylene chloride (ug/L)	2.5	10

I-53-SW-002		
Date		08/19/96
Compound	LOC	Conc
Methylene chloride (ug/L)	2.5	17

I-53-SW-019		
Date		08/12/96
Compound	LOC	Conc
Chromium (ug/L)	11.4	24.9
Methylene chloride (ug/L)	2.5	2.7

I-53-SW-003		
Date		08/19/96
Compound	LOC	Conc
Methylene chloride (ug/L)	2.5	14

I-53-SW-024		
Date		09/01/98
Compound	LOC	Conc
Sulfide (ug/L)	2200	4500

I-113-SW-001		
Date		08/02/96
Compound	LOC	Conc
Lead (ug/L)	5	8.55
Mercury (ug/L)	0.05	0.54

I-53-SW-020		
Date		08/12/96
Compound	LOC	Conc
bis(2-Ethylhexyl)phthalate (ug/L)	1.2	15
Chromium (ug/L)	11.4	50.5

I-113-SW-002			
Date		08/01/96	08/01/96 (dup)
Compound	LOC	Conc	Conc
Methylene chloride (ug/L)	2.5	ND	2.6

I-53-SW-018		
Date		08/13/96
Compound	LOC	Conc
Methylene chloride (ug/L)	2.5	5.2

I-65-SW-001		
Date		07/11/96
Compound	LOC	Conc
Mercury (ug/L)	0.05	0.38

I-53-SW-016		
Date		08/13/96
Compound	LOC	Conc
Chromium (ug/L)	11.4	59.9
Methylene chloride (ug/L)	2.5	5.8

I-53-SW-017		
Date		08/13/96
Compound	LOC	Conc
Methylene chloride (ug/L)	2.5	5

I-53-SW-010A		
Date		08/14/96
Compound	LOC	Conc
Methylene chloride (ug/L)	2.5	10

I-53-SW-026		
Date		09/01/98
Compound	LOC	Conc
Aluminum (ug/L)	190	232

LEGEND

- SURFACE WATER AND/OR SEDIMENT SAMPLE
- ROADS
- WATER BODIES
- BUILDING
- APPROXIMATE SITE LOCATION
- D — ALL COMPOUNDS IDENTIFIED IN AN ANALYSIS AT THE SECONDARY DILUTION FACTOR
- J — ESTIMATED VALUE
- NA — NOT ANALYZED
- ND — NOT DETECTED
- NE — NO EXCEEDENCE

NOTE: ALL FORMER TANK LOCATIONS AND ALL SOIL BORING LOCATIONS ARE APPROXIMATE.

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User Name : AFOX

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0 300
SCALE IN FEET

PLOT SIZE: 22x34

REV. ISSUED DATE DESCRIPTION

KEYPLAN

SEAL

ARCADIS
101 Fieldcrest Avenue
Suite 5E
Edison, New Jersey 08817
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www.arcadis-us.com

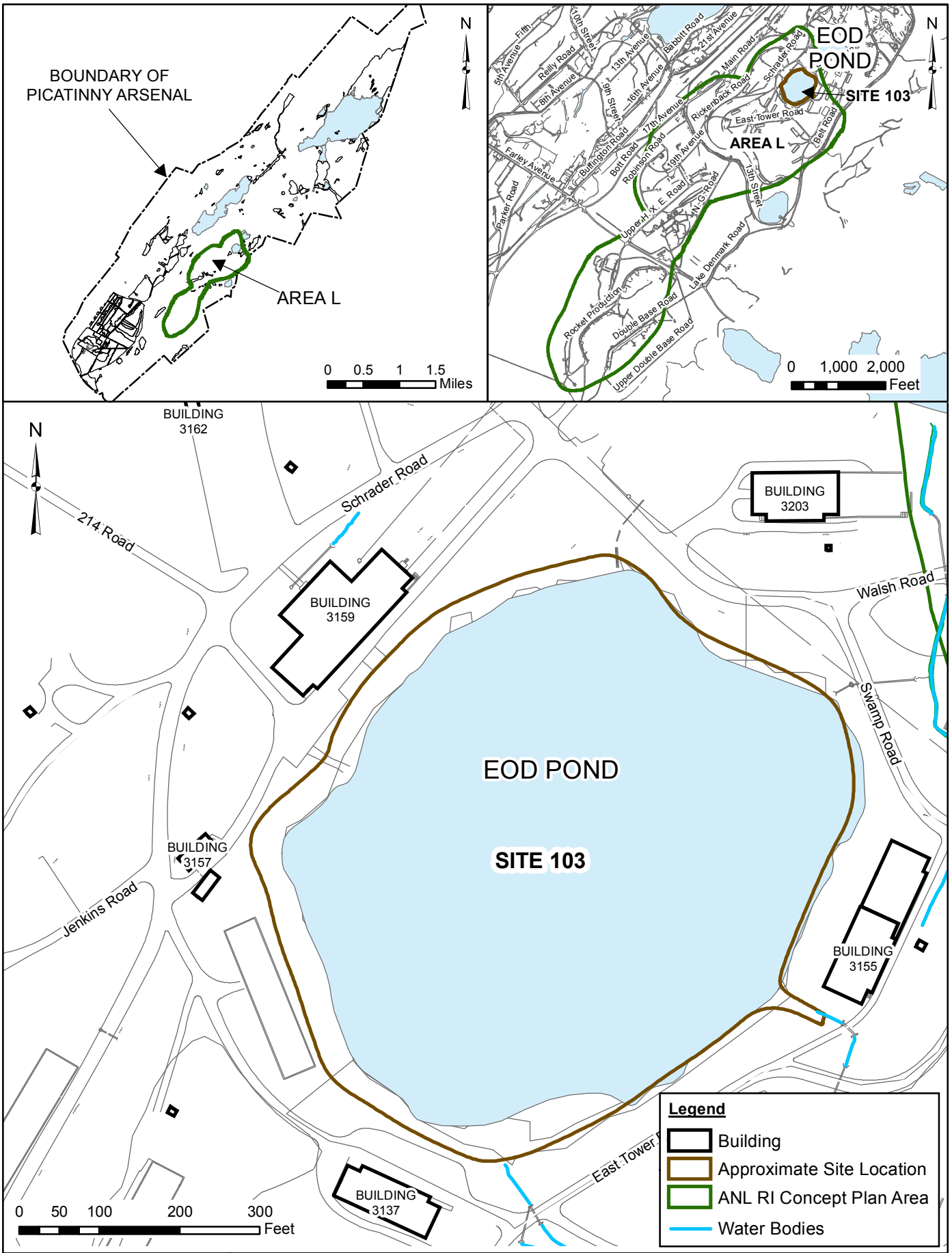
PROJECT TITLE
PICATINNY ARSENAL
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
T. LLEWELLYN	M. MOHIUDDIN	K. PANHORST	T. LLEWELLYN

SHEET TITLE
HISTORICAL SURFACE WATER
LOC EXCEEDENCES
AT SITE 53/PICA 057
PICATINNY LAKE

TASK/PHASE NUMBER	DRAWN BY
EA001	A. FOX

PROJECT NUMBER	DRAWING NUMBER
GP06PICA.P057	3-7



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ARCADIS
ARCADIS - Edison, NJ
105 Fieldcrest Avenue, Suite 305
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Phone: (732) 225-5061
Fax: (732) 225-5067

LAYOUT SITE 103 / PICA 164
RESERVOIR NEAR BUILDING 3159
EOD POND
PICATINNY ARSENAL, NEW JERSEY

PROJECT MANAGER T. LLEWELLYN	DEPARTMENT MANAGER M. MOHIUDDIN
DRAWN M. GRESS	CHECKED K. TIPTON
PROJECT NUMBER GP06PICA.P057.NJ001	DRAWING NUMBER 3-8

L-103-SD-001		
Depth (ft)		0 – 1
Compound	LOC	Conc
Aldrin (mg/kg)	0.002	0.3
Aroclor 1254 (mg/kg)	0.060	0.26
Dieldrin (mg/kg)	0.00285	0.37
Endosulfan I (mg/kg)	0.0003	0.9
Endosulfan II (mg/kg)	0.0003	0.01
Endrin ketone (mg/kg)	0.00267	0.02
Methoxychlor (mg/kg)	0.006	0.08 J
Zinc (mg/kg)	171	628

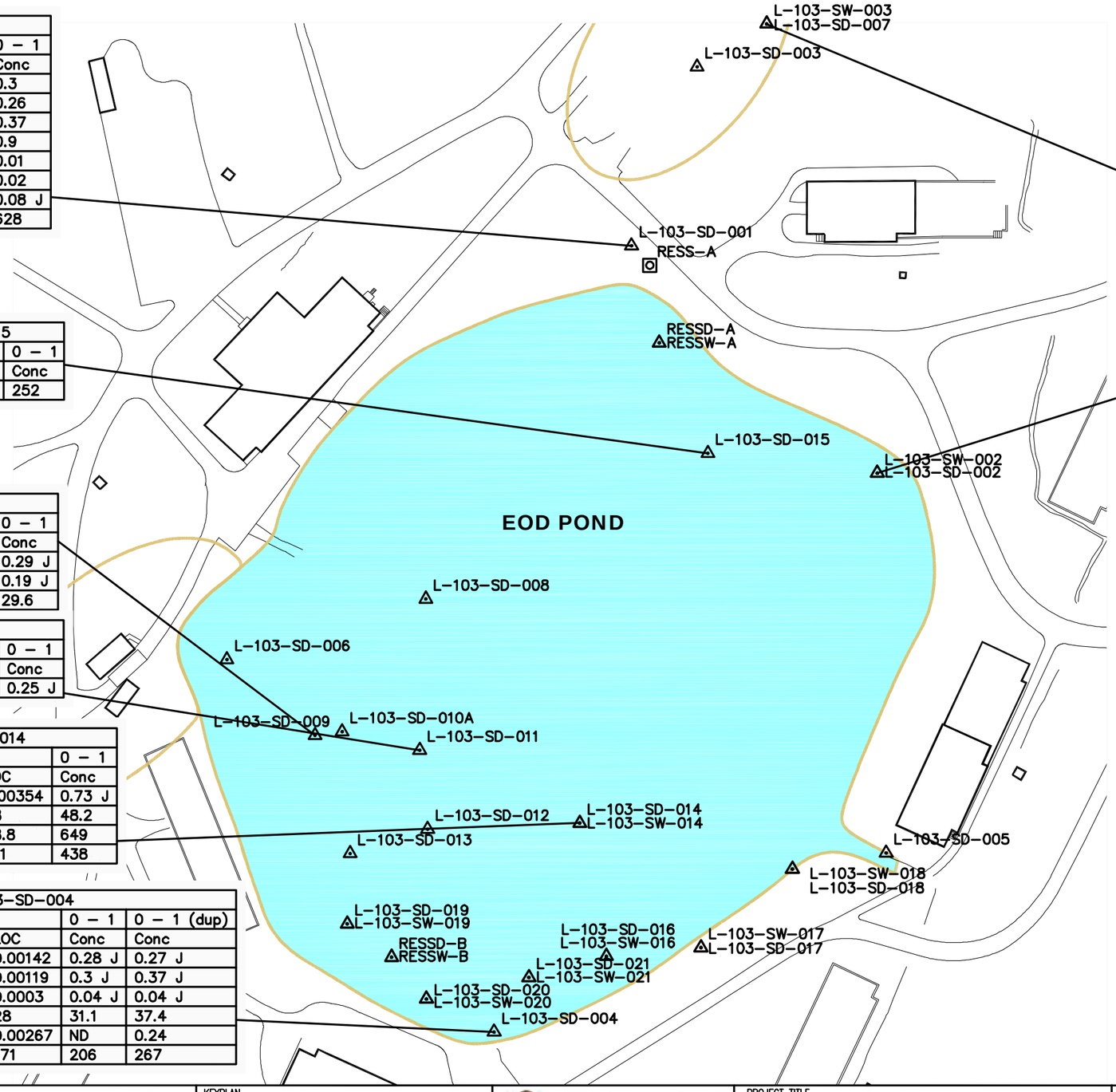
L-103-SD-015		
Depth (ft)		0 – 1
Compound	LOC	Conc
Zinc (mg/kg)	171	252

L-103-SD-009		
Depth (ft)		0 – 1
Compound	LOC	Conc
4,4'-DDD (mg/kg)	0.00354	0.29 J
4,4'-DDE (mg/kg)	0.00142	0.19 J
Copper (mg/kg)	28	29.6

L-103-SD-011		
Depth (ft)		0 – 1
Compound	LOC	Conc
4,4'-DDD (mg/kg)	0.00354	0.25 J

L-103-SD-014		
Depth (ft)		0 – 1
Compound	LOC	Conc
4,4'-DDD (mg/kg)	0.00354	0.73 J
Copper (mg/kg)	28	48.2
Lead (mg/kg)	38.8	649
Zinc (mg/kg)	171	438

L-103-SD-004			
Depth (ft)		0 – 1	0 – 1 (dup)
Compound	LOC	Conc	Conc
4,4'-DDE (mg/kg)	0.00142	0.28 J	0.27 J
4,4'-DDT (mg/kg)	0.00119	0.3 J	0.37 J
Chlordane (mg/kg)	0.0003	0.04 J	0.04 J
Copper (mg/kg)	28	31.1	37.4
Endrin ketone (mg/kg)	0.00267	ND	0.24
Zinc (mg/kg)	171	206	267



L-103-SD-007		
Depth (ft)		0 – 1
Compound	LOC	Conc
4,4'-DDD (mg/kg)	0.00354	0.18 J
4,4'-DDE (mg/kg)	0.00142	0.27 J
4,4'-DDT (mg/kg)	0.00119	0.02 J
Aroclor 1254 (mg/kg)	0.060	0.07
Zinc (mg/kg)	171	352

L-103-SD-002		
Depth (ft)		0 – 1
Compound	LOC	Conc
4,4'-DDD (mg/kg)	0.00354	0.03 J
4,4'-DDE (mg/kg)	0.00142	0.01 J
Copper (mg/kg)	28	36.7
Lead (mg/kg)	38.8	47.5
Zinc (mg/kg)	171	254

LEGEND

- SURFACE SOIL SAMPLE
- SURFACE WATER AND/OR SEDIMENT SAMPLE
- ROADS
- WATER BODIES
- BUILDING
- APPROXIMATE SITE LOCATION
- D — ALL COMPOUNDS IDENTIFIED IN AN ANALYSIS AT THE SECONDARY DILUTION FACTOR
- J — ESTIMATED VALUE
- NA — NOT ANALYZED
- ND — NOT DETECTED
- NE — NO EXCEEDENCE

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PLOT SCALE 11x17

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KEYPLAN

ARCADIS
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PROJECT TITLE
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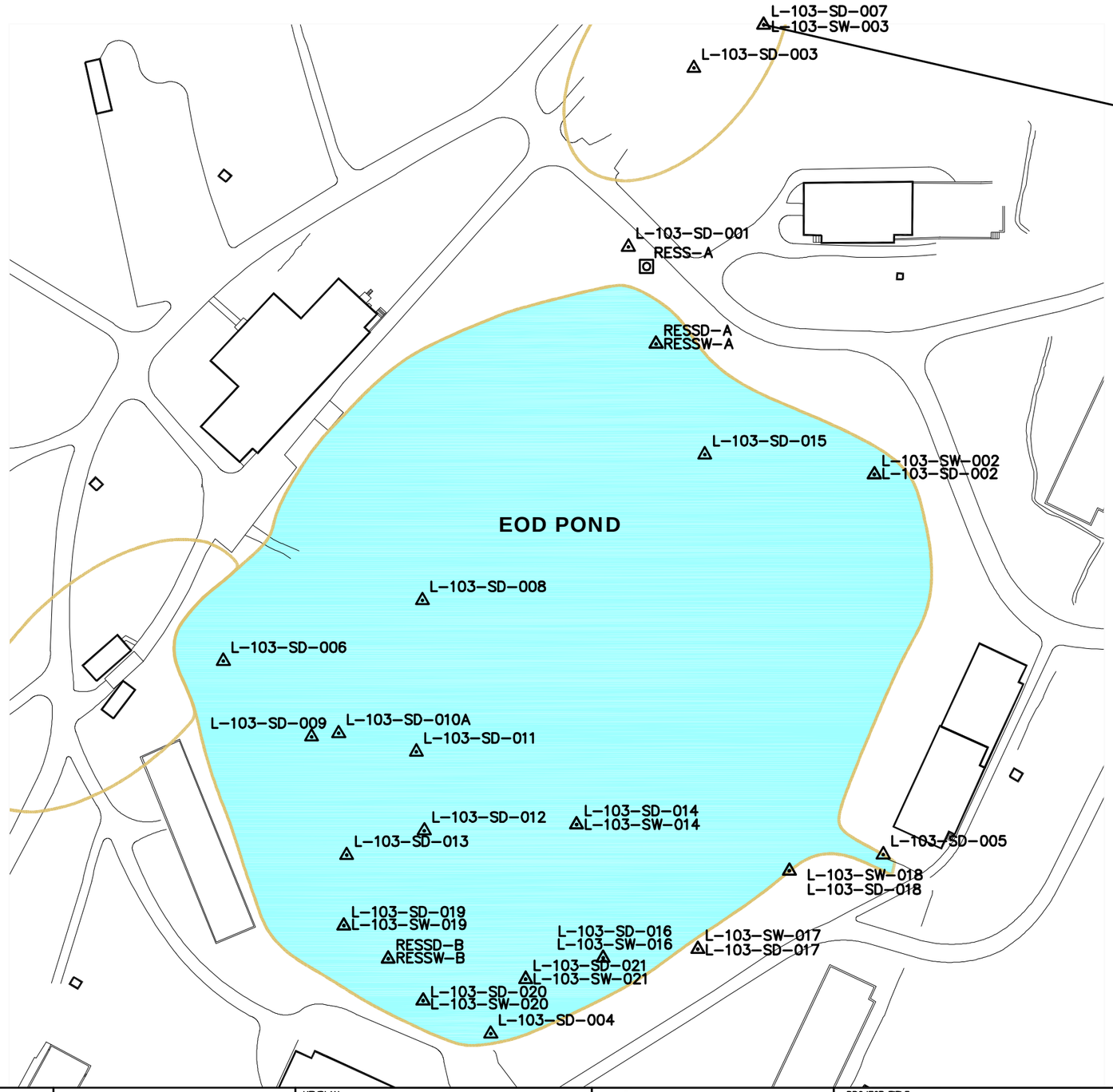
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED
T. LLEWELLYN	M. MOHIUDDIN	K. PANHORST	K. TIPTON

SHEET TITLE
HISTORICAL SEDIMENT LOC EXCEEDENCES AT SITE 103/PICA 164 EOD POND AREA

TASK/PHASE NUMBER: EA001
DRAWN BY: A. FOX
PROJECT NUMBER: GP06PICA.P057
DRAWING NUMBER: 3-9



L-103-SW-003		
Date		05/12/99
Compound	LOC	Conc
Aluminum (ug/L)	190	470
Iron (ug/L)	1790	19800
Manganese (ug/L)	383	1200

N

LEGEND

- SURFACE SOIL SAMPLE
- SURFACE WATER AND/OR SEDIMENT SAMPLE
- ROADS
- WATER BODIES
- BUILDING
- APPROXIMATE SITE LOCATION
- D — ALL COMPOUNDS IDENTIFIED IN AN ANALYSIS AT THE SECONDARY DILUTION FACTOR
- J — ESTIMATED VALUE
- NA — NOT ANALYZED
- ND — NOT DETECTED
- NE — NO EXCEEDENCE

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PLOT SCALE 11x17

REV. ISSUED DATE DESCRIPTION

KEYPLAN

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PROJECT TITLE
PICATINNY ARSENAL
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED
T. LLEWELLYN	M. MOHIUDDIN	K. PANHORST	K. TIPTON
SHEET TITLE: HISTORICAL SURFACE WATER LOC EXCEEDENCES AT SITE 103/PICA 164 EOD POND AREA		TASK/PHASE NUMBER: EA001	DRAWN BY: A. FOX
		PROJECT NUMBER: GP06PICA.P057	DRAWING NUMBER: 3-10

Appendix A

Historical Data Analytical Results Summary Tables from Picatinny Database (Provided on CD)

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Italicized text indicate site located as part of the Picatinny Lake perimeter

Table A-1
Historical Analytical Results for Soil Samples at PICA 015 / Site 54

		Site Name	54	54	54	54
		Location ID	O-54-SS-001	O-54-SS-002	O-54-SS-003	O-54-SS-004
		Sample ID	54SS-1(0-1)	54SS-2(0-1)	54SS-3(0-1)	54SS-4(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/14/1998	12/14/1998	12/14/1998	12/14/1998
		Sample Matrix	SO	SO	SO	SO
Chemical Name	CAS No	Unit				
Metals						
Arsenic	7440-38-2	mg/kg	5.99	5.57	7.79	6.84

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		Site Name	54	54	54	54	54	54	54
		Location ID	O-54-SD-001	O-54-SD-002	O-54-SD-003	O-54-SD-004	O-54-SD-005	O-54-SD-006	O-54-SD-007
		Sample ID	54SD-1(0-1)	54SD-2(0-1)	54SD-3(0-1)	54SD-4(0-1)	54SD-5(0-1)	54SD-6(0-1)	54SD-7(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	CAS No	Unit							
Explosives									
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.116 UJ	< 0.109 UJ	< 0.101 UJ	< 0.104 UJ	< 0.106 UJ	< 0.125 UJ	< 0.122 UJ
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.116 UJ	< 0.109 UJ	< 0.101 UJ	< 0.104 UJ	< 0.106 UJ	< 0.125 UJ	< 0.122 UJ
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.116 UJ	< 0.109 UJ	< 0.101 UJ	< 0.104 UJ	< 0.106 UJ	< 0.125 UJ	< 0.122 UJ
2-amino-4,6-Dinitrotoluene	35572-78-2	mg/kg	< 0.116 UJ	< 0.109 UJ	< 0.101 UJ	< 0.104 UJ	< 0.106 UJ	< 0.125 UJ	< 0.122 UJ
2-Nitrotoluene	88-72-2	mg/kg	< 0.232 UJ	< 0.217 UJ	< 0.202 UJ	< 0.209 UJ	< 0.212 UJ	< 0.25 UJ	< 0.244 UJ
3-Nitrotoluene	99-08-1	mg/kg	< 0.232 UJ	< 0.217 UJ	< 0.202 UJ	< 0.209 UJ	< 0.212 UJ	< 0.25 UJ	< 0.244 UJ
4-amino-2,6-Dinitrotoluene	19406-51-0	mg/kg	< 0.116 UJ	< 0.109 UJ	< 0.101 UJ	< 0.104 UJ	< 0.106 UJ	< 0.125 UJ	< 0.122 UJ
4-Nitrotoluene	99-99-0	mg/kg	< 0.232 UJ	< 0.217 UJ	< 0.202 UJ	< 0.209 UJ	< 0.212 UJ	< 0.25 UJ	< 0.244 UJ
HMX	2691-41-0	mg/kg	< 0.232 UJ	< 0.217 UJ	< 0.202 UJ	< 0.209 UJ	< 0.212 UJ	< 0.25 UJ	< 0.244 UJ
Nitrobenzene	98-95-3	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.101 UJ	< 0.104 UJ	< 0.106 UJ	< 0.569 UJ	< 0.122 UJ
Nitrobenzene	98-95-3	mg/kg	< 0.116 UJ	< 0.109 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.125 UJ	< 0.372 UJ
Nitrocellulose	9004-70-0	mg/kg							
Nitroglycerin	55-63-0	mg/kg							
PETN	78-11-5	mg/kg							
RDX	121-82-4	mg/kg	< 0.232 UJ	< 0.217 UJ	< 0.202 UJ	< 0.209 UJ	< 0.212 UJ	< 0.25 UJ	< 0.244 UJ
Tetryl	479-45-8	mg/kg	< 0.232 UJ	< 0.217 UJ	< 0.202 UJ	< 0.209 UJ	< 0.212 UJ	< 0.25 UJ	< 0.244 UJ
Explosives / SVOC									
2,4-Dinitrotoluene	121-14-2	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.101 UJ	< 0.104 UJ	< 0.106 UJ	< 1.138 UJ	< 0.122 UJ
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.116 UJ	< 0.109 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 0.125 UJ	< 0.745 UJ
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.116 UJ	< 0.109 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.122 UJ
2,6-Dinitrotoluene	606-20-2	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.101 UJ	< 0.104 UJ	< 0.106 UJ	< 0.125 UJ	< 0.745 UJ
Metals									
Aluminum	7429-90-5	mg/kg	6480 J	9200	6220	9280	10100	6890	15400
Antimony	7440-36-0	mg/kg	2.56 J	2.54	< 0.085 U	0.18	< 0.116 U	0.67	0.45
Arsenic	7440-38-2	mg/kg	17.5 J	14.6	1.67	4.47	2.15	8.46	6.06
Barium	7440-39-3	mg/kg	112 J	88.4	24.2	30.8	71	213	167
Beryllium	7440-41-7	mg/kg	1.75 J	1.12	0.34	0.34	0.96	1.15	2.23
Cadmium	7440-43-9	mg/kg	2.77 J	3.37	0.07	0.12	0.18	0.95	0.61
Calcium	7440-70-2	mg/kg	7400 J	4990	859	1680	3160	16400	10000
Chromium	7440-47-3	mg/kg	< 12.947 UJ	9.47	6.1	4.54	27.6	17.6	27.9
Cobalt	7440-48-4	mg/kg	< 25.867 UJ	< 17.168 U	< 3.356 U	< 4.814 U	7.79	< 15.041 U	< 10.532 U
Copper	7440-50-8	mg/kg	40.4 J	46.8	4.36	4.79	5.32	175	17.5
Iron	7439-89-6	mg/kg	14100 J	17300	5530	5330	16300	12700	12400
Lead	7439-92-1	mg/kg	157 J	181 J	6.49 J	19.4 J	12.3 J	55.7 J	42.8 J
Magnesium	7439-95-4	mg/kg	1160 J	2650	771	474	1130	2930	1990
Manganese	7439-96-5	mg/kg	493 J	652	26.9	113	385	1260	462

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		Site Name	54	54	54	54	54	54	54
		Location ID	O-54-SD-001	O-54-SD-002	O-54-SD-003	O-54-SD-004	O-54-SD-005	O-54-SD-006	O-54-SD-007
		Sample ID	54SD-1(0-1)	54SD-2(0-1)	54SD-3(0-1)	54SD-4(0-1)	54SD-5(0-1)	54SD-6(0-1)	54SD-7(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	CAS No	Unit							
Mercury	7439-97-6	mg/kg	< 0.253 UJ	< 0.168 R	< 0.034 R	< 0.047 R	< 0.045 R	1.5	< 0.106 R
Nickel	7440-02-0	mg/kg	< 25.867 UJ	< 17.168 U	< 3.356 U	< 4.814 U	6.44	< 15.041 U	12.9
Potassium	7440-09-7	mg/kg	< 1294.667 UJ	1270	< 167.797 U	< 240.943 U	< 230.641 U	< 752.846 U	574
Selenium	7782-49-2	mg/kg	5.17 J	4.27	< 0.671 U	< 0.963 U	1.18	3.98	4.03
Silver	7440-22-4	mg/kg	0.54 J	1.19	0.08	0.15	0.12	0.33	0.22
Sodium	7440-23-5	mg/kg	< 646.667 UJ	< 429.204 U	< 83.898 U	< 120.347 U	122	1070	< 263.298 U
Thallium	7440-28-0	mg/kg	0.35 J	0.37	0.06	0.05	0.05	0.17	0.16
Vanadium	7440-62-2	mg/kg	26.3 J	47.2	15.3	18.1	94.8	43.1	30.9
Zinc	7440-66-6	mg/kg	269 J	327	12.2	20.5	19.5	287	61.2
Other									
1,4-Oxathiane	15980-15-1	mg/kg							
Dithiane	51330-42-8	mg/kg							
PCBs									
Aroclor 1016	12674-11-2	mg/kg							
Aroclor 1016	12674-11-2	mg/kg							
Aroclor 1221	11104-28-2	mg/kg							
Aroclor 1232	11141-16-5	mg/kg							
Aroclor 1242	53469-21-9	mg/kg							
Aroclor 1248	12672-29-6	mg/kg							
Aroclor 1254	11097-69-1	mg/kg							
Aroclor 1260	11096-82-5	mg/kg							
Aroclor 1260	11096-82-5	mg/kg							
Aroclor 1262	37324-23-5	mg/kg							
Pesticides									
4,4'-DDD	72-54-8	mg/kg							
4,4'-DDD	72-54-8	mg/kg							
4,4'-DDE	72-55-9	mg/kg							
4,4'-DDE	72-55-9	mg/kg							
4,4'-DDT	50-29-3	mg/kg							
4,4'-DDT	50-29-3	mg/kg							
Aldrin	309-00-2	mg/kg							
Aldrin	309-00-2	mg/kg							
alpha-BHC	319-84-6	mg/kg							
alpha-BHC	319-84-6	mg/kg							
Atrazine	1912-24-9	mg/kg							
beta-BHC	319-85-7	mg/kg							

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		Site Name	54	54	54	54	54	54	54
		Location ID	O-54-SD-001	O-54-SD-002	O-54-SD-003	O-54-SD-004	O-54-SD-005	O-54-SD-006	O-54-SD-007
		Sample ID	54SD-1(0-1)	54SD-2(0-1)	54SD-3(0-1)	54SD-4(0-1)	54SD-5(0-1)	54SD-6(0-1)	54SD-7(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	CAS No	Unit							
beta-BHC	319-85-7	mg/kg							
Chlordane	57-74-9	mg/kg							
Chlordane	57-74-9	mg/kg							
delta-BHC	319-86-8	mg/kg							
delta-BHC	319-86-8	mg/kg							
Dieldrin	60-57-1	mg/kg							
Dieldrin	60-57-1	mg/kg							
Endosulfan I	959-98-8	mg/kg							
Endosulfan I	959-98-8	mg/kg							
Endosulfan II	33213-65-9	mg/kg							
Endosulfan II	33213-65-9	mg/kg							
Endosulfan sulfate	1031-07-8	mg/kg							
Endosulfan sulfate	1031-07-8	mg/kg							
Endrin	72-20-8	mg/kg							
Endrin	72-20-8	mg/kg							
Endrin aldehyde	7421-93-4	mg/kg							
Endrin ketone	53494-70-5	mg/kg							
gamma-BHC (Lindane)	58-89-9	mg/kg							
gamma-BHC (Lindane)	58-89-9	mg/kg							
Heptachlor	76-44-8	mg/kg							
Heptachlor	76-44-8	mg/kg							
Heptachlor epoxide	1024-57-3	mg/kg							
Heptachlor epoxide	1024-57-3	mg/kg							
Isodrin	465-73-6	mg/kg							
Isodrin	465-73-6	mg/kg							
Malathion	121-75-5	mg/kg							
Methoxychlor	72-43-5	mg/kg							
Methoxychlor	72-43-5	mg/kg							
Mirex	2385-85-5	mg/kg							
Parathion	56-38-2	mg/kg							
p-Chlorophenylmethyl sulfide	123-09-1	mg/kg							
p-Chlorophenylmethyl sulfone	98-57-7	mg/kg							
p-Chlorophenylmethyl sulfoxide	934-73-6	mg/kg							
Supona	470-90-6	mg/kg							
Toxaphene	8001-35-2	mg/kg							
Toxaphene	8001-35-2	mg/kg							
Vapona	62-73-7	mg/kg							

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		Site Name	54	54	54	54	54	54	54
		Location ID	O-54-SD-001	O-54-SD-002	O-54-SD-003	O-54-SD-004	O-54-SD-005	O-54-SD-006	O-54-SD-007
		Sample ID	54SD-1(0-1)	54SD-2(0-1)	54SD-3(0-1)	54SD-4(0-1)	54SD-5(0-1)	54SD-6(0-1)	54SD-7(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	CAS No	Unit							
SVOC									
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 UJ	< 0.027 UJ
1,2,4-Trichlorobenzene	120-82-1	mg/kg	< 1.333 UJ	< 0.885 UJ	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
1,2-Dichlorobenzene	95-50-1	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
1,2-Diphenylhydrazine	122-66-7	mg/kg							
1,3-Dichlorobenzene	541-73-1	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
1,3-Dichlorobenzene	541-73-1	mg/kg							
1,4-Dichlorobenzene	106-46-7	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
2,4,5-Trichlorophenol	95-95-4	mg/kg	< 4 UJ	< 2.655 UJ	< 0.508 UJ	< 0.744 UJ	< 0.713 UJ	< 2.439 UJ	< 1.596 UJ
2,4,6-Trichlorophenol	88-06-2	mg/kg	< 4 UJ	< 2.655 UJ	< 0.508 UJ	< 0.744 UJ	< 0.713 UJ	< 2.439 UJ	< 1.596 UJ
2,4-Dichlorophenol	120-83-2	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ
2,4-Dimethylphenol	105-67-9	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ
2,4-Dinitrophenol	51-28-5	mg/kg	< 17.333 UJ	< 11.504 UJ	< 2.203 UJ	< 3.226 UJ	< 3.088 UJ	< 10.569 UJ	< 6.915 UJ
2,6-Dinitroaniline	606-22-4	mg/kg							
2-Chloronaphthalene	91-58-7	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
2-Chlorophenol	95-57-8	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ
2-Methylnaphthalene	91-57-6	mg/kg	< 1.333 UJ	< 0.885 UJ	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
2-Methylphenol	95-48-7	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ
2-Nitroaniline	88-74-4	mg/kg	< 4 UJ	< 2.655 UJ	< 0.508 UJ	< 0.744 UJ	< 0.713 UJ	< 2.439 UJ	< 1.596 UJ
2-Nitrophenol	88-75-5	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ
3,3'-Dichlorobenzidine	91-94-1	mg/kg	< 6.667 UJ	< 4.425 UJ	< 0.847 UJ	< 1.241 UJ	< 1.188 UJ	< 4.065 UJ	< 2.66 UJ
3,5-Dinitroaniline	618-87-1	mg/kg							
3-Nitroaniline	99-09-2	mg/kg	< 4 UJ	< 2.655 UJ	< 0.508 UJ	< 0.744 UJ	< 0.713 UJ	< 2.439 UJ	< 1.596 UJ
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg	< 13.333 UJ	< 8.85 UJ	< 1.695 UJ	< 2.481 UJ	< 2.375 UJ	< 8.13 UJ	< 5.319 UJ
4-Bromophenyl phenyl ether	101-55-3	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ
4-Chloro-3-methylphenol	59-50-7	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ
4-Chloroaniline	106-47-8	mg/kg	< 4 UJ	< 2.655 UJ	< 0.508 UJ	< 0.744 UJ	< 0.713 UJ	< 2.439 UJ	< 1.596 UJ
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	< 1.333 UJ	< 0.885 UJ	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
4-Methylphenol	106-44-5	mg/kg	< 1.867 UJ#	< 1.239 UJ#	< 0.237 UJ#	< 0.347 UJ#	< 0.333 UJ#	< 1.138 UJ#	< 0.745 UJ#
4-Nitroaniline	100-01-6	mg/kg	< 4 UJ	< 2.655 UJ	< 0.508 UJ	< 0.744 UJ	< 0.713 UJ	< 2.439 UJ	< 1.596 UJ
4-Nitrophenol	100-02-7	mg/kg	< 6.667 UJ	< 4.425 UJ	< 0.847 UJ	< 1.241 UJ	< 1.188 UJ	< 4.065 UJ	< 2.66 UJ
Acenaphthene	83-32-9	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
Acenaphthylene	208-96-8	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
Aniline	62-53-3	mg/kg							
Anthracene	120-12-7	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
Benz(a)anthracene	56-55-3	mg/kg	< 1.333 UJ	0.28 J	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
Benzo(a)pyrene	50-32-8	mg/kg	< 1.867 UJ	0.33 J	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		Site Name	54	54	54	54	54	54	54
		Location ID	O-54-SD-001	O-54-SD-002	O-54-SD-003	O-54-SD-004	O-54-SD-005	O-54-SD-006	O-54-SD-007
		Sample ID	54SD-1(0-1)	54SD-2(0-1)	54SD-3(0-1)	54SD-4(0-1)	54SD-5(0-1)	54SD-6(0-1)	54SD-7(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	CAS No	Unit							
Benzo(b)fluoranthene	205-99-2	mg/kg	< 1.333 UJ	0.41 J	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
Benzo(g,h,i)perylene	191-24-2	mg/kg	< 2.133 UJ	< 1.416 UJ	< 0.271 UJ	< 0.397 UJ	< 0.38 UJ	< 1.301 UJ	< 0.851 UJ
Benzo(k)fluoranthene	207-08-9	mg/kg	< 1.333 UJ	0.44 J	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
Benzyl alcohol	100-51-6	mg/kg							
bis(2-Chloroethoxy)methane	111-91-1	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
bis(2-Chloroethyl)ether	111-44-4	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	< 1.333 (U)J	< 0.885 (U)J	< 0.169 (U)J	< 0.248 (U)J	< 0.238 (U)J	< 0.813 (U)J	< 0.532 (U)J
Butylbenzyl phthalate	85-68-7	mg/kg	< 1.333 UJ	< 0.885 UJ	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
Carbazole	86-74-8	mg/kg	< 1.333 UJ	< 0.885 UJ	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
Chrysene	218-01-9	mg/kg	< 1.333 UJ	0.47 J	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
Dibenz(a,h)anthracene	53-70-3	mg/kg	< 2.133 UJ	< 1.416 UJ	< 0.271 UJ	< 0.397 UJ	< 0.38 UJ	< 1.301 UJ	< 0.851 UJ
Dibenzofuran	132-64-9	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
Dichlorobenzenes	25321-22-6	mg/kg							
Dicyclopentadiene	77-73-6	mg/kg							
Diethylphthalate	84-66-2	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
Dimethylphthalate	131-11-3	mg/kg	< 1.333 UJ	< 0.885 UJ	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
di-n-Butylphthalate	84-74-2	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
di-n-Octylphthalate	117-84-0	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ
Diphenylamine	122-39-4	mg/kg							
Fluoranthene	206-44-0	mg/kg	0.69 J	0.88 J	0.03 J	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
Fluorene	86-73-7	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
Hexachlorobenzene	118-74-1	mg/kg	< 1.333 UJ	< 0.885 UJ	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
Hexachlorobutadiene	87-68-3	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ
Hexachlorocyclopentadiene	77-47-4	mg/kg	< 13.333 R	< 8.85 R	< 1.695 R	< 2.481 R	< 2.375 R	< 8.13 R	< 5.319 R
Hexachloroethane	67-72-1	mg/kg	< 1.333 UJ	< 0.885 UJ	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	< 2.133 UJ	< 1.416 UJ	< 0.271 UJ	< 0.397 UJ	< 0.38 UJ	< 1.301 UJ	< 0.851 UJ
Isophorone	78-59-1	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ
Naphthalene	91-20-3	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
N-Nitrosodimethylamine	62-75-9	mg/kg							
n-Nitroso-di-n-propylamine	621-64-7	mg/kg	< 1.333 UJ	< 0.885 UJ	< 0.169 UJ	< 0.248 UJ	< 0.238 UJ	< 0.813 UJ	< 0.532 UJ
n-Nitrosodiphenylamine	86-30-6	mg/kg	< 0.933 UJ	< 0.619 UJ	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
Pentachlorophenol	87-86-5	mg/kg	< 6.667 UJ	< 4.425 UJ	< 0.847 UJ	< 1.241 UJ	< 1.188 UJ	< 4.065 UJ	< 2.66 UJ
Phenanthrene	85-01-8	mg/kg	< 0.933 UJ	0.58 J	< 0.119 UJ	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
Phenol	108-95-2	mg/kg	< 1.867 UJ	< 1.239 UJ	< 0.237 UJ	< 0.347 UJ	< 0.333 UJ	< 1.138 UJ	< 0.745 UJ
Pyrene	129-00-0	mg/kg	0.45 J	0.65 J	0.02 J	< 0.174 UJ	< 0.166 UJ	< 0.569 UJ	< 0.372 UJ
Vitamin E	59-02-9	mg/kg							

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		Site Name	54	54	54	54	54	54	54
		Location ID	O-54-SD-001	O-54-SD-002	O-54-SD-003	O-54-SD-004	O-54-SD-005	O-54-SD-006	O-54-SD-007
		Sample ID	54SD-1(0-1)	54SD-2(0-1)	54SD-3(0-1)	54SD-4(0-1)	54SD-5(0-1)	54SD-6(0-1)	54SD-7(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	CAS No	Unit							
TPH									
Total Petroleum Hydrocarbons	TPH	mg/kg							
VOC									
1,1,1-Trichloroethane	71-55-6	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	mg/kg							
1,1,2-Trichloroethane	79-00-5	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
1,1-Dichloroethane	75-34-3	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
1,1-Dichloroethene	75-35-4	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
1,2,3-Trichlorobenzene	87-61-6	mg/kg							
1,2-Dichloroethane	107-06-2	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
1,2-Dichloroethene (total)	540-59-0	mg/kg							
1,2-Dichloropropane	78-87-5	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
1,3-Dichloropropane	142-28-9	mg/kg							
2,3,6-Trichlorophenol	933-75-5	mg/kg							
2-Butanone	78-93-3	mg/kg	0.45 J	0.14 J	0.58 J	0.82 J	0.03 J	0.21	0.19
2-Chloroethyl vinyl ether	110-75-8	mg/kg							
2-Hexanone	591-78-6	mg/kg	< 0.267 UJ	< 0.177 U	< 0.034 U	< 0.05 U	< 0.048 U	< 0.163 UJ	< 0.106 UJ
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	< 0.267 UJ	< 0.177 U	< 0.034 U	< 0.05 U	< 0.048 U	< 0.163 U	< 0.106 U
Acetone	67-64-1	mg/kg	1.6 J	0.5 J	< 0.017 (U)	< 0.025 (U)	0.13 J	0.77 J	0.69 J
Acetonitrile	75-05-8	mg/kg							
Acrylonitrile	107-13-1	mg/kg							
Benzene	71-43-2	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
Bromodichloromethane	75-27-4	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
Bromoform	75-25-2	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 UJ	< 0.027 UJ
Bromomethane	74-83-9	mg/kg	< 0.133 UJ	< 0.088 UJ	< 0.017 UJ	< 0.025 UJ	< 0.024 UJ	< 0.081 UJ	< 0.053 UJ
Carbon disulfide	75-15-0	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	0.51 J
Carbon tetrachloride	56-23-5	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
Chlorobenzene	108-90-7	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 UJ	< 0.027 UJ
Chloroethane	75-00-3	mg/kg	< 0.267 UJ	< 0.177 U	< 0.034 U	< 0.05 U	< 0.048 U	< 0.163 U	< 0.106 U
Chloroform	67-66-3	mg/kg	0.01 J	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
Chloromethane	74-87-3	mg/kg	< 0.133 UJ	< 0.088 U	< 0.017 U	< 0.025 U	< 0.024 U	< 0.081 U	< 0.053 U
cis-1,2-Dichloroethene	156-59-2	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
cis-1,3-Dichloropropene	10061-01-5	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
Dibromochloromethane	124-48-1	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 UJ	< 0.027 UJ
Dibromochloropropane	96-12-8	mg/kg							
Dichlorodifluoromethane	75-71-8	mg/kg							
Ethyl benzene	100-41-4	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 UJ	< 0.027 UJ

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		Site Name	54	54	54	54	54	54	54
		Location ID	O-54-SD-001	O-54-SD-002	O-54-SD-003	O-54-SD-004	O-54-SD-005	O-54-SD-006	O-54-SD-007
		Sample ID	54SD-1(0-1)	54SD-2(0-1)	54SD-3(0-1)	54SD-4(0-1)	54SD-5(0-1)	54SD-6(0-1)	54SD-7(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	CAS No	Unit							
Methylene chloride	75-09-2	mg/kg	< 0.067 (U)J	< 0.044 (U)	< 0.847 (U)	< 0.012 (U)	< 0.012 (U)	< 0.041 (U)J	< 0.027 (U)J
m-Xylenes	108-38-3	mg/kg							
Styrene	100-42-5	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 UJ	< 0.027 UJ
Tetrachloroethene	127-18-4	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 UJ	< 0.027 UJ
Toluene	108-88-3	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
trans-1,2-Dichloroethene	156-60-5	mg/kg	< 0.067 UJ	< 44.248 U	< 8.475 U	< 12.407 U	< 11.876 U	< 40.65 U	< 26.596 U
trans-1,3-Dichloropropene	10061-02-6	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
Trichloroethene	79-01-6	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 U	< 0.027 U
Trichlorofluoromethane	75-69-4	mg/kg							
Vinyl chloride	75-01-4	mg/kg	< 0.133 UJ	< 0.088 U	< 0.017 U	< 0.025 U	< 0.024 U	< 0.081 U	< 0.053 U
Xylenes	1330-20-7	mg/kg	< 0.067 UJ	< 0.044 U	< 0.847 U	< 0.012 U	< 0.012 U	< 0.041 UJ	< 0.027 UJ
WetChem									
% Solids	%Solid	%							
Cation Exchange Capacity	CEC	mg/kg							
Cyanide	57-12-5	mg/kg							
Total organic carbon	TOC	mg/kg							

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54	54
		O-54-SD-008	O-54-SD-009	O-54-SD-009	O-54-SD-010A	O-54-SD-010A	O-54-SD-011
		54SD-8(0-1)	54SD-9(0-1)-128550	54SD-9(0-1)-128624	54SD-10(0-1)-128535	54SD-10(0-1)-128616	54SD-11DUP(0-1)-128537
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/7/1998	12/7/1998	6/15/1999	12/7/1998	6/15/1999	12/7/1998
		SE	SE	SE	SE	SE	SE
Chemical Name	CAS No						
Explosives							
1,3,5-Trinitrobenzene	99-35-4	< 0.103 UJ	< 0.107 UJ		< 0.134 UJ		< 0.115 UJ
1,3-Dinitrobenzene	99-65-0	< 0.103 UJ	< 0.107 UJ		< 0.134 UJ		< 0.115 UJ
2,4,6-Trinitrotoluene	118-96-7	< 0.103 UJ	< 0.107 UJ		< 0.134 UJ		< 0.115 UJ
2-amino-4,6-Dinitrotoluene	35572-78-2	< 0.103 UJ	< 0.107 UJ		< 0.134 UJ		< 0.115 UJ
2-Nitrotoluene	88-72-2	< 0.206 UJ	< 0.215 UJ		< 0.269 UJ		< 0.23 UJ
3-Nitrotoluene	99-08-1	< 0.206 UJ	< 0.215 UJ		< 0.269 UJ		< 0.23 UJ
4-amino-2,6-Dinitrotoluene	19406-51-0	< 0.103 UJ	< 0.107 UJ		< 0.134 UJ		< 0.115 UJ
4-Nitrotoluene	99-99-0	< 0.206 UJ	< 0.215 UJ		< 0.269 UJ		< 0.23 UJ
HMX	2691-41-0	< 0.206 UJ	< 0.215 UJ		< 0.269 UJ		< 0.23 UJ
Nitrobenzene	98-95-3	< 0.14 UJ	< 0.107 UJ	< 3.667 UJ	< 0.134 UJ	< 4.521 UJ	< 0.115 UJ
Nitrobenzene	98-95-3	< 0.103 UJ					
Nitrocellulose	9004-70-0						
Nitroglycerin	55-63-0						
PETN	78-11-5						
RDX	121-82-4	< 0.206 UJ	< 0.215 UJ		< 0.269 UJ		< 0.23 UJ
Tetryl	479-45-8	< 0.206 UJ	< 0.215 UJ		< 0.269 UJ		< 0.23 UJ
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	< 0.103 UJ	< 0.107 UJ	< 3.667 UJ	< 0.134 UJ	< 4.521 UJ	< 0.115 UJ
2,4-Dinitrotoluene	121-14-2	< 0.281 UJ					
2,6-Dinitrotoluene	606-20-2	< 0.281 UJ	< 0.107 UJ	< 3.667 UJ	< 0.134 UJ	< 4.521 UJ	< 0.115 UJ
2,6-Dinitrotoluene	606-20-2	< 0.103 UJ					
Metals							
Aluminum	7429-90-5	6310	17300		5640		3430
Antimony	7440-36-0	0.17	0.57		< 0.336 U		< 0.485 U
Arsenic	7440-38-2	2.97	10.8		3.23		< 2.911 U
Barium	7440-39-3	52.1	958		88.8		90.3
Beryllium	7440-41-7	0.78	2.42		0.97		0.55
Cadmium	7440-43-9	0.17	0.61		0.37		0.28
Calcium	7440-70-2	2020	19700		7050		17000
Chromium	7440-47-3	9.58	138		< 0.068 U		< 9.703 U
Cobalt	7440-48-4	5.21	< 0.154 U		< 0.137 U		< 19.406 U
Copper	7440-50-8	6.91	23.2		9.41		16.2
Iron	7439-89-6	6170	15100		4970		5180
Lead	7439-92-1	12 J	41.8 J		11.8 J		3.68 J
Magnesium	7439-95-4	954	7100		1070		2340
Manganese	7439-96-5	190	1550		825		210

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54	54
		O-54-SD-008	O-54-SD-009	O-54-SD-009	O-54-SD-010A	O-54-SD-010A	O-54-SD-011
		54SD-8(0-1)	54SD-9(0-1)-128550	54SD-9(0-1)-128624	54SD-10(0-1)-128535	54SD-10(0-1)-128616	54SD-11DUP(0-1)-128537
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/7/1998	12/7/1998	6/15/1999	12/7/1998	6/15/1999	12/7/1998
		SE	SE	SE	SE	SE	SE
Chemical Name	CAS No						
Mercury	7439-97-6	< 0.04 R	< 0.154 R		< 0.137 U		< 0.198 U
Nickel	7440-02-0	5.05	< 0.154 U		< 0.137 U		< 19.406 U
Potassium	7440-09-7	275	816		< 6.849 U		< 970.297 U
Selenium	7782-49-2	1.08	3.61		< 2.685 U		< 3.881 U
Silver	7440-22-4	0.05	0.23		< 0.171 U		< 0.248 U
Sodium	7440-23-5	< 99.198 U	< 3.846 U		< 3.425 U		< 485.149 U
Thallium	7440-28-0	0.1	0.28		< 0.137 U		< 0.198 U
Vanadium	7440-62-2	24.2	32.3		11.6		27.3
Zinc	7440-66-6	36.7	190		< 0.342 U		< 48.515 U
Other							
1,4-Oxathiane	15980-15-1						
Dithiane	51330-42-8						
PCBs							
Aroclor 1016	12674-11-2						
Aroclor 1016	12674-11-2						
Aroclor 1221	11104-28-2						
Aroclor 1232	11141-16-5						
Aroclor 1242	53469-21-9						
Aroclor 1248	12672-29-6						
Aroclor 1254	11097-69-1						
Aroclor 1260	11096-82-5						
Aroclor 1260	11096-82-5						
Aroclor 1262	37324-23-5						
Pesticides							
4,4'-DDD	72-54-8						
4,4'-DDD	72-54-8						
4,4'-DDE	72-55-9						
4,4'-DDE	72-55-9						
4,4'-DDT	50-29-3						
4,4'-DDT	50-29-3						
Aldrin	309-00-2						
Aldrin	309-00-2						
alpha-BHC	319-84-6						
alpha-BHC	319-84-6						
Atrazine	1912-24-9						
beta-BHC	319-85-7						

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54	54
		O-54-SD-008	O-54-SD-009	O-54-SD-009	O-54-SD-010A	O-54-SD-010A	O-54-SD-011
		54SD-8(0-1)	54SD-9(0-1)-128550	54SD-9(0-1)-128624	54SD-10(0-1)-128535	54SD-10(0-1)-128616	54SD-11DUP(0-1)-128537
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/7/1998	12/7/1998	6/15/1999	12/7/1998	6/15/1999	12/7/1998
		SE	SE	SE	SE	SE	SE
Chemical Name	CAS No						
beta-BHC	319-85-7						
Chlordane	57-74-9						
Chlordane	57-74-9						
delta-BHC	319-86-8						
delta-BHC	319-86-8						
Dieldrin	60-57-1						
Dieldrin	60-57-1						
Endosulfan I	959-98-8						
Endosulfan I	959-98-8						
Endosulfan II	33213-65-9						
Endosulfan II	33213-65-9						
Endosulfan sulfate	1031-07-8						
Endosulfan sulfate	1031-07-8						
Endrin	72-20-8						
Endrin	72-20-8						
Endrin aldehyde	7421-93-4						
Endrin ketone	53494-70-5						
gamma-BHC (Lindane)	58-89-9						
gamma-BHC (Lindane)	58-89-9						
Heptachlor	76-44-8						
Heptachlor	76-44-8						
Heptachlor epoxide	1024-57-3						
Heptachlor epoxide	1024-57-3						
Isodrin	465-73-6						
Isodrin	465-73-6						
Malathion	121-75-5						
Methoxychlor	72-43-5						
Methoxychlor	72-43-5						
Mirex	2385-85-5						
Parathion	56-38-2						
p-Chlorophenylmethyl sulfide	123-09-1						
p-Chlorophenylmethyl sulfone	98-57-7						
p-Chlorophenylmethyl sulfoxide	934-73-6						
Supona	470-90-6						
Toxaphene	8001-35-2						
Toxaphene	8001-35-2						
Vapona	62-73-7						

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-008 54SD-8(0-1) 0 - 1 12/7/1998 SE	54 O-54-SD-009 54SD-9(0-1)-128550 0 - 1 12/7/1998 SE	54 O-54-SD-009 54SD-9(0-1)-128624 0 - 1 6/15/1999 SE	54 O-54-SD-010A 54SD-10(0-1)-128535 0 - 1 12/7/1998 SE	54 O-54-SD-010A 54SD-10(0-1)-128616 0 - 1 6/15/1999 SE	54 O-54-SD-011 54SD-11DUP(0-1)-128537 0 - 1 12/7/1998 SE
Chemical Name	CAS No						
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5	< 0.01 UJ	< 0.038 UJ		< 0.034 UJ		< 0.05 UJ
1,2,4-Trichlorobenzene	120-82-1	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
1,2-Dichlorobenzene	95-50-1	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
1,2-Diphenylhydrazine	122-66-7						
1,3-Dichlorobenzene	541-73-1	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
1,3-Dichlorobenzene	541-73-1						
1,4-Dichlorobenzene	106-46-7	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
2,4,5-Trichlorophenol	95-95-4	< 0.601 UJ		< 3.667 UJ		< 4.521 UJ	
2,4,6-Trichlorophenol	88-06-2	< 0.601 UJ		< 3.667 UJ		< 4.521 UJ	
2,4-Dichlorophenol	120-83-2	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	
2,4-Dimethylphenol	105-67-9	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	
2,4-Dinitrophenol	51-28-5	< 2.605 UJ		< 17.778 UJ		< 21.918 UJ	
2,6-Dinitroaniline	606-22-4						
2-Chloronaphthalene	91-58-7	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
2-Chlorophenol	95-57-8	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	
2-Methylnaphthalene	91-57-6	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
2-Methylphenol	95-48-7	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	
2-Nitroaniline	88-74-4	< 0.601 UJ		< 17.778 UJ		< 21.918 UJ	
2-Nitrophenol	88-75-5	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	
3,3'-Dichlorobenzidine	91-94-1	< 1.002 UJ		< 17.778 UJ		< 21.918 UJ	
3,5-Dinitroaniline	618-87-1						
3-Nitroaniline	99-09-2	< 0.601 UJ		< 17.778 UJ		< 21.918 UJ	
4,6-dinitro-2-Methylphenol	534-52-1	< 2.004 UJ		< 17.778 UJ		< 21.918 UJ	
4-Bromophenyl phenyl ether	101-55-3	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	
4-Chloro-3-methylphenol	59-50-7	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	
4-Chloroaniline	106-47-8	< 0.601 UJ		< 3.667 UJ		< 4.521 UJ	
4-Chlorophenyl phenyl ether	7005-72-3	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
4-Methylphenol	106-44-5	< 0.281 UJ#		< 3.667 UJ#		< 4.521 UJ#	
4-Nitroaniline	100-01-6	< 0.601 UJ		< 17.778 UJ		< 21.918 UJ	
4-Nitrophenol	100-02-7	< 1.002 UJ		< 17.778 UJ		< 21.918 UJ	
Acenaphthene	83-32-9	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
Acenaphthylene	208-96-8	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
Aniline	62-53-3			< 3.667 UJ		< 4.521 UJ	
Anthracene	120-12-7	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
Benz(a)anthracene	56-55-3	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
Benzo(a)pyrene	50-32-8	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-008 54SD-8(0-1) 0 - 1 12/7/1998 SE	54 O-54-SD-009 54SD-9(0-1)-128550 0 - 1 12/7/1998 SE	54 O-54-SD-009 54SD-9(0-1)-128624 0 - 1 6/15/1999 SE	54 O-54-SD-010A 54SD-10(0-1)-128535 0 - 1 12/7/1998 SE	54 O-54-SD-010A 54SD-10(0-1)-128616 0 - 1 6/15/1999 SE	54 O-54-SD-011 54SD-11DUP(0-1)-128537 0 - 1 12/7/1998 SE
Chemical Name	CAS No						
Benzo(b)fluoranthene	205-99-2	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
Benzo(g,h,i)perylene	191-24-2	< 0.321 UJ		< 3.667 UJ		< 4.521 UJ	
Benzo(k)fluoranthene	207-08-9	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
Benzyl alcohol	100-51-6						
bis(2-Chloroethoxy)methane	111-91-1	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
bis(2-Chloroethyl)ether	111-44-4	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
bis(2-Chloroisopropyl)ether	39638-32-9	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.2 (U)J		< 3.667 UJ		< 4.521 UJ	
Butylbenzyl phthalate	85-68-7	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
Carbazole	86-74-8	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
Chrysene	218-01-9	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
Dibenz(a,h)anthracene	53-70-3	< 0.321 UJ		< 3.667 UJ		< 4.521 UJ	
Dibenzofuran	132-64-9	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
Dichlorobenzenes	25321-22-6						
Dicyclopentadiene	77-73-6						
Diethylphthalate	84-66-2	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
Dimethylphthalate	131-11-3	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
di-n-Butylphthalate	84-74-2	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
di-n-Octylphthalate	117-84-0	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	
Diphenylamine	122-39-4			< 3.667 UJ		< 4.521 UJ	
Fluoranthene	206-44-0	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
Fluorene	86-73-7	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
Hexachlorobenzene	118-74-1	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
Hexachlorobutadiene	87-68-3	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	
Hexachlorocyclopentadiene	77-47-4	< 2.004 R		< 17.778 UJ		< 21.918 UJ	
Hexachloroethane	67-72-1	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
Indeno(1,2,3-c,d)pyrene	193-39-5	< 0.321 UJ		< 3.667 UJ		< 4.521 UJ	
Isophorone	78-59-1	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	
Naphthalene	91-20-3	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
N-Nitrosodimethylamine	62-75-9						
n-Nitroso-di-n-propylamine	621-64-7	< 0.2 UJ		< 3.667 UJ		< 4.521 UJ	
n-Nitrosodiphenylamine	86-30-6	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
Pentachlorophenol	87-86-5	< 1.002 UJ		< 3.667 UJ		< 4.521 UJ	
Phenanthrene	85-01-8	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
Phenol	108-95-2	< 0.281 UJ		< 3.667 UJ		< 4.521 UJ	
Pyrene	129-00-0	< 0.14 UJ		< 3.667 UJ		< 4.521 UJ	
Vitamin E	59-02-9						

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-008 54SD-8(0-1) 0 - 1 12/7/1998 SE	54 O-54-SD-009 54SD-9(0-1)-128550 0 - 1 12/7/1998 SE	54 O-54-SD-009 54SD-9(0-1)-128624 0 - 1 6/15/1999 SE	54 O-54-SD-010A 54SD-10(0-1)-128535 0 - 1 12/7/1998 SE	54 O-54-SD-010A 54SD-10(0-1)-128616 0 - 1 6/15/1999 SE	54 O-54-SD-011 54SD-11DUP(0-1)-128537 0 - 1 12/7/1998 SE
Chemical Name	CAS No						
TPH							
Total Petroleum Hydrocarbons	TPH						
VOC							
1,1,1-Trichloroethane	71-55-6	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1						
1,1,2-Trichloroethane	79-00-5	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
1,1-Dichloroethane	75-34-3	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
1,1-Dichloroethene	75-35-4	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
1,2,3-Trichlorobenzene	87-61-6						
1,2-Dichloroethane	107-06-2	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
1,2-Dichloroethene (total)	540-59-0						
1,2-Dichloropropane	78-87-5	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
1,3-Dichloropropane	142-28-9						
2,3,6-Trichlorophenol	933-75-5						
2-Butanone	78-93-3	< 0.04 U	0.14 J		0.24		0.15 J
2-Chloroethyl vinyl ether	110-75-8						
2-Hexanone	591-78-6	< 0.04 U	< 0.154 U		< 0.137 UJ		< 0.198 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.04 U	< 0.154 U		< 0.137 U		< 0.198 U
Acetone	67-64-1	0.04 J	0.56 J		0.82 J		0.53 J
Acetonitrile	75-05-8						
Acrylonitrile	107-13-1						
Benzene	71-43-2	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
Bromodichloromethane	75-27-4	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
Bromoform	75-25-2	< 0.01 UJ	< 0.038 UJ		< 0.034 UJ		< 0.05 UJ
Bromomethane	74-83-9	< 0.02 UJ	< 0.077 UJ		< 0.068 UJ		< 0.099 UJ
Carbon disulfide	75-15-0	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
Carbon tetrachloride	56-23-5	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
Chlorobenzene	108-90-7	< 0.01 U	< 0.038 U		< 0.034 UJ		< 0.05 U
Chloroethane	75-00-3	< 0.04 U	< 0.154 U		< 0.137 U		< 0.198 U
Chloroform	67-66-3	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
Chloromethane	74-87-3	< 0.02 U	< 0.077 U		< 0.068 U		< 0.099 U
cis-1,2-Dichloroethene	156-59-2	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
cis-1,3-Dichloropropene	10061-01-5	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
Dibromochloromethane	124-48-1	< 0.01 U	< 0.038 U		< 0.034 UJ		< 0.05 U
Dibromochloropropane	96-12-8						
Dichlorodifluoromethane	75-71-8						
Ethyl benzene	100-41-4	< 0.01 U	< 0.038 U		< 0.034 UJ		< 0.05 U

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-008 54SD-8(0-1) 0 - 1 12/7/1998 SE	54 O-54-SD-009 54SD-9(0-1)-128550 0 - 1 12/7/1998 SE	54 O-54-SD-009 54SD-9(0-1)-128624 0 - 1 6/15/1999 SE	54 O-54-SD-010A 54SD-10(0-1)-128535 0 - 1 12/7/1998 SE	54 O-54-SD-010A 54SD-10(0-1)-128616 0 - 1 6/15/1999 SE	54 O-54-SD-011 54SD-11DUP(0-1)-128537 0 - 1 12/7/1998 SE
Chemical Name	CAS No						
Methylene chloride	75-09-2	< 0.01 (U)	< 0.038 (U)		< 0.034 (U)		< 0.05 (U)
m-Xylenes	108-38-3						
Styrene	100-42-5	< 0.01 U	< 0.038 U		< 0.034 UJ		< 0.05 U
Tetrachloroethene	127-18-4	< 0.01 U	< 0.038 U		< 0.034 UJ		< 0.05 U
Toluene	108-88-3	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
trans-1,2-Dichloroethene	156-60-5	< 10.02 U	< 38.462 U		< 34.247 U		< 49.505 U
trans-1,3-Dichloropropene	10061-02-6	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
Trichloroethene	79-01-6	< 0.01 U	< 0.038 U		< 0.034 U		< 0.05 U
Trichlorofluoromethane	75-69-4						
Vinyl chloride	75-01-4	< 0.02 U	< 0.077 U		< 0.068 U		< 0.099 U
Xylenes	1330-20-7	< 0.01 U	< 0.038 U		< 0.034 UJ		< 0.05 U
WetChem							
% Solids	%Solid						
Cation Exchange Capacity	CEC						
Cyanide	57-12-5						
Total organic carbon	TOC						

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-011 54SD-11(0-1)-128536 0 - 1 12/7/1998 SE	54 O-54-SD-011 54SD-11DUP(0-1)-128618 0 - 1 6/15/1999 SE	54 O-54-SD-011 54SD-11(0-1)-128617 0 - 1 6/15/1999 SE	54 O-54-SD-012 54SD-12(0-1)-128538 0 - 1 12/7/1998 SE	54 O-54-SD-012 54SD-12(0-1)-128619 0 - 1 6/15/1999 SE
Chemical Name	CAS No					
Explosives						
1,3,5-Trinitrobenzene	99-35-4	< 0.131 UJ			< 0.102 UJ	
1,3-Dinitrobenzene	99-65-0	< 0.131 UJ			< 0.102 UJ	
2,4,6-Trinitrotoluene	118-96-7	< 0.131 UJ			< 0.102 UJ	
2-amino-4,6-Dinitrotoluene	35572-78-2	< 0.131 UJ			< 0.102 UJ	
2-Nitrotoluene	88-72-2	< 0.262 UJ			< 0.204 UJ	
3-Nitrotoluene	99-08-1	< 0.262 UJ			< 0.204 UJ	
4-amino-2,6-Dinitrotoluene	19406-51-0	< 0.131 UJ			< 0.102 UJ	
4-Nitrotoluene	99-99-0	< 0.262 UJ			< 0.204 UJ	
HMX	2691-41-0	< 0.262 UJ			< 0.204 UJ	
Nitrobenzene	98-95-3	< 0.131 UJ	< 4.4 UJ	< 4.024 UJ	< 0.102 UJ	< 3.474 UJ
Nitrobenzene	98-95-3					
Nitrocellulose	9004-70-0					
Nitroglycerin	55-63-0					
PETN	78-11-5					
RDX	121-82-4	< 0.262 UJ			< 0.204 UJ	
Tetryl	479-45-8	< 0.262 UJ			< 0.204 UJ	
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2	< 0.131 UJ	< 4.4 UJ	< 4.024 UJ	< 0.102 UJ	< 3.474 UJ
2,4-Dinitrotoluene	121-14-2					
2,6-Dinitrotoluene	606-20-2	< 0.131 UJ	< 4.4 UJ	< 4.024 UJ	< 0.102 UJ	< 3.474 UJ
2,6-Dinitrotoluene	606-20-2					
Metals						
Aluminum	7429-90-5	2660			14300	
Antimony	7440-36-0	< 0.462 U			< 0.079 U	
Arsenic	7440-38-2	< 2.774 U			0.89	
Barium	7440-39-3	80.8			46.3	
Beryllium	7440-41-7	0.38			0.7	
Cadmium	7440-43-9	0.38			0.08	
Calcium	7440-70-2	16700			1110	
Chromium	7440-47-3	< 9.245 U			13.1	
Cobalt	7440-48-4	< 18.491 U			< 3.128 U	
Copper	7440-50-8	11.5			3.95	
Iron	7439-89-6	4950			8750	
Lead	7439-92-1	7.71 J			7.91 J	
Magnesium	7439-95-4	2330			687	
Manganese	7439-96-5	267			78.7	

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54
		O-54-SD-011	O-54-SD-011	O-54-SD-011	O-54-SD-012	O-54-SD-012
		54SD-11(0-1)-128536	54SD-11DUP(0-1)-128618	54SD-11(0-1)-128617	54SD-12(0-1)-128538	54SD-12(0-1)-128619
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/7/1998	6/15/1999	6/15/1999	12/7/1998	6/15/1999
		SE	SE	SE	SE	SE
Chemical Name	CAS No					
Mercury	7439-97-6	< 0.189 U			< 0.032 R	
Nickel	7440-02-0	< 18.491 U			3.81	
Potassium	7440-09-7	< 924.528 U			161	
Selenium	7782-49-2	< 3.698 U			< 0.626 U	
Silver	7440-22-4	< 0.236 U			< 0.039 U	
Sodium	7440-23-5	< 462.264 U			< 78.199 U	
Thallium	7440-28-0	< 0.189 U			0.03	
Vanadium	7440-62-2	18			50.2	
Zinc	7440-66-6	< 46.226 U			< 7.82 U	
Other						
1,4-Oxathiane	15980-15-1					
Dithiane	51330-42-8					
PCBs						
Aroclor 1016	12674-11-2					
Aroclor 1016	12674-11-2					
Aroclor 1221	11104-28-2					
Aroclor 1232	11141-16-5					
Aroclor 1242	53469-21-9					
Aroclor 1248	12672-29-6					
Aroclor 1254	11097-69-1					
Aroclor 1260	11096-82-5					
Aroclor 1260	11096-82-5					
Aroclor 1262	37324-23-5					
Pesticides						
4,4'-DDD	72-54-8					
4,4'-DDD	72-54-8					
4,4'-DDE	72-55-9					
4,4'-DDE	72-55-9					
4,4'-DDT	50-29-3					
4,4'-DDT	50-29-3					
Aldrin	309-00-2					
Aldrin	309-00-2					
alpha-BHC	319-84-6					
alpha-BHC	319-84-6					
Atrazine	1912-24-9					
beta-BHC	319-85-7					

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54
		O-54-SD-011	O-54-SD-011	O-54-SD-011	O-54-SD-012	O-54-SD-012
		54SD-11(0-1)-128536	54SD-11DUP(0-1)-128618	54SD-11(0-1)-128617	54SD-12(0-1)-128538	54SD-12(0-1)-128619
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/7/1998	6/15/1999	6/15/1999	12/7/1998	6/15/1999
		SE	SE	SE	SE	SE
Chemical Name	CAS No					
beta-BHC	319-85-7					
Chlordane	57-74-9					
Chlordane	57-74-9					
delta-BHC	319-86-8					
delta-BHC	319-86-8					
Dieldrin	60-57-1					
Dieldrin	60-57-1					
Endosulfan I	959-98-8					
Endosulfan I	959-98-8					
Endosulfan II	33213-65-9					
Endosulfan II	33213-65-9					
Endosulfan sulfate	1031-07-8					
Endosulfan sulfate	1031-07-8					
Endrin	72-20-8					
Endrin	72-20-8					
Endrin aldehyde	7421-93-4					
Endrin ketone	53494-70-5					
gamma-BHC (Lindane)	58-89-9					
gamma-BHC (Lindane)	58-89-9					
Heptachlor	76-44-8					
Heptachlor	76-44-8					
Heptachlor epoxide	1024-57-3					
Heptachlor epoxide	1024-57-3					
Isodrin	465-73-6					
Isodrin	465-73-6					
Malathion	121-75-5					
Methoxychlor	72-43-5					
Methoxychlor	72-43-5					
Mirex	2385-85-5					
Parathion	56-38-2					
p-Chlorophenylmethyl sulfide	123-09-1					
p-Chlorophenylmethyl sulfone	98-57-7					
p-Chlorophenylmethyl sulfoxide	934-73-6					
Supona	470-90-6					
Toxaphene	8001-35-2					
Toxaphene	8001-35-2					
Vapona	62-73-7					

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-011 54SD-11(0-1)-128536 0 - 1 12/7/1998 SE	54 O-54-SD-011 54SD-11DUP(0-1)-128618 0 - 1 6/15/1999 SE	54 O-54-SD-011 54SD-11(0-1)-128617 0 - 1 6/15/1999 SE	54 O-54-SD-012 54SD-12(0-1)-128538 0 - 1 12/7/1998 SE	54 O-54-SD-012 54SD-12(0-1)-128619 0 - 1 6/15/1999 SE
Chemical Name	CAS No					
SVOC						
1,1,2,2-Tetrachloroethane	79-34-5	< 0.047 UJ			< 0.79 U	
1,2,4-Trichlorobenzene	120-82-1		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
1,2-Dichlorobenzene	95-50-1		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
1,2-Diphenylhydrazine	122-66-7					
1,3-Dichlorobenzene	541-73-1		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
1,3-Dichlorobenzene	541-73-1					
1,4-Dichlorobenzene	106-46-7		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
2,4,5-Trichlorophenol	95-95-4		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
2,4,6-Trichlorophenol	88-06-2		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
2,4-Dichlorophenol	120-83-2		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
2,4-Dimethylphenol	105-67-9		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
2,4-Dinitrophenol	51-28-5		< 21.333 UJ	< 19.512 UJ		< 16.842 UJ
2,6-Dinitroaniline	606-22-4					
2-Chloronaphthalene	91-58-7		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
2-Chlorophenol	95-57-8		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
2-Methylnaphthalene	91-57-6		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
2-Methylphenol	95-48-7		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
2-Nitroaniline	88-74-4		< 21.333 UJ	< 19.512 UJ		< 16.842 UJ
2-Nitrophenol	88-75-5		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
3,3'-Dichlorobenzidine	91-94-1		< 21.333 UJ	< 19.512 UJ		< 16.842 UJ
3,5-Dinitroaniline	618-87-1					
3-Nitroaniline	99-09-2		< 21.333 UJ	< 19.512 UJ		< 16.842 UJ
4,6-dinitro-2-Methylphenol	534-52-1		< 21.333 UJ	< 19.512 UJ		< 16.842 UJ
4-Bromophenyl phenyl ether	101-55-3		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
4-Chloro-3-methylphenol	59-50-7		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
4-Chloroaniline	106-47-8		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
4-Chlorophenyl phenyl ether	7005-72-3		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
4-Methylphenol	106-44-5		< 4.4 UJ#	< 4.024 UJ#		< 3.474 UJ#
4-Nitroaniline	100-01-6		< 21.333 UJ	< 19.512 UJ		< 16.842 UJ
4-Nitrophenol	100-02-7		< 21.333 UJ	< 19.512 UJ		< 16.842 UJ
Acenaphthene	83-32-9		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Acenaphthylene	208-96-8		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Aniline	62-53-3		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Anthracene	120-12-7		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Benz(a)anthracene	56-55-3		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Benzo(a)pyrene	50-32-8		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-011 54SD-11(0-1)-128536 0 - 1 12/7/1998 SE	54 O-54-SD-011 54SD-11DUP(0-1)-128618 0 - 1 6/15/1999 SE	54 O-54-SD-011 54SD-11(0-1)-128617 0 - 1 6/15/1999 SE	54 O-54-SD-012 54SD-12(0-1)-128538 0 - 1 12/7/1998 SE	54 O-54-SD-012 54SD-12(0-1)-128619 0 - 1 6/15/1999 SE
Chemical Name	CAS No					
Benzo(b)fluoranthene	205-99-2		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Benzo(g,h,i)perylene	191-24-2		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Benzo(k)fluoranthene	207-08-9		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Benzyl alcohol	100-51-6					
bis(2-Chloroethoxy)methane	111-91-1		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
bis(2-Chloroethyl)ether	111-44-4		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
bis(2-Chloroisopropyl)ether	39638-32-9		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
bis(2-Ethylhexyl)phthalate	117-81-7		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Butylbenzyl phthalate	85-68-7		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Carbazole	86-74-8		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Chrysene	218-01-9		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Dibenz(a,h)anthracene	53-70-3		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Dibenzofuran	132-64-9		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Dichlorobenzenes	25321-22-6					
Dicyclopentadiene	77-73-6					
Diethylphthalate	84-66-2		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Dimethylphthalate	131-11-3		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
di-n-Butylphthalate	84-74-2		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
di-n-Octylphthalate	117-84-0		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Diphenylamine	122-39-4		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Fluoranthene	206-44-0		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Fluorene	86-73-7		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Hexachlorobenzene	118-74-1		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Hexachlorobutadiene	87-68-3		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Hexachlorocyclopentadiene	77-47-4		< 21.333 UJ	< 19.512 UJ		< 16.842 UJ
Hexachloroethane	67-72-1		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Indeno(1,2,3-c,d)pyrene	193-39-5		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Isophorone	78-59-1		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Naphthalene	91-20-3		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
N-Nitrosodimethylamine	62-75-9					
n-Nitroso-di-n-propylamine	621-64-7		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
n-Nitrosodiphenylamine	86-30-6		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Pentachlorophenol	87-86-5		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Phenanthrene	85-01-8		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Phenol	108-95-2		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Pyrene	129-00-0		< 4.4 UJ	< 4.024 UJ		< 3.474 UJ
Vitamin E	59-02-9					

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54
		O-54-SD-011	O-54-SD-011	O-54-SD-011	O-54-SD-012	O-54-SD-012
		54SD-11(0-1)-128536	54SD-11DUP(0-1)-128618	54SD-11(0-1)-128617	54SD-12(0-1)-128538	54SD-12(0-1)-128619
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/7/1998	6/15/1999	6/15/1999	12/7/1998	6/15/1999
		SE	SE	SE	SE	SE
Chemical Name	CAS No					
TPH						
Total Petroleum Hydrocarbons	TPH					
VOC						
1,1,1-Trichloroethane	71-55-6	< 0.047 U			< 0.79 U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1					
1,1,2-Trichloroethane	79-00-5	< 0.047 U			< 0.79 U	
1,1-Dichloroethane	75-34-3	< 0.047 U			< 0.79 U	
1,1-Dichloroethene	75-35-4	< 0.047 U			< 0.79 U	
1,2,3-Trichlorobenzene	87-61-6					
1,2-Dichloroethane	107-06-2	< 0.047 U			< 0.79 U	
1,2-Dichloroethene (total)	540-59-0					
1,2-Dichloropropane	78-87-5	< 0.047 U			< 0.79 U	
1,3-Dichloropropane	142-28-9					
2,3,6-Trichlorophenol	933-75-5					
2-Butanone	78-93-3	0.18 J			< 0.032 U	
2-Chloroethyl vinyl ether	110-75-8					
2-Hexanone	591-78-6	< 0.189 U			< 0.032 U	
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.189 U			< 0.032 U	
Acetone	67-64-1	0.5 J			< 0.016 U	
Acetonitrile	75-05-8					
Acrylonitrile	107-13-1					
Benzene	71-43-2	< 0.047 U			< 0.79 U	
Bromodichloromethane	75-27-4	< 0.047 U			< 0.79 U	
Bromoform	75-25-2	< 0.047 UJ			< 0.79 U	
Bromomethane	74-83-9	< 0.094 UJ			< 0.016 U	
Carbon disulfide	75-15-0	< 0.047 U			< 0.79 U	
Carbon tetrachloride	56-23-5	< 0.047 U			< 0.79 U	
Chlorobenzene	108-90-7	< 0.047 U			< 0.79 U	
Chloroethane	75-00-3	< 0.189 U			< 0.032 UJ	
Chloroform	67-66-3	< 0.047 U			< 0.79 U	
Chloromethane	74-87-3	< 0.094 U			< 0.016 U	
cis-1,2-Dichloroethene	156-59-2	< 0.047 U			< 0.79 U	
cis-1,3-Dichloropropene	10061-01-5	< 0.047 U			< 0.79 U	
Dibromochloromethane	124-48-1	< 0.047 U			< 0.79 U	
Dibromochloropropane	96-12-8					
Dichlorodifluoromethane	75-71-8					
Ethyl benzene	100-41-4	< 0.047 U			< 0.79 U	

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54
		O-54-SD-011	O-54-SD-011	O-54-SD-011	O-54-SD-012	O-54-SD-012
		54SD-11(0-1)-128536	54SD-11DUP(0-1)-128618	54SD-11(0-1)-128617	54SD-12(0-1)-128538	54SD-12(0-1)-128619
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/7/1998	6/15/1999	6/15/1999	12/7/1998	6/15/1999
		SE	SE	SE	SE	SE
Chemical Name	CAS No					
Methylene chloride	75-09-2	< 0.047 (U)			< 0.79 U	
m-Xylenes	108-38-3					
Styrene	100-42-5	< 0.047 U			< 0.79 U	
Tetrachloroethene	127-18-4	< 0.047 U			< 0.79 U	
Toluene	108-88-3	< 0.047 U			< 0.79 U	
trans-1,2-Dichloroethene	156-60-5	< 47.17 U			< 7.899 U	
trans-1,3-Dichloropropene	10061-02-6	< 0.047 U			< 0.79 U	
Trichloroethene	79-01-6	< 0.047 U			< 0.79 U	
Trichlorofluoromethane	75-69-4					
Vinyl chloride	75-01-4	< 0.094 U			< 0.016 U	
Xylenes	1330-20-7	< 0.047 U			< 0.79 U	
WetChem						
% Solids	%Solid					
Cation Exchange Capacity	CEC					
Cyanide	57-12-5					
Total organic carbon	TOC					

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-013 54SD-13(0-1)-128539 0 - 1 12/7/1998 SE	54 O-54-SD-013 54SD-13(0-1)-128620 0 - 1 6/15/1999 SE	54 O-54-SD-014 54SD-14(0-1)-128540 0 - 1 12/7/1998 SE	54 O-54-SD-014 54SD-14(0-1)-128621 0 - 1 6/15/1999 SE	54 O-54-SD-015 54SD-15(0-1)-128541 0 - 1 12/7/1998 SE
Chemical Name	CAS No					
Explosives						
1,3,5-Trinitrobenzene	99-35-4	< 0.101 UJ		< 0.103 UJ		< 0.115 UJ
1,3-Dinitrobenzene	99-65-0	< 0.101 UJ		< 0.103 UJ		< 0.115 UJ
2,4,6-Trinitrotoluene	118-96-7	< 0.101 UJ		< 0.103 UJ		< 0.115 UJ
2-amino-4,6-Dinitrotoluene	35572-78-2	< 0.101 UJ		< 0.103 UJ		< 0.115 UJ
2-Nitrotoluene	88-72-2	< 0.202 UJ		< 0.206 UJ		< 0.229 UJ
3-Nitrotoluene	99-08-1	< 0.202 UJ		< 0.206 UJ		< 0.229 UJ
4-amino-2,6-Dinitrotoluene	19406-51-0	< 0.101 UJ		< 0.103 UJ		< 0.115 UJ
4-Nitrotoluene	99-99-0	< 0.202 UJ		< 0.206 UJ		< 0.229 UJ
HMX	2691-41-0	< 0.202 UJ		< 0.206 UJ		< 0.229 UJ
Nitrobenzene	98-95-3	< 0.101 UJ	< 1.658 U	< 0.103 UJ	< 1.737 U	< 0.115 UJ
Nitrobenzene	98-95-3					
Nitrocellulose	9004-70-0					
Nitroglycerin	55-63-0					
PETN	78-11-5					
RDX	121-82-4	< 0.202 UJ		< 0.206 UJ		< 0.229 UJ
Tetryl	479-45-8	< 0.202 UJ		< 0.206 UJ		< 0.229 UJ
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2	< 0.101 UJ	< 1.658 U	< 0.103 UJ	< 1.737 U	< 0.115 UJ
2,4-Dinitrotoluene	121-14-2					
2,6-Dinitrotoluene	606-20-2	< 0.101 UJ	< 1.658 U	< 0.103 UJ	< 1.737 U	< 0.115 UJ
2,6-Dinitrotoluene	606-20-2					
Metals						
Aluminum	7429-90-5	14300		9620		2530 J
Antimony	7440-36-0	< 0.074 U		0.53		< 0.633 UJ
Arsenic	7440-38-2	0.63		7.39		< 3.759 UJ
Barium	7440-39-3	30.2		53.9		65.7 J
Beryllium	7440-41-7	0.56		0.43		0.46 J
Cadmium	7440-43-9	0.04		0.43		0.27 J
Calcium	7440-70-2	461		1960		12500 J
Chromium	7440-47-3	23.4		14.9		< 12.532 UJ
Cobalt	7440-48-4	5.07		< 5.013 U		< 25.063 UJ
Copper	7440-50-8	3.72		8.76		12.3 J
Iron	7439-89-6	13800		10300		2960 J
Lead	7439-92-1	4.56 J		51.9 J		< 2.506 UJ
Magnesium	7439-95-4	3070		1640		2030 J
Manganese	7439-96-5	43.4		121		185 J

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54
		O-54-SD-013	O-54-SD-013	O-54-SD-014	O-54-SD-014	O-54-SD-015
		54SD-13(0-1)-128539	54SD-13(0-1)-128620	54SD-14(0-1)-128540	54SD-14(0-1)-128621	54SD-15(0-1)-128541
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/7/1998	6/15/1999	12/7/1998	6/15/1999	12/7/1998
		SE	SE	SE	SE	SE
Chemical Name	CAS No					
Mercury	7439-97-6	< 0.03 R		< 0.051 R		< 0.253 UJ
Nickel	7440-02-0	6.58		10		< 25.063 UJ
Potassium	7440-09-7	359		463		< 1253.165 UJ
Selenium	7782-49-2	< 0.587 U		< 1.003 U		< 5.013 UJ
Silver	7440-22-4	< 0.037 U		0.07		< 0.316 UJ
Sodium	7440-23-5	< 73.333 U		< 125.316 U		< 626.582 UJ
Thallium	7440-28-0	0.07		0.18		< 0.253 UJ
Vanadium	7440-62-2	35.6		27.8		15.6 J
Zinc	7440-66-6	< 7.333 U		77		< 62.658 UJ
Other						
1,4-Oxathiane	15980-15-1					
Dithiane	51330-42-8					
PCBs						
Aroclor 1016	12674-11-2					
Aroclor 1016	12674-11-2					
Aroclor 1221	11104-28-2					
Aroclor 1232	11141-16-5					
Aroclor 1242	53469-21-9					
Aroclor 1248	12672-29-6					
Aroclor 1254	11097-69-1					
Aroclor 1260	11096-82-5					
Aroclor 1260	11096-82-5					
Aroclor 1262	37324-23-5					
Pesticides						
4,4'-DDD	72-54-8					
4,4'-DDD	72-54-8					
4,4'-DDE	72-55-9					
4,4'-DDE	72-55-9					
4,4'-DDT	50-29-3					
4,4'-DDT	50-29-3					
Aldrin	309-00-2					
Aldrin	309-00-2					
alpha-BHC	319-84-6					
alpha-BHC	319-84-6					
Atrazine	1912-24-9					
beta-BHC	319-85-7					

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54
		O-54-SD-013	O-54-SD-013	O-54-SD-014	O-54-SD-014	O-54-SD-015
		54SD-13(0-1)-128539	54SD-13(0-1)-128620	54SD-14(0-1)-128540	54SD-14(0-1)-128621	54SD-15(0-1)-128541
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/7/1998	6/15/1999	12/7/1998	6/15/1999	12/7/1998
		SE	SE	SE	SE	SE
Chemical Name	CAS No					
beta-BHC	319-85-7					
Chlordane	57-74-9					
Chlordane	57-74-9					
delta-BHC	319-86-8					
delta-BHC	319-86-8					
Dieldrin	60-57-1					
Dieldrin	60-57-1					
Endosulfan I	959-98-8					
Endosulfan I	959-98-8					
Endosulfan II	33213-65-9					
Endosulfan II	33213-65-9					
Endosulfan sulfate	1031-07-8					
Endosulfan sulfate	1031-07-8					
Endrin	72-20-8					
Endrin	72-20-8					
Endrin aldehyde	7421-93-4					
Endrin ketone	53494-70-5					
gamma-BHC (Lindane)	58-89-9					
gamma-BHC (Lindane)	58-89-9					
Heptachlor	76-44-8					
Heptachlor	76-44-8					
Heptachlor epoxide	1024-57-3					
Heptachlor epoxide	1024-57-3					
Isodrin	465-73-6					
Isodrin	465-73-6					
Malathion	121-75-5					
Methoxychlor	72-43-5					
Methoxychlor	72-43-5					
Mirex	2385-85-5					
Parathion	56-38-2					
p-Chlorophenylmethyl sulfide	123-09-1					
p-Chlorophenylmethyl sulfone	98-57-7					
p-Chlorophenylmethyl sulfoxide	934-73-6					
Supona	470-90-6					
Toxaphene	8001-35-2					
Toxaphene	8001-35-2					
Vapona	62-73-7					

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-013 54SD-13(0-1)-128539 0 - 1 12/7/1998 SE	54 O-54-SD-013 54SD-13(0-1)-128620 0 - 1 6/15/1999 SE	54 O-54-SD-014 54SD-14(0-1)-128540 0 - 1 12/7/1998 SE	54 O-54-SD-014 54SD-14(0-1)-128621 0 - 1 6/15/1999 SE	54 O-54-SD-015 54SD-15(0-1)-128541 0 - 1 12/7/1998 SE
Chemical Name	CAS No					
SVOC						
1,1,2,2-Tetrachloroethane	79-34-5	< 0.741 U		< 0.013 UJ		< 0.063 UJ
1,2,4-Trichlorobenzene	120-82-1		< 1.658 U		< 1.737 U	
1,2-Dichlorobenzene	95-50-1		< 1.658 U		< 1.737 U	
1,2-Diphenylhydrazine	122-66-7					
1,3-Dichlorobenzene	541-73-1		< 1.658 U		< 1.737 U	
1,3-Dichlorobenzene	541-73-1					
1,4-Dichlorobenzene	106-46-7		< 1.658 U		< 1.737 U	
2,4,5-Trichlorophenol	95-95-4		< 1.658 U		< 1.737 U	
2,4,6-Trichlorophenol	88-06-2		< 1.658 U		< 1.737 U	
2,4-Dichlorophenol	120-83-2		< 1.658 U		< 1.737 U	
2,4-Dimethylphenol	105-67-9		< 1.658 U		< 1.737 U	
2,4-Dinitrophenol	51-28-5		< 8.04 U		< 8.421 U	
2,6-Dinitroaniline	606-22-4					
2-Chloronaphthalene	91-58-7		< 1.658 U		< 1.737 U	
2-Chlorophenol	95-57-8		< 1.658 U		< 1.737 U	
2-Methylnaphthalene	91-57-6		< 1.658 U		< 1.737 U	
2-Methylphenol	95-48-7		< 1.658 U		< 1.737 U	
2-Nitroaniline	88-74-4		< 8.04 U		< 8.421 U	
2-Nitrophenol	88-75-5		< 1.658 U		< 1.737 U	
3,3'-Dichlorobenzidine	91-94-1		< 8.04 U		< 8.421 U	
3,5-Dinitroaniline	618-87-1					
3-Nitroaniline	99-09-2		< 8.04 U		< 8.421 U	
4,6-dinitro-2-Methylphenol	534-52-1		< 8.04 U		< 8.421 U	
4-Bromophenyl phenyl ether	101-55-3		< 1.658 U		< 1.737 U	
4-Chloro-3-methylphenol	59-50-7		< 1.658 U		< 1.737 U	
4-Chloroaniline	106-47-8		< 1.658 U		< 1.737 U	
4-Chlorophenyl phenyl ether	7005-72-3		< 1.658 U		< 1.737 U	
4-Methylphenol	106-44-5		< 1.658 U#		< 1.737 U#	
4-Nitroaniline	100-01-6		< 8.04 U		< 8.421 U	
4-Nitrophenol	100-02-7		< 8.04 U		< 8.421 U	
Acenaphthene	83-32-9		< 1.658 U		< 1.737 U	
Acenaphthylene	208-96-8		< 1.658 U		< 1.737 U	
Aniline	62-53-3		< 1.658 U		< 1.737 U	
Anthracene	120-12-7		< 1.658 U		< 1.737 U	
Benz(a)anthracene	56-55-3		< 1.658 U		< 1.737 U	
Benzo(a)pyrene	50-32-8		< 1.658 U		< 1.737 U	

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-013 54SD-13(0-1)-128539 0 - 1 12/7/1998 SE	54 O-54-SD-013 54SD-13(0-1)-128620 0 - 1 6/15/1999 SE	54 O-54-SD-014 54SD-14(0-1)-128540 0 - 1 12/7/1998 SE	54 O-54-SD-014 54SD-14(0-1)-128621 0 - 1 6/15/1999 SE	54 O-54-SD-015 54SD-15(0-1)-128541 0 - 1 12/7/1998 SE
Chemical Name	CAS No					
Benzo(b)fluoranthene	205-99-2		< 1.658 U		< 1.737 U	
Benzo(g,h,i)perylene	191-24-2		< 1.658 U		< 1.737 U	
Benzo(k)fluoranthene	207-08-9		< 1.658 U		< 1.737 U	
Benzyl alcohol	100-51-6					
bis(2-Chloroethoxy)methane	111-91-1		< 1.658 U		< 1.737 U	
bis(2-Chloroethyl)ether	111-44-4		< 1.658 U		< 1.737 U	
bis(2-Chloroisopropyl)ether	39638-32-9		< 1.658 U		< 1.737 U	
bis(2-Ethylhexyl)phthalate	117-81-7		< 1.658 U		< 1.737 U	
Butylbenzyl phthalate	85-68-7		< 1.658 U		< 1.737 U	
Carbazole	86-74-8		< 1.658 U		< 1.737 U	
Chrysene	218-01-9		< 1.658 U		< 1.737 U	
Dibenz(a,h)anthracene	53-70-3		< 1.658 U		< 1.737 U	
Dibenzofuran	132-64-9		< 1.658 U		< 1.737 U	
Dichlorobenzenes	25321-22-6					
Dicyclopentadiene	77-73-6					
Diethylphthalate	84-66-2		< 1.658 U		< 1.737 U	
Dimethylphthalate	131-11-3		< 1.658 U		< 1.737 U	
di-n-Butylphthalate	84-74-2		< 1.658 U		< 1.737 U	
di-n-Octylphthalate	117-84-0		< 1.658 U		< 1.737 U	
Diphenylamine	122-39-4		< 1.658 U		< 1.737 U	
Fluoranthene	206-44-0		< 1.658 U		< 1.737 U	
Fluorene	86-73-7		< 1.658 U		< 1.737 U	
Hexachlorobenzene	118-74-1		< 1.658 U		< 1.737 U	
Hexachlorobutadiene	87-68-3		< 1.658 U		< 1.737 U	
Hexachlorocyclopentadiene	77-47-4		< 8.04 U		< 8.421 U	
Hexachloroethane	67-72-1		< 1.658 U		< 1.737 U	
Indeno(1,2,3-c,d)pyrene	193-39-5		< 1.658 U		< 1.737 U	
Isophorone	78-59-1		< 1.658 U		< 1.737 U	
Naphthalene	91-20-3		< 1.658 U		< 1.737 U	
N-Nitrosodimethylamine	62-75-9					
n-Nitroso-di-n-propylamine	621-64-7		< 1.658 U		< 1.737 U	
n-Nitrosodiphenylamine	86-30-6		< 1.658 U		< 1.737 U	
Pentachlorophenol	87-86-5		< 1.658 U		< 1.737 U	
Phenanthrene	85-01-8		< 1.658 U		< 1.737 U	
Phenol	108-95-2		< 1.658 U		< 1.737 U	
Pyrene	129-00-0		< 1.658 U		< 1.737 U	
Vitamin E	59-02-9					

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-013 54SD-13(0-1)-128539 0 - 1 12/7/1998 SE	54 O-54-SD-013 54SD-13(0-1)-128620 0 - 1 6/15/1999 SE	54 O-54-SD-014 54SD-14(0-1)-128540 0 - 1 12/7/1998 SE	54 O-54-SD-014 54SD-14(0-1)-128621 0 - 1 6/15/1999 SE	54 O-54-SD-015 54SD-15(0-1)-128541 0 - 1 12/7/1998 SE
Chemical Name	CAS No					
TPH						
Total Petroleum Hydrocarbons	TPH					
VOC						
1,1,1-Trichloroethane	71-55-6	< 0.741 U		< 0.013 U		< 0.063 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1					
1,1,2-Trichloroethane	79-00-5	< 0.741 U		< 0.013 U		< 0.063 UJ
1,1-Dichloroethane	75-34-3	< 0.741 U		< 0.013 U		< 0.063 UJ
1,1-Dichloroethene	75-35-4	< 0.741 UJ		< 0.013 U		< 0.063 UJ
1,2,3-Trichlorobenzene	87-61-6					
1,2-Dichloroethane	107-06-2	< 0.741 U		< 0.013 U		< 0.063 UJ
1,2-Dichloroethene (total)	540-59-0					
1,2-Dichloropropane	78-87-5	< 0.741 U		< 0.013 U		< 0.063 UJ
1,3-Dichloropropane	142-28-9					
2,3,6-Trichlorophenol	933-75-5					
2-Butanone	78-93-3	< 0.03 U		< 0.051 U		< 0.253 UJ
2-Chloroethyl vinyl ether	110-75-8					
2-Hexanone	591-78-6	< 0.03 U		< 0.051 U		< 0.253 UJ
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.03 U		< 0.051 U		< 0.253 UJ
Acetone	67-64-1	< 0.015 (U)		< 0.025 (U)		< 0.127 (U)J
Acetonitrile	75-05-8					
Acrylonitrile	107-13-1					
Benzene	71-43-2	< 0.741 U		< 0.013 U		< 0.063 UJ
Bromodichloromethane	75-27-4	< 0.741 U		< 0.013 U		< 0.063 UJ
Bromoform	75-25-2	< 0.741 U		< 0.013 UJ		< 0.063 UJ
Bromomethane	74-83-9	< 0.015 U		< 0.025 U		< 0.127 UJ
Carbon disulfide	75-15-0	< 0.741 U		< 0.013 U		< 0.063 UJ
Carbon tetrachloride	56-23-5	< 0.741 U		< 0.013 U		< 0.063 UJ
Chlorobenzene	108-90-7	< 0.741 U		< 0.013 U		< 0.063 UJ
Chloroethane	75-00-3	< 0.03 U		< 0.051 UJ		< 0.253 UJ
Chloroform	67-66-3	< 0.741 U		< 0.013 U		< 0.063 UJ
Chloromethane	74-87-3	< 0.015 U		< 0.025 U		< 0.127 UJ
cis-1,2-Dichloroethene	156-59-2	< 0.741 U		< 0.013 U		< 0.063 UJ
cis-1,3-Dichloropropene	10061-01-5	< 0.741 U		< 0.013 U		< 0.063 UJ
Dibromochloromethane	124-48-1	< 0.741 U		< 0.013 U		< 0.063 UJ
Dibromochloropropane	96-12-8					
Dichlorodifluoromethane	75-71-8					
Ethyl benzene	100-41-4	< 0.741 U		< 0.013 U		< 0.063 UJ

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-013 54SD-13(0-1)-128539 0 - 1 12/7/1998 SE	54 O-54-SD-013 54SD-13(0-1)-128620 0 - 1 6/15/1999 SE	54 O-54-SD-014 54SD-14(0-1)-128540 0 - 1 12/7/1998 SE	54 O-54-SD-014 54SD-14(0-1)-128621 0 - 1 6/15/1999 SE	54 O-54-SD-015 54SD-15(0-1)-128541 0 - 1 12/7/1998 SE
Chemical Name	CAS No					
Methylene chloride	75-09-2	< 0.741 U		< 0.013 U		< 0.063 UJ
m-Xylenes	108-38-3					
Styrene	100-42-5	< 0.741 U		< 0.013 U		< 0.063 UJ
Tetrachloroethene	127-18-4	< 0.741 U		< 0.013 U		< 0.063 UJ
Toluene	108-88-3	< 0.741 U		< 0.013 U		< 0.063 UJ
trans-1,2-Dichloroethene	156-60-5	< 7.407 U		< 12.658 U		< 63.291 UJ
trans-1,3-Dichloropropene	10061-02-6	< 0.741 U		< 0.013 U		< 0.063 UJ
Trichloroethene	79-01-6	< 0.741 U		< 0.013 U		< 0.063 UJ
Trichlorofluoromethane	75-69-4					
Vinyl chloride	75-01-4	< 0.015 U		< 0.025 U		< 0.127 UJ
Xylenes	1330-20-7	< 0.741 U		< 0.013 U		< 0.063 UJ
WetChem						
% Solids	%Solid					
Cation Exchange Capacity	CEC					
Cyanide	57-12-5					
Total organic carbon	TOC					

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54	54
		O-54-SD-015	O-54-SD-016	O-54-SD-016	O-54-SD-017	O-54-SD-018	O-54-SD-019
		54SD-15(0-1)-128622	54SD-16(0-1)-128542	54SD-16(0-1)-128623	54SD-17(0-1)	54SD-18(0-1)	54SD-19(0-1)
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		6/15/1999	12/7/1998	6/15/1999	12/8/1998	12/8/1998	12/8/1998
		SE	SE	SE	SE	SE	SE
Chemical Name	CAS No						
Explosives							
1,3,5-Trinitrobenzene	99-35-4		< 0.12 UJ		< 0.194 U	< 0.13 U	< 0.125 U
1,3-Dinitrobenzene	99-65-0		< 0.12 UJ		< 0.194 U	< 0.13 U	< 0.125 U
2,4,6-Trinitrotoluene	118-96-7		< 0.12 UJ		< 0.194 U	< 0.13 U	< 0.125 U
2-amino-4,6-Dinitrotoluene	35572-78-2		< 0.12 UJ		< 0.194 U	< 0.13 U	< 0.125 U
2-Nitrotoluene	88-72-2		< 0.24 UJ		< 0.388 U	< 0.261 U	< 0.25 U
3-Nitrotoluene	99-08-1		< 0.24 UJ		< 0.388 U	< 0.261 U	< 0.25 U
4-amino-2,6-Dinitrotoluene	19406-51-0		< 0.12 UJ		< 0.194 U	< 0.13 U	< 0.125 U
4-Nitrotoluene	99-99-0		< 0.24 UJ		< 0.388 U	< 0.261 U	< 0.25 U
HMX	2691-41-0		< 0.24 UJ		< 0.388 U	< 0.261 U	< 0.25 U
Nitrobenzene	98-95-3	< 3.882 UJ	< 0.12 UJ	< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
Nitrobenzene	98-95-3				< 0.194 U	< 0.13 U	< 0.125 U
Nitrocellulose	9004-70-0						
Nitroglycerin	55-63-0						
PETN	78-11-5						
RDX	121-82-4		< 0.24 UJ		< 0.388 U	< 0.261 U	< 0.25 U
Tetryl	479-45-8		< 0.24 UJ		< 0.388 UJ	< 0.261 UJ	< 0.25 UJ
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	< 3.882 UJ	< 0.12 UJ	< 3.4375 U	< 0.194 U	< 0.13 U	< 0.125 U
2,4-Dinitrotoluene	121-14-2				< 1.458 UJ	< 1.085 U	< 1.061 U
2,6-Dinitrotoluene	606-20-2	< 3.882 UJ	< 0.12 UJ	< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 U
2,6-Dinitrotoluene	606-20-2				< 0.194 U	< 0.13 U	< 0.125 U
Metals							
Aluminum	7429-90-5		2190		3270 J	2780	4980
Antimony	7440-36-0		< 0.357 U		0.68 J	< 0.38 U	< 0.371 U
Arsenic	7440-38-2		< 2.121 U		3.66 J	< 2.279 UJ	< 2.205 UJ
Barium	7440-39-3		68.2		91.7 J	70	59.2
Beryllium	7440-41-7		0.2		0.9 J	0.89	1.18
Cadmium	7440-43-9		< 0.143 U		0.99 J	0.18	0.16
Calcium	7440-70-2		15600		12200 J	11900	9020
Chromium	7440-47-3		< 7.071 U		< 10.115 UJ	< 7.597 U	< 7.356 U
Cobalt	7440-48-4		< 14.143 U		< 20.208 UJ	< 15.194 U	< 14.697 U
Copper	7440-50-8		< 3.536 U		27.6 J	27.6	26.7
Iron	7439-89-6		2790		6250 J	3330	2310
Lead	7439-92-1		1.68 J		51.1 J	4.55 J	4.58 J
Magnesium	7439-95-4		2290		1850 J	1870	1510
Manganese	7439-96-5		190		244 J	129 J	98.5 J

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54	54
		O-54-SD-015	O-54-SD-016	O-54-SD-016	O-54-SD-017	O-54-SD-018	O-54-SD-019
		54SD-15(0-1)-128622	54SD-16(0-1)-128542	54SD-16(0-1)-128623	54SD-17(0-1)	54SD-18(0-1)	54SD-19(0-1)
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		6/15/1999	12/7/1998	6/15/1999	12/8/1998	12/8/1998	12/8/1998
		SE	SE	SE	SE	SE	SE
Chemical Name	CAS No						
Mercury	7439-97-6		< 0.143 U		0.24 J	< 0.155 U	0.2 J
Nickel	7440-02-0		< 14.143 U		< 20.208 UJ	< 15.194 U	< 14.697 U
Potassium	7440-09-7		< 707.143 U		< 1011.458 UJ	< 759.69 U	< 735.606 U
Selenium	7782-49-2		< 2.829 U		< 4.042 UJ	< 3.039 U	< 2.939 U
Silver	7440-22-4		< 0.179 U		< 0.302 UJ	< 0.225 UJ	< 0.22 UJ
Sodium	7440-23-5		< 353.571 U		< 505.208 UJ	< 379.845 U	< 367.424 U
Thallium	7440-28-0		< 0.143 U		< 0.198 UJ	< 0.155 U	< 0.144 U
Vanadium	7440-62-2		< 7.071 U		12.1 J	< 7.597 U	< 7.356 U
Zinc	7440-66-6		< 35.357 U		79.6 J	< 37.984 U	< 36.742 U
Other							
1,4-Oxathiane	15980-15-1						
Dithiane	51330-42-8						
PCBs							
Aroclor 1016	12674-11-2						
Aroclor 1016	12674-11-2						
Aroclor 1221	11104-28-2						
Aroclor 1232	11141-16-5						
Aroclor 1242	53469-21-9						
Aroclor 1248	12672-29-6						
Aroclor 1254	11097-69-1						
Aroclor 1260	11096-82-5						
Aroclor 1260	11096-82-5						
Aroclor 1262	37324-23-5						
Pesticides							
4,4'-DDD	72-54-8						
4,4'-DDD	72-54-8						
4,4'-DDE	72-55-9						
4,4'-DDE	72-55-9						
4,4'-DDT	50-29-3						
4,4'-DDT	50-29-3						
Aldrin	309-00-2						
Aldrin	309-00-2						
alpha-BHC	319-84-6						
alpha-BHC	319-84-6						
Atrazine	1912-24-9						
beta-BHC	319-85-7						

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54	54
		O-54-SD-015	O-54-SD-016	O-54-SD-016	O-54-SD-017	O-54-SD-018	O-54-SD-019
		54SD-15(0-1)-128622	54SD-16(0-1)-128542	54SD-16(0-1)-128623	54SD-17(0-1)	54SD-18(0-1)	54SD-19(0-1)
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		6/15/1999	12/7/1998	6/15/1999	12/8/1998	12/8/1998	12/8/1998
		SE	SE	SE	SE	SE	SE
Chemical Name	CAS No						
beta-BHC	319-85-7						
Chlordane	57-74-9						
Chlordane	57-74-9						
delta-BHC	319-86-8						
delta-BHC	319-86-8						
Dieldrin	60-57-1						
Dieldrin	60-57-1						
Endosulfan I	959-98-8						
Endosulfan I	959-98-8						
Endosulfan II	33213-65-9						
Endosulfan II	33213-65-9						
Endosulfan sulfate	1031-07-8						
Endosulfan sulfate	1031-07-8						
Endrin	72-20-8						
Endrin	72-20-8						
Endrin aldehyde	7421-93-4						
Endrin ketone	53494-70-5						
gamma-BHC (Lindane)	58-89-9						
gamma-BHC (Lindane)	58-89-9						
Heptachlor	76-44-8						
Heptachlor	76-44-8						
Heptachlor epoxide	1024-57-3						
Heptachlor epoxide	1024-57-3						
Isodrin	465-73-6						
Isodrin	465-73-6						
Malathion	121-75-5						
Methoxychlor	72-43-5						
Methoxychlor	72-43-5						
Mirex	2385-85-5						
Parathion	56-38-2						
p-Chlorophenylmethyl sulfide	123-09-1						
p-Chlorophenylmethyl sulfone	98-57-7						
p-Chlorophenylmethyl sulfoxide	934-73-6						
Supona	470-90-6						
Toxaphene	8001-35-2						
Toxaphene	8001-35-2						
Vapona	62-73-7						

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-015 54SD-15(0-1)-128622 0 - 1 6/15/1999 SE	54 O-54-SD-016 54SD-16(0-1)-128542 0 - 1 12/7/1998 SE	54 O-54-SD-016 54SD-16(0-1)-128623 0 - 1 6/15/1999 SE	54 O-54-SD-017 54SD-17(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-018 54SD-18(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-019 54SD-19(0-1) 0 - 1 12/8/1998 SE
Chemical Name	CAS No						
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 UJ
1,2,4-Trichlorobenzene	120-82-1	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
1,2-Dichlorobenzene	95-50-1	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
1,2-Diphenylhydrazine	122-66-7						
1,3-Dichlorobenzene	541-73-1	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
1,3-Dichlorobenzene	541-73-1						
1,4-Dichlorobenzene	106-46-7	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
2,4,5-Trichlorophenol	95-95-4	< 3.882 UJ		< 3.4375 U	< 3.125 UJ	< 2.326 U	< 2.273 U
2,4,6-Trichlorophenol	88-06-2	< 3.882 UJ		< 3.4375 U	< 3.125 UJ	< 2.326 U	< 2.273 U
2,4-Dichlorophenol	120-83-2	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 U
2,4-Dimethylphenol	105-67-9	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 U
2,4-Dinitrophenol	51-28-5	< 18.824 UJ		< 16.667 UJ	< 13.542 UJ	< 10.078 UJ	< 9.848 U
2,6-Dinitroaniline	606-22-4						
2-Chloronaphthalene	91-58-7	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
2-Chlorophenol	95-57-8	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 U
2-Methylnaphthalene	91-57-6	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
2-Methylphenol	95-48-7	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 U
2-Nitroaniline	88-74-4	< 18.824 UJ		< 16.667 U	< 3.125 UJ	< 2.326 U	< 2.273 U
2-Nitrophenol	88-75-5	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 U
3,3'-Dichlorobenzidine	91-94-1	< 18.824 UJ		< 16.667 U	< 5.208 UJ	< 3.876 UJ	< 3.788 UJ
3,5-Dinitroaniline	618-87-1						
3-Nitroaniline	99-09-2	< 18.824 UJ		< 16.667 U	< 3.125 UJ	< 2.326 UJ	< 2.273 UJ
4,6-dinitro-2-Methylphenol	534-52-1	< 18.824 UJ		< 16.667 U	< 10.417 UJ	< 7.752 U	< 7.576 U
4-Bromophenyl phenyl ether	101-55-3	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 U
4-Chloro-3-methylphenol	59-50-7	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 U
4-Chloroaniline	106-47-8	< 3.882 UJ		< 3.4375 U	< 3.125 UJ	< 2.326 UJ	< 2.273 UJ
4-Chlorophenyl phenyl ether	7005-72-3	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
4-Methylphenol	106-44-5	< 3.882 UJ#		< 3.4375 U#	< 1.458 UJ#	< 1.085 U#	< 1.061 U#
4-Nitroaniline	100-01-6	< 18.824 UJ		< 16.667 U	< 3.125 UJ	< 2.326 U	< 2.273 U
4-Nitrophenol	100-02-7	< 18.824 UJ		< 16.667 U	< 5.208 UJ	< 3.876 U	< 3.788 U
Acenaphthene	83-32-9	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
Acenaphthylene	208-96-8	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
Aniline	62-53-3	< 3.882 UJ		< 3.4375 U			
Anthracene	120-12-7	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
Benz(a)anthracene	56-55-3	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
Benzo(a)pyrene	50-32-8	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 UJ

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-015 54SD-15(0-1)-128622 0 - 1 6/15/1999 SE	54 O-54-SD-016 54SD-16(0-1)-128542 0 - 1 12/7/1998 SE	54 O-54-SD-016 54SD-16(0-1)-128623 0 - 1 6/15/1999 SE	54 O-54-SD-017 54SD-17(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-018 54SD-18(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-019 54SD-19(0-1) 0 - 1 12/8/1998 SE
Chemical Name	CAS No						
Benzo(b)fluoranthene	205-99-2	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 UJ
Benzo(g,h,i)perylene	191-24-2	< 3.882 UJ		< 3.4375 UJ	< 1.667 UJ	< 1.24 U	< 1.212 UJ
Benzo(k)fluoranthene	207-08-9	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 UJ
Benzyl alcohol	100-51-6						
bis(2-Chloroethoxy)methane	111-91-1	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
bis(2-Chloroethyl)ether	111-44-4	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
bis(2-Chloroisopropyl)ether	39638-32-9	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
bis(2-Ethylhexyl)phthalate	117-81-7	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
Butylbenzyl phthalate	85-68-7	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
Carbazole	86-74-8	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
Chrysene	218-01-9	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
Dibenz(a,h)anthracene	53-70-3	< 3.882 UJ		< 3.4375 UJ	< 1.667 UJ	< 1.24 U	< 1.212 UJ
Dibenzofuran	132-64-9	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
Dichlorobenzenes	25321-22-6						
Dicyclopentadiene	77-73-6						
Diethylphthalate	84-66-2	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
Dimethylphthalate	131-11-3	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
di-n-Butylphthalate	84-74-2	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
di-n-Octylphthalate	117-84-0	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 UJ
Diphenylamine	122-39-4	< 3.882 UJ		< 3.4375 U			
Fluoranthene	206-44-0	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
Fluorene	86-73-7	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
Hexachlorobenzene	118-74-1	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
Hexachlorobutadiene	87-68-3	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 U
Hexachlorocyclopentadiene	77-47-4	< 18.824 UJ		< 16.667 U	< 10.417 UJ	< 7.752 U	< 7.576 U
Hexachloroethane	67-72-1	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
Indeno(1,2,3-c,d)pyrene	193-39-5	< 3.882 UJ		< 3.4375 UJ	< 1.667 UJ	< 1.24 U	< 1.212 UJ
Isophorone	78-59-1	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 U
Naphthalene	91-20-3	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
N-Nitrosodimethylamine	62-75-9						
n-Nitroso-di-n-propylamine	621-64-7	< 3.882 UJ		< 3.4375 U	< 1.042 UJ	< 0.775 U	< 0.758 U
n-Nitrosodiphenylamine	86-30-6	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
Pentachlorophenol	87-86-5	< 3.882 UJ		< 3.4375 U	< 5.208 UJ	< 3.876 U	< 3.788 U
Phenanthrene	85-01-8	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
Phenol	108-95-2	< 3.882 UJ		< 3.4375 U	< 1.458 UJ	< 1.085 U	< 1.061 U
Pyrene	129-00-0	< 3.882 UJ		< 3.4375 U	< 0.729 UJ	< 0.543 U	< 0.53 U
Vitamin E	59-02-9						

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-015 54SD-15(0-1)-128622 0 - 1 6/15/1999 SE	54 O-54-SD-016 54SD-16(0-1)-128542 0 - 1 12/7/1998 SE	54 O-54-SD-016 54SD-16(0-1)-128623 0 - 1 6/15/1999 SE	54 O-54-SD-017 54SD-17(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-018 54SD-18(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-019 54SD-19(0-1) 0 - 1 12/8/1998 SE
Chemical Name	CAS No						
TPH							
Total Petroleum Hydrocarbons	TPH						
VOC							
1,1,1-Trichloroethane	71-55-6		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1						
1,1,2-Trichloroethane	79-00-5		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
1,1-Dichloroethane	75-34-3		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
1,1-Dichloroethene	75-35-4		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
1,2,3-Trichlorobenzene	87-61-6						
1,2-Dichloroethane	107-06-2		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
1,2-Dichloroethene (total)	540-59-0						
1,2-Dichloropropane	78-87-5		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
1,3-Dichloropropane	142-28-9						
2,3,6-Trichlorophenol	933-75-5						
2-Butanone	78-93-3		< 0.143 U		< 0.208 UJ	< 0.155 U	0.25
2-Chloroethyl vinyl ether	110-75-8						
2-Hexanone	591-78-6		< 0.143 U		< 0.208 UJ	< 0.155 U	< 0.152 U
4-Methyl-2-pentanone (MIBK)	108-10-1		< 0.143 U		< 0.208 UJ	< 0.155 U	< 0.152 U
Acetone	67-64-1		< 0.071 (U)		< 0.104 (U)J	< 0.078 (U)	0.98 J
Acetonitrile	75-05-8						
Acrylonitrile	107-13-1						
Benzene	71-43-2		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Bromodichloromethane	75-27-4		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Bromoform	75-25-2		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 UJ
Bromomethane	74-83-9		< 0.071 U		< 0.104 UJ	< 0.078 U	< 0.076 UJ
Carbon disulfide	75-15-0		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Carbon tetrachloride	56-23-5		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Chlorobenzene	108-90-7		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Chloroethane	75-00-3		< 0.143 UJ		< 0.208 UJ	< 0.155 UJ	< 0.152 U
Chloroform	67-66-3		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Chloromethane	74-87-3		< 0.071 U		< 0.104 UJ	< 0.078 U	< 0.076 U
cis-1,2-Dichloroethene	156-59-2		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
cis-1,3-Dichloropropene	10061-01-5		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Dibromochloromethane	124-48-1		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Dibromochloropropane	96-12-8						
Dichlorodifluoromethane	75-71-8						
Ethyl benzene	100-41-4		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-015 54SD-15(0-1)-128622 0 - 1 6/15/1999 SE	54 O-54-SD-016 54SD-16(0-1)-128542 0 - 1 12/7/1998 SE	54 O-54-SD-016 54SD-16(0-1)-128623 0 - 1 6/15/1999 SE	54 O-54-SD-017 54SD-17(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-018 54SD-18(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-019 54SD-19(0-1) 0 - 1 12/8/1998 SE
Chemical Name	CAS No						
Methylene chloride	75-09-2		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 (U)
m-Xylenes	108-38-3						
Styrene	100-42-5		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Tetrachloroethene	127-18-4		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Toluene	108-88-3		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
trans-1,2-Dichloroethene	156-60-5		< 35.714 U		< 52.083 UJ	< 38.76 U	< 37.879 U
trans-1,3-Dichloropropene	10061-02-6		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Trichloroethene	79-01-6		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
Trichlorofluoromethane	75-69-4						
Vinyl chloride	75-01-4		< 0.071 U		< 0.104 UJ	< 0.078 U	< 0.076 U
Xylenes	1330-20-7		< 0.036 U		< 0.052 UJ	< 0.039 U	< 0.038 U
WetChem							
% Solids	%Solid						
Cation Exchange Capacity	CEC						
Cyanide	57-12-5						
Total organic carbon	TOC						

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-020 54SD-20DUP(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-020 54SD-20(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-021 54SD-21(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-022 54SD-22(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-023 54SD-23(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-024 54SD-24(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-025 54SD-25(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-026 54SD-26(0-1) 0 - 1 12/8/1998 SE
Chemical Name	CAS No								
Explosives									
1,3,5-Trinitrobenzene	99-35-4	< 0.13 U	< 0.143 U	< 0.133 U	< 0.101 U	< 0.139 U	< 0.13 U	< 0.139 U	< 0.123 U
1,3-Dinitrobenzene	99-65-0	< 0.13 U	< 0.143 U	< 0.133 U	< 0.101 U	< 0.139 U	< 0.13 U	< 0.139 U	< 0.123 U
2,4,6-Trinitrotoluene	118-96-7	< 0.13 U	< 0.143 U	< 0.133 U	< 0.101 U	< 0.139 U	< 0.13 U	< 0.139 U	< 0.123 U
2-amino-4,6-Dinitrotoluene	35572-78-2	< 0.13 U	< 0.143 U	< 0.133 U	< 0.101 U	< 0.139 U	< 0.13 U	< 0.139 U	< 0.123 U
2-Nitrotoluene	88-72-2	< 0.26 U	< 0.285 U	< 0.266 U	< 0.202 U	< 0.278 U	< 0.26 U	< 0.279 U	< 0.247 U
3-Nitrotoluene	99-08-1	< 0.26 U	< 0.285 U	< 0.266 U	< 0.202 U	< 0.278 U	< 0.26 U	< 0.279 U	< 0.247 U
4-amino-2,6-Dinitrotoluene	19406-51-0	< 0.13 U	< 0.143 U	< 0.133 U	< 0.101 U	< 0.139 U	< 0.13 U	< 0.139 U	< 0.123 U
4-Nitrotoluene	99-99-0	< 0.26 U	< 0.285 U	< 0.266 U	< 0.202 U	< 0.278 U	< 0.26 U	< 0.279 U	< 0.247 U
HMX	2691-41-0	< 0.26 U	< 0.285 U	< 0.266 U	< 0.202 U	< 0.278 U	< 0.26 U	< 0.279 U	< 0.247 U
Nitrobenzene	98-95-3	< 0.13 U	< 0.143 U	< 0.556 U	< 0.118 U	< 0.139 U	< 0.13 U	< 0.543 U	< 0.714 UJ
Nitrobenzene	98-95-3	< 0.511 U	< 0.598 U	< 0.133 U	< 0.101 U	< 0.593 U	< 0.569 U	< 0.139 U	< 0.123 U
Nitrocellulose	9004-70-0								
Nitroglycerin	55-63-0								
PETN	78-11-5								
RDX	121-82-4	< 0.26 U	< 0.285 U	< 0.266 U	< 0.202 U	< 0.278 U	< 0.26 U	< 0.279 U	< 0.247 U
Tetryl	479-45-8	< 0.26 UJ	< 0.285 UJ	< 0.266 UJ	< 0.202 UJ	< 0.278 UJ	< 0.26 UJ	< 0.279 UJ	< 0.247 UJ
Explosives / SVOC									
2,4-Dinitrotoluene	121-14-2	< 0.13 U	< 1.197 U	< 0.133 U	< 0.101 U	< 0.139 U	< 1.138 U	< 1.085 U	< 1.429 UJ
2,4-Dinitrotoluene	121-14-2	< 1.022 U	< 0.143 U	< 1.111 U	< 0.235 U	< 1.186 U	< 0.13 U	< 0.139 U	< 0.123 U
2,6-Dinitrotoluene	606-20-2	< 0.13 U	< 0.143 U	< 0.133 U	< 0.235 U	< 0.139 U	< 0.13 U	< 0.139 U	< 1.429 UJ
2,6-Dinitrotoluene	606-20-2	< 1.022 U	< 1.197 U	< 1.111 U	< 0.101 U	< 1.186 U	< 1.138 U	< 1.085 U	< 0.123 U
Metals									
Aluminum	7429-90-5	2420	2790	1640	2770	4010	3260	3810	7080 J
Antimony	7440-36-0	< 0.365 U	< 0.427 U	< 0.397 U	< 0.082 U	< 0.424 U	< 0.398 U	< 0.388 U	< 0.5 UJ
Arsenic	7440-38-2	< 2.168 U	< 2.564 UJ	< 2.357 UJ	< 0.494 UJ	2.95 J	< 2.39 UJ	< 2.302 UJ	< 2.969 UJ
Barium	7440-39-3	92.7	122	86.5	21.2	147	118	111	94 J
Beryllium	7440-41-7	0.59	0.53	0.23	0.23	0.81	0.73	0.62	0.56 J
Cadmium	7440-43-9	0.49	0.2	0.18	0.05	0.85	0.27	0.31	0.35 J
Calcium	7440-70-2	12500	17800	14400	1230	18700	16600	23400	9820 J
Chromium	7440-47-3	< 7.226 U	< 8.547 U	< 7.857 U	2.86	< 8.39 U	< 7.967 U	8.53	10.4 J
Cobalt	7440-48-4	< 14.453 U	< 17.094 U	< 15.714 U	< 3.294 U	< 16.78 U	< 15.935 U	< 15.349 U	< 19.796 UJ
Copper	7440-50-8	10.9	19.7	11.4	1.87	18.1	18	21.3	18 J
Iron	7439-89-6	5960	7890	4160	2070	8980	6040	7250	9820 J
Lead	7439-92-1	15.8 J	5.78 J	17.5 J	3.14 J	16.2 J	6.01 J	2.76 J	5.68 J
Magnesium	7439-95-4	1750	2460	2210	255	2540	2220	2950	1160 J
Manganese	7439-96-5	298	345 J	221 J	35.5 J	397 J	208 J	229 J	324 J

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-020 54SD-20DUP(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-020 54SD-20(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-021 54SD-21(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-022 54SD-22(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-023 54SD-23(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-024 54SD-24(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-025 54SD-25(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-026 54SD-26(0-1) 0 - 1 12/8/1998 SE
Chemical Name	CAS No								
Mercury	7439-97-6	< 0.146 R	< 0.171 U	< 0.159 U	< 0.034 U	0.3 J	0.17 J	0.18 J	< 0.194 UJ
Nickel	7440-02-0	< 14.453 U	< 17.094 U	< 15.714 U	< 3.294 U	< 16.78 U	< 15.935 U	< 15.349 U	< 19.796 UJ
Potassium	7440-09-7	< 722.628 U	< 854.701 U	< 785.714 U	< 164.706 U	< 838.983 U	< 796.748 U	< 767.442 U	< 990.816 UJ
Selenium	7782-49-2	< 2.891 U	< 3.419 U	< 3.143 U	< 0.659 U	< 3.356 U	< 3.187 U	3.15	< 3.959 UJ
Silver	7440-22-4	< 0.182 U	< 0.256 UJ	< 0.238 UJ	< 0.049 UJ	< 0.254 UJ	< 0.236 UJ	< 0.233 UJ	< 0.296 UJ
Sodium	7440-23-5	< 361.314 U	< 427.35 U	< 392.857 U	< 82.353 U	< 419.492 U	< 398.374 U	< 383.721 U	< 494.898 UJ
Thallium	7440-28-0	< 0.146 U	< 0.171 U	< 0.159 U	< 0.034 U	< 0.169 U	< 0.163 U	< 0.155 U	< 0.194 UJ
Vanadium	7440-62-2	< 7.226 U	< 8.547 U	< 7.857 U	3.9	11.7	8.94	18.7	18.2 J
Zinc	7440-66-6	< 36.131 U	< 42.735 U	< 39.286 U	< 8.235 U	< 41.949 U	< 39.837 U	< 38.372 U	83.4 J
Other									
1,4-Oxathiane	15980-15-1								
Dithiane	51330-42-8								
PCBs									
Aroclor 1016	12674-11-2								
Aroclor 1016	12674-11-2								
Aroclor 1221	11104-28-2								
Aroclor 1232	11141-16-5								
Aroclor 1242	53469-21-9								
Aroclor 1248	12672-29-6								
Aroclor 1254	11097-69-1								
Aroclor 1260	11096-82-5								
Aroclor 1260	11096-82-5								
Aroclor 1262	37324-23-5								
Pesticides									
4,4'-DDD	72-54-8								
4,4'-DDD	72-54-8								
4,4'-DDE	72-55-9								
4,4'-DDE	72-55-9								
4,4'-DDT	50-29-3								
4,4'-DDT	50-29-3								
Aldrin	309-00-2								
Aldrin	309-00-2								
alpha-BHC	319-84-6								
alpha-BHC	319-84-6								
Atrazine	1912-24-9								
beta-BHC	319-85-7								

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-020 54SD-20DUP(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-020 54SD-20(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-021 54SD-21(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-022 54SD-22(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-023 54SD-23(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-024 54SD-24(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-025 54SD-25(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-026 54SD-26(0-1) 0 - 1 12/8/1998 SE
Chemical Name	CAS No								
beta-BHC	319-85-7								
Chlordane	57-74-9								
Chlordane	57-74-9								
delta-BHC	319-86-8								
delta-BHC	319-86-8								
Dieldrin	60-57-1								
Dieldrin	60-57-1								
Endosulfan I	959-98-8								
Endosulfan I	959-98-8								
Endosulfan II	33213-65-9								
Endosulfan II	33213-65-9								
Endosulfan sulfate	1031-07-8								
Endosulfan sulfate	1031-07-8								
Endrin	72-20-8								
Endrin	72-20-8								
Endrin aldehyde	7421-93-4								
Endrin ketone	53494-70-5								
gamma-BHC (Lindane)	58-89-9								
gamma-BHC (Lindane)	58-89-9								
Heptachlor	76-44-8								
Heptachlor	76-44-8								
Heptachlor epoxide	1024-57-3								
Heptachlor epoxide	1024-57-3								
Isodrin	465-73-6								
Isodrin	465-73-6								
Malathion	121-75-5								
Methoxychlor	72-43-5								
Methoxychlor	72-43-5								
Mirex	2385-85-5								
Parathion	56-38-2								
p-Chlorophenylmethyl sulfide	123-09-1								
p-Chlorophenylmethyl sulfone	98-57-7								
p-Chlorophenylmethyl sulfoxide	934-73-6								
Supona	470-90-6								
Toxaphene	8001-35-2								
Toxaphene	8001-35-2								
Vapona	62-73-7								

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-020 54SD-20DUP(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-020 54SD-20(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-021 54SD-21(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-022 54SD-22(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-023 54SD-23(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-024 54SD-24(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-025 54SD-25(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-026 54SD-26(0-1) 0 - 1 12/8/1998 SE
Chemical Name	CAS No								
SVOC									
1,1,2,2-Tetrachloroethane	79-34-5	< 0.036 U	< 0.043 UJ	< 0.04 UJ	< 0.84 UJ	< 0.042 UJ	< 0.041 UJ	< 0.039 U	< 0.051 UJ
1,2,4-Trichlorobenzene	120-82-1	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
1,2-Dichlorobenzene	95-50-1	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
1,2-Diphenylhydrazine	122-66-7								
1,3-Dichlorobenzene	541-73-1	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
1,3-Dichlorobenzene	541-73-1								
1,4-Dichlorobenzene	106-46-7	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
2,4,5-Trichlorophenol	95-95-4	< 2.19 U	< 2.564 U	< 2.381 U	< 0.504 U	< 2.542 U	< 2.439 U	< 2.326 U	< 3.061 UJ
2,4,6-Trichlorophenol	88-06-2	< 2.19 U	< 2.564 U	< 2.381 U	< 0.504 U	< 2.542 U	< 2.439 U	< 2.326 U	< 3.061 UJ
2,4-Dichlorophenol	120-83-2	< 1.022 U	< 1.197 U	< 1.111 U	< 0.235 U	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ
2,4-Dimethylphenol	105-67-9	< 1.022 U	< 1.197 U	< 1.111 U	< 0.235 U	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ
2,4-Dinitrophenol	51-28-5	< 9.489 UJ	< 11.111 UJ	< 10.317 U	< 2.185 U	< 11.017 U	< 10.569 U	< 10.078 U	< 13.265 UJ
2,6-Dinitroaniline	606-22-4								
2-Chloronaphthalene	91-58-7	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
2-Chlorophenol	95-57-8	< 1.022 U	< 1.197 U	< 1.111 U	< 0.235 U	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ
2-Methylnaphthalene	91-57-6	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
2-Methylphenol	95-48-7	< 1.022 U	< 1.197 U	< 1.111 U	< 0.235 U	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ
2-Nitroaniline	88-74-4	< 2.19 U	< 2.564 U	< 2.381 U	< 0.504 U	< 2.542 U	< 2.439 U	< 2.326 U	< 3.061 UJ
2-Nitrophenol	88-75-5	< 1.022 U	< 1.197 U	< 1.111 U	< 0.235 U	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ
3,3'-Dichlorobenzidine	91-94-1	< 3.65 UJ	< 4.274 UJ	< 3.968 UJ	< 0.84 UJ	< 4.237 UJ	< 4.065 UJ	< 3.876 UJ	< 5.102 UJ
3,5-Dinitroaniline	618-87-1								
3-Nitroaniline	99-09-2	< 2.19 UJ	< 2.564 UJ	< 2.381 UJ	< 0.504 UJ	< 2.542 UJ	< 2.439 UJ	< 2.326 UJ	< 3.061 UJ
4,6-dinitro-2-Methylphenol	534-52-1	< 7.299 U	< 8.547 U	< 7.937 U	< 1.681 U	< 8.475 U	< 8.13 U	< 7.752 U	< 10.204 UJ
4-Bromophenyl phenyl ether	101-55-3	< 1.022 U	< 1.197 U	< 1.111 U	< 0.235 U	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ
4-Chloro-3-methylphenol	59-50-7	< 1.022 U	< 1.197 U	< 1.111 U	< 0.235 U	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ
4-Chloroaniline	106-47-8	< 2.19 UJ	< 2.564 UJ	< 2.381 UJ	< 0.504 UJ	< 2.542 UJ	< 2.439 UJ	< 2.326 UJ	< 3.061 UJ
4-Chlorophenyl phenyl ether	7005-72-3	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
4-Methylphenol	106-44-5	< 1.022 U#	< 1.197 U#	< 1.111 U#	< 0.235 U#	< 1.186 U#	< 1.138 U#	< 1.085 U#	< 1.429 UJ#
4-Nitroaniline	100-01-6	< 2.19 U	< 2.564 U	< 2.381 U	< 0.504 U	< 2.542 U	< 2.439 U	< 2.326 U	< 3.061 UJ
4-Nitrophenol	100-02-7	< 3.65 U	< 4.274 U	< 3.968 U	< 0.84 U	< 4.237 U	< 4.065 U	< 3.876 U	< 5.102 UJ
Acenaphthene	83-32-9	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
Acenaphthylene	208-96-8	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
Aniline	62-53-3								
Anthracene	120-12-7	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
Benz(a)anthracene	56-55-3	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
Benzo(a)pyrene	50-32-8	< 1.022 UJ	< 1.197 U	< 1.111 UJ	< 0.235 UJ	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-020 54SD-20DUP(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-020 54SD-20(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-021 54SD-21(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-022 54SD-22(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-023 54SD-23(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-024 54SD-24(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-025 54SD-25(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-026 54SD-26(0-1) 0 - 1 12/8/1998 SE
Chemical Name	CAS No								
Benzo(b)fluoranthene	205-99-2	< 0.73 UJ	< 0.855 U	< 0.794 UJ	< 0.168 UJ	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
Benzo(g,h,i)perylene	191-24-2	< 1.168 UJ	< 1.368 U	< 1.27 UJ	< 0.269 UJ	< 1.356 U	< 1.301 U	< 1.24 U	< 1.633 UJ
Benzo(k)fluoranthene	207-08-9	< 0.73 UJ	< 0.855 U	< 0.794 UJ	< 0.168 UJ	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
Benzyl alcohol	100-51-6								
bis(2-Chloroethoxy)methane	111-91-1	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
bis(2-Chloroethyl)ether	111-44-4	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
bis(2-Chloroisopropyl)ether	39638-32-9	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	7.88	< 0.813 U	< 0.775 U	< 1.02 UJ
Butylbenzyl phthalate	85-68-7	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
Carbazole	86-74-8	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
Chrysene	218-01-9	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
Dibenz(a,h)anthracene	53-70-3	< 1.168 UJ	< 1.368 U	< 1.27 UJ	< 0.269 UJ	< 1.356 U	< 1.301 U	< 1.24 U	< 1.633 UJ
Dibenzofuran	132-64-9	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
Dichlorobenzenes	25321-22-6								
Dicyclopentadiene	77-73-6								
Diethylphthalate	84-66-2	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
Dimethylphthalate	131-11-3	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
di-n-Butylphthalate	84-74-2	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
di-n-Octylphthalate	117-84-0	< 1.022 UJ	< 1.197 U	< 1.111 UJ	< 0.235 UJ	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ
Diphenylamine	122-39-4								
Fluoranthene	206-44-0	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
Fluorene	86-73-7	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
Hexachlorobenzene	118-74-1	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
Hexachlorobutadiene	87-68-3	< 1.022 U	< 1.197 U	< 1.111 U	< 0.235 U	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ
Hexachlorocyclopentadiene	77-47-4	< 7.299 U	< 8.547 U	< 7.937 U	< 1.681 U	< 8.475 U	< 8.13 U	< 7.752 U	< 10.204 UJ
Hexachloroethane	67-72-1	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
Indeno(1,2,3-c,d)pyrene	193-39-5	< 1.168 UJ	< 1.368 U	< 1.27 UJ	< 0.269 UJ	< 1.356 U	< 1.301 U	< 1.24 U	< 1.633 UJ
Isophorone	78-59-1	< 1.022 U	< 1.197 U	< 1.111 U	< 0.235 U	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ
Naphthalene	91-20-3	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
N-Nitrosodimethylamine	62-75-9								
n-Nitroso-di-n-propylamine	621-64-7	< 0.73 U	< 0.855 U	< 0.794 U	< 0.168 U	< 0.847 U	< 0.813 U	< 0.775 U	< 1.02 UJ
n-Nitrosodiphenylamine	86-30-6	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
Pentachlorophenol	87-86-5	< 3.65 U	< 4.274 U	< 3.968 U	< 0.84 U	< 4.237 U	< 4.065 U	< 3.876 U	< 5.102 UJ
Phenanthrene	85-01-8	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
Phenol	108-95-2	< 1.022 U	< 1.197 U	< 1.111 U	< 0.235 U	< 1.186 U	< 1.138 U	< 1.085 U	< 1.429 UJ
Pyrene	129-00-0	< 0.511 U	< 0.598 U	< 0.556 U	< 0.118 U	< 0.593 U	< 0.569 U	< 0.543 U	< 0.714 UJ
Vitamin E	59-02-9								

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-020 54SD-20DUP(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-020 54SD-20(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-021 54SD-21(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-022 54SD-22(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-023 54SD-23(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-024 54SD-24(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-025 54SD-25(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-026 54SD-26(0-1) 0 - 1 12/8/1998 SE
Chemical Name	CAS No								
TPH									
Total Petroleum Hydrocarbons	TPH								
VOC									
1,1,1-Trichloroethane	71-55-6	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1								
1,1,2-Trichloroethane	79-00-5	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
1,1-Dichloroethane	75-34-3	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
1,1-Dichloroethene	75-35-4	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
1,2,3-Trichlorobenzene	87-61-6								
1,2-Dichloroethane	107-06-2	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
1,2-Dichloroethene (total)	540-59-0								
1,2-Dichloropropane	78-87-5	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
1,3-Dichloropropane	142-28-9								
2,3,6-Trichlorophenol	933-75-5								
2-Butanone	78-93-3	< 0.146 U	0.19	0.17	0.03 J	0.49	0.08 J	< 0.155 U	< 0.204 UJ
2-Chloroethyl vinyl ether	110-75-8								
2-Hexanone	591-78-6	< 0.146 U	< 0.171 U	< 0.159 U	< 0.034 U	< 0.169 U	< 0.163 U	< 0.155 U	< 0.204 UJ
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.146 U	< 0.171 U	< 0.159 U	< 0.034 U	< 0.169 U	< 0.163 U	< 0.155 U	< 0.204 UJ
Acetone	67-64-1	< 0.073 (U)	0.8 J	0.75 J	< 0.017 (U)	< 0.085 (U)D	0.25 J	< 0.078 U	< 0.102 (U)J
Acetonitrile	75-05-8								
Acrylonitrile	107-13-1								
Benzene	71-43-2	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Bromodichloromethane	75-27-4	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Bromoform	75-25-2	< 0.036 U	< 0.043 UJ	< 0.04 UJ	< 0.84 UJ	< 0.042 UJ	< 0.041 UJ	< 0.039 U	< 0.051 UJ
Bromomethane	74-83-9	< 0.073 U	< 0.085 UJ	< 0.079 UJ	< 0.017 UJ	< 0.085 UJ	< 0.081 UJ	< 0.078 U	< 0.102 UJ
Carbon disulfide	75-15-0	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Carbon tetrachloride	56-23-5	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Chlorobenzene	108-90-7	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Chloroethane	75-00-3	< 0.146 U	< 0.171 U	< 0.159 U	< 0.034 U	< 0.169 U	< 0.163 U	< 0.155 U	< 0.204 UJ
Chloroform	67-66-3	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Chloromethane	74-87-3	< 0.073 U	< 0.085 U	< 0.079 U	< 0.017 U	< 0.085 U	< 0.081 U	< 0.078 U	< 0.102 UJ
cis-1,2-Dichloroethene	156-59-2	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
cis-1,3-Dichloropropene	10061-01-5	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Dibromochloromethane	124-48-1	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Dibromochloropropane	96-12-8								
Dichlorodifluoromethane	75-71-8								
Ethyl benzene	100-41-4	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-020 54SD-20DUP(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-020 54SD-20(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-021 54SD-21(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-022 54SD-22(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-023 54SD-23(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-024 54SD-24(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-025 54SD-25(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-026 54SD-26(0-1) 0 - 1 12/8/1998 SE
Chemical Name	CAS No								
Methylene chloride	75-09-2	< 0.036 U	< 0.043 (U)	< 0.04 (U)	< 0.84 (U)	< 0.042 (U)	< 0.041 (U)	< 0.039 U	< 0.051 UJ
m-Xylenes	108-38-3								
Styrene	100-42-5	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Tetrachloroethene	127-18-4	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Toluene	108-88-3	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
trans-1,2-Dichloroethene	156-60-5	< 36.496 U	< 42.735 U	< 39.683 U	< 8.403 U	< 42.373 U	< 40.65 U	< 38.76 U	< 51.02 UJ
trans-1,3-Dichloropropene	10061-02-6	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Trichloroethene	79-01-6	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
Trichlorofluoromethane	75-69-4								
Vinyl chloride	75-01-4	< 0.073 U	< 0.085 U	< 0.079 U	< 0.017 U	< 0.085 U	< 0.081 U	< 0.078 U	< 0.102 UJ
Xylenes	1330-20-7	< 0.036 U	< 0.043 U	< 0.04 U	< 0.84 U	< 0.042 U	< 0.041 U	< 0.039 U	< 0.051 UJ
WetChem									
% Solids	%Solid								
Cation Exchange Capacity	CEC								
Cyanide	57-12-5								
Total organic carbon	TOC								

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-027 54SD-27(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-028 54SD-28(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-029 54SD-29(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-030 54SD-30(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-031 54SD-31(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-032 54SD-32(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-033 54SD-33(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-034 54SD-34(0-1) 0 - 1 12/14/1998 SE
Chemical Name	CAS No								
Explosives									
1,3,5-Trinitrobenzene	99-35-4	< 0.162 U	< 0.101 U	< 0.104 U	< 0.136 U	< 0.109 U	< 0.137 U	< 0.103 U	< 0.154 U
1,3-Dinitrobenzene	99-65-0	< 0.162 U	< 0.101 U	< 0.104 U	< 0.136 U	< 0.109 U	< 0.137 U	< 0.103 U	< 0.154 U
2,4,6-Trinitrotoluene	118-96-7	< 0.162 U	< 0.101 U	< 0.104 U	< 0.136 U	< 0.109 U	< 0.137 U	< 0.103 U	< 0.154 U
2-amino-4,6-Dinitrotoluene	35572-78-2	< 0.162 U	< 0.101 UJ	< 0.104 U	< 0.136 U	< 0.109 U	< 0.137 U	< 0.103 U	< 0.154 U
2-Nitrotoluene	88-72-2	< 0.324 U	< 0.202 U	< 0.207 U	< 0.271 U	< 0.217 U	< 0.274 U	< 0.207 U	< 0.308 U
3-Nitrotoluene	99-08-1	< 0.324 U	< 0.202 U	< 0.207 U	< 0.271 U	< 0.217 U	< 0.274 U	< 0.207 U	< 0.308 U
4-amino-2,6-Dinitrotoluene	19406-51-0	< 0.162 U	< 0.101 U	< 0.104 U	< 0.136 U	< 0.109 U	< 0.137 U	< 0.103 U	< 0.154 U
4-Nitrotoluene	99-99-0	< 0.324 U	< 0.202 U	< 0.207 U	< 0.271 U	< 0.217 U	< 0.274 U	< 0.207 U	< 0.308 U
HMX	2691-41-0	< 0.324 U	< 0.202 U	< 0.207 U	< 0.271 U	< 0.217 U	< 0.274 U	< 0.207 U	< 0.308 U
Nitrobenzene	98-95-3	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
Nitrobenzene	98-95-3	< 0.162 U	< 0.101 U	< 0.104 U	< 0.136 U	< 0.109 U	< 0.137 U	< 0.103 U	< 0.154 U
Nitrocellulose	9004-70-0								
Nitroglycerin	55-63-0								
PETN	78-11-5								
RDX	121-82-4	< 0.324 U	< 0.202 U	< 0.207 U	< 0.271 U	< 0.217 U	< 0.274 U	< 0.207 U	< 0.308 U
Tetryl	479-45-8	< 0.324 UJ	< 0.202 UJ	< 0.207 UJ	< 0.271 UJ	< 0.217 UJ	< 0.274 UJ	< 0.207 UJ	< 0.308 UJ
Explosives / SVOC									
2,4-Dinitrotoluene	121-14-2	< 1.176 U	< 0.101 U	< 0.104 U	< 0.609 UD	< 0.281 U	< 0.137 U	< 0.103 U	< 1.197 U
2,4-Dinitrotoluene	121-14-2	< 0.162 U	< 0.192 U	< 0.234 U	< 0.136 U	< 0.109 U	< 0.933 UD	< 0.197 U	< 0.154 U
2,6-Dinitrotoluene	606-20-2	< 0.162 U	< 0.101 U	< 0.234 U	< 0.136 U	< 0.109 U	< 0.137 U	< 0.197 U	< 1.197 U
2,6-Dinitrotoluene	606-20-2	< 1.176 U	< 0.192 U	< 0.104 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.103 U	< 0.154 U
Metals									
Aluminum	7429-90-5	7940	5570	9220	21100	19100	12100	9830	18300
Antimony	7440-36-0	< 0.412 U	< 0.068 U	< 0.075 U	0.83	< 0.1 U	0.5	< 0.069 U	< 0.419 U
Arsenic	7440-38-2	< 2.445 UJ	0.82 J	0.95	11.3	0.84	3.67	1.59	< 2.487 U
Barium	7440-39-3	84	11	43.4	583	86.1	79.3	34.7	84.4
Beryllium	7440-41-7	0.4	0.17	0.51	1.31	1.64	0.84	0.37	0.77
Cadmium	7440-43-9	0.23	< 0.027 U	0.05	2.06	0.09	0.57	0.06	0.4
Calcium	7440-70-2	8490	471	3160	23600	4240	6200	653	12800
Chromium	7440-47-3	14.5	8.71	28.5	38.9	28.9	18.1	12.3	26.6
Cobalt	7440-48-4	< 16.303 U	< 2.736 U	6.23	10.6	< 3.976 U	< 13.067 U	4.4	< 17.094 U
Copper	7440-50-8	15.5	3.3	3.64	70	6.87	23.3	9.63	38.8
Iron	7439-89-6	10200	5690	9700	25600	11000	13700	11900	5700
Lead	7439-92-1	4.71 J	10.6 J	6.41	210	12.7	41.2	8.51	7.56
Magnesium	7439-95-4	1760	830	2350	9910	1370	2280	1420	3200
Manganese	7439-96-5	159 J	20.1 J	57.3	3640	65.1	190	135	46.6

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-027 54SD-27(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-028 54SD-28(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-029 54SD-29(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-030 54SD-30(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-031 54SD-31(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-032 54SD-32(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-033 54SD-33(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-034 54SD-34(0-1) 0 - 1 12/14/1998 SE
Chemical Name	CAS No								
Mercury	7439-97-6	< 0.16 U	< 0.027 U	< 0.03 U	< 0.087 R	< 0.04 R	< 0.133 U	< 0.028 U	< 0.162 R
Nickel	7440-02-0	< 16.303 U	< 2.736 U	13.8	22.7	12.3	< 13.067 U	8.9	< 17.094 U
Potassium	7440-09-7	< 815.966 U	222	307	2290	378	< 653.333 U	312	< 854.701 U
Selenium	7782-49-2	< 3.261 U	< 0.547 U	1.16	2.89	2.13	< 2.64 U	< 0.551 U	< 3.316 U
Silver	7440-22-4	< 0.244 UJ	< 0.041 UJ	< 0.038 U	< 0.109 R	< 0.05 R	< 0.167 U	< 0.035 U	< 0.205 U
Sodium	7440-23-5	432	< 68.399 U	102	371	136	< 326.667 U	< 70.323 U	< 427.35 U
Thallium	7440-28-0	< 0.16 U	< 0.027 U	0.05	0.36	0.11	< 0.133 U	0.1	< 0.162 U
Vanadium	7440-62-2	27.8	15.2	80.3	67.8	35.3	54.5	37.6	54.7
Zinc	7440-66-6	47.3 J	7.02 J	9.23	661	11.3	82.7	15.2	< 42.735 U
Other									
1,4-Oxathiane	15980-15-1								
Dithiane	51330-42-8								
PCBs									
Aroclor 1016	12674-11-2								
Aroclor 1016	12674-11-2								
Aroclor 1221	11104-28-2								
Aroclor 1232	11141-16-5								
Aroclor 1242	53469-21-9								
Aroclor 1248	12672-29-6								
Aroclor 1254	11097-69-1								
Aroclor 1260	11096-82-5								
Aroclor 1260	11096-82-5								
Aroclor 1262	37324-23-5								
Pesticides									
4,4'-DDD	72-54-8								
4,4'-DDD	72-54-8								
4,4'-DDE	72-55-9								
4,4'-DDE	72-55-9								
4,4'-DDT	50-29-3								
4,4'-DDT	50-29-3								
Aldrin	309-00-2								
Aldrin	309-00-2								
alpha-BHC	319-84-6								
alpha-BHC	319-84-6								
Atrazine	1912-24-9								
beta-BHC	319-85-7								

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-027 54SD-27(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-028 54SD-28(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-029 54SD-29(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-030 54SD-30(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-031 54SD-31(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-032 54SD-32(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-033 54SD-33(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-034 54SD-34(0-1) 0 - 1 12/14/1998 SE
Chemical Name	CAS No								
beta-BHC	319-85-7								
Chlordane	57-74-9								
Chlordane	57-74-9								
delta-BHC	319-86-8								
delta-BHC	319-86-8								
Dieldrin	60-57-1								
Dieldrin	60-57-1								
Endosulfan I	959-98-8								
Endosulfan I	959-98-8								
Endosulfan II	33213-65-9								
Endosulfan II	33213-65-9								
Endosulfan sulfate	1031-07-8								
Endosulfan sulfate	1031-07-8								
Endrin	72-20-8								
Endrin	72-20-8								
Endrin aldehyde	7421-93-4								
Endrin ketone	53494-70-5								
gamma-BHC (Lindane)	58-89-9								
gamma-BHC (Lindane)	58-89-9								
Heptachlor	76-44-8								
Heptachlor	76-44-8								
Heptachlor epoxide	1024-57-3								
Heptachlor epoxide	1024-57-3								
Isodrin	465-73-6								
Isodrin	465-73-6								
Malathion	121-75-5								
Methoxychlor	72-43-5								
Methoxychlor	72-43-5								
Mirex	2385-85-5								
Parathion	56-38-2								
p-Chlorophenylmethyl sulfide	123-09-1								
p-Chlorophenylmethyl sulfone	98-57-7								
p-Chlorophenylmethyl sulfoxide	934-73-6								
Supona	470-90-6								
Toxaphene	8001-35-2								
Toxaphene	8001-35-2								
Vapona	62-73-7								

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Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-027 54SD-27(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-028 54SD-28(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-029 54SD-29(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-030 54SD-30(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-031 54SD-31(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-032 54SD-32(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-033 54SD-33(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-034 54SD-34(0-1) 0 - 1 12/14/1998 SE
Chemical Name	CAS No								
SVOC									
1,1,2,2-Tetrachloroethane	79-34-5	< 0.042 UJ	< 0.684 UJ	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
1,2,4-Trichlorobenzene	120-82-1	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
1,2-Dichlorobenzene	95-50-1	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
1,2-Diphenylhydrazine	122-66-7								
1,3-Dichlorobenzene	541-73-1	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
1,3-Dichlorobenzene	541-73-1								
1,4-Dichlorobenzene	106-46-7	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
2,4,5-Trichlorophenol	95-95-4	< 2.521 U	< 0.41 U	< 0.501 U	< 1.304 UJD	< 0.602 U	< 2 UJD	< 0.422 U	< 2.564 U
2,4,6-Trichlorophenol	88-06-2	< 2.521 U	< 0.41 U	< 0.501 U	< 1.304 UD	< 0.602 U	< 2 UD	< 0.422 U	< 2.564 U
2,4-Dichlorophenol	120-83-2	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U
2,4-Dimethylphenol	105-67-9	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U
2,4-Dinitrophenol	51-28-5	< 10.924 U	< 1.778 U	< 2.17 U	< 5.652 UD	< 2.61 U	< 8.667 UD	< 1.828 U	< 11.111 U
2,6-Dinitroaniline	606-22-4								
2-Chloronaphthalene	91-58-7	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
2-Chlorophenol	95-57-8	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U
2-Methylnaphthalene	91-57-6	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
2-Methylphenol	95-48-7	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U
2-Nitroaniline	88-74-4	< 2.521 U	< 0.41 U	< 0.501 U	< 1.304 UD	< 0.602 U	< 2 UD	< 0.422 U	< 2.564 U
2-Nitrophenol	88-75-5	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U
3,3'-Dichlorobenzidine	91-94-1	< 4.202 UJ	< 0.684 UJ	< 0.835 U	< 2.174 UJD	< 1.004 U	< 3.333 UJD	< 0.703 U	< 4.274 U
3,5-Dinitroaniline	618-87-1								
3-Nitroaniline	99-09-2	< 2.521 UJ	< 0.41 UJ	< 0.501 U	< 1.304 UD	< 0.602 U	< 2 UD	< 0.422 U	< 2.564 U
4,6-dinitro-2-Methylphenol	534-52-1	< 8.403 U	< 1.368 U	< 1.669 U	< 4.348 UD	< 2.008 U	< 6.667 UD	< 1.406 U	< 8.547 U
4-Bromophenyl phenyl ether	101-55-3	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U
4-Chloro-3-methylphenol	59-50-7	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U
4-Chloroaniline	106-47-8	< 2.521 UJ	< 0.41 UJ	< 0.501 U	< 1.304 UD	< 0.602 U	< 2 UD	< 0.422 U	< 2.564 U
4-Chlorophenyl phenyl ether	7005-72-3	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
4-Methylphenol	106-44-5	< 1.176 U#	< 0.192 U#	< 0.234 U#	< 0.609 UD#	< 0.281 U#	< 0.933 UD#	< 0.197 U#	< 1.197 U#
4-Nitroaniline	100-01-6	< 2.521 U	< 0.41 U	< 0.501 U	< 1.304 UD	< 0.602 U	< 2 UD	< 0.422 U	< 2.564 U
4-Nitrophenol	100-02-7	< 4.202 U	< 0.684 U	< 0.835 U	< 2.174 UD	< 1.004 U	< 3.333 UD	< 0.703 U	< 4.274 U
Acenaphthene	83-32-9	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
Acenaphthylene	208-96-8	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
Aniline	62-53-3								
Anthracene	120-12-7	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
Benz(a)anthracene	56-55-3	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
Benzo(a)pyrene	50-32-8	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-027 54SD-27(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-028 54SD-28(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-029 54SD-29(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-030 54SD-30(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-031 54SD-31(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-032 54SD-32(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-033 54SD-33(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-034 54SD-34(0-1) 0 - 1 12/14/1998 SE
Chemical Name	CAS No								
Benzo(b)fluoranthene	205-99-2	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
Benzo(g,h,i)perylene	191-24-2	< 1.345 U	< 0.219 U	< 0.267 UJ	< 0.696 UJD	< 0.321 UJ	< 1.067 UJD	< 0.225 UJ	< 1.368 UJ
Benzo(k)fluoranthene	207-08-9	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
Benzyl alcohol	100-51-6								
bis(2-Chloroethoxy)methane	111-91-1	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
bis(2-Chloroethyl)ether	111-44-4	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
bis(2-Chloroisopropyl)ether	39638-32-9	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.84 U	< 0.137 U	< 0.167 (U)	< 0.435 (U)D	< 0.201 (U)	< 0.667 (U)D	< 0.141 (U)	< 0.855 (U)
Butylbenzyl phthalate	85-68-7	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
Carbazole	86-74-8	< 0.84 U	< 0.137 U	< 0.167 U	< 0.87 UD	< 0.201 U	< 1.333 UD	< 0.141 U	< 0.855 U
Chrysene	218-01-9	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
Dibenz(a,h)anthracene	53-70-3	< 1.345 U	< 0.219 U	< 0.267 UJ	< 0.696 UJD	< 0.321 UJ	< 1.067 UJD	< 0.225 UJ	< 1.368 UJ
Dibenzofuran	132-64-9	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
Dichlorobenzenes	25321-22-6								
Dicyclopentadiene	77-73-6								
Diethylphthalate	84-66-2	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
Dimethylphthalate	131-11-3	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
di-n-Butylphthalate	84-74-2	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
di-n-Octylphthalate	117-84-0	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U
Diphenylamine	122-39-4								
Fluoranthene	206-44-0	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
Fluorene	86-73-7	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
Hexachlorobenzene	118-74-1	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
Hexachlorobutadiene	87-68-3	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U
Hexachlorocyclopentadiene	77-47-4	< 8.403 U	< 1.368 U	< 1.669 U	< 4.348 UD	< 2.008 U	< 6.667 UD	< 1.406 U	< 8.547 U
Hexachloroethane	67-72-1	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
Indeno(1,2,3-c,d)pyrene	193-39-5	< 1.345 U	< 0.219 U	< 0.267 U	< 0.696 UD	< 0.321 U	< 1.067 UD	< 0.225 U	< 1.368 U
Isophorone	78-59-1	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U
Naphthalene	91-20-3	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
N-Nitrosodimethylamine	62-75-9								
n-Nitroso-di-n-propylamine	621-64-7	< 0.84 U	< 0.137 U	< 0.167 U	< 0.435 UD	< 0.201 U	< 0.667 UD	< 0.141 U	< 0.855 U
n-Nitrosodiphenylamine	86-30-6	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
Pentachlorophenol	87-86-5	< 4.202 U	< 0.684 U	< 0.835 U	< 2.174 UD	< 1.004 U	< 3.333 UD	< 0.703 U	< 4.274 U
Phenanthrene	85-01-8	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
Phenol	108-95-2	< 1.176 U	< 0.192 U	< 0.234 U	< 0.609 UD	< 0.281 U	< 0.933 UD	< 0.197 U	< 1.197 U
Pyrene	129-00-0	< 0.588 U	< 0.096 U	< 0.117 U	< 0.304 UD	< 0.141 U	< 0.467 UD	< 0.098 U	< 0.598 U
Vitamin E	59-02-9								

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-027 54SD-27(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-028 54SD-28(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-029 54SD-29(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-030 54SD-30(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-031 54SD-31(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-032 54SD-32(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-033 54SD-33(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-034 54SD-34(0-1) 0 - 1 12/14/1998 SE
Chemical Name	CAS No								
TPH									
Total Petroleum Hydrocarbons	TPH								
VOC									
1,1,1-Trichloroethane	71-55-6	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1								
1,1,2-Trichloroethane	79-00-5	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
1,1-Dichloroethane	75-34-3	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	0.02 J
1,1-Dichloroethene	75-35-4	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
1,2,3-Trichlorobenzene	87-61-6								
1,2-Dichloroethane	107-06-2	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
1,2-Dichloroethene (total)	540-59-0								
1,2-Dichloropropane	78-87-5	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
1,3-Dichloropropane	142-28-9								
2,3,6-Trichlorophenol	933-75-5								
2-Butanone	78-93-3	< 0.168 U	< 0.027 U	< 0.033 U	< 0.087 U	< 0.04 U	< 0.133 U	< 0.028 U	< 0.171 U
2-Chloroethyl vinyl ether	110-75-8								
2-Hexanone	591-78-6	< 0.168 U	< 0.027 U	< 0.033 U	< 0.087 U	< 0.04 U	< 0.133 U	< 0.028 U	< 0.171 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.168 U	< 0.027 U	< 0.033 U	< 0.087 U	< 0.04 U	< 0.133 U	< 0.028 U	< 0.171 U
Acetone	67-64-1	< 0.084 (U)	< 0.014 (U)	< 0.017 U	< 0.043 (U)	< 0.02 (U)	< 0.067 (U)	< 0.014 (U)	< 0.085 (U)
Acetonitrile	75-05-8								
Acrylonitrile	107-13-1								
Benzene	71-43-2	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
Bromodichloromethane	75-27-4	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
Bromoform	75-25-2	< 0.042 UJ	< 0.684 UJ	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
Bromomethane	74-83-9	< 0.084 U	< 0.014 U	< 0.017 U	< 0.043 U	< 0.02 U	< 0.067 U	< 0.014 U	< 0.085 U
Carbon disulfide	75-15-0	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
Carbon tetrachloride	56-23-5	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
Chlorobenzene	108-90-7	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
Chloroethane	75-00-3	< 0.168 U	< 0.027 U	< 0.033 U	< 0.087 U	< 0.04 U	< 0.133 U	< 0.028 U	< 0.171 U
Chloroform	67-66-3	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
Chloromethane	74-87-3	< 0.084 U	< 0.014 U	< 0.017 U	< 0.043 U	< 0.02 U	< 0.067 U	< 0.014 U	< 0.085 U
cis-1,2-Dichloroethene	156-59-2	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	0.43
cis-1,3-Dichloropropene	10061-01-5	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
Dibromochloromethane	124-48-1	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
Dibromochloropropane	96-12-8								
Dichlorodifluoromethane	75-71-8								
Ethyl benzene	100-41-4	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-027 54SD-27(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-028 54SD-28(0-1) 0 - 1 12/8/1998 SE	54 O-54-SD-029 54SD-29(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-030 54SD-30(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-031 54SD-31(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-032 54SD-32(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-033 54SD-33(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-034 54SD-34(0-1) 0 - 1 12/14/1998 SE
Chemical Name	CAS No								
Methylene chloride	75-09-2	< 0.042 U	< 0.684 U	< 0.835 (U)	< 0.022 (U)	< 0.01 (U)	< 0.033 (U)	< 0.703 (U)	< 0.043 (U)
m-Xylenes	108-38-3								
Styrene	100-42-5	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
Tetrachloroethene	127-18-4	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	0.03 J
Toluene	108-88-3	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	0.58 J
trans-1,2-Dichloroethene	156-60-5	< 42.017 U	< 6.84 U	< 8.347 U	< 21.739 U	< 10.04 U	< 33.333 U	< 7.032 U	< 42.735 U
trans-1,3-Dichloropropene	10061-02-6	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
Trichloroethene	79-01-6	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	0.27
Trichlorofluoromethane	75-69-4								
Vinyl chloride	75-01-4	< 0.084 U	< 0.014 U	< 0.017 U	< 0.043 U	< 0.02 U	< 0.067 U	< 0.014 U	0.02 J
Xylenes	1330-20-7	< 0.042 U	< 0.684 U	< 0.835 U	< 0.022 U	< 0.01 U	< 0.033 U	< 0.703 U	< 0.043 U
WetChem									
% Solids	%Solid								
Cation Exchange Capacity	CEC								
Cyanide	57-12-5								
Total organic carbon	TOC								

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-035 54SD-35(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-036 54SD-36(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-037 54SD-37(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-038 54SD-38(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-039 54SD-39(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-040 54SD-40(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-041 54SD-41(0-1) 0 - 1 11/28/2001 SE	54 O-54-SD-042 54SD-42DUP(0-1) 0 - 1 11/28/2001 SE
Chemical Name	CAS No								
Explosives									
1,3,5-Trinitrobenzene	99-35-4	< 0.199 U	< 0.328 U	< 0.104 U	< 0.139 U	< 0.14 U	< 0.147 U	< 0.25 U	< 0.25 U
1,3-Dinitrobenzene	99-65-0	< 0.199 U	< 0.328 U	< 0.104 U	< 0.139 U	< 0.14 U	< 0.147 U	< 0.25 U	< 0.25 U
2,4,6-Trinitrotoluene	118-96-7	< 0.199 U	< 0.328 U	< 0.104 U	< 0.139 U	< 0.14 U	< 0.147 U	< 0.25 U	< 0.25 U
2-amino-4,6-Dinitrotoluene	35572-78-2	< 0.199 U	< 0.328 U	< 0.104 U	< 0.139 U	< 0.14 U	< 0.147 U	< 0.25 U	< 0.25 U
2-Nitrotoluene	88-72-2	< 0.398 U	< 0.656 U	< 0.208 UJ	< 0.277 U	< 0.279 U	< 0.294 U	< 0.25 U	< 0.25 U
3-Nitrotoluene	99-08-1	1.03	< 0.656 U	< 0.208 U	< 0.277 U	< 0.279 U	< 0.294 U	< 0.25 U	< 0.25 U
4-amino-2,6-Dinitrotoluene	19406-51-0	< 0.199 U	< 0.328 U	< 0.104 U	< 0.139 U	< 0.14 U	< 0.147 U	< 0.25 U	< 0.25 U
4-Nitrotoluene	99-99-0	< 0.398 U	< 0.656 U	< 0.208 U	< 0.277 U	< 0.279 U	< 0.294 U	< 0.25 U	0.13 J
HMX	2691-41-0	< 0.398 U	< 0.656 U	< 0.208 U	< 0.277 U	< 0.279 U	< 0.294 U	< 0.5 U	< 0.5 U
Nitrobenzene	98-95-3	< 0.199 U	< 0.328 U	< 0.104 UJ	< 0.139 U	< 0.636 U	< 0.147 U	< 2.6 U	< 2.9 U
Nitrobenzene	98-95-3	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.14 U	< 0.598 U	< 0.25 U	< 0.25 U
Nitrocellulose	9004-70-0								
Nitroglycerin	55-63-0								
PETN	78-11-5								
RDX	121-82-4	< 0.398 U	< 0.656 U	< 0.208 U	< 0.277 U	< 0.279 U	< 0.294 U	< 0.5 U	< 0.5 U
Tetryl	479-45-8	< 0.398 UJ	< 0.656 UJ	< 0.208 UJ	< 0.277 UJ	< 0.279 UJ	< 0.294 UJ	< 0.65 U	< 0.65 U
Explosives / SVOC									
2,4-Dinitrotoluene	121-14-2	< 1.197 U	< 0.328 U	< 0.21 UD	< 1.045 U	< 1.273 U	< 0.147 U	< 2.6 U	< 2.9 U
2,4-Dinitrotoluene	121-14-2	< 0.199 U	< 1.867 UJD	< 0.104 U	< 0.139 U	< 0.14 U	< 1.197 U	< 0.25 U	< 0.25 U
2,6-Dinitrotoluene	606-20-2	< 1.197 U	< 1.867 UJD	< 0.104 U	< 0.139 U	< 0.14 U	< 1.197 U	< 2.6 U	< 2.9 U
2,6-Dinitrotoluene	606-20-2	< 0.199 U	< 0.328 U	< 0.21 UD	< 1.045 U	< 1.273 U	< 0.147 U	< 0.25 U	< 0.25 U
Metals									
Aluminum	7429-90-5	18300	4750 J	9190	3950	4360	5660	12900	6760
Antimony	7440-36-0	< 0.41 U	2.16 J	0.09	< 0.373 U	< 0.455 U	< 0.419 U	< 7.8 UJ	< 8.9 UJ
Arsenic	7440-38-2	< 2.462 U	8.39 J	2.62	< 2.216 U	< 2.7 U	< 2.487 U	5.7 J	2.9 J
Barium	7440-39-3	121	76 J	59.1	154	64.7	89.7	85.6 J	114 J
Beryllium	7440-41-7	0.9	0.31 J	0.62	0.74	0.33	0.55	2 J	1.1 J
Cadmium	7440-43-9	0.58	1.27 J	0.16	0.43	0.85	0.57	2	0.63 J
Calcium	7440-70-2	10100	9530 J	19800	22500	20300	18900	3080 J	6440
Chromium	7440-47-3	25.4	< 13.2 UJ	15.3	21	11	15.5	10.2	5.9
Cobalt	7440-48-4	< 16.923 U	< 26.4 UJ	7.32	< 14.925 U	< 18.182 U	< 17.094 U	8.1 J	3.2 J
Copper	7440-50-8	52.5	26.8 J	26.8	21.2	16.6	15.6	50.3 J	22.5 J
Iron	7439-89-6	6200	12000 J	16600	14600	5110	7280	10300	3140
Lead	7439-92-1	7.28	109 J	16.9	35.2	10.1	8.8	68.5	15.8 J
Magnesium	7439-95-4	2260	1650 J	11700	2040	2860	2130	1490 J	981 J
Manganese	7439-96-5	180	940 J	302	579	270	256	88.8	70.7

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-035 54SD-35(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-036 54SD-36(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-037 54SD-37(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-038 54SD-38(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-039 54SD-39(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-040 54SD-40(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-041 54SD-41(0-1) 0 - 1 11/28/2001 SE	54 O-54-SD-042 54SD-42DUP(0-1) 0 - 1 11/28/2001 SE
Chemical Name	CAS No								
Mercury	7439-97-6	< 0.162 R	< 0.24 UJ	< 0.027 R	< 0.149 R	< 0.182 R	< 0.162 R	0.29 J	0.23 J
Nickel	7440-02-0	< 16.923 U	< 26.4 UJ	11.4	< 14.925 U	< 18.182 U	< 17.094 U	17.7 J	6.4 J
Potassium	7440-09-7	< 846.154 U	< 1320 UJ	1990	< 746.269 U	< 909.091 U	< 854.701 U	380 J	215 J
Selenium	7782-49-2	< 3.291 U	< 4.76 UJ	1.17	12	4.14	5.32	< 3.9 U	< 4.5 U
Silver	7440-22-4	< 0.205 U	< 0.293 UJ	< 0.033 R	< 0.187 U	< 0.227 U	< 0.205 U	< 3.9 U	< 4.5 U
Sodium	7440-23-5	< 423.077 U	< 660 UJ	359	< 373.134 U	< 454.545 U	< 427.35 U	< 3910 U	< 4450 U
Thallium	7440-28-0	< 0.162 U	< 0.24 UJ	0.08	< 0.149 U	< 0.182 U	< 0.162 U	< 7.8 U	4.9 J
Vanadium	7440-62-2	42.6	36.3 J	24.7	60.1	15.8	23.9	28.1 J	8.7 J
Zinc	7440-66-6	< 42.308 U	213 J	50.1	< 37.313 U	< 45.455 U	< 42.735 U	245	43.3
Other									
1,4-Oxathiane	15980-15-1								
Dithiane	51330-42-8								
PCBs									
Aroclor 1016	12674-11-2								
Aroclor 1016	12674-11-2								
Aroclor 1221	11104-28-2								
Aroclor 1232	11141-16-5								
Aroclor 1242	53469-21-9								
Aroclor 1248	12672-29-6								
Aroclor 1254	11097-69-1								
Aroclor 1260	11096-82-5								
Aroclor 1260	11096-82-5								
Aroclor 1262	37324-23-5								
Pesticides									
4,4'-DDD	72-54-8								
4,4'-DDD	72-54-8								
4,4'-DDE	72-55-9								
4,4'-DDE	72-55-9								
4,4'-DDT	50-29-3								
4,4'-DDT	50-29-3								
Aldrin	309-00-2								
Aldrin	309-00-2								
alpha-BHC	319-84-6								
alpha-BHC	319-84-6								
Atrazine	1912-24-9								
beta-BHC	319-85-7								

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54	54	54	54	54
		O-54-SD-035	O-54-SD-036	O-54-SD-037	O-54-SD-038	O-54-SD-039	O-54-SD-040	O-54-SD-041	O-54-SD-042
		54SD-35(0-1)	54SD-36(0-1)	54SD-37(0-1)	54SD-38(0-1)	54SD-39(0-1)	54SD-40(0-1)	54SD-41(0-1)	54SD-42DUP(0-1)
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/14/1998	12/14/1998	12/14/1998	12/14/1998	12/14/1998	12/14/1998	11/28/2001	11/28/2001
		SE	SE	SE	SE	SE	SE	SE	SE
Chemical Name	CAS No								
beta-BHC	319-85-7								
Chlordane	57-74-9								
Chlordane	57-74-9								
delta-BHC	319-86-8								
delta-BHC	319-86-8								
Dieldrin	60-57-1								
Dieldrin	60-57-1								
Endosulfan I	959-98-8								
Endosulfan I	959-98-8								
Endosulfan II	33213-65-9								
Endosulfan II	33213-65-9								
Endosulfan sulfate	1031-07-8								
Endosulfan sulfate	1031-07-8								
Endrin	72-20-8								
Endrin	72-20-8								
Endrin aldehyde	7421-93-4								
Endrin ketone	53494-70-5								
gamma-BHC (Lindane)	58-89-9								
gamma-BHC (Lindane)	58-89-9								
Heptachlor	76-44-8								
Heptachlor	76-44-8								
Heptachlor epoxide	1024-57-3								
Heptachlor epoxide	1024-57-3								
Isodrin	465-73-6								
Isodrin	465-73-6								
Malathion	121-75-5								
Methoxychlor	72-43-5								
Methoxychlor	72-43-5								
Mirex	2385-85-5								
Parathion	56-38-2								
p-Chlorophenylmethyl sulfide	123-09-1								
p-Chlorophenylmethyl sulfone	98-57-7								
p-Chlorophenylmethyl sulfoxide	934-73-6								
Supona	470-90-6								
Toxaphene	8001-35-2								
Toxaphene	8001-35-2								
Vapona	62-73-7								

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-035 54SD-35(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-036 54SD-36(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-037 54SD-37(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-038 54SD-38(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-039 54SD-39(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-040 54SD-40(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-041 54SD-41(0-1) 0 - 1 11/28/2001 SE	54 O-54-SD-042 54SD-42DUP(0-1) 0 - 1 11/28/2001 SE
Chemical Name	CAS No								
SVOC									
1,1,2,2-Tetrachloroethane	79-34-5	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
1,2,4-Trichlorobenzene	120-82-1	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 U	< 2.6 U	< 2.9 U
1,2-Dichlorobenzene	95-50-1	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
1,2-Diphenylhydrazine	122-66-7								
1,3-Dichlorobenzene	541-73-1	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
1,3-Dichlorobenzene	541-73-1								
1,4-Dichlorobenzene	106-46-7	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
2,4,5-Trichlorophenol	95-95-4	< 2.564 U	< 4 UJD	< 0.449 UJD	< 2.239 U	< 2.727 U	< 2.564 U	< 2.6 U	< 2.9 U
2,4,6-Trichlorophenol	88-06-2	< 2.564 U	< 4 UJD	< 0.449 UD	< 2.239 U	< 2.727 U	< 2.564 U	< 2.6 U	< 2.9 U
2,4-Dichlorophenol	120-83-2	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 U	< 2.6 U	< 2.9 U
2,4-Dimethylphenol	105-67-9	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 U	< 2.6 U	< 2.9 U
2,4-Dinitrophenol	51-28-5	< 11.111 U	< 17.333 UJD	< 1.946 UD	< 9.701 U	< 11.818 U	< 11.111 U	< 13 U	< 14 U
2,6-Dinitroaniline	606-22-4								
2-Chloronaphthalene	91-58-7	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
2-Chlorophenol	95-57-8	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 U	< 2.6 U	< 2.9 U
2-Methylnaphthalene	91-57-6	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 U	< 2.6 U	< 2.9 U
2-Methylphenol	95-48-7	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 U	< 2.6 U	< 2.9 U
2-Nitroaniline	88-74-4	< 2.564 U	< 4 UJD	< 0.449 UD	< 2.239 U	< 2.727 U	< 2.564 U	< 13 U	< 14 U
2-Nitrophenol	88-75-5	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 U	< 2.6 U	< 2.9 U
3,3'-Dichlorobenzidine	91-94-1	< 4.274 U	< 6.667 UJD	< 0.749 UJD	< 3.731 U	< 4.545 U	< 4.274 U	< 13 U	< 14 U
3,5-Dinitroaniline	618-87-1								
3-Nitroaniline	99-09-2	< 2.564 U	< 4 UJD	< 0.449 UD	< 2.239 U	< 2.727 U	< 2.564 U	< 13 U	< 14 U
4,6-dinitro-2-Methylphenol	534-52-1	< 8.547 U	< 13.333 UJD	< 1.497 UD	< 7.463 U	< 9.091 U	< 8.547 U	< 13 U	< 14 U
4-Bromophenyl phenyl ether	101-55-3	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 U	< 2.6 U	< 2.9 U
4-Chloro-3-methylphenol	59-50-7	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 U	< 2.6 U	< 2.9 U
4-Chloroaniline	106-47-8	< 2.564 U	< 4 UJD	< 0.449 UD	< 2.239 U	< 2.727 U	< 2.564 U	< 2.6 U	< 2.9 U
4-Chlorophenyl phenyl ether	7005-72-3	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 U	< 2.6 U	< 2.9 U
4-Methylphenol	106-44-5	< 1.197 U#	< 1.867 UJD#	< 0.21 UD#	< 1.045 U#	< 1.273 U#	< 1.197 U#	< 2.6 U#	< 2.9 U#
4-Nitroaniline	100-01-6	< 2.564 U	< 4 UJD	< 0.449 UD	< 2.239 U	< 2.727 U	< 2.564 U	< 13 U	< 14 U
4-Nitrophenol	100-02-7	< 4.274 U	< 6.667 UJD	< 0.749 UD	< 3.731 U	< 4.545 U	< 4.274 U	< 13 U	< 14 U
Acenaphthene	83-32-9	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
Acenaphthylene	208-96-8	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
Aniline	62-53-3							< 2.6 U	< 2.9 U
Anthracene	120-12-7	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
Benz(a)anthracene	56-55-3	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 U	< 2.6 U	< 2.9 U
Benzo(a)pyrene	50-32-8	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 UJ	< 2.6 U	< 2.9 U

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-035 54SD-35(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-036 54SD-36(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-037 54SD-37(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-038 54SD-38(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-039 54SD-39(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-040 54SD-40(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-041 54SD-41(0-1) 0 - 1 11/28/2001 SE	54 O-54-SD-042 54SD-42DUP(0-1) 0 - 1 11/28/2001 SE
Chemical Name	CAS No								
Benzo(b)fluoranthene	205-99-2	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 UJ	< 2.6 U	< 2.9 U
Benzo(g,h,i)perylene	191-24-2	< 1.368 UJ	< 2.133 UJD	< 0.24 UJD	< 1.194 UJ	< 1.455 UJ	< 1.368 UJ	< 2.6 U	< 2.9 U
Benzo(k)fluoranthene	207-08-9	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 UJ	< 2.6 U	< 2.9 U
Benzyl alcohol	100-51-6								
bis(2-Chloroethoxy)methane	111-91-1	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
bis(2-Chloroethyl)ether	111-44-4	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
bis(2-Chloroisopropyl)ether	39638-32-9	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.855 (U)	< 1.333 UJD	< 0.15 (U)D	< 0.746 (U)	< 0.909 U	< 0.855 (U)	< 2.6 U	< 2.9 U
Butylbenzyl phthalate	85-68-7	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 U	< 2.6 U	< 2.9 U
Carbazole	86-74-8	< 0.855 U	< 2.667 UJD	< 0.299 UD	< 0.746 U	< 0.909 U	< 0.855 U	< 2.6 U	< 2.9 U
Chrysene	218-01-9	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 U	< 2.6 U	< 2.9 U
Dibenz(a,h)anthracene	53-70-3	< 1.368 UJ	< 2.133 UJD	< 0.24 UJD	< 1.194 UJ	< 1.455 UJ	< 1.368 UJ	< 2.6 U	< 2.9 U
Dibenzofuran	132-64-9	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
Dichlorobenzenes	25321-22-6								
Dicyclopentadiene	77-73-6								
Diethylphthalate	84-66-2	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
Dimethylphthalate	131-11-3	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 U	< 2.6 U	< 2.9 U
di-n-Butylphthalate	84-74-2	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
di-n-Octylphthalate	117-84-0	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 UJ	< 2.6 U	< 2.9 U
Diphenylamine	122-39-4							< 2.6 U	< 2.9 U
Fluoranthene	206-44-0	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
Fluorene	86-73-7	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
Hexachlorobenzene	118-74-1	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 U	< 2.6 U	< 2.9 U
Hexachlorobutadiene	87-68-3	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 U	< 2.6 U	< 2.9 U
Hexachlorocyclopentadiene	77-47-4	< 8.547 U	< 13.333 UJD	< 1.497 UD	< 7.463 U	< 9.091 U	< 8.547 U	< 13 U	< 14 U
Hexachloroethane	67-72-1	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 U	< 2.6 U	< 2.9 U
Indeno(1,2,3-c,d)pyrene	193-39-5	< 1.368 U	< 2.133 UJD	< 0.24 UD	< 1.194 U	< 1.455 U	< 1.368 UJ	< 2.6 U	< 2.9 U
Isophorone	78-59-1	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 U	< 2.6 U	< 2.9 U
Naphthalene	91-20-3	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
N-Nitrosodimethylamine	62-75-9								
n-Nitroso-di-n-propylamine	621-64-7	< 0.855 U	< 1.333 UJD	< 0.15 UD	< 0.746 U	< 0.909 U	< 0.855 U	< 2.6 U	< 2.9 U
n-Nitrosodiphenylamine	86-30-6	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
Pentachlorophenol	87-86-5	< 4.274 U	< 6.667 UJD	< 0.749 UD	< 3.731 U	< 4.545 U	< 4.274 U	< 2.6 U	< 2.9 U
Phenanthrene	85-01-8	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
Phenol	108-95-2	< 1.197 U	< 1.867 UJD	< 0.21 UD	< 1.045 U	< 1.273 U	< 1.197 U	< 2.6 U	< 2.9 U
Pyrene	129-00-0	< 0.598 U	< 0.933 UJD	< 0.105 UD	< 0.522 U	< 0.636 U	< 0.598 U	< 2.6 U	< 2.9 U
Vitamin E	59-02-9								1.8 NJ

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-035 54SD-35(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-036 54SD-36(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-037 54SD-37(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-038 54SD-38(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-039 54SD-39(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-040 54SD-40(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-041 54SD-41(0-1) 0 - 1 11/28/2001 SE	54 O-54-SD-042 54SD-42DUP(0-1) 0 - 1 11/28/2001 SE
Chemical Name	CAS No								
TPH									
Total Petroleum Hydrocarbons	TPH								
VOC									
1,1,1-Trichloroethane	71-55-6	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1							< 0.039 U	< 0.045 U
1,1,2-Trichloroethane	79-00-5	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
1,1-Dichloroethane	75-34-3	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
1,1-Dichloroethene	75-35-4	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
1,2,3-Trichlorobenzene	87-61-6								
1,2-Dichloroethane	107-06-2	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
1,2-Dichloroethene (total)	540-59-0								
1,2-Dichloropropane	78-87-5	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
1,3-Dichloropropane	142-28-9								
2,3,6-Trichlorophenol	933-75-5								
2-Butanone	78-93-3	< 0.171 U	< 0.267 UJ	< 0.03 U	< 0.149 UJ	< 0.182 U	< 0.171 U	0.03 J	0.14 J
2-Chloroethyl vinyl ether	110-75-8								
2-Hexanone	591-78-6	< 0.171 U	< 0.267 UJ	< 0.03 U	< 0.149 UJ	< 0.182 U	< 0.171 U	< 0.39 U	< 0.45 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.171 U	< 0.267 UJ	< 0.03 U	< 0.149 UJ	< 0.182 U	< 0.171 U	< 0.39 U	< 0.45 U
Acetone	67-64-1	< 0.085 (U)	< 0.133 (U)J	< 0.015 (U)	< 0.075 (U)J	< 0.091 (U)	< 0.085 (U)	0.07 J	0.54 J
Acetonitrile	75-05-8							< 1.6 R	< 1.8 R
Acrylonitrile	107-13-1								
Benzene	71-43-2	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Bromodichloromethane	75-27-4	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Bromoform	75-25-2	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Bromomethane	74-83-9	< 0.085 U	< 0.133 UJ	< 0.015 U	< 0.075 UJ	< 0.091 U	< 0.085 U	< 0.078 U	< 0.089 R
Carbon disulfide	75-15-0	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	0.04 J
Carbon tetrachloride	56-23-5	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Chlorobenzene	108-90-7	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Chloroethane	75-00-3	< 0.171 U	< 0.267 UJ	< 0.03 U	< 0.149 UJ	< 0.182 U	< 0.171 U	< 0.078 UJ	< 0.089 U
Chloroform	67-66-3	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Chloromethane	74-87-3	< 0.085 U	< 0.133 UJ	< 0.015 U	< 0.075 UJ	< 0.091 U	< 0.085 U	< 0.078 UJ	< 0.089 U
cis-1,2-Dichloroethene	156-59-2	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
cis-1,3-Dichloropropene	10061-01-5	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Dibromochloromethane	124-48-1	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Dibromochloropropane	96-12-8								
Dichlorodifluoromethane	75-71-8							< 0.078 U	< 0.089 U
Ethyl benzene	100-41-4	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-035 54SD-35(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-036 54SD-36(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-037 54SD-37(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-038 54SD-38(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-039 54SD-39(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-040 54SD-40(0-1) 0 - 1 12/14/1998 SE	54 O-54-SD-041 54SD-41(0-1) 0 - 1 11/28/2001 SE	54 O-54-SD-042 54SD-42DUP(0-1) 0 - 1 11/28/2001 SE
Chemical Name	CAS No								
Methylene chloride	75-09-2	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 UJ
m-Xylenes	108-38-3								
Styrene	100-42-5	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Tetrachloroethene	127-18-4	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Toluene	108-88-3	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	0.01 J
trans-1,2-Dichloroethene	156-60-5	< 42.735 U	< 66.667 UJ	< 7.485 U	< 37.313 UJ	< 45.455 U	< 42.735 U	< 0.039 U	< 0.045 U
trans-1,3-Dichloropropene	10061-02-6	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Trichloroethene	79-01-6	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
Trichlorofluoromethane	75-69-4							< 0.039 U	< 0.045 U
Vinyl chloride	75-01-4	< 0.085 U	< 0.133 UJ	< 0.015 U	< 0.075 UJ	< 0.091 U	< 0.085 U	< 0.078 U	< 0.089 U
Xylenes	1330-20-7	< 0.043 U	< 0.067 UJ	< 0.749 U	< 0.037 UJ	< 0.045 U	< 0.043 U	< 0.039 U	< 0.045 U
WetChem									
% Solids	%Solid							12.8	11.2
Cation Exchange Capacity	CEC								
Cyanide	57-12-5								
Total organic carbon	TOC								

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54 O-54-SD-042 54SD-42(0-1) 0 - 1 11/28/2001 SE	54 O-54-SD-043 54SD-43DUP(0-1) 0 - 1 11/28/2001 SE	54 O-54-SD-043 54SD-43(0-1) 0 - 1 11/28/2001 SE	54 O-SDBG-26 SDBG-26(0-0.5) 0 - .5 11/4/1993 SE
Chemical Name	CAS No				
Explosives					
1,3,5-Trinitrobenzene	99-35-4	< 0.25 U		< 0.25 U	< 0.922 U
1,3-Dinitrobenzene	99-65-0	< 0.25 U		< 0.25 U	< 0.504 U
2,4,6-Trinitrotoluene	118-96-7	< 0.25 U		< 0.25 U	< 2 U
2-amino-4,6-Dinitrotoluene	35572-78-2	< 0.25 U		< 0.25 U	
2-Nitrotoluene	88-72-2	< 0.25 U		< 0.25 U	
3-Nitrotoluene	99-08-1	< 0.25 U		< 0.25 U	< 0.34 U
4-amino-2,6-Dinitrotoluene	19406-51-0	< 0.25 U		< 0.25 U	
4-Nitrotoluene	99-99-0	< 0.25 U		< 0.25 U	
HMX	2691-41-0	< 0.5 U		< 0.5 U	< 2 U
Nitrobenzene	98-95-3	< 3.1 U		< 0.25 U	< 1.8 U
Nitrobenzene	98-95-3	< 0.25 U		< 2.2 U	< 1.14 UJ
Nitrocellulose	9004-70-0				573 B
Nitroglycerin	55-63-0				< 0.51 UJ
PETN	78-11-5				< 1 UJ
RDX	121-82-4	< 0.5 U		< 0.5 U	< 1.28 U
Tetryl	479-45-8	< 0.65 U		< 0.65 U	< 2.11 U
Explosives / SVOC					
2,4-Dinitrotoluene	121-14-2	< 0.25 U		< 2.2 U	< 1.4 U
2,4-Dinitrotoluene	121-14-2	< 3.1 U		< 0.25 U	< 2.5 U
2,6-Dinitrotoluene	606-20-2	< 3.1 U		< 0.25 U	< 2 U
2,6-Dinitrotoluene	606-20-2	< 0.25 U		< 2.2 U	< 0.32 U
Metals					
Aluminum	7429-90-5	5540		10100	1570
Antimony	7440-36-0	< 9.5 UJ		< 6.6 UJ	< 1 U
Arsenic	7440-38-2	3.3 J		2.1 J	< 2.5 U
Barium	7440-39-3	110 J		100 J	101
Beryllium	7440-41-7	1.4 J		0.31 J	< 0.427 U
Cadmium	7440-43-9	0.96 J		< 1.3 U	< 1.2 U
Calcium	7440-70-2	5370		3460	9020
Chromium	7440-47-3	4.4 J		7.6	< 1.04 U
Cobalt	7440-48-4	4.2 J		2.7 J	< 2.5 U
Copper	7440-50-8	38.7 J		9.7 J	< 2.84 U
Iron	7439-89-6	2800		3070	2020
Lead	7439-92-1	50.2 J		9.7	< 7.44 U
Magnesium	7439-95-4	786 J		902 J	1270
Manganese	7439-96-5	69.9		68.8	119

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54
		O-54-SD-042	O-54-SD-043	O-54-SD-043	O-SDBG-26
		54SD-42(0-1)	54SD-43DUP(0-1)	54SD-43(0-1)	SDBG-26(0-0.5)
		0 - 1	0 - 1	0 - 1	0 - .5
		11/28/2001	11/28/2001	11/28/2001	11/4/1993
		SE	SE	SE	SE
Chemical Name	CAS No				
Mercury	7439-97-6	0.37 J		0.12 J	< 0.05 U
Nickel	7440-02-0	11.8 J		4.4 J	< 2.74 U
Potassium	7440-09-7	180 J		221 J	< 131 U
Selenium	7782-49-2	< 4.7 U		< 3.3 U	< 0.449 U
Silver	7440-22-4	< 4.7 U		< 3.3 U	< 0.803 U
Sodium	7440-23-5	< 4740 U		< 3300 U	< 38.7 U
Thallium	7440-28-0	< 9.5 U		< 6.6 U	< 34.3 U
Vanadium	7440-62-2	10.6 J		13.3 J	< 1.41 U
Zinc	7440-66-6	106		32.5	31.9
Other					
1,4-Oxathiane	15980-15-1				< 0.075 U
Dithiane	51330-42-8				< 0.065 U
PCBs					
Aroclor 1016	12674-11-2				< 0.32 U
Aroclor 1016	12674-11-2				< 0.1 U
Aroclor 1221	11104-28-2				< 0.1 UT
Aroclor 1232	11141-16-5				< 0.1 UT
Aroclor 1242	53469-21-9				< 0.1 UT
Aroclor 1248	12672-29-6				< 0.1 UT
Aroclor 1254	11097-69-1				< 0.0479 UT
Aroclor 1260	11096-82-5				< 0.0479 U
Aroclor 1260	11096-82-5				< 0.79 U
Aroclor 1262	37324-23-5				< 6.3 U
Pesticides					
4,4'-DDD	72-54-8				< 0.064 U
4,4'-DDD	72-54-8				0.02
4,4'-DDE	72-55-9				< 0.068 U
4,4'-DDE	72-55-9				< 0.27 U
4,4'-DDT	50-29-3				< 0.1 U
4,4'-DDT	50-29-3				< 0.35 U
Aldrin	309-00-2				< 1.3 U
Aldrin	309-00-2				< 0.14 U
alpha-BHC	319-84-6				< 1.3 U
alpha-BHC	319-84-6				< 0.28 U
Atrazine	1912-24-9				< 0.065 U
beta-BHC	319-85-7				< 1.3 U

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54
		O-54-SD-042	O-54-SD-043	O-54-SD-043	O-SDBG-26
		54SD-42(0-1)	54SD-43DUP(0-1)	54SD-43(0-1)	SDBG-26(0-0.5)
		0 - 1	0 - 1	0 - 1	0 - .5
		11/28/2001	11/28/2001	11/28/2001	11/4/1993
		SE	SE	SE	SE
Chemical Name	CAS No				
beta-BHC	319-85-7				< 0.77 U
Chlordane	57-74-9				< 0.68 U
Chlordane	57-74-9				< 0.0684 U
delta-BHC	319-86-8				< 0.85 U
delta-BHC	319-86-8				< 0.21 U
Dieldrin	60-57-1				< 0.079 U
Dieldrin	60-57-1				< 0.16 U
Endosulfan I	959-98-8				< 0.4 U
Endosulfan I	959-98-8				< 0.1 U
Endosulfan II	33213-65-9				< 0.07 U
Endosulfan II	33213-65-9				< 2.4 U
Endosulfan sulfate	1031-07-8				< 1.2 U
Endosulfan sulfate	1031-07-8				0.01 N
Endrin	72-20-8				< 1.3 U
Endrin	72-20-8				< 0.65 UJ
Endrin aldehyde	7421-93-4				< 1.8 U
Endrin ketone	53494-70-5				0.01 N
gamma-BHC (Lindane)	58-89-9				< 0.1 U
gamma-BHC (Lindane)	58-89-9				< 0.1 U
Heptachlor	76-44-8				< 0.24 U
Heptachlor	76-44-8				< 0.22 U
Heptachlor epoxide	1024-57-3				< 0.48 U
Heptachlor epoxide	1024-57-3				< 0.13 U
Isodrin	465-73-6				< 0.3 U
Isodrin	465-73-6				< 0.48 U
Malathion	121-75-5				< 0.18 U
Methoxychlor	72-43-5				< 0.0359 U
Methoxychlor	72-43-5				< 0.26 U
Mirex	2385-85-5				< 0.14 U
Parathion	56-38-2				< 1.7 U
p-Chlorophenylmethyl sulfide	123-09-1				< 0.097 U
p-Chlorophenylmethyl sulfone	98-57-7				< 0.066 U
p-Chlorophenylmethyl sulfoxide	934-73-6				< 0.32 U
Supona	470-90-6				< 0.92 U
Toxaphene	8001-35-2				< 12 U
Toxaphene	8001-35-2				< 0.226 U
Vapona	62-73-7				< 0.068 U

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54
		O-54-SD-042	O-54-SD-043	O-54-SD-043	O-SDBG-26
		54SD-42(0-1)	54SD-43DUP(0-1)	54SD-43(0-1)	SDBG-26(0-0.5)
		0 - 1	0 - 1	0 - 1	0 - .5
		11/28/2001	11/28/2001	11/28/2001	11/4/1993
		SE	SE	SE	SE
Chemical Name	CAS No				
SVOC					
1,1,2,2-Tetrachloroethane	79-34-5	< 0.047 UJ		< 0.033 U	< 0.2 U
1,2,4-Trichlorobenzene	120-82-1	< 3.1 U		< 2.2 U	< 0.22 U
1,2-Dichlorobenzene	95-50-1	< 3.1 U		< 2.2 U	< 0.042 U
1,2-Diphenylhydrazine	122-66-7				< 0.52 U
1,3-Dichlorobenzene	541-73-1	< 3.1 U		< 2.2 U	< 0.14 U
1,3-Dichlorobenzene	541-73-1				< 0.042 U
1,4-Dichlorobenzene	106-46-7	< 3.1 U		< 2.2 U	< 0.034 U
2,4,5-Trichlorophenol	95-95-4	< 3.1 U		< 2.2 U	< 0.49 U
2,4,6-Trichlorophenol	88-06-2	< 3.1 U		< 2.2 U	< 0.061 U
2,4-Dichlorophenol	120-83-2	< 3.1 U		< 2.2 U	< 0.065 U
2,4-Dimethylphenol	105-67-9	< 3.1 U		< 2.2 U	< 3 U
2,4-Dinitrophenol	51-28-5	< 15 U		< 11 U	< 4.7 U
2,6-Dinitroaniline	606-22-4				< 0.57 U
2-Chloronaphthalene	91-58-7	< 3.1 U		< 2.2 U	< 0.24 U
2-Chlorophenol	95-57-8	< 3.1 U		< 2.2 U	< 0.055 U
2-Methylnaphthalene	91-57-6	< 3.1 U		< 2.2 U	< 0.032 U
2-Methylphenol	95-48-7	< 3.1 U		< 2.2 U	< 0.098 U
2-Nitroaniline	88-74-4	< 15 U		< 11 U	
2-Nitrophenol	88-75-5	< 3.1 U		< 2.2 U	< 1.1 U
3,3'-Dichlorobenzidine	91-94-1	< 15 U		< 11 U	< 1.6 U
3,5-Dinitroaniline	618-87-1				< 1.6 U
3-Nitroaniline	99-09-2	< 15 U		< 11 U	< 3 U
4,6-dinitro-2-Methylphenol	534-52-1	< 15 U		< 11 U	< 0.8 U
4-Bromophenyl phenyl ether	101-55-3	< 3.1 U		< 2.2 U	< 0.041 U
4-Chloro-3-methylphenol	59-50-7	< 3.1 U		< 2.2 U	< 0.93 U
4-Chloroaniline	106-47-8	< 3.1 U		< 2.2 U	
4-Chlorophenyl phenyl ether	7005-72-3	< 3.1 U		< 2.2 U	< 0.17 U
4-Methylphenol	106-44-5	< 3.1 U#		< 2.2 U#	< 0.24 U#
4-Nitroaniline	100-01-6	< 15 U		< 11 U	
4-Nitrophenol	100-02-7	< 15 U		< 11 U	< 3.3 U
Acenaphthene	83-32-9	< 3.1 U		< 2.2 U	< 0.041 U
Acenaphthylene	208-96-8	< 3.1 U		< 2.2 U	< 0.033 U
Aniline	62-53-3	< 3.1 U		< 2.2 U	
Anthracene	120-12-7	< 3.1 U		< 2.2 U	< 0.71 U
Benz(a)anthracene	56-55-3	< 3.1 U		< 2.2 U	< 0.041 U
Benzo(a)pyrene	50-32-8	< 3.1 U		< 2.2 U	< 1.2 U

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54
		O-54-SD-042	O-54-SD-043	O-54-SD-043	O-SDBG-26
		54SD-42(0-1)	54SD-43DUP(0-1)	54SD-43(0-1)	SDBG-26(0-0.5)
		0 - 1	0 - 1	0 - 1	0 - .5
		11/28/2001	11/28/2001	11/28/2001	11/4/1993
		SE	SE	SE	SE
Chemical Name	CAS No				
Benzo(b)fluoranthene	205-99-2	< 3.1 U		< 2.2 U	< 0.31 U
Benzo(g,h,i)perylene	191-24-2	< 3.1 U		< 2.2 U	< 0.18 U
Benzo(k)fluoranthene	207-08-9	< 3.1 U		< 2.2 U	< 0.13 U
Benzyl alcohol	100-51-6				< 0.032 U
bis(2-Chloroethoxy)methane	111-91-1	< 3.1 U		< 2.2 U	< 0.19 U
bis(2-Chloroethyl)ether	111-44-4	< 3.1 U		< 2.2 U	< 0.36 U
bis(2-Chloroisopropyl)ether	39638-32-9	< 3.1 U		< 2.2 U	< 0.44 U
bis(2-Ethylhexyl)phthalate	117-81-7	< 3.1 U		< 2.2 U	< 0.48 U
Butylbenzyl phthalate	85-68-7	< 3.1 U		< 2.2 U	< 1.8 U
Carbazole	86-74-8	< 3.1 U		< 2.2 U	
Chrysene	218-01-9	< 3.1 U		< 2.2 U	< 0.032 U
Dibenz(a,h)anthracene	53-70-3	< 3.1 U		< 2.2 U	< 0.31 U
Dibenzofuran	132-64-9	< 3.1 U		< 2.2 U	< 0.38 U
Dichlorobenzenes	25321-22-6				< 0.2 U
Dicyclopentadiene	77-73-6				< 0.57 U
Diethylphthalate	84-66-2	< 3.1 U		< 2.2 U	< 0.24 U
Dimethylphthalate	131-11-3	< 3.1 U		< 2.2 U	< 0.063 U
di-n-Butylphthalate	84-74-2	< 3.1 U		< 2.2 U	< 1.3 U
di-n-Octylphthalate	117-84-0	< 3.1 U		< 2.2 U	< 0.23 U
Diphenylamine	122-39-4	< 3.1 U		< 2.2 U	
Fluoranthene	206-44-0	< 3.1 U		< 2.2 U	< 0.032 U
Fluorene	86-73-7	< 3.1 U		< 2.2 U	< 0.065 U
Hexachlorobenzene	118-74-1	< 3.1 U		< 2.2 U	< 0.08 U
Hexachlorobutadiene	87-68-3	< 3.1 U		< 2.2 U	< 0.97 U
Hexachlorocyclopentadiene	77-47-4	< 15 U		< 11 U	< 0.52 U
Hexachloroethane	67-72-1	< 3.1 U		< 2.2 U	< 1.8 U
Indeno(1,2,3-c,d)pyrene	193-39-5	< 3.1 U		< 2.2 U	< 2.4 U
Isophorone	78-59-1	< 3.1 U		< 2.2 U	< 0.39 U
Naphthalene	91-20-3	< 3.1 U		< 2.2 U	< 0.74 U
N-Nitrosodimethylamine	62-75-9				< 0.46 U
n-Nitroso-di-n-propylamine	621-64-7	< 3.1 U		< 2.2 U	< 1.1 U
n-Nitrosodiphenylamine	86-30-6	< 3.1 U		< 2.2 U	< 0.29 U
Pentachlorophenol	87-86-5	< 3.1 U		< 2.2 U	< 0.76 U
Phenanthrene	85-01-8	< 3.1 U		< 2.2 U	< 0.032 U
Phenol	108-95-2	< 3.1 U		< 2.2 U	< 0.052 U
Pyrene	129-00-0	< 3.1 U		< 2.2 U	< 0.083 U
Vitamin E	59-02-9	1.7 NJ		2.1 NJ	

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54
		O-54-SD-042	O-54-SD-043	O-54-SD-043	O-SDBG-26
		54SD-42(0-1)	54SD-43DUP(0-1)	54SD-43(0-1)	SDBG-26(0-0.5)
		0 - 1	0 - 1	0 - 1	0 - .5
		11/28/2001	11/28/2001	11/28/2001	11/4/1993
		SE	SE	SE	SE
Chemical Name	CAS No				
TPH					
Total Petroleum Hydrocarbons	TPH				582
VOC					
1,1,1-Trichloroethane	71-55-6	< 0.047 U		< 0.033 U	< 0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	< 0.047 U		< 0.033 U	
1,1,2-Trichloroethane	79-00-5	< 0.047 U		< 0.033 U	< 0.33 U
1,1-Dichloroethane	75-34-3	< 0.047 U		< 0.033 U	< 0.49 U
1,1-Dichloroethene	75-35-4	< 0.047 U		< 0.033 U	< 0.27 U
1,2,3-Trichlorobenzene	87-61-6				< 0.032 U
1,2-Dichloroethane	107-06-2	< 0.047 U		< 0.033 U	< 0.32 U
1,2-Dichloroethene (total)	540-59-0				< 0.32 U
1,2-Dichloropropane	78-87-5	< 0.047 U		< 0.033 U	< 0.53 U
1,3-Dichloropropane	142-28-9				< 0.2 U
2,3,6-Trichlorophenol	933-75-5				< 0.62 U
2-Butanone	78-93-3	0.12 J		0.05 J	< 4.3 U
2-Chloroethyl vinyl ether	110-75-8				< 0.5 U
2-Hexanone	591-78-6	< 0.47 UJ		< 0.33 U	
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.47 UJ		< 0.33 U	< 0.63 U
Acetone	67-64-1	0.43 J		0.17 J	< 3.3 U
Acetonitrile	75-05-8	< 1.9 R		< 1.3 R	
Acrylonitrile	107-13-1				< 2 U
Benzene	71-43-2	< 0.047 U		< 0.033 U	< 0.1 U
Bromodichloromethane	75-27-4	< 0.047 U		< 0.033 U	< 0.2 U
Bromoform	75-25-2	< 0.047 U		< 0.033 U	< 0.2 U
Bromomethane	74-83-9	< 0.095 U		< 0.066 U	< 0.26 U
Carbon disulfide	75-15-0	0.01 J		3.1 J	
Carbon tetrachloride	56-23-5	< 0.047 U		< 0.033 U	< 0.31 U
Chlorobenzene	108-90-7	< 0.047 UJ		< 0.033 U	< 0.1 U
Chloroethane	75-00-3	< 0.095 UJ		< 0.066 UJ	< 0.64 U
Chloroform	67-66-3	< 0.047 U		< 0.033 U	< 0.24 U
Chloromethane	74-87-3	< 0.095 U		< 0.066 U	< 0.96 U
cis-1,2-Dichloroethene	156-59-2	< 0.047 U		< 0.033 U	
cis-1,3-Dichloropropene	10061-01-5	< 0.047 U		< 0.033 U	
Dibromochloromethane	124-48-1	< 0.047 U		< 0.033 U	< 0.25 U
Dibromochloropropane	96-12-8				< 0.071 U
Dichlorodifluoromethane	75-71-8	< 0.095 UJ		< 0.066 UJ	
Ethyl benzene	100-41-4	< 0.047 UJ		< 0.033 U	< 0.19 U

Table A-2
Historical Analytical Results for Sediment Samples at PICA 015 / Site 54

		54	54	54	54
		O-54-SD-042	O-54-SD-043	O-54-SD-043	O-SDBG-26
		54SD-42(0-1)	54SD-43DUP(0-1)	54SD-43(0-1)	SDBG-26(0-0.5)
		0 - 1	0 - 1	0 - 1	0 - .5
		11/28/2001	11/28/2001	11/28/2001	11/4/1993
		SE	SE	SE	SE
Chemical Name	CAS No				
Methylene chloride	75-09-2	< 0.047 U		< 0.033 U	< 4.4 U
m-Xylenes	108-38-3				< 0.23 U
Styrene	100-42-5	< 0.047 UJ		< 0.033 U	
Tetrachloroethene	127-18-4	< 0.047 UJ		< 0.033 U	< 0.16 U
Toluene	108-88-3	0.02 J		0.58 J	< 0.1 U
trans-1,2-Dichloroethene	156-60-5	< 0.047 U		< 0.033 U	
trans-1,3-Dichloropropene	10061-02-6	< 0.047 U		< 0.033 U	
Trichloroethene	79-01-6	< 0.047 U		< 0.033 U	< 0.23 U
Trichlorofluoromethane	75-69-4	< 0.047 U		< 0.033 U	< 0.23 U
Vinyl chloride	75-01-4	< 0.095 U		< 0.066 U	< 1.8 U
Xylenes	1330-20-7	< 0.047 UJ		< 0.033 U	< 0.78 U
WetChem					
% Solids	%Solid	10.6	14.9	15.1	
Cation Exchange Capacity	CEC				48400 D
Cyanide	57-12-5				< 0.25 U
Total organic carbon	TOC				484000

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-3
Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54
		Location ID	O-54-SW-001	O-54-SW-002	O-54-SW-003	O-54-SW-004
		Sample ID	54SW-1(19981207)	54SW-2(19981207)	54SW-3(19981207)	54SW-4(19981207)
		Depth Interval				
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Explosives						
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ
2-amino-4,6-Dinitrotoluene	35572-78-2	ug/L	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ
2-Nitrotoluene	88-72-2	ug/L	< 0.1 UJ	< 0.1 UJ	< 0.1 UJ	< 0.1 UJ
3-Nitrotoluene	99-08-1	ug/L	< 0.1 UJ	< 0.1 UJ	< 0.1 UJ	< 0.1 UJ
4-amino-2,6-Dinitrotoluene	19406-51-0	ug/L	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ
4-Nitrotoluene	99-99-0	ug/L	< 0.1 UJ	< 0.1 UJ	< 0.1 UJ	< 0.1 UJ
HMX	2691-41-0	ug/L	< 0.1 UJ	< 0.1 UJ	< 0.1 UJ	< 0.1 UJ
Nitrobenzene	98-95-3	ug/L	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ
Nitrobenzene	98-95-3	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Nitrocellulose	9004-70-0	ug/L				
Nitroglycerin	55-63-0	ug/L				
PETN	78-11-5	ug/L				
RDX	121-82-4	ug/L	< 0.1 UJ	< 0.1 UJ	< 0.1 UJ	< 0.1 UJ
Tetryl	479-45-8	ug/L	< 0.05 R	< 0.1 UJ	< 0.1 UJ	< 0.1 UJ
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ
2,4-Dinitrotoluene	121-14-2	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
2,6-Dinitrotoluene	606-20-2	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ	< 0.05 UJ
Metals						
Aluminum	7429-90-5	ug/L	< 50 U	131	215	< 50 U
Antimony	7440-36-0	ug/L	< 0.556 U	< 0.556 U	< 0.556 U	< 0.556 U
Arsenic	7440-38-2	ug/L	< 1.11 U	< 1.11 U	< 1.11 U	< 1.11 U
Barium	7440-39-3	ug/L	10.8	13.1	10.9	10.6
Beryllium	7440-41-7	ug/L	< 0.222 UJ	< 0.222 UJ	< 0.222 UJ	< 0.222 UJ
Cadmium	7440-43-9	ug/L	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U
Calcium	7440-70-2	ug/L	6450	6660	5930	6090
Chromium	7440-47-3	ug/L	< 2.2 U	< 2.2 U	< 2.2 U	< 2.2 U
Cobalt	7440-48-4	ug/L	< 0.556 U	< 0.556 U	< 0.556 U	< 0.556 U
Copper	7440-50-8	ug/L	< 3.3 UJ	< 3.3 UJ	< 3.3 UJ	< 3.3 UJ
Iron	7439-89-6	ug/L	94.5	276	294	99.2
Lead	7439-92-1	ug/L	< 0.556 U	3.06	0.73	< 0.556 U
Magnesium	7439-95-4	ug/L	2940	3020	2780	2770
Manganese	7439-96-5	ug/L	8.86	33.3	10.9	8.15
Mercury	7439-97-6	ug/L	< 0.556 U	< 0.556 U	< 0.556 U	< 0.556 U
Nickel	7440-02-0	ug/L	< 5.6 U	< 5.6 U	< 5.6 U	< 5.6 U
Potassium	7440-09-7	ug/L	< 1000 U	< 1000 U	< 1000 U	< 1000 U

Table A-3
Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54
		Location ID	O-54-SW-001	O-54-SW-002	O-54-SW-003	O-54-SW-004
		Sample ID	54SW-1(19981207)	54SW-2(19981207)	54SW-3(19981207)	54SW-4(19981207)
		Depth Interval				
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Selenium	7782-49-2	ug/L	< 6.11 U	< 6.11 U	< 6.11 U	< 6.11 U
Silver	7440-22-4	ug/L	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U
Sodium	7440-23-5	ug/L	10900	11000	10100	10400
Thallium	7440-28-0	ug/L	< 0.111 U	< 0.111 U	< 0.111 U	< 0.111 U
Vanadium	7440-62-2	ug/L	< 2.2 U	< 2.2 U	< 2.2 U	< 2.2 U
Zinc	7440-66-6	ug/L	< 16.7 U	< 16.7 U	< 16.7 U	< 16.7 U
Other						
1,4-Oxathiane	15980-15-1	ug/L				
Diisopropyl methylphosphonate	1445-75-6	ug/L				
Dimethylmethylphosphonate	756-79-6	ug/L				
Dithiane	51330-42-8	ug/L				
PCBs						
Aroclor 1016	12674-11-2	ug/L				
Aroclor 1221	11104-28-2	ug/L				
Aroclor 1232	11141-16-5	ug/L				
Aroclor 1242	53469-21-9	ug/L				
Aroclor 1248	12672-29-6	ug/L				
Aroclor 1254	11097-69-1	ug/L				
Aroclor 1260	11096-82-5	ug/L				
Pesticides						
4,4'-DDD	72-54-8	ug/L				
4,4'-DDD	72-54-8	ug/L				
4,4'-DDE	72-55-9	ug/L				
4,4'-DDE	72-55-9	ug/L				
4,4'-DDT	50-29-3	ug/L				
4,4'-DDT	50-29-3	ug/L				
Aldrin	309-00-2	ug/L				
Aldrin	309-00-2	ug/L				
alpha-BHC	319-84-6	ug/L				
alpha-BHC	319-84-6	ug/L				
Atrazine	1912-24-9	ug/L				
beta-BHC	319-85-7	ug/L				
beta-BHC	319-85-7	ug/L				
Bromacil	314-40-9	ug/L				
Chlordane	57-74-9	ug/L				
Chlordane	57-74-9	ug/L				
delta-BHC	319-86-8	ug/L				
Dieldrin	60-57-1	ug/L				
Dieldrin	60-57-1	ug/L				
Endosulfan I	959-98-8	ug/L				

Table A-3
Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54
		Location ID	O-54-SW-001	O-54-SW-002	O-54-SW-003	O-54-SW-004
		Sample ID	54SW-1(19981207)	54SW-2(19981207)	54SW-3(19981207)	54SW-4(19981207)
		Depth Interval				
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Endosulfan I	959-98-8	ug/L				
Endosulfan II	33213-65-9	ug/L				
Endosulfan II	33213-65-9	ug/L				
Endosulfan sulfate	1031-07-8	ug/L				
Endosulfan sulfate	1031-07-8	ug/L				
Endrin	72-20-8	ug/L				
Endrin	72-20-8	ug/L				
Endrin aldehyde	7421-93-4	ug/L				
Endrin aldehyde	7421-93-4	ug/L				
Endrin ketone	53494-70-5	ug/L				
gamma-BHC (Lindane)	58-89-9	ug/L				
gamma-BHC (Lindane)	58-89-9	ug/L				
Heptachlor	76-44-8	ug/L				
Heptachlor	76-44-8	ug/L				
Heptachlor epoxide	1024-57-3	ug/L				
Heptachlor epoxide	1024-57-3	ug/L				
Isodrin	465-73-6	ug/L				
Isodrin	465-73-6	ug/L				
Malathion	121-75-5	ug/L				
Methoxychlor	72-43-5	ug/L				
Methoxychlor	72-43-5	ug/L				
Mirex	2385-85-5	ug/L				
Parathion	56-38-2	ug/L				
p-Chlorophenylmethyl sulfide	123-09-1	ug/L				
p-Chlorophenylmethyl sulfone	98-57-7	ug/L				
p-Chlorophenylmethyl sulfoxide	934-73-6	ug/L				
Supona	470-90-6	ug/L				
Toxaphene	8001-35-2	ug/L				
Vapona	62-73-7	ug/L				
SVOC						
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
1,2,4-Trichlorobenzene	120-82-1	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
1,2-Dichlorobenzene	95-50-1	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
1,2-Diphenylhydrazine	122-66-7	ug/L				
1,3-Dichlorobenzene	541-73-1	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
1,3-Dichlorobenzene	541-73-1	ug/L				
1,4-Dichlorobenzene	106-46-7	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
2,4,5-Trichlorophenol	95-95-4	ug/L	< 4 UJ	< 4 UJ	< 4 UJ	< 4 UJ
2,4,6-Trichlorophenol	88-06-2	ug/L	< 4.5 UJ	< 4.5 UJ	< 4.5 UJ	< 4.5 UJ
2,4-Dichlorophenol	120-83-2	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ

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Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54
		Location ID	O-54-SW-001	O-54-SW-002	O-54-SW-003	O-54-SW-004
		Sample ID	54SW-1(19981207)	54SW-2(19981207)	54SW-3(19981207)	54SW-4(19981207)
		Depth Interval				
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
2,4-Dimethylphenol	105-67-9	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
2,4-Dinitrophenol	51-28-5	ug/L	< 30 UJ	< 30 UJ	< 30 UJ	< 30 UJ
2,6-Dinitroaniline	606-22-4	ug/L				
2-Chloronaphthalene	91-58-7	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
2-Chlorophenol	95-57-8	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
2-Methylnaphthalene	91-57-6	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
2-Methylphenol	95-48-7	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
2-Nitroaniline	88-74-4	ug/L	< 5 UJ	< 5 UJ	< 5 UJ	< 5 UJ
2-Nitrophenol	88-75-5	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
3,3'-Dichlorobenzidine	91-94-1	ug/L	< 5 UJ	< 5 UJ	< 5 UJ	< 5 UJ
3,5-Dinitroaniline	618-87-1	ug/L				
3-Nitroaniline	99-09-2	ug/L	< 5 UJ	< 5 UJ	< 5 UJ	< 5 UJ
4,6-dinitro-2-Methylphenol	534-52-1	ug/L	< 20 UJ	< 20 UJ	< 20 UJ	< 20 UJ
4-Bromophenyl phenyl ether	101-55-3	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
4-Chloro-3-methylphenol	59-50-7	ug/L	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ
4-Chloroaniline	106-47-8	ug/L	< 4 UJ	< 4 UJ	< 4 UJ	< 4 UJ
4-Chlorophenyl phenyl ether	7005-72-3	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
4-Methylphenol	106-44-5	ug/L	< 2 UJ#	< 2 UJ#	< 2 UJ#	< 2 UJ#
4-Nitroaniline	100-01-6	ug/L	< 5 UJ	< 5 UJ	< 5 UJ	< 5 UJ
4-Nitrophenol	100-02-7	ug/L	< 10 UJ	< 10 UJ	< 10 UJ	< 10 UJ
Acenaphthene	83-32-9	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Acenaphthylene	208-96-8	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Aniline	62-53-3	ug/L				
Anthracene	120-12-7	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Benz(a)anthracene	56-55-3	ug/L	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ
Benzo(a)pyrene	50-32-8	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
Benzo(b)fluoranthene	205-99-2	ug/L	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ
Benzo(g,h,i)perylene	191-24-2	ug/L	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
Benzo(k)fluoranthene	207-08-9	ug/L	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ
Benzyl alcohol	100-51-6	ug/L				
bis(2-Chloroethoxy)methane	111-91-1	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
bis(2-Chloroethyl)ether	111-44-4	ug/L	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ
bis(2-Chloroisopropyl)ether	39638-32-9	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
Butylbenzyl phthalate	85-68-7	ug/L	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ
Carbazole	86-74-8	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
Chrysene	218-01-9	ug/L	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ
Dibenz(a,h)anthracene	53-70-3	ug/L	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
Dibenzofuran	132-64-9	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Dichlorobenzenes	25321-22-6	ug/L				

Table A-3
Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54
		Location ID	O-54-SW-001	O-54-SW-002	O-54-SW-003	O-54-SW-004
		Sample ID	54SW-1(19981207)	54SW-2(19981207)	54SW-3(19981207)	54SW-4(19981207)
		Depth Interval				
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Dicyclopentadiene	77-73-6	ug/L				
Diethylphthalate	84-66-2	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Dimethylphthalate	131-11-3	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
di-n-Butylphthalate	84-74-2	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
di-n-Octylphthalate	117-84-0	ug/L	< 2.4 UJ	< 2.4 UJ	< 2.4 UJ	< 2.4 UJ
Diphenylamine	122-39-4	ug/L				
Fluoranthene	206-44-0	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Fluorene	86-73-7	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Hexachlorobenzene	118-74-1	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
Hexachlorobutadiene	87-68-3	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
Hexachlorocyclopentadiene	77-47-4	ug/L	< 10 UJ	< 10 UJ	< 10 UJ	< 10 UJ
Hexachloroethane	67-72-1	ug/L	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ	< 1.5 UJ
Indeno(1,2,3-c,d)pyrene	193-39-5	ug/L	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ	< 2.5 UJ
Isophorone	78-59-1	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Naphthalene	91-20-3	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
N-Nitrosodimethylamine	62-75-9	ug/L				
n-Nitroso-di-n-propylamine	621-64-7	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
n-Nitrosodiphenylamine	86-30-6	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Pentachlorophenol	87-86-5	ug/L	< 10 UJ	< 10 UJ	< 10 UJ	< 10 UJ
Phenanthrene	85-01-8	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Phenol	108-95-2	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ
Pyrene	129-00-0	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
TPH						
Total Petroleum Hydrocarbons	TPH	ug/L				
VOC						
1,1,1-Trichloroethane	71-55-6	ug/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L	< 15 U	< 15 U	< 15 U	< 15 U
1,1,2-Trichloroethane	79-00-5	ug/L	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
1,1-Dichloroethane	75-34-3	ug/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
1,1-Dichloroethene	75-35-4	ug/L	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U
1,2,3-Trichlorobenzene	87-61-6	ug/L				
1,2-Dichloroethane	107-06-2	ug/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
1,2-Dichloroethene (total)	540-59-0	ug/L				
1,2-Dichloropropane	78-87-5	ug/L	< 2 U	< 2 U	< 2 U	< 2 U
1,3-Dichloropropane	142-28-9	ug/L				
2,3,6-Trichlorophenol	933-75-5	ug/L				
2-Butanone	78-93-3	ug/L	< 10 U	< 10 U	< 10 U	< 10 U
2-Chloroethyl vinyl ether	110-75-8	ug/L				
2-Hexanone	591-78-6	ug/L	< 21 U	< 21 U	< 21 U	< 21 U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	< 12 U	< 12 U	< 12 U	< 12 U

Table A-3
Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54
		Location ID	O-54-SW-001	O-54-SW-002	O-54-SW-003	O-54-SW-004
		Sample ID	54SW-1(19981207)	54SW-2(19981207)	54SW-3(19981207)	54SW-4(19981207)
		Depth Interval				
		Sample Date	12/7/1998	12/7/1998	12/7/1998	12/7/1998
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Acetone	67-64-1	ug/L	< 9 (U)	< 9 (U)	< 9 (U)	< 9 U
Acetonitrile	75-05-8	ug/L	< 200 U	< 200 U	< 200 U	< 200 U
Acrylonitrile	107-13-1	ug/L				
Benzene	71-43-2	ug/L	< 1 U	< 1 U	< 1 U	< 1 U
Bromodichloromethane	75-27-4	ug/L	< 2.2 U	< 2.2 U	< 2.2 U	< 2.2 U
Bromoform	75-25-2	ug/L	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Bromomethane	74-83-9	ug/L	< 3.5 U	< 3.5 U	< 3.5 U	< 3.5 U
Carbon disulfide	75-15-0	ug/L	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
Carbon tetrachloride	56-23-5	ug/L	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Chlorobenzene	108-90-7	ug/L	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U
Chloroethane	75-00-3	ug/L	< 8.2 U	< 8.2 U	< 8.2 U	< 8.2 U
Chloroform	67-66-3	ug/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Chloromethane	74-87-3	ug/L	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
cis-1,2-Dichloroethene	156-59-2	ug/L	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U
cis-1,3-Dichloropropene	10061-01-5	ug/L	< 2 U	< 2 U	< 2 U	< 2 U
Dibromochloromethane	124-48-1	ug/L	< 2.3 U	< 2.3 U	< 2.3 U	< 2.3 U
Dibromochloropropane	96-12-8	ug/L				
Dichlorodifluoromethane	75-71-8	ug/L	< 5 U	< 5 U	< 5 U	< 5 U
Ethyl benzene	100-41-4	ug/L	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U
Methylene chloride	75-09-2	ug/L	< 6.4 (U)	< 6.4 (U)	< 6.4 (U)	< 6.4 (U)
m-Xylenes	108-38-3	ug/L				
Styrene	100-42-5	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Tetrachloroethene	127-18-4	ug/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
Toluene	108-88-3	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
trans-1,2-Dichloroethene	156-60-5	ug/L	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U
trans-1,3-Dichloropropene	10061-02-6	ug/L	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Trichloroethene	79-01-6	ug/L	< 3 U	< 3 U	< 3 U	< 3 U
Trichlorofluoromethane	75-69-4	ug/L	< 4.6 U	< 4.6 U	< 4.6 U	< 4.6 U
Vinyl chloride	75-01-4	ug/L	< 4.6 U	< 4.6 U	< 4.6 U	< 4.6 U
Xylenes	1330-20-7	ug/L	< 3.72 U	< 3.72 U	< 3.72 U	< 3.72 U
WetChem						
Cyanide	57-12-5	ug/L				
Hardness	HARDNESS	ug/L				

Notes:

LOC - Level of Concern
mg/kg - milligrams per kilogram
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-3
Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54	54
		Location ID	O-54-SW-041	O-54-SW-042	O-54-SW-042	O-54-SW-043	O-SWBG-26
		Sample ID	54SW-41(20011128)	54SW-42DUP(20011128)	54SW-42(20011128)	54SW-43(20011128)	SWBG-26(19931104)
		Depth Interval					
		Sample Date	11/28/2001	11/28/2001	11/28/2001	11/28/2001	11/4/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
Explosives							
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 2.1 UJD
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.458 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.426 U
2-amino-4,6-Dinitrotoluene	35572-78-2	ug/L	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	
2-Nitrotoluene	88-72-2	ug/L	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	
3-Nitrotoluene	99-08-1	ug/L	< 0.2 U	< 0.2 U	< 0.2 U	0.15 J	< 2.9 U
4-amino-2,6-Dinitrotoluene	19406-51-0	ug/L	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	
4-Nitrotoluene	99-99-0	ug/L	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	
HMX	2691-41-0	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 5.3 UJD
Nitrobenzene	98-95-3	ug/L	< 0.2 U	< 0.2 U	< 10 U	< 10 U	< 0.682 U
Nitrobenzene	98-95-3	ug/L	< 10 U	< 10 U	< 0.2 U	< 0.2 U	< 3.7 U
Nitrocellulose	9004-70-0	ug/L					< 222 U
Nitroglycerin	55-63-0	ug/L					< 1.49 U
PETN	78-11-5	ug/L					< 2 U
RDX	121-82-4	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 4.2 UJD
Tetryl	479-45-8	ug/L	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.631 U
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 5.8 U
2,4-Dinitrotoluene	121-14-2	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 0.397 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 10 U	< 10 U	< 0.2 U	< 0.2 U	< 6.7 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.2 U	< 0.2 U	< 10 U	< 10 U	< 0.6 U
Metals							
Aluminum	7429-90-5	ug/L	400	85 J	130	160	166
Antimony	7440-36-0	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 60 U
Arsenic	7440-38-2	ug/L	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 2.35 U
Barium	7440-39-3	ug/L	34 J	22 J	24 J	21 J	27
Beryllium	7440-41-7	ug/L	< 2 U	< 2 U	< 2 U	< 2 U	< 1.12 U
Cadmium	7440-43-9	ug/L	< 2 U	< 2 U	< 2 U	< 2 U	< 6.78 U
Calcium	7440-70-2	ug/L	8900	7600	7300	6200	6360
Chromium	7440-47-3	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 16.8 U
Cobalt	7440-48-4	ug/L	1.9 J	1.6 J	1.7 J	< 50 U	< 25 U
Copper	7440-50-8	ug/L	7.2 J	6.6 J	5.6 J	< 9 U	< 18.8 U
Iron	7439-89-6	ug/L	760	310	390	1200	576
Lead	7439-92-1	ug/L	< 3 U	< 3 U	< 3 U	< 3 U	< 4.47 U
Magnesium	7439-95-4	ug/L	2700 J	3100 J	3000 J	1800 J	2640
Manganese	7439-96-5	ug/L	130	130	180	71	171
Mercury	7439-97-6	ug/L	0.08 J	< 0.092 U	< 0.092 U	0.11	< 0.1 U
Nickel	7440-02-0	ug/L	2.3 J	< 40 U	< 40 U	< 40 U	< 32.1 U
Potassium	7440-09-7	ug/L	970 J	1100 J	1100 J	990 J	< 1240 U

Table A-3
Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54	54
		Location ID	O-54-SW-041	O-54-SW-042	O-54-SW-042	O-54-SW-043	O-SWBG-26
		Sample ID	54SW-41(20011128)	54SW-42DUP(20011128)	54SW-42(20011128)	54SW-43(20011128)	SWBG-26(19931104)
		Depth Interval					
		Sample Date	11/28/2001	11/28/2001	11/28/2001	11/28/2001	11/4/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
Selenium	7782-49-2	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 2.53 U
Silver	7440-22-4	ug/L	< 4 U	< 4 U	< 4 U	< 4 U	< 0.333 U
Sodium	7440-23-5	ug/L	10100	11600	10500	3500 J	2520
Thallium	7440-28-0	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 125 U
Vanadium	7440-62-2	ug/L	1.7 J	1 J	1.3 J	1.1 J	< 27.6 U
Zinc	7440-66-6	ug/L	35	22	28	< 20 U	37
Other							
1,4-Oxathiane	15980-15-1	ug/L					< 27 U
Diisopropyl methylphosphonate	1445-75-6	ug/L					< 21 U
Dimethylmethylphosphonate	756-79-6	ug/L					< 130 U
Dithiane	51330-42-8	ug/L					< 3.3 U
PCBs							
Aroclor 1016	12674-11-2	ug/L					< 0.385 U
Aroclor 1221	11104-28-2	ug/L					< 0.385 UT
Aroclor 1232	11141-16-5	ug/L					< 0.385 UT
Aroclor 1242	53469-21-9	ug/L					< 0.385 UT
Aroclor 1248	12672-29-6	ug/L					< 0.385 UT
Aroclor 1254	11097-69-1	ug/L					< 0.176 UT
Aroclor 1260	11096-82-5	ug/L					< 0.176 UJ
Pesticides							
4,4'-DDD	72-54-8	ug/L					< 18 U
4,4'-DDD	72-54-8	ug/L					< 0.81 U
4,4'-DDE	72-55-9	ug/L					< 14 U
4,4'-DDE	72-55-9	ug/L					< 0.39 U
4,4'-DDT	50-29-3	ug/L					< 18 U
4,4'-DDT	50-29-3	ug/L					< 0.25 U
Aldrin	309-00-2	ug/L					< 0.74 UJ
Aldrin	309-00-2	ug/L					< 13 U
alpha-BHC	319-84-6	ug/L					< 5.3 U
alpha-BHC	319-84-6	ug/L					0.56
Atrazine	1912-24-9	ug/L					< 5.9 U
beta-BHC	319-85-7	ug/L					< 0.99 U
beta-BHC	319-85-7	ug/L					< 17 U
Bromacil	314-40-9	ug/L					< 2.9 U
Chlordane	57-74-9	ug/L					< 0.0312 U
Chlordane	57-74-9	ug/L					< 37 U
delta-BHC	319-86-8	ug/L					0.73
Dieldrin	60-57-1	ug/L					< 0.74 U
Dieldrin	60-57-1	ug/L					< 26 U
Endosulfan I	959-98-8	ug/L					0.35 N

Table A-3
Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54	54
		Location ID	O-54-SW-041	O-54-SW-042	O-54-SW-042	O-54-SW-043	O-SWBG-26
		Sample ID	54SW-41(20011128)	54SW-42DUP(20011128)	54SW-42(20011128)	54SW-43(20011128)	SWBG-26(19931104)
		Depth Interval					
		Sample Date	11/28/2001	11/28/2001	11/28/2001	11/28/2001	11/4/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
Endosulfan I	959-98-8	ug/L					< 23 U
Endosulfan II	33213-65-9	ug/L					< 0.77 U
Endosulfan II	33213-65-9	ug/L					< 42 U
Endosulfan sulfate	1031-07-8	ug/L					0.02 N
Endosulfan sulfate	1031-07-8	ug/L					< 50 U
Endrin	72-20-8	ug/L					< 18 U
Endrin	72-20-8	ug/L					< 0.0176 U
Endrin aldehyde	7421-93-4	ug/L					< 0.0504 U
Endrin aldehyde	7421-93-4	ug/L					< 5 U
Endrin ketone	53494-70-5	ug/L					0.31 N
gamma-BHC (Lindane)	58-89-9	ug/L					< 0.25 U
gamma-BHC (Lindane)	58-89-9	ug/L					< 7.2 U
Heptachlor	76-44-8	ug/L					< 0.25 U
Heptachlor	76-44-8	ug/L					< 38 U
Heptachlor epoxide	1024-57-3	ug/L					< 28 U
Heptachlor epoxide	1024-57-3	ug/L					< 0.63 U
Isodrin	465-73-6	ug/L					< 7.8 U
Isodrin	465-73-6	ug/L					< 0.25 U
Malathion	121-75-5	ug/L					< 21 U
Methoxychlor	72-43-5	ug/L					< 11 U
Methoxychlor	72-43-5	ug/L					< 0.075 U
Mirex	2385-85-5	ug/L					< 24 U
Parathion	56-38-2	ug/L					< 37 U
p-Chlorophenylmethyl sulfide	123-09-1	ug/L					< 10 U
p-Chlorophenylmethyl sulfone	98-57-7	ug/L					< 5.3 U
p-Chlorophenylmethyl sulfoxide	934-73-6	ug/L					< 15 U
Supona	470-90-6	ug/L					< 19 U
Toxaphene	8001-35-2	ug/L					< 1.64 U
Vapona	62-73-7	ug/L					< 8.5 U
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1.5 U
1,2,4-Trichlorobenzene	120-82-1	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 2.4 U
1,2-Dichlorobenzene	95-50-1	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 1.2 U
1,2-Diphenylhydrazine	122-66-7	ug/L					< 13 U
1,3-Dichlorobenzene	541-73-1	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 1 U
1,3-Dichlorobenzene	541-73-1	ug/L					< 3.4 U
1,4-Dichlorobenzene	106-46-7	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 1.5 U
2,4,5-Trichlorophenol	95-95-4	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 2.8 U
2,4,6-Trichlorophenol	88-06-2	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 3.6 U
2,4-Dichlorophenol	120-83-2	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 8.4 U

Table A-3
Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54	54
		Location ID	O-54-SW-041	O-54-SW-042	O-54-SW-042	O-54-SW-043	O-SWBG-26
		Sample ID	54SW-41(20011128)	54SW-42DUP(20011128)	54SW-42(20011128)	54SW-43(20011128)	SWBG-26(19931104)
		Depth Interval					
		Sample Date	11/28/2001	11/28/2001	11/28/2001	11/28/2001	11/4/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
2,4-Dimethylphenol	105-67-9	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 4.4 U
2,4-Dinitrophenol	51-28-5	ug/L	< 50 UJ	< 50 UJ	< 50 UJ	< 50 U	< 180 U
2,6-Dinitroaniline	606-22-4	ug/L					< 8.8 U
2-Chloronaphthalene	91-58-7	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 2.6 U
2-Chlorophenol	95-57-8	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 2.8 U
2-Methylnaphthalene	91-57-6	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 1.3 U
2-Methylphenol	95-48-7	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 3.6 U
2-Nitroaniline	88-74-4	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	
2-Nitrophenol	88-75-5	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 8.2 U
3,3'-Dichlorobenzidine	91-94-1	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	< 5 U
3,5-Dinitroaniline	618-87-1	ug/L					< 21 U
3-Nitroaniline	99-09-2	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	< 15 U
4,6-dinitro-2-Methylphenol	534-52-1	ug/L	< 50 UJ	< 50 UJ	< 50 UJ	< 50 U	
4-Bromophenyl phenyl ether	101-55-3	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 22 U
4-Chloro-3-methylphenol	59-50-7	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 8.5 U
4-Chloroaniline	106-47-8	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	
4-Chlorophenyl phenyl ether	7005-72-3	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 23 U
4-Methylphenol	106-44-5	ug/L	< 10 U#	< 10 U#	< 10 U#	< 10 U#	< 2.8 U#
4-Nitroaniline	100-01-6	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	
4-Nitrophenol	100-02-7	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	< 96 U
Acenaphthene	83-32-9	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 5.8 U
Acenaphthylene	208-96-8	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 5.1 U
Aniline	62-53-3	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	
Anthracene	120-12-7	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 5.2 U
Benz(a)anthracene	56-55-3	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 9.8 U
Benzo(a)pyrene	50-32-8	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 14 U
Benzo(b)fluoranthene	205-99-2	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Benzo(g,h,i)perylene	191-24-2	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 15 U
Benzo(k)fluoranthene	207-08-9	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Benzyl alcohol	100-51-6	ug/L					< 4 U
bis(2-Chloroethoxy)methane	111-91-1	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 6.8 U
bis(2-Chloroethyl)ether	111-44-4	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 0.68 U
bis(2-Chloroisopropyl)ether	39638-32-9	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 5 U
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 7.7 U
Butylbenzyl phthalate	85-68-7	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 28 U
Carbazole	86-74-8	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	
Chrysene	218-01-9	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 7.4 U
Dibenz(a,h)anthracene	53-70-3	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 12 U
Dibenzofuran	132-64-9	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 5.1 U
Dichlorobenzenes	25321-22-6	ug/L					< 2 U

Table A-3
Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54	54
		Location ID	O-54-SW-041	O-54-SW-042	O-54-SW-042	O-54-SW-043	O-SWBG-26
		Sample ID	54SW-41(20011128)	54SW-42DUP(20011128)	54SW-42(20011128)	54SW-43(20011128)	SWBG-26(19931104)
		Depth Interval					
		Sample Date	11/28/2001	11/28/2001	11/28/2001	11/28/2001	11/4/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
Dicyclopentadiene	77-73-6	ug/L					< 5.5 U
Diethylphthalate	84-66-2	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 5.9 U
Dimethylphthalate	131-11-3	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 2.2 U
di-n-Butylphthalate	84-74-2	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 33 U
di-n-Octylphthalate	117-84-0	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 1.5 U
Diphenylamine	122-39-4	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	
Fluoranthene	206-44-0	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 24 U
Fluorene	86-73-7	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 9.2 U
Hexachlorobenzene	118-74-1	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 12 U
Hexachlorobutadiene	87-68-3	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 8.7 U
Hexachlorocyclopentadiene	77-47-4	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	< 54 U
Hexachloroethane	67-72-1	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 8.3 U
Indeno(1,2,3-c,d)pyrene	193-39-5	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 21 U
Isophorone	78-59-1	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 2.4 U
Naphthalene	91-20-3	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 0.5 U
N-Nitrosodimethylamine	62-75-9	ug/L					< 9.7 U
n-Nitroso-di-n-propylamine	621-64-7	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 6.8 U
n-Nitrosodiphenylamine	86-30-6	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 3.7 U
Pentachlorophenol	87-86-5	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 9.1 U
Phenanthrene	85-01-8	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 9.9 U
Phenol	108-95-2	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 2.2 U
Pyrene	129-00-0	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 17 U
TPH							
Total Petroleum Hydrocarbons	TPH	ug/L					< 100 U
VOC							
1,1,1-Trichloroethane	71-55-6	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	
1,1,2-Trichloroethane	79-00-5	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethane	75-34-3	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethene	75-35-4	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2,3-Trichlorobenzene	87-61-6	ug/L					< 5.8 U
1,2-Dichloroethane	107-06-2	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichloroethene (total)	540-59-0	ug/L					< 5 U
1,2-Dichloropropane	78-87-5	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,3-Dichloropropane	142-28-9	ug/L					< 4.8 U
2,3,6-Trichlorophenol	933-75-5	ug/L					< 1.7 U
2-Butanone	78-93-3	ug/L	< 10 UJ	< 10 UJ	< 10 UJ	1.4 J	< 10 U
2-Chloroethyl vinyl ether	110-75-8	ug/L					< 3.5 U
2-Hexanone	591-78-6	ug/L	< 10 UJ	< 10 UJ	< 10 UJ	< 10 UJ	
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 1.4 U

Table A-3
Historical Analytical Results for Surface Water Samples at PICA 085 / Site 54

		Site Name	54	54	54	54	54
		Location ID	O-54-SW-041	O-54-SW-042	O-54-SW-042	O-54-SW-043	O-SWBG-26
		Sample ID	54SW-41(20011128)	54SW-42DUP(20011128)	54SW-42(20011128)	54SW-43(20011128)	SWBG-26(19931104)
		Depth Interval					
		Sample Date	11/28/2001	11/28/2001	11/28/2001	11/28/2001	11/4/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
Acetone	67-64-1	ug/L	< 10 (U)J	< 10 (U)J	< 10 (U)J	< 10 (U)J	< 8 U
Acetonitrile	75-05-8	ug/L	< 20 R	< 20 R	< 20 R	< 20 R	
Acrylonitrile	107-13-1	ug/L					< 8.4 U
Benzene	71-43-2	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromodichloromethane	75-27-4	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromoform	75-25-2	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 11 U
Bromomethane	74-83-9	ug/L	< 2 U	< 2 U	< 2 U	< 2 U	< 14 U
Carbon disulfide	75-15-0	ug/L	< 1 U	< 1 U	2.5	< 1 U	
Carbon tetrachloride	56-23-5	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chlorobenzene	108-90-7	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chloroethane	75-00-3	ug/L	< 2 U	< 2 U	< 2 U	< 2 U	< 8 U
Chloroform	67-66-3	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chloromethane	74-87-3	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ	< 1.2 U
cis-1,2-Dichloroethene	156-59-2	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	
cis-1,3-Dichloropropene	10061-01-5	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	
Dibromochloromethane	124-48-1	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Dibromochloropropane	96-12-8	ug/L					< 12 U
Dichlorodifluoromethane	75-71-8	ug/L	< 2 UJ	< 2 UJ	< 2 UJ	< 2 UJ	
Ethyl benzene	100-41-4	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Methylene chloride	75-09-2	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
m-Xylenes	108-38-3	ug/L					< 1 U
Styrene	100-42-5	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	
Tetrachloroethene	127-18-4	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Toluene	108-88-3	ug/L	< 1 U	< 1 U	< 1 U	0.88 J	< 1 U
trans-1,2-Dichloroethene	156-60-5	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	
trans-1,3-Dichloropropene	10061-02-6	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	
Trichloroethene	79-01-6	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Trichlorofluoromethane	75-69-4	ug/L	< 2 U	< 2 U	< 2 U	< 2 U	< 1 U
Vinyl chloride	75-01-4	ug/L	< 2 U	< 2 U	< 2 U	< 2 U	< 12 U
Xylenes	1330-20-7	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 2 U
WetChem							
Cyanide	57-12-5	ug/L					< 5 U
Hardness	HARDNESS	ug/L					26000

Notes:

LOC - Level of Concern
mg/kg - milligrams per kilogram
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53	53	53
			Location ID	I-53-SD-001	I-53-SD-002	I-53-SD-003	I-53-SD-004	I-53-SD-005	I-53-SD-006	I-53-SD-007
			Sample ID	53SD-1(0-1)	53SD-2(0-1)	53SD-3(0-1)	53SD-4(0-1)	53SD-5(0-1)	53SD-6(0-1)	53SD-7(0-1)
			Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996	8/16/1996	8/16/1996
			Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**	**ValueNo**							
Analyte Group										
Dioxins										
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	mg/kg	(1)					< 0.063 U		
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	mg/kg	(1)					< 0.95 U		
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	mg/kg	(1)					< 0.01 U		
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	mg/kg	(1)					< 0.92 U		
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	mg/kg	(1)					< 0.01 U		
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	mg/kg	(1)					< 0.72 U		
Octachlorodibenzodioxin	3268-87-9	mg/kg	(1)					< 0.012 U		
Total heptachlorodibenzo-p-dioxins	37871-00-4	mg/kg	(1)					< 0.063 U		
Total hexachlorodibenzo-p-dioxins	34465-46-8	mg/kg	(1)					< 0.92 U		
Total pentachlorodibenzo-p-dioxins	36088-22-9	mg/kg	(1)					< 0.01 U		
Total tetrachlorodibenzo-p-dioxins	41903-57-5	mg/kg	(1)					< 0.72 U		
Explosives										
1,3,5-Trinitrobenzene	99-35-4	mg/kg	(1)	< 0.488 U	< 0.488 U	< 0.488 U	< 0.488 U	< 0.488 U	< 0.488 U	< 0.488 U
1,3-Dinitrobenzene	99-65-0	mg/kg	(1)	< 0.496 U	< 0.496 U	< 0.496 U	< 0.496 U	< 0.496 U	< 0.496 U	< 0.496 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	(1)	< 0.456 U	< 0.456 U	< 0.456 U	< 0.456 U	< 0.456 U	< 0.456 U	< 0.456 U
2-amino-4,6-Dinitrotoluene	35572-78-2	mg/kg	(1)							
2-Nitrotoluene	88-72-2	mg/kg	(1)							
3-Nitrotoluene	99-08-1	mg/kg	(1)							
4-amino-2,6-Dinitrotoluene	19406-51-0	mg/kg	(1)							
4-Nitrotoluene	99-99-0	mg/kg	(1)							
HMX	2691-41-0	mg/kg	(1)	< 0.666 U	< 0.666 U	< 0.666 U	< 0.666 U	< 0.666 U	< 0.666 U	< 0.666 U
Nitrobenzene	98-95-3	mg/kg	(1)	< 2.41 U	< 2.41 U	< 2.41 U	< 2.41 U	< 2.41 U	< 2.41 U	< 2.41 U
Nitrobenzene	98-95-3	mg/kg	(2)							
Nitrocellulose	9004-70-0	mg/kg	(1)	< 10.4 U	< 10.4 U	< 10.4 U	< 10.4 U		< 10.4 U	< 10.4 U
Nitroglycerin	55-63-0	mg/kg	(1)	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U
Nitroguanidine	556-88-7	mg/kg	(1)	< 0.475 U	< 0.475 U	< 0.475 U	< 0.475 U	< 0.475 U	< 0.475 U	< 0.475 U
PETN	78-11-5	mg/kg	(1)	16.1	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U
Picric Acid	88-89-1	mg/kg	(1)	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U
RDX	121-82-4	mg/kg	(1)	< 0.587 U	< 0.587 U	< 0.587 U	< 0.587 U	< 0.587 U	< 0.587 U	< 0.587 U
Tetrazene	14097-21-3	mg/kg	(1)	< 1.19 U	< 1.19 U	< 1.19 U	< 1.19 U	< 1.19 U	< 1.19 U	< 1.19 U
Tetryl	479-45-8	mg/kg	(1)	< 0.731 U	< 0.731 U	< 0.731 U	< 0.731 U	< 0.731 U	< 0.731 U	< 0.731 U
Explosives / SVOC										
2,4-Dinitrotoluene	121-14-2	mg/kg	(1)	< 0.424 U	< 0.424 U	< 0.424 U	< 0.424 U	< 0.424 U	< 0.424 U	< 0.424 U
2,4-Dinitrotoluene	121-14-2	mg/kg	(2)							
2,6-Dinitrotoluene	606-20-2	mg/kg	(1)	< 0.524 U	< 0.524 U	< 0.524 U	< 0.524 U	< 0.524 U	< 0.524 U	< 0.524 U
2,6-Dinitrotoluene	606-20-2	mg/kg	(2)							
Furans										
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	mg/kg	(1)					< 0.75 U		

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53	53	53
			Location ID	I-53-SD-001	I-53-SD-002	I-53-SD-003	I-53-SD-004	I-53-SD-005	I-53-SD-006	I-53-SD-007
			Sample ID	53SD-1(0-1)	53SD-2(0-1)	53SD-3(0-1)	53SD-4(0-1)	53SD-5(0-1)	53SD-6(0-1)	53SD-7(0-1)
			Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996	8/16/1996	8/16/1996
			Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**	**ValueNo**							
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	mg/kg	(1)					< 0.91 U		
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	mg/kg	(1)					< 0.47 U		
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	mg/kg	(1)					< 0.46 U		
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	mg/kg	(1)					< 0.56 U		
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	mg/kg	(1)					< 0.88 U		
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	mg/kg	(1)					< 0.48 U		
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	mg/kg	(1)					< 0.89 U		
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	mg/kg	(1)					< 0.01 U		
Octachlorodibenzofuran	39001-02-0	mg/kg	(1)					< 0.58 U		
Total heptachlorodibenzofurans	38998-75-3	mg/kg	(1)					< 0.75 U		
Total hexachlorodibenzofurans	55684-94-1	mg/kg	(1)					< 0.46 U		
Total pentachlorodibenzofurans	30402-15-4	mg/kg	(1)					< 0.88 U		
Total tetrachlorodibenzofurans	30402-14-3	mg/kg	(1)					< 0.01 U		
Metals										
Aluminum	7429-90-5	mg/kg	(1)	6490	6450	6270	10400	3630	5860	6290
Antimony	7440-36-0	mg/kg	(1)	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Arsenic	7440-38-2	mg/kg	(1)	2.24	6.76	1.71	< 0.25 U	< 0.25 U	< 0.25 U	2.87
Barium	7440-39-3	mg/kg	(1)	156	96.4	70.7	104	104	129	124
Beryllium	7440-41-7	mg/kg	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Boron	7440-42-8	mg/kg	(1)	39.9	41.7	28.4	56.3	< 5.91 U	< 5.91 U	49.2
Cadmium	7440-43-9	mg/kg	(1)	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U
Calcium	7440-70-2	mg/kg	(1)	6120	4700	2090	8860	13700	12100	13100
Chromium	7440-47-3	mg/kg	(1)	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U
Cobalt	7440-48-4	mg/kg	(1)	< 1.42 U	14.3	< 1.42 U	< 1.42 U	< 1.42 U	< 1.42 U	< 1.42 U
Copper	7440-50-8	mg/kg	(1)	18.2	34.6	10.7	29.2	32.3	38.8	29.9
Iron	7439-89-6	mg/kg	(1)	7210	6950	7150	5360	6590	9360	7100
Lead	7439-92-1	mg/kg	(1)	13.1	26.6	9.21	20.4	11.4	15.9	9.33
Magnesium	7439-95-4	mg/kg	(1)	988	1340	922	1480	1910	1820	1730
Manganese	7439-96-5	mg/kg	(1)	845	267	199	388	723	1400	443
Mercury	7439-97-6	mg/kg	(1)	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	1.19	< 0.05 U
Nickel	7440-02-0	mg/kg	(1)	< 1.71 U	< 1.71 U	< 1.71 U	16.1	< 1.71 U	< 1.71 U	< 1.71 U
Potassium	7440-09-7	mg/kg	(1)	< 100 U	< 100 U	< 100 U	< 100 U	< 100 U	< 100 U	< 100 U
Selenium	7782-49-2	mg/kg	(1)	4.31	3.53	1.28	4.7	5.12	3.25	7.02
Silver	7440-22-4	mg/kg	(1)	< 0.589 U	6.94	< 0.589 U	< 0.589 U	< 0.589 U	5.39	< 0.589 U
Sodium	7440-23-5	mg/kg	(1)	1950	2260	1340	2770	3720	2990	2380
Strontium	7440-24-6	mg/kg	(1)	41.3	24.3	17.3	38.9	57.8	53.8	54.3
Thallium	7440-28-0	mg/kg	(1)	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Titanium	7440-32-6	mg/kg	(1)	478	425	402	< 50 U	< 50 U	< 50 U	< 50 U
Vanadium	7440-62-2	mg/kg	(1)	< 3.39 U	24.4	18.2	< 3.39 U	< 3.39 U	< 3.39 U	< 3.39 U

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53	53	53
			Location ID	I-53-SD-001	I-53-SD-002	I-53-SD-003	I-53-SD-004	I-53-SD-005	I-53-SD-006	I-53-SD-007
			Sample ID	53SD-1(0-1)	53SD-2(0-1)	53SD-3(0-1)	53SD-4(0-1)	53SD-5(0-1)	53SD-6(0-1)	53SD-7(0-1)
			Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996	8/16/1996	8/16/1996
			Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**	**ValueNo**							
Zinc	7440-66-6	mg/kg	(1)	< 8.03 U	120	< 8.03 U	< 8.03 U	< 8.03 U	< 8.03 U	< 8.03 U
Zirconium	7440-67-7	mg/kg	(1)	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
PCBs										
Aroclor 1016	12674-11-2	mg/kg	(1)					< 0.0666 U		
Aroclor 1221	11104-28-2	mg/kg	(1)					< 0.082 UT		
Aroclor 1232	11141-16-5	mg/kg	(1)					< 0.082 UT		
Aroclor 1242	53469-21-9	mg/kg	(1)					< 0.082 UT		
Aroclor 1248	12672-29-6	mg/kg	(1)					< 0.082 UT		
Aroclor 1254	11097-69-1	mg/kg	(1)					< 0.082 UT		
Aroclor 1260	11096-82-5	mg/kg	(1)					< 0.0804 U		
Pesticides										
4,4'-DDD	72-54-8	mg/kg	(1)					< 0.826 U		
4,4'-DDE	72-55-9	mg/kg	(1)					< 0.765 U		
4,4'-DDT	50-29-3	mg/kg	(1)					< 0.707 U		
Aldrin	309-00-2	mg/kg	(1)					< 0.729 U		
alpha-BHC	319-84-6	mg/kg	(1)					< 0.907 U		
alpha-Chlordane	5103-71-9	mg/kg	(1)					< 0.5 UT		
beta-BHC	319-85-7	mg/kg	(1)					< 0.257 U		
Chlordane	57-74-9	mg/kg	(1)							
delta-BHC	319-86-8	mg/kg	(1)					< 0.555 U		
Diazinon	333-41-5	mg/kg	(1)					< 0.0133 U		
Dieldrin	60-57-1	mg/kg	(1)					< 0.629 U		
Endosulfan I	959-98-8	mg/kg	(1)					< 0.602 U		
Endosulfan II	33213-65-9	mg/kg	(1)					< 0.663 U		
Endosulfan sulfate	1031-07-8	mg/kg	(1)					< 0.763 U		
Endrin	72-20-8	mg/kg	(1)					< 0.657 U		
Endrin aldehyde	7421-93-4	mg/kg	(1)					< 0.024 U		
Endrin ketone	53494-70-5	mg/kg	(1)					< 0.024 UT		
gamma-BHC (Lindane)	58-89-9	mg/kg	(1)					< 0.638 U		
gamma-Chlordane	5103-74-2	mg/kg	(1)					< 0.5 UT		
Heptachlor	76-44-8	mg/kg	(1)					< 0.618 U		
Heptachlor epoxide	1024-57-3	mg/kg	(1)					< 0.62 U		
Isodrin	465-73-6	mg/kg	(1)					< 0.461 U		
Malathion	121-75-5	mg/kg	(1)					< 0.0133 U		
Methoxychlor	72-43-5	mg/kg	(1)					< 0.0711 U		
Mirex	2385-85-5	mg/kg	(1)	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
Toxaphene	8001-35-2	mg/kg	(1)					< 0.444 U		
Radiological										
Americium-241	86954-36-1	pCi/g	(1)					< 0.448 U		

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53	53	53
			Location ID	I-53-SD-001	I-53-SD-002	I-53-SD-003	I-53-SD-004	I-53-SD-005	I-53-SD-006	I-53-SD-007
			Sample ID	53SD-1(0-1)	53SD-2(0-1)	53SD-3(0-1)	53SD-4(0-1)	53SD-5(0-1)	53SD-6(0-1)	53SD-7(0-1)
			Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996	8/16/1996	8/16/1996
			Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**	**ValueNo**							
Cesium-137	10045-97-3	pCi/g	(1)					< 0.175 U		
Cobalt-60	10198-40-0	pCi/g	(1)					< 0.171 U		
Gross Alpha	12587-46-1	pCi/g	(1)					< 0.728 U		
Gross beta	12587-47-2	pCi/g	(1)					< 2.16 U		
Radium-226	13982-63-3	pCi/g	(1)					< 0.711 U		
Total Uranium	7440-61-1 U	mg/kg	(1)					1.19		
Uranium-235	15117-96-1	pCi/g	(1)					0.02		
Uranium-238	7440-61-1 U-238	pCi/g	(1)					0.48		
SVOC										
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	(1)	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U
1,2,4-Trichlorobenzene	120-82-1	mg/kg	(1)	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U
1,2-Dichlorobenzene	95-50-1	mg/kg	(1)	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U
1,3-Dichlorobenzene	541-73-1	mg/kg	(1)	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U
1,4-Dichlorobenzene	106-46-7	mg/kg	(1)	< 0.098 U	< 0.098 U	< 0.098 U	< 0.098 U	< 0.098 U	< 0.098 U	< 0.098 U
2,4,5-Trichlorophenol	95-95-4	mg/kg	(1)	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
2,4,6-Trichlorophenol	88-06-2	mg/kg	(1)	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
2,4-Dichlorophenol	120-83-2	mg/kg	(1)	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U
2,4-Dimethylphenol	105-67-9	mg/kg	(1)	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U
2,4-Dinitrophenol	51-28-5	mg/kg	(1)	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U
2-Chloronaphthalene	91-58-7	mg/kg	(1)	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U
2-Chlorophenol	95-57-8	mg/kg	(1)	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U
2-Methylnaphthalene	91-57-6	mg/kg	(1)	< 0.049 U	< 0.049 U	< 0.049 U	< 0.049 U	< 0.049 U	< 0.049 U	< 0.049 U
2-Methylphenol	95-48-7	mg/kg	(1)	< 0.029 U	< 0.029 U	< 0.029 U	< 0.029 U	< 0.029 U	< 0.029 U	< 0.029 U
2-Nitroaniline	88-74-4	mg/kg	(1)	< 0.062 U	< 0.062 U	< 0.062 U	< 0.062 U	< 0.062 U	< 0.062 U	< 0.062 U
2-Nitrophenol	88-75-5	mg/kg	(1)	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U
3,3'-Dichlorobenzidine	91-94-1	mg/kg	(1)	< 6.3 U	< 6.3 U	< 6.3 U	< 6.3 U	< 6.3 U	< 6.3 U	< 6.3 U
3-Nitroaniline	99-09-2	mg/kg	(1)	< 0.45 U	< 0.45 U	< 0.45 U	< 0.45 U	< 0.45 U	< 0.45 U	< 0.45 U
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg	(1)	< 0.55 U	< 0.55 U	< 0.55 U	< 0.55 U	< 0.55 U	< 0.55 U	< 0.55 U
4-Bromophenyl phenyl ether	101-55-3	mg/kg	(1)	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
4-Chloro-3-methylphenol	59-50-7	mg/kg	(1)	< 0.095 U	< 0.095 U	< 0.095 U	< 0.095 U	< 0.095 U	< 0.095 U	< 0.095 U
4-Chloroaniline	106-47-8	mg/kg	(1)	< 0.81 U	< 0.81 U	< 0.81 U	< 0.81 U	< 0.81 U	< 0.81 U	< 0.81 U
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	(1)	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
4-Methylphenol	106-44-5	mg/kg	(1)	< 0.24 U#	< 0.24 U#	< 0.24 U#	< 0.24 U#	< 0.24 U#	< 0.24 U#	< 0.24 U#
4-Nitroaniline	100-01-6	mg/kg	(1)	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U
4-Nitrophenol	100-02-7	mg/kg	(1)	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U
Acenaphthene	83-32-9	mg/kg	(1)	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U
Acenaphthylene	208-96-8	mg/kg	(1)	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
Aniline	62-53-3	mg/kg	(1)	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U
Anthracene	120-12-7	mg/kg	(1)	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53	53	53
			Location ID	I-53-SD-001	I-53-SD-002	I-53-SD-003	I-53-SD-004	I-53-SD-005	I-53-SD-006	I-53-SD-007
			Sample ID	53SD-1(0-1)	53SD-2(0-1)	53SD-3(0-1)	53SD-4(0-1)	53SD-5(0-1)	53SD-6(0-1)	53SD-7(0-1)
			Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996	8/16/1996	8/16/1996
			Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**	**ValueNo**							
Benz(a)anthracene	56-55-3	mg/kg	(1)	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
Benzo(a)pyrene	50-32-8	mg/kg	(1)	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
Benzo(b)fluoranthene	205-99-2	mg/kg	(1)	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U
Benzo(g,h,i)perylene	191-24-2	mg/kg	(1)	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
Benzo(k)fluoranthene	207-08-9	mg/kg	(1)	< 0.066 U	< 0.066 U	< 0.066 U	< 0.066 U	< 0.066 U	< 0.066 U	< 0.066 U
Benzyl alcohol	100-51-6	mg/kg	(1)	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U
bis(2-Chloroethoxy)methane	111-91-1	mg/kg	(1)	< 0.059 U	< 0.059 U	< 0.059 U	< 0.059 U	< 0.059 U	< 0.059 U	< 0.059 U
bis(2-Chloroethyl)ether	111-44-4	mg/kg	(1)	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg	(1)	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	(1)	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U
Butylbenzyl phthalate	85-68-7	mg/kg	(1)	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
Carbazole	86-74-8	mg/kg	(1)	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U
Chrysene	218-01-9	mg/kg	(1)	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
Dibenz(a,h)anthracene	53-70-3	mg/kg	(1)	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U
Dibenzofuran	132-64-9	mg/kg	(1)	< 0.035 U	< 0.035 U	< 0.035 U	< 0.035 U	< 0.035 U	< 0.035 U	< 0.035 U
Diethylphthalate	84-66-2	mg/kg	(1)	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U
Dimethylphthalate	131-11-3	mg/kg	(1)	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
di-n-Butylphthalate	84-74-2	mg/kg	(1)	< 0.061 U	< 0.061 U	< 0.061 U	< 0.061 U	< 0.061 U	< 0.061 U	< 0.061 U
di-n-Octylphthalate	117-84-0	mg/kg	(1)	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U
Diphenylamine	122-39-4	mg/kg	(1)	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U
Fluoranthene	206-44-0	mg/kg	(1)	< 0.068 U	< 0.068 U	< 0.068 U	< 0.068 U	< 0.068 U	< 0.068 U	< 0.068 U
Fluorene	86-73-7	mg/kg	(1)	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
Hexachlorobenzene	118-74-1	mg/kg	(1)	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
Hexachlorobutadiene	87-68-3	mg/kg	(1)	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
Hexachlorocyclopentadiene	77-47-4	mg/kg	(1)	< 6.2 U	< 6.2 U	< 6.2 U	< 6.2 U	< 6.2 U	< 6.2 U	< 6.2 U
Hexachloroethane	67-72-1	mg/kg	(1)	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	(1)	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U
Isophorone	78-59-1	mg/kg	(1)	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
Naphthalene	91-20-3	mg/kg	(1)	< 0.037 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.037 U
n-Nitroso-di-n-propylamine	621-64-7	mg/kg	(1)	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
n-Nitrosodiphenylamine	86-30-6	mg/kg	(1)	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U
Pentachlorophenol	87-86-5	mg/kg	(1)	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U
Phenanthrene	85-01-8	mg/kg	(1)	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
Phenol	108-95-2	mg/kg	(1)	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U
Pyrene	129-00-0	mg/kg	(1)	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
TPH										
Diesel Fuel	68334-30-5	mg/kg	(1)	< 7.98 U	< 7.98 U	< 7.98 U	< 7.98 U	< 7.98 U	< 7.98 U	< 7.98 U
Gasoline range organics	GRO	mg/kg	(1)	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U
TPH, aviation gas fraction	50815-00-4	mg/kg	(1)	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53	53	53
			Location ID	I-53-SD-001	I-53-SD-002	I-53-SD-003	I-53-SD-004	I-53-SD-005	I-53-SD-006	I-53-SD-007
			Sample ID	53SD-1(0-1)	53SD-2(0-1)	53SD-3(0-1)	53SD-4(0-1)	53SD-5(0-1)	53SD-6(0-1)	53SD-7(0-1)
			Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996	8/16/1996	8/16/1996
			Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**	**ValueNo**							
TRPH	TRPH	mg/kg	(1)	215	< 27.6 U	< 28 U	< 28 U	< 30.9 U	< 27.6 U	< 27.6 U
VOC										
1,1,1-Trichloroethane	71-55-6	mg/kg	(1)	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	mg/kg	(1)	< 0.82 U	< 0.82 U	< 0.82 U	< 0.82 U	< 0.82 U	< 0.82 U	< 0.82 U
1,1,2-Trichloroethane	79-00-5	mg/kg	(1)	< 0.54 U	< 0.54 U	< 0.54 U	< 0.54 U	< 0.54 U	< 0.54 U	< 0.54 U
1,1-Dichloroethane	75-34-3	mg/kg	(1)	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
1,1-Dichloroethene	75-35-4	mg/kg	(1)	< 0.39 U	< 0.39 U	< 0.39 U	< 0.39 U	< 0.39 U	< 0.39 U	< 0.39 U
1,2-Dichloroethane	107-06-2	mg/kg	(1)	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
1,2-Dichloroethene (total)	540-59-0	mg/kg	(1)	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U
1,2-Dichloropropane	78-87-5	mg/kg	(1)	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U
2-Butanone	78-93-3	mg/kg	(1)	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U
2-Hexanone	591-78-6	mg/kg	(1)	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	(1)	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U
Acetone	67-64-1	mg/kg	(1)	0.16	0.13	< 0.017 U	0.4	0.3	0.53	0.23
Acetonitrile	75-05-8	mg/kg	(1)	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
Benzene	71-43-2	mg/kg	(1)	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U
Bromodichloromethane	75-27-4	mg/kg	(1)	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U
Bromoform	75-25-2	mg/kg	(1)	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U
Bromomethane	74-83-9	mg/kg	(1)	< 0.57 U	< 0.57 U	< 0.57 U	< 0.57 U	< 0.57 U	< 0.57 U	< 0.57 U
Carbon disulfide	75-15-0	mg/kg	(1)	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U
Carbon tetrachloride	56-23-5	mg/kg	(1)	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U
Chlorobenzene	108-90-7	mg/kg	(1)	< 0.086 U	< 0.086 U	< 0.086 U	< 0.086 U	< 0.086 U	< 0.086 U	< 0.086 U
Chloroethane	75-00-3	mg/kg	(1)	< 0.012 U	< 0.012 U	< 0.012 U	< 0.012 U	< 0.012 U	< 0.012 U	< 0.012 U
Chloroform	67-66-3	mg/kg	(1)	< 0.087 U	< 0.087 U	< 0.087 U	< 0.087 U	< 0.087 U	< 0.087 U	< 0.087 U
Chloromethane	74-87-3	mg/kg	(1)	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U
cis-1,3-Dichloropropene	10061-01-5	mg/kg	(1)	< 0.32 U	< 0.32 U	< 0.32 U	< 0.32 U	< 0.32 U	< 0.32 U	< 0.32 U
Dibromochloromethane	124-48-1	mg/kg	(1)	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U
Dichlorodifluoromethane	75-71-8	mg/kg	(1)	< 0.014 U	< 0.014 U	< 0.014 U	< 0.014 U	< 0.014 U	< 0.014 U	< 0.014 U
Ethanol	64-17-5	mg/kg	(1)	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
Ethyl benzene	100-41-4	mg/kg	(1)	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
Isopropanol	67-63-0	mg/kg	(1)	< 0.79 U	< 0.79 U	< 0.79 U	< 0.79 U	< 0.79 U	< 0.79 U	< 0.79 U
Methylene chloride	75-09-2	mg/kg	(1)	0.34	0.19	0.13	< 0.012 U	0.28	0.42	0.18
Styrene	100-42-5	mg/kg	(1)	< 0.26 U	< 0.26 U	< 0.26 U	< 0.26 U	< 0.26 U	< 0.26 U	< 0.26 U
tert-Butylalcohol	75-65-0	mg/kg	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Tetrachloroethene	127-18-4	mg/kg	(1)	< 0.081 U	< 0.081 U	< 0.081 U	< 0.081 U	< 0.081 U	< 0.081 U	< 0.081 U
Toluene	108-88-3	mg/kg	(1)	< 0.078 U	< 0.078 U	< 0.078 U	< 0.078 U	< 0.078 U	< 0.078 U	< 0.078 U
trans-1,3-Dichloropropene	10061-02-6	mg/kg	(1)	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U
Trichloroethene	79-01-6	mg/kg	(1)	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U
Trichlorofluoromethane	75-69-4	mg/kg	(1)	< 0.59 U	< 0.59 U	< 0.59 U	0.07	< 0.59 U	< 0.59 U	< 0.59 U

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53	53	53
			Location ID	I-53-SD-001	I-53-SD-002	I-53-SD-003	I-53-SD-004	I-53-SD-005	I-53-SD-006	I-53-SD-007
			Sample ID	53SD-1(0-1)	53SD-2(0-1)	53SD-3(0-1)	53SD-4(0-1)	53SD-5(0-1)	53SD-6(0-1)	53SD-7(0-1)
			Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996	8/16/1996	8/16/1996
			Sample Matrix	SE	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**	**ValueNo**							
Vinyl acetate	108-05-4	mg/kg	(1)	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U
Vinyl chloride	75-01-4	mg/kg	(1)	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U
Xylenes	1330-20-7	mg/kg	(1)	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U
WetChem										
% Solids	%Solid	%	(1)							
Ammonia	7664-41-7	mg/kg	(1)	1500	1300	960	2080	2220	1940	7500
Chloride	16887-00-6	mg/kg	(1)	36.3	36.5	34.1	72.6	115	104	61.9
Cyanide	57-12-5	mg/kg	(1)	< 0.92 U	< 0.92 U	< 0.92 U	< 0.92 U	< 0.92 U	< 0.92 U	< 0.92 U
Fluoride	16984-48-8	mg/kg	(1)	< 3.62 U	< 3.62 U	< 3.62 U	< 3.62 U	< 3.62 U	< 3.62 U	< 3.62 U
Nitrate	14797-55-8	mg/kg	(1)							
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	(1)	< 0.6 U	< 0.6 U	< 0.6 U	< 0.6 U	< 0.6 U	< 0.6 U	< 0.6 U
Nitrite	14797-65-0	mg/kg	(1)							
Phosphate	14265-44-2	mg/kg	(1)	520	360	380	8200	14000	5500	4900
Phosphorus	7723-14-0	mg/kg	(1)							
Sulfate	14808-79-8	mg/kg	(1)	< 90.4 U	< 90.4 U	< 90.4 U	< 90.4 U	< 90.4 U	< 90.4 U	< 90.4 U
Sulfide	18496-25-8	mg/kg	(1)	< 6 U	104	< 6 U	< 6 U	< 6 U	< 6 U	< 6 U
Total organic carbon	TOC	mg/kg	(1)	335000	291000	136000	430000	741000	656000	503000

Notes:
LOC - Level of Concern
mg/kg - milligrams per kilogram
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-008 53SD-8(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-009 53SD-9(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-010A 53SD-10(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-011 53SD-11(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-012 53SD-12(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-013 53SD-13(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-014 53SD-14(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-015 53SD-15(0-1) 0 - 1 8/15/1996 SE
Chemical Name	**CAS No**								
Analyte Group									
Dioxins									
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9								< 0.72 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6								< 0.78 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7								< 0.83 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3								< 0.76 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4								< 0.01 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6								< 0.011 U
Octachlorodibenzodioxin	3268-87-9								< 0.8 U
Total heptachlorodibenzo-p-dioxins	37871-00-4								< 0.72 U
Total hexachlorodibenzo-p-dioxins	34465-46-8								< 0.76 U
Total pentachlorodibenzo-p-dioxins	36088-22-9								< 0.01 U
Total tetrachlorodibenzo-p-dioxins	41903-57-5								< 0.011 U
Explosives									
1,3,5-Trinitrobenzene	99-35-4	< 0.488 U	< 0.488 U	< 0.488 U	< 0.488 U	< 0.488 U	< 0.488 U	< 0.488 U	< 0.488 U
1,3-Dinitrobenzene	99-65-0	< 0.496 U	< 0.496 U	< 0.496 U	< 0.496 U	< 0.496 U	< 0.496 U	< 0.496 U	< 0.496 U
2,4,6-Trinitrotoluene	118-96-7	< 0.456 U	< 0.456 U	< 0.456 U	< 0.456 U	< 0.456 U	< 0.456 U	< 0.456 U	< 0.456 U
2-amino-4,6-Dinitrotoluene	35572-78-2								
2-Nitrotoluene	88-72-2								
3-Nitrotoluene	99-08-1								
4-amino-2,6-Dinitrotoluene	19406-51-0								
4-Nitrotoluene	99-99-0								
HMX	2691-41-0	< 0.666 U	2.69	< 0.666 U	< 0.666 U	< 0.666 U	< 0.666 U	4.22	< 0.666 U
Nitrobenzene	98-95-3	< 2.41 U	< 2.41 U	< 2.41 U	< 2.41 U	< 2.41 U	< 2.41 U	< 2.41 U	< 2.41 U
Nitrobenzene	98-95-3								
Nitrocellulose	9004-70-0	< 10.4 U	< 10.4 U	< 10.4 U	< 10.4 U	< 10.4 U	< 10.4 U	< 10.4 U	< 10.4 U
Nitroglycerin	55-63-0	< 4 UJ	< 4 UJ	< 4 UJ	< 4 UJ	< 4 UJ	< 4 UJ	< 4 UJ	< 4 U
Nitroguanidine	556-88-7	< 0.475 U	< 0.475 U	< 0.475 U	< 0.475 U	< 0.475 U	< 0.475 U	< 0.475 U	< 0.475 U
PETN	78-11-5	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U
Picric Acid	88-89-1	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U
RDX	121-82-4	< 0.587 U	< 0.587 U	< 0.587 U	< 0.587 U	< 0.587 U	< 0.587 U	2.27	< 0.587 U
Tetrazene	14097-21-3	< 1.19 U	< 1.19 U	< 1.19 U	< 1.19 U	< 1.19 U	< 1.19 U	< 1.19 U	< 1.19 U
Tetryl	479-45-8	< 0.731 U	< 0.731 U	< 0.731 U	< 0.731 U	< 0.731 U	< 0.731 U	< 0.731 U	< 0.731 U
Explosives / SVOC									
2,4-Dinitrotoluene	121-14-2	< 0.424 U	< 0.424 U	< 0.424 U	< 0.424 U	< 0.424 U	< 0.424 U	< 0.424 U	< 0.424 U
2,4-Dinitrotoluene	121-14-2								
2,6-Dinitrotoluene	606-20-2	< 0.524 U	< 0.524 U	< 0.524 U	< 0.524 U	< 0.524 U	< 0.524 U	0.97	< 0.524 U
2,6-Dinitrotoluene	606-20-2								
Furans									
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4								< 0.012 U

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-008 53SD-8(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-009 53SD-9(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-010A 53SD-10(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-011 53SD-11(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-012 53SD-12(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-013 53SD-13(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-014 53SD-14(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-015 53SD-15(0-1) 0 - 1 8/15/1996 SE
Chemical Name	**CAS No**								
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7								< 0.015 U
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9								< 0.46 U
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9								< 0.45 U
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9								< 0.55 U
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6								< 0.7 U
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5								< 0.47 U
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4								< 0.71 U
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9								< 0.011 U
Octachlorodibenzofuran	39001-02-0								< 0.6 U
Total heptachlorodibenzofurans	38998-75-3								< 0.012 U
Total hexachlorodibenzofurans	55684-94-1								< 0.45 U
Total pentachlorodibenzofurans	30402-15-4								< 0.7 U
Total tetrachlorodibenzofurans	30402-14-3								< 0.011 U
Metals									
Aluminum	7429-90-5	6480	5670	17300	8430	6200	6450	3260	2260
Antimony	7440-36-0	< 0.1 U	< 0.1 U	0.75	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Arsenic	7440-38-2	< 0.25 U	3.67	5.27	3.07	1.99	2.73	3.85	< 0.25 U
Barium	7440-39-3	124	178	102	123	63.2	173	79.1	90.6
Beryllium	7440-41-7	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Boron	7440-42-8	< 5.91 U	61.4	< 5.91 U	52	12.5	< 5.91 U	< 5.91 U	< 5.91 U
Cadmium	7440-43-9	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U
Calcium	7440-70-2	12100	13000	3090	10500	2270	11500	10700	15100
Chromium	7440-47-3	< 4.05 U	< 4.05 U	19.4	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U	< 4.05 U
Cobalt	7440-48-4	< 1.42 U	< 1.42 U	8.94	< 1.42 U	< 1.42 U	< 1.42 U	< 1.42 U	< 1.42 U
Copper	7440-50-8	25.5	22.5	47.7	29	5.68	30.4	24.5	22.6
Iron	7439-89-6	7850	7320	11000	5960	4100	7390	5030	8060
Lead	7439-92-1	6	13	62.5	12.5	10.8	8.8	< 0.5 U	< 0.5 U
Magnesium	7439-95-4	1460	1840	1360	1620	657	1670	1510	1870
Manganese	7439-96-5	728	886	220	670	198	937	762	615
Mercury	7439-97-6	< 0.05 U	< 0.05 U	0.76	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U
Nickel	7440-02-0	< 1.71 U	< 1.71 U	20.5	< 1.71 U	4.03	< 1.71 U	< 1.71 U	< 1.71 U
Potassium	7440-09-7	< 100 U	< 100 U	< 100 U	< 100 U	< 100 U	< 100 U	< 100 U	< 100 U
Selenium	7782-49-2	3.79	5.48	1.46 J	< 0.25 UJ	< 0.25 UJ	< 0.25 UJ	< 0.25 UJ	< 0.25 U
Silver	7440-22-4	< 0.589 U	< 0.589 U	4.48	< 0.589 U	< 0.589 U	4.58	< 0.589 U	< 0.589 U
Sodium	7440-23-5	2270	2970	1810	3730	1000	3410	4210	3790
Strontium	7440-24-6	51.2	66.7	23.5	52.2	19.7	56.3	46.5	42.4
Thallium	7440-28-0	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
Titanium	7440-32-6	< 50 U	< 50 U	492	668	370	< 50 U	< 50 U	< 50 U
Vanadium	7440-62-2	< 3.39 U	< 3.39 U	22.1	< 3.39 U	9.95	< 3.39 U	< 3.39 U	< 3.39 U

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-008 53SD-8(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-009 53SD-9(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-010A 53SD-10(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-011 53SD-11(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-012 53SD-12(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-013 53SD-13(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-014 53SD-14(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-015 53SD-15(0-1) 0 - 1 8/15/1996 SE
Chemical Name	**CAS No**								
Zinc	7440-66-6	< 8.03 U	< 8.03 U	103	< 8.03 U	< 8.03 U	< 8.03 U	< 8.03 U	< 8.03 U
Zirconium	7440-67-7	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
PCBs									
Aroclor 1016	12674-11-2								< 0.0666 U
Aroclor 1221	11104-28-2								< 0.082 UT
Aroclor 1232	11141-16-5								< 0.082 UT
Aroclor 1242	53469-21-9								< 0.082 UT
Aroclor 1248	12672-29-6								< 0.082 UT
Aroclor 1254	11097-69-1								< 0.082 UT
Aroclor 1260	11096-82-5								< 0.0804 U
Pesticides									
4,4'-DDD	72-54-8								< 0.826 U
4,4'-DDE	72-55-9								< 0.765 U
4,4'-DDT	50-29-3								< 0.707 U
Aldrin	309-00-2								< 0.729 U
alpha-BHC	319-84-6								< 0.907 U
alpha-Chlordane	5103-71-9								< 0.5 UT
beta-BHC	319-85-7								< 0.257 U
Chlordane	57-74-9								
delta-BHC	319-86-8								< 0.555 U
Diazinon	333-41-5								< 0.0133 U
Dieldrin	60-57-1								< 0.629 U
Endosulfan I	959-98-8								< 0.602 U
Endosulfan II	33213-65-9								< 0.663 U
Endosulfan sulfate	1031-07-8								< 0.763 U
Endrin	72-20-8								< 0.657 U
Endrin aldehyde	7421-93-4								< 0.024 U
Endrin ketone	53494-70-5								< 0.024 UT
gamma-BHC (Lindane)	58-89-9								< 0.638 U
gamma-Chlordane	5103-74-2								< 0.5 UT
Heptachlor	76-44-8								< 0.618 U
Heptachlor epoxide	1024-57-3								< 0.62 U
Isodrin	465-73-6								< 0.461 U
Malathion	121-75-5								< 0.0133 U
Methoxychlor	72-43-5								< 0.0711 U
Mirex	2385-85-5	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
Toxaphene	8001-35-2								< 0.444 U
Radiological									
Americium-241	86954-36-1								< 0.517 U

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Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-008 53SD-8(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-009 53SD-9(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-010A 53SD-10(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-011 53SD-11(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-012 53SD-12(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-013 53SD-13(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-014 53SD-14(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-015 53SD-15(0-1) 0 - 1 8/15/1996 SE
Chemical Name	**CAS No**								
Cesium-137	10045-97-3								< 0.213 U
Cobalt-60	10198-40-0								< 0.229 U
Gross Alpha	12587-46-1								< 0.728 U
Gross beta	12587-47-2								< 2.09 U
Radium-226	13982-63-3								1.67
Total Uranium	7440-61-1 U								0.82
Uranium-235	15117-96-1								0.03
Uranium-238	7440-61-1 U-238								0.43
SVOC									
1,1,2,2-Tetrachloroethane	79-34-5	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U
1,2,4-Trichlorobenzene	120-82-1	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U
1,2-Dichlorobenzene	95-50-1	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U
1,3-Dichlorobenzene	541-73-1	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U
1,4-Dichlorobenzene	106-46-7	< 0.098 U	< 0.098 U	< 0.098 U	< 0.098 U	< 0.098 U	< 0.098 U	< 0.098 U	< 0.098 U
2,4,5-Trichlorophenol	95-95-4	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U
2,4,6-Trichlorophenol	88-06-2	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
2,4-Dichlorophenol	120-83-2	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U
2,4-Dimethylphenol	105-67-9	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U
2,4-Dinitrophenol	51-28-5	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U
2-Chloronaphthalene	91-58-7	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U
2-Chlorophenol	95-57-8	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U
2-Methylnaphthalene	91-57-6	< 0.049 U	< 0.049 U	< 0.049 U	< 0.049 U	< 0.049 U	< 0.049 U	< 0.049 U	< 0.049 U
2-Methylphenol	95-48-7	< 0.029 U	< 0.029 U	< 0.029 U	< 0.029 U	< 0.029 U	< 0.029 U	< 0.029 U	< 0.029 U
2-Nitroaniline	88-74-4	< 0.062 U	< 0.062 U	< 0.062 U	< 0.062 U	< 0.062 U	< 0.062 U	< 0.062 U	< 0.062 U
2-Nitrophenol	88-75-5	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U
3,3'-Dichlorobenzidine	91-94-1	< 6.3 U	< 6.3 U	< 6.3 U	< 6.3 U	< 6.3 U	< 6.3 U	< 6.3 U	< 6.3 U
3-Nitroaniline	99-09-2	< 0.45 U	< 0.45 U	< 0.45 U	< 0.45 U	< 0.45 U	< 0.45 U	< 0.45 U	< 0.45 U
4,6-dinitro-2-Methylphenol	534-52-1	< 0.55 U	< 0.55 U	< 0.55 U	< 0.55 U	< 0.55 U	< 0.55 U	< 0.55 U	< 0.55 U
4-Bromophenyl phenyl ether	101-55-3	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
4-Chloro-3-methylphenol	59-50-7	< 0.095 U	< 0.095 U	< 0.095 U	< 0.095 U	< 0.095 U	< 0.095 U	< 0.095 U	< 0.095 U
4-Chloroaniline	106-47-8	< 0.81 U	< 0.81 U	< 0.81 U	< 0.81 U	< 0.81 U	< 0.81 U	< 0.81 U	< 0.81 U
4-Chlorophenyl phenyl ether	7005-72-3	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
4-Methylphenol	106-44-5	< 0.24 U#	< 0.24 U#	< 0.24 U#	< 0.24 U#	< 0.24 U#	< 0.24 U#	< 0.24 U#	< 0.24 U#
4-Nitroaniline	100-01-6	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U
4-Nitrophenol	100-02-7	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U
Acenaphthene	83-32-9	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U
Acenaphthylene	208-96-8	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
Aniline	62-53-3	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U
Anthracene	120-12-7	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-008 53SD-8(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-009 53SD-9(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-010A 53SD-10(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-011 53SD-11(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-012 53SD-12(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-013 53SD-13(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-014 53SD-14(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-015 53SD-15(0-1) 0 - 1 8/15/1996 SE
Chemical Name	**CAS No**								
Benz(a)anthracene	56-55-3	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
Benzo(a)pyrene	50-32-8	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
Benzo(b)fluoranthene	205-99-2	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U
Benzo(g,h,i)perylene	191-24-2	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
Benzo(k)fluoranthene	207-08-9	< 0.066 U	< 0.066 U	< 0.066 U	< 0.066 U	< 0.066 U	< 0.066 U	< 0.066 U	< 0.066 U
Benzyl alcohol	100-51-6	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U
bis(2-Chloroethoxy)methane	111-91-1	< 0.059 U	< 0.059 U	< 0.059 U	< 0.059 U	< 0.059 U	< 0.059 U	< 0.059 U	< 0.059 U
bis(2-Chloroethyl)ether	111-44-4	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
bis(2-Chloroisopropyl)ether	39638-32-9	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U
Butylbenzyl phthalate	85-68-7	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
Carbazole	86-74-8	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U
Chrysene	218-01-9	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U
Dibenz(a,h)anthracene	53-70-3	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U
Dibenzofuran	132-64-9	< 0.035 U	< 0.035 U	< 0.035 U	< 0.035 U	< 0.035 U	< 0.035 U	< 0.035 U	< 0.035 U
Diethylphthalate	84-66-2	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U
Dimethylphthalate	131-11-3	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
di-n-Butylphthalate	84-74-2	< 0.061 U	< 0.061 U	< 0.061 U	< 0.061 U	< 0.061 U	< 0.061 U	< 0.061 U	< 0.061 U
di-n-Octylphthalate	117-84-0	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U
Diphenylamine	122-39-4	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U
Fluoranthene	206-44-0	< 0.068 U	< 0.068 U	< 0.068 U	< 0.068 U	< 0.068 U	< 0.068 U	< 0.068 U	< 0.068 U
Fluorene	86-73-7	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
Hexachlorobenzene	118-74-1	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
Hexachlorobutadiene	87-68-3	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
Hexachlorocyclopentadiene	77-47-4	< 6.2 U	< 6.2 U	< 6.2 U	< 6.2 U	< 6.2 U	< 6.2 U	< 6.2 U	< 6.2 U
Hexachloroethane	67-72-1	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U
Indeno(1,2,3-c,d)pyrene	193-39-5	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U
Isophorone	78-59-1	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
Naphthalene	91-20-3	< 0.037 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.037 U
n-Nitroso-di-n-propylamine	621-64-7	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U
n-Nitrosodiphenylamine	86-30-6	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U
Pentachlorophenol	87-86-5	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U
Phenanthrene	85-01-8	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
Phenol	108-95-2	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U
Pyrene	129-00-0	< 0.033 U	< 0.033 U	0.18	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U
TPH									
Diesel Fuel	68334-30-5	< 7.98 U	< 7.98 U	< 7.98 U	< 7.98 U	< 7.98 U	< 7.98 U	< 7.98 U	< 7.98 U
Gasoline range organics	GRO	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U
TPH, aviation gas fraction	50815-00-4	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-008 53SD-8(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-009 53SD-9(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-010A 53SD-10(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-011 53SD-11(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-012 53SD-12(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-013 53SD-13(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-014 53SD-14(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-015 53SD-15(0-1) 0 - 1 8/15/1996 SE
Chemical Name	**CAS No**								
TRPH	TRPH	192	< 27.6 U	109	420	< 27.6 U	< 27.6 U	< 27.8 U	< 27.8 U
VOC									
1,1,1-Trichloroethane	71-55-6	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	< 0.82 U	< 0.82 U	< 0.82 U	< 0.82 U	< 0.82 U	< 0.82 U	< 0.82 U	< 0.82 U
1,1,2-Trichloroethane	79-00-5	< 0.54 U	< 0.54 U	< 0.54 U	< 0.54 U	< 0.54 U	< 0.54 U	< 0.54 U	< 0.54 U
1,1-Dichloroethane	75-34-3	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
1,1-Dichloroethene	75-35-4	< 0.39 U	< 0.39 U	< 0.39 U	< 0.39 U	< 0.39 U	< 0.39 U	< 0.39 U	< 0.39 U
1,2-Dichloroethane	107-06-2	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
1,2-Dichloroethene (total)	540-59-0	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U
1,2-Dichloropropane	78-87-5	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U
2-Butanone	78-93-3	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U
2-Hexanone	591-78-6	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U
Acetone	67-64-1	0.35	0.33	0.13	0.14	< 0.017 U	1	0.31	0.69
Acetonitrile	75-05-8	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
Benzene	71-43-2	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U
Bromodichloromethane	75-27-4	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U
Bromoform	75-25-2	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U
Bromomethane	74-83-9	< 0.57 U	< 0.57 U	< 0.57 U	< 0.57 U	< 0.57 U	< 0.57 U	< 0.57 U	< 0.57 U
Carbon disulfide	75-15-0	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U
Carbon tetrachloride	56-23-5	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U
Chlorobenzene	108-90-7	< 0.086 U	< 0.086 U	< 0.086 U	< 0.086 U	< 0.086 U	< 0.086 U	< 0.086 U	< 0.086 U
Chloroethane	75-00-3	< 0.012 U	< 0.012 U	< 0.012 U	< 0.012 U	< 0.012 U	< 0.012 U	< 0.012 U	< 0.012 U
Chloroform	67-66-3	< 0.087 U	< 0.087 U	< 0.087 U	< 0.087 U	< 0.087 U	< 0.087 U	< 0.087 U	< 0.087 U
Chloromethane	74-87-3	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U
cis-1,3-Dichloropropene	10061-01-5	< 0.32 U	< 0.32 U	< 0.32 U	< 0.32 U	< 0.32 U	< 0.32 U	< 0.32 U	< 0.32 U
Dibromochloromethane	124-48-1	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U
Dichlorodifluoromethane	75-71-8	< 0.014 U	< 0.014 U	< 0.014 U	< 0.014 U	< 0.014 U	< 0.014 U	< 0.014 U	< 0.014 U
Ethanol	64-17-5	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
Ethyl benzene	100-41-4	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U
Isopropanol	67-63-0	< 0.79 U	< 0.79 U	< 0.79 U	< 0.79 U	< 0.79 U	< 0.79 U	< 0.79 U	< 0.79 U
Methylene chloride	75-09-2	< 0.012 U	0.21	< 0.012 U	0.09	< 0.012 U	< 0.012 U	0.11	< 0.012 U
Styrene	100-42-5	< 0.26 U	< 0.26 U	< 0.26 U	< 0.26 U	< 0.26 U	< 0.26 U	< 0.26 U	< 0.26 U
tert-Butylalcohol	75-65-0	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Tetrachloroethene	127-18-4	< 0.081 U	< 0.081 U	< 0.081 U	< 0.081 U	< 0.081 U	< 0.081 U	< 0.081 U	< 0.081 U
Toluene	108-88-3	< 0.078 U	< 0.078 U	< 0.078 U	< 0.078 U	< 0.078 U	< 0.078 U	0.76	< 0.078 U
trans-1,3-Dichloropropene	10061-02-6	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U
Trichloroethene	79-01-6	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U
Trichlorofluoromethane	75-69-4	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U	0.11

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-008 53SD-8(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-009 53SD-9(0-1) 0 - 1 8/15/1996 SE	53 I-53-SD-010A 53SD-10(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-011 53SD-11(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-012 53SD-12(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-013 53SD-13(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-014 53SD-14(0-1) 0 - 1 8/14/1996 SE	53 I-53-SD-015 53SD-15(0-1) 0 - 1 8/15/1996 SE
Chemical Name	**CAS No**								
Vinyl acetate	108-05-4	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U
Vinyl chloride	75-01-4	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U
Xylenes	1330-20-7	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U
WetChem									
% Solids	%Solid								
Ammonia	7664-41-7	2400	3400	990	1600	263	1800	1500	1800
Chloride	16887-00-6	77.2	92.4	72.9	84.2	15.2	117	144	114
Cyanide	57-12-5	< 0.92 U	< 0.92 U	< 0.92 U	< 0.92 U	< 0.92 U	< 0.92 U	< 0.92 U	< 0.92 U
Fluoride	16984-48-8	31.3	< 3.62 U	< 3.62 U	< 3.62 U	< 3.62 U	< 3.62 U	< 3.62 U	< 3.62 U
Nitrate	14797-55-8								
Nitrate/Nitrite	Nitrate/Nitrite	3.91	< 0.6 U	< 0.6 U	< 0.6 U	2.02	< 0.6 U	< 0.6 U	< 0.6 U
Nitrite	14797-65-0								
Phosphate	14265-44-2	5600	10000	640	5800	1800	8400	4900	8600
Phosphorus	7723-14-0								
Sulfate	14808-79-8	< 90.4 U	< 90.4 U	< 90.4 U	< 90.4 U	< 90.4 U	< 90.4 U	< 90.4 U	< 90.4 U
Sulfide	18496-25-8	< 6 U	< 6 U	27.5	52.5	< 6 U	57.5	< 6 U	102
Total organic carbon	TOC	577000	633000	143000	471000	69200	522000	684000	518000

Notes:
LOC - Level of Concern
mg/kg - milligrams per kilogram
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-016 53SD-16(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-017 53SD-17(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-018 53SD-18(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-019 53SD-19(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-0.5) 0 - .5 11/4/1998 SE	53 I-53-SD-021 53SD-21(0-1) 0 - 1 8/19/1996 SE	53 I-53-SD-022 53SD-22DUP(0-1) 0 - 1 8/21/1996 SE
Chemical Name	**CAS No**								
Analyte Group									
Dioxins									
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9								
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6								
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7								
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3								
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4								
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6								
Octachlorodibenzodioxin	3268-87-9								
Total heptachlorodibenzo-p-dioxins	37871-00-4								
Total hexachlorodibenzo-p-dioxins	34465-46-8								
Total pentachlorodibenzo-p-dioxins	36088-22-9								
Total tetrachlorodibenzo-p-dioxins	41903-57-5								
Explosives									
1,3,5-Trinitrobenzene	99-35-4	< 0.488 U	< 0.488 U	< 0.488 U	< 0.488 U	< 0.488 U		< 0.488 U	< 0.488 U
1,3-Dinitrobenzene	99-65-0	< 0.496 U	< 0.496 U	< 0.496 U	< 0.496 U	< 0.496 U		< 0.496 U	< 0.496 U
2,4,6-Trinitrotoluene	118-96-7	< 0.456 U	< 0.456 U	< 0.456 U	< 0.456 U	< 0.456 U		< 0.456 U	< 0.456 U
2-amino-4,6-Dinitrotoluene	35572-78-2								
2-Nitrotoluene	88-72-2								
3-Nitrotoluene	99-08-1								
4-amino-2,6-Dinitrotoluene	19406-51-0								
4-Nitrotoluene	99-99-0								
HMX	2691-41-0	< 0.666 U	< 0.666 U	< 0.666 U	< 0.666 U	< 0.666 U		< 0.666 U	< 0.666 U
Nitrobenzene	98-95-3	< 2.41 U	< 2.41 U	< 2.41 U	< 2.41 U	< 2.41 U		< 2.41 U	< 2.41 U
Nitrobenzene	98-95-3								
Nitrocellulose	9004-70-0	< 10.4 U	< 10.4 U	< 10.4 U	< 10.4 U	< 10.4 U		< 10.4 U	< 10.4 U
Nitroglycerin	55-63-0	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U		< 4 U	< 4 U
Nitroguanidine	556-88-7	< 0.475 UJ	< 0.475 UJ	< 0.475 UJ	< 0.475 UJ	< 0.475 UJ		< 0.475 U	< 0.475 U
PETN	78-11-5	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U		< 4 U	< 4 U
Picric Acid	88-89-1	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U	< 0.108 U		< 0.108 U	< 0.108 U
RDX	121-82-4	< 0.587 U	< 0.587 U	< 0.587 U	< 0.587 U	< 0.587 U		< 0.587 U	< 0.587 U
Tetrazene	14097-21-3	< 1.19 U	< 1.19 U	< 1.19 U	< 1.19 U	< 1.19 U		< 1.19 U	< 1.19 U
Tetryl	479-45-8	< 0.731 U	< 0.731 U	< 0.731 U	< 0.731 U	< 0.731 U		< 0.731 U	< 0.731 U
Explosives / SVOC									
2,4-Dinitrotoluene	121-14-2	< 0.424 U	< 0.424 U	< 0.424 U	< 0.424 U	< 0.424 U		< 0.424 U	< 0.424 U
2,4-Dinitrotoluene	121-14-2								
2,6-Dinitrotoluene	606-20-2	< 0.524 U	< 0.524 U	< 0.524 U	< 0.524 U	< 0.524 U		< 0.524 U	< 0.524 U
2,6-Dinitrotoluene	606-20-2								
Furans									
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4								

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-016 53SD-16(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-017 53SD-17(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-018 53SD-18(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-019 53SD-19(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-0.5) 0 - .5 11/4/1998 SE	53 I-53-SD-021 53SD-21(0-1) 0 - 1 8/19/1996 SE	53 I-53-SD-022 53SD-22DUP(0-1) 0 - 1 8/21/1996 SE
Chemical Name	**CAS No**								
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7								
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9								
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9								
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9								
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6								
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5								
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4								
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9								
Octachlorodibenzofuran	39001-02-0								
Total heptachlorodibenzofurans	38998-75-3								
Total hexachlorodibenzofurans	55684-94-1								
Total pentachlorodibenzofurans	30402-15-4								
Total tetrachlorodibenzofurans	30402-14-3								
Metals									
Aluminum	7429-90-5	7830	12400	3800	6220	7860		9760	9170
Antimony	7440-36-0	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	1.31		< 0.1 U	< 0.1 U
Arsenic	7440-38-2	< 0.25 U	0.97	7.78	2.53	10.8		2.46	1.26
Barium	7440-39-3	124	38.1	127	189	302		185	144
Beryllium	7440-41-7	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U		< 0.5 U	< 0.5 U
Boron	7440-42-8	< 5.91 U	< 5.91 U	< 5.91 U	< 5.91 U	32.3		26.8	20.5
Cadmium	7440-43-9	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	9.49		< 0.7 U	< 0.7 U
Calcium	7440-70-2	12700	1440	8810	14400	7540		5090	3360
Chromium	7440-47-3	< 4.05 U	8.32	< 4.05 U	< 4.05 U	< 4.05 U		< 4.05 U	16.7
Cobalt	7440-48-4	< 1.42 U	3.52	< 1.42 U	< 1.42 U	9.9		7	4.27
Copper	7440-50-8	29.1	8.63	49.9	38.5	91.6		23	11.9
Iron	7439-89-6	7660	11000	9820	11200	15100		7390	4920
Lead	7439-92-1	8.36	9.3	36.3	10.3	211		11.3	11.6
Magnesium	7439-95-4	1570	894	1490	2020	1550		1170	936
Manganese	7439-96-5	879	176	1090	1420	778		602	409
Mercury	7439-97-6	< 0.05 U	< 0.05 U	0.39	< 0.05 U	1.59		< 0.05 U	< 0.05 U
Nickel	7440-02-0	< 1.71 U	7.58	< 1.71 U	< 1.71 U	17.5		9.35	7.58
Potassium	7440-09-7	< 100 U	233	< 100 U	< 100 U	< 100 U		< 100 U	< 100 U
Selenium	7782-49-2	< 0.25 UJ	< 0.25 UJ	< 0.25 UJ	< 0.25 UJ	< 0.25 UJ		3.56	2.58
Silver	7440-22-4	< 0.589 U	< 0.589 U	4.98	< 0.589 U	5.15		< 0.589 U	< 0.589 U
Sodium	7440-23-5	2910	632	3340	2990	1880		1280	1050
Strontium	7440-24-6	47.6	7.15	55.5	59.1	30.9		28	29.5
Thallium	7440-28-0	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U		< 0.1 U	0.48
Titanium	7440-32-6	< 50 U	148	< 50 U	< 50 U	351		499	601
Vanadium	7440-62-2	< 3.39 U	24.2	< 3.39 U	< 3.39 U	30.2		20.8	12.9

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-016 53SD-16(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-017 53SD-17(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-018 53SD-18(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-019 53SD-19(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-0.5) 0 - .5 11/4/1998 SE	53 I-53-SD-021 53SD-21(0-1) 0 - 1 8/19/1996 SE	53 I-53-SD-022 53SD-22DUP(0-1) 0 - 1 8/21/1996 SE
Chemical Name	**CAS No**								
Zinc	7440-66-6	< 8.03 U	22	< 8.03 U	< 8.03 U	3780		36.1	24.9
Zirconium	7440-67-7	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U		< 2.5 U	< 2.5 U
PCBs									
Aroclor 1016	12674-11-2								
Aroclor 1221	11104-28-2								
Aroclor 1232	11141-16-5								
Aroclor 1242	53469-21-9								
Aroclor 1248	12672-29-6								
Aroclor 1254	11097-69-1								
Aroclor 1260	11096-82-5								
Pesticides									
4,4'-DDD	72-54-8								
4,4'-DDE	72-55-9								
4,4'-DDT	50-29-3								
Aldrin	309-00-2								
alpha-BHC	319-84-6								
alpha-Chlordane	5103-71-9								
beta-BHC	319-85-7								
Chlordane	57-74-9								
delta-BHC	319-86-8								
Diazinon	333-41-5								
Dieldrin	60-57-1								
Endosulfan I	959-98-8								
Endosulfan II	33213-65-9								
Endosulfan sulfate	1031-07-8								
Endrin	72-20-8								
Endrin aldehyde	7421-93-4								
Endrin ketone	53494-70-5								
gamma-BHC (Lindane)	58-89-9								
gamma-Chlordane	5103-74-2								
Heptachlor	76-44-8								
Heptachlor epoxide	1024-57-3								
Isodrin	465-73-6								
Malathion	121-75-5								
Methoxychlor	72-43-5								
Mirex	2385-85-5	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U		< 0.25 U	< 0.25 U
Toxaphene	8001-35-2								
Radiological									
Americium-241	86954-36-1								

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-016 53SD-16(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-017 53SD-17(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-018 53SD-18(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-019 53SD-19(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-0.5) 0 - .5 11/4/1998 SE	53 I-53-SD-021 53SD-21(0-1) 0 - 1 8/19/1996 SE	53 I-53-SD-022 53SD-22DUP(0-1) 0 - 1 8/21/1996 SE
Chemical Name	**CAS No**								
Cesium-137	10045-97-3								
Cobalt-60	10198-40-0								
Gross Alpha	12587-46-1								
Gross beta	12587-47-2								
Radium-226	13982-63-3								
Total Uranium	7440-61-1 U								
Uranium-235	15117-96-1								
Uranium-238	7440-61-1 U-238								
SVOC									
1,1,2,2-Tetrachloroethane	79-34-5	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U		< 0.24 U	< 0.24 U
1,2,4-Trichlorobenzene	120-82-1	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U	< 0.04 U		< 0.04 U	< 0.04 U
1,2-Dichlorobenzene	95-50-1	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U		< 0.11 U	< 0.11 U
1,3-Dichlorobenzene	541-73-1	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U		< 0.13 U	< 0.13 U
1,4-Dichlorobenzene	106-46-7	< 0.098 U	< 0.098 U	< 0.098 U	< 0.098 U	< 0.098 U		< 0.098 U	< 0.098 U
2,4,5-Trichlorophenol	95-95-4	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U		< 0.1 U	< 0.1 U
2,4,6-Trichlorophenol	88-06-2	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U		< 0.17 U	< 0.17 U
2,4-Dichlorophenol	120-83-2	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U	< 0.18 U		< 0.18 U	< 0.18 U
2,4-Dimethylphenol	105-67-9	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U		< 0.69 U	< 0.69 U
2,4-Dinitrophenol	51-28-5	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U		< 1.2 U	< 1.2 U
2-Chloronaphthalene	91-58-7	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U		< 0.036 U	< 0.036 U
2-Chlorophenol	95-57-8	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U	< 0.06 U		< 0.06 U	< 0.06 U
2-Methylnaphthalene	91-57-6	< 0.049 U	< 0.049 U	< 0.049 U	< 0.049 U	< 0.049 U		< 0.049 U	< 0.049 U
2-Methylphenol	95-48-7	< 0.029 U	< 0.029 U	< 0.029 U	< 0.029 U	< 0.029 U		< 0.029 U	< 0.029 U
2-Nitroaniline	88-74-4	< 0.062 U	< 0.062 U	< 0.062 U	< 0.062 U	< 0.062 U		< 0.062 U	< 0.062 U
2-Nitrophenol	88-75-5	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U		< 0.14 U	< 0.14 U
3,3'-Dichlorobenzidine	91-94-1	< 6.3 U	< 6.3 U	< 6.3 U	< 6.3 U	< 6.3 U		< 6.3 U	< 6.3 U
3-Nitroaniline	99-09-2	< 0.45 U	< 0.45 U	< 0.45 U	< 0.45 U	< 0.45 U		< 0.45 U	< 0.45 U
4,6-dinitro-2-Methylphenol	534-52-1	< 0.55 U	< 0.55 U	< 0.55 U	< 0.55 U	< 0.55 U		< 0.55 U	< 0.55 U
4-Bromophenyl phenyl ether	101-55-3	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U		< 0.033 U	< 0.033 U
4-Chloro-3-methylphenol	59-50-7	< 0.095 U	< 0.095 U	< 0.095 U	< 0.095 U	< 0.095 U		< 0.095 U	< 0.095 U
4-Chloroaniline	106-47-8	< 0.81 U	< 0.81 U	< 0.81 U	< 0.81 U	< 0.81 U		< 0.81 U	< 0.81 U
4-Chlorophenyl phenyl ether	7005-72-3	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U		< 0.033 U	< 0.033 U
4-Methylphenol	106-44-5	< 0.24 U#	< 0.24 U#	< 0.24 U#	< 0.24 U#	< 0.24 U#		< 0.24 U#	< 0.24 U#
4-Nitroaniline	100-01-6	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U	< 0.41 U		< 0.41 U	< 0.41 U
4-Nitrophenol	100-02-7	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U		< 1.4 U	< 1.4 U
Acenaphthene	83-32-9	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U	< 0.036 U		< 0.036 U	< 0.036 U
Acenaphthylene	208-96-8	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U		< 0.033 U	< 0.033 U
Aniline	62-53-3	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U		< 0.65 U	< 0.65 U
Anthracene	120-12-7	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U		< 0.033 U	< 0.033 U

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-016 53SD-16(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-017 53SD-17(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-018 53SD-18(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-019 53SD-19(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-0.5) 0 - .5 11/4/1998 SE	53 I-53-SD-021 53SD-21(0-1) 0 - 1 8/19/1996 SE	53 I-53-SD-022 53SD-22DUP(0-1) 0 - 1 8/21/1996 SE
Chemical Name	**CAS No**								
Benz(a)anthracene	56-55-3	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U		< 0.17 U	< 0.17 U
Benzo(a)pyrene	50-32-8	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U		< 0.25 U	< 0.25 U
Benzo(b)fluoranthene	205-99-2	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U		< 0.21 U	< 0.21 U
Benzo(g,h,i)perylene	191-24-2	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U		< 0.25 U	< 0.25 U
Benzo(k)fluoranthene	207-08-9	< 0.066 U	< 0.066 U	< 0.066 U	< 0.066 U	< 0.066 U		< 0.066 U	< 0.066 U
Benzyl alcohol	100-51-6	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U		< 0.19 U	< 0.19 U
bis(2-Chloroethoxy)methane	111-91-1	< 0.059 U	< 0.059 U	< 0.059 U	< 0.059 U	< 0.059 U		< 0.059 U	< 0.059 U
bis(2-Chloroethyl)ether	111-44-4	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U		< 0.033 U	< 0.033 U
bis(2-Chloroisopropyl)ether	39638-32-9	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U		< 0.2 U	< 0.2 U
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U		< 0.62 U	< 0.62 U
Butylbenzyl phthalate	85-68-7	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U		< 0.17 U	< 0.17 U
Carbazole	86-74-8	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U	< 0.14 U		< 0.14 U	< 0.14 U
Chrysene	218-01-9	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U	< 0.12 U		< 0.12 U	< 0.12 U
Dibenz(a,h)anthracene	53-70-3	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U	< 0.21 U		< 0.21 U	< 0.21 U
Dibenzofuran	132-64-9	< 0.035 U	< 0.035 U	< 0.035 U	< 0.035 U	< 0.035 U		< 0.035 U	< 0.035 U
Diethylphthalate	84-66-2	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U		< 0.24 U	< 0.24 U
Dimethylphthalate	131-11-3	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U		< 0.17 U	< 0.17 U
di-n-Butylphthalate	84-74-2	< 0.061 U	< 0.061 U	< 0.061 U	< 0.061 U	< 0.061 U		< 0.061 U	< 0.061 U
di-n-Octylphthalate	117-84-0	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U		< 0.19 U	< 0.19 U
Diphenylamine	122-39-4	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U	< 0.13 U		< 0.13 U	< 0.13 U
Fluoranthene	206-44-0	< 0.068 U	< 0.068 U	< 0.068 U	< 0.068 U	< 0.068 U		< 0.068 U	< 0.068 U
Fluorene	86-73-7	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U		< 0.033 U	< 0.033 U
Hexachlorobenzene	118-74-1	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U		< 0.033 U	< 0.033 U
Hexachlorobutadiene	87-68-3	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U		< 0.23 U	< 0.23 U
Hexachlorocyclopentadiene	77-47-4	< 6.2 U	< 6.2 U	< 6.2 U	< 6.2 U	< 6.2 U		< 6.2 U	< 6.2 U
Hexachloroethane	67-72-1	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U		< 0.15 U	< 0.15 U
Indeno(1,2,3-c,d)pyrene	193-39-5	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U		< 0.29 U	< 0.29 U
Isophorone	78-59-1	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U		< 0.033 U	< 0.033 U
Naphthalene	91-20-3	< 0.037 U	< 0.037 U	< 0.037 U	< 0.037 U	< 0.037 U		< 0.037 U	< 0.037 U
n-Nitroso-di-n-propylamine	621-64-7	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U	< 0.2 U		< 0.2 U	< 0.2 U
n-Nitrosodiphenylamine	86-30-6	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U		< 0.19 U	< 0.19 U
Pentachlorophenol	87-86-5	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U	< 1.3 U		< 1.3 U	< 1.3 U
Phenanthrene	85-01-8	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	0.39		< 0.033 U	< 0.033 U
Phenol	108-95-2	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U	< 0.11 U		< 0.11 U	< 0.11 U
Pyrene	129-00-0	< 0.033 U	< 0.033 U	< 0.033 U	< 0.033 U	0.43		< 0.033 U	< 0.033 U
TPH									
Diesel Fuel	68334-30-5	< 7.98 U	< 7.98 U	< 7.98 U	< 7.98 U	< 7.98 U		< 7.98 U	
Gasoline range organics	GRO	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U		< 8 U	
TPH, aviation gas fraction	50815-00-4	< 8 U	< 8 U	< 8 U	< 8 U	< 8 U		< 8 U	

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-016 53SD-16(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-017 53SD-17(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-018 53SD-18(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-019 53SD-19(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-0.5) 0 - .5 11/4/1998 SE	53 I-53-SD-021 53SD-21(0-1) 0 - 1 8/19/1996 SE	53 I-53-SD-022 53SD-22DUP(0-1) 0 - 1 8/21/1996 SE
Chemical Name	**CAS No**								
TRPH	TRPH	< 27.8 U	< 27.8 U	220	< 27.8 U	695		< 27.8 U	
VOC									
1,1,1-Trichloroethane	71-55-6	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U		< 0.44 U	< 0.44 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	< 0.82 U	< 0.82 U	< 0.82 U	< 0.82 U	< 0.82 U		< 0.82 U	< 0.82 U
1,1,2-Trichloroethane	79-00-5	< 0.54 U	< 0.54 U	< 0.54 U	< 0.54 U	< 0.54 U		< 0.54 U	< 0.54 U
1,1-Dichloroethane	75-34-3	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U		< 0.23 U	< 0.23 U
1,1-Dichloroethene	75-35-4	< 0.39 U	< 0.39 U	< 0.39 U	< 0.39 U	< 0.39 U		< 0.39 U	< 0.39 U
1,2-Dichloroethane	107-06-2	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U		< 0.17 U	< 0.17 U
1,2-Dichloroethene (total)	540-59-0	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U		< 0.3 U	< 0.3 U
1,2-Dichloropropane	78-87-5	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U		< 0.29 U	< 0.29 U
2-Butanone	78-93-3	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U	< 0.07 U		< 0.07 U	< 0.07 U
2-Hexanone	591-78-6	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U		< 0.032 U	< 0.032 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U	< 0.027 U		< 0.027 U	< 0.027 U
Acetone	67-64-1	0.22	< 0.017 U	0.54	< 0.017 U	< 0.017 U		< 0.017 U	0.08
Acetonitrile	75-05-8	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U		< 0.23 U	< 0.23 U
Benzene	71-43-2	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U		< 0.15 U	< 0.15 U
Bromodichloromethane	75-27-4	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U	< 0.29 U		< 0.29 U	< 0.29 U
Bromoform	75-25-2	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U	< 0.69 U		< 0.69 U	< 0.69 U
Bromomethane	74-83-9	< 0.57 U	< 0.57 U	< 0.57 U	< 0.57 U	< 0.57 U		< 0.57 U	< 0.57 U
Carbon disulfide	75-15-0	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U	< 0.44 U		< 0.44 U	< 0.44 U
Carbon tetrachloride	56-23-5	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U		< 0.7 U	< 0.7 U
Chlorobenzene	108-90-7	< 0.086 U	< 0.086 U	< 0.086 U	< 0.086 U	< 0.086 U		< 0.086 U	< 0.086 U
Chloroethane	75-00-3	< 0.012 U	< 0.012 U	< 0.012 U	< 0.012 U	< 0.012 U		< 0.012 U	< 0.012 U
Chloroform	67-66-3	< 0.087 U	< 0.087 U	< 0.087 U	< 0.087 U	< 0.087 U		< 0.087 U	< 0.087 U
Chloromethane	74-87-3	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U	< 0.88 U		< 0.88 U	< 0.88 U
cis-1,3-Dichloropropene	10061-01-5	< 0.32 U	< 0.32 U	< 0.32 U	< 0.32 U	< 0.32 U		< 0.32 U	< 0.32 U
Dibromochloromethane	124-48-1	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U	< 0.31 U		< 0.31 U	< 0.31 U
Dichlorodifluoromethane	75-71-8	< 0.014 U	< 0.014 U	< 0.014 U	< 0.014 U	< 0.014 U		< 0.014 U	< 0.014 U
Ethanol	64-17-5	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U		< 3.7 U	< 3.7 U
Ethyl benzene	100-41-4	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U	< 0.17 U		< 0.17 U	< 0.17 U
Isopropanol	67-63-0	< 0.79 U	< 0.79 U	< 0.79 U	< 0.79 U	< 0.79 U		< 0.79 U	< 0.79 U
Methylene chloride	75-09-2	0.08	< 0.012 U	0.15	0.11	0.08		< 0.012 U	0.08
Styrene	100-42-5	< 0.26 U	< 0.26 U	< 0.26 U	< 0.26 U	< 0.26 U		< 0.26 U	< 0.26 U
tert-Butylalcohol	75-65-0	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U		< 0.5 U	< 0.5 U
Tetrachloroethene	127-18-4	< 0.081 U	< 0.081 U	< 0.081 U	< 0.081 U	< 0.081 U		< 0.081 U	< 0.081 U
Toluene	108-88-3	0.01	0.24	0.01	< 0.078 U	0.55		< 0.078 U	< 0.078 U
trans-1,3-Dichloropropene	10061-02-6	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U		< 0.28 U	< 0.28 U
Trichloroethene	79-01-6	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U	< 0.28 U		< 0.28 U	< 0.28 U
Trichlorofluoromethane	75-69-4	< 0.59 U	< 0.59 U	< 0.59 U	0.09	< 0.59 U		< 0.59 U	< 0.59 U

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53 I-53-SD-016 53SD-16(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-017 53SD-17(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-018 53SD-18(0-1) 0 - 1 8/13/1996 SE	53 I-53-SD-019 53SD-19(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-1) 0 - 1 8/12/1996 SE	53 I-53-SD-020 53SD-20(0-0.5) 0 - .5 11/4/1998 SE	53 I-53-SD-021 53SD-21(0-1) 0 - 1 8/19/1996 SE	53 I-53-SD-022 53SD-22DUP(0-1) 0 - 1 8/21/1996 SE
Chemical Name	**CAS No**								
Vinyl acetate	108-05-4	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U	< 0.032 U		< 0.032 U	< 0.032 U
Vinyl chloride	75-01-4	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U	< 0.62 U		< 0.62 U	< 0.62 U
Xylenes	1330-20-7	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U	< 0.15 U		< 0.15 U	< 0.15 U
WetChem									
% Solids	%Solid								
Ammonia	7664-41-7	2400	129	830	< 12.5 U	1000		2500	1900
Chloride	16887-00-6	97.2	11.8	165	105	81.7		34.3	< 6.05 U
Cyanide	57-12-5	< 0.92 U	< 0.92 U	< 0.92 U	< 0.92 U	< 0.92 U		< 0.92 U	< 0.92 U
Fluoride	16984-48-8	< 3.62 U	7.36	< 3.62 U	< 3.62 U	< 3.62 U		15.8	14
Nitrate	14797-55-8								
Nitrate/Nitrite	Nitrate/Nitrite	4.14	< 0.6 U	< 0.6 U	< 0.6 U	< 0.6 U		< 0.6 U	2.17
Nitrite	14797-65-0								
Phosphate	14265-44-2	7900	320	650	7400	1500		510	< 7.49 U
Phosphorus	7723-14-0								
Sulfate	14808-79-8	< 90.4 U	< 90.4 U	< 90.4 U	< 90.4 U	1170		< 90.4 U	< 90.4 U
Sulfide	18496-25-8	< 6 U	< 6 U	62.5	80.6	880		< 6 U	43.4
Total organic carbon	TOC	885000	251000	937000	673000	407000	110000	195000	160000

Notes:
LOC - Level of Concern
mg/kg - milligrams per kilogram
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SD-022	I-53-SD-023	I-53-SD-024	I-53-SD-026	I-B807-SD-2	I-B807-SD-3
		53SD-22(0-1)	53SD-23(0-1)	53SD-24(0-0.5)	53SD-26(0-0.5)	B807SD-2(5-5.5)	B807SD-3(9.5-10)
		0 - 1	0 - 1	0 - .5	0 - .5	5 - 5.5	9.5 - 10
		8/21/1996	8/21/1996	10/14/1998	10/14/1998	4/2/2004	4/2/2004
		SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**						
Analyte Group							
Dioxins							
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9						
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6						
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7						
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3						
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4						
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6						
Octachlorodibenzodioxin	3268-87-9						
Total heptachlorodibenzo-p-dioxins	37871-00-4						
Total hexachlorodibenzo-p-dioxins	34465-46-8						
Total pentachlorodibenzo-p-dioxins	36088-22-9						
Total tetrachlorodibenzo-p-dioxins	41903-57-5						
Explosives							
1,3,5-Trinitrobenzene	99-35-4	< 0.488 U	< 0.488 U	< 0.1 U	< 0.1 U	< 0.25 U	< 0.25 U
1,3-Dinitrobenzene	99-65-0	< 0.496 U	< 0.496 U	< 0.1 U	< 0.1 U	< 0.25 U	< 0.25 U
2,4,6-Trinitrotoluene	118-96-7	< 0.456 U	< 0.456 U	< 0.1 U	< 0.1 U	< 0.25 U	< 0.25 U
2-amino-4,6-Dinitrotoluene	35572-78-2			< 0.1 U	< 0.1 U	< 0.25 U	< 0.25 U
2-Nitrotoluene	88-72-2			< 0.2 U	< 0.2 U	< 0.25 U	< 0.25 U
3-Nitrotoluene	99-08-1			< 0.2 U	< 0.2 U	< 0.25 U	< 0.25 U
4-amino-2,6-Dinitrotoluene	19406-51-0			< 0.1 U	< 0.1 U	< 0.25 U	< 0.25 U
4-Nitrotoluene	99-99-0			< 0.2 U	< 0.2 U	< 0.25 U	< 0.25 U
HMX	2691-41-0	< 0.666 U	< 0.666 U	< 0.2 U	< 0.2 U	< 0.5 U	< 0.5 U
Nitrobenzene	98-95-3	< 2.41 U	< 2.41 U	< 0.1 U	< 0.1 U	< 0.49 U	< 0.25 U
Nitrobenzene	98-95-3			< 0.07 U	< 0.14 UD	< 0.25 U	< 1.1 U
Nitrocellulose	9004-70-0	< 10.4 U	< 10.4 U	< 10.2 UR	< 10.5 UR		
Nitroglycerin	55-63-0	< 4 U	< 4 U	< 4.03 U	< 4.03 U		
Nitroguanidine	556-88-7	< 0.475 U	< 0.475 U	< 0.467 U	< 0.468 U		
PETN	78-11-5	< 4 U	< 4 U	< 4.03 U	< 4.03 U		
Picric Acid	88-89-1	< 0.108 U	< 0.108 U				
RDX	121-82-4	< 0.587 U	< 0.587 U	0.12 J	< 0.2 U	< 0.5 U	< 0.5 U
Tetrazene	14097-21-3	< 1.19 U	< 1.19 U				
Tetryl	479-45-8	< 0.731 U	< 0.731 U	< 0.2 U	< 0.2 U	< 0.65 U	< 0.65 U
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	< 0.424 U	< 0.424 U	< 0.1 U	< 0.28 UD	< 0.49 U	< 0.25 U
2,4-Dinitrotoluene	121-14-2			< 0.14 U	< 0.1 U	< 0.25 U	< 1.1 U
2,6-Dinitrotoluene	606-20-2	< 0.524 U	< 0.524 U	< 0.1 U	< 0.1 U	< 0.49 U	< 1.1 U
2,6-Dinitrotoluene	606-20-2			< 0.14 U	< 0.28 UD	< 0.25 U	< 0.25 U
Furans							
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4						

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SD-022	I-53-SD-023	I-53-SD-024	I-53-SD-026	I-B807-SD-2	I-B807-SD-3
		53SD-22(0-1)	53SD-23(0-1)	53SD-24(0-0.5)	53SD-26(0-0.5)	B807SD-2(5-5.5)	B807SD-3(9.5-10)
		0 - 1	0 - 1	0 - .5	0 - .5	5 - 5.5	9.5 - 10
		8/21/1996	8/21/1996	10/14/1998	10/14/1998	4/2/2004	4/2/2004
		SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**						
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7						
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9						
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9						
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9						
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6						
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5						
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4						
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9						
Octachlorodibenzofuran	39001-02-0						
Total heptachlorodibenzofurans	38998-75-3						
Total hexachlorodibenzofurans	55684-94-1						
Total pentachlorodibenzofurans	30402-15-4						
Total tetrachlorodibenzofurans	30402-14-3						
Metals							
Aluminum	7429-90-5	9620	7220	2310 J	3990 J	5850	13600
Antimony	7440-36-0	< 0.1 U	< 0.1 U	< 0.047 U	0.16	0.38 J	< 3.4 U
Arsenic	7440-38-2	3.69	3.22	< 0.281 U	3.4	2.4	3.3 J
Barium	7440-39-3	170	175	22.9 J	59.3 J	36.2	132
Beryllium	7440-41-7	< 0.5 U	< 0.5 U	0.45 J	0.57 J	0.34 J	2.5
Boron	7440-42-8	27.5	46.6	< 4.35 U	< 5 U		
Cadmium	7440-43-9	< 0.7 U	< 0.7 U	0.02	0.37	0.07 J	0.31 J
Calcium	7440-70-2	4010	11500	2150 J	3010 J	602 J	2520
Chromium	7440-47-3	19.1	< 4.05 U	< 0.87 R	< 1 R	5.7	8.2
Cobalt	7440-48-4	6.41	< 1.42 U	4.94 J	5.87 J	2.4 J	2.9 J
Copper	7440-50-8	17.8	21.6	12 J	14.2 J	13.4	9
Iron	7439-89-6	6730	7380	8520 J	15100 J	7820	5550
Lead	7439-92-1	11.7	9.57	1.77	45.8	8.1	14.3
Magnesium	7439-95-4	1140	1810	2310 J	1600 J	464 J	834 J
Manganese	7439-96-5	526	883	32.3 J	1000 J	150	129
Mercury	7439-97-6	< 0.05 U	< 0.05 U	0.02	0.06	0.15	0.14 J
Nickel	7440-02-0	8.61	12.8	6.17	4.84	2.6 J	5.3 J
Potassium	7440-09-7	< 100 U	< 100 U	1310	401	193 J	368 J
Selenium	7782-49-2	1.91	3.87	0.66	1.04	< 0.74 U	1.9
Silver	7440-22-4	< 0.589 U	< 0.589 U	0.05	0.08	< 0.74 U	< 1.7 U
Sodium	7440-23-5	1220	2450	52.6	94.3	< 739 U	< 1680 U
Strontium	7440-24-6	20.9	48.5	2.34 J	30.3 J		
Thallium	7440-28-0	< 0.1 U	< 0.1 U	0.02	0.12	0.81 J	1.6 J
Titanium	7440-32-6	547	724	276 J	215 J		
Vanadium	7440-62-2	19.2	< 3.39 U	9.21 J	15.7 J	13.2	10.4 J

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SD-022	I-53-SD-023	I-53-SD-024	I-53-SD-026	I-B807-SD-2	I-B807-SD-3
		53SD-22(0-1)	53SD-23(0-1)	53SD-24(0-0.5)	53SD-26(0-0.5)	B807SD-2(5-5.5)	B807SD-3(9.5-10)
		0 - 1	0 - 1	0 - .5	0 - .5	5 - 5.5	9.5 - 10
		8/21/1996	8/21/1996	10/14/1998	10/14/1998	4/2/2004	4/2/2004
		SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**						
Zinc	7440-66-6	40.4	< 8.03 U	7.56 J	159 J	17.3	14.3
Zirconium	7440-67-7	< 2.5 U	< 2.5 U	0.6	0.78		
PCBs							
Aroclor 1016	12674-11-2			< 0.027 U	< 0.027 U		
Aroclor 1221	11104-28-2			< 0.027 U	< 0.027 U		
Aroclor 1232	11141-16-5			< 0.013 U	< 0.013 U		
Aroclor 1242	53469-21-9			< 0.013 U	< 0.013 U		
Aroclor 1248	12672-29-6			< 0.027 U	< 0.027 U		
Aroclor 1254	11097-69-1			0.03 J	< 0.027 U		
Aroclor 1260	11096-82-5			< 0.027 U	< 0.027 U		
Pesticides							
4,4'-DDD	72-54-8			< 0.07 U	< 0.07 U		
4,4'-DDE	72-55-9			< 0.07 U	0.26 NJ		
4,4'-DDT	50-29-3			< 0.07 U	0.45 NJ		
Aldrin	309-00-2			< 0.07 U	< 0.07 U		
alpha-BHC	319-84-6			< 0.07 U	< 0.07 U		
alpha-Chlordane	5103-71-9			< 0.07 U	< 0.07 U		
beta-BHC	319-85-7			< 0.07 U	< 0.07 U		
Chlordane	57-74-9			< 0.3 U	< 0.3 U		
delta-BHC	319-86-8			< 0.07 U	< 0.07 U		
Diazinon	333-41-5						
Dieldrin	60-57-1			< 0.07 U	< 0.07 U		
Endosulfan I	959-98-8			< 0.07 U	< 0.07 U		
Endosulfan II	33213-65-9			< 0.07 U	< 0.07 U		
Endosulfan sulfate	1031-07-8			< 0.07 U	< 0.07 U		
Endrin	72-20-8			< 0.07 U	< 0.07 U		
Endrin aldehyde	7421-93-4			< 0.07 UR	< 0.07 UR		
Endrin ketone	53494-70-5			< 0.07 UJ	< 0.07 UJ		
gamma-BHC (Lindane)	58-89-9			< 0.07 U	< 0.07 U		
gamma-Chlordane	5103-74-2			< 0.07 U	< 0.07 U		
Heptachlor	76-44-8			< 0.07 U	< 0.07 U		
Heptachlor epoxide	1024-57-3			< 0.07 U	< 0.07 U		
Isodrin	465-73-6						
Malathion	121-75-5						
Methoxychlor	72-43-5			< 0.07 U	< 0.07 U		
Mirex	2385-85-5	< 0.25 U	< 0.25 U				
Toxaphene	8001-35-2			< 0.067 U	< 0.067 U		
Radiological							
Americium-241	86954-36-1						

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SD-022	I-53-SD-023	I-53-SD-024	I-53-SD-026	I-B807-SD-2	I-B807-SD-3
		53SD-22(0-1)	53SD-23(0-1)	53SD-24(0-0.5)	53SD-26(0-0.5)	B807SD-2(5-5.5)	B807SD-3(9.5-10)
		0 - 1	0 - 1	0 - .5	0 - .5	5 - 5.5	9.5 - 10
		8/21/1996	8/21/1996	10/14/1998	10/14/1998	4/2/2004	4/2/2004
		SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**						
Cesium-137	10045-97-3						
Cobalt-60	10198-40-0						
Gross Alpha	12587-46-1						
Gross beta	12587-47-2						
Radium-226	13982-63-3						
Total Uranium	7440-61-1 U						
Uranium-235	15117-96-1						
Uranium-238	7440-61-1 U-238						
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5	< 0.24 U	< 0.24 U				
1,2,4-Trichlorobenzene	120-82-1	< 0.04 U	< 0.04 U	< 0.1 U	< 0.2 UD	< 0.49 U	< 1.1 U
1,2-Dichlorobenzene	95-50-1	< 0.11 U	< 0.11 U	< 0.07 U	< 0.14 UD	< 0.49 U	< 1.1 U
1,3-Dichlorobenzene	541-73-1	< 0.13 U	< 0.13 U	< 0.07 U	< 0.14 UD	< 0.49 U	< 1.1 U
1,4-Dichlorobenzene	106-46-7	< 0.098 U	< 0.098 U	< 0.07 U	< 0.14 UD	< 0.49 U	< 1.1 U
2,4,5-Trichlorophenol	95-95-4	< 0.1 U	< 0.1 U	< 0.3 U	< 0.6 UD	< 0.49 U	< 1.1 U
2,4,6-Trichlorophenol	88-06-2	< 0.17 U	< 0.17 U	< 0.3 U	< 0.6 UD	< 0.49 U	< 1.1 U
2,4-Dichlorophenol	120-83-2	< 0.18 U	< 0.18 U	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
2,4-Dimethylphenol	105-67-9	< 0.69 U	< 0.69 U	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
2,4-Dinitrophenol	51-28-5	< 1.2 U	< 1.2 U	< 1.3 U	< 2.6 UD	< 2.4 U	< 5.4 U
2-Chloronaphthalene	91-58-7	< 0.036 U	< 0.036 U	< 0.07 U	< 0.14 UD	< 0.49 U	< 1.1 U
2-Chlorophenol	95-57-8	< 0.06 U	< 0.06 U	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
2-Methylnaphthalene	91-57-6	< 0.049 U	< 0.049 U	< 0.1 U	< 0.2 UD	< 0.49 U	< 1.1 U
2-Methylphenol	95-48-7	< 0.029 U	< 0.029 U	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
2-Nitroaniline	88-74-4	< 0.062 U	< 0.062 U	< 0.3 U	< 0.6 UD	< 2.4 U	< 5.4 U
2-Nitrophenol	88-75-5	< 0.14 U	< 0.14 U	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
3,3'-Dichlorobenzidine	91-94-1	< 6.3 U	< 6.3 U	< 0.5 UJ	< 1 UJD	< 2.4 U	< 5.4 U
3-Nitroaniline	99-09-2	< 0.45 U	< 0.45 U	< 0.3 U	< 0.6 UD	< 2.4 U	< 5.4 U
4,6-dinitro-2-Methylphenol	534-52-1	< 0.55 U	< 0.55 U	< 1 U	< 2 UD	< 2.4 U	< 5.4 U
4-Bromophenyl phenyl ether	101-55-3	< 0.033 U	< 0.033 U	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
4-Chloro-3-methylphenol	59-50-7	< 0.095 U	< 0.095 U	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
4-Chloroaniline	106-47-8	< 0.81 U	< 0.81 U	< 0.3 UJ	< 0.6 UJD	< 0.49 U	< 1.1 U
4-Chlorophenyl phenyl ether	7005-72-3	< 0.033 U	< 0.033 U	< 0.1 U	< 0.2 UD	< 0.49 U	< 1.1 U
4-Methylphenol	106-44-5	< 0.24 U#	< 0.24 U#	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
4-Nitroaniline	100-01-6	< 0.41 U	< 0.41 U	< 0.3 U	< 0.6 UD	< 2.4 U	< 5.4 U
4-Nitrophenol	100-02-7	< 1.4 U	< 1.4 U	< 0.5 U	< 1 UD	< 2.4 U	< 5.4 U
Acenaphthene	83-32-9	< 0.036 U	< 0.036 U	< 0.07 U	0.18 JD	< 0.49 U	< 1.1 U
Acenaphthylene	208-96-8	< 0.033 U	< 0.033 U	< 0.07 U	0.02 JD	< 0.49 U	< 1.1 U
Aniline	62-53-3	< 0.65 U	< 0.65 U			< 0.49 U	< 1.1 U
Anthracene	120-12-7	< 0.033 U	< 0.033 U	< 0.07 U	0.67 D	< 0.49 U	< 1.1 U

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SD-022	I-53-SD-023	I-53-SD-024	I-53-SD-026	I-B807-SD-2	I-B807-SD-3
		53SD-22(0-1)	53SD-23(0-1)	53SD-24(0-0.5)	53SD-26(0-0.5)	B807SD-2(5-5.5)	B807SD-3(9.5-10)
		0 - 1	0 - 1	0 - .5	0 - .5	5 - 5.5	9.5 - 10
		8/21/1996	8/21/1996	10/14/1998	10/14/1998	4/2/2004	4/2/2004
		SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**						
Benz(a)anthracene	56-55-3	< 0.17 U	< 0.17 U	< 0.1 U	0.87 D	< 0.49 U	< 1.1 U
Benzo(a)pyrene	50-32-8	< 0.25 U	< 0.25 U	< 0.14 U	0.86 D	< 0.49 U	< 1.1 U
Benzo(b)fluoranthene	205-99-2	< 0.21 U	< 0.21 U	< 0.1 U	0.99 D	< 0.49 U	< 1.1 U
Benzo(g,h,i)perylene	191-24-2	< 0.25 U	< 0.25 U	< 0.16 U	0.39 JD	< 0.49 U	< 1.1 U
Benzo(k)fluoranthene	207-08-9	< 0.066 U	< 0.066 U	< 0.1 U	0.45 D	< 0.49 U	< 1.1 U
Benzyl alcohol	100-51-6	< 0.19 U	< 0.19 U				
bis(2-Chloroethoxy)methane	111-91-1	< 0.059 U	< 0.059 U	< 0.07 U	< 0.14 UD	< 0.49 U	< 1.1 U
bis(2-Chloroethyl)ether	111-44-4	< 0.033 U	< 0.033 U	< 0.07 U	< 0.14 UD	< 0.49 U	< 1.1 U
bis(2-Chloroisopropyl)ether	39638-32-9	< 0.2 U	< 0.2 U	< 0.07 U	< 0.14 UD	< 0.49 U	< 1.1 U
bis(2-Ethylhexyl)phthalate	117-81-7	4	< 0.62 U	< 0.1 U	< 0.2 UD	< 0.49 U	< 1.1 U
Butylbenzyl phthalate	85-68-7	< 0.17 U	< 0.17 U	< 0.1 U	< 0.2 UD	< 0.49 U	< 1.1 U
Carbazole	86-74-8	< 0.14 U	< 0.14 U	< 0.1 U	0.13 JD	< 0.49 U	< 1.1 U
Chrysene	218-01-9	< 0.12 U	< 0.12 U	< 0.1 U	0.76 D	< 0.49 U	< 1.1 U
Dibenz(a,h)anthracene	53-70-3	< 0.21 U	< 0.21 U	< 0.16 U	< 0.32 UD	< 0.49 U	< 1.1 U
Dibenzofuran	132-64-9	< 0.035 U	< 0.035 U	< 0.07 U	0.08 JD	< 0.49 U	< 1.1 U
Diethylphthalate	84-66-2	< 0.24 U	< 0.24 U	< 0.07 U	< 0.14 UD	< 0.49 U	< 1.1 U
Dimethylphthalate	131-11-3	< 0.17 U	< 0.17 U	< 0.1 U	< 0.2 UD	< 0.49 U	< 1.1 U
di-n-Butylphthalate	84-74-2	< 0.061 U	< 0.061 U	< 0.07 U	0.32 D	< 0.49 U	< 1.1 U
di-n-Octylphthalate	117-84-0	< 0.19 U	< 0.19 U	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
Diphenylamine	122-39-4	< 0.13 U	< 0.13 U			< 0.49 U	< 1.1 U
Fluoranthene	206-44-0	< 0.068 U	< 0.068 U	< 0.07 U	2.2 D	0.09 J	< 1.1 U
Fluorene	86-73-7	< 0.033 U	< 0.033 U	< 0.07 U	0.28 D	< 0.49 U	< 1.1 U
Hexachlorobenzene	118-74-1	< 0.033 U	< 0.033 U	< 0.1 U	< 0.2 UD	< 0.49 U	< 1.1 U
Hexachlorobutadiene	87-68-3	< 0.23 U	< 0.23 U	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
Hexachlorocyclopentadiene	77-47-4	< 6.2 U	< 6.2 U	< 1 UJ	< 2 UJD	< 2.4 U	< 5.4 U
Hexachloroethane	67-72-1	< 0.15 U	< 0.15 U	< 0.1 U	< 0.2 UD	< 0.49 U	< 1.1 U
Indeno(1,2,3-c,d)pyrene	193-39-5	< 0.29 U	< 0.29 U	< 0.16 U	0.5 D	< 0.49 U	< 1.1 U
Isophorone	78-59-1	< 0.033 U	< 0.033 U	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
Naphthalene	91-20-3	< 0.037 U	< 0.037 U	< 0.07 U	< 0.14 UD	< 0.49 U	< 1.1 U
n-Nitroso-di-n-propylamine	621-64-7	< 0.2 U	< 0.2 U	< 0.1 U	< 0.2 UD	< 0.49 U	< 1.1 U
n-Nitrosodiphenylamine	86-30-6	< 0.19 U	< 0.19 U	< 0.07 U	3.5 D	< 0.49 U	< 1.1 U
Pentachlorophenol	87-86-5	< 1.3 U	< 1.3 U	< 0.5 U	< 1 UD	< 0.49 U	< 1.1 U
Phenanthrene	85-01-8	< 0.033 U	< 0.033 U	< 0.07 U	1.9 D	< 0.49 U	< 1.1 U
Phenol	108-95-2	< 0.11 U	< 0.11 U	< 0.14 U	< 0.28 UD	< 0.49 U	< 1.1 U
Pyrene	129-00-0	< 0.033 U	< 0.033 U	< 0.07 U	1.3 D	< 0.49 U	< 1.1 U
TPH							
Diesel Fuel	68334-30-5						
Gasoline range organics	GRO						
TPH, aviation gas fraction	50815-00-4						

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SD-022	I-53-SD-023	I-53-SD-024	I-53-SD-026	I-B807-SD-2	I-B807-SD-3
		53SD-22(0-1)	53SD-23(0-1)	53SD-24(0-0.5)	53SD-26(0-0.5)	B807SD-2(5-5.5)	B807SD-3(9.5-10)
		0 - 1	0 - 1	0 - .5	0 - .5	5 - 5.5	9.5 - 10
		8/21/1996	8/21/1996	10/14/1998	10/14/1998	4/2/2004	4/2/2004
		SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**						
TRPH	TRPH						
VOC							
1,1,1-Trichloroethane	71-55-6	< 0.44 U	< 0.44 U				
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	< 0.82 U	< 0.82 U				
1,1,2-Trichloroethane	79-00-5	< 0.54 U	< 0.54 U				
1,1-Dichloroethane	75-34-3	< 0.23 U	< 0.23 U				
1,1-Dichloroethene	75-35-4	< 0.39 U	< 0.39 U				
1,2-Dichloroethane	107-06-2	< 0.17 U	< 0.17 U				
1,2-Dichloroethene (total)	540-59-0	< 0.3 U	< 0.3 U				
1,2-Dichloropropane	78-87-5	< 0.29 U	< 0.29 U				
2-Butanone	78-93-3	< 0.07 U	< 0.07 U				
2-Hexanone	591-78-6	< 0.032 U	< 0.032 U				
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.027 U	< 0.027 U				
Acetone	67-64-1	0.11	< 0.017 U				
Acetonitrile	75-05-8	< 0.23 U	< 0.23 U				
Benzene	71-43-2	< 0.15 U	< 0.15 U				
Bromodichloromethane	75-27-4	< 0.29 U	< 0.29 U				
Bromoform	75-25-2	< 0.69 U	< 0.69 U				
Bromomethane	74-83-9	< 0.57 U	< 0.57 U				
Carbon disulfide	75-15-0	< 0.44 U	< 0.44 U				
Carbon tetrachloride	56-23-5	< 0.7 U	< 0.7 U				
Chlorobenzene	108-90-7	< 0.086 U	< 0.086 U				
Chloroethane	75-00-3	< 0.012 U	< 0.012 U				
Chloroform	67-66-3	< 0.087 U	< 0.087 U				
Chloromethane	74-87-3	< 0.88 U	< 0.88 U				
cis-1,3-Dichloropropene	10061-01-5	< 0.32 U	< 0.32 U				
Dibromochloromethane	124-48-1	< 0.31 U	< 0.31 U				
Dichlorodifluoromethane	75-71-8	< 0.014 U	< 0.014 U				
Ethanol	64-17-5	< 3.7 U	< 3.7 U				
Ethyl benzene	100-41-4	< 0.17 U	< 0.17 U				
Isopropanol	67-63-0	< 0.79 U	< 0.79 U				
Methylene chloride	75-09-2	0.13	0.2				
Styrene	100-42-5	< 0.26 U	< 0.26 U				
tert-Butylalcohol	75-65-0	< 0.5 U	< 0.5 U				
Tetrachloroethene	127-18-4	< 0.081 U	< 0.081 U				
Toluene	108-88-3	< 0.078 U	< 0.078 U				
trans-1,3-Dichloropropene	10061-02-6	< 0.28 U	< 0.28 U				
Trichloroethene	79-01-6	< 0.28 U	< 0.28 U				
Trichlorofluoromethane	75-69-4	< 0.59 U	< 0.59 U				

Table A-4
Historical Analytical Results for Sediment Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SD-022	I-53-SD-023	I-53-SD-024	I-53-SD-026	I-B807-SD-2	I-B807-SD-3
		53SD-22(0-1)	53SD-23(0-1)	53SD-24(0-0.5)	53SD-26(0-0.5)	B807SD-2(5-5.5)	B807SD-3(9.5-10)
		0 - 1	0 - 1	0 - .5	0 - .5	5 - 5.5	9.5 - 10
		8/21/1996	8/21/1996	10/14/1998	10/14/1998	4/2/2004	4/2/2004
		SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**						
Vinyl acetate	108-05-4	< 0.032 U	< 0.032 U				
Vinyl chloride	75-01-4	< 0.62 U	< 0.62 U				
Xylenes	1330-20-7	< 0.15 U	< 0.15 U				
WetChem							
% Solids	%Solid					67.6	29.8
Ammonia	7664-41-7	1800	2030	15.5	11.5		
Chloride	16887-00-6	33.1	75.9	4.57 J	22.6 J		
Cyanide	57-12-5	< 0.92 U	< 0.92 U				
Fluoride	16984-48-8	< 3.62 U	< 3.62 U	< 0.926 U	2.09 J		
Nitrate	14797-55-8			< 1.85 U	< 1.85 U		
Nitrate/Nitrite	Nitrate/Nitrite	< 0.6 U	< 0.6 U				
Nitrite	14797-65-0			< 0.926 U	< 0.926 U		
Phosphate	14265-44-2	< 7.49 U	1900				
Phosphorus	7723-14-0			340 JD	273 JD		
Sulfate	14808-79-8	< 90.4 U	< 90.4 U	67.3 J	176 J		
Sulfide	18496-25-8	52.1	89	25.7 B	50.3 B		
Total organic carbon	TOC	175000	406000	2570	34000		

Notes:
LOC - Level of Concern
mg/kg - milligrams per kilogram
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53
			Location ID	I-53-SW-001	I-53-SW-002	I-53-SW-003	I-53-SW-004	I-53-SW-005
			Sample ID	53SW-1(19960819)	53SW-2(19960819)	53SW-3(19960819)	53SW-4(19960816)	53SW-5(19960815)
			Depth Interval					
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996
			Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**	**ValueNo**					
Dioxins								
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	ug/L	(1)					< 0.14 U
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	ug/L	(1)					< 0.11 U
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	ug/L	(1)					< 0.11 U
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	ug/L	(1)					< 0.11 U
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	ug/L	(1)					< 0.15 U
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	ug/L	(1)					< 0.11 U
Octachlorodibenzodioxin	3268-87-9	ug/L	(1)					< 0.14 U
Total heptachlorodibenzo-p-dioxins	37871-00-4	ug/L	(1)					< 0.14 U
Total hexachlorodibenzo-p-dioxins	34465-46-8	ug/L	(1)					< 0.11 U
Total pentachlorodibenzo-p-dioxins	36088-22-9	ug/L	(1)					< 0.15 U
Total tetrachlorodibenzo-p-dioxins	41903-57-5	ug/L	(1)					< 0.11 U
Explosives								
1,3,5-Trinitrobenzene	99-35-4	ug/L	(1)	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U
1,3-Dinitrobenzene	99-65-0	ug/L	(1)	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	(1)	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U
2-amino-4,6-Dinitrotoluene	35572-78-2	ug/L	(1)					
2-Nitrotoluene	88-72-2	ug/L	(1)					
3-Nitrotoluene	99-08-1	ug/L	(1)					
4-amino-2,6-Dinitrotoluene	19406-51-0	ug/L	(1)					
4-Nitrotoluene	99-99-0	ug/L	(1)					
HMX	2691-41-0	ug/L	(1)	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U
Nitrobenzene	98-95-3	ug/L	(1)	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U
Nitrobenzene	98-95-3	ug/L	(2)					
Nitrocellulose	9004-70-0	ug/L	(1)	< 553 U	< 553 U	< 553 U	< 553 U	< 553 U
Nitroglycerin	55-63-0	ug/L	(1)	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Nitroguanidine	556-88-7	ug/L	(1)	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U
PETN	78-11-5	ug/L	(1)	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Picric Acid	88-89-1	ug/L	(1)	< 0.27 UJ	< 0.27 UJ	< 0.27 UJ	< 0.27 UJ	< 0.27 UJ
RDX	121-82-4	ug/L	(1)	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U
Tetrazene	14097-21-3	ug/L	(1)	< 40 U	< 40 U	< 40 U	< 40 U	< 40 U
Tetryl	479-45-8	ug/L	(1)	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U
Explosives / SVOC								
2,4-Dinitrotoluene	121-14-2	ug/L	(1)	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U
2,4-Dinitrotoluene	121-14-2	ug/L	(2)					
2,6-Dinitrotoluene	606-20-2	ug/L	(1)	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U
2,6-Dinitrotoluene	606-20-2	ug/L	(2)					
Furans								
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	ug/L	(1)					< 0.076 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	ug/L	(1)					< 0.093 U
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	ug/L	(1)					< 0.086 U
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	ug/L	(1)					< 0.084 U
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	ug/L	(1)					< 0.1 U
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	ug/L	(1)					< 0.13 U
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	ug/L	(1)					< 0.088 U
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	ug/L	(1)					< 0.13 U
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	ug/L	(1)					< 0.13 U
Octachlorodibenzofuran	39001-02-0	ug/L	(1)					< 0.099 U
Total heptachlorodibenzofurans	38998-75-3	ug/L	(1)					< 0.076 U
Total hexachlorodibenzofurans	55684-94-1	ug/L	(1)					< 0.084 U
Total pentachlorodibenzofurans	30402-15-4	ug/L	(1)					< 0.13 U
Total tetrachlorodibenzofurans	30402-14-3	ug/L	(1)					< 0.13 U
Metals								
Aluminum	7429-90-5	ug/L	(1)	63	37.2	26.6	37.2	30.6
Antimony	7440-36-0	ug/L	(1)	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53
			Location ID	I-53-SW-001	I-53-SW-002	I-53-SW-003	I-53-SW-004	I-53-SW-005
			Sample ID	53SW-1(19960819)	53SW-2(19960819)	53SW-3(19960819)	53SW-4(19960816)	53SW-5(19960815)
			Depth Interval					
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996
			Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**	**ValueNo**					
Arsenic	7440-38-2	ug/L	(1)	< 1 UJ	< 1 UJ	< 1 UJ	1.08 J	< 1 UJ
Barium	7440-39-3	ug/L	(1)	12.1	11.7	14.6	12.5	19.3
Beryllium	7440-41-7	ug/L	(1)	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Boron	7440-42-8	ug/L	(1)	57.6	< 50 U	54.2	< 50 U	< 50 U
Cadmium	7440-43-9	ug/L	(1)	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U
Calcium	7440-70-2	ug/L	(1)	6290	6220	6690	6870	6940
Chromium	7440-47-3	ug/L	(1)	< 6.96 U	< 6.96 U	< 6.96 U	< 6.96 U	< 6.96 U
Cobalt	7440-48-4	ug/L	(1)	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Copper	7440-50-8	ug/L	(1)	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Iron	7439-89-6	ug/L	(1)	375	454	475	539	631
Lead	7439-92-1	ug/L	(1)	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Magnesium	7439-95-4	ug/L	(1)	2560	2510	2590	2690	2620
Manganese	7439-96-5	ug/L	(1)	16.7	16.5	34.4	28	107
Mercury	7439-97-6	ug/L	(1)	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U
Nickel	7440-02-0	ug/L	(1)	< 7.11 U	< 7.11 U	< 7.11 U	< 7.11 U	< 7.11 U
Potassium	7440-09-7	ug/L	(1)	< 1000 U	< 1000 U	< 1000 U	< 1000 U	< 1000 U
Selenium	7782-49-2	ug/L	(1)	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Silver	7440-22-4	ug/L	(1)	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U
Sodium	7440-23-5	ug/L	(1)	9830	9770	10600	11000	11100
Strontium	7440-24-6	ug/L	(1)	25.6	26.5	27.4	28.7	30.8
Thallium	7440-28-0	ug/L	(1)	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Titanium	7440-32-6	ug/L	(1)	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Vanadium	7440-62-2	ug/L	(1)	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U
Zinc	7440-66-6	ug/L	(1)	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U
Zirconium	7440-67-7	ug/L	(1)	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
PCBs								
Aroclor 1016	12674-11-2	ug/L	(1)					< 0.16 U
Aroclor 1221	11104-28-2	ug/L	(1)					< 0.16 UT
Aroclor 1232	11141-16-5	ug/L	(1)					< 0.16 UT
Aroclor 1242	53469-21-9	ug/L	(1)					< 0.19 UT
Aroclor 1248	12672-29-6	ug/L	(1)					< 0.19 UT
Aroclor 1254	11097-69-1	ug/L	(1)					< 0.19 UT
Aroclor 1260	11096-82-5	ug/L	(1)					< 0.19 U
Pesticides								
4,4'-DDD	72-54-8	ug/L	(1)					< 0.0233 U
4,4'-DDE	72-55-9	ug/L	(1)					< 0.027 U
4,4'-DDT	50-29-3	ug/L	(1)					< 0.034 U
Aldrin	309-00-2	ug/L	(1)					< 0.0918 U
alpha-BHC	319-84-6	ug/L	(1)					< 0.0385 U
alpha-Chlordane	5103-71-9	ug/L	(1)					< 0.075 UT
beta-BHC	319-85-7	ug/L	(1)					< 0.024 U
Chlordane	57-74-9	ug/L	(1)					
delta-BHC	319-86-8	ug/L	(1)					< 0.0293 U
Diazinon	333-41-5	ug/L	(1)					< 0.188 UT
Dieldrin	60-57-1	ug/L	(1)					< 0.024 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53
			Location ID	I-53-SW-001	I-53-SW-002	I-53-SW-003	I-53-SW-004	I-53-SW-005
			Sample ID	53SW-1(19960819)	53SW-2(19960819)	53SW-3(19960819)	53SW-4(19960816)	53SW-5(19960815)
			Depth Interval					
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996
			Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**	**ValueNo**					
Endosulfan I	959-98-8	ug/L	(1)					< 0.023 U
Endosulfan II	33213-65-9	ug/L	(1)					< 0.023 U
Endosulfan sulfate	1031-07-8	ug/L	(1)					< 0.0786 U
Endrin	72-20-8	ug/L	(1)					< 0.0238 U
Endrin aldehyde	7421-93-4	ug/L	(1)					< 0.0285 U
Endrin ketone	53494-70-5	ug/L	(1)					< 0.0285 UT
gamma-BHC (Lindane)	58-89-9	ug/L	(1)					< 0.0507 U
gamma-Chlordane	5103-74-2	ug/L	(1)					< 0.075 UT
Heptachlor	76-44-8	ug/L	(1)					< 0.0423 U
Heptachlor epoxide	1024-57-3	ug/L	(1)					< 0.0245 U
Isodrin	465-73-6	ug/L	(1)					< 0.0562 U
Malathion	121-75-5	ug/L	(1)					< 0.188 UT
Methoxychlor	72-43-5	ug/L	(1)					< 0.057 U
Mirex	2385-85-5	ug/L	(1)	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U
Toxaphene	8001-35-2	ug/L	(1)					< 1.35 U
Radiological								
Americium-241	86954-36-1	pCi/L	(1)					< 3.31 U
Cesium-137	10045-97-3	pCi/L	(1)					< 1.01 U
Cobalt-60	10198-40-0	pCi/L	(1)					< 1.07 U
Gross Alpha	12587-46-1	pCi/L	(1)					< 0.49 U
Gross beta	12587-47-2	pCi/L	(1)					2.12
Radium-226	13982-63-3	pCi/L	(1)					< 3.69 U
Total Uranium	7440-61-1 U	ug/L	(1)					< 0.111 U
Uranium-235	15117-96-1	pCi/L	(1)					< 0.013 U
Uranium-238	7440-61-1 U-238	pCi/L	(1)					0.03
SVOC								
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	(1)	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U
1,2,4-Trichlorobenzene	120-82-1	ug/L	(1)	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorobenzene	95-50-1	ug/L	(1)	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,3-Dichlorobenzene	541-73-1	ug/L	(1)	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,4-Dichlorobenzene	106-46-7	ug/L	(1)	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2,4,5-Trichlorophenol	95-95-4	ug/L	(1)	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
2,4,6-Trichlorophenol	88-06-2	ug/L	(1)	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
2,4-Dichlorophenol	120-83-2	ug/L	(1)	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U
2,4-Dimethylphenol	105-67-9	ug/L	(1)	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
2,4-Dinitrophenol	51-28-5	ug/L	(1)	< 21 U	< 21 U	< 21 U	< 21 U	< 21 U
2-Chloronaphthalene	91-58-7	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Chlorophenol	95-57-8	ug/L	(1)	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U
2-Methylnaphthalene	91-57-6	ug/L	(1)	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2-Methylphenol	95-48-7	ug/L	(1)	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
2-Nitroaniline	88-74-4	ug/L	(1)	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
2-Nitrophenol	88-75-5	ug/L	(1)	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
3,3'-Dichlorobenzidine	91-94-1	ug/L	(1)	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U
3-Nitroaniline	99-09-2	ug/L	(1)	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U
4,6-dinitro-2-Methylphenol	534-52-1	ug/L	(1)	< 17 U	< 17 U	< 17 U	< 17 U	< 17 U
4-Bromophenyl phenyl ether	101-55-3	ug/L	(1)	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
4-Chloro-3-methylphenol	59-50-7	ug/L	(1)	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U
4-Chloroaniline	106-47-8	ug/L	(1)	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U
4-Chlorophenyl phenyl ether	7005-72-3	ug/L	(1)	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U
4-Methylphenol	106-44-5	ug/L	(1)	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#
4-Nitroaniline	100-01-6	ug/L	(1)	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
4-Nitrophenol	100-02-7	ug/L	(1)	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53
			Location ID	I-53-SW-001	I-53-SW-002	I-53-SW-003	I-53-SW-004	I-53-SW-005
			Sample ID	53SW-1(19960819)	53SW-2(19960819)	53SW-3(19960819)	53SW-4(19960816)	53SW-5(19960815)
			Depth Interval					
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996
			Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**	**ValueNo**					
Acenaphthene	83-32-9	ug/L	(1)	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Acenaphthylene	208-96-8	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Aniline	62-53-3	ug/L	(1)	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
Anthracene	120-12-7	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Benz(a)anthracene	56-55-3	ug/L	(1)	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Benzo(a)pyrene	50-32-8	ug/L	(1)	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
Benzo(b)fluoranthene	205-99-2	ug/L	(1)	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U
Benzo(g,h,i)perylene	191-24-2	ug/L	(1)	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U
Benzo(k)fluoranthene	207-08-9	ug/L	(1)	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U
Benzoic Acid	65-85-0	ug/L	(1)	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U
Benzyl alcohol	100-51-6	ug/L	(1)	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U
bis(2-Chloroethoxy)methane	111-91-1	ug/L	(1)	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
bis(2-Chloroethyl)ether	111-44-4	ug/L	(1)	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
bis(2-Chloroisopropyl)ether	39638-32-9	ug/L	(1)	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	(1)	11	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Butylbenzyl phthalate	85-68-7	ug/L	(1)	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Carbazole	86-74-8	ug/L	(1)	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Chrysene	218-01-9	ug/L	(1)	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U
Dibenz(a,h)anthracene	53-70-3	ug/L	(1)	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U
Dibenzofuran	132-64-9	ug/L	(1)	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Diethylphthalate	84-66-2	ug/L	(1)	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Dimethylphthalate	131-11-3	ug/L	(1)	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
di-n-Butylphthalate	84-74-2	ug/L	(1)	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
di-n-Octylphthalate	117-84-0	ug/L	(1)	< 15 U	< 15 U	< 15 U	< 15 U	< 15 U
Diphenylamine	122-39-4	ug/L	(1)	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoranthene	206-44-0	ug/L	(1)	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U
Fluorene	86-73-7	ug/L	(1)	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
Hexachlorobenzene	118-74-1	ug/L	(1)	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Hexachlorobutadiene	87-68-3	ug/L	(1)	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Hexachlorocyclopentadiene	77-47-4	ug/L	(1)	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Hexachloroethane	67-72-1	ug/L	(1)	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
Indeno(1,2,3-c,d)pyrene	193-39-5	ug/L	(1)	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Isophorone	78-59-1	ug/L	(1)	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Naphthalene	91-20-3	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
N-Nitrosodimethylamine	62-75-9	ug/L	(1)					
n-Nitroso-di-n-propylamine	621-64-7	ug/L	(1)	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
n-Nitrosodiphenylamine	86-30-6	ug/L	(1)	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U
Pentachlorophenol	87-86-5	ug/L	(1)	< 0.042 U	< 0.042 U	< 0.042 U	< 0.042 U	< 0.042 U
Phenanthrene	85-01-8	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Phenol	108-95-2	ug/L	(1)	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U
Pyrene	129-00-0	ug/L	(1)	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
TPH								
Diesel Fuel	68334-30-5	ug/L	(1)					
Diesel Range Organics	DRO	ug/L	(1)	< 340 U	< 340 U	< 340 U	< 340 U	< 340 U
Gasoline	8006-61-9	ug/L	(1)					
Gasoline range organics	GRO	ug/L	(1)	< 340 U	< 340 U	< 340 U	< 340 U	< 340 U
TPH, aviation gas fraction	50815-00-4	ug/L	(1)	< 340 U	< 340 U	< 340 U	< 340 U	< 340 U
TRPH	TRPH	ug/L	(1)	< 188 U	< 169 U	< 172 U	< 180 U	< 174 U
VOC								
1,1,1-Trichloroethane	71-55-6	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L	(1)	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,1,2-Trichloroethane	79-00-5	ug/L	(1)	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U
1,1-Dichloroethane	75-34-3	ug/L	(1)	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U
1,1-Dichloroethene	75-35-4	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

			Site Name	53	53	53	53	53
			Location ID	I-53-SW-001	I-53-SW-002	I-53-SW-003	I-53-SW-004	I-53-SW-005
			Sample ID	53SW-1(19960819)	53SW-2(19960819)	53SW-3(19960819)	53SW-4(19960816)	53SW-5(19960815)
			Depth Interval					
			Sample Date	8/19/1996	8/19/1996	8/19/1996	8/16/1996	8/15/1996
			Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**	**ValueNo**					
1,2-Dichloroethane	107-06-2	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloroethene (total)	540-59-0	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloropropane	78-87-5	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Butanone	78-93-3	ug/L	(1)	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U
2-Hexanone	591-78-6	ug/L	(1)	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	(1)	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U
Acetone	67-64-1	ug/L	(1)	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U
Acetonitrile	75-05-8	ug/L	(1)	< 200 U	< 200 U	< 200 U	< 200 U	< 200 U
Benzene	71-43-2	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromodichloromethane	75-27-4	ug/L	(1)	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U
Bromoform	75-25-2	ug/L	(1)	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Bromomethane	74-83-9	ug/L	(1)	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
Carbon disulfide	75-15-0	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Carbon tetrachloride	56-23-5	ug/L	(1)	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Chlorobenzene	108-90-7	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloroethane	75-00-3	ug/L	(1)	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
Chloroform	67-66-3	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	1.9	< 0.5 U
Chloromethane	74-87-3	ug/L	(1)	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U
cis-1,3-Dichloropropene	10061-01-5	ug/L	(1)	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Dibromochloromethane	124-48-1	ug/L	(1)	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U
Dichlorodifluoromethane	75-71-8	ug/L	(1)	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U
Ethanol	64-17-5	ug/L	(1)	< 2000 U	< 2000 U	< 2000 U	< 2000 U	< 2000 U
Ethyl benzene	100-41-4	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Isopropanol	67-63-0	ug/L	(1)	< 400 U	< 400 U	< 400 U	< 400 U	< 400 U
Methylene chloride	75-09-2	ug/L	(1)	16	17	14	< 2.3 U	< 2.3 U
Styrene	100-42-5	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
tert-Butylalcohol	75-65-0	ug/L	(1)	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U
Tetrachloroethene	127-18-4	ug/L	(1)	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Toluene	108-88-3	ug/L	(1)	0.57	0.69	0.58	< 0.5 U	0.84
trans-1,3-Dichloropropene	10061-02-6	ug/L	(1)	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U
Trichloroethene	79-01-6	ug/L	(1)	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichlorofluoromethane	75-69-4	ug/L	(1)	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U
Vinyl acetate	108-05-4	ug/L	(1)	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U
Vinyl chloride	75-01-4	ug/L	(1)	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Xylenes	1330-20-7	ug/L	(1)	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U	0.87
WetChem								
Ammonia	7664-41-7	ug/L	(1)	57.3	92.7	135	89.9	82.5
Chloride	16887-00-6	ug/L	(1)	22000	22000	23100	24100	23100
Cyanide	57-12-5	ug/L	(1)	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoride	16984-48-8	ug/L	(1)	< 1230 U	< 1230 U	< 1230 U	< 1230 U	< 1230 U
Nitrate	14797-55-8	ug/L	(1)					
Nitrate/Nitrite	Nitrate/Nitrite	ug/L	(1)	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Nitrite	14797-65-0	ug/L	(1)					
Phosphate	14265-44-2	ug/L	(1)	13.5	13.7	17.5	26.8	19.7
Phosphorus	7723-14-0	ug/L	(1)					
Sulfate	14808-79-8	ug/L	(1)	< 10000 U	< 10000 U	< 10000 U	< 10000 U	< 10000 U
Sulfide	18496-25-8	ug/L	(1)	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U

Notes:
LOC - Level of Concern
ug/L - micrograms per liter
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-006	I-53-SW-007	I-53-SW-008	I-53-SW-009	I-53-SW-010A	I-53-SW-011
		53SW-6(19960816)	53SW-7(19960816)	53SW-8(19960815)	53SW-9(19960815)	53SW-10(19960814)	53SW-11(19960814)
		8/16/1996	8/16/1996	8/15/1996	8/15/1996	8/14/1996	8/14/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Dioxins							
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9						
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6						
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7						
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3						
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4						
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6						
Octachlorodibenzodioxin	3268-87-9						
Total heptachlorodibenzo-p-dioxins	37871-00-4						
Total hexachlorodibenzo-p-dioxins	34465-46-8						
Total pentachlorodibenzo-p-dioxins	36088-22-9						
Total tetrachlorodibenzo-p-dioxins	41903-57-5						
Explosives							
1,3,5-Trinitrobenzene	99-35-4	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U
1,3-Dinitrobenzene	99-65-0	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U
2,4,6-Trinitrotoluene	118-96-7	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U
2-amino-4,6-Dinitrotoluene	35572-78-2						
2-Nitrotoluene	88-72-2						
3-Nitrotoluene	99-08-1						
4-amino-2,6-Dinitrotoluene	19406-51-0						
4-Nitrotoluene	99-99-0						
HMX	2691-41-0	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U
Nitrobenzene	98-95-3	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U
Nitrobenzene	98-95-3						
Nitrocellulose	9004-70-0	< 553 U	< 553 U	< 553 U	< 553 U	< 553 U	< 553 U
Nitroglycerin	55-63-0	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Nitroguanidine	556-88-7	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U
PETN	78-11-5	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Picric Acid	88-89-1	< 0.27 UJ	< 0.27 UJ	< 0.27 UJ	< 0.27 UJ	< 0.27 U	< 0.27 U
RDX	121-82-4	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U
Tetrazene	14097-21-3	< 40 U	< 40 U	< 40 U	< 40 U	< 40 UJ	< 40 UJ
Tetryl	479-45-8	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U
2,4-Dinitrotoluene	121-14-2						
2,6-Dinitrotoluene	606-20-2	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U
2,6-Dinitrotoluene	606-20-2						
Furans							
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4						
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7						
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9						
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9						
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9						
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6						
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5						
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4						
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9						
Octachlorodibenzofuran	39001-02-0						
Total heptachlorodibenzofurans	38998-75-3						
Total hexachlorodibenzofurans	55684-94-1						
Total pentachlorodibenzofurans	30402-15-4						
Total tetrachlorodibenzofurans	30402-14-3						
Metals							
Aluminum	7429-90-5	46.6	46.4	37.4	42.3	36.8	39.5
Antimony	7440-36-0	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-006	I-53-SW-007	I-53-SW-008	I-53-SW-009	I-53-SW-010A	I-53-SW-011
		53SW-6(19960816)	53SW-7(19960816)	53SW-8(19960815)	53SW-9(19960815)	53SW-10(19960814)	53SW-11(19960814)
		8/16/1996	8/16/1996	8/15/1996	8/15/1996	8/14/1996	8/14/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Arsenic	7440-38-2	< 1 UJ	< 1 UJ	1.08 J	< 1 UJ	< 1 U	< 1 U
Barium	7440-39-3	16.5	17.3	20.6	19.5	41.4	19
Beryllium	7440-41-7	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Boron	7440-42-8	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Cadmium	7440-43-9	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U
Calcium	7440-70-2	6760	6840	7140	6940	6670	6630
Chromium	7440-47-3	< 6.96 U	< 6.96 U	< 6.96 U	< 6.96 U	< 6.96 U	< 6.96 U
Cobalt	7440-48-4	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Copper	7440-50-8	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Iron	7439-89-6	603	622	645	625	557	608
Lead	7439-92-1	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Magnesium	7439-95-4	2590	2600	2690	2630	2540	2520
Manganese	7439-96-5	71.3	81.9	111	105	101	127
Mercury	7439-97-6	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U
Nickel	7440-02-0	< 7.11 U	< 7.11 U	< 7.11 U	< 7.11 U	< 7.11 U	< 7.11 U
Potassium	7440-09-7	< 1000 U	< 1000 U	< 1000 U	< 1000 U	< 1000 U	< 1000 U
Selenium	7782-49-2	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Silver	7440-22-4	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U
Sodium	7440-23-5	10600	10700	11300	11000	10600	10600
Strontium	7440-24-6	28.9	30.4	32.1	31.5	32.8	32.9
Thallium	7440-28-0	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Titanium	7440-32-6	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Vanadium	7440-62-2	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U
Zinc	7440-66-6	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U
Zirconium	7440-67-7	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
PCBs							
Aroclor 1016	12674-11-2						
Aroclor 1221	11104-28-2						
Aroclor 1232	11141-16-5						
Aroclor 1242	53469-21-9						
Aroclor 1248	12672-29-6						
Aroclor 1254	11097-69-1						
Aroclor 1260	11096-82-5						
Pesticides							
4,4'-DDD	72-54-8						
4,4'-DDE	72-55-9						
4,4'-DDT	50-29-3						
Aldrin	309-00-2						
alpha-BHC	319-84-6						
alpha-Chlordane	5103-71-9						
beta-BHC	319-85-7						
Chlordane	57-74-9						
delta-BHC	319-86-8						
Diazinon	333-41-5						
Dieldrin	60-57-1						

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-006	I-53-SW-007	I-53-SW-008	I-53-SW-009	I-53-SW-010A	I-53-SW-011
		53SW-6(19960816)	53SW-7(19960816)	53SW-8(19960815)	53SW-9(19960815)	53SW-10(19960814)	53SW-11(19960814)
		8/16/1996	8/16/1996	8/15/1996	8/15/1996	8/14/1996	8/14/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Endosulfan I	959-98-8						
Endosulfan II	33213-65-9						
Endosulfan sulfate	1031-07-8						
Endrin	72-20-8						
Endrin aldehyde	7421-93-4						
Endrin ketone	53494-70-5						
gamma-BHC (Lindane)	58-89-9						
gamma-Chlordane	5103-74-2						
Heptachlor	76-44-8						
Heptachlor epoxide	1024-57-3						
Isodrin	465-73-6						
Malathion	121-75-5						
Methoxychlor	72-43-5						
Mirex	2385-85-5	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U
Toxaphene	8001-35-2						
Radiological							
Americium-241	86954-36-1						
Cesium-137	10045-97-3						
Cobalt-60	10198-40-0						
Gross Alpha	12587-46-1						
Gross beta	12587-47-2						
Radium-226	13982-63-3						
Total Uranium	7440-61-1 U						
Uranium-235	15117-96-1						
Uranium-238	7440-61-1 U-238						
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U
1,2,4-Trichlorobenzene	120-82-1	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorobenzene	95-50-1	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,3-Dichlorobenzene	541-73-1	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,4-Dichlorobenzene	106-46-7	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2,4,5-Trichlorophenol	95-95-4	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
2,4,6-Trichlorophenol	88-06-2	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
2,4-Dichlorophenol	120-83-2	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U
2,4-Dimethylphenol	105-67-9	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
2,4-Dinitrophenol	51-28-5	< 21 U	< 21 U	< 21 U	< 21 U	< 21 U	< 21 U
2-Chloronaphthalene	91-58-7	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Chlorophenol	95-57-8	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U
2-Methylnaphthalene	91-57-6	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2-Methylphenol	95-48-7	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
2-Nitroaniline	88-74-4	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
2-Nitrophenol	88-75-5	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
3,3'-Dichlorobenzidine	91-94-1	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U
3-Nitroaniline	99-09-2	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U
4,6-dinitro-2-Methylphenol	534-52-1	< 17 U	< 17 U	< 17 U	< 17 U	< 17 U	< 17 U
4-Bromophenyl phenyl ether	101-55-3	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
4-Chloro-3-methylphenol	59-50-7	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U
4-Chloroaniline	106-47-8	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U
4-Chlorophenyl phenyl ether	7005-72-3	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U
4-Methylphenol	106-44-5	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#
4-Nitroaniline	100-01-6	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
4-Nitrophenol	100-02-7	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-006	I-53-SW-007	I-53-SW-008	I-53-SW-009	I-53-SW-010A	I-53-SW-011
		53SW-6(19960816)	53SW-7(19960816)	53SW-8(19960815)	53SW-9(19960815)	53SW-10(19960814)	53SW-11(19960814)
		8/16/1996	8/16/1996	8/15/1996	8/15/1996	8/14/1996	8/14/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Acenaphthene	83-32-9	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Acenaphthylene	208-96-8	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Aniline	62-53-3	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
Anthracene	120-12-7	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Benz(a)anthracene	56-55-3	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Benzo(a)pyrene	50-32-8	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
Benzo(b)fluoranthene	205-99-2	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U
Benzo(g,h,i)perylene	191-24-2	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U
Benzo(k)fluoranthene	207-08-9	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U
Benzoic Acid	65-85-0	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U
Benzyl alcohol	100-51-6	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U
bis(2-Chloroethoxy)methane	111-91-1	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
bis(2-Chloroethyl)ether	111-44-4	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
bis(2-Chloroisopropyl)ether	39638-32-9	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
bis(2-Ethylhexyl)phthalate	117-81-7	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Butylbenzyl phthalate	85-68-7	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Carbazole	86-74-8	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Chrysene	218-01-9	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U
Dibenz(a,h)anthracene	53-70-3	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U
Dibenzofuran	132-64-9	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Diethylphthalate	84-66-2	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Dimethylphthalate	131-11-3	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
di-n-Butylphthalate	84-74-2	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
di-n-Octylphthalate	117-84-0	< 15 U	< 15 U	< 15 U	< 15 U	< 15 U	< 15 U
Diphenylamine	122-39-4	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoranthene	206-44-0	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U
Fluorene	86-73-7	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
Hexachlorobenzene	118-74-1	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Hexachlorobutadiene	87-68-3	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Hexachlorocyclopentadiene	77-47-4	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Hexachloroethane	67-72-1	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
Indeno(1,2,3-c,d)pyrene	193-39-5	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Isophorone	78-59-1	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Naphthalene	91-20-3	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
N-Nitrosodimethylamine	62-75-9						
n-Nitroso-di-n-propylamine	621-64-7	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
n-Nitrosodiphenylamine	86-30-6	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U
Pentachlorophenol	87-86-5	< 0.042 U		< 0.042 U		< 0.042 U	< 0.042 U
Phenanthrene	85-01-8	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Phenol	108-95-2	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U
Pyrene	129-00-0	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
TPH							
Diesel Fuel	68334-30-5						
Diesel Range Organics	DRO	< 340 U	< 340 U	< 340 U	< 340 U	< 330 U	< 330 U
Gasoline	8006-61-9						
Gasoline range organics	GRO	< 340 U	< 340 U	< 340 U	< 340 U	< 330 U	< 330 U
TPH, aviation gas fraction	50815-00-4	< 340 U	< 340 U	< 340 U	< 340 U	< 330 U	< 330 U
TRPH	TRPH	< 170 U	< 174 U	< 174 U	< 176 U	< 172 U	< 170 U
VOC							
1,1,1-Trichloroethane	71-55-6	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,1,2-Trichloroethane	79-00-5	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U
1,1-Dichloroethane	75-34-3	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U
1,1-Dichloroethene	75-35-4	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-006	I-53-SW-007	I-53-SW-008	I-53-SW-009	I-53-SW-010A	I-53-SW-011
		53SW-6(19960816)	53SW-7(19960816)	53SW-8(19960815)	53SW-9(19960815)	53SW-10(19960814)	53SW-11(19960814)
		8/16/1996	8/16/1996	8/15/1996	8/15/1996	8/14/1996	8/14/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
1,2-Dichloroethane	107-06-2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloroethene (total)	540-59-0	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloropropane	78-87-5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Butanone	78-93-3	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U
2-Hexanone	591-78-6	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U
Acetone	67-64-1	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U
Acetonitrile	75-05-8	< 200 U	< 200 U	< 200 U	< 200 U	< 200 U	< 200 U
Benzene	71-43-2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromodichloromethane	75-27-4	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U
Bromoform	75-25-2	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Bromomethane	74-83-9	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
Carbon disulfide	75-15-0	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Carbon tetrachloride	56-23-5	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Chlorobenzene	108-90-7	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloroethane	75-00-3	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
Chloroform	67-66-3	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloromethane	74-87-3	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U
cis-1,3-Dichloropropene	10061-01-5	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Dibromochloromethane	124-48-1	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U
Dichlorodifluoromethane	75-71-8	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U
Ethanol	64-17-5	< 2000 U	< 2000 U	< 2000 U	< 2000 U	< 2000 U	< 2000 U
Ethyl benzene	100-41-4	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Isopropanol	67-63-0	< 400 U	< 400 U	< 400 U	< 400 U	< 400 U	< 400 U
Methylene chloride	75-09-2	< 2.3 U	< 2.3 U	< 2.3 U	< 2.3 U	10	< 2.3 U
Styrene	100-42-5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
tert-Butylalcohol	75-65-0	< 500 U	< 500 U	< 500 U		< 500 U	< 500 U
Tetrachloroethene	127-18-4	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Toluene	108-88-3	0.6	0.51	1.5	0.98	6.6	2.4
trans-1,3-Dichloropropene	10061-02-6	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U
Trichloroethene	79-01-6	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichlorofluoromethane	75-69-4	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U
Vinyl acetate	108-05-4	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U
Vinyl chloride	75-01-4	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Xylenes	1330-20-7	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U
WetChem							
Ammonia	7664-41-7	82.9	96.4	91.8	74.5	99.1	99.1
Chloride	16887-00-6	23100	23100	24100	24100	24100	24100
Cyanide	57-12-5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoride	16984-48-8	< 1230 U	< 1230 U	< 1230 U	< 1230 U	< 1230 U	< 1230 U
Nitrate	14797-55-8						
Nitrate/Nitrite	Nitrate/Nitrite	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Nitrite	14797-65-0						
Phosphate	14265-44-2	26.8	30.5	28.8	27.2	27.2	17.7
Phosphorus	7723-14-0						
Sulfate	14808-79-8	< 10000 U	< 10000 U	< 10000 U	< 10000 U	< 10000 U	< 10000 U
Sulfide	18496-25-8	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U

Notes:
LOC - Level of Concern
ug/L - micrograms per liter
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-012	I-53-SW-013	I-53-SW-014	I-53-SW-015	I-53-SW-016	I-53-SW-017
		53SW-12(19960814)	53SW-13(19960814)	53SW-14(19960814)	53SW-15(19960815)	53SW-16(19960813)	53SW-17(19960813)
		8/14/1996	8/14/1996	8/14/1996	8/15/1996	8/13/1996	8/13/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Dioxins							
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9				< 0.24 U		
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6				< 0.12 U		
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7				< 0.13 U		
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3				< 0.12 U		
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4				< 0.16 U		
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6				< 0.13 U		
Octachlorodibenzodioxin	3268-87-9				< 0.29 U		
Total heptachlorodibenzo-p-dioxins	37871-00-4				< 0.24 U		
Total hexachlorodibenzo-p-dioxins	34465-46-8				< 0.12 U		
Total pentachlorodibenzo-p-dioxins	36088-22-9				< 0.16 U		
Total tetrachlorodibenzo-p-dioxins	41903-57-5				< 0.13 U		
Explosives							
1,3,5-Trinitrobenzene	99-35-4	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U
1,3-Dinitrobenzene	99-65-0	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U
2,4,6-Trinitrotoluene	118-96-7	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U
2-amino-4,6-Dinitrotoluene	35572-78-2						
2-Nitrotoluene	88-72-2						
3-Nitrotoluene	99-08-1						
4-amino-2,6-Dinitrotoluene	19406-51-0						
4-Nitrotoluene	99-99-0						
HMX	2691-41-0	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U
Nitrobenzene	98-95-3	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U
Nitrobenzene	98-95-3						
Nitrocellulose	9004-70-0	< 553 U	< 553 U	< 553 U	< 553 U	< 553 U	< 553 U
Nitroglycerin	55-63-0	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Nitroguanidine	556-88-7	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U
PETN	78-11-5	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Picric Acid	88-89-1	< 0.27 U	< 0.27 U	< 0.27 U	< 0.27 UJ	< 0.27 U	< 0.27 U
RDX	121-82-4	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U
Tetrazene	14097-21-3	< 40 UJ	< 40 UJ	< 40 UJ	< 40 U	< 40 UJ	< 40 UJ
Tetryl	479-45-8	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U
2,4-Dinitrotoluene	121-14-2						
2,6-Dinitrotoluene	606-20-2	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U
2,6-Dinitrotoluene	606-20-2						
Furans							
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4				< 0.095 U		
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7				< 0.12 U		
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9				< 0.11 U		
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9				< 0.11 U		
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9				< 0.13 U		
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6				< 0.12 U		
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5				< 0.11 U		
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4				< 0.12 U		
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9				< 0.15 U		
Octachlorodibenzofuran	39001-02-0				< 0.12 U		
Total heptachlorodibenzofurans	38998-75-3				< 0.095 U		
Total hexachlorodibenzofurans	55684-94-1				< 0.11 U		
Total pentachlorodibenzofurans	30402-15-4				< 0.12 U		
Total tetrachlorodibenzofurans	30402-14-3				< 0.15 U		
Metals							
Aluminum	7429-90-5	80.1	25.9	46	40.2	50.4	42.8
Antimony	7440-36-0	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-012	I-53-SW-013	I-53-SW-014	I-53-SW-015	I-53-SW-016	I-53-SW-017
		53SW-12(19960814)	53SW-13(19960814)	53SW-14(19960814)	53SW-15(19960815)	53SW-16(19960813)	53SW-17(19960813)
		8/14/1996	8/14/1996	8/14/1996	8/15/1996	8/13/1996	8/13/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Arsenic	7440-38-2	< 1 U	< 1 U	< 1 U	1.01 J	< 1 U	< 1 U
Barium	7440-39-3	22.9	23.6	24.4	20.5	22.4	22.8
Beryllium	7440-41-7	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Boron	7440-42-8	< 50 U	54.4	< 50 U	< 50 U	< 50 U	< 50 U
Cadmium	7440-43-9	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U
Calcium	7440-70-2	7040	7040	7070	7130	6750	7140
Chromium	7440-47-3	< 6.96 U	< 6.96 U	< 6.96 U	< 6.96 U	59.9	< 6.96 U
Cobalt	7440-48-4	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Copper	7440-50-8	< 5 U	< 5 U	5.54	< 5 U	< 5 U	< 5 U
Iron	7439-89-6	705	684	720	640	889	645
Lead	7439-92-1	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Magnesium	7439-95-4	2750	2730	2690	2690	2600	2750
Manganese	7439-96-5	190	215	226	121	213	225
Mercury	7439-97-6	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U
Nickel	7440-02-0	< 7.11 U	< 7.11 U	< 7.11 U	< 7.11 U	14.5	< 7.11 U
Potassium	7440-09-7	< 1000 U	< 1000 U	< 1000 U	< 1000 U	< 1000 U	< 1000 U
Selenium	7782-49-2	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Silver	7440-22-4	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U
Sodium	7440-23-5	11300	11300	11300	11600	10800	11200
Strontium	7440-24-6	31.8	31.8	31.2	33.1	31.3	33.1
Thallium	7440-28-0	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Titanium	7440-32-6	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Vanadium	7440-62-2	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U
Zinc	7440-66-6	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U
Zirconium	7440-67-7	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
PCBs							
Aroclor 1016	12674-11-2				< 0.16 U		
Aroclor 1221	11104-28-2				< 0.16 UT		
Aroclor 1232	11141-16-5				< 0.16 UT		
Aroclor 1242	53469-21-9				< 0.19 UT		
Aroclor 1248	12672-29-6				< 0.19 UT		
Aroclor 1254	11097-69-1				< 0.19 UT		
Aroclor 1260	11096-82-5				< 0.19 U		
Pesticides							
4,4'-DDD	72-54-8				< 0.0233 U		
4,4'-DDE	72-55-9				< 0.027 U		
4,4'-DDT	50-29-3				< 0.034 U		
Aldrin	309-00-2				< 0.0918 U		
alpha-BHC	319-84-6				< 0.0385 U		
alpha-Chlordane	5103-71-9				< 0.075 UT		
beta-BHC	319-85-7				< 0.024 U		
Chlordane	57-74-9						
delta-BHC	319-86-8				< 0.0293 U		
Diazinon	333-41-5				< 0.188 UT		
Dieldrin	60-57-1				< 0.024 U		

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-012	I-53-SW-013	I-53-SW-014	I-53-SW-015	I-53-SW-016	I-53-SW-017
		53SW-12(19960814)	53SW-13(19960814)	53SW-14(19960814)	53SW-15(19960815)	53SW-16(19960813)	53SW-17(19960813)
		8/14/1996	8/14/1996	8/14/1996	8/15/1996	8/13/1996	8/13/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Endosulfan I	959-98-8				< 0.023 U		
Endosulfan II	33213-65-9				< 0.023 U		
Endosulfan sulfate	1031-07-8				< 0.0786 U		
Endrin	72-20-8				< 0.0238 U		
Endrin aldehyde	7421-93-4				< 0.0285 U		
Endrin ketone	53494-70-5				< 0.0285 UT		
gamma-BHC (Lindane)	58-89-9				< 0.0507 U		
gamma-Chlordane	5103-74-2				< 0.075 UT		
Heptachlor	76-44-8				< 0.0423 U		
Heptachlor epoxide	1024-57-3				< 0.0245 U		
Isodrin	465-73-6				< 0.0562 U		
Malathion	121-75-5				< 0.188 UT		
Methoxychlor	72-43-5				< 0.057 U		
Mirex	2385-85-5	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U
Toxaphene	8001-35-2				< 1.35 U		
Radiological							
Americium-241	86954-36-1				< 3.44 U		
Cesium-137	10045-97-3				< 1.07 U		
Cobalt-60	10198-40-0				< 1 U		
Gross Alpha	12587-46-1				1.84		
Gross beta	12587-47-2				10.7		
Radium-226	13982-63-3				< 3.41 U		
Total Uranium	7440-61-1 U				< 0.111 U		
Uranium-235	15117-96-1				< 0.013 U		
Uranium-238	7440-61-1 U-238				0.1		
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U
1,2,4-Trichlorobenzene	120-82-1	< 1.8 U	< 1.8 UJ	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorobenzene	95-50-1	< 1.7 U	< 1.7 UJ	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,3-Dichlorobenzene	541-73-1	< 1.7 U	< 1.7 UJ	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,4-Dichlorobenzene	106-46-7	< 1.7 U	< 1.7 UJ	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2,4,5-Trichlorophenol	95-95-4	< 5.2 U	< 5.2 UJ	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
2,4,6-Trichlorophenol	88-06-2	< 4.2 U	< 4.2 UJ	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
2,4-Dichlorophenol	120-83-2	< 2.9 U	< 2.9 UJ	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U
2,4-Dimethylphenol	105-67-9	< 5.8 U	< 5.8 UJ	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
2,4-Dinitrophenol	51-28-5	< 21 U	< 21 UJ	< 21 U	< 21 U	< 21 U	< 21 U
2-Chloronaphthalene	91-58-7	< 0.5 U	< 0.5 UJ	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Chlorophenol	95-57-8	< 0.99 U	< 0.99 UJ	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U
2-Methylnaphthalene	91-57-6	< 1.7 U	< 1.7 UJ	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2-Methylphenol	95-48-7	< 3.9 U	< 3.9 UJ	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
2-Nitroaniline	88-74-4	< 4.3 U	< 4.3 UJ	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
2-Nitrophenol	88-75-5	< 3.7 U	< 3.7 UJ	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
3,3'-Dichlorobenzidine	91-94-1	< 12 U	< 12 UJ	< 12 U	< 12 U	< 12 U	< 12 U
3-Nitroaniline	99-09-2	< 4.9 U	< 4.9 UJ	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U
4,6-dinitro-2-Methylphenol	534-52-1	< 17 U	< 17 UJ	< 17 U	< 17 U	< 17 U	< 17 U
4-Bromophenyl phenyl ether	101-55-3	< 4.2 U	< 4.2 UJ	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
4-Chloro-3-methylphenol	59-50-7	< 4 U	< 4 UJ	< 4 U	< 4 U	< 4 U	< 4 U
4-Chloroaniline	106-47-8	< 7.3 U	< 7.3 UJ	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U
4-Chlorophenyl phenyl ether	7005-72-3	< 5.1 U	< 5.1 UJ	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U
4-Methylphenol	106-44-5	< 0.52 U#	< 0.52 UJ#	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#
4-Nitroaniline	100-01-6	< 5.2 U	< 5.2 UJ	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
4-Nitrophenol	100-02-7	< 12 U	< 12 UJ	< 12 U	< 12 U	< 12 U	< 12 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-012	I-53-SW-013	I-53-SW-014	I-53-SW-015	I-53-SW-016	I-53-SW-017
		53SW-12(19960814)	53SW-13(19960814)	53SW-14(19960814)	53SW-15(19960815)	53SW-16(19960813)	53SW-17(19960813)
		8/14/1996	8/14/1996	8/14/1996	8/15/1996	8/13/1996	8/13/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Acenaphthene	83-32-9	< 1.7 U	< 1.7 UJ	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Acenaphthylene	208-96-8	< 0.5 U	< 0.5 UJ	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Aniline	62-53-3	< 4.4 U	< 4.4 UJ	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
Anthracene	120-12-7	< 0.5 U	< 0.5 UJ	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Benz(a)anthracene	56-55-3	< 1.6 U	< 1.6 UJ	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Benzo(a)pyrene	50-32-8	< 4.7 U	< 4.7 UJ	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
Benzo(b)fluoranthene	205-99-2	< 5.4 U	< 5.4 UJ	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U
Benzo(g,h,i)perylene	191-24-2	< 6.1 U	< 6.1 UJ	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U
Benzo(k)fluoranthene	207-08-9	< 0.87 U	< 0.87 UJ	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U
Benzoic Acid	65-85-0	< 13 U	< 13 UJ	< 13 U	< 13 U	< 13 U	< 13 U
Benzyl alcohol	100-51-6	< 0.72 U	< 0.72 UJ	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U
bis(2-Chloroethoxy)methane	111-91-1	< 1.5 U	< 1.5 UJ	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
bis(2-Chloroethyl)ether	111-44-4	< 1.9 U	< 1.9 UJ	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
bis(2-Chloroisopropyl)ether	39638-32-9	< 5.3 U	< 5.3 UJ	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
bis(2-Ethylhexyl)phthalate	117-81-7	< 4.8 U	< 4.8 UJ	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Butylbenzyl phthalate	85-68-7	< 3.4 U	< 3.4 UJ	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Carbazole	86-74-8	< 2 U	< 2 UJ	< 2 U	< 2 U	< 2 U	< 2 U
Chrysene	218-01-9	< 2.4 U	< 2.4 UJ	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U
Dibenz(a,h)anthracene	53-70-3	< 6.5 U	< 6.5 UJ	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U
Dibenzofuran	132-64-9	< 1.7 U	< 1.7 UJ	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Diethylphthalate	84-66-2	< 2 U	< 2 UJ	< 2 U	< 2 U	< 2 U	< 2 U
Dimethylphthalate	131-11-3	< 1.5 U	< 1.5 UJ	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
di-n-Butylphthalate	84-74-2	< 3.7 U	< 3.7 UJ	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
di-n-Octylphthalate	117-84-0	< 15 U	< 15 UJ	< 15 U	< 15 U	< 15 U	< 15 U
Diphenylamine	122-39-4	< 2.5 U	< 2.5 UJ	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoranthene	206-44-0	< 3.3 U	< 3.3 UJ	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U
Fluorene	86-73-7	< 3.7 U	< 3.7 UJ	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
Hexachlorobenzene	118-74-1	< 1.6 U	< 1.6 UJ	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Hexachlorobutadiene	87-68-3	< 3.4 U	< 3.4 UJ	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Hexachlorocyclopentadiene	77-47-4	< 8.6 U	< 8.6 UJ	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Hexachloroethane	67-72-1	< 1.5 U	< 1.5 UJ	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
Indeno(1,2,3-c,d)pyrene	193-39-5	< 8.6 U	< 8.6 UJ	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Isophorone	78-59-1	< 4.8 U	< 4.8 UJ	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Naphthalene	91-20-3	< 0.5 U	< 0.5 UJ	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
N-Nitrosodimethylamine	62-75-9						
n-Nitroso-di-n-propylamine	621-64-7	< 4.4 U	< 4.4 UJ	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
n-Nitrosodiphenylamine	86-30-6	< 3 U	< 3 UJ	< 3 U	< 3 U	< 3 U	< 3 U
Pentachlorophenol	87-86-5	< 0.042 U	< 0.042 U	< 0.042 U	< 0.042 U	< 0.042 U	< 0.042 U
Phenanthrene	85-01-8	< 0.5 U	< 0.5 UJ	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Phenol	108-95-2	< 9.2 U	< 9.2 UJ	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U
Pyrene	129-00-0	< 2.8 U	< 2.8 UJ	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
TPH							
Diesel Fuel	68334-30-5						
Diesel Range Organics	DRO	< 340 U	< 340 U	< 330 U	< 340 U	< 330 U	< 330 U
Gasoline	8006-61-9						
Gasoline range organics	GRO	< 340 U	< 340 U	< 330 U	< 340 U	< 330 U	< 330 U
TPH, aviation gas fraction	50815-00-4	< 340 U	< 340 U	< 330 U	< 340 U	< 330 U	< 330 U
TRPH	TRPH		< 174 U	< 174 U	< 174 U	< 180 U	< 172 U
VOC							
1,1,1-Trichloroethane	71-55-6	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,1,2-Trichloroethane	79-00-5	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U
1,1-Dichloroethane	75-34-3	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U
1,1-Dichloroethene	75-35-4	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-012	I-53-SW-013	I-53-SW-014	I-53-SW-015	I-53-SW-016	I-53-SW-017
		53SW-12(19960814)	53SW-13(19960814)	53SW-14(19960814)	53SW-15(19960815)	53SW-16(19960813)	53SW-17(19960813)
		8/14/1996	8/14/1996	8/14/1996	8/15/1996	8/13/1996	8/13/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
1,2-Dichloroethane	107-06-2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloroethene (total)	540-59-0	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloropropane	78-87-5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Butanone	78-93-3	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U
2-Hexanone	591-78-6	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U
Acetone	67-64-1	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U
Acetonitrile	75-05-8	< 200 U	< 200 U	< 200 U	< 200 U	< 200 U	< 200 U
Benzene	71-43-2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromodichloromethane	75-27-4	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U
Bromoform	75-25-2	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Bromomethane	74-83-9	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
Carbon disulfide	75-15-0	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Carbon tetrachloride	56-23-5	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Chlorobenzene	108-90-7	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloroethane	75-00-3	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
Chloroform	67-66-3	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloromethane	74-87-3	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U
cis-1,3-Dichloropropene	10061-01-5	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Dibromochloromethane	124-48-1	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U
Dichlorodifluoromethane	75-71-8	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U
Ethanol	64-17-5	< 2000 U	< 2000 U	< 2000 U	< 2000 U	< 2000 U	< 2000 U
Ethyl benzene	100-41-4	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Isopropanol	67-63-0	< 400 U	< 400 U	< 400 U	< 400 U	< 400 U	< 400 U
Methylene chloride	75-09-2	< 2.3 U	10	< 2.3 U	< 2.3 U	5.8	5
Styrene	100-42-5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
tert-Butylalcohol	75-65-0	< 500 U	< 500 U		< 500 U	< 500 U	< 500 U
Tetrachloroethene	127-18-4	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Toluene	108-88-3	1.5	0.67	1.7	3	2.2	2.1
trans-1,3-Dichloropropene	10061-02-6	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U
Trichloroethene	79-01-6	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichlorofluoromethane	75-69-4	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U
Vinyl acetate	108-05-4	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U
Vinyl chloride	75-01-4	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Xylenes	1330-20-7	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U
WetChem							
Ammonia	7664-41-7	111	65.8	106	68.9	76.8 J	68.5 J
Chloride	16887-00-6	24100	24100	24100	24100	24100	24100
Cyanide	57-12-5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoride	16984-48-8	< 1230 U	< 1230 U	< 1230 U	< 1230 U	< 1230 U	< 1230 U
Nitrate	14797-55-8						
Nitrate/Nitrite	Nitrate/Nitrite	< 10 U	< 10 U	< 10 U	15.1	< 10 U	< 10 U
Nitrite	14797-65-0						
Phosphate	14265-44-2	24.7	23	28.4	19.7	28.9	45.5
Phosphorus	7723-14-0						
Sulfate	14808-79-8	< 10000 U	< 10000 U	< 10000 U	< 10000 U	< 10000 U	< 10000 U
Sulfide	18496-25-8	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U

Notes:
LOC - Level of Concern
ug/L - micrograms per liter
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-018	I-53-SW-019	I-53-SW-020	I-53-SW-021	I-53-SW-022	I-53-SW-022
		53SW-18(19960813)	53SW-19(19960812)	53SW-20(19960812)	53SW-21(19960819)	53SW-22DUP(19960821)	53SW-22(19960821)
		8/13/1996	8/12/1996	8/12/1996	8/19/1996	8/21/1996	8/21/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Dioxins							
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9						
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6						
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7						
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3						
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4						
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6						
Octachlorodibenzodioxin	3268-87-9						
Total heptachlorodibenzo-p-dioxins	37871-00-4						
Total hexachlorodibenzo-p-dioxins	34465-46-8						
Total pentachlorodibenzo-p-dioxins	36088-22-9						
Total tetrachlorodibenzo-p-dioxins	41903-57-5						
Explosives							
1,3,5-Trinitrobenzene	99-35-4	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U
1,3-Dinitrobenzene	99-65-0	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U
2,4,6-Trinitrotoluene	118-96-7	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U
2-amino-4,6-Dinitrotoluene	35572-78-2						
2-Nitrotoluene	88-72-2						
3-Nitrotoluene	99-08-1						
4-amino-2,6-Dinitrotoluene	19406-51-0						
4-Nitrotoluene	99-99-0						
HMX	2691-41-0	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U
Nitrobenzene	98-95-3	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U
Nitrobenzene	98-95-3						
Nitrocellulose	9004-70-0	< 553 U	< 553 U	< 553 U	< 553 U	< 553 U	< 553 U
Nitroglycerin	55-63-0	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Nitroguanidine	556-88-7	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U
PETN	78-11-5	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Picric Acid	88-89-1	< 0.27 U	< 0.27 U	< 0.27 U	< 0.27 UJ	< 0.27 U	< 0.27 U
RDX	121-82-4	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U
Tetrazene	14097-21-3	< 40 UJ	< 40 UJ	< 40 UJ	< 40 U	< 40 U	< 40 U
Tetryl	479-45-8	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U
2,4-Dinitrotoluene	121-14-2						
2,6-Dinitrotoluene	606-20-2	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U
2,6-Dinitrotoluene	606-20-2						
Furans							
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4						
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7						
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9						
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9						
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9						
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6						
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5						
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4						
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9						
Octachlorodibenzofuran	39001-02-0						
Total heptachlorodibenzofurans	38998-75-3						
Total hexachlorodibenzofurans	55684-94-1						
Total pentachlorodibenzofurans	30402-15-4						
Total tetrachlorodibenzofurans	30402-14-3						
Metals							
Aluminum	7429-90-5	50.9	48.2	75.2	45.2	61.4	52.4
Antimony	7440-36-0	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-018	I-53-SW-019	I-53-SW-020	I-53-SW-021	I-53-SW-022	I-53-SW-022
		53SW-18(19960813)	53SW-19(19960812)	53SW-20(19960812)	53SW-21(19960819)	53SW-22DUP(19960821)	53SW-22(19960821)
		8/13/1996	8/12/1996	8/12/1996	8/19/1996	8/21/1996	8/21/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Arsenic	7440-38-2	< 1 U	< 1 U	< 1 U	1.08 J	1.21 J	< 1 UJ
Barium	7440-39-3	21	21.4	21.8	12.8	11.9	12.1
Beryllium	7440-41-7	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Boron	7440-42-8	< 50 U	< 50 U	< 50 U	< 50 U	54.2	98.4
Cadmium	7440-43-9	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U
Calcium	7440-70-2	6970	7080	7030	5810	5820	5810
Chromium	7440-47-3	< 6.96 U	24.9	50.5	< 6.96 U	< 6.96 U	< 6.96 U
Cobalt	7440-48-4	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Copper	7440-50-8	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Iron	7439-89-6	410	641	878	341	387	369
Lead	7439-92-1	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Magnesium	7439-95-4	2680	2720	2680	2540	2490	2490
Manganese	7439-96-5	152	150	147	12.9	18.2	14.6
Mercury	7439-97-6	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U
Nickel	7440-02-0	< 7.11 U	< 7.11 U	18.1	< 7.11 U	< 7.11 U	< 7.11 U
Potassium	7440-09-7	< 1000 U	< 1000 U	< 1000 U	< 1000 U	< 1000 U	< 1000 U
Selenium	7782-49-2	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Silver	7440-22-4	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U
Sodium	7440-23-5	11300	11300	11300	9790	9790	9930
Strontium	7440-24-6	31.4	32.3	32.4	25.3	25.7	24.3
Thallium	7440-28-0	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Titanium	7440-32-6	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Vanadium	7440-62-2	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U
Zinc	7440-66-6	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U
Zirconium	7440-67-7	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
PCBs							
Aroclor 1016	12674-11-2						
Aroclor 1221	11104-28-2						
Aroclor 1232	11141-16-5						
Aroclor 1242	53469-21-9						
Aroclor 1248	12672-29-6						
Aroclor 1254	11097-69-1						
Aroclor 1260	11096-82-5						
Pesticides							
4,4'-DDD	72-54-8						
4,4'-DDE	72-55-9						
4,4'-DDT	50-29-3						
Aldrin	309-00-2						
alpha-BHC	319-84-6						
alpha-Chlordane	5103-71-9						
beta-BHC	319-85-7						
Chlordane	57-74-9						
delta-BHC	319-86-8						
Diazinon	333-41-5						
Dieldrin	60-57-1						

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-018	I-53-SW-019	I-53-SW-020	I-53-SW-021	I-53-SW-022	I-53-SW-022
		53SW-18(19960813)	53SW-19(19960812)	53SW-20(19960812)	53SW-21(19960819)	53SW-22DUP(19960821)	53SW-22(19960821)
		8/13/1996	8/12/1996	8/12/1996	8/19/1996	8/21/1996	8/21/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Endosulfan I	959-98-8						
Endosulfan II	33213-65-9						
Endosulfan sulfate	1031-07-8						
Endrin	72-20-8						
Endrin aldehyde	7421-93-4						
Endrin ketone	53494-70-5						
gamma-BHC (Lindane)	58-89-9						
gamma-Chlordane	5103-74-2						
Heptachlor	76-44-8						
Heptachlor epoxide	1024-57-3						
Isodrin	465-73-6						
Malathion	121-75-5						
Methoxychlor	72-43-5						
Mirex	2385-85-5	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U
Toxaphene	8001-35-2						
Radiological							
Americium-241	86954-36-1						
Cesium-137	10045-97-3						
Cobalt-60	10198-40-0						
Gross Alpha	12587-46-1						
Gross beta	12587-47-2						
Radium-226	13982-63-3						
Total Uranium	7440-61-1 U						
Uranium-235	15117-96-1						
Uranium-238	7440-61-1 U-238						
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U
1,2,4-Trichlorobenzene	120-82-1	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorobenzene	95-50-1	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,3-Dichlorobenzene	541-73-1	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,4-Dichlorobenzene	106-46-7	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2,4,5-Trichlorophenol	95-95-4	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
2,4,6-Trichlorophenol	88-06-2	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
2,4-Dichlorophenol	120-83-2	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U
2,4-Dimethylphenol	105-67-9	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
2,4-Dinitrophenol	51-28-5	< 21 U	< 21 U	< 21 U	< 21 U	< 21 U	< 21 U
2-Chloronaphthalene	91-58-7	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Chlorophenol	95-57-8	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U
2-Methylnaphthalene	91-57-6	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2-Methylphenol	95-48-7	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
2-Nitroaniline	88-74-4	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
2-Nitrophenol	88-75-5	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
3,3'-Dichlorobenzidine	91-94-1	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U
3-Nitroaniline	99-09-2	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U
4,6-dinitro-2-Methylphenol	534-52-1	< 17 U	< 17 U	< 17 U	< 17 U	< 17 U	< 17 U
4-Bromophenyl phenyl ether	101-55-3	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
4-Chloro-3-methylphenol	59-50-7	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U
4-Chloroaniline	106-47-8	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U
4-Chlorophenyl phenyl ether	7005-72-3	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U
4-Methylphenol	106-44-5	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#
4-Nitroaniline	100-01-6	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
4-Nitrophenol	100-02-7	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-018	I-53-SW-019	I-53-SW-020	I-53-SW-021	I-53-SW-022	I-53-SW-022
		53SW-18(19960813)	53SW-19(19960812)	53SW-20(19960812)	53SW-21(19960819)	53SW-22DUP(19960821)	53SW-22(19960821)
		8/13/1996	8/12/1996	8/12/1996	8/19/1996	8/21/1996	8/21/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Acenaphthene	83-32-9	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Acenaphthylene	208-96-8	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Aniline	62-53-3	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
Anthracene	120-12-7	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Benz(a)anthracene	56-55-3	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Benzo(a)pyrene	50-32-8	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
Benzo(b)fluoranthene	205-99-2	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U
Benzo(g,h,i)perylene	191-24-2	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U
Benzo(k)fluoranthene	207-08-9	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U
Benzoic Acid	65-85-0	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U
Benzyl alcohol	100-51-6	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U
bis(2-Chloroethoxy)methane	111-91-1	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
bis(2-Chloroethyl)ether	111-44-4	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
bis(2-Chloroisopropyl)ether	39638-32-9	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
bis(2-Ethylhexyl)phthalate	117-81-7	< 4.8 U	< 4.8 U	15	< 4.8 U	< 4.8 U	< 4.8 U
Butylbenzyl phthalate	85-68-7	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Carbazole	86-74-8	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Chrysene	218-01-9	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U
Dibenz(a,h)anthracene	53-70-3	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U
Dibenzofuran	132-64-9	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Diethylphthalate	84-66-2	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Dimethylphthalate	131-11-3	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
di-n-Butylphthalate	84-74-2	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
di-n-Octylphthalate	117-84-0	< 15 U	< 15 U	< 15 U	< 15 U	< 15 U	< 15 U
Diphenylamine	122-39-4	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoranthene	206-44-0	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U
Fluorene	86-73-7	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
Hexachlorobenzene	118-74-1	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Hexachlorobutadiene	87-68-3	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Hexachlorocyclopentadiene	77-47-4	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Hexachloroethane	67-72-1	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
Indeno(1,2,3-c,d)pyrene	193-39-5	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Isophorone	78-59-1	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Naphthalene	91-20-3	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
N-Nitrosodimethylamine	62-75-9						
n-Nitroso-di-n-propylamine	621-64-7	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
n-Nitrosodiphenylamine	86-30-6	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U
Pentachlorophenol	87-86-5	< 0.042 U	< 0.042 U	< 0.042 U	< 0.042 U	< 0.042 U	< 0.042 U
Phenanthrene	85-01-8	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Phenol	108-95-2	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U
Pyrene	129-00-0	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
TPH							
Diesel Fuel	68334-30-5		< 340 U	< 340 U			
Diesel Range Organics	DRO	< 330 U			< 340 U	< 340 U	< 340 U
Gasoline	8006-61-9		< 340 U	< 340 U			
Gasoline range organics	GRO	< 330 U			< 340 U	< 340 U	< 340 U
TPH, aviation gas fraction	50815-00-4	< 330 U	< 340 U	< 340 U	< 340 U	< 340 U	< 340 U
TRPH	TRPH	< 176 U	< 169 U	< 169 U	< 194 U	< 181 U	< 172 U
VOC							
1,1,1-Trichloroethane	71-55-6	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
1,1,2-Trichloroethane	79-00-5	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U
1,1-Dichloroethane	75-34-3	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U
1,1-Dichloroethene	75-35-4	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53	53
		I-53-SW-018	I-53-SW-019	I-53-SW-020	I-53-SW-021	I-53-SW-022	I-53-SW-022
		53SW-18(19960813)	53SW-19(19960812)	53SW-20(19960812)	53SW-21(19960819)	53SW-22DUP(19960821)	53SW-22(19960821)
		8/13/1996	8/12/1996	8/12/1996	8/19/1996	8/21/1996	8/21/1996
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
1,2-Dichloroethane	107-06-2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloroethene (total)	540-59-0	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloropropane	78-87-5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Butanone	78-93-3	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U
2-Hexanone	591-78-6	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U
Acetone	67-64-1	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U
Acetonitrile	75-05-8	< 200 U	< 200 U	< 200 U	< 200 U	< 200 U	< 200 U
Benzene	71-43-2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromodichloromethane	75-27-4	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U
Bromoform	75-25-2	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Bromomethane	74-83-9	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
Carbon disulfide	75-15-0	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Carbon tetrachloride	56-23-5	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Chlorobenzene	108-90-7	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloroethane	75-00-3	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
Chloroform	67-66-3	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloromethane	74-87-3	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U
cis-1,3-Dichloropropene	10061-01-5	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Dibromochloromethane	124-48-1	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U
Dichlorodifluoromethane	75-71-8	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U
Ethanol	64-17-5	< 2000 U	< 2000 U	< 2000 U	< 2000 U	< 2000 U	< 2000 U
Ethyl benzene	100-41-4	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Isopropanol	67-63-0	< 400 U	< 400 U	< 400 U	< 400 U	< 400 U	< 400 U
Methylene chloride	75-09-2	5.2	2.7	2.5	14	< 2.3 U	< 2.3 U
Styrene	100-42-5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
tert-Butylalcohol	75-65-0	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U
Tetrachloroethene	127-18-4	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Toluene	108-88-3	1.2	1.4	2.2	0.61	< 0.5 U	< 0.5 U
trans-1,3-Dichloropropene	10061-02-6	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U
Trichloroethene	79-01-6	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichlorofluoromethane	75-69-4	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U
Vinyl acetate	108-05-4	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U
Vinyl chloride	75-01-4	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Xylenes	1330-20-7	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U
WetChem							
Ammonia	7664-41-7	73.9 J	62.8 J	59.1 J	71.3	59.1 J	67.5 J
Chloride	16887-00-6	23100	24100	24100	22000	22000	22000
Cyanide	57-12-5	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoride	16984-48-8	< 1230 U	< 1230 U	< 1230 U	< 1230 U	< 1230 U	< 1230 U
Nitrate	14797-55-8						
Nitrate/Nitrite	Nitrate/Nitrite	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Nitrite	14797-65-0						
Phosphate	14265-44-2	38.2	31.7	35	14.3	< 13.3 U	19.3
Phosphorus	7723-14-0						
Sulfate	14808-79-8	< 10000 U	< 10000 U	< 10000 U	< 10000 U	< 10000 U	< 10000 U
Sulfide	18496-25-8	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U

Notes:
LOC - Level of Concern
ug/L - micrograms per liter
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53
		I-53-SW-023	I-53-SW-024	I-53-SW-024	I-53-SW-026	I-53-SW-026
		53SW-23(19960821)	53SW-24(19980901)	53SW-24(19980910)	53SW-26(19980901)	53SW-26(19980910)
		8/21/1996	9/1/1998	9/10/1998	9/1/1998	9/10/1998
		WS	WS	WS	WS	WS
Chemical Name	**CAS No**					
Dioxins						
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9					
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6					
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7					
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3					
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4					
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6					
Octachlorodibenzodioxin	3268-87-9					
Total heptachlorodibenzo-p-dioxins	37871-00-4					
Total hexachlorodibenzo-p-dioxins	34465-46-8					
Total pentachlorodibenzo-p-dioxins	36088-22-9					
Total tetrachlorodibenzo-p-dioxins	41903-57-5					
Explosives						
1,3,5-Trinitrobenzene	99-35-4	< 0.449 U	< 0.05 U		< 0.05 U	
1,3-Dinitrobenzene	99-65-0	< 0.611 U	< 0.05 U		< 0.05 U	
2,4,6-Trinitrotoluene	118-96-7	< 0.635 U	< 0.05 U		< 0.05 U	
2-amino-4,6-Dinitrotoluene	35572-78-2		< 0.05 U		< 0.05 U	
2-Nitrotoluene	88-72-2		< 0.1 U		< 0.1 U	
3-Nitrotoluene	99-08-1		< 0.1 U		< 0.1 U	
4-amino-2,6-Dinitrotoluene	19406-51-0		< 0.05 U		< 0.05 U	
4-Nitrotoluene	99-99-0		< 0.1 U		< 0.1 U	
HMX	2691-41-0	< 1.21 U	< 0.1 U		< 0.1 U	
Nitrobenzene	98-95-3	< 0.645 U	< 1 U		< 1 U	
Nitrobenzene	98-95-3		< 0.05 U		< 0.05 U	
Nitrocellulose	9004-70-0	< 553 U	< 553 U		< 553 U	
Nitroglycerin	55-63-0	< 10 U	< 4 U		< 4 U	
Nitroguanidine	556-88-7	< 30.9 U	< 26 U		< 26 U	
PETN	78-11-5	< 20 U	< 8 U		< 8 U	
Picric Acid	88-89-1	< 0.27 U		< 0.24 U		< 0.24 U
RDX	121-82-4	< 1.17 U	< 0.1 U		< 0.1 U	
Tetrazene	14097-21-3	< 40 U	< 4.72 U		< 4.72 U	
Tetryl	479-45-8	< 1.56 U	< 0.1 U		< 0.1 U	
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2	< 0.0637 U	< 0.05 U		< 0.05 U	
2,4-Dinitrotoluene	121-14-2		< 2 U		< 2 U	
2,6-Dinitrotoluene	606-20-2	< 0.0738 U	< 2 U		< 2 U	
2,6-Dinitrotoluene	606-20-2		< 0.05 U		< 0.05 U	
Furans						
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4					
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7					
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9					
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9					
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9					
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6					
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5					
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4					
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9					
Octachlorodibenzofuran	39001-02-0					
Total heptachlorodibenzofurans	38998-75-3					
Total hexachlorodibenzofurans	55684-94-1					
Total pentachlorodibenzofurans	30402-15-4					
Total tetrachlorodibenzofurans	30402-14-3					
Metals						
Aluminum	7429-90-5	30.1	< 100 U		232	
Antimony	7440-36-0	< 1 U	< 0.667 U		< 0.667 U	

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53
		I-53-SW-023	I-53-SW-024	I-53-SW-024	I-53-SW-026	I-53-SW-026
		53SW-23(19960821)	53SW-24(19980901)	53SW-24(19980910)	53SW-26(19980901)	53SW-26(19980910)
		8/21/1996	9/1/1998	9/10/1998	9/1/1998	9/10/1998
		WS	WS	WS	WS	WS
Chemical Name	**CAS No**					
Arsenic	7440-38-2	< 1 UJ	< 1.11 U		< 1.11 U	
Barium	7440-39-3	15.5	17.7		18.8	
Beryllium	7440-41-7	< 5 U	< 0.222 U		< 0.222 U	
Boron	7440-42-8	77.8	56.6		42.8	
Cadmium	7440-43-9	< 3.01 U	< 0.111 U		< 0.111 U	
Calcium	7440-70-2	6850	7340		25200	
Chromium	7440-47-3	< 6.96 U	< 2 U		< 2 U	
Cobalt	7440-48-4	< 50 U	< 0.667 U		< 0.667 U	
Copper	7440-50-8	< 5 U	< 3 U		< 3 U	
Iron	7439-89-6	473	296		352	
Lead	7439-92-1	< 1 U	< 0.667 U		1.91	
Magnesium	7439-95-4	2630	2730		7080	
Manganese	7439-96-5	26	78.2		38.5	
Mercury	7439-97-6	< 0.243 U	< 0.222 U		< 0.222 U	
Nickel	7440-02-0	< 7.11 U	< 5 U		< 5 U	
Potassium	7440-09-7	< 1000 U	902		1520	
Selenium	7782-49-2	< 2 U	< 6.11 U		< 6.11 U	
Silver	7440-22-4	< 4.42 U	< 0.111 U		< 0.111 U	
Sodium	7440-23-5	10700	10500 J		38600 J	
Strontium	7440-24-6	30.3	31.6		110	
Thallium	7440-28-0	< 1 U	< 0.111 U		< 0.111 U	
Titanium	7440-32-6	< 2 U	< 2 U		8	
Vanadium	7440-62-2	< 4.69 U	< 2 U		< 2 U	
Zinc	7440-66-6	< 35.8 U	< 15 U		15.6	
Zirconium	7440-67-7	< 1 UJ	< 2 U		< 2 U	
PCBs						
Aroclor 1016	12674-11-2		< 0.1 U		< 0.1 U	
Aroclor 1221	11104-28-2		< 0.1 U		< 0.1 U	
Aroclor 1232	11141-16-5		< 0.1 U		< 0.1 U	
Aroclor 1242	53469-21-9		< 0.1 U		< 0.1 U	
Aroclor 1248	12672-29-6		< 0.1 U		< 0.1 U	
Aroclor 1254	11097-69-1		< 0.1 U		< 0.1 U	
Aroclor 1260	11096-82-5		< 0.1 U		< 0.1 U	
Pesticides						
4,4'-DDD	72-54-8		< 0.6 U		< 0.6 U	
4,4'-DDE	72-55-9		< 0.5 U		< 0.5 U	
4,4'-DDT	50-29-3		< 0.5 U		< 0.5 U	
Aldrin	309-00-2		< 0.5 U		< 0.5 U	
alpha-BHC	319-84-6		< 0.5 U		< 0.5 U	
alpha-Chlordane	5103-71-9		< 0.5 U		< 0.5 U	
beta-BHC	319-85-7		< 0.5 U		< 0.5 U	
Chlordane	57-74-9		< 0.025 U		< 0.025 U	
delta-BHC	319-86-8		< 0.5 U		< 0.5 U	
Diazinon	333-41-5		< 0.05 U		< 0.05 U	
Dieldrin	60-57-1		< 0.5 U		< 0.5 U	

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53
		I-53-SW-023	I-53-SW-024	I-53-SW-024	I-53-SW-026	I-53-SW-026
		53SW-23(19960821)	53SW-24(19980901)	53SW-24(19980910)	53SW-26(19980901)	53SW-26(19980910)
		8/21/1996	9/1/1998	9/10/1998	9/1/1998	9/10/1998
		WS	WS	WS	WS	WS
Chemical Name	**CAS No**					
Endosulfan I	959-98-8		< 0.5 U		< 0.5 U	
Endosulfan II	33213-65-9		< 0.5 U		< 0.5 U	
Endosulfan sulfate	1031-07-8		< 0.5 U		< 0.5 U	
Endrin	72-20-8		< 0.5 U		< 0.5 U	
Endrin aldehyde	7421-93-4		< 0.5 U		< 0.5 U	
Endrin ketone	53494-70-5		< 0.5 U		< 0.5 U	
gamma-BHC (Lindane)	58-89-9		< 0.5 U		< 0.5 U	
gamma-Chlordane	5103-74-2		< 0.5 U		< 0.5 U	
Heptachlor	76-44-8		< 0.5 U		< 0.5 U	
Heptachlor epoxide	1024-57-3		< 0.5 U		< 0.5 U	
Isodrin	465-73-6					
Malathion	121-75-5		< 0.05 U		< 0.05 U	
Methoxychlor	72-43-5		< 0.5 U		< 0.5 U	
Mirex	2385-85-5	< 0.025 U	< 10 U		< 10 U	
Toxaphene	8001-35-2		< 0.5 U		< 0.5 U	
Radiological						
Americium-241	86954-36-1					
Cesium-137	10045-97-3					
Cobalt-60	10198-40-0					
Gross Alpha	12587-46-1					
Gross beta	12587-47-2					
Radium-226	13982-63-3					
Total Uranium	7440-61-1 U					
Uranium-235	15117-96-1					
Uranium-238	7440-61-1 U-238					
SVOC						
1,1,2,2-Tetrachloroethane	79-34-5	< 0.51 U				
1,2,4-Trichlorobenzene	120-82-1	< 1.8 U	< 1 U		< 1 U	
1,2-Dichlorobenzene	95-50-1	< 1.7 U	< 1 U		< 1 U	
1,3-Dichlorobenzene	541-73-1	< 1.7 U	< 1 U		< 1 U	
1,4-Dichlorobenzene	106-46-7	< 1.7 U	< 1 U		< 1 U	
2,4,5-Trichlorophenol	95-95-4	< 5.2 U	< 4 U		< 4 U	
2,4,6-Trichlorophenol	88-06-2	< 4.2 U	< 4.5 U		< 4.5 U	
2,4-Dichlorophenol	120-83-2	< 2.9 U	< 2 U		< 2 U	
2,4-Dimethylphenol	105-67-9	< 5.8 U	< 2 U		< 2 U	
2,4-Dinitrophenol	51-28-5	< 21 U	< 30 U		< 30 U	
2-Chloronaphthalene	91-58-7	< 0.5 U	< 1 U		< 1 U	
2-Chlorophenol	95-57-8	< 0.99 U	< 2 U		< 2 U	
2-Methylnaphthalene	91-57-6	< 1.7 U	< 1 U		< 1 U	
2-Methylphenol	95-48-7	< 3.9 U	< 2 U		< 2 U	
2-Nitroaniline	88-74-4	< 4.3 U	< 5 U		< 5 U	
2-Nitrophenol	88-75-5	< 3.7 U	< 2 U		< 2 U	
3,3'-Dichlorobenzidine	91-94-1	< 12 U	< 5 U		< 5 U	
3-Nitroaniline	99-09-2	< 4.9 U	< 5 U		< 5 U	
4,6-dinitro-2-Methylphenol	534-52-1	< 17 U	< 20 U		< 20 U	
4-Bromophenyl phenyl ether	101-55-3	< 4.2 U	< 1 U		< 1 U	
4-Chloro-3-methylphenol	59-50-7	< 4 U	< 1.5 U		< 1.5 U	
4-Chloroaniline	106-47-8	< 7.3 U	< 4 U		< 4 U	
4-Chlorophenyl phenyl ether	7005-72-3	< 5.1 U	< 1 U		< 1 U	
4-Methylphenol	106-44-5	< 0.52 U#	< 2 U		< 2 U	
4-Nitroaniline	100-01-6	< 5.2 U	< 5 U		< 5 U	
4-Nitrophenol	100-02-7	< 12 U	< 10 U		< 10 U	

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53
		I-53-SW-023	I-53-SW-024	I-53-SW-024	I-53-SW-026	I-53-SW-026
		53SW-23(19960821)	53SW-24(19980901)	53SW-24(19980910)	53SW-26(19980901)	53SW-26(19980910)
		8/21/1996	9/1/1998	9/10/1998	9/1/1998	9/10/1998
		WS	WS	WS	WS	WS
Chemical Name	**CAS No**					
Acenaphthene	83-32-9	< 1.7 U	< 1 U		< 1 U	
Acenaphthylene	208-96-8	< 0.5 U				
Aniline	62-53-3	< 4.4 U	< 2 U		< 2 U	
Anthracene	120-12-7	< 0.5 U	< 1 U		< 1 U	
Benz(a)anthracene	56-55-3	< 1.6 U	< 1.5 U		< 1.5 U	
Benzo(a)pyrene	50-32-8	< 4.7 U	< 2 U		< 2 U	
Benzo(b)fluoranthene	205-99-2	< 5.4 U	< 1.5 U		< 1.5 U	
Benzo(g,h,i)perylene	191-24-2	< 6.1 U	< 2.5 U		< 2.5 U	
Benzo(k)fluoranthene	207-08-9	< 0.87 U	< 1.5 U		< 1.5 U	
Benzoic Acid	65-85-0	< 13 U				
Benzyl alcohol	100-51-6	< 0.72 U				
bis(2-Chloroethoxy)methane	111-91-1	< 1.5 U	< 1 U		< 1 U	
bis(2-Chloroethyl)ether	111-44-4	< 1.9 U	< 1.5 U		< 1.5 U	
bis(2-Chloroisopropyl)ether	39638-32-9	< 5.3 U	< 1 U		< 1 U	
bis(2-Ethylhexyl)phthalate	117-81-7	< 4.8 U	< 2 U		< 2 U	
Butylbenzyl phthalate	85-68-7	< 3.4 U	< 1.5 U		< 1.5 U	
Carbazole	86-74-8	< 2 U	< 2 U		< 2 U	
Chrysene	218-01-9	< 2.4 U	< 1.5 U		< 1.5 U	
Dibenz(a,h)anthracene	53-70-3	< 6.5 U	< 2.5 U		< 2.5 U	
Dibenzofuran	132-64-9	< 1.7 U	< 1 U		< 1 U	
Diethylphthalate	84-66-2	< 2 U	< 1 U		< 1 U	
Dimethylphthalate	131-11-3	< 1.5 U	< 2 U		< 2 U	
di-n-Butylphthalate	84-74-2	< 3.7 U	0.51 J		0.5 J	
di-n-Octylphthalate	117-84-0	< 15 U	< 2.4 U		< 2.4 U	
Diphenylamine	122-39-4	< 2.5 U	< 1 U		< 1 U	
Fluoranthene	206-44-0	< 3.3 U	< 1 U		< 1 U	
Fluorene	86-73-7	< 3.7 U	< 1 U		< 1 U	
Hexachlorobenzene	118-74-1	< 1.6 U	< 2 U		< 2 U	
Hexachlorobutadiene	87-68-3	< 3.4 U	< 2 U		< 2 U	
Hexachlorocyclopentadiene	77-47-4	< 8.6 U	< 10 U		< 10 U	
Hexachloroethane	67-72-1	< 1.5 U	< 1.5 U		< 1.5 U	
Indeno(1,2,3-c,d)pyrene	193-39-5	< 8.6 U	< 2.5 U		< 2.5 U	
Isophorone	78-59-1	< 4.8 U	< 1 U		< 1 U	
Naphthalene	91-20-3	< 0.5 U	< 1 U		< 1 U	
N-Nitrosodimethylamine	62-75-9		< 1 U		< 1 U	
n-Nitroso-di-n-propylamine	621-64-7	< 4.4 U	< 1 U		< 1 U	
n-Nitrosodiphenylamine	86-30-6	< 3 U	< 1 U		< 1 U	
Pentachlorophenol	87-86-5	< 0.042 U	< 10 U		< 10 U	
Phenanthrene	85-01-8	< 0.5 U	< 1 U		< 1 U	
Phenol	108-95-2	< 9.2 U	< 2 U		< 2 U	
Pyrene	129-00-0	< 2.8 U	< 1 U		< 1 U	
TPH						
Diesel Fuel	68334-30-5					
Diesel Range Organics	DRO	< 340 U				
Gasoline	8006-61-9					
Gasoline range organics	GRO	< 340 U				
TPH, aviation gas fraction	50815-00-4	< 340 U				
TRPH	TRPH	< 178 U				
VOC						
1,1,1-Trichloroethane	71-55-6	< 0.5 U				
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	< 5 U				
1,1,2-Trichloroethane	79-00-5	< 1.2 U				
1,1-Dichloroethane	75-34-3	< 0.68 U				
1,1-Dichloroethene	75-35-4	< 0.5 U				

Table A-5
Historical Analytical Results for Surface Water Samples at PICA 057 Site 53

		53	53	53	53	53
		I-53-SW-023	I-53-SW-024	I-53-SW-024	I-53-SW-026	I-53-SW-026
		53SW-23(19960821)	53SW-24(19980901)	53SW-24(19980910)	53SW-26(19980901)	53SW-26(19980910)
		8/21/1996	9/1/1998	9/10/1998	9/1/1998	9/10/1998
		WS	WS	WS	WS	WS
Chemical Name	**CAS No**					
1,2-Dichloroethane	107-06-2	< 0.5 U				
1,2-Dichloroethene (total)	540-59-0	< 0.5 U				
1,2-Dichloropropane	78-87-5	< 0.5 U				
2-Butanone	78-93-3	< 6.4 U				
2-Hexanone	591-78-6	< 3.6 U				
4-Methyl-2-pentanone (MIBK)	108-10-1	< 3 U				
Acetone	67-64-1	< 13 U				
Acetonitrile	75-05-8	< 200 U				
Benzene	71-43-2	< 0.5 U				
Bromodichloromethane	75-27-4	< 0.59 U				
Bromoform	75-25-2	< 2.6 U				
Bromomethane	74-83-9	< 5.8 U				
Carbon disulfide	75-15-0	< 0.5 U				
Carbon tetrachloride	56-23-5	< 0.58 U				
Chlorobenzene	108-90-7	< 0.5 U				
Chloroethane	75-00-3	< 1.9 U				
Chloroform	67-66-3	< 0.5 U				
Chloromethane	74-87-3	< 3.2 U				
cis-1,3-Dichloropropene	10061-01-5	< 0.58 U				
Dibromochloromethane	124-48-1	< 0.67 U				
Dichlorodifluoromethane	75-71-8	< 6.9 U				
Ethanol	64-17-5	< 2000 U				
Ethyl benzene	100-41-4	< 0.5 U				
Isopropanol	67-63-0	< 400 U				
Methylene chloride	75-09-2	< 2.3 U				
Styrene	100-42-5	< 0.5 U				
tert-Butylalcohol	75-65-0	< 500 U				
Tetrachloroethene	127-18-4	< 1.6 U				
Toluene	108-88-3	< 0.5 U				
trans-1,3-Dichloropropene	10061-02-6	< 0.7 U				
Trichloroethene	79-01-6	< 0.5 U				
Trichlorofluoromethane	75-69-4	< 1.4 U				
Vinyl acetate	108-05-4	< 8.3 U				
Vinyl chloride	75-01-4	< 2.6 U				
Xylenes	1330-20-7	< 0.84 U				
WetChem						
Ammonia	7664-41-7	61.9 J	< 50 U		< 50 U	
Chloride	16887-00-6	23100	20800		74500 D	
Cyanide	57-12-5	< 2.5 U				
Fluoride	16984-48-8	< 1230 U	138		198	
Nitrate	14797-55-8		< 100 U		269	
Nitrate/Nitrite	Nitrate/Nitrite	< 10 U				
Nitrite	14797-65-0		< 100 U		< 100 U	
Phosphate	14265-44-2	16.9				
Phosphorus	7723-14-0		13.2		23.8	
Sulfate	14808-79-8	< 10000 U	4130		13700	
Sulfide	18496-25-8	< 50 U	4500		1800	

Notes:
LOC - Level of Concern
ug/L - micrograms per liter
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SD-001	I-65-SD-002	I-65-SD-002	I-65-SD-002
		Sample ID	65SD-1(0-1)	65SD-2(0-1)	65SD-2(0-0.5)	65SD-2BDUP(1-2)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2
		Sample Date	7/11/1996	7/11/1996	10/15/1998	5/18/2001
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	FD
Chemical Name	**CAS No**	**Unit**				
Explosives						
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.488 U	< 0.488 U		
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.496 U	< 0.496 U		
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.456 U	< 0.456 U		
HMX	2691-41-0	mg/kg	< 0.666 U	< 0.666 U		
Nitrobenzene	98-95-3	mg/kg	< 2.41 U	< 2.41 U		
Nitrocellulose	9004-70-0	mg/kg	< 10.4 U	< 10.4 U		
Nitroglycerin	55-63-0	mg/kg	< 4 U	< 4 U		
Nitroguanidine	556-88-7	mg/kg	< 0.475 U	< 0.475 U		
PETN	78-11-5	mg/kg	< 4 U	< 4 U		
Picric Acid	88-89-1	mg/kg	< 0.108 U	< 0.108 U		
RDX	121-82-4	mg/kg	< 0.587 U	< 0.587 U		
Tetrazene	14097-21-3	mg/kg	< 1.19 U	< 1.19 U		
Tetryl	479-45-8	mg/kg	< 0.731 U	< 0.731 U		
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.424 U	< 0.424 U		
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.524 U	< 0.524 U		
Metals						
Aluminum	7429-90-5	mg/kg	3780	3620		3860 J
Antimony	7440-36-0	mg/kg	1.1	3.16		< 1.5 UJ
Arsenic	7440-38-2	mg/kg	7.49	26.4		21.3 J
Barium	7440-39-3	mg/kg	92.1	108		74.3 J
Beryllium	7440-41-7	mg/kg	1.06	1.31		0.37 J
Boron	7440-42-8	mg/kg	< 5.91 U	< 5.91 U		
Cadmium	7440-43-9	mg/kg	< 0.7 U	< 0.7 U		0.72 J
Calcium	7440-70-2	mg/kg	2790	6290		5050 J
Chromium	7440-47-3	mg/kg	9.94	12.4		12.8 J
Cobalt	7440-48-4	mg/kg	5.54	5.71		6.9 J
Copper	7440-50-8	mg/kg	157	181		150 J

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SD-001	I-65-SD-002	I-65-SD-002	I-65-SD-002
		Sample ID	65SD-1(0-1)	65SD-2(0-1)	65SD-2(0-0.5)	65SD-2BDUP(1-2)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2
		Sample Date	7/11/1996	7/11/1996	10/15/1998	5/18/2001
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	FD
Chemical Name	**CAS No**	**Unit**				
Iron	7439-89-6	mg/kg	19200	19400		29600 J
Lead	7439-92-1	mg/kg	189	212		122 J
Magnesium	7439-95-4	mg/kg	1710	2580		2580 J
Manganese	7439-96-5	mg/kg	123	231		196 J
Mercury	7439-97-6	mg/kg	2.2	10		5.3 JD
Nickel	7440-02-0	mg/kg	22.3	20.8		22.5 J
Potassium	7440-09-7	mg/kg	240	234		282 J
Selenium	7782-49-2	mg/kg	0.82	1.55		< 0.73 UJ
Silver	7440-22-4	mg/kg	< 0.589 U	< 0.589 U		< 0.73 UJ
Sodium	7440-23-5	mg/kg	583	959		381 J
Strontium	7440-24-6	mg/kg	27.7 J	84 J		
Thallium	7440-28-0	mg/kg	< 0.1 U	0.39		< 1.5 UJ
Titanium	7440-32-6	mg/kg	225	320		
Vanadium	7440-62-2	mg/kg	38.1	26.5		24.7 J
Zinc	7440-66-6	mg/kg	181	253		233 J
Zirconium	7440-67-7	mg/kg	< 2.5 U	8.14		
PCBs						
Aroclor 1016	12674-11-2	mg/kg	< 0.0666 U	< 0.0666 U		< 0.048 U
Aroclor 1221	11104-28-2	mg/kg	< 0.082 UT	< 0.082 UT		< 0.048 U
Aroclor 1232	11141-16-5	mg/kg	< 0.082 UT	< 0.082 UT		< 0.048 U
Aroclor 1242	53469-21-9	mg/kg	< 0.082 UT	< 0.082 UT		< 0.048 U
Aroclor 1248	12672-29-6	mg/kg	< 0.082 UT	< 0.082 UT		< 0.048 U
Aroclor 1254	11097-69-1	mg/kg	< 0.082 UT	< 0.082 UT		< 0.048 U
Aroclor 1260	11096-82-5	mg/kg	< 0.0804 U	0.14		< 0.048 U
Pesticides						
Mirex	2385-85-5	mg/kg	< 0.25 U	< 0.25 U		
Radiological						
Americium-241	86954-36-1	pCi/g	< 0.0763 U	0.3		
Cesium-137	10045-97-3	pCi/g	0.28	0.23		

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SD-001	I-65-SD-002	I-65-SD-002	I-65-SD-002
		Sample ID	65SD-1(0-1)	65SD-2(0-1)	65SD-2(0-0.5)	65SD-2BDUP(1-2)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2
		Sample Date	7/11/1996	7/11/1996	10/15/1998	5/18/2001
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	FD
Chemical Name	**CAS No**	**Unit**				
Cobalt-60	10198-40-0	pCi/g	< 0.0331 U	< 0.0392 U		
Gross Alpha	12587-46-1	pCi/g	1.25	1.53		
Gross beta	12587-47-2	pCi/g	2.22	1.98		
Radium-226	13982-63-3	pCi/g	1.51	1.78		
Total Uranium	7440-61-1 U	mg/kg	3.99	3.9		
Uranium-235	15117-96-1	pCi/g	0.02	0.05		
Uranium-238	7440-61-1 U-238	pCi/g	0.78	1.02		
SVOC						
1-Methylnaphthalene	90-12-0					
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	< 0.24 U	< 0.24 U		
1,2,4-Trichlorobenzene	120-82-1	mg/kg	< 0.04 U	< 0.04 U		
1,2-Dichlorobenzene	95-50-1	mg/kg	< 0.11 U	5.2		
1,3-Dichlorobenzene	541-73-1	mg/kg	< 0.13 U	0.78		
1,4-Dichlorobenzene	106-46-7	mg/kg	< 0.098 U	1.3		
2,4,5-Trichlorophenol	95-95-4	mg/kg	< 0.1 U	< 0.1 U		
2,4,6-Trichlorophenol	88-06-2	mg/kg	< 0.17 U	< 0.17 U		
2,4-Dichlorophenol	120-83-2	mg/kg	< 0.18 U	< 0.18 U		
2,4-Dimethylphenol	105-67-9	mg/kg	< 0.69 U	< 0.69 U		
2,4-Dinitrophenol	51-28-5	mg/kg	< 1.2 U	< 1.2 U		
2-Chloronaphthalene	91-58-7	mg/kg	< 0.036 U	< 0.036 U		
2-Chlorophenol	95-57-8	mg/kg	< 0.06 U	< 0.06 U		
2-Methylnaphthalene	91-57-6	mg/kg	0.5	0.36		
2-Methylphenol	95-48-7	mg/kg	< 0.029 U	< 0.029 U		
2-Nitroaniline	88-74-4	mg/kg	< 0.062 U	< 0.062 U		
2-Nitrophenol	88-75-5	mg/kg	< 0.14 U	< 0.14 U		
3,3'-Dichlorobenzidine	91-94-1	mg/kg	< 6.3 U	< 6.3 U		
3-Nitroaniline	99-09-2	mg/kg	< 0.45 U	< 0.45 U		
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg	< 0.55 U	< 0.55 U		
4-Bromophenyl phenyl ether	101-55-3	mg/kg	< 0.033 U	< 0.033 U		

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SD-001	I-65-SD-002	I-65-SD-002	I-65-SD-002
		Sample ID	65SD-1(0-1)	65SD-2(0-1)	65SD-2(0-0.5)	65SD-2BDUP(1-2)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2
		Sample Date	7/11/1996	7/11/1996	10/15/1998	5/18/2001
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	FD
Chemical Name	**CAS No**	**Unit**				
4-Chloro-3-methylphenol	59-50-7	mg/kg	< 0.095 U	< 0.095 U		
4-Chloroaniline	106-47-8	mg/kg	< 0.81 U	< 0.81 U		
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	< 0.033 U	< 0.033 U		
4-Methylphenol	106-44-5	mg/kg	< 0.24 U#	< 0.24 U#		
4-Nitroaniline	100-01-6	mg/kg	< 0.41 U	< 0.41 U		
4-Nitrophenol	100-02-7	mg/kg	< 1.4 U	< 1.4 U		
Acenaphthene	83-32-9	mg/kg	< 0.036 U	0.1		< 0.48 U
Acenaphthylene	208-96-8	mg/kg	< 0.033 U	< 0.033 U		< 0.48 U
Aniline	62-53-3	mg/kg	< 0.65 U	< 0.65 U		
Anthracene	120-12-7	mg/kg	0.3	0.31		0.15 J
Benz(a)anthracene	56-55-3	mg/kg	< 0.17 U	1.1		1.9
Benzo(a)pyrene	50-32-8	mg/kg	< 0.25 U	1.3		1.9
Benzo(b)fluoranthene	205-99-2	mg/kg	< 0.21 U	1.8		2
Benzo(g,h,i)perylene	191-24-2	mg/kg	< 0.25 U	0.54		0.86
Benzo(k)fluoranthene	207-08-9	mg/kg	< 0.066 U	0.43		1.6
Benzyl alcohol	100-51-6	mg/kg	< 0.19 U	< 0.19 U		
bis(2-Chloroethoxy)methane	111-91-1	mg/kg	< 0.059 U	< 0.059 U		
bis(2-Chloroethyl)ether	111-44-4	mg/kg	< 0.033 U	< 0.033 U		
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg	< 0.2 U	< 0.2 U		
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	< 0.62 U	< 0.62 U		
Butylbenzyl phthalate	85-68-7	mg/kg	< 0.17 U	< 0.17 U		
Carbazole	86-74-8	mg/kg	< 0.14 U	< 0.14 U		
Chrysene	218-01-9	mg/kg	2	1.4		2
Dibenz(a,h)anthracene	53-70-3	mg/kg	< 0.21 U	< 0.21 U		0.32 J
Dibenzofuran	132-64-9	mg/kg	< 0.035 U	0.11		
Diethylphthalate	84-66-2	mg/kg	< 0.24 U	< 0.24 U		
Dimethylphthalate	131-11-3	mg/kg	< 0.17 U	< 0.17 U		
di-n-Butylphthalate	84-74-2	mg/kg	< 0.061 U	< 0.061 U		
di-n-Octylphthalate	117-84-0	mg/kg	< 0.19 U	< 0.19 U		

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SD-001	I-65-SD-002	I-65-SD-002	I-65-SD-002
		Sample ID	65SD-1(0-1)	65SD-2(0-1)	65SD-2(0-0.5)	65SD-2BDUP(1-2)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2
		Sample Date	7/11/1996	7/11/1996	10/15/1998	5/18/2001
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	FD
Chemical Name	**CAS No**	**Unit**				
Diphenylamine	122-39-4	mg/kg	< 0.13 U	< 0.13 U		
Fluoranthene	206-44-0	mg/kg	2	2.1		2.7
Fluorene	86-73-7	mg/kg	0.5	0.16		< 0.48 U
Hexachlorobenzene	118-74-1	mg/kg	< 0.033 U	< 0.033 U		
Hexachlorobutadiene	87-68-3	mg/kg	< 0.23 U	< 0.23 U		
Hexachlorocyclopentadiene	77-47-4	mg/kg	< 6.2 U	< 6.2 U		
Hexachloroethane	67-72-1	mg/kg	< 0.15 U	< 0.15 U		
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	< 0.29 U	0.67		0.92
Isophorone	78-59-1	mg/kg	< 0.033 U	< 0.033 U		
Naphthalene	91-20-3	mg/kg	< 0.037 U	0.29		< 0.48 U
n-Nitroso-di-n-propylamine	621-64-7	mg/kg	< 0.2 U	< 0.2 U		
n-Nitrosodiphenylamine	86-30-6	mg/kg	< 0.19 U	< 0.19 U		
Pentachlorophenol	87-86-5	mg/kg	< 1.3 U	< 1.3 U		
Phenanthrene	85-01-8	mg/kg	2	1		0.38 J
Phenol	108-95-2	mg/kg	< 0.11 U	< 0.11 U		
Pyrene	129-00-0	mg/kg	1	2		1.9
TPH						
Diesel Fuel	68334-30-5	mg/kg	144	< 8.24 U		
Gasoline range organics	GRO	mg/kg	< 8.3 U	< 8.3 U		
TPH, aviation gas fraction	50815-00-4	mg/kg	< 8 U	< 8 U		
TRPH	TRPH	mg/kg	841	5500		
VOC						
1,1,1-Trichloroethane	71-55-6	mg/kg	< 0.44 U	< 0.44 U		
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	mg/kg	< 0.82 U	< 0.82 U		
1,1,2-Trichloroethane	79-00-5	mg/kg	< 0.54 U	< 0.54 U		
1,1-Dichloroethane	75-34-3	mg/kg	< 0.23 U	< 0.23 U		
1,1-Dichloroethene	75-35-4	mg/kg	< 0.39 U	< 0.39 U		
1,2-Dichloroethane	107-06-2	mg/kg	< 0.17 U	< 0.17 U		
1,2-Dichloroethene (total)	540-59-0	mg/kg	< 0.3 U	< 0.3 U		

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SD-001	I-65-SD-002	I-65-SD-002	I-65-SD-002
		Sample ID	65SD-1(0-1)	65SD-2(0-1)	65SD-2(0-0.5)	65SD-2BDUP(1-2)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2
		Sample Date	7/11/1996	7/11/1996	10/15/1998	5/18/2001
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	FD
Chemical Name	**CAS No**	**Unit**				
1,2-Dichloropropane	78-87-5	mg/kg	< 0.29 U	< 0.29 U		
2-Butanone	78-93-3	mg/kg	< 0.07 U	< 0.07 U		
2-Hexanone	591-78-6	mg/kg	< 0.032 U	< 0.032 U		
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	< 0.027 U	< 0.027 U		
Acetone	67-64-1	mg/kg	< 0.017 U	0.13		
Acetonitrile	75-05-8	mg/kg	< 0.23 U	< 0.23 U		
Benzene	71-43-2	mg/kg	< 0.15 U	< 0.15 U		
Bromodichloromethane	75-27-4	mg/kg	< 0.29 U	< 0.29 U		
Bromoform	75-25-2	mg/kg	< 0.69 U	< 0.69 U		
Bromomethane	74-83-9	mg/kg	< 0.57 U	< 0.57 U		
Carbon disulfide	75-15-0	mg/kg	< 0.44 U	< 0.44 U		
Carbon tetrachloride	56-23-5	mg/kg	< 0.7 U	< 0.7 U		
Chlorobenzene	108-90-7	mg/kg	< 0.086 U	< 0.086 U		
Chloroethane	75-00-3	mg/kg	< 0.012 U	< 0.012 U		
Chloroform	67-66-3	mg/kg	< 0.087 U	< 0.087 U		
Chloromethane	74-87-3	mg/kg	< 0.88 U	< 0.88 U		
cis-1,3-Dichloropropene	10061-01-5	mg/kg	< 0.32 U	< 0.32 U		
Dibromochloromethane	124-48-1	mg/kg	< 0.31 U	< 0.31 U		
Dichlorodifluoromethane	75-71-8	mg/kg	< 0.014 U	< 0.014 U		
Ethanol	64-17-5	mg/kg	< 3.7 U	< 3.7 U		
Ethyl benzene	100-41-4	mg/kg	< 0.17 U	< 0.17 U		
Isopropanol	67-63-0	mg/kg	< 0.79 U	< 0.79 U		
Methylene chloride	75-09-2	mg/kg	< 0.012 U	< 0.012 U		
Styrene	100-42-5	mg/kg	< 0.26 U	< 0.26 U		
tert-Butylalcohol	75-65-0	mg/kg	< 0.5 U	< 0.5 U		
Tetrachloroethene	127-18-4	mg/kg	< 0.081 U	< 0.081 U		
Toluene	108-88-3	mg/kg	< 0.078 U	< 0.078 U		
trans-1,3-Dichloropropene	10061-02-6	mg/kg	< 0.28 U	< 0.28 U		
Trichloroethene	79-01-6	mg/kg	< 0.28 U	< 0.28 U		

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SD-001	I-65-SD-002	I-65-SD-002	I-65-SD-002
		Sample ID	65SD-1(0-1)	65SD-2(0-1)	65SD-2(0-0.5)	65SD-2BDUP(1-2)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2
		Sample Date	7/11/1996	7/11/1996	10/15/1998	5/18/2001
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	FD
Chemical Name	**CAS No**	**Unit**				
Trichlorofluoromethane	75-69-4	mg/kg	0.01	0.01		
Vinyl acetate	108-05-4	mg/kg	< 0.032 U	< 0.032 U		
Vinyl chloride	75-01-4	mg/kg	< 0.62 U	< 0.62 U		
Xylenes	1330-20-7	mg/kg	< 0.15 U	< 0.15 U		
WetChem						
% Solids	%Solid	%				68.3
Ammonia	7664-41-7	mg/kg	32.6	57.7		
Chloride	16887-00-6	mg/kg	< 6.05 U	114		
Cyanide	57-12-5	mg/kg	< 0.92 U	< 0.92 U		
Fluoride	16984-48-8	mg/kg	< 3.62 U	< 3.62 U		
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	1.15	< 0.6 U		
Phosphate	14265-44-2	mg/kg	840	3100		
Sulfate	14808-79-8	mg/kg	< 90.4 U	< 90.4 U		
Sulfide	18496-25-8	mg/kg	16.9	1500		
Total organic carbon	TOC	mg/kg	8740	127000	90300	

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

pCi/g - picocuries per gram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65	65	65	65
		I-65-SD-002	I-65-SD-003	I-65-SD-003	I-65-SD-004	I-65-SD-005
		65SD-2B(1-2)	65SD-3(0-1)	65SD-3(0-0.5)	65SD-4(0-1)	1-65SD005 (18-24)
		1 - 2	0 - 1	0 - .5	0 - 1	1.5 - 2
		5/18/2001	7/10/1996	10/15/1998	7/10/1996	11/14/2011
		SE	SE	SE	SE	SE
		N	N	N	N	N
Chemical Name	**CAS No**					
Explosives						
1,3,5-Trinitrobenzene	99-35-4		< 0.488 U		< 0.488 U	
1,3-Dinitrobenzene	99-65-0		< 0.496 U		< 0.496 U	
2,4,6-Trinitrotoluene	118-96-7		< 0.456 U		< 0.456 U	
HMX	2691-41-0		< 0.666 U		< 0.666 U	
Nitrobenzene	98-95-3		< 2.41 U		< 2.41 U	
Nitrocellulose	9004-70-0		< 10.4 U		< 10.4 U	
Nitroglycerin	55-63-0		< 4 U		< 4 U	
Nitroguanidine	556-88-7		< 0.475 U		< 0.475 U	
PETN	78-11-5		< 4 U		< 4 U	
Picric Acid	88-89-1		< 0.108 U		< 0.108 U	
RDX	121-82-4		< 0.587 U		< 0.587 U	
Tetrazene	14097-21-3		< 1.19 U		< 1.19 U	
Tetryl	479-45-8		< 0.731 U		< 0.731 U	
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2		< 0.424 U		< 0.424 U	
2,6-Dinitrotoluene	606-20-2		< 0.524 U		< 0.524 U	
Metals						
Aluminum	7429-90-5	4460 J	5370		2780	
Antimony	7440-36-0	1 J	0.44		0.28	
Arsenic	7440-38-2	34.8 J	8.71		4.49	4.99 J
Barium	7440-39-3	82.2 J	79.9		53.6	
Beryllium	7440-41-7	0.35 J	0.85		< 0.5 U	
Boron	7440-42-8		< 5.91 U		< 5.91 U	
Cadmium	7440-43-9	0.22 J	< 0.7 U		< 0.7 U	
Calcium	7440-70-2	5030 J	15200		2950	
Chromium	7440-47-3	16.4 J	8.16		< 4.05 U	
Cobalt	7440-48-4	9.7 J	4.97		3.61	
Copper	7440-50-8	228 J	71		24	56.6

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65	65	65	65
		I-65-SD-002	I-65-SD-003	I-65-SD-003	I-65-SD-004	I-65-SD-005
		65SD-2B(1-2)	65SD-3(0-1)	65SD-3(0-0.5)	65SD-4(0-1)	1-65SD005 (18-24)
		1 - 2	0 - 1	0 - .5	0 - 1	1.5 - 2
		5/18/2001	7/10/1996	10/15/1998	7/10/1996	11/14/2011
		SE	SE	SE	SE	SE
		N	N	N	N	N
Chemical Name	**CAS No**					
Iron	7439-89-6	37800 J	19300		11300	
Lead	7439-92-1	199 J	71.3		51.9	6.1
Magnesium	7439-95-4	3560 J	5790		2680	
Manganese	7439-96-5	271 J	391		135	
Mercury	7439-97-6	11.2 JD	0.2		0.31	0.175 J
Nickel	7440-02-0	38.1 J	15.3		11.7	
Potassium	7440-09-7	482 J	913		384	
Selenium	7782-49-2	< 0.69 UJ	1.35		0.68	
Silver	7440-22-4	< 0.69 UJ	< 0.589 U		< 0.589 U	
Sodium	7440-23-5	320 J	526		503	
Strontium	7440-24-6		47 J		15.3 J	
Thallium	7440-28-0	< 1.4 UJ	< 0.1 U		< 0.1 U	
Titanium	7440-32-6		217		212	
Vanadium	7440-62-2	26.3 J	20.7		18.2	
Zinc	7440-66-6	268 J	143		102	
Zirconium	7440-67-7		4.65		< 2.5 U	
PCBs						
Aroclor 1016	12674-11-2	< 0.046 U	< 0.0666 U		< 0.0666 U	
Aroclor 1221	11104-28-2	< 0.046 U	< 0.082 UT		< 0.082 UT	
Aroclor 1232	11141-16-5	< 0.046 U	< 0.082 UT		< 0.082 UT	
Aroclor 1242	53469-21-9	< 0.046 U	< 0.082 UT		< 0.082 UT	
Aroclor 1248	12672-29-6	< 0.046 U	< 0.082 UT		< 0.082 UT	
Aroclor 1254	11097-69-1	< 0.046 U	< 0.082 UT		< 0.082 UT	
Aroclor 1260	11096-82-5	< 0.046 U	< 0.0804 U		< 0.0804 U	
Pesticides						
Mirex	2385-85-5		< 0.25 U		< 0.25 U	
Radiological						
Americium-241	86954-36-1					
Cesium-137	10045-97-3					

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65	65	65	65
		I-65-SD-002	I-65-SD-003	I-65-SD-003	I-65-SD-004	I-65-SD-005
		65SD-2B(1-2)	65SD-3(0-1)	65SD-3(0-0.5)	65SD-4(0-1)	1-65SD005 (18-24)
		1 - 2	0 - 1	0 - .5	0 - 1	1.5 - 2
		5/18/2001	7/10/1996	10/15/1998	7/10/1996	11/14/2011
		SE	SE	SE	SE	SE
		N	N	N	N	N
Chemical Name	**CAS No**					
Cobalt-60	10198-40-0					
Gross Alpha	12587-46-1					
Gross beta	12587-47-2					
Radium-226	13982-63-3					
Total Uranium	7440-61-1 U					
Uranium-235	15117-96-1					
Uranium-238	7440-61-1 U-238					
SVOC						
1-Methylnaphthalene	90-12-0					< 26.4 UJ
1,1,2,2-Tetrachloroethane	79-34-5		< 0.24 U		< 0.24 U	
1,2,4-Trichlorobenzene	120-82-1		< 0.04 U		< 0.04 U	
1,2-Dichlorobenzene	95-50-1		< 0.11 U		< 0.11 U	
1,3-Dichlorobenzene	541-73-1		< 0.13 U		< 0.13 U	
1,4-Dichlorobenzene	106-46-7		< 0.098 U		< 0.098 U	
2,4,5-Trichlorophenol	95-95-4		< 0.1 U		< 0.1 U	
2,4,6-Trichlorophenol	88-06-2		< 0.17 U		< 0.17 U	
2,4-Dichlorophenol	120-83-2		< 0.18 U		< 0.18 U	
2,4-Dimethylphenol	105-67-9		< 0.69 U		< 0.69 U	
2,4-Dinitrophenol	51-28-5		< 1.2 U		< 1.2 U	
2-Chloronaphthalene	91-58-7		< 0.036 U		< 0.036 U	
2-Chlorophenol	95-57-8		< 0.06 U		< 0.06 U	
2-Methylnaphthalene	91-57-6		1		< 0.049 U	< 26.4 UJ
2-Methylphenol	95-48-7		< 0.029 U		< 0.029 U	
2-Nitroaniline	88-74-4		< 0.062 U		< 0.062 U	
2-Nitrophenol	88-75-5		< 0.14 U		< 0.14 U	
3,3'-Dichlorobenzidine	91-94-1		< 6.3 U		< 6.3 U	
3-Nitroaniline	99-09-2		< 0.45 U		< 0.45 U	
4,6-dinitro-2-Methylphenol	534-52-1		< 0.55 U		< 0.55 U	
4-Bromophenyl phenyl ether	101-55-3		< 0.033 U		< 0.033 U	

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65	65	65	65
		I-65-SD-002	I-65-SD-003	I-65-SD-003	I-65-SD-004	I-65-SD-005
		65SD-2B(1-2)	65SD-3(0-1)	65SD-3(0-0.5)	65SD-4(0-1)	1-65SD005 (18-24)
		1 - 2	0 - 1	0 - .5	0 - 1	1.5 - 2
		5/18/2001	7/10/1996	10/15/1998	7/10/1996	11/14/2011
		SE	SE	SE	SE	SE
		N	N	N	N	N
Chemical Name	**CAS No**					
4-Chloro-3-methylphenol	59-50-7		< 0.095 U		< 0.095 U	
4-Chloroaniline	106-47-8		< 0.81 U		< 0.81 U	
4-Chlorophenyl phenyl ether	7005-72-3		< 0.033 U		< 0.033 U	
4-Methylphenol	106-44-5		< 0.24 U#		< 0.24 U#	
4-Nitroaniline	100-01-6		< 0.41 U		< 0.41 U	
4-Nitrophenol	100-02-7		< 1.4 U		< 1.4 U	
Acenaphthene	83-32-9	< 0.46 U	2		< 0.036 U	< 26.4 UJ
Acenaphthylene	208-96-8	< 0.46 U	< 0.033 U		< 0.033 U	< 26.4 UJ
Aniline	62-53-3		< 0.65 U		< 0.65 U	
Anthracene	120-12-7	0.12 J	1		< 0.033 U	< 26.4 UJ
Benz(a)anthracene	56-55-3	1.1	3		< 0.17 U	< 26.4 UJ
Benzo(a)pyrene	50-32-8	1	3		< 0.25 U	53.1 J
Benzo(b)fluoranthene	205-99-2	1.2	5		< 0.21 U	< 26.4 UJ
Benzo(g,h,i)perylene	191-24-2	0.4 J	< 0.25 U		< 0.25 U	< 26.4 UJ
Benzo(k)fluoranthene	207-08-9	0.69	1		< 0.066 U	< 26.4 UJ
Benzyl alcohol	100-51-6		< 0.19 U		< 0.19 U	
bis(2-Chloroethoxy)methane	111-91-1		< 0.059 U		< 0.059 U	
bis(2-Chloroethyl)ether	111-44-4		< 0.033 U		< 0.033 U	
bis(2-Chloroisopropyl)ether	39638-32-9		< 0.2 U		< 0.2 U	
bis(2-Ethylhexyl)phthalate	117-81-7		< 0.62 U		< 0.62 U	
Butylbenzyl phthalate	85-68-7		< 0.17 U		< 0.17 U	
Carbazole	86-74-8		1		< 0.14 U	
Chrysene	218-01-9	1.2	4		< 0.12 U	< 26.4 UJ
Dibenz(a,h)anthracene	53-70-3	0.14 J	< 0.21 U		< 0.21 U	< 26.4 UJ
Dibenzofuran	132-64-9		0.8		< 0.035 U	
Diethylphthalate	84-66-2		< 0.24 U		< 0.24 U	
Dimethylphthalate	131-11-3		< 0.17 U		< 0.17 U	
di-n-Butylphthalate	84-74-2		< 0.061 U		< 0.061 U	
di-n-Octylphthalate	117-84-0		< 0.19 U		< 0.19 U	

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65	65	65	65
		I-65-SD-002	I-65-SD-003	I-65-SD-003	I-65-SD-004	I-65-SD-005
		65SD-2B(1-2)	65SD-3(0-1)	65SD-3(0-0.5)	65SD-4(0-1)	1-65SD005 (18-24)
		1 - 2	0 - 1	0 - .5	0 - 1	1.5 - 2
		5/18/2001	7/10/1996	10/15/1998	7/10/1996	11/14/2011
		SE	SE	SE	SE	SE
		N	N	N	N	N
Chemical Name	**CAS No**					
Diphenylamine	122-39-4		< 0.13 U		< 0.13 U	
Fluoranthene	206-44-0	1.6	9		< 0.068 U	< 26.4 UJ
Fluorene	86-73-7	< 0.46 U	1		< 0.033 U	< 26.4 UJ
Hexachlorobenzene	118-74-1		< 0.033 U		< 0.033 U	
Hexachlorobutadiene	87-68-3		< 0.23 U		< 0.23 U	
Hexachlorocyclopentadiene	77-47-4		< 6.2 U		< 6.2 U	
Hexachloroethane	67-72-1		< 0.15 U		< 0.15 U	
Indeno(1,2,3-c,d)pyrene	193-39-5	0.41 J	< 0.29 U		< 0.29 U	< 26.4 UJ
Isophorone	78-59-1		< 0.033 U		< 0.033 U	
Naphthalene	91-20-3	< 0.46 U	2		< 0.037 U	< 26.4 UJ
n-Nitroso-di-n-propylamine	621-64-7		< 0.2 U		< 0.2 U	
n-Nitrosodiphenylamine	86-30-6		< 0.19 U		< 0.19 U	
Pentachlorophenol	87-86-5		< 1.3 U		< 1.3 U	
Phenanthrene	85-01-8	0.39 J	9		0.7	< 26.4 UJ
Phenol	108-95-2		< 0.11 U		< 0.11 U	
Pyrene	129-00-0	1.4	7		0.7	< 26.4 UJ
TPH						
Diesel Fuel	68334-30-5		22.6		< 8.24 U	
Gasoline range organics	GRO		< 8.3 U		< 8.3 U	
TPH, aviation gas fraction	50815-00-4		< 8 U		< 8 U	
TRPH	TRPH		1550		445	
VOC						
1,1,1-Trichloroethane	71-55-6		< 0.44 U		< 0.44 U	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		< 0.82 U		< 0.82 U	
1,1,2-Trichloroethane	79-00-5		< 0.54 U		< 0.54 U	
1,1-Dichloroethane	75-34-3		< 0.23 U		< 0.23 U	
1,1-Dichloroethene	75-35-4		< 0.39 U		< 0.39 U	
1,2-Dichloroethane	107-06-2		< 0.17 U		< 0.17 U	
1,2-Dichloroethene (total)	540-59-0		< 0.3 U		< 0.3 U	

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65	65	65	65
		I-65-SD-002	I-65-SD-003	I-65-SD-003	I-65-SD-004	I-65-SD-005
		65SD-2B(1-2)	65SD-3(0-1)	65SD-3(0-0.5)	65SD-4(0-1)	1-65SD005 (18-24)
		1 - 2	0 - 1	0 - .5	0 - 1	1.5 - 2
		5/18/2001	7/10/1996	10/15/1998	7/10/1996	11/14/2011
		SE	SE	SE	SE	SE
		N	N	N	N	N
Chemical Name	**CAS No**					
1,2-Dichloropropane	78-87-5		< 0.29 U		< 0.29 U	
2-Butanone	78-93-3		< 0.07 U		< 0.07 U	
2-Hexanone	591-78-6		< 0.032 U		< 0.032 U	
4-Methyl-2-pentanone (MIBK)	108-10-1		< 0.027 U		< 0.027 U	
Acetone	67-64-1		< 0.017 U		< 0.017 U	
Acetonitrile	75-05-8		< 0.23 U		< 0.23 U	
Benzene	71-43-2		< 0.15 U		< 0.15 U	
Bromodichloromethane	75-27-4		< 0.29 U		< 0.29 U	
Bromoform	75-25-2		< 0.69 U		< 0.69 U	
Bromomethane	74-83-9		< 0.57 U		< 0.57 U	
Carbon disulfide	75-15-0		< 0.44 U		< 0.44 U	
Carbon tetrachloride	56-23-5		< 0.7 U		< 0.7 U	
Chlorobenzene	108-90-7		< 0.086 U		< 0.086 U	
Chloroethane	75-00-3		< 0.012 U		< 0.012 U	
Chloroform	67-66-3		< 0.087 U		< 0.087 U	
Chloromethane	74-87-3		< 0.88 U		< 0.88 U	
cis-1,3-Dichloropropene	10061-01-5		< 0.32 U		< 0.32 U	
Dibromochloromethane	124-48-1		< 0.31 U		< 0.31 U	
Dichlorodifluoromethane	75-71-8		< 0.014 U		< 0.014 U	
Ethanol	64-17-5		< 3.7 U		< 3.7 U	
Ethyl benzene	100-41-4		< 0.17 U		< 0.17 U	
Isopropanol	67-63-0		< 0.79 U		< 0.79 U	
Methylene chloride	75-09-2		0.01		< 0.012 U	
Styrene	100-42-5		< 0.26 U		< 0.26 U	
tert-Butylalcohol	75-65-0		< 0.5 U		< 0.5 U	
Tetrachloroethene	127-18-4		< 0.081 U		< 0.081 U	
Toluene	108-88-3		< 0.078 U		< 0.078 U	
trans-1,3-Dichloropropene	10061-02-6		< 0.28 U		< 0.28 U	
Trichloroethene	79-01-6		< 0.28 U		< 0.28 U	

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65	65	65	65
		I-65-SD-002	I-65-SD-003	I-65-SD-003	I-65-SD-004	I-65-SD-005
		65SD-2B(1-2)	65SD-3(0-1)	65SD-3(0-0.5)	65SD-4(0-1)	1-65SD005 (18-24)
		1 - 2	0 - 1	0 - .5	0 - 1	1.5 - 2
		5/18/2001	7/10/1996	10/15/1998	7/10/1996	11/14/2011
		SE	SE	SE	SE	SE
		N	N	N	N	N
Chemical Name	**CAS No**					
Trichlorofluoromethane	75-69-4		< 0.59 U		0.01	
Vinyl acetate	108-05-4		< 0.032 U		< 0.032 U	
Vinyl chloride	75-01-4		< 0.62 U		< 0.62 U	
Xylenes	1330-20-7		< 0.15 U		< 0.15 U	
WetChem						
% Solids	%Solid	72				
Ammonia	7664-41-7					
Chloride	16887-00-6					
Cyanide	57-12-5		< 0.92 U		< 0.92 U	
Fluoride	16984-48-8					
Nitrate/Nitrite	Nitrate/Nitrite					
Phosphate	14265-44-2					
Sulfate	14808-79-8					
Sulfide	18496-25-8					
Total organic carbon	TOC		15600	4690	18600	

Notes:

LOC - Level of Concern
mg/kg - milligrams per kilogram
pCi/g - picocuries per gram
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65
		I-65-SD-005	I-65-SD-006
		1-65SD005 (0-6)	1-65SD006 (18-24)
		0 - .5	1.5 - 2
		11/14/2011	11/14/2011
		SE	SE
		N	N
Chemical Name	**CAS No**		
Explosives			
1,3,5-Trinitrobenzene	99-35-4		
1,3-Dinitrobenzene	99-65-0		
2,4,6-Trinitrotoluene	118-96-7		
HMX	2691-41-0		
Nitrobenzene	98-95-3		
Nitrocellulose	9004-70-0		
Nitroglycerin	55-63-0		
Nitroguanidine	556-88-7		
PETN	78-11-5		
Picric Acid	88-89-1		
RDX	121-82-4		
Tetrazene	14097-21-3		
Tetryl	479-45-8		
Explosives / SVOC			
2,4-Dinitrotoluene	121-14-2		
2,6-Dinitrotoluene	606-20-2		
Metals			
Aluminum	7429-90-5		
Antimony	7440-36-0		
Arsenic	7440-38-2	26.7	5
Barium	7440-39-3		
Beryllium	7440-41-7		
Boron	7440-42-8		
Cadmium	7440-43-9		
Calcium	7440-70-2		
Chromium	7440-47-3		
Cobalt	7440-48-4		
Copper	7440-50-8	159	35.2

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65
		I-65-SD-005	I-65-SD-006
		1-65SD005 (0-6)	1-65SD006 (18-24)
		0 - .5	1.5 - 2
		11/14/2011	11/14/2011
		SE	SE
		N	N
Chemical Name	**CAS No**		
Iron	7439-89-6		
Lead	7439-92-1	92.2	27.8
Magnesium	7439-95-4		
Manganese	7439-96-5		
Mercury	7439-97-6	6.05	0.0455 UB
Nickel	7440-02-0		
Potassium	7440-09-7		
Selenium	7782-49-2		
Silver	7440-22-4		
Sodium	7440-23-5		
Strontium	7440-24-6		
Thallium	7440-28-0		
Titanium	7440-32-6		
Vanadium	7440-62-2		
Zinc	7440-66-6		
Zirconium	7440-67-7		
PCBs			
Aroclor 1016	12674-11-2		
Aroclor 1221	11104-28-2		
Aroclor 1232	11141-16-5		
Aroclor 1242	53469-21-9		
Aroclor 1248	12672-29-6		
Aroclor 1254	11097-69-1		
Aroclor 1260	11096-82-5		
Pesticides			
Mirex	2385-85-5		
Radiological			
Americium-241	86954-36-1		
Cesium-137	10045-97-3		

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65
		I-65-SD-005	I-65-SD-006
		1-65SD005 (0-6)	1-65SD006 (18-24)
		0 - .5	1.5 - 2
		11/14/2011	11/14/2011
		SE	SE
		N	N
Chemical Name	**CAS No**		
Cobalt-60	10198-40-0		
Gross Alpha	12587-46-1		
Gross beta	12587-47-2		
Radium-226	13982-63-3		
Total Uranium	7440-61-1 U		
Uranium-235	15117-96-1		
Uranium-238	7440-61-1 U-238		
SVOC			
1-Methylnaphthalene	90-12-0	149	9.09
1,1,2,2-Tetrachloroethane	79-34-5		
1,2,4-Trichlorobenzene	120-82-1		
1,2-Dichlorobenzene	95-50-1		
1,3-Dichlorobenzene	541-73-1		
1,4-Dichlorobenzene	106-46-7		
2,4,5-Trichlorophenol	95-95-4		
2,4,6-Trichlorophenol	88-06-2		
2,4-Dichlorophenol	120-83-2		
2,4-Dimethylphenol	105-67-9		
2,4-Dinitrophenol	51-28-5		
2-Chloronaphthalene	91-58-7		
2-Chlorophenol	95-57-8		
2-Methylnaphthalene	91-57-6	298	16.7
2-Methylphenol	95-48-7		
2-Nitroaniline	88-74-4		
2-Nitrophenol	88-75-5		
3,3'-Dichlorobenzidine	91-94-1		
3-Nitroaniline	99-09-2		
4,6-dinitro-2-Methylphenol	534-52-1		
4-Bromophenyl phenyl ether	101-55-3		

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65
		I-65-SD-005	I-65-SD-006
		1-65SD005 (0-6)	1-65SD006 (18-24)
		0 - .5	1.5 - 2
		11/14/2011	11/14/2011
		SE	SE
		N	N
Chemical Name	**CAS No**		
4-Chloro-3-methylphenol	59-50-7		
4-Chloroaniline	106-47-8		
4-Chlorophenyl phenyl ether	7005-72-3		
4-Methylphenol	106-44-5		
4-Nitroaniline	100-01-6		
4-Nitrophenol	100-02-7		
Acenaphthene	83-32-9	< 8.54 U	< 7.02 U
Acenaphthylene	208-96-8	10.2	< 7.02 U
Aniline	62-53-3		
Anthracene	120-12-7	57.9	< 7.02 U
Benz(a)anthracene	56-55-3	219 J	7.25 J
Benzo(a)pyrene	50-32-8	200 J	5.86 J
Benzo(b)fluoranthene	205-99-2	204	7.7
Benzo(g,h,i)perylene	191-24-2	114	3.74 J
Benzo(k)fluoranthene	207-08-9	170	6.02 J
Benzyl alcohol	100-51-6		
bis(2-Chloroethoxy)methane	111-91-1		
bis(2-Chloroethyl)ether	111-44-4		
bis(2-Chloroisopropyl)ether	39638-32-9		
bis(2-Ethylhexyl)phthalate	117-81-7		
Butylbenzyl phthalate	85-68-7		
Carbazole	86-74-8		
Chrysene	218-01-9	229	9.45
Dibenz(a,h)anthracene	53-70-3	35.2 J	< 7.02 UJ
Dibenzofuran	132-64-9		
Diethylphthalate	84-66-2		
Dimethylphthalate	131-11-3		
di-n-Butylphthalate	84-74-2		
di-n-Octylphthalate	117-84-0		

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65
		I-65-SD-005	I-65-SD-006
		1-65SD005 (0-6)	1-65SD006 (18-24)
		0 - .5	1.5 - 2
		11/14/2011	11/14/2011
		SE	SE
		N	N
Chemical Name	**CAS No**		
Diphenylamine	122-39-4		
Fluoranthene	206-44-0	462	19.5
Fluorene	86-73-7	30.3	4.63 J
Hexachlorobenzene	118-74-1		
Hexachlorobutadiene	87-68-3		
Hexachlorocyclopentadiene	77-47-4		
Hexachloroethane	67-72-1		
Indeno(1,2,3-c,d)pyrene	193-39-5	107 J	4.34 J
Isophorone	78-59-1		
Naphthalene	91-20-3	127	7.64
n-Nitroso-di-n-propylamine	621-64-7		
n-Nitrosodiphenylamine	86-30-6		
Pentachlorophenol	87-86-5		
Phenanthrene	85-01-8	266	13.1
Phenol	108-95-2		
Pyrene	129-00-0	272	13.7
TPH			
Diesel Fuel	68334-30-5		
Gasoline range organics	GRO		
TPH, aviation gas fraction	50815-00-4		
TRPH	TRPH		
VOC			
1,1,1-Trichloroethane	71-55-6		
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		
1,1,2-Trichloroethane	79-00-5		
1,1-Dichloroethane	75-34-3		
1,1-Dichloroethene	75-35-4		
1,2-Dichloroethane	107-06-2		
1,2-Dichloroethene (total)	540-59-0		

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65
		I-65-SD-005	I-65-SD-006
		1-65SD005 (0-6)	1-65SD006 (18-24)
		0 - .5	1.5 - 2
		11/14/2011	11/14/2011
		SE	SE
		N	N
Chemical Name	**CAS No**		
1,2-Dichloropropane	78-87-5		
2-Butanone	78-93-3		
2-Hexanone	591-78-6		
4-Methyl-2-pentanone (MIBK)	108-10-1		
Acetone	67-64-1		
Acetonitrile	75-05-8		
Benzene	71-43-2		
Bromodichloromethane	75-27-4		
Bromoform	75-25-2		
Bromomethane	74-83-9		
Carbon disulfide	75-15-0		
Carbon tetrachloride	56-23-5		
Chlorobenzene	108-90-7		
Chloroethane	75-00-3		
Chloroform	67-66-3		
Chloromethane	74-87-3		
cis-1,3-Dichloropropene	10061-01-5		
Dibromochloromethane	124-48-1		
Dichlorodifluoromethane	75-71-8		
Ethanol	64-17-5		
Ethyl benzene	100-41-4		
Isopropanol	67-63-0		
Methylene chloride	75-09-2		
Styrene	100-42-5		
tert-Butylalcohol	75-65-0		
Tetrachloroethene	127-18-4		
Toluene	108-88-3		
trans-1,3-Dichloropropene	10061-02-6		
Trichloroethene	79-01-6		

Table A-6
Historical Analytical Results for Sediment Samples at PICA 047 Site 65

		65	65
		I-65-SD-005	I-65-SD-006
		1-65SD005 (0-6)	1-65SD006 (18-24)
		0 - .5	1.5 - 2
		11/14/2011	11/14/2011
		SE	SE
		N	N
Chemical Name	**CAS No**		
Trichlorofluoromethane	75-69-4		
Vinyl acetate	108-05-4		
Vinyl chloride	75-01-4		
Xylenes	1330-20-7		
WetChem			
% Solids	%Solid		
Ammonia	7664-41-7		
Chloride	16887-00-6		
Cyanide	57-12-5		
Fluoride	16984-48-8		
Nitrate/Nitrite	Nitrate/Nitrite		
Phosphate	14265-44-2		
Sulfate	14808-79-8		
Sulfide	18496-25-8		
Total organic carbon	TOC		

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

pCi/g - picocuries per gram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-7
Historical Analtyical Results of Surface Water Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SW-001	I-65-SW-002	I-65-SW-003	I-65-SW-004
		Sample ID	65SW-1(19960711)	65SW-2(19960711)	65SW-3(19960710)	65SW-4(19960710)
		Depth Interval				
		Sample Date	7/11/1996	7/11/1996	7/10/1996	7/10/1996
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Explosives						
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U
HMX	2691-41-0	ug/L	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U
Nitrobenzene	98-95-3	ug/L	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U
Nitrocellulose	9004-70-0	ug/L	< 553 U	< 553 U	< 553 U	< 553 U
Nitroglycerin	55-63-0	ug/L	< 10 U	< 10 U	< 10 U	< 10 U
Nitroguanidine	556-88-7	ug/L	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U
PETN	78-11-5	ug/L	< 20 U	< 20 U	< 20 U	< 20 U
Picric Acid	88-89-1	ug/L	< 0.27 U	< 0.27 U	< 0.27 U	< 0.27 U
RDX	121-82-4	ug/L	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U
Tetrazene	14097-21-3	ug/L	< 40 U	< 40 U	< 40 U	< 40 U
Tetryl	479-45-8	ug/L	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U
Metals						
Aluminum	7429-90-5	ug/L	44.5	76.1	67.1	124
Antimony	7440-36-0	ug/L	< 1 U	< 1 U	< 1 U	< 1 U
Arsenic	7440-38-2	ug/L	< 1 U	< 1 U	< 1 U	< 1 U
Barium	7440-39-3	ug/L	16.4	16.3	15	17.8
Beryllium	7440-41-7	ug/L	< 5 U	< 5 U	< 5 U	< 5 U
Boron	7440-42-8	ug/L	62	< 50 U	< 50 U	< 50 U
Cadmium	7440-43-9	ug/L	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U
Calcium	7440-70-2	ug/L	6740	6810	6720	9370
Chromium	7440-47-3	ug/L	< 6.96 U	< 6.96 U	< 6.96 U	< 6.96 U
Cobalt	7440-48-4	ug/L	< 50 U	< 50 U	< 50 U	< 50 U
Copper	7440-50-8	ug/L	< 5 U	< 5 U	< 5 U	< 5 U
Iron	7439-89-6	ug/L	402	529	411	506
Lead	7439-92-1	ug/L	1.16	2.98	1.13	2.67
Magnesium	7439-95-4	ug/L	2600	2640	2580	3060

Table A-7
Historical Analtyical Results of Surface Water Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SW-001	I-65-SW-002	I-65-SW-003	I-65-SW-004
		Sample ID	65SW-1(19960711)	65SW-2(19960711)	65SW-3(19960710)	65SW-4(19960710)
		Depth Interval				
		Sample Date	7/11/1996	7/11/1996	7/10/1996	7/10/1996
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Manganese	7439-96-5	ug/L	95.1	94.8	63.8	67.8
Mercury	7439-97-6	ug/L	0.38	< 0.243 U	< 0.243 U	< 0.243 U
Nickel	7440-02-0	ug/L	< 7.11 U	< 7.11 U	< 7.11 U	< 7.11 U
Potassium	7440-09-7	ug/L	< 1000 U	< 1000 U	< 1000 U	< 1000 U
Selenium	7782-49-2	ug/L	< 2 U	< 2 U	< 2 U	< 2 U
Silver	7440-22-4	ug/L	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U
Sodium	7440-23-5	ug/L	12300	12600	12200	16000
Strontium	7440-24-6	ug/L	31.8	31.6	31.4	44.9
Thallium	7440-28-0	ug/L	< 1 U	< 1 U	< 1 U	< 1 U
Titanium	7440-32-6	ug/L	< 2 U	2.07	2.35	3.7
Vanadium	7440-62-2	ug/L	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U
Zinc	7440-66-6	ug/L	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U
Zirconium	7440-67-7	ug/L	< 1 U	< 1 U	< 1 U	< 1 U
PCBs						
Aroclor 1016	12674-11-2	ug/L	< 0.16 U	< 0.16 U	< 0.16 U	< 0.16 U
Aroclor 1221	11104-28-2	ug/L	< 0.16 UT	< 0.16 UT	< 0.16 UT	< 0.16 UT
Aroclor 1232	11141-16-5	ug/L	< 0.16 UT	< 0.16 UT	< 0.16 UT	< 0.16 UT
Aroclor 1242	53469-21-9	ug/L	< 0.19 UT	< 0.19 UT	< 0.19 UT	< 0.19 UT
Aroclor 1248	12672-29-6	ug/L	< 0.19 UT	< 0.19 UT	< 0.19 UT	< 0.19 UT
Aroclor 1254	11097-69-1	ug/L	< 0.19 UT	< 0.19 UT	< 0.19 UT	< 0.19 UT
Aroclor 1260	11096-82-5	ug/L	< 0.19 U	< 0.19 U	< 0.19 U	< 0.19 U
Pesticides						
Mirex	2385-85-5	ug/L	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U
SVOC						
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U
1,2,4-Trichlorobenzene	120-82-1	ug/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorobenzene	95-50-1	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,3-Dichlorobenzene	541-73-1	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,4-Dichlorobenzene	106-46-7	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2,4,5-Trichlorophenol	95-95-4	ug/L	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
2,4,6-Trichlorophenol	88-06-2	ug/L	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U

Table A-7
Historical Analtyical Results of Surface Water Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SW-001	I-65-SW-002	I-65-SW-003	I-65-SW-004
		Sample ID	65SW-1(19960711)	65SW-2(19960711)	65SW-3(19960710)	65SW-4(19960710)
		Depth Interval				
		Sample Date	7/11/1996	7/11/1996	7/10/1996	7/10/1996
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
2,4-Dichlorophenol	120-83-2	ug/L	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U
2,4-Dimethylphenol	105-67-9	ug/L	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
2,4-Dinitrophenol	51-28-5	ug/L	< 21 U	< 21 U	< 21 U	< 21 U
2-Chloronaphthalene	91-58-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Chlorophenol	95-57-8	ug/L	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U
2-Methylnaphthalene	91-57-6	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2-Methylphenol	95-48-7	ug/L	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
2-Nitroaniline	88-74-4	ug/L	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
2-Nitrophenol	88-75-5	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
3,3'-Dichlorobenzidine	91-94-1	ug/L	< 12 U	< 12 U	< 12 U	< 12 U
3-Nitroaniline	99-09-2	ug/L	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U
4,6-dinitro-2-Methylphenol	534-52-1	ug/L	< 17 U	< 17 U	< 17 U	< 17 U
4-Bromophenyl phenyl ether	101-55-3	ug/L	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
4-Chloro-3-methylphenol	59-50-7	ug/L	< 4 U	< 4 U	< 4 U	< 4 U
4-Chloroaniline	106-47-8	ug/L	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U
4-Chlorophenyl phenyl ether	7005-72-3	ug/L	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U
4-Methylphenol	106-44-5	ug/L	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#
4-Nitroaniline	100-01-6	ug/L	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
4-Nitrophenol	100-02-7	ug/L	< 12 U	< 12 U	< 12 U	< 12 U
Acenaphthene	83-32-9	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Acenaphthylene	208-96-8	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Aniline	62-53-3	ug/L	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
Anthracene	120-12-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Benz(a)anthracene	56-55-3	ug/L	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Benzo(a)pyrene	50-32-8	ug/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
Benzo(b)fluoranthene	205-99-2	ug/L	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U
Benzo(g,h,i)perylene	191-24-2	ug/L	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U
Benzo(k)fluoranthene	207-08-9	ug/L	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U
Benzoic Acid	65-85-0	ug/L	< 13 U	< 13 U	< 13 U	< 13 U
Benzyl alcohol	100-51-6	ug/L	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U
bis(2-Chloroethoxy)methane	111-91-1	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
bis(2-Chloroethyl)ether	111-44-4	ug/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U

Table A-7
Historical Analtyical Results of Surface Water Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SW-001	I-65-SW-002	I-65-SW-003	I-65-SW-004
		Sample ID	65SW-1(19960711)	65SW-2(19960711)	65SW-3(19960710)	65SW-4(19960710)
		Depth Interval				
		Sample Date	7/11/1996	7/11/1996	7/10/1996	7/10/1996
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
bis(2-Chloroisopropyl)ether	39638-32-9	ug/L	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Butylbenzyl phthalate	85-68-7	ug/L	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Carbazole	86-74-8	ug/L	< 2 U	< 2 U	< 2 U	< 2 U
Chrysene	218-01-9	ug/L	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U
Dibenz(a,h)anthracene	53-70-3	ug/L	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U
Dibenzofuran	132-64-9	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Diethylphthalate	84-66-2	ug/L	2.8	< 2 U	< 2 U	< 2 U
Dimethylphthalate	131-11-3	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
di-n-Butylphthalate	84-74-2	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
di-n-Octylphthalate	117-84-0	ug/L	< 15 U	< 15 U	< 15 U	< 15 U
Diphenylamine	122-39-4	ug/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoranthene	206-44-0	ug/L	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U
Fluorene	86-73-7	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
Hexachlorobenzene	118-74-1	ug/L	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Hexachlorobutadiene	87-68-3	ug/L	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Hexachlorocyclopentadiene	77-47-4	ug/L	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Hexachloroethane	67-72-1	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
Indeno(1,2,3-c,d)pyrene	193-39-5	ug/L	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Isophorone	78-59-1	ug/L	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Naphthalene	91-20-3	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
n-Nitroso-di-n-propylamine	621-64-7	ug/L	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
n-Nitrosodiphenylamine	86-30-6	ug/L	< 3 U	< 3 U	< 3 U	< 3 U
Pentachlorophenol	87-86-5	ug/L	< 0.042 U	< 0.042 U	< 0.042 U	< 0.042 U
Phenanthrene	85-01-8	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Phenol	108-95-2	ug/L	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U
Pyrene	129-00-0	ug/L	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
TPH						
Diesel Range Organics	DRO	ug/L	< 340 U	< 340 U	< 350 U	< 350 U
Gasoline range organics	GRO	ug/L	< 340 U	< 340 U	< 350 U	< 350 U
TPH, aviation gas fraction	50815-00-4	ug/L	< 330 U	< 330 U	< 340 U	< 340 U
TRPH	TRPH	ug/L	< 183 U	< 174 U	< 176 U	< 192 U

Table A-7
Historical Analtyical Results of Surface Water Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SW-001	I-65-SW-002	I-65-SW-003	I-65-SW-004
		Sample ID	65SW-1(19960711)	65SW-2(19960711)	65SW-3(19960710)	65SW-4(19960710)
		Depth Interval				
		Sample Date	7/11/1996	7/11/1996	7/10/1996	7/10/1996
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
VOC						
1,1,1-Trichloroethane	71-55-6	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L	< 5 U	< 5 U	< 5 U	< 5 U
1,1,2-Trichloroethane	79-00-5	ug/L	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U
1,1-Dichloroethane	75-34-3	ug/L	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U
1,1-Dichloroethene	75-35-4	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloroethane	107-06-2	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloroethene (total)	540-59-0	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloropropane	78-87-5	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Butanone	78-93-3	ug/L	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U
2-Hexanone	591-78-6	ug/L	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	< 3 U	< 3 U	< 3 U	< 3 U
Acetone	67-64-1	ug/L	< 13 U	< 13 U	< 13 U	< 13 U
Acetonitrile	75-05-8	ug/L	< 200 U	< 200 U	< 200 U	< 200 U
Benzene	71-43-2	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromodichloromethane	75-27-4	ug/L	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U
Bromoform	75-25-2	ug/L	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Bromomethane	74-83-9	ug/L	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
Carbon disulfide	75-15-0	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Carbon tetrachloride	56-23-5	ug/L	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Chlorobenzene	108-90-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloroethane	75-00-3	ug/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
Chloroform	67-66-3	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloromethane	74-87-3	ug/L	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U
cis-1,3-Dichloropropene	10061-01-5	ug/L	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Dibromochloromethane	124-48-1	ug/L	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U
Dichlorodifluoromethane	75-71-8	ug/L	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U
Ethanol	64-17-5	ug/L	< 2000 U	< 2000 U	< 2000 U	< 2000 U
Ethyl benzene	100-41-4	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Isopropanol	67-63-0	ug/L	< 400 U	< 400 U	< 400 U	< 400 U
Methylene chloride	75-09-2	ug/L	< 2.3 U	< 2.3 U	< 2.3 U	< 2.3 U
Styrene	100-42-5	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U

Table A-7
Historical Analtyical Results of Surface Water Samples at PICA 047 Site 65

		Site Name	65	65	65	65
		Location ID	I-65-SW-001	I-65-SW-002	I-65-SW-003	I-65-SW-004
		Sample ID	65SW-1(19960711)	65SW-2(19960711)	65SW-3(19960710)	65SW-4(19960710)
		Depth Interval				
		Sample Date	7/11/1996	7/11/1996	7/10/1996	7/10/1996
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
tert-Butylalcohol	75-65-0	ug/L	< 500 U	< 500 U	< 500 U	< 500 U
Tetrachloroethene	127-18-4	ug/L	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Toluene	108-88-3	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,3-Dichloropropene	10061-02-6	ug/L	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U
Trichloroethene	79-01-6	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichlorofluoromethane	75-69-4	ug/L	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U
Vinyl acetate	108-05-4	ug/L	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U
Vinyl chloride	75-01-4	ug/L	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Xylenes	1330-20-7	ug/L	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U
WetChem						
Cyanide	57-12-5	ug/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U

Notes:

LOC - Level of Concern

ug/L - micrograms per liter

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-8
Historical Analytical Results for Sediment Samples at PICA 057 Site 33

		Site Name	33	33	33	33
		Location ID	I-33-SD-001	I-33-SD-002	I-33-SD-002	I-33-SD-003
		Sample ID	33SD-1(0-1)	33SD-2(0-1)	33SD-2(0-0.5)	33SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1
		Sample Date	7/11/1996	7/11/1996	10/15/1998	7/11/1996
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	N
Chemical Name	**CAS No**	**Unit**				
Explosives						
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.488 U	< 0.488 U		< 0.488 U
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.496 U	< 0.496 U		< 0.496 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.456 U	< 0.456 U		< 0.456 U
HMX	2691-41-0	mg/kg	< 0.666 U	< 0.666 U		< 0.666 U
Nitrobenzene	98-95-3	mg/kg	< 2.41 U	< 2.41 U		< 2.41 U
Nitrocellulose	9004-70-0	mg/kg	56.4	72.1		200
Nitroglycerin	55-63-0	mg/kg	< 4 U	< 4 U		< 4 U
Nitroguanidine	556-88-7	mg/kg	< 0.475 U	< 0.475 U		< 0.475 U
PETN	78-11-5	mg/kg	< 4 U	< 4 U		< 4 U
Picric Acid	88-89-1	mg/kg	< 0.108 U	< 0.108 U		< 0.108 U
RDX	121-82-4	mg/kg	< 0.587 U	< 0.587 U		< 0.587 U
Tetrazene	14097-21-3	mg/kg	< 1.19 U	< 1.19 U		< 1.19 U
Tetryl	479-45-8	mg/kg	< 0.731 U	< 0.731 U		< 0.731 U
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.424 U	< 0.424 U		< 0.424 U
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.524 U	< 0.524 U		< 0.524 U
Metals						
Aluminum	7429-90-5	mg/kg	10900	10900		7150
Antimony	7440-36-0	mg/kg	< 0.1 U	< 0.1 U		< 0.1 U
Arsenic	7440-38-2	mg/kg	4.03	5.1		5.19
Barium	7440-39-3	mg/kg	75.6	147		64.9
Beryllium	7440-41-7	mg/kg	1.05	1.23		0.97
Boron	7440-42-8	mg/kg	< 5.91 U	< 5.91 U		< 5.91 U
Cadmium	7440-43-9	mg/kg	< 0.7 U	< 0.7 U		< 0.7 U
Calcium	7440-70-2	mg/kg	5780	1970		668
Chromium	7440-47-3	mg/kg	13.9	12.4		10.1
Cobalt	7440-48-4	mg/kg	8.78	4.81		5.85
Copper	7440-50-8	mg/kg	51	43.3		38.1

Table A-8
Historical Analytical Results for Sediment Samples at PICA 057 Site 33

		Site Name	33	33	33	33
		Location ID	I-33-SD-001	I-33-SD-002	I-33-SD-002	I-33-SD-003
		Sample ID	33SD-1(0-1)	33SD-2(0-1)	33SD-2(0-0.5)	33SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1
		Sample Date	7/11/1996	7/11/1996	10/15/1998	7/11/1996
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	N
Chemical Name	**CAS No**	**Unit**				
Iron	7439-89-6	mg/kg	13100	14000		9680
Lead	7439-92-1	mg/kg	145	136		199
Magnesium	7439-95-4	mg/kg	4210	1200		830
Manganese	7439-96-5	mg/kg	143	311		96.1
Mercury	7439-97-6	mg/kg	0.44	5.2		0.37
Nickel	7440-02-0	mg/kg	15.2	10.8		8.1
Potassium	7440-09-7	mg/kg	275	252		153
Selenium	7782-49-2	mg/kg	0.78	0.91		0.65
Silver	7440-22-4	mg/kg	1.69	< 0.589 U		< 0.589 U
Sodium	7440-23-5	mg/kg	684	655		455
Strontium	7440-24-6	mg/kg	12.3 J	13 J		6.7 J
Thallium	7440-28-0	mg/kg	< 0.1 U	0.24		0.19
Titanium	7440-32-6	mg/kg	221	189		189
Vanadium	7440-62-2	mg/kg	23.7	22.2		16.1
Zinc	7440-66-6	mg/kg	146	131		288
Zirconium	7440-67-7	mg/kg	< 2.5 U	< 2.5 U		< 2.5 U
Pesticides						
Mirex	2385-85-5	mg/kg	< 0.25 U	< 0.25 U		< 0.25 U
SVOC						
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	< 0.24 U	< 0.24 U		< 0.24 U
1,2,4-Trichlorobenzene	120-82-1	mg/kg	< 0.04 U	< 0.04 U		< 0.04 U
1,2-Dichlorobenzene	95-50-1	mg/kg	< 0.11 U	< 0.11 U		< 0.11 U
1,3-Dichlorobenzene	541-73-1	mg/kg	< 0.13 U	< 0.13 U		< 0.13 U
1,4-Dichlorobenzene	106-46-7	mg/kg	< 0.098 U	< 0.098 U		< 0.098 U
2,4,5-Trichlorophenol	95-95-4	mg/kg	< 0.1 U	< 0.1 U		< 0.1 U
2,4,6-Trichlorophenol	88-06-2	mg/kg	< 0.17 U	< 0.17 U		< 0.17 U
2,4-Dichlorophenol	120-83-2	mg/kg	< 0.18 U	< 0.18 U		< 0.18 U
2,4-Dimethylphenol	105-67-9	mg/kg	< 0.69 U	< 0.69 U		< 0.69 U
2,4-Dinitrophenol	51-28-5	mg/kg	< 1.2 U	< 1.2 U		< 1.2 U

Table A-8
Historical Analytical Results for Sediment Samples at PICA 057 Site 33

		Site Name	33	33	33	33
		Location ID	I-33-SD-001	I-33-SD-002	I-33-SD-002	I-33-SD-003
		Sample ID	33SD-1(0-1)	33SD-2(0-1)	33SD-2(0-0.5)	33SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1
		Sample Date	7/11/1996	7/11/1996	10/15/1998	7/11/1996
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	N
Chemical Name	**CAS No**	**Unit**				
2-Chloronaphthalene	91-58-7	mg/kg	< 0.036 U	< 0.036 U		< 0.036 U
2-Chlorophenol	95-57-8	mg/kg	< 0.06 U	< 0.06 U		< 0.06 U
2-Methylnaphthalene	91-57-6	mg/kg	< 0.049 U	< 0.049 U		< 0.049 U
2-Methylphenol	95-48-7	mg/kg	< 0.029 U	< 0.029 U		< 0.029 U
2-Nitroaniline	88-74-4	mg/kg	< 0.062 U	< 0.062 U		< 0.062 U
2-Nitrophenol	88-75-5	mg/kg	< 0.14 U	< 0.14 U		< 0.14 U
3,3'-Dichlorobenzidine	91-94-1	mg/kg	< 6.3 U	< 6.3 U		< 6.3 U
3-Nitroaniline	99-09-2	mg/kg	< 0.45 U	< 0.45 U		< 0.45 U
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg	< 0.55 U	< 0.55 U		< 0.55 U
4-Bromophenyl phenyl ether	101-55-3	mg/kg	< 0.033 U	< 0.033 U		< 0.033 U
4-Chloro-3-methylphenol	59-50-7	mg/kg	< 0.095 U	< 0.095 U		< 0.095 U
4-Chloroaniline	106-47-8	mg/kg	< 0.81 U	< 0.81 U		< 0.81 U
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	< 0.033 U	< 0.033 U		< 0.033 U
4-Methylphenol	106-44-5	mg/kg	< 0.24 U#	< 0.24 U#		< 0.24 U#
4-Nitroaniline	100-01-6	mg/kg	< 0.41 U	< 0.41 U		< 0.41 U
4-Nitrophenol	100-02-7	mg/kg	< 1.4 U	< 1.4 U		< 1.4 U
Acenaphthene	83-32-9	mg/kg	< 0.036 U	< 0.036 U		< 0.036 U
Acenaphthylene	208-96-8	mg/kg	< 0.033 U	0.09		< 0.033 U
Aniline	62-53-3	mg/kg	< 0.65 U	< 0.65 U		< 0.65 U
Anthracene	120-12-7	mg/kg	< 0.033 U	0.17		0.06
Benz(a)anthracene	56-55-3	mg/kg	< 0.17 U	0.85		< 0.17 U
Benzo(a)pyrene	50-32-8	mg/kg	< 0.25 U	0.94		< 0.25 U
Benzo(b)fluoranthene	205-99-2	mg/kg	< 0.21 U	1.1		< 0.21 U
Benzo(g,h,i)perylene	191-24-2	mg/kg	< 0.25 U	< 0.25 U		< 0.25 U
Benzo(k)fluoranthene	207-08-9	mg/kg	< 0.066 U	0.3		< 0.066 U
Benzyl alcohol	100-51-6	mg/kg	< 0.19 U	< 0.19 U		< 0.19 U
bis(2-Chloroethoxy)methane	111-91-1	mg/kg	< 0.059 U	< 0.059 U		< 0.059 U
bis(2-Chloroethyl)ether	111-44-4	mg/kg	< 0.033 U	< 0.033 U		< 0.033 U
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg	< 0.2 U	< 0.2 U		< 0.2 U

Table A-8
Historical Analytical Results for Sediment Samples at PICA 057 Site 33

		Site Name	33	33	33	33
		Location ID	I-33-SD-001	I-33-SD-002	I-33-SD-002	I-33-SD-003
		Sample ID	33SD-1(0-1)	33SD-2(0-1)	33SD-2(0-0.5)	33SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1
		Sample Date	7/11/1996	7/11/1996	10/15/1998	7/11/1996
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	N
Chemical Name	**CAS No**	**Unit**				
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	< 0.62 U	< 0.62 U		< 0.62 U
Butylbenzyl phthalate	85-68-7	mg/kg	< 0.17 U	< 0.17 U		< 0.17 U
Carbazole	86-74-8	mg/kg	< 0.14 U	< 0.14 U		< 0.14 U
Chrysene	218-01-9	mg/kg	< 0.12 U	1.2		< 0.12 U
Dibenz(a,h)anthracene	53-70-3	mg/kg	< 0.21 U	< 0.21 U		< 0.21 U
Dibenzofuran	132-64-9	mg/kg	< 0.035 U	< 0.035 U		< 0.035 U
Diethylphthalate	84-66-2	mg/kg	< 0.24 U	< 0.24 U		< 0.24 U
Dimethylphthalate	131-11-3	mg/kg	< 0.17 U	< 0.17 U		< 0.17 U
di-n-Butylphthalate	84-74-2	mg/kg	0.41	1.7		0.23
di-n-Octylphthalate	117-84-0	mg/kg	< 0.19 U	< 0.19 U		< 0.19 U
Diphenylamine	122-39-4	mg/kg	0.4	2.3		0.52
Fluoranthene	206-44-0	mg/kg	< 0.068 U	1.6		0.39
Fluorene	86-73-7	mg/kg	< 0.033 U	0.11		< 0.033 U
Hexachlorobenzene	118-74-1	mg/kg	< 0.033 U	< 0.033 U		< 0.033 U
Hexachlorobutadiene	87-68-3	mg/kg	< 0.23 U	< 0.23 U		< 0.23 U
Hexachlorocyclopentadiene	77-47-4	mg/kg	< 6.2 U	< 6.2 U		< 6.2 U
Hexachloroethane	67-72-1	mg/kg	< 0.15 U	< 0.15 U		< 0.15 U
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	< 0.29 U	< 0.29 U		< 0.29 U
Isophorone	78-59-1	mg/kg	< 0.033 U	< 0.033 U		< 0.033 U
Naphthalene	91-20-3	mg/kg	< 0.037 U	0.13		< 0.037 U
n-Nitroso-di-n-propylamine	621-64-7	mg/kg	< 0.2 U	< 0.2 U		< 0.2 U
n-Nitrosodiphenylamine	86-30-6	mg/kg	0.51	2.8		0.67
Pentachlorophenol	87-86-5	mg/kg	< 1.3 U	< 1.3 U		< 1.3 U
Phenanthrene	85-01-8	mg/kg	< 0.033 U	0.76		0.11
Phenol	108-95-2	mg/kg	< 0.11 U	< 0.11 U		< 0.11 U
Pyrene	129-00-0	mg/kg	0.09	1.9		0.29
VOC						
1,1,1-Trichloroethane	71-55-6	mg/kg	< 0.44 U	< 0.44 U		< 0.44 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	mg/kg	< 0.82 U	< 0.82 U		< 0.82 U

Table A-8
Historical Analytical Results for Sediment Samples at PICA 057 Site 33

		Site Name	33	33	33	33
		Location ID	I-33-SD-001	I-33-SD-002	I-33-SD-002	I-33-SD-003
		Sample ID	33SD-1(0-1)	33SD-2(0-1)	33SD-2(0-0.5)	33SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1
		Sample Date	7/11/1996	7/11/1996	10/15/1998	7/11/1996
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	N
Chemical Name	**CAS No**	**Unit**				
1,1,2-Trichloroethane	79-00-5	mg/kg	< 0.54 U	< 0.54 U		< 0.54 U
1,1-Dichloroethane	75-34-3	mg/kg	< 0.23 U	< 0.23 U		< 0.23 U
1,1-Dichloroethene	75-35-4	mg/kg	< 0.39 U	< 0.39 U		< 0.39 U
1,2-Dichloroethane	107-06-2	mg/kg	< 0.17 U	< 0.17 U		< 0.17 U
1,2-Dichloroethene (total)	540-59-0	mg/kg	< 0.3 U	< 0.3 U		< 0.3 U
1,2-Dichloropropane	78-87-5	mg/kg	< 0.29 U	< 0.29 U		< 0.29 U
2-Butanone	78-93-3	mg/kg	< 0.07 U	< 0.07 U		< 0.07 U
2-Hexanone	591-78-6	mg/kg	< 0.032 U	< 0.032 U		< 0.032 U
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	< 0.027 U	< 0.027 U		< 0.027 U
Acetone	67-64-1	mg/kg	< 0.017 U	0.12		< 0.017 U
Acetonitrile	75-05-8	mg/kg	< 0.23 U	< 0.23 U		< 0.23 U
Benzene	71-43-2	mg/kg	< 0.15 U	< 0.15 U		< 0.15 U
Bromodichloromethane	75-27-4	mg/kg	< 0.29 U	< 0.29 U		< 0.29 U
Bromoform	75-25-2	mg/kg	< 0.69 U	< 0.69 U		< 0.69 U
Bromomethane	74-83-9	mg/kg	< 0.57 U	< 0.57 U		< 0.57 U
Carbon disulfide	75-15-0	mg/kg	< 0.44 U	< 0.44 U		< 0.44 U
Carbon tetrachloride	56-23-5	mg/kg	< 0.7 U	< 0.7 U		< 0.7 U
Chlorobenzene	108-90-7	mg/kg	< 0.086 U	< 0.086 U		< 0.086 U
Chloroethane	75-00-3	mg/kg	< 0.012 U	< 0.012 U		< 0.012 U
Chloroform	67-66-3	mg/kg	< 0.087 U	< 0.087 U		< 0.087 U
Chloromethane	74-87-3	mg/kg	< 0.88 U	< 0.88 U		< 0.88 U
cis-1,3-Dichloropropene	10061-01-5	mg/kg	< 0.32 U	< 0.32 U		< 0.32 U
Dibromochloromethane	124-48-1	mg/kg	< 0.31 U	< 0.31 U		< 0.31 U
Dichlorodifluoromethane	75-71-8	mg/kg	< 0.014 U	< 0.014 U		< 0.014 U
Ethanol	64-17-5	mg/kg	< 3.7 U	< 3.7 U		< 3.7 U
Ethyl benzene	100-41-4	mg/kg	< 0.17 U	< 0.17 U		< 0.17 U
Isopropanol	67-63-0	mg/kg	< 0.79 U	< 0.79 U		< 0.79 U
Methylene chloride	75-09-2	mg/kg	< 0.012 U	0.02		< 0.012 U
Styrene	100-42-5	mg/kg	< 0.26 U	< 0.26 U		< 0.26 U

Table A-8
Historical Analytical Results for Sediment Samples at PICA 057 Site 33

		Site Name	33	33	33	33
		Location ID	I-33-SD-001	I-33-SD-002	I-33-SD-002	I-33-SD-003
		Sample ID	33SD-1(0-1)	33SD-2(0-1)	33SD-2(0-0.5)	33SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1
		Sample Date	7/11/1996	7/11/1996	10/15/1998	7/11/1996
		Sample Matrix	SE	SE	SE	SE
		Sample Type Code	N	N	N	N
Chemical Name	**CAS No**	**Unit**				
tert-Butylalcohol	75-65-0	mg/kg	< 0.5 U	< 0.5 U		< 0.5 U
Tetrachloroethene	127-18-4	mg/kg	< 0.081 U	< 0.081 U		< 0.081 U
Toluene	108-88-3	mg/kg	< 0.078 U	< 0.078 U		< 0.078 U
trans-1,3-Dichloropropene	10061-02-6	mg/kg	< 0.28 U	< 0.28 U		< 0.28 U
Trichloroethene	79-01-6	mg/kg	< 0.28 U	< 0.28 U		< 0.28 U
Trichlorofluoromethane	75-69-4	mg/kg	< 0.59 U	0.02		0.86
Vinyl acetate	108-05-4	mg/kg	< 0.032 U	< 0.032 U		< 0.032 U
Vinyl chloride	75-01-4	mg/kg	< 0.62 U	< 0.62 U		< 0.62 U
Xylenes	1330-20-7	mg/kg	< 0.15 U	< 0.15 U		< 0.15 U
WetChem						
Ammonia	7664-41-7	mg/kg	87.1	143		98.9
Chloride	16887-00-6	mg/kg	9.45	14.1		8.8
Cyanide	57-12-5	mg/kg	< 0.92 U	< 0.92 U		< 0.92 U
Fluoride	16984-48-8	mg/kg	11.1	9.71		10.3
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	< 0.6 U	< 0.6 U		0.78
Phosphate	14265-44-2	mg/kg	410	420		260
Sulfate	14808-79-8	mg/kg	< 90.4 U	< 90.4 U		< 90.4 U
Sulfide	18496-25-8	mg/kg	89	370		75
Total organic carbon	TOC	mg/kg	30400	35700	37600	35800

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-9
Historical Analytical Results for Surface Water Samples at PICA 057 Site 33

		Site Name	33	33	33
		Location ID	I-33-SW-001	I-33-SW-002	I-33-SW-003
		Sample ID	33SW-1(19960711)	33SW-2(19960711)	33SW-3(19960711)
		Depth Interval			
		Sample Date	7/11/1996	7/11/1996	7/11/1996
		Sample Matrix	WS	WS	WS
Chemical Name	**CAS No**	**Unit**			
Explosives					
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.449 U	< 0.449 U	< 0.449 U
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.611 U	< 0.611 U	< 0.611 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.635 U	< 0.635 U	< 0.635 U
HMX	2691-41-0	ug/L	< 1.21 U	< 1.21 U	< 1.21 U
Nitrobenzene	98-95-3	ug/L	< 0.645 U	< 0.645 U	< 0.645 U
Nitrocellulose	9004-70-0	ug/L	< 553 U	< 553 U	< 553 U
Nitroglycerin	55-63-0	ug/L	< 10 U	< 10 U	< 10 U
Nitroguanidine	556-88-7	ug/L	< 30.9 U	< 30.9 U	< 30.9 U
PETN	78-11-5	ug/L	< 20 U	< 20 U	< 20 U
Picric Acid	88-89-1	ug/L	< 0.27 U	< 0.27 U	< 0.27 U
RDX	121-82-4	ug/L	< 1.17 U	< 1.17 U	< 1.17 U
Tetrazene	14097-21-3	ug/L	< 40 U	< 40 U	< 40 U
Tetryl	479-45-8	ug/L	< 1.56 U	< 1.56 U	< 1.56 U
Explosives / SVOC					
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.0637 U	< 0.0637 U	< 0.0637 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.0738 U	< 0.0738 U	< 0.0738 U
Metals					
Aluminum	7429-90-5	ug/L	48	49.7	< 23.5 U
Antimony	7440-36-0	ug/L	< 1 U	< 1 U	< 1 U
Arsenic	7440-38-2	ug/L	< 1 U	< 1 U	< 1 U
Barium	7440-39-3	ug/L	14.3	14.8	< 2.5 U
Beryllium	7440-41-7	ug/L	< 5 U	< 5 U	< 5 U
Boron	7440-42-8	ug/L	< 50 U	< 50 U	< 50 U
Cadmium	7440-43-9	ug/L	< 3.01 U	< 3.01 U	< 3.01 U
Calcium	7440-70-2	ug/L	6910	6980	< 1000 U
Chromium	7440-47-3	ug/L	< 6.96 U	< 6.96 U	< 6.96 U
Cobalt	7440-48-4	ug/L	< 50 U	< 50 U	< 50 U
Copper	7440-50-8	ug/L	< 5 U	< 5 U	< 5 U
Iron	7439-89-6	ug/L	330	340	< 36.8 U

Table A-9
Historical Analytical Results for Surface Water Samples at PICA 057 Site 33

		Site Name	33	33	33
		Location ID	I-33-SW-001	I-33-SW-002	I-33-SW-003
		Sample ID	33SW-1(19960711)	33SW-2(19960711)	33SW-3(19960711)
		Depth Interval			
		Sample Date	7/11/1996	7/11/1996	7/11/1996
		Sample Matrix	WS	WS	WS
Chemical Name	**CAS No**	**Unit**			
Lead	7439-92-1	ug/L	< 1 U	< 1 U	< 1 U
Magnesium	7439-95-4	ug/L	2650	2670	< 1000 U
Manganese	7439-96-5	ug/L	55.6	63.6	< 2.5 U
Mercury	7439-97-6	ug/L	< 0.243 U	< 0.243 U	< 0.243 U
Nickel	7440-02-0	ug/L	< 7.11 U	< 7.11 U	< 7.11 U
Potassium	7440-09-7	ug/L	< 1000 U	< 1000 U	< 1000 U
Selenium	7782-49-2	ug/L	< 2 U	< 2 U	< 2 U
Silver	7440-22-4	ug/L	< 4.42 U	< 4.42 U	< 4.42 U
Sodium	7440-23-5	ug/L	12300	12300	< 2290 U
Strontium	7440-24-6	ug/L	30.9	31.1	31.3
Thallium	7440-28-0	ug/L	< 1 U	< 1 U	< 1 U
Titanium	7440-32-6	ug/L	< 2 U	< 2 U	< 2 U
Vanadium	7440-62-2	ug/L	< 4.69 U	< 4.69 U	< 4.69 U
Zinc	7440-66-6	ug/L	< 35.8 U	< 35.8 U	< 35.8 U
Zirconium	7440-67-7	ug/L	< 1 U	< 1 U	< 1 U
Pesticides					
Mirex	2385-85-5	ug/L	< 0.025 U	< 0.025 U	< 0.025 U
SVOC					
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	< 0.51 U	< 0.51 U	< 0.51 U
1,2,4-Trichlorobenzene	120-82-1	ug/L	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorobenzene	95-50-1	ug/L	< 1.7 U	< 1.7 U	< 1.7 U
1,3-Dichlorobenzene	541-73-1	ug/L	< 1.7 U	< 1.7 U	< 1.7 U
1,4-Dichlorobenzene	106-46-7	ug/L	< 1.7 U	< 1.7 U	< 1.7 U
2,4,5-Trichlorophenol	95-95-4	ug/L	< 5.2 U	< 5.2 U	< 5.2 U
2,4,6-Trichlorophenol	88-06-2	ug/L	< 4.2 U	< 4.2 U	< 4.2 U
2,4-Dichlorophenol	120-83-2	ug/L	< 2.9 U	< 2.9 U	< 2.9 U
2,4-Dimethylphenol	105-67-9	ug/L	< 5.8 U	< 5.8 U	< 5.8 U
2,4-Dinitrophenol	51-28-5	ug/L	< 21 U	< 21 U	< 21 U
2-Chloronaphthalene	91-58-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
2-Chlorophenol	95-57-8	ug/L	< 0.99 U	< 0.99 U	< 0.99 U

Table A-9
Historical Analytical Results for Surface Water Samples at PICA 057 Site 33

		Site Name	33	33	33
		Location ID	I-33-SW-001	I-33-SW-002	I-33-SW-003
		Sample ID	33SW-1(19960711)	33SW-2(19960711)	33SW-3(19960711)
		Depth Interval			
		Sample Date	7/11/1996	7/11/1996	7/11/1996
		Sample Matrix	WS	WS	WS
Chemical Name	**CAS No**	**Unit**			
2-Methylnaphthalene	91-57-6	ug/L	< 1.7 U	< 1.7 U	< 1.7 U
2-Methylphenol	95-48-7	ug/L	< 3.9 U	< 3.9 U	< 3.9 U
2-Nitroaniline	88-74-4	ug/L	< 4.3 U	< 4.3 U	< 4.3 U
2-Nitrophenol	88-75-5	ug/L	< 3.7 U	< 3.7 U	< 3.7 U
3,3'-Dichlorobenzidine	91-94-1	ug/L	< 12 U	< 12 U	< 12 U
3-Nitroaniline	99-09-2	ug/L	< 4.9 U	< 4.9 U	< 4.9 U
4,6-dinitro-2-Methylphenol	534-52-1	ug/L	< 17 U	< 17 U	< 17 U
4-Bromophenyl phenyl ether	101-55-3	ug/L	< 4.2 U	< 4.2 U	< 4.2 U
4-Chloro-3-methylphenol	59-50-7	ug/L	< 4 U	< 4 U	< 4 U
4-Chloroaniline	106-47-8	ug/L	< 7.3 U	< 7.3 U	< 7.3 U
4-Chlorophenyl phenyl ether	7005-72-3	ug/L	< 5.1 U	< 5.1 U	< 5.1 U
4-Methylphenol	106-44-5	ug/L	< 0.52 U#	< 0.52 U#	< 0.52 U#
4-Nitroaniline	100-01-6	ug/L	< 5.2 U	< 5.2 U	< 5.2 U
4-Nitrophenol	100-02-7	ug/L	< 12 U	< 12 U	< 12 U
Acenaphthene	83-32-9	ug/L	< 1.7 U	< 1.7 U	< 1.7 U
Acenaphthylene	208-96-8	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
Aniline	62-53-3	ug/L	< 4.4 U	< 4.4 U	< 4.4 U
Anthracene	120-12-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
Benz(a)anthracene	56-55-3	ug/L	< 1.6 U	< 1.6 U	< 1.6 U
Benzo(a)pyrene	50-32-8	ug/L	< 4.7 U	< 4.7 U	< 4.7 U
Benzo(b)fluoranthene	205-99-2	ug/L	< 5.4 U	< 5.4 U	< 5.4 U
Benzo(g,h,i)perylene	191-24-2	ug/L	< 6.1 U	< 6.1 U	< 6.1 U
Benzo(k)fluoranthene	207-08-9	ug/L	< 0.87 U	< 0.87 U	< 0.87 U
Benzoic Acid	65-85-0	ug/L	< 13 U	< 13 U	< 13 U
Benzyl alcohol	100-51-6	ug/L	< 0.72 U	< 0.72 U	< 0.72 U
bis(2-Chloroethoxy)methane	111-91-1	ug/L	< 1.5 U	< 1.5 U	< 1.5 U
bis(2-Chloroethyl)ether	111-44-4	ug/L	< 1.9 U	< 1.9 U	< 1.9 U
bis(2-Chloroisopropyl)ether	39638-32-9	ug/L	< 5.3 U	< 5.3 U	< 5.3 U
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	< 4.8 U	< 4.8 U	< 4.8 U
Butylbenzyl phthalate	85-68-7	ug/L	< 3.4 U	< 3.4 U	< 3.4 U

Table A-9
Historical Analytical Results for Surface Water Samples at PICA 057 Site 33

		Site Name	33	33	33
		Location ID	I-33-SW-001	I-33-SW-002	I-33-SW-003
		Sample ID	33SW-1(19960711)	33SW-2(19960711)	33SW-3(19960711)
		Depth Interval			
		Sample Date	7/11/1996	7/11/1996	7/11/1996
		Sample Matrix	WS	WS	WS
Chemical Name	**CAS No**	**Unit**			
Carbazole	86-74-8	ug/L	< 2 U	< 2 U	< 2 U
Chrysene	218-01-9	ug/L	< 2.4 U	< 2.4 U	< 2.4 U
Dibenz(a,h)anthracene	53-70-3	ug/L	< 6.5 U	< 6.5 U	< 6.5 U
Dibenzofuran	132-64-9	ug/L	< 1.7 U	< 1.7 U	< 1.7 U
Diethylphthalate	84-66-2	ug/L	< 2 U	< 2 U	2.7
Dimethylphthalate	131-11-3	ug/L	< 1.5 U	< 1.5 U	< 1.5 U
di-n-Butylphthalate	84-74-2	ug/L	< 3.7 U	< 3.7 U	< 3.7 U
di-n-Octylphthalate	117-84-0	ug/L	< 15 U	< 15 U	< 15 U
Diphenylamine	122-39-4	ug/L	< 2.5 U	< 2.5 U	< 2.5 U
Fluoranthene	206-44-0	ug/L	< 3.3 U	< 3.3 U	< 3.3 U
Fluorene	86-73-7	ug/L	< 3.7 U	< 3.7 U	< 3.7 U
Hexachlorobenzene	118-74-1	ug/L	< 1.6 U	< 1.6 U	< 1.6 U
Hexachlorobutadiene	87-68-3	ug/L	< 3.4 U	< 3.4 U	< 3.4 U
Hexachlorocyclopentadiene	77-47-4	ug/L	< 8.6 U	< 8.6 U	< 8.6 U
Hexachloroethane	67-72-1	ug/L	< 1.5 U	< 1.5 U	< 1.5 U
Indeno(1,2,3-c,d)pyrene	193-39-5	ug/L	< 8.6 U	< 8.6 U	< 8.6 U
Isophorone	78-59-1	ug/L	< 4.8 U	< 4.8 U	< 4.8 U
Naphthalene	91-20-3	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
n-Nitroso-di-n-propylamine	621-64-7	ug/L	< 4.4 U	< 4.4 U	< 4.4 U
n-Nitrosodiphenylamine	86-30-6	ug/L	< 3 U	< 3 U	< 3 U
Pentachlorophenol	87-86-5	ug/L	< 0.042 U	< 0.042 U	< 0.042 U
Phenanthrene	85-01-8	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
Phenol	108-95-2	ug/L	< 9.2 U	< 9.2 U	< 9.2 U
Pyrene	129-00-0	ug/L	< 2.8 U	< 2.8 U	< 2.8 U
VOC					
1,1,1-Trichloroethane	71-55-6	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L	< 5 U	< 5 U	< 5 U
1,1,2-Trichloroethane	79-00-5	ug/L	< 1.2 U	< 1.2 U	< 1.2 U
1,1-Dichloroethane	75-34-3	ug/L	< 0.68 U	< 0.68 U	< 0.68 U
1,1-Dichloroethene	75-35-4	ug/L	< 0.5 U	< 0.5 U	< 0.5 U

Table A-9
Historical Analytical Results for Surface Water Samples at PICA 057 Site 33

		Site Name	33	33	33
		Location ID	I-33-SW-001	I-33-SW-002	I-33-SW-003
		Sample ID	33SW-1(19960711)	33SW-2(19960711)	33SW-3(19960711)
		Depth Interval			
		Sample Date	7/11/1996	7/11/1996	7/11/1996
		Sample Matrix	WS	WS	WS
Chemical Name	**CAS No**	**Unit**			
1,2-Dichloroethane	107-06-2	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloroethene (total)	540-59-0	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloropropane	78-87-5	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
2-Butanone	78-93-3	ug/L	< 6.4 U	< 6.4 U	< 6.4 U
2-Hexanone	591-78-6	ug/L	< 3.6 U	< 3.6 U	< 3.6 U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	< 3 U	< 3 U	< 3 U
Acetone	67-64-1	ug/L	< 13 U	< 13 U	< 13 U
Acetonitrile	75-05-8	ug/L	< 200 U	< 200 U	< 200 U
Benzene	71-43-2	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
Bromodichloromethane	75-27-4	ug/L	< 0.59 U	< 0.59 U	< 0.59 U
Bromoform	75-25-2	ug/L	< 2.6 U	< 2.6 U	< 2.6 U
Bromomethane	74-83-9	ug/L	< 5.8 U	< 5.8 U	< 5.8 U
Carbon disulfide	75-15-0	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
Carbon tetrachloride	56-23-5	ug/L	< 0.58 U	< 0.58 U	< 0.58 U
Chlorobenzene	108-90-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
Chloroethane	75-00-3	ug/L	< 1.9 U	< 1.9 U	< 1.9 U
Chloroform	67-66-3	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
Chloromethane	74-87-3	ug/L	< 3.2 U	< 3.2 U	< 3.2 U
cis-1,3-Dichloropropene	10061-01-5	ug/L	< 0.58 U	< 0.58 U	< 0.58 U
Dibromochloromethane	124-48-1	ug/L	< 0.67 U	< 0.67 U	< 0.67 U
Dichlorodifluoromethane	75-71-8	ug/L	< 6.9 U	< 6.9 U	< 6.9 U
Ethanol	64-17-5	ug/L	< 2000 U	< 2000 U	< 2000 U
Ethyl benzene	100-41-4	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
Isopropanol	67-63-0	ug/L	< 400 U	< 400 U	< 400 U
Methylene chloride	75-09-2	ug/L	< 2.3 U	< 2.3 U	< 2.3 U
Styrene	100-42-5	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
tert-Butylalcohol	75-65-0	ug/L	< 500 U	< 500 U	< 500 U
Tetrachloroethene	127-18-4	ug/L	< 1.6 U	< 1.6 U	< 1.6 U
Toluene	108-88-3	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,3-Dichloropropene	10061-02-6	ug/L	< 0.7 U	< 0.7 U	< 0.7 U

Table A-9
Historical Analytical Results for Surface Water Samples at PICA 057 Site 33

		Site Name	33	33	33
		Location ID	I-33-SW-001	I-33-SW-002	I-33-SW-003
		Sample ID	33SW-1(19960711)	33SW-2(19960711)	33SW-3(19960711)
		Depth Interval			
		Sample Date	7/11/1996	7/11/1996	7/11/1996
		Sample Matrix	WS	WS	WS
Chemical Name	**CAS No**	**Unit**			
Trichloroethene	79-01-6	ug/L	< 0.5 U	< 0.5 U	< 0.5 U
Trichlorofluoromethane	75-69-4	ug/L	< 1.4 U	< 1.4 U	< 1.4 U
Vinyl acetate	108-05-4	ug/L	< 8.3 U	< 8.3 U	< 8.3 U
Vinyl chloride	75-01-4	ug/L	< 2.6 U	< 2.6 U	< 2.6 U
Xylenes	1330-20-7	ug/L	< 0.84 U	< 0.84 U	< 0.84 U
WetChem					
Ammonia	7664-41-7	ug/L	56.2	102	< 60 U
Chloride	16887-00-6	ug/L	26300	26300	26300
Cyanide	57-12-5	ug/L	< 2.5 U	< 2.5 U	< 2.5 U
Fluoride	16984-48-8	ug/L	< 1230 U	< 1230 U	< 1230 U
Nitrate/Nitrite	Nitrate/Nitrite	ug/L	< 10 U	< 10 U	< 10 U
Phosphate	14265-44-2	ug/L	21	34.3	33
Sulfate	14808-79-8	ug/L	< 10000 U	< 10000 U	< 10000 U
Sulfide	18496-25-8	ug/L	< 50 U	< 50 U	< 50 U

Notes:

LOC - Level of Concern

ug/L - micrograms per liter

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40	40
		Location ID	I-40-SD-001	I-40-SD-002	I-40-SD-002	I-40-SD-003	I-40-SD-003	I-40-SD-003	I-40-SD-003	I-40-SD-003
		Sample ID	40SD-1(0-1)	40SD-2(0-1)	40SD-2(0-0.5)	40SD-3(0-1)	40SD-3(0-0.5)	40SD-3B(1-2)	1-40-SE001 (1-2)	1-40-SE001 (0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1	0 - .5	1 - 2	1 - 2	0 - 1
		Sample Date	8/21/1996	7/22/1996	10/14/1998	7/18/1996	10/14/1998	5/17/2001	2/10/2011	2/10/2011
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**								
Explosives										
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.488 U	< 0.488 R		2.85		< 0.25 U	< 0.247 U	< 0.249 U
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.496 U	< 0.496 U		< 0.496 U		< 0.25 U	< 0.247 U	< 0.249 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.456 U	20		1100 +		< 0.25 U	< 0.247 U	0.738
2-amino-4,6-Dinitrotoluene	35572-78-2	mg/kg						< 0.25 U	< 0.247 U	< 0.249 U
2-Nitrotoluene	88-72-2	mg/kg						< 0.25 U	< 0.247 U	< 0.249 U
3-Nitrotoluene	99-08-1	mg/kg						< 0.25 U	< 0.247 U	< 0.249 U
4-amino-2,6-Dinitrotoluene	19406-51-0	mg/kg						< 0.25 U	< 0.247 U	0.247 J
4-Nitrotoluene	99-99-0	mg/kg						< 0.25 U	< 0.247 U	< 0.249 U
HMX	2691-41-0	mg/kg	< 0.666 U	< 0.666 U		500		< 0.5 U	< 0.247 U	< 0.249 U
Nitrobenzene	98-95-3	mg/kg	< 2.41 U	< 2.41 U		< 2.41 U		< 0.25 U	< 0.247 U	< 0.249 U
Nitrobenzene	98-95-3	mg/kg								
Nitrocellulose	9004-70-0	mg/kg	< 10.4 U	< 10.4 U		600				
Nitroglycerin	55-63-0	mg/kg	< 4 U	< 4 U		11.8				
Nitroguanidine	556-88-7	mg/kg	< 0.475 U	< 0.475 U		< 0.475 U				
PETN	78-11-5	mg/kg	< 4 U	< 4 U		62.5			< 0.247 U	< 0.249 U
Picric Acid	88-89-1	mg/kg	< 0.108 U	0.5		13				
RDX	121-82-4	mg/kg	**< 0.587 U**	< 0.587 U		2500 +		< 0.5 U	< 0.247 U	< 0.249 U
Tetrazene	14097-21-3	mg/kg	< 1.19 U	< 1.19 U		< 1.19 U				
Tetryl	479-45-8	mg/kg	< 0.731 U	< 0.731 U		< 0.731 U		< 0.65 U	< 0.247 U	< 0.249 U
Explosives / SVOC										
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.424 U	< 0.424 U		< 0.424 U		< 0.25 U	< 0.247 U	< 0.249 U
2,4-Dinitrotoluene	121-14-2	mg/kg								
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.524 U	< 0.524 U		< 0.524 U		< 0.25 U	< 0.247 U	< 0.249 U
2,6-Dinitrotoluene	606-20-2	mg/kg								
Metals										
Aluminum	7429-90-5	mg/kg	2820	5190		5640		8710 J		
Antimony	7440-36-0	mg/kg	< 0.1 U	< 0.1 U		0.52		< 1.2 UJ		
Arsenic	7440-38-2	mg/kg	0.82	3.75		2.57		2.4 J		
Barium	7440-39-3	mg/kg	39.2	201		3400		32.2 J		
Beryllium	7440-41-7	mg/kg	< 0.5 U	< 0.5 U		< 0.5 U		0.11 J		
Boron	7440-42-8	mg/kg	13.9	< 5.91 U		8.68				
Cadmium	7440-43-9	mg/kg	< 0.7 U	< 0.7 U		2.68 +		< 0.24 UJ		
Calcium	7440-70-2	mg/kg	2000	1690		24400		316 J		
Chromium	7440-47-3	mg/kg	< 4.05 U	11.3		8.53		9.3 J		
Cobalt	7440-48-4	mg/kg	< 1.42 U	4.45		3.31		5.5 J		
Copper	7440-50-8	mg/kg	3.87	67.2 +		1760 +		9.1 J		
Iron	7439-89-6	mg/kg	3840	16000		9260		13500 J		
Lead	7439-92-1	mg/kg	6.98	47.6 +		347 +		4.8 J		
Magnesium	7439-95-4	mg/kg	335	1510		4570		1460 J		
Manganese	7439-96-5	mg/kg	195	200		203		58.7 J		

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40	40
		Location ID	I-40-SD-001	I-40-SD-002	I-40-SD-002	I-40-SD-003	I-40-SD-003	I-40-SD-003	I-40-SD-003	I-40-SD-003
		Sample ID	40SD-1(0-1)	40SD-2(0-1)	40SD-2(0-0.5)	40SD-3(0-1)	40SD-3(0-0.5)	40SD-3B(1-2)	1-40-SE001 (1-2)	1-40-SE001 (0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1	0 - .5	1 - 2	1 - 2	0 - 1
		Sample Date	8/21/1996	7/22/1996	10/14/1998	7/18/1996	10/14/1998	5/17/2001	2/10/2011	2/10/2011
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**								
Mercury	7439-97-6	mg/kg	< 0.05 U	9 +		6.9 +		0.61 J +		
Nickel	7440-02-0	mg/kg	< 1.71 U	12.4		13.8		8.8 J		
Potassium	7440-09-7	mg/kg	< 100 U	279		152		337 J		
Selenium	7782-49-2	mg/kg	1.45	0.46		0.59		< 0.61 UJ		
Silver	7440-22-4	mg/kg	< 0.589 U	< 0.589 U		1.09 +		< 0.61 UJ		
Sodium	7440-23-5	mg/kg	702	354		533		< 606 UJ		
Strontium	7440-24-6	mg/kg	17	30		230				
Thallium	7440-28-0	mg/kg	0.24	< 0.1 U		< 0.1 U		< 1.2 UJ		
Titanium	7440-32-6	mg/kg	< 50 U	248		208				
Vanadium	7440-62-2	mg/kg	< 3.39 U	10.2		7.07		13.9 J		
Zinc	7440-66-6	mg/kg	< 8.03 U	127		1080 +		30.7 J		
Zirconium	7440-67-7	mg/kg	< 2.5 U	4.22		< 2.5 U				
PCBs										
Aroclor 1016	12674-11-2	mg/kg								
Aroclor 1221	11104-28-2	mg/kg								
Aroclor 1232	11141-16-5	mg/kg								
Aroclor 1242	53469-21-9	mg/kg								
Aroclor 1248	12672-29-6	mg/kg								
Aroclor 1254	11097-69-1	mg/kg								
Aroclor 1260	11096-82-5	mg/kg								
Pesticides										
4,4'-DDD	72-54-8	mg/kg								
4,4'-DDE	72-55-9	mg/kg								
4,4'-DDT	50-29-3	mg/kg								
Aldrin	309-00-2	mg/kg								
alpha-BHC	319-84-6	mg/kg								

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40	40
		Location ID	I-40-SD-001	I-40-SD-002	I-40-SD-002	I-40-SD-003	I-40-SD-003	I-40-SD-003	I-40-SD-003	I-40-SD-003
		Sample ID	40SD-1(0-1)	40SD-2(0-1)	40SD-2(0-0.5)	40SD-3(0-1)	40SD-3(0-0.5)	40SD-3B(1-2)	1-40-SE001 (1-2)	1-40-SE001 (0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1	0 - .5	1 - 2	1 - 2	0 - 1
		Sample Date	8/21/1996	7/22/1996	10/14/1998	7/18/1996	10/14/1998	5/17/2001	2/10/2011	2/10/2011
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**								
alpha-Chlordane	5103-71-9	mg/kg								
beta-BHC	319-85-7	mg/kg								
Chlordane	57-74-9	mg/kg								
delta-BHC	319-86-8	mg/kg								
Dieldrin	60-57-1	mg/kg								
Endosulfan I	959-98-8	mg/kg								
Endosulfan II	33213-65-9	mg/kg								
Endosulfan sulfate	1031-07-8	mg/kg								
Endrin	72-20-8	mg/kg								
Endrin aldehyde	7421-93-4	mg/kg								
Endrin ketone	53494-70-5	mg/kg								
gamma-BHC (Lindane)	58-89-9	mg/kg								
gamma-Chlordane	5103-74-2	mg/kg								
Heptachlor	76-44-8	mg/kg								
Heptachlor epoxide	1024-57-3	mg/kg								
Methoxychlor	72-43-5	mg/kg								
Toxaphene	8001-35-2	mg/kg								
SVOC										
1,2,4-Trichlorobenzene	120-82-1	mg/kg								
1,2-Dichlorobenzene	95-50-1	mg/kg								
1,3-Dichlorobenzene	541-73-1	mg/kg								
1,4-Dichlorobenzene	106-46-7	mg/kg								
2,4,5-Trichlorophenol	95-95-4	mg/kg								
2,4,6-Trichlorophenol	88-06-2	mg/kg								
2,4-Dichlorophenol	120-83-2	mg/kg								
2,4-Dimethylphenol	105-67-9	mg/kg								
2,4-Dinitrophenol	51-28-5	mg/kg								
2-Chloronaphthalene	91-58-7	mg/kg								
2-Chlorophenol	95-57-8	mg/kg								

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40	40
		Location ID	I-40-SD-001	I-40-SD-002	I-40-SD-002	I-40-SD-003	I-40-SD-003	I-40-SD-003	I-40-SD-003	I-40-SD-003
		Sample ID	40SD-1(0-1)	40SD-2(0-1)	40SD-2(0-0.5)	40SD-3(0-1)	40SD-3(0-0.5)	40SD-3B(1-2)	1-40-SE001 (1-2)	1-40-SE001 (0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1	0 - .5	1 - 2	1 - 2	0 - 1
		Sample Date	8/21/1996	7/22/1996	10/14/1998	7/18/1996	10/14/1998	5/17/2001	2/10/2011	2/10/2011
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**								
2-Methylnaphthalene	91-57-6	mg/kg								
2-Methylphenol	95-48-7	mg/kg								
2-Nitroaniline	88-74-4	mg/kg								
2-Nitrophenol	88-75-5	mg/kg								
3,3'-Dichlorobenzidine	91-94-1	mg/kg								
3-Nitroaniline	99-09-2	mg/kg								
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg								
4-Bromophenyl phenyl ether	101-55-3	mg/kg								
4-Chloro-3-methylphenol	59-50-7	mg/kg								
4-Chloroaniline	106-47-8	mg/kg								
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg								
4-Methylphenol	106-44-5	mg/kg								
4-Nitroaniline	100-01-6	mg/kg								
4-Nitrophenol	100-02-7	mg/kg								
Acenaphthene	83-32-9	mg/kg								
Acenaphthylene	208-96-8	mg/kg								
Aniline	62-53-3	mg/kg								
Anthracene	120-12-7	mg/kg								
Benz(a)anthracene	56-55-3	mg/kg								
Benzo(a)pyrene	50-32-8	mg/kg								
Benzo(b)fluoranthene	205-99-2	mg/kg								
Benzo(g,h,i)perylene	191-24-2	mg/kg								
Benzo(k)fluoranthene	207-08-9	mg/kg								
bis(2-Chloroethoxy)methane	111-91-1	mg/kg								
bis(2-Chloroethyl)ether	111-44-4	mg/kg								
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg								
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg								
Butylbenzyl phthalate	85-68-7	mg/kg								
Carbazole	86-74-8	mg/kg								
Chrysene	218-01-9	mg/kg								
Dibenz(a,h)anthracene	53-70-3	mg/kg								
Dibenzofuran	132-64-9	mg/kg								
Diethylphthalate	84-66-2	mg/kg								

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40	40
		Location ID	I-40-SD-001	I-40-SD-002	I-40-SD-002	I-40-SD-003	I-40-SD-003	I-40-SD-003	I-40-SD-003	I-40-SD-003
		Sample ID	40SD-1(0-1)	40SD-2(0-1)	40SD-2(0-0.5)	40SD-3(0-1)	40SD-3(0-0.5)	40SD-3B(1-2)	1-40-SE001 (1-2)	1-40-SE001 (0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1	0 - .5	1 - 2	1 - 2	0 - 1
		Sample Date	8/21/1996	7/22/1996	10/14/1998	7/18/1996	10/14/1998	5/17/2001	2/10/2011	2/10/2011
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**								
Dimethylphthalate	131-11-3	mg/kg								
di-n-Butylphthalate	84-74-2	mg/kg								
di-n-Octylphthalate	117-84-0	mg/kg								
Diphenylamine	122-39-4	mg/kg								
Fluoranthene	206-44-0	mg/kg								
Fluorene	86-73-7	mg/kg								
Hexachlorobenzene	118-74-1	mg/kg								
Hexachlorobutadiene	87-68-3	mg/kg								
Hexachlorocyclopentadiene	77-47-4	mg/kg								
Hexachloroethane	67-72-1	mg/kg								
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg								
Isophorone	78-59-1	mg/kg								
Naphthalene	91-20-3	mg/kg								
n-Nitroso-di-n-propylamine	621-64-7	mg/kg								
n-Nitrosodiphenylamine	86-30-6	mg/kg								
Pentachlorophenol	87-86-5	mg/kg								
Phenanthrene	85-01-8	mg/kg								
Phenol	108-95-2	mg/kg								
Pyrene	129-00-0	mg/kg								
WetChem										
% Solids	%Solid	%						82.5		
Ammonia	7664-41-7	mg/kg	630	< 12.5 U		65.6				
Chloride	16887-00-6	mg/kg	< 6.05 U	< 6.05 U		10.7				
Cyanide	57-12-5	mg/kg	< 0.92 U	< 0.92 U		3.07				
Fluoride	16984-48-8	mg/kg	< 3.62 U	< 3.62 U		< 3.62 U				
Nitrate	14797-55-8	mg/kg								
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	1.57	< 0.6 U		15				
Nitrite	14797-65-0	mg/kg								
Phosphate	14265-44-2	mg/kg	150	250		260				
Phosphorus	7723-14-0	mg/kg								
Sulfate	14808-79-8	mg/kg	< 90.4 U	< 90.4 U		< 90.4 U				
Sulfide	18496-25-8	mg/kg	29.3	33.2		< 6 U				
Total organic carbon	TOC	mg/kg	69900	8570	40800	14100	22900			

Notes:

All exceedances are boldfaced

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40	40
		Location ID	I-40-SD-003	I-40-SD-003	I-40-SD-004	I-40-SD-005	I-40-SD-005	I-40-SD-005	I-40-SD-005	I-40-SD-005
		Sample ID	1-40SD003 (18-2	1-40SD003 (0-6)	40SD-4(0-0.5)	40SD-5(0-0.5)	1-40-SE002 (1-2)	1-40-SE002 (0-1)	1-40-SEDUP001 (0-1	1-40SD005 (18-2
		Depth Interval	1.5 - 2	0 - .5	0 - .5	0 - .5	1 - 2	0 - 1	0 - 1	1.5 - 2
		Sample Date	11/15/2011	11/15/2011	10/15/1998	10/15/1998	2/10/2011	2/10/2011	2/10/2011	11/15/2011
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N	FD	N
Chemical Name	**CAS No**	**Unit**								
Explosives										
1,3,5-Trinitrobenzene	99-35-4	mg/kg			< 0.1 U	0.1 J	< 0.245 U	< 0.25 U	< 0.245 U	
1,3-Dinitrobenzene	99-65-0	mg/kg			< 0.1 U	< 0.1 U	< 0.245 U	< 0.25 U	< 0.245 U	
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.247 U	< 0.247 U	0.17 J	60.8 JD	< 0.245 U	< 0.25 U	< 0.245 U	0.287
2-amino-4,6-Dinitrotoluene	35572-78-2	mg/kg			0.13 J	45.7 JD	< 0.245 U	< 0.25 U	< 0.245 U	
2-Nitrotoluene	88-72-2	mg/kg			< 0.2 U	< 0.2 U	< 0.245 U	< 0.25 U	< 0.245 U	
3-Nitrotoluene	99-08-1	mg/kg			< 0.2 U	< 0.2 U	< 0.245 U	< 0.25 U	< 0.245 U	
4-amino-2,6-Dinitrotoluene	19406-51-0	mg/kg			0.3 J	19.9 JD	< 0.245 U	< 0.25 U	< 0.245 U	
4-Nitrotoluene	99-99-0	mg/kg			< 0.2 U	< 0.2 U	< 0.245 U	< 0.25 U	< 0.245 U	
HMX	2691-41-0	mg/kg			< 0.2 U	1550 JD	< 0.245 U	< 0.25 U	< 0.245 U	
Nitrobenzene	98-95-3	mg/kg			< 0.1 U	< 0.1 U	< 0.245 U	< 0.25 U	< 0.245 U	
Nitrobenzene	98-95-3	mg/kg			< 0.07 UD	< 0.07 UD				
Nitrocellulose	9004-70-0	mg/kg			77.2 J	458 JD				
Nitroglycerin	55-63-0	mg/kg			< 4.03 U	< 4.03 U				
Nitroguanidine	556-88-7	mg/kg			< 0.475 U	< 0.474 U				
PETN	78-11-5	mg/kg			< 4.03 U	< 4.03 U	< 0.245 U	< 0.25 U	< 0.245 U	
Picric Acid	88-89-1	mg/kg								
RDX	121-82-4	mg/kg	< 0.247 U	< 0.247 U	< 0.2 U	7680 JD +	< 0.245 U	< 0.25 U	< 0.245 U	< 0.247 U
Tetrazene	14097-21-3	mg/kg								
Tetryl	479-45-8	mg/kg			< 0.2 U	< 0.2 U	< 0.245 U	< 0.25 U	< 0.245 U	
Explosives / SVOC										
2,4-Dinitrotoluene	121-14-2	mg/kg			< 0.14 UD	0.39 J	< 0.245 U	< 0.25 U	< 0.245 U	
2,4-Dinitrotoluene	121-14-2	mg/kg			< 0.1 U	< 0.14 UD				
2,6-Dinitrotoluene	606-20-2	mg/kg			< 0.1 U	< 0.14 UD	< 0.245 U	< 0.25 U	< 0.245 U	
2,6-Dinitrotoluene	606-20-2	mg/kg			< 0.14 UD	< 0.1 U				
Metals										
Aluminum	7429-90-5	mg/kg			4360 J	4620 J				
Antimony	7440-36-0	mg/kg			0.16	15.4				
Arsenic	7440-38-2	mg/kg			1.38	1.35				
Barium	7440-39-3	mg/kg			85.3 J	251 J				
Beryllium	7440-41-7	mg/kg			0.26 J	0.3 J				
Boron	7440-42-8	mg/kg			< 4.59 U	< 4.95 U				
Cadmium	7440-43-9	mg/kg			0.28	0.98				
Calcium	7440-70-2	mg/kg			593 J	676 J				
Chromium	7440-47-3	mg/kg			< 0.917 R	< 0.99 R				
Cobalt	7440-48-4	mg/kg			3.86 J	3.74 J				
Copper	7440-50-8	mg/kg			24.8 J	36.5 J +				
Iron	7439-89-6	mg/kg			9240 J	9550 J				
Lead	7439-92-1	mg/kg			39.5 +	99.9 +				
Magnesium	7439-95-4	mg/kg			1280 J	1490 J				
Manganese	7439-96-5	mg/kg			98.3 J	100 J				

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40	40
		Location ID	I-40-SD-003	I-40-SD-003	I-40-SD-004	I-40-SD-005	I-40-SD-005	I-40-SD-005	I-40-SD-005	I-40-SD-005
		Sample ID	1-40SD003 (18-2	1-40SD003 (0-6)	40SD-4(0-0.5)	40SD-5(0-0.5)	1-40-SE002 (1-2)	1-40-SE002 (0-1)	1-40-SEDUP001 (0-1	1-40SD005 (18-2
		Depth Interval	1.5 - 2	0 - .5	0 - .5	0 - .5	1 - 2	0 - 1	0 - 1	1.5 - 2
		Sample Date	11/15/2011	11/15/2011	10/15/1998	10/15/1998	2/10/2011	2/10/2011	2/10/2011	11/15/2011
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N	FD	N
Chemical Name	**CAS No**	**Unit**								
Mercury	7439-97-6	mg/kg			1.24 +	15.2 +				
Nickel	7440-02-0	mg/kg			7.81	8.99				
Potassium	7440-09-7	mg/kg			161	260				
Selenium	7782-49-2	mg/kg			< 0.363 U	< 0.368 U				
Silver	7440-22-4	mg/kg			0.43	0.09				
Sodium	7440-23-5	mg/kg			< 45.9 U	< 49.5 U				
Strontium	7440-24-6	mg/kg			5.92 J	3.71 J				
Thallium	7440-28-0	mg/kg			< 0.018 U	0.04				
Titanium	7440-32-6	mg/kg			148 J	163 J				
Vanadium	7440-62-2	mg/kg			10.4 J	9.1 J				
Zinc	7440-66-6	mg/kg			163 J	137 J				
Zirconium	7440-67-7	mg/kg			1.89	1.86				
PCBs										
Aroclor 1016	12674-11-2	mg/kg			< 0.027 U	< 0.675 UD				
Aroclor 1221	11104-28-2	mg/kg			< 0.027 U	< 0.675 UD				
Aroclor 1232	11141-16-5	mg/kg			< 0.013 U	< 0.325 UD				
Aroclor 1242	53469-21-9	mg/kg			< 0.013 U	< 0.325 UD				
Aroclor 1248	12672-29-6	mg/kg			< 0.027 U	< 0.675 UD				
Aroclor 1254	11097-69-1	mg/kg			< 0.027 U	< 0.675 UD				
Aroclor 1260	11096-82-5	mg/kg			< 0.027 U	< 0.675 UD				
Pesticides										
4,4'-DDD	72-54-8	mg/kg			0.6 NJ +	0.01 NJ +				
4,4'-DDE	72-55-9	mg/kg			< 0.07 U	< 0.07 U				
4,4'-DDT	50-29-3	mg/kg			< 0.07 U	< 0.07 U				
Aldrin	309-00-2	mg/kg			< 0.07 U	< 0.07 U				
alpha-BHC	319-84-6	mg/kg			< 0.07 U	< 0.07 U				

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40	40
		Location ID	I-40-SD-003	I-40-SD-003	I-40-SD-004	I-40-SD-005	I-40-SD-005	I-40-SD-005	I-40-SD-005	I-40-SD-005
		Sample ID	1-40SD003 (18-2	1-40SD003 (0-6)	40SD-4(0-0.5)	40SD-5(0-0.5)	1-40-SE002 (1-2)	1-40-SE002 (0-1)	1-40-SEDUP001 (0-1	1-40SD005 (18-2
		Depth Interval	1.5 - 2	0 - .5	0 - .5	0 - .5	1 - 2	0 - 1	0 - 1	1.5 - 2
		Sample Date	11/15/2011	11/15/2011	10/15/1998	10/15/1998	2/10/2011	2/10/2011	2/10/2011	11/15/2011
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N	FD	N
Chemical Name	**CAS No**	**Unit**								
alpha-Chlordane	5103-71-9	mg/kg			< 0.07 U	< 0.07 U				
beta-BHC	319-85-7	mg/kg			< 0.07 U	< 0.07 U				
Chlordane	57-74-9	mg/kg			< 0.3 U	< 0.3 U				
delta-BHC	319-86-8	mg/kg			< 0.07 U	< 0.07 U				
Dieldrin	60-57-1	mg/kg			< 0.07 U	< 0.07 U				
Endosulfan I	959-98-8	mg/kg			< 0.07 U	< 0.07 U				
Endosulfan II	33213-65-9	mg/kg			< 0.07 U	< 0.07 U				
Endosulfan sulfate	1031-07-8	mg/kg			< 0.07 U	0.2 NJ +				
Endrin	72-20-8	mg/kg			< 0.07 U	< 0.07 U				
Endrin aldehyde	7421-93-4	mg/kg			< 0.07 R	< 0.07 R				
Endrin ketone	53494-70-5	mg/kg			< 0.07 UJ	< 0.07 UJ				
gamma-BHC (Lindane)	58-89-9	mg/kg			< 0.07 U	< 0.07 U				
gamma-Chlordane	5103-74-2	mg/kg			< 0.07 U	< 0.07 U				
Heptachlor	76-44-8	mg/kg			< 0.07 U	< 0.07 U				
Heptachlor epoxide	1024-57-3	mg/kg			< 0.07 U	< 0.07 U				
Methoxychlor	72-43-5	mg/kg			< 0.07 U	< 0.07 U				
Toxaphene	8001-35-2	mg/kg			< 0.067 U	< 0.067 U				
SVOC										
1,2,4-Trichlorobenzene	120-82-1	mg/kg			< 0.5 UD	< 1 UD				
1,2-Dichlorobenzene	95-50-1	mg/kg			< 0.35 UD	< 0.7 UD				
1,3-Dichlorobenzene	541-73-1	mg/kg			< 0.35 UD	< 0.7 UD				
1,4-Dichlorobenzene	106-46-7	mg/kg			< 0.35 UD	< 0.7 UD				
2,4,5-Trichlorophenol	95-95-4	mg/kg			< 1.5 UD	< 3 UD				
2,4,6-Trichlorophenol	88-06-2	mg/kg			< 1.5 UD	< 3 UD				
2,4-Dichlorophenol	120-83-2	mg/kg			< 0.7 UD	< 1.4 UD				
2,4-Dimethylphenol	105-67-9	mg/kg			< 0.7 UD	< 1.4 UD				
2,4-Dinitrophenol	51-28-5	mg/kg			< 6.5 UD	< 13 UD				
2-Chloronaphthalene	91-58-7	mg/kg			2.1 D	4.8 D				
2-Chlorophenol	95-57-8	mg/kg			< 0.7 UD	< 1.4 UD				

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40	40
		Location ID	I-40-SD-003	I-40-SD-003	I-40-SD-004	I-40-SD-005	I-40-SD-005	I-40-SD-005	I-40-SD-005	I-40-SD-005
		Sample ID	1-40SD003 (18-2	1-40SD003 (0-6)	40SD-4(0-0.5)	40SD-5(0-0.5)	1-40-SE002 (1-2)	1-40-SE002 (0-1)	1-40-SEDUP001 (0-1	1-40SD005 (18-2
		Depth Interval	1.5 - 2	0 - .5	0 - .5	0 - .5	1 - 2	0 - 1	0 - 1	1.5 - 2
		Sample Date	11/15/2011	11/15/2011	10/15/1998	10/15/1998	2/10/2011	2/10/2011	2/10/2011	11/15/2011
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N	FD	N
Chemical Name	**CAS No**	**Unit**								
2-Methylnaphthalene	91-57-6	mg/kg			< 0.5 UD	< 1 UD				
2-Methylphenol	95-48-7	mg/kg			< 0.7 UD	< 1.4 UD				
2-Nitroaniline	88-74-4	mg/kg			< 1.5 UD	< 3 UD				
2-Nitrophenol	88-75-5	mg/kg			< 0.7 UD	< 1.4 UD				
3,3'-Dichlorobenzidine	91-94-1	mg/kg			< 2.5 UJD	< 5 UJD				
3-Nitroaniline	99-09-2	mg/kg			< 1.5 UD	< 3 UD				
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg			< 5 UD	< 10 UD				
4-Bromophenyl phenyl ether	101-55-3	mg/kg			< 0.7 UD	< 1.4 UD				
4-Chloro-3-methylphenol	59-50-7	mg/kg			< 0.7 UD	< 1.4 UD				
4-Chloroaniline	106-47-8	mg/kg			< 1.5 UJD	< 3 UJD				
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg			< 0.5 UD	< 1 UD				
4-Methylphenol	106-44-5	mg/kg			< 0.7 UD#	< 1.4 UD#				
4-Nitroaniline	100-01-6	mg/kg			< 1.5 UD	< 3 UJD				
4-Nitrophenol	100-02-7	mg/kg			< 2.5 UD	< 5 UD				
Acenaphthene	83-32-9	mg/kg			0.2 JD +	< 0.7 UD				
Acenaphthylene	208-96-8	mg/kg			< 0.35 UD	< 0.7 UD				
Aniline	62-53-3	mg/kg								
Anthracene	120-12-7	mg/kg			0.1 JD +	< 0.7 UD				
Benz(a)anthracene	56-55-3	mg/kg			< 0.5 UD	< 1 UD				
Benzo(a)pyrene	50-32-8	mg/kg			< 0.7 UD	< 1.4 UD				
Benzo(b)fluoranthene	205-99-2	mg/kg			< 0.5 UD	< 1 UD				
Benzo(g,h,i)perylene	191-24-2	mg/kg			< 0.8 UD	< 1.6 UD				
Benzo(k)fluoranthene	207-08-9	mg/kg			< 0.5 UD	< 1 UD				
bis(2-Chloroethoxy)methane	111-91-1	mg/kg			< 0.35 UD	< 0.7 UD				
bis(2-Chloroethyl)ether	111-44-4	mg/kg			< 0.35 UD	< 0.7 UD				
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg			< 0.35 UD	< 0.7 UD				
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg			< 0.5 UD	< 1 UD				
Butylbenzyl phthalate	85-68-7	mg/kg			< 0.5 UD	< 1 UD				
Carbazole	86-74-8	mg/kg			< 0.5 UD	< 1 UD				
Chrysene	218-01-9	mg/kg			< 0.5 UD	< 1 UD				
Dibenz(a,h)anthracene	53-70-3	mg/kg			< 0.8 UD	< 1.6 UD				
Dibenzofuran	132-64-9	mg/kg			0.14 JD	< 0.7 UD				
Diethylphthalate	84-66-2	mg/kg			< 0.35 UD	< 0.7 UD				

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40	40
		Location ID	I-40-SD-003	I-40-SD-003	I-40-SD-004	I-40-SD-005	I-40-SD-005	I-40-SD-005	I-40-SD-005	I-40-SD-005
		Sample ID	1-40SD003 (18-2	1-40SD003 (0-6)	40SD-4(0-0.5)	40SD-5(0-0.5)	1-40-SE002 (1-2)	1-40-SE002 (0-1)	1-40-SEDUP001 (0-1	1-40SD005 (18-2
		Depth Interval	1.5 - 2	0 - .5	0 - .5	0 - .5	1 - 2	0 - 1	0 - 1	1.5 - 2
		Sample Date	11/15/2011	11/15/2011	10/15/1998	10/15/1998	2/10/2011	2/10/2011	2/10/2011	11/15/2011
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N	FD	N
Chemical Name	**CAS No**	**Unit**								
Dimethylphthalate	131-11-3	mg/kg			< 0.5 UD	< 1 UD				
di-n-Butylphthalate	84-74-2	mg/kg			< 0.35 UD	< 0.7 UD				
di-n-Octylphthalate	117-84-0	mg/kg			< 0.7 UD	< 1.4 UD				
Diphenylamine	122-39-4	mg/kg								
Fluoranthene	206-44-0	mg/kg			0.48 JD +	0.62 JD +				
Fluorene	86-73-7	mg/kg			< 0.35 UD	< 0.7 UD				
Hexachlorobenzene	118-74-1	mg/kg			< 0.5 UD	< 1 UD				
Hexachlorobutadiene	87-68-3	mg/kg			< 0.7 UD	< 1.4 UD				
Hexachlorocyclopentadiene	77-47-4	mg/kg			< 5 UJD	< 10 UJD				
Hexachloroethane	67-72-1	mg/kg			< 0.5 UD	< 1 UD				
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg			< 0.8 UD	< 1.6 UD				
Isophorone	78-59-1	mg/kg			< 0.7 UD	< 1.4 UD				
Naphthalene	91-20-3	mg/kg			4.1 D +	35 D +				
n-Nitroso-di-n-propylamine	621-64-7	mg/kg			< 0.5 UD	< 1 UD				
n-Nitrosodiphenylamine	86-30-6	mg/kg			0.13 JD	< 0.7 UD				
Pentachlorophenol	87-86-5	mg/kg			< 2.5 UD	< 5 UD				
Phenanthrene	85-01-8	mg/kg			0.31 JD +	< 0.7 UD				
Phenol	108-95-2	mg/kg			< 0.7 UD	< 1.4 UD				
Pyrene	129-00-0	mg/kg			0.29 JD +	0.38 JD +				
WetChem										
% Solids	%Solid	%								
Ammonia	7664-41-7	mg/kg			23.8	77.6				
Chloride	16887-00-6	mg/kg			13.6 J	11.2 J				
Cyanide	57-12-5	mg/kg								
Fluoride	16984-48-8	mg/kg			4.32 J	3.52 J				
Nitrate	14797-55-8	mg/kg			< 1.95 U	< 1.95 U				
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg								
Nitrite	14797-65-0	mg/kg			< 0.976 U	< 0.976 U				
Phosphate	14265-44-2	mg/kg								
Phosphorus	7723-14-0	mg/kg			227 JD	363 JD				
Sulfate	14808-79-8	mg/kg			57.5 J	84.2 J				
Sulfide	18496-25-8	mg/kg			< 2.55 R	< 2.4 R				
Total organic carbon	TOC	mg/kg			10700	23400				

Notes:

All exceedances are boldfaced

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40
		Location ID	I-40-SD-005	I-40-SD-006	I-40-SD-007	I-40-SD-007	I-40-SD-008	I-40-SD-009	I-40-SD-010A
		Sample ID	1-40SD005 (0-6)	40SD-6(0-1)	40SD-7DUP(0-1)	40SD-7(0-1)	40SD-8(0-1)	40SD-9(0-1)	40SD-10(0-1)
		Depth Interval	0 - .5	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	11/15/2011	8/16/2002	8/16/2002	8/16/2002	8/16/2002	8/16/2002	8/16/2002
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	FD	N	N	N	N
Chemical Name	**CAS No**	**Unit**							
Explosives									
1,3,5-Trinitrobenzene	99-35-4	mg/kg		< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
1,3-Dinitrobenzene	99-65-0	mg/kg		< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	0.354	< 0.25 U	< 0.25 U	< 0.25 U	0.27	< 0.25 U	0.06 J
2-amino-4,6-Dinitrotoluene	35572-78-2	mg/kg		< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
2-Nitrotoluene	88-72-2	mg/kg		< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
3-Nitrotoluene	99-08-1	mg/kg		< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
4-amino-2,6-Dinitrotoluene	19406-51-0	mg/kg		< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
4-Nitrotoluene	99-99-0	mg/kg		< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
HMX	2691-41-0	mg/kg		< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Nitrobenzene	98-95-3	mg/kg		< 0.45 U	< 0.42 U	< 0.25 U	< 0.42 U	< 0.43 U	< 0.25 U
Nitrobenzene	98-95-3	mg/kg		< 0.25 U	< 0.25 U	< 0.47 U	< 0.25 U	< 0.25 U	< 0.42 U
Nitrocellulose	9004-70-0	mg/kg							
Nitroglycerin	55-63-0	mg/kg							
Nitroguanidine	556-88-7	mg/kg							
PETN	78-11-5	mg/kg							
Picric Acid	88-89-1	mg/kg							
RDX	121-82-4	mg/kg	< 0.246 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Tetrazene	14097-21-3	mg/kg							
Tetryl	479-45-8	mg/kg		< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U	< 0.65 U
Explosives / SVOC									
2,4-Dinitrotoluene	121-14-2	mg/kg		< 0.45 U	< 0.25 U	< 0.47 U	< 0.42 U	< 0.25 U	< 0.25 U
2,4-Dinitrotoluene	121-14-2	mg/kg		< 0.25 U	< 0.42 U	< 0.25 U	< 0.25 U	< 0.43 U	< 0.42 U
2,6-Dinitrotoluene	606-20-2	mg/kg		< 0.45 U	< 0.42 U	< 0.25 U	< 0.25 U	< 0.25 U	< 0.25 U
2,6-Dinitrotoluene	606-20-2	mg/kg		< 0.25 U	< 0.25 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Metals									
Aluminum	7429-90-5	mg/kg		3500	4280	4430	3390	5200	5510
Antimony	7440-36-0	mg/kg		< 1.4 U	< 1.3 U	0.37 J	< 1.3 U	< 1.3 U	< 1.3 U
Arsenic	7440-38-2	mg/kg		2.5	2.4	3.4	14.2	4.4	2.5
Barium	7440-39-3	mg/kg		30.9 J	53.1	71.9	21.6 J	55.3	37.1
Beryllium	7440-41-7	mg/kg		< 0.68 U	< 0.63 U	< 0.72 U	0.33 J	< 0.66 U	0.12 J
Boron	7440-42-8	mg/kg							
Cadmium	7440-43-9	mg/kg		0.11 J	0.16 J	0.29	< 0.26 U	0.03 J	< 0.26 U
Calcium	7440-70-2	mg/kg		824	632	805	181 J	887	436 J
Chromium	7440-47-3	mg/kg		3.7	6.1	6	4.2	8.4	15.8
Cobalt	7440-48-4	mg/kg		2.5 J	3.1 J	3.8 J	3.3 J	4.9 J	5.8 J
Copper	7440-50-8	mg/kg		9.5 J	17.6 J	22.9 J	8.6 J	13.9 J	21.7 J
Iron	7439-89-6	mg/kg		8110	7620	9390	15800	11400	16200
Lead	7439-92-1	mg/kg		16.9	15.8	32	6.6	14.3	13.9
Magnesium	7439-95-4	mg/kg		869	875	920	861	1400	1810
Manganese	7439-96-5	mg/kg		59.9 J	89.9 J	98.6 J	67.5 J	220 J	157 J

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40
		Location ID	I-40-SD-005	I-40-SD-006	I-40-SD-007	I-40-SD-007	I-40-SD-008	I-40-SD-009	I-40-SD-010A
		Sample ID	1-40SD005 (0-6)	40SD-6(0-1)	40SD-7DUP(0-1)	40SD-7(0-1)	40SD-8(0-1)	40SD-9(0-1)	40SD-10(0-1)
		Depth Interval	0 - .5	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	11/15/2011	8/16/2002	8/16/2002	8/16/2002	8/16/2002	8/16/2002	8/16/2002
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	FD	N	N	N	N
Chemical Name	**CAS No**	**Unit**							
Mercury	7439-97-6	mg/kg		1.3 +	0.29 +	0.86 +	0.79 +	0.52 +	0.59 +
Nickel	7440-02-0	mg/kg		4.4 J	6.6	7.5	8.6	13.1	29.5
Potassium	7440-09-7	mg/kg		200 J	212 J	247 J	143 J	371 J	377 J
Selenium	7782-49-2	mg/kg		< 0.68 U	< 0.63 U	< 0.72 U	< 0.64 U	< 0.66 U	< 0.64 U
Silver	7440-22-4	mg/kg		0.17 J	0.75	1.1 +	< 0.64 U	0.42 J	0.54 J
Sodium	7440-23-5	mg/kg		< 679 U	< 629 U	< 719 U	< 640 U	< 658 U	< 644 U
Strontium	7440-24-6	mg/kg							
Thallium	7440-28-0	mg/kg		1.2 J	0.85 J	0.95 J	< 1.3 U	1.3	< 1.3 U
Titanium	7440-32-6	mg/kg							
Vanadium	7440-62-2	mg/kg		6.9	8.6	9.5	4.9 J	12.3	14
Zinc	7440-66-6	mg/kg		47.4	57.4	86.5	50.6	62.9	76.6
Zirconium	7440-67-7	mg/kg							
PCBs									
Aroclor 1016	12674-11-2	mg/kg							
Aroclor 1221	11104-28-2	mg/kg							
Aroclor 1232	11141-16-5	mg/kg							
Aroclor 1242	53469-21-9	mg/kg							
Aroclor 1248	12672-29-6	mg/kg							
Aroclor 1254	11097-69-1	mg/kg							
Aroclor 1260	11096-82-5	mg/kg							
Pesticides									
4,4'-DDD	72-54-8	mg/kg							
4,4'-DDE	72-55-9	mg/kg							
4,4'-DDT	50-29-3	mg/kg							
Aldrin	309-00-2	mg/kg							
alpha-BHC	319-84-6	mg/kg							

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40
		Location ID	I-40-SD-005	I-40-SD-006	I-40-SD-007	I-40-SD-007	I-40-SD-008	I-40-SD-009	I-40-SD-010A
		Sample ID	1-40SD005 (0-6)	40SD-6(0-1)	40SD-7DUP(0-1)	40SD-7(0-1)	40SD-8(0-1)	40SD-9(0-1)	40SD-10(0-1)
		Depth Interval	0 - .5	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	11/15/2011	8/16/2002	8/16/2002	8/16/2002	8/16/2002	8/16/2002	8/16/2002
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	FD	N	N	N	N
Chemical Name	**CAS No**	**Unit**							
alpha-Chlordane	5103-71-9	mg/kg							
beta-BHC	319-85-7	mg/kg							
Chlordane	57-74-9	mg/kg							
delta-BHC	319-86-8	mg/kg							
Dieldrin	60-57-1	mg/kg							
Endosulfan I	959-98-8	mg/kg							
Endosulfan II	33213-65-9	mg/kg							
Endosulfan sulfate	1031-07-8	mg/kg							
Endrin	72-20-8	mg/kg							
Endrin aldehyde	7421-93-4	mg/kg							
Endrin ketone	53494-70-5	mg/kg							
gamma-BHC (Lindane)	58-89-9	mg/kg							
gamma-Chlordane	5103-74-2	mg/kg							
Heptachlor	76-44-8	mg/kg							
Heptachlor epoxide	1024-57-3	mg/kg							
Methoxychlor	72-43-5	mg/kg							
Toxaphene	8001-35-2	mg/kg							
SVOC									
1,2,4-Trichlorobenzene	120-82-1	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
1,2-Dichlorobenzene	95-50-1	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
1,3-Dichlorobenzene	541-73-1	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
1,4-Dichlorobenzene	106-46-7	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
2,4,5-Trichlorophenol	95-95-4	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
2,4,6-Trichlorophenol	88-06-2	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
2,4-Dichlorophenol	120-83-2	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
2,4-Dimethylphenol	105-67-9	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
2,4-Dinitrophenol	51-28-5	mg/kg		< 2.2 U	< 2 U	< 2.3 U	< 2 U	< 2.1 U	< 2.1 U
2-Chloronaphthalene	91-58-7	mg/kg		< 0.45 U	0.15 J	0.2 J	< 0.42 U	< 0.43 U	< 0.42 U
2-Chlorophenol	95-57-8	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40
		Location ID	I-40-SD-005	I-40-SD-006	I-40-SD-007	I-40-SD-007	I-40-SD-008	I-40-SD-009	I-40-SD-010A
		Sample ID	1-40SD005 (0-6)	40SD-6(0-1)	40SD-7DUP(0-1)	40SD-7(0-1)	40SD-8(0-1)	40SD-9(0-1)	40SD-10(0-1)
		Depth Interval	0 - .5	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	11/15/2011	8/16/2002	8/16/2002	8/16/2002	8/16/2002	8/16/2002	8/16/2002
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	FD	N	N	N	N
Chemical Name	**CAS No**	**Unit**							
2-Methylnaphthalene	91-57-6	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
2-Methylphenol	95-48-7	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
2-Nitroaniline	88-74-4	mg/kg		< 2.2 U	< 2 U	< 2.3 U	< 2 U	< 2.1 U	< 2.1 U
2-Nitrophenol	88-75-5	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
3,3'-Dichlorobenzidine	91-94-1	mg/kg		< 2.2 U	< 2 U	< 2.3 U	< 2 U	< 2.1 U	< 2.1 U
3-Nitroaniline	99-09-2	mg/kg		< 2.2 U	< 2 U	< 2.3 U	< 2 U	< 2.1 U	< 2.1 U
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg		< 2.2 U	< 2 U	< 2.3 U	< 2 U	< 2.1 U	< 2.1 U
4-Bromophenyl phenyl ether	101-55-3	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
4-Chloro-3-methylphenol	59-50-7	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
4-Chloroaniline	106-47-8	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
4-Methylphenol	106-44-5	mg/kg		< 0.45 U#	< 0.42 U#	< 0.47 U#	< 0.42 U#	< 0.43 U#	< 0.42 U#
4-Nitroaniline	100-01-6	mg/kg		< 2.2 U	< 2 U	< 2.3 U	< 2 U	< 2.1 U	< 2.1 U
4-Nitrophenol	100-02-7	mg/kg		< 2.2 U	< 2 U	< 2.3 U	< 2 U	< 2.1 U	< 2.1 U
Acenaphthene	83-32-9	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Acenaphthylene	208-96-8	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Aniline	62-53-3	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Anthracene	120-12-7	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Benz(a)anthracene	56-55-3	mg/kg		< 0.45 U	0.04 J +	0.15 J +	< 0.42 U	< 0.43 U	< 0.42 U
Benzo(a)pyrene	50-32-8	mg/kg		< 0.45 U	< 0.42 U	0.14 J +	< 0.42 U	< 0.43 U	< 0.42 U
Benzo(b)fluoranthene	205-99-2	mg/kg		< 0.45 U	0.05 J +	0.18 J +	< 0.42 U	< 0.43 U	< 0.42 U
Benzo(g,h,i)perylene	191-24-2	mg/kg		< 0.45 U	< 0.42 U	0.07 J	< 0.42 U	< 0.43 U	< 0.42 U
Benzo(k)fluoranthene	207-08-9	mg/kg		< 0.45 U	< 0.42 U	0.09 J +	< 0.42 U	< 0.43 U	< 0.42 U
bis(2-Chloroethoxy)methane	111-91-1	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
bis(2-Chloroethyl)ether	111-44-4	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Butylbenzyl phthalate	85-68-7	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Carbazole	86-74-8	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Chrysene	218-01-9	mg/kg		< 0.45 U	0.06 J +	0.21 J +	< 0.42 U	< 0.43 U	< 0.42 U
Dibenz(a,h)anthracene	53-70-3	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Dibenzofuran	132-64-9	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Diethylphthalate	84-66-2	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40	40	40
		Location ID	I-40-SD-005	I-40-SD-006	I-40-SD-007	I-40-SD-007	I-40-SD-008	I-40-SD-009	I-40-SD-010A
		Sample ID	1-40SD005 (0-6)	40SD-6(0-1)	40SD-7DUP(0-1)	40SD-7(0-1)	40SD-8(0-1)	40SD-9(0-1)	40SD-10(0-1)
		Depth Interval	0 - .5	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	11/15/2011	8/16/2002	8/16/2002	8/16/2002	8/16/2002	8/16/2002	8/16/2002
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	FD	N	N	N	N
Chemical Name	**CAS No**	**Unit**							
Dimethylphthalate	131-11-3	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
di-n-Butylphthalate	84-74-2	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
di-n-Octylphthalate	117-84-0	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Diphenylamine	122-39-4	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Fluoranthene	206-44-0	mg/kg		< 0.45 U	0.07 J +	0.25 J +	< 0.42 U	< 0.43 U	< 0.42 U
Fluorene	86-73-7	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Hexachlorobenzene	118-74-1	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Hexachlorobutadiene	87-68-3	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Hexachlorocyclopentadiene	77-47-4	mg/kg		< 2.2 U	< 2 U	< 2.3 U	< 2 U	< 2.1 U	< 2.1 U
Hexachloroethane	67-72-1	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg		< 0.45 U	< 0.42 U	0.06 J	< 0.42 U	< 0.43 U	< 0.42 U
Isophorone	78-59-1	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Naphthalene	91-20-3	mg/kg		< 0.45 U	0.35 J +	0.86 +	0.06 J +	< 0.43 U	< 0.42 U
n-Nitroso-di-n-propylamine	621-64-7	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
n-Nitrosodiphenylamine	86-30-6	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Pentachlorophenol	87-86-5	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Phenanthrene	85-01-8	mg/kg		< 0.45 U	0.04 J	0.17 J +	< 0.42 U	< 0.43 U	< 0.42 U
Phenol	108-95-2	mg/kg		< 0.45 U	< 0.42 U	< 0.47 U	< 0.42 U	< 0.43 U	< 0.42 U
Pyrene	129-00-0	mg/kg		< 0.45 U	0.09 J +	0.29 J +	< 0.42 U	< 0.43 U	< 0.42 U
WetChem									
% Solids	%Solid	%		73.7	79.5	69.6	78.1	76	77.7
Ammonia	7664-41-7	mg/kg							
Chloride	16887-00-6	mg/kg							
Cyanide	57-12-5	mg/kg							
Fluoride	16984-48-8	mg/kg							
Nitrate	14797-55-8	mg/kg							
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg							
Nitrite	14797-65-0	mg/kg							
Phosphate	14265-44-2	mg/kg							
Phosphorus	7723-14-0	mg/kg							
Sulfate	14808-79-8	mg/kg							
Sulfide	18496-25-8	mg/kg							
Total organic carbon	TOC	mg/kg							

Notes:

All exceedances are boldfaced

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40
		Location ID	I-40-SD-011	I-40-SD-011	I-40-SD-012	I-40-SD-013	I-40-SD-014
		Sample ID	DUP003 (013108)-SED	I-40SD011 (0.0-0.5)	I-40SD012 (0.0-0.5)	I-40SD013 (0.0-0.5)	I-40SD014 (0.0-0.5)
		Depth Interval	0 - .5	0 - .5	0 - .5	0 - .5	0 - .5
		Sample Date	1/31/2008	1/31/2008	1/31/2008	1/31/2008	1/31/2008
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	FD	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Explosives							
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
2-amino-4,6-Dinitrotoluene	35572-78-2	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
2-Nitrotoluene	88-72-2	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
3-Nitrotoluene	99-08-1	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
4-amino-2,6-Dinitrotoluene	19406-51-0	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
4-Nitrotoluene	99-99-0	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
HMX	2691-41-0	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
Nitrobenzene	98-95-3	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
Nitrobenzene	98-95-3	mg/kg					
Nitrocellulose	9004-70-0	mg/kg					
Nitroglycerin	55-63-0	mg/kg					
Nitroguanidine	556-88-7	mg/kg					
PETN	78-11-5	mg/kg					
Picric Acid	88-89-1	mg/kg					
RDX	121-82-4	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
Tetrazene	14097-21-3	mg/kg					
Tetryl	479-45-8	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
2,4-Dinitrotoluene	121-14-2	mg/kg					
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.242 U	< 0.249 U	< 0.239 U	< 0.241 U	< 0.244 U
2,6-Dinitrotoluene	606-20-2	mg/kg					
Metals							
Aluminum	7429-90-5	mg/kg					
Antimony	7440-36-0	mg/kg					
Arsenic	7440-38-2	mg/kg					
Barium	7440-39-3	mg/kg					
Beryllium	7440-41-7	mg/kg					
Boron	7440-42-8	mg/kg					
Cadmium	7440-43-9	mg/kg					
Calcium	7440-70-2	mg/kg					
Chromium	7440-47-3	mg/kg					
Cobalt	7440-48-4	mg/kg					
Copper	7440-50-8	mg/kg					
Iron	7439-89-6	mg/kg					
Lead	7439-92-1	mg/kg					
Magnesium	7439-95-4	mg/kg					
Manganese	7439-96-5	mg/kg					

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40
		Location ID	I-40-SD-011	I-40-SD-011	I-40-SD-012	I-40-SD-013	I-40-SD-014
		Sample ID	DUP003 (013108)-SED	I-40SD011 (0.0-0.5)	I-40SD012 (0.0-0.5)	I-40SD013 (0.0-0.5)	I-40SD014 (0.0-0.5)
		Depth Interval	0 - .5	0 - .5	0 - .5	0 - .5	0 - .5
		Sample Date	1/31/2008	1/31/2008	1/31/2008	1/31/2008	1/31/2008
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	FD	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Mercury	7439-97-6	mg/kg					
Nickel	7440-02-0	mg/kg					
Potassium	7440-09-7	mg/kg					
Selenium	7782-49-2	mg/kg					
Silver	7440-22-4	mg/kg					
Sodium	7440-23-5	mg/kg					
Strontium	7440-24-6	mg/kg					
Thallium	7440-28-0	mg/kg					
Titanium	7440-32-6	mg/kg					
Vanadium	7440-62-2	mg/kg					
Zinc	7440-66-6	mg/kg					
Zirconium	7440-67-7	mg/kg					
PCBs							
Aroclor 1016	12674-11-2	mg/kg					
Aroclor 1221	11104-28-2	mg/kg					
Aroclor 1232	11141-16-5	mg/kg					
Aroclor 1242	53469-21-9	mg/kg					
Aroclor 1248	12672-29-6	mg/kg					
Aroclor 1254	11097-69-1	mg/kg					
Aroclor 1260	11096-82-5	mg/kg					
Pesticides							
4,4'-DDD	72-54-8	mg/kg					
4,4'-DDE	72-55-9	mg/kg					
4,4'-DDT	50-29-3	mg/kg					
Aldrin	309-00-2	mg/kg					
alpha-BHC	319-84-6	mg/kg					

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40
		Location ID	I-40-SD-011	I-40-SD-011	I-40-SD-012	I-40-SD-013	I-40-SD-014
		Sample ID	DUP003 (013108)-SED	I-40SD011 (0.0-0.5)	I-40SD012 (0.0-0.5)	I-40SD013 (0.0-0.5)	I-40SD014 (0.0-0.5)
		Depth Interval	0 - .5	0 - .5	0 - .5	0 - .5	0 - .5
		Sample Date	1/31/2008	1/31/2008	1/31/2008	1/31/2008	1/31/2008
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	FD	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
alpha-Chlordane	5103-71-9	mg/kg					
beta-BHC	319-85-7	mg/kg					
Chlordane	57-74-9	mg/kg					
delta-BHC	319-86-8	mg/kg					
Dieldrin	60-57-1	mg/kg					
Endosulfan I	959-98-8	mg/kg					
Endosulfan II	33213-65-9	mg/kg					
Endosulfan sulfate	1031-07-8	mg/kg					
Endrin	72-20-8	mg/kg					
Endrin aldehyde	7421-93-4	mg/kg					
Endrin ketone	53494-70-5	mg/kg					
gamma-BHC (Lindane)	58-89-9	mg/kg					
gamma-Chlordane	5103-74-2	mg/kg					
Heptachlor	76-44-8	mg/kg					
Heptachlor epoxide	1024-57-3	mg/kg					
Methoxychlor	72-43-5	mg/kg					
Toxaphene	8001-35-2	mg/kg					
SVOC							
1,2,4-Trichlorobenzene	120-82-1	mg/kg					
1,2-Dichlorobenzene	95-50-1	mg/kg					
1,3-Dichlorobenzene	541-73-1	mg/kg					
1,4-Dichlorobenzene	106-46-7	mg/kg					
2,4,5-Trichlorophenol	95-95-4	mg/kg					
2,4,6-Trichlorophenol	88-06-2	mg/kg					
2,4-Dichlorophenol	120-83-2	mg/kg					
2,4-Dimethylphenol	105-67-9	mg/kg					
2,4-Dinitrophenol	51-28-5	mg/kg					
2-Chloronaphthalene	91-58-7	mg/kg					
2-Chlorophenol	95-57-8	mg/kg					

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40
		Location ID	I-40-SD-011	I-40-SD-011	I-40-SD-012	I-40-SD-013	I-40-SD-014
		Sample ID	DUP003 (013108)-SED	I-40SD011 (0.0-0.5)	I-40SD012 (0.0-0.5)	I-40SD013 (0.0-0.5)	I-40SD014 (0.0-0.5)
		Depth Interval	0 - .5	0 - .5	0 - .5	0 - .5	0 - .5
		Sample Date	1/31/2008	1/31/2008	1/31/2008	1/31/2008	1/31/2008
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	FD	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
2-Methylnaphthalene	91-57-6	mg/kg					
2-Methylphenol	95-48-7	mg/kg					
2-Nitroaniline	88-74-4	mg/kg					
2-Nitrophenol	88-75-5	mg/kg					
3,3'-Dichlorobenzidine	91-94-1	mg/kg					
3-Nitroaniline	99-09-2	mg/kg					
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg					
4-Bromophenyl phenyl ether	101-55-3	mg/kg					
4-Chloro-3-methylphenol	59-50-7	mg/kg					
4-Chloroaniline	106-47-8	mg/kg					
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg					
4-Methylphenol	106-44-5	mg/kg					
4-Nitroaniline	100-01-6	mg/kg					
4-Nitrophenol	100-02-7	mg/kg					
Acenaphthene	83-32-9	mg/kg					
Acenaphthylene	208-96-8	mg/kg					
Aniline	62-53-3	mg/kg					
Anthracene	120-12-7	mg/kg					
Benz(a)anthracene	56-55-3	mg/kg					
Benzo(a)pyrene	50-32-8	mg/kg					
Benzo(b)fluoranthene	205-99-2	mg/kg					
Benzo(g,h,i)perylene	191-24-2	mg/kg					
Benzo(k)fluoranthene	207-08-9	mg/kg					
bis(2-Chloroethoxy)methane	111-91-1	mg/kg					
bis(2-Chloroethyl)ether	111-44-4	mg/kg					
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg					
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg					
Butylbenzyl phthalate	85-68-7	mg/kg					
Carbazole	86-74-8	mg/kg					
Chrysene	218-01-9	mg/kg					
Dibenz(a,h)anthracene	53-70-3	mg/kg					
Dibenzofuran	132-64-9	mg/kg					
Diethylphthalate	84-66-2	mg/kg					

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40
		Location ID	I-40-SD-011	I-40-SD-011	I-40-SD-012	I-40-SD-013	I-40-SD-014
		Sample ID	DUP003 (013108)-SED	I-40SD011 (0.0-0.5)	I-40SD012 (0.0-0.5)	I-40SD013 (0.0-0.5)	I-40SD014 (0.0-0.5)
		Depth Interval	0 - .5	0 - .5	0 - .5	0 - .5	0 - .5
		Sample Date	1/31/2008	1/31/2008	1/31/2008	1/31/2008	1/31/2008
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	FD	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Dimethylphthalate	131-11-3	mg/kg					
di-n-Butylphthalate	84-74-2	mg/kg					
di-n-Octylphthalate	117-84-0	mg/kg					
Diphenylamine	122-39-4	mg/kg					
Fluoranthene	206-44-0	mg/kg					
Fluorene	86-73-7	mg/kg					
Hexachlorobenzene	118-74-1	mg/kg					
Hexachlorobutadiene	87-68-3	mg/kg					
Hexachlorocyclopentadiene	77-47-4	mg/kg					
Hexachloroethane	67-72-1	mg/kg					
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg					
Isophorone	78-59-1	mg/kg					
Naphthalene	91-20-3	mg/kg					
n-Nitroso-di-n-propylamine	621-64-7	mg/kg					
n-Nitrosodiphenylamine	86-30-6	mg/kg					
Pentachlorophenol	87-86-5	mg/kg					
Phenanthrene	85-01-8	mg/kg					
Phenol	108-95-2	mg/kg					
Pyrene	129-00-0	mg/kg					
WetChem							
% Solids	%Solid	%					
Ammonia	7664-41-7	mg/kg					
Chloride	16887-00-6	mg/kg					
Cyanide	57-12-5	mg/kg					
Fluoride	16984-48-8	mg/kg					
Nitrate	14797-55-8	mg/kg					
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg					
Nitrite	14797-65-0	mg/kg					
Phosphate	14265-44-2	mg/kg					
Phosphorus	7723-14-0	mg/kg					
Sulfate	14808-79-8	mg/kg					
Sulfide	18496-25-8	mg/kg					
Total organic carbon	TOC	mg/kg					

Notes:

All exceedances are boldfaced

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40
		Location ID	I-40-SD-015	I-40-SD-015
		Sample ID	1-40SD015 (18-24)	1-40SD015 (0-6)
		Depth Interval	1.5 - 2	0 - .5
		Sample Date	11/15/2011	11/15/2011
		Sample Matrix	SE	SE
		Sample Type Code	N	N
Chemical Name	**CAS No**	**Unit**		
Explosives				
1,3,5-Trinitrobenzene	99-35-4	mg/kg		
1,3-Dinitrobenzene	99-65-0	mg/kg		
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.249 U	4.54
2-amino-4,6-Dinitrotoluene	35572-78-2	mg/kg		
2-Nitrotoluene	88-72-2	mg/kg		
3-Nitrotoluene	99-08-1	mg/kg		
4-amino-2,6-Dinitrotoluene	19406-51-0	mg/kg		
4-Nitrotoluene	99-99-0	mg/kg		
HMX	2691-41-0	mg/kg		
Nitrobenzene	98-95-3	mg/kg		
Nitrobenzene	98-95-3	mg/kg		
Nitrocellulose	9004-70-0	mg/kg		
Nitroglycerin	55-63-0	mg/kg		
Nitroguanidine	556-88-7	mg/kg		
PETN	78-11-5	mg/kg		
Picric Acid	88-89-1	mg/kg		
RDX	121-82-4	mg/kg	< 0.249 U	< 0.247 U
Tetrazene	14097-21-3	mg/kg		
Tetryl	479-45-8	mg/kg		
Explosives / SVOC				
2,4-Dinitrotoluene	121-14-2	mg/kg		
2,4-Dinitrotoluene	121-14-2	mg/kg		
2,6-Dinitrotoluene	606-20-2	mg/kg		
2,6-Dinitrotoluene	606-20-2	mg/kg		
Metals				
Aluminum	7429-90-5	mg/kg		
Antimony	7440-36-0	mg/kg		
Arsenic	7440-38-2	mg/kg		
Barium	7440-39-3	mg/kg		
Beryllium	7440-41-7	mg/kg		
Boron	7440-42-8	mg/kg		
Cadmium	7440-43-9	mg/kg		
Calcium	7440-70-2	mg/kg		
Chromium	7440-47-3	mg/kg		
Cobalt	7440-48-4	mg/kg		
Copper	7440-50-8	mg/kg		
Iron	7439-89-6	mg/kg		
Lead	7439-92-1	mg/kg		
Magnesium	7439-95-4	mg/kg		
Manganese	7439-96-5	mg/kg		

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40
		Location ID	I-40-SD-015	I-40-SD-015
		Sample ID	1-40SD015 (18-24)	1-40SD015 (0-6)
		Depth Interval	1.5 - 2	0 - .5
		Sample Date	11/15/2011	11/15/2011
		Sample Matrix	SE	SE
		Sample Type Code	N	N
Chemical Name	**CAS No**	**Unit**		
Mercury	7439-97-6	mg/kg		
Nickel	7440-02-0	mg/kg		
Potassium	7440-09-7	mg/kg		
Selenium	7782-49-2	mg/kg		
Silver	7440-22-4	mg/kg		
Sodium	7440-23-5	mg/kg		
Strontium	7440-24-6	mg/kg		
Thallium	7440-28-0	mg/kg		
Titanium	7440-32-6	mg/kg		
Vanadium	7440-62-2	mg/kg		
Zinc	7440-66-6	mg/kg		
Zirconium	7440-67-7	mg/kg		
PCBs				
Aroclor 1016	12674-11-2	mg/kg		
Aroclor 1221	11104-28-2	mg/kg		
Aroclor 1232	11141-16-5	mg/kg		
Aroclor 1242	53469-21-9	mg/kg		
Aroclor 1248	12672-29-6	mg/kg		
Aroclor 1254	11097-69-1	mg/kg		
Aroclor 1260	11096-82-5	mg/kg		
Pesticides				
4,4'-DDD	72-54-8	mg/kg		
4,4'-DDE	72-55-9	mg/kg		
4,4'-DDT	50-29-3	mg/kg		
Aldrin	309-00-2	mg/kg		
alpha-BHC	319-84-6	mg/kg		

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40
		Location ID	I-40-SD-015	I-40-SD-015
		Sample ID	1-40SD015 (18-24)	1-40SD015 (0-6)
		Depth Interval	1.5 - 2	0 - .5
		Sample Date	11/15/2011	11/15/2011
		Sample Matrix	SE	SE
		Sample Type Code	N	N
Chemical Name	**CAS No**	**Unit**		
alpha-Chlordane	5103-71-9	mg/kg		
beta-BHC	319-85-7	mg/kg		
Chlordane	57-74-9	mg/kg		
delta-BHC	319-86-8	mg/kg		
Dieldrin	60-57-1	mg/kg		
Endosulfan I	959-98-8	mg/kg		
Endosulfan II	33213-65-9	mg/kg		
Endosulfan sulfate	1031-07-8	mg/kg		
Endrin	72-20-8	mg/kg		
Endrin aldehyde	7421-93-4	mg/kg		
Endrin ketone	53494-70-5	mg/kg		
gamma-BHC (Lindane)	58-89-9	mg/kg		
gamma-Chlordane	5103-74-2	mg/kg		
Heptachlor	76-44-8	mg/kg		
Heptachlor epoxide	1024-57-3	mg/kg		
Methoxychlor	72-43-5	mg/kg		
Toxaphene	8001-35-2	mg/kg		
SVOC				
1,2,4-Trichlorobenzene	120-82-1	mg/kg		
1,2-Dichlorobenzene	95-50-1	mg/kg		
1,3-Dichlorobenzene	541-73-1	mg/kg		
1,4-Dichlorobenzene	106-46-7	mg/kg		
2,4,5-Trichlorophenol	95-95-4	mg/kg		
2,4,6-Trichlorophenol	88-06-2	mg/kg		
2,4-Dichlorophenol	120-83-2	mg/kg		
2,4-Dimethylphenol	105-67-9	mg/kg		
2,4-Dinitrophenol	51-28-5	mg/kg		
2-Chloronaphthalene	91-58-7	mg/kg		
2-Chlorophenol	95-57-8	mg/kg		

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40
		Location ID	I-40-SD-015	I-40-SD-015
		Sample ID	1-40SD015 (18-24)	1-40SD015 (0-6)
		Depth Interval	1.5 - 2	0 - .5
		Sample Date	11/15/2011	11/15/2011
		Sample Matrix	SE	SE
		Sample Type Code	N	N
Chemical Name	**CAS No**	**Unit**		
2-Methylnaphthalene	91-57-6	mg/kg		
2-Methylphenol	95-48-7	mg/kg		
2-Nitroaniline	88-74-4	mg/kg		
2-Nitrophenol	88-75-5	mg/kg		
3,3'-Dichlorobenzidine	91-94-1	mg/kg		
3-Nitroaniline	99-09-2	mg/kg		
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg		
4-Bromophenyl phenyl ether	101-55-3	mg/kg		
4-Chloro-3-methylphenol	59-50-7	mg/kg		
4-Chloroaniline	106-47-8	mg/kg		
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg		
4-Methylphenol	106-44-5	mg/kg		
4-Nitroaniline	100-01-6	mg/kg		
4-Nitrophenol	100-02-7	mg/kg		
Acenaphthene	83-32-9	mg/kg		
Acenaphthylene	208-96-8	mg/kg		
Aniline	62-53-3	mg/kg		
Anthracene	120-12-7	mg/kg		
Benz(a)anthracene	56-55-3	mg/kg		
Benzo(a)pyrene	50-32-8	mg/kg		
Benzo(b)fluoranthene	205-99-2	mg/kg		
Benzo(g,h,i)perylene	191-24-2	mg/kg		
Benzo(k)fluoranthene	207-08-9	mg/kg		
bis(2-Chloroethoxy)methane	111-91-1	mg/kg		
bis(2-Chloroethyl)ether	111-44-4	mg/kg		
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg		
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg		
Butylbenzyl phthalate	85-68-7	mg/kg		
Carbazole	86-74-8	mg/kg		
Chrysene	218-01-9	mg/kg		
Dibenz(a,h)anthracene	53-70-3	mg/kg		
Dibenzofuran	132-64-9	mg/kg		
Diethylphthalate	84-66-2	mg/kg		

Table A-10
Historical Analytical Results for Sediment Samples at PICA 079 Site 40

		Site Name	40	40
		Location ID	I-40-SD-015	I-40-SD-015
		Sample ID	1-40SD015 (18-24)	1-40SD015 (0-6)
		Depth Interval	1.5 - 2	0 - .5
		Sample Date	11/15/2011	11/15/2011
		Sample Matrix	SE	SE
		Sample Type Code	N	N
Chemical Name	**CAS No**	**Unit**		
Dimethylphthalate	131-11-3	mg/kg		
di-n-Butylphthalate	84-74-2	mg/kg		
di-n-Octylphthalate	117-84-0	mg/kg		
Diphenylamine	122-39-4	mg/kg		
Fluoranthene	206-44-0	mg/kg		
Fluorene	86-73-7	mg/kg		
Hexachlorobenzene	118-74-1	mg/kg		
Hexachlorobutadiene	87-68-3	mg/kg		
Hexachlorocyclopentadiene	77-47-4	mg/kg		
Hexachloroethane	67-72-1	mg/kg		
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg		
Isophorone	78-59-1	mg/kg		
Naphthalene	91-20-3	mg/kg		
n-Nitroso-di-n-propylamine	621-64-7	mg/kg		
n-Nitrosodiphenylamine	86-30-6	mg/kg		
Pentachlorophenol	87-86-5	mg/kg		
Phenanthrene	85-01-8	mg/kg		
Phenol	108-95-2	mg/kg		
Pyrene	129-00-0	mg/kg		
WetChem				
% Solids	%Solid	%		
Ammonia	7664-41-7	mg/kg		
Chloride	16887-00-6	mg/kg		
Cyanide	57-12-5	mg/kg		
Fluoride	16984-48-8	mg/kg		
Nitrate	14797-55-8	mg/kg		
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg		
Nitrite	14797-65-0	mg/kg		
Phosphate	14265-44-2	mg/kg		
Phosphorus	7723-14-0	mg/kg		
Sulfate	14808-79-8	mg/kg		
Sulfide	18496-25-8	mg/kg		
Total organic carbon	TOC	mg/kg		

Notes:

All exceedances are boldfaced

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-11
Historical Analytical Results for Surface Water Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40
		Location ID	I-40-SW-001	I-40-SW-002	I-40-SW-003	I-40-SW-004	I-40-SW-005
		Sample ID	40SW-1(19960821)	40SW-2(19960722)	40SW-3(19960718)	40SW-4(20020828)	40SW-5DUP(20020828)
		Sample Date	8/21/1996	7/22/1996	7/18/1996	8/28/2002	8/28/2002
		Sample Matrix	WS	WS	WS	WS	WS
		Sample Type Code	N	N	N	N	FD
Chemical Name	**CAS No**	**Unit**					
Explosives							
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.449 U	< 0.449 U	< 0.449 U	< 0.2 U	< 0.2 U
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.611 U	< 0.611 U	< 0.611 U	< 0.2 U	< 0.2 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.635 U	< 0.635 U	5.77 +	< 0.2 U	< 0.2 U
2-amino-4,6-Dinitrotoluene	35572-78-2	ug/L				< 0.2 U	< 0.2 U
2-Nitrotoluene	88-72-2	ug/L				< 0.2 U	< 0.2 U
3-Nitrotoluene	99-08-1	ug/L				< 0.2 U	< 0.2 U
4-amino-2,6-Dinitrotoluene	19406-51-0	ug/L				< 0.2 U	< 0.2 U
4-Nitrotoluene	99-99-0	ug/L				< 0.2 U	< 0.2 U
HMX	2691-41-0	ug/L	< 1.21 U	< 1.21 U	96.6	< 0.5 U	< 0.5 U
Nitrobenzene	98-95-3	ug/L	< 0.645 U	< 0.645 U	< 0.645 U	< 0.2 U	< 0.2 U
Nitrocellulose	9004-70-0	ug/L	< 553 U	< 553 U	< 553 UJ		
Nitroglycerin	55-63-0	ug/L	< 10 U	< 10 U	250 +		
Nitroguanidine	556-88-7	ug/L	< 30.9 U	< 30.9 U	< 30.9 U		
PETN	78-11-5	ug/L	< 20 U	< 20 U	< 20 U		
Picric Acid	88-89-1	ug/L	< 0.27 R	< 0.27 U	< 0.27 UJ		
RDX	121-82-4	ug/L	< 1.17 U	< 1.17 U	24.5 +	< 0.5 U	< 0.5 U
Tetrazene	14097-21-3	ug/L	< 40 U	< 40 U	< 40 U		
Tetryl	479-45-8	ug/L	< 1.56 U	< 1.56 U	< 1.56 U	< 0.2 U	< 0.2 U
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.2 U	< 0.2 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.2 U	< 0.2 U
Metals							
Aluminum	7429-90-5	ug/L	31.7	97.5	389 +	< 92 U	< 92 U
Antimony	7440-36-0	ug/L	< 1 U	< 1 U	< 1 U	< 10 U	< 10 U
Arsenic	7440-38-2	ug/L	< 1 UJ	< 1 U	1.24	< 10 U	< 10 U
Barium	7440-39-3	ug/L	17.4	27.6	973	26 J	24 J
Beryllium	7440-41-7	ug/L	< 5 U	< 5 U	< 5 U	< 2 U	< 2 U
Boron	7440-42-8	ug/L	66.2	< 50 U	< 50 U		
Cadmium	7440-43-9	ug/L	< 3.01 U	< 3.01 U	< 3.01 U	< 2 U	< 2 U
Calcium	7440-70-2	ug/L	7350	7020	24900	9300	9200
Chromium	7440-47-3	ug/L	< 6.96 U	< 6.96 U	< 6.96 U	< 10 U	< 10 U
Cobalt	7440-48-4	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U

Table A-11
Historical Analytical Results for Surface Water Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40
		Location ID	I-40-SW-001	I-40-SW-002	I-40-SW-003	I-40-SW-004	I-40-SW-005
		Sample ID	40SW-1(19960821)	40SW-2(19960722)	40SW-3(19960718)	40SW-4(20020828)	40SW-5DUP(20020828)
		Sample Date	8/21/1996	7/22/1996	7/18/1996	8/28/2002	8/28/2002
		Sample Matrix	WS	WS	WS	WS	WS
		Sample Type Code	N	N	N	N	FD
Chemical Name	**CAS No**	**Unit**					
Copper	7440-50-8	ug/L	< 5 U	< 5 U	15 +	1.7 J	2 J
Iron	7439-89-6	ug/L	477	479	718	500 J	450 J
Lead	7439-92-1	ug/L	1.49	1.52	43.6 +	< 3 U	< 3 U
Magnesium	7439-95-4	ug/L	2770	2590	6980	3300 J	3300 J
Manganese	7439-96-5	ug/L	50.5	81.3	118	230	180
Mercury	7439-97-6	ug/L	< 0.243 U	< 0.243 U	< 0.243 U	< 0.092 U	< 0.092 U
Nickel	7440-02-0	ug/L	< 7.11 U	< 7.11 U	< 7.11 U	< 40 U	< 40 U
Potassium	7440-09-7	ug/L	< 1000 U	< 1000 U	< 1000 U	770 J	760 J
Selenium	7782-49-2	ug/L	< 2 U	< 2 U	< 2 U	< 5 U	< 5 U
Silver	7440-22-4	ug/L	< 4.42 U	< 4.42 U	< 4.42 U	< 4 U	< 4 U
Sodium	7440-23-5	ug/L	11600	11000	11600	12100	11900
Strontium	7440-24-6	ug/L	31.9	33.6	194		
Thallium	7440-28-0	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Titanium	7440-32-6	ug/L	< 2 U	2.38	26.8		
Vanadium	7440-62-2	ug/L	< 4.69 U	< 4.69 U	< 4.69 U	< 50 U	< 50 U
Zinc	7440-66-6	ug/L	< 35.8 U	< 35.8 U	< 35.8 U	< 20 U	< 20 U
Zirconium	7440-67-7	ug/L	< 1 UJ	< 1 U	< 1 U		
WetChem							
Ammonia	7664-41-7	ug/L	69.8 J	126	221 +		
Ammonia	7664-41-7	mg/L					
Chloride	16887-00-6	ug/L	24100	23100	22000		
Cyanide	57-12-5	ug/L	< 2.5 U	< 2.5 U	18.6 +		
Fluoride	16984-48-8	ug/L	< 1230 U	< 1230 U	< 1230 U		
Nitrate	14797-55-8	mg/L					
Nitrate/Nitrite	Nitrate/Nitrite	ug/L	< 10 U	< 10 U	< 10 U		
Nitrite	14797-65-0	mg/L					
Phosphate	14265-44-2	ug/L	23.4	25.3	33.7		
Sulfate	14808-79-8	ug/L	< 10000 U	< 10000 U	< 10000 U		
Sulfide	18496-25-8	ug/L	< 50 U	< 50 U	< 50 U		

Notes:

LOC - Level of Concern

mg/L - milligrams per liter

ug/L - micrograms per liter

U - Non-detect at the specified reporting limit

Table A-11
Historical Analytical Results for Surface Water Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40
		Location ID	I-40-SW-005	I-40-SW-006	I-40-SW-011	I-40-SW-011	I-40-SW-012
		Sample ID	40SW-5(20020828)	40SW-6(20020828)	DUP002 (013108)-SW	I-40SW011 (013108)	I-40SW012 (013108)
		Sample Date	8/28/2002	8/28/2002	1/31/2008	1/31/2008	1/31/2008
		Sample Matrix	WS	WS	WS	WS	WS
		Sample Type Code	N	N	FD	N	N
Chemical Name	**CAS No**	**Unit**					
Explosives							
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
2-amino-4,6-Dinitrotoluene	35572-78-2	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
2-Nitrotoluene	88-72-2	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
3-Nitrotoluene	99-08-1	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
4-amino-2,6-Dinitrotoluene	19406-51-0	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
4-Nitrotoluene	99-99-0	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
HMX	2691-41-0	ug/L	< 0.5 U	< 0.5 U	< 1.03 U	< 1.03 U	< 1.02 U
Nitrobenzene	98-95-3	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
Nitrocellulose	9004-70-0	ug/L					
Nitroglycerin	55-63-0	ug/L					
Nitroguanidine	556-88-7	ug/L					
PETN	78-11-5	ug/L					
Picric Acid	88-89-1	ug/L					
RDX	121-82-4	ug/L	< 0.5 U	< 0.5 U	< 1.03 U	< 1.03 U	< 1.02 U
Tetrazene	14097-21-3	ug/L					
Tetryl	479-45-8	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.2 U	< 0.2 U	< 1.03 U	< 1.03 U	< 1.02 U
Metals							
Aluminum	7429-90-5	ug/L	< 92 U	< 92 U			
Antimony	7440-36-0	ug/L	< 10 U	< 10 U			
Arsenic	7440-38-2	ug/L	< 10 U	< 10 U			
Barium	7440-39-3	ug/L	25 J	24 J			
Beryllium	7440-41-7	ug/L	< 2 U	< 2 U			
Boron	7440-42-8	ug/L					
Cadmium	7440-43-9	ug/L	0.3 J +	0.54 J +			
Calcium	7440-70-2	ug/L	9500	9100			
Chromium	7440-47-3	ug/L	< 10 U	< 10 U			
Cobalt	7440-48-4	ug/L	< 50 U	< 50 U			

Table A-11
Historical Analytical Results for Surface Water Samples at PICA 079 Site 40

		Site Name	40	40	40	40	40
		Location ID	I-40-SW-005	I-40-SW-006	I-40-SW-011	I-40-SW-011	I-40-SW-012
		Sample ID	40SW-5(20020828)	40SW-6(20020828)	DUP002 (013108)-SW	I-40SW011 (013108)	I-40SW012 (013108)
		Sample Date	8/28/2002	8/28/2002	1/31/2008	1/31/2008	1/31/2008
		Sample Matrix	WS	WS	WS	WS	WS
		Sample Type Code	N	N	FD	N	N
Chemical Name	**CAS No**	**Unit**					
Copper	7440-50-8	ug/L	2.2 J	2.3 J			
Iron	7439-89-6	ug/L	450 J	430 J			
Lead	7439-92-1	ug/L	< 3 U	< 3 U			
Magnesium	7439-95-4	ug/L	3400 J	3300 J			
Manganese	7439-96-5	ug/L	190	190			
Mercury	7439-97-6	ug/L	< 0.092 U	< 0.092 U			
Nickel	7440-02-0	ug/L	< 40 U	< 40 U			
Potassium	7440-09-7	ug/L	790 J	790 J			
Selenium	7782-49-2	ug/L	< 5 U	< 5 U			
Silver	7440-22-4	ug/L	< 4 U	< 4 U			
Sodium	7440-23-5	ug/L	12400	12100			
Strontium	7440-24-6	ug/L					
Thallium	7440-28-0	ug/L	< 1 U	< 1 U			
Titanium	7440-32-6	ug/L					
Vanadium	7440-62-2	ug/L	< 50 U	< 50 U			
Zinc	7440-66-6	ug/L	< 20 U	< 20 U			
Zirconium	7440-67-7	ug/L					
WetChem							
Ammonia	7664-41-7	ug/L					
Ammonia	7664-41-7	mg/L			0.0923 UB	0.0726 UB	0.0768 UB
Chloride	16887-00-6	ug/L					
Cyanide	57-12-5	ug/L					
Fluoride	16984-48-8	ug/L					
Nitrate	14797-55-8	mg/L			< 0.6 U	< 0.6 U	< 0.6 U
Nitrate/Nitrite	Nitrate/Nitrite	ug/L					
Nitrite	14797-65-0	mg/L			< 0.4 U	< 0.4 U	< 0.4 U
Phosphate	14265-44-2	ug/L					
Sulfate	14808-79-8	ug/L					
Sulfide	18496-25-8	ug/L					

Notes:

LOC - Level of Concern

mg/L - milligrams per liter

ug/L - micrograms per liter

U - Non-detect at the specified reporting limit

Table A-11
Historical Analytical Results for Surface Water Samples at PICA 079 Site 40

		Site Name	40	40
		Location ID	I-40-SW-013	I-40-SW-014
		Sample ID	I-40SW013 (013108)	I-40SW014 (013108)
		Sample Date	1/31/2008	1/31/2008
		Sample Matrix	WS	WS
		Sample Type Code	N	N
Chemical Name	**CAS No**	**Unit**		
Explosives				
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 1.02 U	< 1.02 U
1,3-Dinitrobenzene	99-65-0	ug/L	< 1.02 U	< 1.02 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 1.02 U	< 1.02 U
2-amino-4,6-Dinitrotoluene	35572-78-2	ug/L	< 1.02 U	< 1.02 U
2-Nitrotoluene	88-72-2	ug/L	< 1.02 U	< 1.02 U
3-Nitrotoluene	99-08-1	ug/L	< 1.02 U	< 1.02 U
4-amino-2,6-Dinitrotoluene	19406-51-0	ug/L	< 1.02 U	< 1.02 U
4-Nitrotoluene	99-99-0	ug/L	< 1.02 U	< 1.02 U
HMX	2691-41-0	ug/L	< 1.02 U	< 1.02 U
Nitrobenzene	98-95-3	ug/L	< 1.02 U	< 1.02 U
Nitrocellulose	9004-70-0	ug/L		
Nitroglycerin	55-63-0	ug/L		
Nitroguanidine	556-88-7	ug/L		
PETN	78-11-5	ug/L		
Picric Acid	88-89-1	ug/L		
RDX	121-82-4	ug/L	< 1.02 U	< 1.02 U
Tetrazene	14097-21-3	ug/L		
Tetryl	479-45-8	ug/L	< 1.02 U	< 1.02 U
Explosives / SVOC				
2,4-Dinitrotoluene	121-14-2	ug/L	< 1.02 U	< 1.02 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 1.02 U	< 1.02 U
Metals				
Aluminum	7429-90-5	ug/L		
Antimony	7440-36-0	ug/L		
Arsenic	7440-38-2	ug/L		
Barium	7440-39-3	ug/L		
Beryllium	7440-41-7	ug/L		
Boron	7440-42-8	ug/L		
Cadmium	7440-43-9	ug/L		
Calcium	7440-70-2	ug/L		
Chromium	7440-47-3	ug/L		
Cobalt	7440-48-4	ug/L		

Table A-11
Historical Analytical Results for Surface Water Samples at PICA 079 Site 40

		Site Name	40	40
		Location ID	I-40-SW-013	I-40-SW-014
		Sample ID	I-40SW013 (013108)	I-40SW014 (013108)
		Sample Date	1/31/2008	1/31/2008
		Sample Matrix	WS	WS
		Sample Type Code	N	N
Chemical Name	**CAS No**	**Unit**		
Copper	7440-50-8	ug/L		
Iron	7439-89-6	ug/L		
Lead	7439-92-1	ug/L		
Magnesium	7439-95-4	ug/L		
Manganese	7439-96-5	ug/L		
Mercury	7439-97-6	ug/L		
Nickel	7440-02-0	ug/L		
Potassium	7440-09-7	ug/L		
Selenium	7782-49-2	ug/L		
Silver	7440-22-4	ug/L		
Sodium	7440-23-5	ug/L		
Strontium	7440-24-6	ug/L		
Thallium	7440-28-0	ug/L		
Titanium	7440-32-6	ug/L		
Vanadium	7440-62-2	ug/L		
Zinc	7440-66-6	ug/L		
Zirconium	7440-67-7	ug/L		
WetChem				
Ammonia	7664-41-7	ug/L		
Ammonia	7664-41-7	mg/L	0.0623 UB	0.0887 UB
Chloride	16887-00-6	ug/L		
Cyanide	57-12-5	ug/L		
Fluoride	16984-48-8	ug/L		
Nitrate	14797-55-8	mg/L	< 0.6 U	< 0.6 U
Nitrate/Nitrite	Nitrate/Nitrite	ug/L		
Nitrite	14797-65-0	mg/L	< 0.4 U	< 0.4 U
Phosphate	14265-44-2	ug/L		
Sulfate	14808-79-8	ug/L		
Sulfide	18496-25-8	ug/L		

Notes:

LOC - Level of Concern

mg/L - milligrams per liter

ug/L - micrograms per liter

U - Non-detect at the specified reporting limit

Table A-12
Historical Analytical Results for Sediment Samples at PICA 079 Site 156

		Site Name	156	156	156	156	156
		Location ID	I-156-SD-001	I-156-SD-002	I-156-SD-002	I-156-SD-002	I-156-SD-003
		Sample ID	156SD-1(0-1)	156SD-2(0-1)	156SD-2(0-0.5)	156SD-2B(1-2)	156SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2	0 - 1
		Sample Date	7/23/1996	7/24/1996	10/14/1998	5/17/2001	7/29/1996
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Explosives							
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.488 R	< 0.488 R			< 0.488 U
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.496 U	< 0.496 U			< 0.496 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.456 U	< 0.456 U			< 0.456 U
HMX	2691-41-0	mg/kg	< 0.666 U	< 0.666 U			< 0.666 U
Nitrobenzene	98-95-3	mg/kg	< 2.41 U	< 2.41 U			< 2.41 U
Nitrocellulose	9004-70-0	mg/kg	< 10.4 U	< 10.4 U			< 10.4 U
Nitroglycerin	55-63-0	mg/kg	< 4 U	< 4 U			< 4 U
Nitroguanidine	556-88-7	mg/kg	< 0.475 U	< 0.475 U			< 0.475 U
PETN	78-11-5	mg/kg	< 4 U	< 4 U			< 4 U
Picric Acid	88-89-1	mg/kg	< 0.108 U	< 0.108 U			< 0.108 U
RDX	121-82-4	mg/kg	< 0.587 U	< 0.587 U			< 0.587 U
Tetrazene	14097-21-3	mg/kg	< 1.19 U	< 1.19 U			< 1.19 U
Tetryl	479-45-8	mg/kg	< 0.731 U	< 0.731 U			< 0.731 U
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.424 U	< 0.424 U			< 0.424 U
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.524 U	< 0.524 U			< 0.524 U
Metals							
Aluminum	7429-90-5	mg/kg	5590	10300		10700	11000
Antimony	7440-36-0	mg/kg	< 0.1 U	0.33		< 1.3 U	< 0.1 U
Arsenic	7440-38-2	mg/kg	7.79	7.97		4	4.28
Barium	7440-39-3	mg/kg	101	148		67.7	61.7
Beryllium	7440-41-7	mg/kg	0.97	1.09		0.34 J	< 0.5 U
Boron	7440-42-8	mg/kg	< 5.91 U	10.4			11.5
Cadmium	7440-43-9	mg/kg	< 0.7 U	1.41		< 0.25 U	< 0.7 U
Calcium	7440-70-2	mg/kg	2350	1540		1070	2860
Chromium	7440-47-3	mg/kg	10.9	16.1		10.7	11
Cobalt	7440-48-4	mg/kg	5.12	8.33		6.4	5.03
Copper	7440-50-8	mg/kg	55.1	200		6.9	17.2

Table A-12
Historical Analytical Results for Sediment Samples at PICA 079 Site 156

		Site Name	156	156	156	156	156
		Location ID	I-156-SD-001	I-156-SD-002	I-156-SD-002	I-156-SD-002	I-156-SD-003
		Sample ID	156SD-1(0-1)	156SD-2(0-1)	156SD-2(0-0.5)	156SD-2B(1-2)	156SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2	0 - 1
		Sample Date	7/23/1996	7/24/1996	10/14/1998	5/17/2001	7/29/1996
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Iron	7439-89-6	mg/kg	23000	17300		15100	13100
Lead	7439-92-1	mg/kg	126	110		16.1	18.8
Magnesium	7439-95-4	mg/kg	3450	5280		4520	2500
Manganese	7439-96-5	mg/kg	335	184		206	82
Mercury	7439-97-6	mg/kg	0.11	0.58		0.08 J	2.7
Nickel	7440-02-0	mg/kg	10.5	13.1		9.5	8.49
Potassium	7440-09-7	mg/kg	685	1110		602 J	460
Selenium	7782-49-2	mg/kg	0.54	1.15		< 0.63 U	0.81
Silver	7440-22-4	mg/kg	< 0.589 U	< 0.589 U		< 0.63 U	< 0.589 U
Sodium	7440-23-5	mg/kg	466	501		< 626 U	619
Strontium	7440-24-6	mg/kg	32	14.5			12.9
Thallium	7440-28-0	mg/kg	< 0.1 U	0.19		0.68 J	0.25
Titanium	7440-32-6	mg/kg	268	331			290
Vanadium	7440-62-2	mg/kg	15.9	22.4		17.8	20.7
Zinc	7440-66-6	mg/kg	143	165		44	60.9
Zirconium	7440-67-7	mg/kg	9.59	7.09			5.11
Pesticides							
Mirex	2385-85-5	mg/kg	< 0.25 UJ	< 0.25 UJ			< 0.25 U
SVOC							
1,2,4-Trichlorobenzene	120-82-1	mg/kg	< 0.04 UJ	< 0.04 UJ			< 0.04 U
1,2-Dichlorobenzene	95-50-1	mg/kg	< 0.11 UJ	< 0.11 UJ			< 0.11 U
1,3-Dichlorobenzene	541-73-1	mg/kg	< 0.13 UJ	< 0.13 UJ			< 0.13 U
1,4-Dichlorobenzene	106-46-7	mg/kg	< 0.098 UJ	< 0.098 UJ			< 0.098 U
2,4,5-Trichlorophenol	95-95-4	mg/kg	< 0.1 UJ	< 0.1 UJ			< 0.1 U
2,4,6-Trichlorophenol	88-06-2	mg/kg	< 0.17 UJ	< 0.17 UJ			< 0.17 U
2,4-Dichlorophenol	120-83-2	mg/kg	< 0.18 UJ	< 0.18 UJ			< 0.18 U
2,4-Dimethylphenol	105-67-9	mg/kg	< 0.69 UJ	< 0.69 UJ			< 0.69 U
2,4-Dinitrophenol	51-28-5	mg/kg	< 1.2 UJ	< 1.2 UJ			< 1.2 U
2-Chloronaphthalene	91-58-7	mg/kg	< 0.036 UJ	< 0.036 UJ			< 0.036 U

Table A-12
Historical Analytical Results for Sediment Samples at PICA 079 Site 156

		Site Name	156	156	156	156	156
		Location ID	I-156-SD-001	I-156-SD-002	I-156-SD-002	I-156-SD-002	I-156-SD-003
		Sample ID	156SD-1(0-1)	156SD-2(0-1)	156SD-2(0-0.5)	156SD-2B(1-2)	156SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2	0 - 1
		Sample Date	7/23/1996	7/24/1996	10/14/1998	5/17/2001	7/29/1996
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
2-Chlorophenol	95-57-8	mg/kg	< 0.06 UJ	< 0.06 UJ			< 0.06 U
2-Methylnaphthalene	91-57-6	mg/kg	< 0.049 UJ	< 0.049 UJ			< 0.049 U
2-Methylphenol	95-48-7	mg/kg	< 0.029 UJ	< 0.029 UJ			< 0.029 U
2-Nitroaniline	88-74-4	mg/kg	< 0.062 UJ	< 0.062 UJ			< 0.062 U
2-Nitrophenol	88-75-5	mg/kg	< 0.14 UJ	< 0.14 UJ			< 0.14 U
3,3'-Dichlorobenzidine	91-94-1	mg/kg	< 6.3 UJ	< 6.3 UJ			< 6.3 U
3-Nitroaniline	99-09-2	mg/kg	< 0.45 UJ	< 0.45 UJ			< 0.45 U
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg	< 0.55 UJ	< 0.55 UJ			< 0.55 U
4-Bromophenyl phenyl ether	101-55-3	mg/kg	< 0.033 UJ	< 0.033 UJ			< 0.033 U
4-Chloro-3-methylphenol	59-50-7	mg/kg	< 0.095 UJ	< 0.095 UJ			< 0.095 U
4-Chloroaniline	106-47-8	mg/kg	< 0.81 UJ	< 0.81 UJ			< 0.81 U
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	< 0.033 UJ	< 0.033 UJ			< 0.033 U
4-Methylphenol	106-44-5	mg/kg	< 0.24 UJ#	< 0.24 UJ#			< 0.24 U#
4-Nitroaniline	100-01-6	mg/kg	< 0.41 UJ	< 0.41 UJ			< 0.41 U
4-Nitrophenol	100-02-7	mg/kg	< 1.4 UJ	< 1.4 UJ			< 1.4 U
Acenaphthene	83-32-9	mg/kg	< 0.036 UJ	< 0.036 UJ		< 0.41 U	< 0.036 U
Acenaphthylene	208-96-8	mg/kg	< 0.033 UJ	< 0.033 UJ		< 0.41 U	< 0.033 U
Aniline	62-53-3	mg/kg	< 0.65 UJ	< 0.65 UJ			< 0.65 U
Anthracene	120-12-7	mg/kg	< 0.033 UJ	< 0.033 UJ		< 0.41 U	< 0.033 U
Benz(a)anthracene	56-55-3	mg/kg	< 0.17 UJ	0.26 J		< 0.41 U	< 0.17 U
Benzo(a)pyrene	50-32-8	mg/kg	< 0.25 UJ	< 0.25 UJ		< 0.41 U	< 0.25 U
Benzo(b)fluoranthene	205-99-2	mg/kg	< 0.21 UJ	< 0.21 UJ		< 0.41 U	< 0.21 U
Benzo(g,h,i)perylene	191-24-2	mg/kg	< 0.25 UJ	< 0.25 UJ		< 0.41 U	< 0.25 U
Benzo(k)fluoranthene	207-08-9	mg/kg	< 0.066 UJ	0.25 J		< 0.41 U	< 0.066 U
Benzyl alcohol	100-51-6	mg/kg	< 0.19 UJ	< 0.19 UJ			< 0.19 U
bis(2-Chloroethoxy)methane	111-91-1	mg/kg	< 0.059 UJ	< 0.059 UJ			< 0.059 U
bis(2-Chloroethyl)ether	111-44-4	mg/kg	< 0.033 UJ	< 0.033 UJ			< 0.033 U
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg	< 0.2 UJ	< 0.2 UJ			< 0.2 U
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	< 0.62 UJ	< 0.62 UJ			3.2

Table A-12
Historical Analytical Results for Sediment Samples at PICA 079 Site 156

		Site Name	156	156	156	156	156
		Location ID	I-156-SD-001	I-156-SD-002	I-156-SD-002	I-156-SD-002	I-156-SD-003
		Sample ID	156SD-1(0-1)	156SD-2(0-1)	156SD-2(0-0.5)	156SD-2B(1-2)	156SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2	0 - 1
		Sample Date	7/23/1996	7/24/1996	10/14/1998	5/17/2001	7/29/1996
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Butylbenzyl phthalate	85-68-7	mg/kg	< 0.17 UJ	< 0.17 UJ			< 0.17 U
Carbazole	86-74-8	mg/kg	< 0.14 UJ	< 0.14 UJ			< 0.14 U
Chrysene	218-01-9	mg/kg	< 0.12 UJ	0.32 J		< 0.41 U	< 0.12 U
Dibenz(a,h)anthracene	53-70-3	mg/kg	< 0.21 UJ	< 0.21 UJ		< 0.41 U	< 0.21 U
Dibenzofuran	132-64-9	mg/kg	< 0.035 UJ	< 0.035 UJ			< 0.035 U
Diethylphthalate	84-66-2	mg/kg	< 0.24 UJ	< 0.24 UJ			< 0.24 U
Dimethylphthalate	131-11-3	mg/kg	< 0.17 UJ	< 0.17 UJ			< 0.17 U
di-n-Butylphthalate	84-74-2	mg/kg	< 0.061 UJ	0.73 J			< 0.061 U
di-n-Octylphthalate	117-84-0	mg/kg	< 0.19 UJ	< 0.19 UJ			< 0.19 U
Diphenylamine	122-39-4	mg/kg	< 0.13 UJ	< 0.13 UJ			< 0.13 U
Fluoranthene	206-44-0	mg/kg	< 0.068 UJ	0.51 J		< 0.41 U	< 0.068 U
Fluorene	86-73-7	mg/kg	< 0.033 UJ	< 0.033 UJ		< 0.41 U	< 0.033 U
Hexachlorobenzene	118-74-1	mg/kg	< 0.033 UJ	< 0.033 UJ			< 0.033 U
Hexachlorobutadiene	87-68-3	mg/kg	< 0.23 UJ	< 0.23 UJ			< 0.23 U
Hexachlorocyclopentadiene	77-47-4	mg/kg	< 6.2 UJ	< 6.2 UJ			< 6.2 U
Hexachloroethane	67-72-1	mg/kg	< 0.15 UJ	< 0.15 UJ			< 0.15 U
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	< 0.29 UJ	< 0.29 UJ		< 0.41 U	< 0.29 U
Isophorone	78-59-1	mg/kg	< 0.033 UJ	< 0.033 UJ			< 0.033 U
Naphthalene	91-20-3	mg/kg	< 0.037 UJ	< 0.037 UJ		< 0.41 U	< 0.037 U
n-Nitroso-di-n-propylamine	621-64-7	mg/kg	< 0.2 UJ	< 0.2 UJ			< 0.2 U
n-Nitrosodiphenylamine	86-30-6	mg/kg	< 0.19 UJ	< 0.19 UJ			< 0.19 U
Pentachlorophenol	87-86-5	mg/kg	< 1.3 UJ	< 1.3 UJ			< 1.3 U
Phenanthrene	85-01-8	mg/kg	< 0.033 UJ	0.07 J		< 0.41 U	< 0.033 U
Phenol	108-95-2	mg/kg	< 0.11 UJ	< 0.11 UJ			< 0.11 U
Pyrene	129-00-0	mg/kg	< 0.033 UJ	0.51 J		< 0.41 U	< 0.033 U
WetChem							
% Solids	%Solid	%				79.8	
Ammonia	7664-41-7	mg/kg	32.3	109			170
Chloride	16887-00-6	mg/kg	< 6.05 U	9.01			19.4

Table A-12
Historical Analytical Results for Sediment Samples at PICA 079 Site 156

		Site Name	156	156	156	156	156
		Location ID	I-156-SD-001	I-156-SD-002	I-156-SD-002	I-156-SD-002	I-156-SD-003
		Sample ID	156SD-1(0-1)	156SD-2(0-1)	156SD-2(0-0.5)	156SD-2B(1-2)	156SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	1 - 2	0 - 1
		Sample Date	7/23/1996	7/24/1996	10/14/1998	5/17/2001	7/29/1996
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Cyanide	57-12-5	mg/kg	< 0.92 U	< 0.92 U			< 0.92 U
Fluoride	16984-48-8	mg/kg	< 3.62 U	7.86			< 3.62 U
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	< 0.6 U	< 0.6 U			< 0.6 U
Phosphate	14265-44-2	mg/kg	200	210			210
Sulfate	14808-79-8	mg/kg	< 90.4 U	< 90.4 U			< 90.4 U
Sulfide	18496-25-8	mg/kg	37.3	25.5			31.1
Total organic carbon	TOC	mg/kg	7520	7930	62400		37500

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

UJ - Compound was analyzed but not detected. Detection limit is an estimated value.

J - Estimated concentration

R - Rejected

Table A-12
Historical Analytical Results for Sediment Samples at PICA 079 Site 156

		156	156	156
		I-156-SD-004	I-156-SD-004	I-156-SD-005
		156SD-4(0-1)	156SD-4(0-0.5)	156SD-5(0-1)
		0 - 1	0 - .5	0 - 1
		7/30/1996	10/14/1998	7/25/1996
		SE	SE	SE
		N	N	N
Chemical Name	**CAS No**			
Explosives				
1,3,5-Trinitrobenzene	99-35-4	< 0.488 U		< 0.488 R
1,3-Dinitrobenzene	99-65-0	< 0.496 U		< 0.496 U
2,4,6-Trinitrotoluene	118-96-7	1.35		< 0.456 U
HMX	2691-41-0	< 0.666 U		< 0.666 U
Nitrobenzene	98-95-3	< 2.41 U		< 2.41 U
Nitrocellulose	9004-70-0	< 10.4 U		< 10.4 U
Nitroglycerin	55-63-0	< 4 U		< 4 U
Nitroguanidine	556-88-7	< 0.475 U		< 0.475 U
PETN	78-11-5	< 4 U		< 4 U
Picric Acid	88-89-1	< 0.108 U		< 0.108 U
RDX	121-82-4	< 0.587 U		< 0.587 U
Tetrazene	14097-21-3	< 1.19 U		< 1.19 U
Tetryl	479-45-8	< 0.731 U		< 0.731 U
Explosives / SVOC				
2,4-Dinitrotoluene	121-14-2	< 0.424 U		< 0.424 U
2,6-Dinitrotoluene	606-20-2	< 0.524 U		< 0.524 U
Metals				
Aluminum	7429-90-5	13500		11600
Antimony	7440-36-0	< 0.1 U		< 0.1 U
Arsenic	7440-38-2	9.37		9.5
Barium	7440-39-3	101		126
Beryllium	7440-41-7	0.79		1.42
Boron	7440-42-8	12.6		9.86
Cadmium	7440-43-9	< 0.7 U		< 0.7 U
Calcium	7440-70-2	13400		7590
Chromium	7440-47-3	16.5		19.3
Cobalt	7440-48-4	6.99		10.1
Copper	7440-50-8	24.3		27.3

Table A-12
Historical Analytical Results for Sediment Samples at PICA 079 Site 156

		156	156	156
		I-156-SD-004	I-156-SD-004	I-156-SD-005
		156SD-4(0-1)	156SD-4(0-0.5)	156SD-5(0-1)
		0 - 1	0 - .5	0 - 1
		7/30/1996	10/14/1998	7/25/1996
		SE	SE	SE
		N	N	N
Chemical Name	**CAS No**			
Iron	7439-89-6	18200		24500
Lead	7439-92-1	36.8		30.8
Magnesium	7439-95-4	3440		17500
Manganese	7439-96-5	403		633
Mercury	7439-97-6	0.86		0.14
Nickel	7440-02-0	13.2		19.3
Potassium	7440-09-7	634		4070
Selenium	7782-49-2	< 0.25 U		1.38
Silver	7440-22-4	4.68		< 0.589 U
Sodium	7440-23-5	651		497
Strontium	7440-24-6	100		15.5
Thallium	7440-28-0	0.21		0.18
Titanium	7440-32-6	340		347
Vanadium	7440-62-2	26.2		28.7
Zinc	7440-66-6	120		163
Zirconium	7440-67-7	8		9.6
Pesticides				
Mirex	2385-85-5	< 0.25 U		< 0.25 UJ
SVOC				
1,2,4-Trichlorobenzene	120-82-1	< 0.04 U		< 0.04 UJ
1,2-Dichlorobenzene	95-50-1	< 0.11 U		< 0.11 UJ
1,3-Dichlorobenzene	541-73-1	< 0.13 U		< 0.13 UJ
1,4-Dichlorobenzene	106-46-7	< 0.098 U		< 0.098 UJ
2,4,5-Trichlorophenol	95-95-4	< 0.1 U		< 0.1 UJ
2,4,6-Trichlorophenol	88-06-2	< 0.17 U		< 0.17 UJ
2,4-Dichlorophenol	120-83-2	< 0.18 U		< 0.18 UJ
2,4-Dimethylphenol	105-67-9	< 0.69 U		< 0.69 UJ
2,4-Dinitrophenol	51-28-5	< 1.2 U		< 1.2 UJ
2-Chloronaphthalene	91-58-7	< 0.036 U		< 0.036 UJ

Table A-12
Historical Analytical Results for Sediment Samples at PICA 079 Site 156

		156	156	156
		I-156-SD-004	I-156-SD-004	I-156-SD-005
		156SD-4(0-1)	156SD-4(0-0.5)	156SD-5(0-1)
		0 - 1	0 - .5	0 - 1
		7/30/1996	10/14/1998	7/25/1996
		SE	SE	SE
		N	N	N
Chemical Name	**CAS No**			
2-Chlorophenol	95-57-8	< 0.06 U		< 0.06 UJ
2-Methylnaphthalene	91-57-6	< 0.049 U		< 0.049 UJ
2-Methylphenol	95-48-7	< 0.029 U		< 0.029 UJ
2-Nitroaniline	88-74-4	< 0.062 U		< 0.062 UJ
2-Nitrophenol	88-75-5	< 0.14 U		< 0.14 UJ
3,3'-Dichlorobenzidine	91-94-1	< 6.3 U		< 6.3 UJ
3-Nitroaniline	99-09-2	< 0.45 U		< 0.45 UJ
4,6-dinitro-2-Methylphenol	534-52-1	< 0.55 U		< 0.55 UJ
4-Bromophenyl phenyl ether	101-55-3	< 0.033 U		< 0.033 UJ
4-Chloro-3-methylphenol	59-50-7	< 0.095 U		< 0.095 UJ
4-Chloroaniline	106-47-8	< 0.81 U		< 0.81 UJ
4-Chlorophenyl phenyl ether	7005-72-3	< 0.033 U		< 0.033 UJ
4-Methylphenol	106-44-5	< 0.24 U#		< 0.24 UJ#
4-Nitroaniline	100-01-6	< 0.41 U		< 0.41 UJ
4-Nitrophenol	100-02-7	< 1.4 U		< 1.4 UJ
Acenaphthene	83-32-9	< 0.036 U		< 0.036 UJ
Acenaphthylene	208-96-8	< 0.033 U		< 0.033 UJ
Aniline	62-53-3	< 0.65 U		< 0.65 UJ
Anthracene	120-12-7	0.1		0.11 J
Benz(a)anthracene	56-55-3	0.3		0.27 J
Benzo(a)pyrene	50-32-8	< 0.25 U		< 0.25 UJ
Benzo(b)fluoranthene	205-99-2	0.39		< 0.21 UJ
Benzo(g,h,i)perylene	191-24-2	< 0.25 U		< 0.25 UJ
Benzo(k)fluoranthene	207-08-9	0.12		0.2 J
Benzyl alcohol	100-51-6	< 0.19 U		< 0.19 UJ
bis(2-Chloroethoxy)methane	111-91-1	< 0.059 U		< 0.059 UJ
bis(2-Chloroethyl)ether	111-44-4	< 0.033 U		< 0.033 UJ
bis(2-Chloroisopropyl)ether	39638-32-9	< 0.2 U		< 0.2 UJ
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.62 U		< 0.62 UJ

Table A-12
Historical Analytical Results for Sediment Samples at PICA 079 Site 156

		156	156	156
		I-156-SD-004	I-156-SD-004	I-156-SD-005
		156SD-4(0-1)	156SD-4(0-0.5)	156SD-5(0-1)
		0 - 1	0 - .5	0 - 1
		7/30/1996	10/14/1998	7/25/1996
		SE	SE	SE
		N	N	N
Chemical Name	**CAS No**			
Butylbenzyl phthalate	85-68-7	< 0.17 U		< 0.17 UJ
Carbazole	86-74-8	< 0.14 U		< 0.14 UJ
Chrysene	218-01-9	0.34		0.38 J
Dibenz(a,h)anthracene	53-70-3	< 0.21 U		< 0.21 UJ
Dibenzofuran	132-64-9	< 0.035 U		< 0.035 UJ
Diethylphthalate	84-66-2	< 0.24 U		< 0.24 UJ
Dimethylphthalate	131-11-3	< 0.17 U		< 0.17 UJ
di-n-Butylphthalate	84-74-2	0.16		< 0.061 UJ
di-n-Octylphthalate	117-84-0	< 0.19 U		< 0.19 UJ
Diphenylamine	122-39-4	< 0.13 U		< 0.13 UJ
Fluoranthene	206-44-0	0.66		0.69 J
Fluorene	86-73-7	< 0.033 U		< 0.033 UJ
Hexachlorobenzene	118-74-1	< 0.033 U		< 0.033 UJ
Hexachlorobutadiene	87-68-3	< 0.23 U		< 0.23 UJ
Hexachlorocyclopentadiene	77-47-4	< 6.2 U		< 6.2 UJ
Hexachloroethane	67-72-1	< 0.15 U		< 0.15 UJ
Indeno(1,2,3-c,d)pyrene	193-39-5	< 0.29 U		< 0.29 UJ
Isophorone	78-59-1	< 0.033 U		< 0.033 UJ
Naphthalene	91-20-3	< 0.037 U		< 0.037 UJ
n-Nitroso-di-n-propylamine	621-64-7	< 0.2 U		< 0.2 UJ
n-Nitrosodiphenylamine	86-30-6	< 0.19 U		< 0.19 UJ
Pentachlorophenol	87-86-5	< 1.3 U		< 1.3 UJ
Phenanthrene	85-01-8	0.29		0.48 J
Phenol	108-95-2	< 0.11 U		< 0.11 UJ
Pyrene	129-00-0	0.61		0.8 J
WetChem				
% Solids	%Solid			
Ammonia	7664-41-7	58.9		115
Chloride	16887-00-6	23.4		10.6

Table A-12
Historical Analytical Results for Sediment Samples at PICA 079 Site 156

		156	156	156
		I-156-SD-004	I-156-SD-004	I-156-SD-005
		156SD-4(0-1)	156SD-4(0-0.5)	156SD-5(0-1)
		0 - 1	0 - .5	0 - 1
		7/30/1996	10/14/1998	7/25/1996
		SE	SE	SE
		N	N	N
Chemical Name	**CAS No**			
Cyanide	57-12-5	< 0.92 U		< 0.92 U
Fluoride	16984-48-8	6.31		< 3.62 U
Nitrate/Nitrite	Nitrate/Nitrite	< 0.6 UJ		< 0.6 U
Phosphate	14265-44-2	400		770
Sulfate	14808-79-8	225		< 90.4 U
Sulfide	18496-25-8	380		300
Total organic carbon	TOC	22200	31300	20100

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

UJ - Compound was analyzed but not detected. Detection lin

J - Estimated concentration

R - Rejected

Table A-13
Historical Analytical Results for Surface Water Samples at PICA 079 Site 156

		Site Name	156	156	156	156	156
		Location ID	I-156-SW-001	I-156-SW-002	I-156-SW-003	I-156-SW-004	I-156-SW-005
		Sample ID	156SW-1(19960723)	156SW-2(19960723)	156SW-3(19960729)	156SW-4(19960730)	156SW-5(19960725)
		Depth Interval					
		Sample Date	7/23/1996	7/23/1996	7/29/1996	7/30/1996	7/25/1996
		Sample Matrix	WS	WS	WS	WS	WS
		Sample Type Code	N	N	N	N	N
Chemical Name	CAS No	Unit					
Explosives							
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U
HMX	2691-41-0	ug/L	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U
Nitrobenzene	98-95-3	ug/L	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U
Nitrocellulose	9004-70-0	ug/L	< 553 U	< 553 U	< 553 U	< 553 U	< 553 U
Nitroglycerin	55-63-0	ug/L	< 10 U	< 10 U	< 10 UJ	< 10 UJ	< 10 U
Nitroguanidine	556-88-7	ug/L	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U
PETN	78-11-5	ug/L	< 20 U	< 20 U	< 20 UJ	< 20 UJ	< 20 U
Picric Acid	88-89-1	ug/L	< 0.27 U	< 0.27 U	< 0.27 U	< 0.27 U	< 0.27 U
RDX	121-82-4	ug/L	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U
Tetrazene	14097-21-3	ug/L	< 40 U	< 40 U	< 40 U	< 40 U	< 40 UJ
Tetryl	479-45-8	ug/L	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U
Metals							
Aluminum	7429-90-5	ug/L	43.6	246	32.6	33.6	56.4
Antimony	7440-36-0	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Arsenic	7440-38-2	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Barium	7440-39-3	ug/L	17.2	26.1	16.6	17.7	17.6
Beryllium	7440-41-7	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Boron	7440-42-8	ug/L	< 50 U	< 50 U	58.9	57.1	< 50 U
Cadmium	7440-43-9	ug/L	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U
Calcium	7440-70-2	ug/L	6360	9130	6320	6290	6650
Chromium	7440-47-3	ug/L	< 6.96 U	< 6.96 U	< 6.96 U	< 6.96 U	< 6.96 U
Cobalt	7440-48-4	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U
Copper	7440-50-8	ug/L	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Iron	7439-89-6	ug/L	385	828	281	423	397
Lead	7439-92-1	ug/L	4.6	< 1 U	< 1 U	< 1 U	< 1 U
Magnesium	7439-95-4	ug/L	2470	3650	2450	2460	2580
Manganese	7439-96-5	ug/L	53.1	152	33	64.9	68.2
Mercury	7439-97-6	ug/L	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U	< 0.243 U
Nickel	7440-02-0	ug/L	< 7.11 U	< 7.11 U	< 7.11 U	< 7.11 U	< 7.11 U
Potassium	7440-09-7	ug/L	< 1000 U	< 1000 U	< 1000 U	< 1000 U	< 1000 U

Table A-13
Historical Analytical Results for Surface Water Samples at PICA 079 Site 156

		Site Name	156	156	156	156	156
		Location ID	I-156-SW-001	I-156-SW-002	I-156-SW-003	I-156-SW-004	I-156-SW-005
		Sample ID	156SW-1(19960723)	156SW-2(19960723)	156SW-3(19960729)	156SW-4(19960730)	156SW-5(19960725)
		Depth Interval					
		Sample Date	7/23/1996	7/23/1996	7/29/1996	7/30/1996	7/25/1996
		Sample Matrix	WS	WS	WS	WS	WS
		Sample Type Code	N	N	N	N	N
Chemical Name	CAS No	Unit					
Selenium	7782-49-2	ug/L	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Silver	7440-22-4	ug/L	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U
Sodium	7440-23-5	ug/L	10600	10500	10400	10300	10800
Strontium	7440-24-6	ug/L	38.1	29.5	27.2	27.7	31
Thallium	7440-28-0	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Titanium	7440-32-6	ug/L	9	< 2 U	< 2 U	< 2 U	< 2 U
Vanadium	7440-62-2	ug/L	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U
Zinc	7440-66-6	ug/L	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U
Zirconium	7440-67-7	ug/L	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Pesticides							
Mirex	2385-85-5	ug/L	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U
SVOC							
1,2,4-Trichlorobenzene	120-82-1	ug/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorobenzene	95-50-1	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,3-Dichlorobenzene	541-73-1	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,4-Dichlorobenzene	106-46-7	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2,4,5-Trichlorophenol	95-95-4	ug/L	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
2,4,6-Trichlorophenol	88-06-2	ug/L	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
2,4-Dichlorophenol	120-83-2	ug/L	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U
2,4-Dimethylphenol	105-67-9	ug/L	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
2,4-Dinitrophenol	51-28-5	ug/L	< 21 U	< 21 U	< 21 U	< 21 U	< 21 U
2-Chloronaphthalene	91-58-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Chlorophenol	95-57-8	ug/L	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U
2-Methylnaphthalene	91-57-6	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2-Methylphenol	95-48-7	ug/L	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
2-Nitroaniline	88-74-4	ug/L	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
2-Nitrophenol	88-75-5	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
3,3'-Dichlorobenzidine	91-94-1	ug/L	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U
3-Nitroaniline	99-09-2	ug/L	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U
4,6-dinitro-2-Methylphenol	534-52-1	ug/L	< 17 U	< 17 U	< 17 U	< 17 U	< 17 U
4-Bromophenyl phenyl ether	101-55-3	ug/L	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
4-Chloro-3-methylphenol	59-50-7	ug/L	< 4 U	< 4 U	< 4 U	< 4 U	< 4 U
4-Chloroaniline	106-47-8	ug/L	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U
4-Chlorophenyl phenyl ether	7005-72-3	ug/L	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U
4-Methylphenol	106-44-5	ug/L	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#
4-Nitroaniline	100-01-6	ug/L	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U

Table A-13
Historical Analytical Results for Surface Water Samples at PICA 079 Site 156

		Site Name	156	156	156	156	156
		Location ID	I-156-SW-001	I-156-SW-002	I-156-SW-003	I-156-SW-004	I-156-SW-005
		Sample ID	156SW-1(19960723)	156SW-2(19960723)	156SW-3(19960729)	156SW-4(19960730)	156SW-5(19960725)
		Depth Interval					
		Sample Date	7/23/1996	7/23/1996	7/29/1996	7/30/1996	7/25/1996
		Sample Matrix	WS	WS	WS	WS	WS
		Sample Type Code	N	N	N	N	N
Chemical Name	CAS No	Unit					
4-Nitrophenol	100-02-7	ug/L	< 12 U	< 12 U	< 12 U	< 12 U	< 12 U
Acenaphthene	83-32-9	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Acenaphthylene	208-96-8	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Aniline	62-53-3	ug/L	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
Anthracene	120-12-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Benz(a)anthracene	56-55-3	ug/L	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Benzo(a)pyrene	50-32-8	ug/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
Benzo(b)fluoranthene	205-99-2	ug/L	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U
Benzo(g,h,i)perylene	191-24-2	ug/L	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U
Benzo(k)fluoranthene	207-08-9	ug/L	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U
Benzoic Acid	65-85-0	ug/L	< 13 U	< 13 U	< 13 U	< 13 U	< 13 U
Benzyl alcohol	100-51-6	ug/L	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U
bis(2-Chloroethoxy)methane	111-91-1	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
bis(2-Chloroethyl)ether	111-44-4	ug/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
bis(2-Chloroisopropyl)ether	39638-32-9	ug/L	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Butylbenzyl phthalate	85-68-7	ug/L	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Carbazole	86-74-8	ug/L	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Chrysene	218-01-9	ug/L	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U
Dibenz(a,h)anthracene	53-70-3	ug/L	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U
Dibenzofuran	132-64-9	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Diethylphthalate	84-66-2	ug/L	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Dimethylphthalate	131-11-3	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
di-n-Butylphthalate	84-74-2	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
di-n-Octylphthalate	117-84-0	ug/L	< 15 U	< 15 U	< 15 U	< 15 U	< 15 U
Diphenylamine	122-39-4	ug/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoranthene	206-44-0	ug/L	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U
Fluorene	86-73-7	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
Hexachlorobenzene	118-74-1	ug/L	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Hexachlorobutadiene	87-68-3	ug/L	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Hexachlorocyclopentadiene	77-47-4	ug/L	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Hexachloroethane	67-72-1	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
Indeno(1,2,3-c,d)pyrene	193-39-5	ug/L	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Isophorone	78-59-1	ug/L	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Naphthalene	91-20-3	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
n-Nitroso-di-n-propylamine	621-64-7	ug/L	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U

Table A-13
Historical Analytical Results for Surface Water Samples at PICA 079 Site 156

		Site Name	156	156	156	156	156
		Location ID	I-156-SW-001	I-156-SW-002	I-156-SW-003	I-156-SW-004	I-156-SW-005
		Sample ID	156SW-1(19960723)	156SW-2(19960723)	156SW-3(19960729)	156SW-4(19960730)	156SW-5(19960725)
		Depth Interval					
		Sample Date	7/23/1996	7/23/1996	7/29/1996	7/30/1996	7/25/1996
		Sample Matrix	WS	WS	WS	WS	WS
		Sample Type Code	N	N	N	N	N
Chemical Name	CAS No	Unit					
n-Nitrosodiphenylamine	86-30-6	ug/L	< 3 U	< 3 U	< 3 U	< 3 U	< 3 U
Pentachlorophenol	87-86-5	ug/L	< 0.042 R	< 0.042 R	< 0.042 U	< 0.042 U	< 0.042 R
Phenanthrene	85-01-8	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Phenol	108-95-2	ug/L	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U
Pyrene	129-00-0	ug/L	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
WetChem							
Ammonia	7664-41-7	ug/L	125	131	72.8	82.9	129
Chloride	16887-00-6	ug/L	22000	22000	22000	22000	23100
Cyanide	57-12-5	ug/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoride	16984-48-8	ug/L	< 1230 U	< 1230 U	< 1230 U	< 1230 U	< 1230 U
Nitrate/Nitrite	Nitrate/Nitrite	ug/L	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
Phosphate	14265-44-2	ug/L	28	28.4	18.2	23.5	26.2
Sulfate	14808-79-8	ug/L	< 10000 U	< 10000 U	< 10000 U	< 10000 U	< 10000 U
Sulfide	18496-25-8	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U

Notes:

LOC - Level of Concern

ug/L - micrograms per liter

U - Non-detect at the specified reporting limit

J - Estimated concentration

R - Rejected

Table A-14
Historical Analytical Results for Sediment Samples at PICA 079 Site 157

		Site Name	157	157	157	157	157	157
		Location ID	I-157-SD-001	I-157-SD-002	I-157-SD-002	I-157-SD-003	I-157-SD-004	I-157-SD-005
		Sample ID	157SD-1(0-1)	157SD-2(0-1)	157SD-2(0-0.5)	157SD-3(0-1)	157SD-4(0-1)	157SD-5(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1	0 - 1	0 - 1
		Sample Date	7/31/1996	7/17/1996	10/14/1998	7/15/1996	8/16/2002	8/16/2002
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Explosives								
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.488 U	< 0.488 U		< 0.488 U	< 0.25 U	< 0.25 U
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.496 U	< 0.496 U		< 0.496 U	< 0.25 U	< 0.25 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.456 U	< 0.456 U		< 0.456 U	< 0.25 U	< 0.25 U
2-amino-4,6-Dinitrotoluene	35572-78-2	mg/kg					< 0.25 U	< 0.25 U
2-Nitrotoluene	88-72-2	mg/kg					< 0.25 U	< 0.25 U
3-Nitrotoluene	99-08-1	mg/kg					< 0.25 U	< 0.25 U
4-amino-2,6-Dinitrotoluene	19406-51-0	mg/kg					< 0.25 U	< 0.25 U
4-Nitrotoluene	99-99-0	mg/kg					< 0.25 U	< 0.25 U
HMX	2691-41-0	mg/kg	< 0.666 U	0.87		< 0.666 U	< 0.5 U	< 0.5 U
Nitrobenzene	98-95-3	mg/kg	< 2.41 U	< 2.41 U		< 2.41 U	< 0.58 U	< 0.44 U
Nitrobenzene	98-95-3	mg/kg					< 0.25 U	< 0.25 U
Nitrocellulose	9004-70-0	mg/kg	< 10.4 U	< 10.4 U		< 10.4 U		
Nitroglycerin	55-63-0	mg/kg	< 4 U	< 4 U		< 4 U		
Nitroguanidine	556-88-7	mg/kg	< 0.475 U	< 0.475 U		< 0.475 U		
PETN	78-11-5	mg/kg	< 4 U	< 4 U		< 4 U		
Picric Acid	88-89-1	mg/kg	< 0.108 U	< 0.108 U		< 0.108 U		
RDX	121-82-4	mg/kg	< 0.587 U	< 0.587 U		< 0.587 U	< 0.5 U	< 0.5 U
Tetrazene	14097-21-3	mg/kg	< 1.19 U	< 1.19 U		< 1.19 U		
Tetryl	479-45-8	mg/kg	< 0.731 U	< 0.731 U		< 0.731 U	< 0.65 U	< 0.65 U
Explosives / SVOC								
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.424 U	< 0.424 U		< 0.424 U	< 0.25 U	< 0.25 U
2,4-Dinitrotoluene	121-14-2	mg/kg					< 0.58 U	< 0.44 U
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.524 U	< 0.524 U		< 0.524 U	< 0.58 U	< 0.25 U
2,6-Dinitrotoluene	606-20-2	mg/kg					< 0.25 U	< 0.44 U
Metals								
Aluminum	7429-90-5	mg/kg	11900	5480		7240	8420	4580
Antimony	7440-36-0	mg/kg	< 0.1 U	< 0.1 U		< 0.1 U	< 1.8 U	< 1.3 U
Arsenic	7440-38-2	mg/kg	4.21	12.6		3.47	3.1	2.2
Barium	7440-39-3	mg/kg	55.9	96.6		37.9	54.4	28.5
Beryllium	7440-41-7	mg/kg	0.95	< 0.5 U		< 0.5 U	< 0.88 U	< 0.67 U
Boron	7440-42-8	mg/kg	11.7	< 5.91 U		< 5.91 U		
Cadmium	7440-43-9	mg/kg	< 0.7 U	< 0.7 U		< 0.7 U	0.29 J	< 0.27 U
Calcium	7440-70-2	mg/kg	1100	405		350	1860	335 J

Table A-14
Historical Analytical Results for Sediment Samples at PICA 079 Site 157

		Site Name	157	157	157	157	157	157
		Location ID	I-157-SD-001	I-157-SD-002	I-157-SD-002	I-157-SD-003	I-157-SD-004	I-157-SD-005
		Sample ID	157SD-1(0-1)	157SD-2(0-1)	157SD-2(0-0.5)	157SD-3(0-1)	157SD-4(0-1)	157SD-5(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1	0 - 1	0 - 1
		Sample Date	7/31/1996	7/17/1996	10/14/1998	7/15/1996	8/16/2002	8/16/2002
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Chromium	7440-47-3	mg/kg	17.7	9.02		9.21	11.7	6.6
Cobalt	7440-48-4	mg/kg	8.01	4.54		4.4	6.3 J	5.3 J
Copper	7440-50-8	mg/kg	16.4	12.8		14.1	27.7 J	12.9 J
Iron	7439-89-6	mg/kg	25800	9510		11300	13100	12100
Lead	7439-92-1	mg/kg	44.1	12.2		20.3	17.8	7
Magnesium	7439-95-4	mg/kg	10300	1660		1230	1560	1370
Manganese	7439-96-5	mg/kg	162	62.5		62	126 J	137 J
Mercury	7439-97-6	mg/kg	1.3	0.1		0.19	0.44	0.21
Nickel	7440-02-0	mg/kg	15.7	10		10.5	12.1	8.5
Potassium	7440-09-7	mg/kg	4020	326		201	381 J	341 J
Selenium	7782-49-2	mg/kg	< 0.25 U	0.56		0.65	< 0.88 U	< 0.67 U
Silver	7440-22-4	mg/kg	< 0.589 U	< 0.589 U		< 0.589 U	1.5	< 0.67 U
Sodium	7440-23-5	mg/kg	495	460		424	< 876 U	< 669 U
Strontium	7440-24-6	mg/kg	8.79	8.98		9.45		
Thallium	7440-28-0	mg/kg	< 0.1 U	< 0.1 U		0.16	< 1.8 U	0.97 J
Titanium	7440-32-6	mg/kg	299	257		278		
Vanadium	7440-62-2	mg/kg	24.3	14.8		13.7	15.1	9.9
Zinc	7440-66-6	mg/kg	133	31.3		38.7	59.4	31
Zirconium	7440-67-7	mg/kg	8.95	4.45		3.85		
Pesticides								
Mirex	2385-85-5	mg/kg	< 0.25 U					
SVOC								
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	< 0.24 U					
1,2,4-Trichlorobenzene	120-82-1	mg/kg	< 0.04 U				< 0.58 U	< 0.44 U
1,2-Dichlorobenzene	95-50-1	mg/kg	< 0.11 U				< 0.58 U	< 0.44 U
1,3-Dichlorobenzene	541-73-1	mg/kg	< 0.13 U				< 0.58 U	< 0.44 U
1,4-Dichlorobenzene	106-46-7	mg/kg	< 0.098 U				< 0.58 U	< 0.44 U
2,4,5-Trichlorophenol	95-95-4	mg/kg	< 0.1 U				< 0.58 U	< 0.44 U
2,4,6-Trichlorophenol	88-06-2	mg/kg	< 0.17 U				< 0.58 U	< 0.44 U
2,4-Dichlorophenol	120-83-2	mg/kg	< 0.18 U				< 0.58 U	< 0.44 U
2,4-Dimethylphenol	105-67-9	mg/kg	< 0.69 U				< 0.58 U	< 0.44 U
2,4-Dinitrophenol	51-28-5	mg/kg	< 1.2 U				< 2.8 U	< 2.1 U
2-Chloronaphthalene	91-58-7	mg/kg	< 0.036 U				0.11 J	< 0.44 U
2-Chlorophenol	95-57-8	mg/kg	< 0.06 U				< 0.58 U	< 0.44 U

Table A-14
Historical Analytical Results for Sediment Samples at PICA 079 Site 157

		Site Name	157	157	157	157	157	157
		Location ID	I-157-SD-001	I-157-SD-002	I-157-SD-002	I-157-SD-003	I-157-SD-004	I-157-SD-005
		Sample ID	157SD-1(0-1)	157SD-2(0-1)	157SD-2(0-0.5)	157SD-3(0-1)	157SD-4(0-1)	157SD-5(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1	0 - 1	0 - 1
		Sample Date	7/31/1996	7/17/1996	10/14/1998	7/15/1996	8/16/2002	8/16/2002
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
2-Methylnaphthalene	91-57-6	mg/kg	< 0.049 U				< 0.58 U	< 0.44 U
2-Methylphenol	95-48-7	mg/kg	< 0.029 U				< 0.58 U	< 0.44 U
2-Nitroaniline	88-74-4	mg/kg	< 0.062 U				< 2.8 U	< 2.1 U
2-Nitrophenol	88-75-5	mg/kg	< 0.14 U				< 0.58 U	< 0.44 U
3,3'-Dichlorobenzidine	91-94-1	mg/kg	< 6.3 U				< 2.8 U	< 2.1 U
3-Nitroaniline	99-09-2	mg/kg	< 0.45 U				< 2.8 U	< 2.1 U
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg	< 0.55 U				< 2.8 U	< 2.1 U
4-Bromophenyl phenyl ether	101-55-3	mg/kg	< 0.033 U				< 0.58 U	< 0.44 U
4-Chloro-3-methylphenol	59-50-7	mg/kg	< 0.095 U				< 0.58 U	< 0.44 U
4-Chloroaniline	106-47-8	mg/kg	< 0.81 U				< 0.58 U	< 0.44 U
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	< 0.033 U				< 0.58 U	< 0.44 U
4-Methylphenol	106-44-5	mg/kg	< 0.24 U#				< 0.58 U#	< 0.44 U#
4-Nitroaniline	100-01-6	mg/kg	< 0.41 U				< 2.8 U	< 2.1 U
4-Nitrophenol	100-02-7	mg/kg	< 1.4 U				< 2.8 U	< 2.1 U
Acenaphthene	83-32-9	mg/kg	< 0.036 U				< 0.58 U	< 0.44 U
Acenaphthylene	208-96-8	mg/kg	< 0.033 U				< 0.58 U	< 0.44 U
Aniline	62-53-3	mg/kg	< 0.65 U				< 0.58 U	< 0.44 U
Anthracene	120-12-7	mg/kg	< 0.033 U				< 0.58 U	< 0.44 U
Benz(a)anthracene	56-55-3	mg/kg	< 0.17 U				< 0.58 U	< 0.44 U
Benzo(a)pyrene	50-32-8	mg/kg	< 0.25 U				< 0.58 U	< 0.44 U
Benzo(b)fluoranthene	205-99-2	mg/kg	< 0.21 U				< 0.58 U	< 0.44 U
Benzo(g,h,i)perylene	191-24-2	mg/kg	< 0.25 U				< 0.58 U	< 0.44 U
Benzo(k)fluoranthene	207-08-9	mg/kg	< 0.066 U				< 0.58 U	< 0.44 U
Benzyl alcohol	100-51-6	mg/kg	< 0.19 U					
bis(2-Chloroethoxy)methane	111-91-1	mg/kg	< 0.059 U				< 0.58 U	< 0.44 U
bis(2-Chloroethyl)ether	111-44-4	mg/kg	< 0.033 U				< 0.58 U	< 0.44 U
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg	< 0.2 U				< 0.58 U	< 0.44 U
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	< 0.62 U				< 0.58 U	< 0.44 U
Butylbenzyl phthalate	85-68-7	mg/kg	< 0.17 U				< 0.58 U	< 0.44 U
Carbazole	86-74-8	mg/kg	< 0.14 U				< 0.58 U	< 0.44 U
Chrysene	218-01-9	mg/kg	< 0.12 U				< 0.58 U	< 0.44 U
Dibenz(a,h)anthracene	53-70-3	mg/kg	< 0.21 U				< 0.58 U	< 0.44 U
Dibenzofuran	132-64-9	mg/kg	< 0.035 U				< 0.58 U	< 0.44 U
Diethylphthalate	84-66-2	mg/kg	< 0.24 U				< 0.58 U	< 0.44 U

Table A-14
Historical Analytical Results for Sediment Samples at PICA 079 Site 157

		Site Name	157	157	157	157	157	157
		Location ID	I-157-SD-001	I-157-SD-002	I-157-SD-002	I-157-SD-003	I-157-SD-004	I-157-SD-005
		Sample ID	157SD-1(0-1)	157SD-2(0-1)	157SD-2(0-0.5)	157SD-3(0-1)	157SD-4(0-1)	157SD-5(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1	0 - 1	0 - 1
		Sample Date	7/31/1996	7/17/1996	10/14/1998	7/15/1996	8/16/2002	8/16/2002
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Dimethylphthalate	131-11-3	mg/kg	< 0.17 U				< 0.58 U	< 0.44 U
di-n-Butylphthalate	84-74-2	mg/kg	< 0.061 U				< 0.58 U	< 0.44 U
di-n-Octylphthalate	117-84-0	mg/kg	< 0.19 U				< 0.58 U	< 0.44 U
Diphenylamine	122-39-4	mg/kg	< 0.13 U				< 0.58 U	< 0.44 U
Fluoranthene	206-44-0	mg/kg	< 0.068 U				< 0.58 U	< 0.44 U
Fluorene	86-73-7	mg/kg	< 0.033 U				< 0.58 U	< 0.44 U
Hexachlorobenzene	118-74-1	mg/kg	< 0.033 U				< 0.58 U	< 0.44 U
Hexachlorobutadiene	87-68-3	mg/kg	< 0.23 U				< 0.58 U	< 0.44 U
Hexachlorocyclopentadiene	77-47-4	mg/kg	< 6.2 U				< 2.8 U	< 2.1 U
Hexachloroethane	67-72-1	mg/kg	< 0.15 U				< 0.58 U	< 0.44 U
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	< 0.29 U				< 0.58 U	< 0.44 U
Isophorone	78-59-1	mg/kg	< 0.033 U				< 0.58 U	< 0.44 U
Naphthalene	91-20-3	mg/kg	< 0.037 U				0.06 J	< 0.44 U
n-Nitroso-di-n-propylamine	621-64-7	mg/kg	< 0.2 U				< 0.58 U	< 0.44 U
n-Nitrosodiphenylamine	86-30-6	mg/kg	< 0.19 U				< 0.58 U	< 0.44 U
Pentachlorophenol	87-86-5	mg/kg	< 1.3 U				< 0.58 U	< 0.44 U
Phenanthrene	85-01-8	mg/kg	< 0.033 U				< 0.58 U	< 0.44 U
Phenol	108-95-2	mg/kg	< 0.11 U				< 0.58 U	< 0.44 U
Pyrene	129-00-0	mg/kg	< 0.033 U				< 0.58 U	< 0.44 U
VOC								
1,1,1-Trichloroethane	71-55-6	mg/kg	< 0.44 U					
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	mg/kg	< 0.82 U					
1,1,2-Trichloroethane	79-00-5	mg/kg	< 0.54 U					
1,1-Dichloroethane	75-34-3	mg/kg	< 0.23 U					

Table A-14
Historical Analytical Results for Sediment Samples at PICA 079 Site 157

		Site Name	157	157	157	157	157	157
		Location ID	I-157-SD-001	I-157-SD-002	I-157-SD-002	I-157-SD-003	I-157-SD-004	I-157-SD-005
		Sample ID	157SD-1(0-1)	157SD-2(0-1)	157SD-2(0-0.5)	157SD-3(0-1)	157SD-4(0-1)	157SD-5(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1	0 - 1	0 - 1
		Sample Date	7/31/1996	7/17/1996	10/14/1998	7/15/1996	8/16/2002	8/16/2002
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
1,1-Dichloroethene	75-35-4	mg/kg	< 0.39 U					
1,2-Dichloroethane	107-06-2	mg/kg	< 0.17 U					
1,2-Dichloroethene (total)	540-59-0	mg/kg	< 0.3 U					
1,2-Dichloropropane	78-87-5	mg/kg	< 0.29 U					
2-Butanone	78-93-3	mg/kg	< 0.07 U					
2-Hexanone	591-78-6	mg/kg	< 0.032 U					
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	< 0.027 U					
Acetone	67-64-1	mg/kg	< 0.017 U					
Acetonitrile	75-05-8	mg/kg	< 0.23 U					
Benzene	71-43-2	mg/kg	< 0.15 U					
Bromodichloromethane	75-27-4	mg/kg	< 0.29 U					
Bromoform	75-25-2	mg/kg	< 0.69 U					
Bromomethane	74-83-9	mg/kg	< 0.57 U					
Carbon disulfide	75-15-0	mg/kg	< 0.44 U					
Carbon tetrachloride	56-23-5	mg/kg	< 0.7 U					
Chlorobenzene	108-90-7	mg/kg	< 0.086 U					
Chloroethane	75-00-3	mg/kg	< 0.012 U					
Chloroform	67-66-3	mg/kg	< 0.087 U					
Chloromethane	74-87-3	mg/kg	< 0.88 U					
cis-1,3-Dichloropropene	10061-01-5	mg/kg	< 0.32 U					
Dibromochloromethane	124-48-1	mg/kg	< 0.31 U					
Dichlorodifluoromethane	75-71-8	mg/kg	< 0.014 U					
Ethanol	64-17-5	mg/kg	< 3.7 U					
Ethyl benzene	100-41-4	mg/kg	< 0.17 U					
Isopropanol	67-63-0	mg/kg	< 0.79 U					
Methylene chloride	75-09-2	mg/kg	< 0.012 U					
Styrene	100-42-5	mg/kg	< 0.26 U					
tert-Butylalcohol	75-65-0	mg/kg	< 0.5 U					
Tetrachloroethene	127-18-4	mg/kg	< 0.081 U					
Toluene	108-88-3	mg/kg	0.14					
trans-1,3-Dichloropropene	10061-02-6	mg/kg	< 0.28 U					
Trichloroethene	79-01-6	mg/kg	< 0.28 U					
Trichlorofluoromethane	75-69-4	mg/kg	0.02					
Vinyl acetate	108-05-4	mg/kg	< 0.032 U					

Table A-14
Historical Analytical Results for Sediment Samples at PICA 079 Site 157

		Site Name	157	157	157	157	157	157
		Location ID	I-157-SD-001	I-157-SD-002	I-157-SD-002	I-157-SD-003	I-157-SD-004	I-157-SD-005
		Sample ID	157SD-1(0-1)	157SD-2(0-1)	157SD-2(0-0.5)	157SD-3(0-1)	157SD-4(0-1)	157SD-5(0-1)
		Depth Interval	0 - 1	0 - 1	0 - .5	0 - 1	0 - 1	0 - 1
		Sample Date	7/31/1996	7/17/1996	10/14/1998	7/15/1996	8/16/2002	8/16/2002
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Vinyl chloride	75-01-4	mg/kg	< 0.62 U					
Xylenes	1330-20-7	mg/kg	< 0.15 U					
WetChem								
% Solids	%Solid	%					57.1	74.7
Ammonia	7664-41-7	mg/kg	37.6	59.4		37.6		
Chloride	16887-00-6	mg/kg	12.2	< 6.05 U		< 6.05 U		
Cyanide	57-12-5	mg/kg	< 0.92 U	< 0.92 U		< 0.92 U		
Fluoride	16984-48-8	mg/kg	< 3.62 U	6.8		9.54		
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	< 0.6 UJ	< 0.6 U		< 0.6 U		
Phosphate	14265-44-2	mg/kg	< 7.49 U	180		200		
Sulfate	14808-79-8	mg/kg	< 90.4 U	< 90.4 U		< 90.4 U		
Sulfide	18496-25-8	mg/kg	150	14.2		16.9		
Total organic carbon	TOC	mg/kg	6130	158000	52600	6950		

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-15
Historical Analytical Results for Surface Water at PICA 079 Site 157

		Site Name	157	157	157
		Location ID	I-157-SW-001	I-157-SW-002	I-157-SW-003
		Sample ID	157SW-1(19960731)	157SW-2(19960717)	157SW-3(19960715)
		Depth Interval			
		Sample Date	7/31/1996	7/17/1996	7/15/1996
		Sample Matrix	WS	WS	WS
Chemical Name	CAS No	Unit			
Explosives					
1,3,5-Trinitrobenzene	99-35-4	ug/l	< 0.449 U	< 0.449 U	< 0.449 U
1,3-Dinitrobenzene	99-65-0	ug/l	< 0.611 U	< 0.611 U	< 0.611 U
2,4,6-Trinitrotoluene	118-96-7	ug/l	< 0.635 U	< 0.635 U	< 0.635 U
HMX	2691-41-0	ug/l	< 1.21 U	6.4	< 1.21 U
Nitrobenzene	98-95-3	ug/l	< 0.645 U	< 0.645 U	< 0.645 U
Nitrocellulose	9004-70-0	ug/l	< 553 U	< 553 UJ	< 553 UJ
Nitroglycerin	55-63-0	ug/l	< 10 UJ	< 10 U	< 10 U
Nitroguanidine	556-88-7	ug/l	< 30.9 U	< 30.9 U	< 30.9 U
PETN	78-11-5	ug/l	< 20 U	< 20 U	< 20 U
Picric Acid	88-89-1	ug/l	< 0.27 U	< 0.27 UJ	< 0.27 U
RDX	121-82-4	ug/l	< 1.17 U	6.79	2.12
Tetrazene	14097-21-3	ug/l	< 40 U	< 40 U	< 40 U
Tetryl	479-45-8	ug/l	< 1.56 U	< 1.56 U	< 1.56 U
Explosives / SVOC					
2,4-Dinitrotoluene	121-14-2	ug/l	< 0.0637 U	< 0.0637 U	< 0.0637 U
2,6-Dinitrotoluene	606-20-2	ug/l	< 0.0738 U	< 0.0738 U	< 0.0738 U
Metals					
Aluminum	7429-90-5	ug/l	62.8	52.4	85
Antimony	7440-36-0	ug/l	< 1 U	< 1 U	< 1 U
Arsenic	7440-38-2	ug/l	< 1 U	< 1 U	< 1 U
Barium	7440-39-3	ug/l	17.5	19.4	17.2
Beryllium	7440-41-7	ug/l	< 5 U	< 5 U	< 5 U
Boron	7440-42-8	ug/l	262	< 50 U	< 50 U
Cadmium	7440-43-9	ug/l	< 3.01 U	< 3.01 U	< 3.01 U
Calcium	7440-70-2	ug/l	6500	6910	6490
Chromium	7440-47-3	ug/l	< 6.96 U	< 6.96 U	< 6.96 U
Cobalt	7440-48-4	ug/l	< 50 U	< 50 U	< 50 U
Copper	7440-50-8	ug/l	< 5 U	< 5 U	< 5 U
Iron	7439-89-6	ug/l	412	268	352
Lead	7439-92-1	ug/l	< 1 U	1.03	< 1 U

Table A-15
Historical Analytical Results for Surface Water at PICA 079 Site 157

		Site Name	157	157	157
		Location ID	I-157-SW-001	I-157-SW-002	I-157-SW-003
		Sample ID	157SW-1(19960731)	157SW-2(19960717)	157SW-3(19960715)
		Depth Interval			
		Sample Date	7/31/1996	7/17/1996	7/15/1996
		Sample Matrix	WS	WS	WS
Chemical Name	CAS No	Unit			
Magnesium	7439-95-4	ug/l	2520	2550	2440
Manganese	7439-96-5	ug/l	74.2	35.1	63.2
Mercury	7439-97-6	ug/l	< 0.243 U	< 0.243 U	< 0.243 U
Nickel	7440-02-0	ug/l	< 7.11 U	< 7.11 U	< 7.11 U
Potassium	7440-09-7	ug/l	< 1000 U	< 1000 U	< 1000 U
Selenium	7782-49-2	ug/l	< 2 U	< 2 U	< 2 U
Silver	7440-22-4	ug/l	< 4.42 U	< 4.42 U	< 4.42 U
Sodium	7440-23-5	ug/l	10700	11600	11100
Strontium	7440-24-6	ug/l	28.5	31.3	29.6
Thallium	7440-28-0	ug/l	< 1 U	< 1 U	< 1 U
Titanium	7440-32-6	ug/l	< 2 U	< 2 U	< 2 U
Vanadium	7440-62-2	ug/l	< 4.69 U	< 4.69 U	< 4.69 U
Zinc	7440-66-6	ug/l	< 35.8 U	< 35.8 U	< 35.8 U
Zirconium	7440-67-7	ug/l	< 1 U	< 1 U	< 1 U
Pesticides					
Mirex	2385-85-5	ug/l	< 0.025 U		
SVOC					
1,1,2,2-Tetrachloroethane	79-34-5	ug/l	< 0.51 U		
1,2,4-Trichlorobenzene	120-82-1	ug/l	< 1.8 U		
1,2-Dichlorobenzene	95-50-1	ug/l	< 1.7 U		
1,3-Dichlorobenzene	541-73-1	ug/l	< 1.7 U		
1,4-Dichlorobenzene	106-46-7	ug/l	< 1.7 U		
2,4,5-Trichlorophenol	95-95-4	ug/l	< 5.2 U		
2,4,6-Trichlorophenol	88-06-2	ug/l	< 4.2 U		
2,4-Dichlorophenol	120-83-2	ug/l	< 2.9 U		
2,4-Dimethylphenol	105-67-9	ug/l	< 5.8 U		
2,4-Dinitrophenol	51-28-5	ug/l	< 21 U		
2-Chloronaphthalene	91-58-7	ug/l	< 0.5 U		
2-Chlorophenol	95-57-8	ug/l	< 0.99 U		
2-Methylnaphthalene	91-57-6	ug/l	< 1.7 U		

Table A-15
Historical Analytical Results for Surface Water at PICA 079 Site 157

		Site Name	157	157	157
		Location ID	I-157-SW-001	I-157-SW-002	I-157-SW-003
		Sample ID	157SW-1(19960731)	157SW-2(19960717)	157SW-3(19960715)
		Depth Interval			
		Sample Date	7/31/1996	7/17/1996	7/15/1996
		Sample Matrix	WS	WS	WS
Chemical Name	CAS No	Unit			
2-Methylphenol	95-48-7	ug/l	< 3.9 U		
2-Nitroaniline	88-74-4	ug/l	< 4.3 U		
2-Nitrophenol	88-75-5	ug/l	< 3.7 U		
3,3'-Dichlorobenzidine	91-94-1	ug/l	< 12 U		
3-Nitroaniline	99-09-2	ug/l	< 4.9 U		
4,6-dinitro-2-Methylphenol	534-52-1	ug/l	< 17 U		
4-Bromophenyl phenyl ether	101-55-3	ug/l	< 4.2 U		
4-Chloro-3-methylphenol	59-50-7	ug/l	< 4 U		
4-Chloroaniline	106-47-8	ug/l	< 7.3 U		
4-Chlorophenyl phenyl ether	7005-72-3	ug/l	< 5.1 U		
4-Methylphenol	106-44-5	ug/l	< 0.52 U#		
4-Nitroaniline	100-01-6	ug/l	< 5.2 U		
4-Nitrophenol	100-02-7	ug/l	< 12 U		
Acenaphthene	83-32-9	ug/l	< 1.7 U		
Acenaphthylene	208-96-8	ug/l	< 0.5 U		
Aniline	62-53-3	ug/l	< 4.4 U		
Anthracene	120-12-7	ug/l	< 0.5 U		
Benz(a)anthracene	56-55-3	ug/l	< 1.6 U		
Benzo(a)pyrene	50-32-8	ug/l	< 4.7 U		
Benzo(b)fluoranthene	205-99-2	ug/l	< 5.4 U		
Benzo(g,h,i)perylene	191-24-2	ug/l	< 6.1 U		
Benzo(k)fluoranthene	207-08-9	ug/l	< 0.87 U		
Benzoic Acid	65-85-0	ug/l	< 13 U		
Benzyl alcohol	100-51-6	ug/l	< 0.72 U		
bis(2-Chloroethoxy)methane	111-91-1	ug/l	< 1.5 U		
bis(2-Chloroethyl)ether	111-44-4	ug/l	< 1.9 U		
bis(2-Chloroisopropyl)ether	39638-32-9	ug/l	< 5.3 U		
bis(2-Ethylhexyl)phthalate	117-81-7	ug/l	< 4.8 U		
Butylbenzyl phthalate	85-68-7	ug/l	< 3.4 U		
Carbazole	86-74-8	ug/l	< 2 U		
Chrysene	218-01-9	ug/l	< 2.4 U		
Dibenz(a,h)anthracene	53-70-3	ug/l	< 6.5 U		

Table A-15
Historical Analytical Results for Surface Water at PICA 079 Site 157

		Site Name	157	157	157
		Location ID	I-157-SW-001	I-157-SW-002	I-157-SW-003
		Sample ID	157SW-1(19960731)	157SW-2(19960717)	157SW-3(19960715)
		Depth Interval			
		Sample Date	7/31/1996	7/17/1996	7/15/1996
		Sample Matrix	WS	WS	WS
Chemical Name	CAS No	Unit			
Dibenzofuran	132-64-9	ug/l	< 1.7 U		
Diethylphthalate	84-66-2	ug/l	< 2 U		
Dimethylphthalate	131-11-3	ug/l	< 1.5 U		
di-n-Butylphthalate	84-74-2	ug/l	< 3.7 U		
di-n-Octylphthalate	117-84-0	ug/l	< 15 U		
Diphenylamine	122-39-4	ug/l	< 2.5 U		
Fluoranthene	206-44-0	ug/l	< 3.3 U		
Fluorene	86-73-7	ug/l	< 3.7 U		
Hexachlorobenzene	118-74-1	ug/l	< 1.6 U		
Hexachlorobutadiene	87-68-3	ug/l	< 3.4 U		
Hexachlorocyclopentadiene	77-47-4	ug/l	< 8.6 U		
Hexachloroethane	67-72-1	ug/l	< 1.5 U		
Indeno(1,2,3-c,d)pyrene	193-39-5	ug/l	< 8.6 U		
Isophorone	78-59-1	ug/l	< 4.8 U		
Naphthalene	91-20-3	ug/l	< 0.5 U		
n-Nitroso-di-n-propylamine	621-64-7	ug/l	< 4.4 U		
n-Nitrosodiphenylamine	86-30-6	ug/l	< 3 U		
Pentachlorophenol	87-86-5	ug/l	< 0.042 U		
Phenanthrene	85-01-8	ug/l	< 0.5 U		
Phenol	108-95-2	ug/l	< 9.2 U		
Pyrene	129-00-0	ug/l	< 2.8 U		
VOC					
1,1,1-Trichloroethane	71-55-6	ug/l	< 0.5 U		
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/l	< 5 U		
1,1,2-Trichloroethane	79-00-5	ug/l	< 1.2 U		
1,1-Dichloroethane	75-34-3	ug/l	< 0.68 U		
1,1-Dichloroethene	75-35-4	ug/l	< 0.5 U		
1,2-Dichloroethane	107-06-2	ug/l	< 0.5 U		
1,2-Dichloroethene (total)	540-59-0	ug/l	< 0.5 U		
1,2-Dichloropropane	78-87-5	ug/l	< 0.5 U		
2-Butanone	78-93-3	ug/l	< 6.4 U		
2-Hexanone	591-78-6	ug/l	< 3.6 U		

Table A-15
Historical Analytical Results for Surface Water at PICA 079 Site 157

		Site Name	157	157	157
		Location ID	I-157-SW-001	I-157-SW-002	I-157-SW-003
		Sample ID	157SW-1(19960731)	157SW-2(19960717)	157SW-3(19960715)
		Depth Interval			
		Sample Date	7/31/1996	7/17/1996	7/15/1996
		Sample Matrix	WS	WS	WS
Chemical Name	CAS No	Unit			
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/l	< 3 U		
Acetone	67-64-1	ug/l	< 13 U		
Acetonitrile	75-05-8	ug/l	< 200 U		
Benzene	71-43-2	ug/l	< 0.5 U		
Bromodichloromethane	75-27-4	ug/l	< 0.59 U		
Bromoform	75-25-2	ug/l	< 2.6 U		
Bromomethane	74-83-9	ug/l	< 5.8 U		
Carbon disulfide	75-15-0	ug/l	< 0.5 U		
Carbon tetrachloride	56-23-5	ug/l	< 0.58 U		
Chlorobenzene	108-90-7	ug/l	< 0.5 U		
Chloroethane	75-00-3	ug/l	< 1.9 U		
Chloroform	67-66-3	ug/l	< 0.5 U		
Chloromethane	74-87-3	ug/l	< 3.2 U		
cis-1,3-Dichloropropene	10061-01-5	ug/l	< 0.58 U		
Dibromochloromethane	124-48-1	ug/l	< 0.67 U		
Dichlorodifluoromethane	75-71-8	ug/l	< 6.9 U		
Ethanol	64-17-5	ug/l	< 2000 U		
Ethyl benzene	100-41-4	ug/l	< 0.5 U		
Isopropanol	67-63-0	ug/l	< 400 U		
Methylene chloride	75-09-2	ug/l	< 2.3 U		
Styrene	100-42-5	ug/l	< 0.5 U		
tert-Butylalcohol	75-65-0	ug/l	< 500 U		
Tetrachloroethene	127-18-4	ug/l	< 1.6 U		
Toluene	108-88-3	ug/l	< 0.5 U		
trans-1,3-Dichloropropene	10061-02-6	ug/l	< 0.7 U		
Trichloroethene	79-01-6	ug/l	< 0.5 U		
Trichlorofluoromethane	75-69-4	ug/l	< 1.4 U		
Vinyl acetate	108-05-4	ug/l	< 8.3 U		
Vinyl chloride	75-01-4	ug/l	< 2.6 U		
Xylenes	1330-20-7	ug/l	< 0.84 U		

Table A-15
Historical Analytical Results for Surface Water at PICA 079 Site 157

		Site Name	157	157	157
		Location ID	I-157-SW-001	I-157-SW-002	I-157-SW-003
		Sample ID	157SW-1(19960731)	157SW-2(19960717)	157SW-3(19960715)
		Depth Interval			
		Sample Date	7/31/1996	7/17/1996	7/15/1996
		Sample Matrix	WS	WS	WS
Chemical Name	CAS No	Unit			
WetChem					
Ammonia	7664-41-7	ug/l	80.8	132	123
Chloride	16887-00-6	ug/l	22000	23100	24100
Cyanide	57-12-5	ug/l	< 2.5 U	< 2.5 U	< 2.5 U
Fluoride	16984-48-8	ug/l	< 1230 U	< 1230 U	< 1230 U
Nitrate/Nitrite	Nitrate/Nitrite	ug/l	< 10 U	< 10 U	< 10 U
Phosphate	14265-44-2	ug/l	15.1	19.9	51.4
Sulfate	14808-79-8	ug/l	< 10000 U	< 10000 U	< 10000 U
Sulfide	18496-25-8	ug/l	< 50 U	< 50 U	< 50 U

Notes:

LOC - Level of Concern

ug/L - micrograms per liter

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-16
Historical Analytical Results for Sediment Samples at PICA 085 Site 113

		Site Name	113	113	113	113	113	113	113
		Location ID	I-113-SD-001	I-113-SD-001	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-003
		Sample ID	113SD-1(0-1)	113SD-1(0-0.5)	113SD-2DUP(0-1)	113SD-2(0-1)	113SD-2(0-0.5)	113SD-2B(1-2)	113SD-3(0-1)
		Depth Interval	0 - 1	0 - .5	0 - 1	0 - 1	0 - .5	1 - 2	0 - 1
		Sample Date	8/2/1996	10/15/1998	8/1/1996	8/1/1996	10/15/1998	5/10/2001	8/1/1996
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	FD	N	N	N	N
Chemical Name	CAS No	Unit							
Explosives									
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.488 U		< 0.488 U	< 0.488 U			< 0.488 U
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.496 U		< 0.496 U	< 0.496 U			< 0.496 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.456 U		0.78	1.82			0.66
HMX	2691-41-0	mg/kg	< 0.666 U		< 0.666 U	< 0.666 U			< 0.666 U
Nitrobenzene	98-95-3	mg/kg	< 2.41 U		< 2.41 U	< 2.41 U			< 2.41 U
Nitrocellulose	9004-70-0	mg/kg	< 10.4 U		770	160			< 10.4 U
Nitroglycerin	55-63-0	mg/kg	< 4 U		< 4 U	< 4 U			< 4 U
Nitroguanidine	556-88-7	mg/kg	< 0.475 U		< 0.475 U	< 0.475 U			< 0.475 U
PETN	78-11-5	mg/kg	< 4 U		< 4 U	< 4 U			< 4 U
Picric Acid	88-89-1	mg/kg	< 0.108 U		< 0.108 U	< 0.108 U			< 0.108 U
RDX	121-82-4	mg/kg	< 0.587 U		< 0.587 U	< 0.587 U			< 0.587 U
Tetrazene	14097-21-3	mg/kg	< 1.19 U		< 1.19 U	< 1.19 U			< 1.19 U
Tetryl	479-45-8	mg/kg	< 0.731 U		< 0.731 U	< 0.731 U			< 0.731 U
Explosives / SVOC									
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.424 U		1.69	2.72			< 0.424 U
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.524 U		< 0.524 U	< 0.524 U			< 0.524 U
Metals									
Aluminum	7429-90-5	mg/kg	4670		4460	4730		5220	4210
Antimony	7440-36-0	mg/kg	12.2		0.71	0.52		< 1.2 R	< 0.1 U
Arsenic	7440-38-2	mg/kg	4.29		3.87	3.61		3.2	2.49
Barium	7440-39-3	mg/kg	18.7		51.1	51.7		57.2	37.8
Beryllium	7440-41-7	mg/kg	< 0.5 U		< 0.5 U	< 0.5 U		< 0.58 UJ	< 0.5 U
Boron	7440-42-8	mg/kg	< 5.91 U		< 5.91 U	< 5.91 U			< 5.91 U
Cadmium	7440-43-9	mg/kg	< 0.7 U		< 0.7 U	< 0.7 U		< 0.23 UJ	< 0.7 U
Calcium	7440-70-2	mg/kg	778		1490	2610		2490	562
Chromium	7440-47-3	mg/kg	19		12.9	7.91		12.8	14.7
Cobalt	7440-48-4	mg/kg	3.62		3.87	4.96		4.5 J	3.79
Copper	7440-50-8	mg/kg	18000		26.1	23.9		20.9 J	22.5
Iron	7439-89-6	mg/kg	12900		11800	13300		16600	11900
Lead	7439-92-1	mg/kg	284		207	125		153	54.1
Magnesium	7439-95-4	mg/kg	2010		1760	1830		1780 J	1470
Manganese	7439-96-5	mg/kg	93.8		195	268		< 1.7 R	172
Mercury	7439-97-6	mg/kg	21		0.34	0.34		0.19 J	0.24
Nickel	7440-02-0	mg/kg	8.81		7.85	9.38		8.4	9.06
Potassium	7440-09-7	mg/kg	450		266	315		357 J	347
Selenium	7782-49-2	mg/kg	0.36		< 0.25 U	< 0.25 U		< 0.58 U	< 0.25 U
Silver	7440-22-4	mg/kg	1.26		< 0.589 U	0.73		< 0.58 U	0.99
Sodium	7440-23-5	mg/kg	421		348	478		< 581 U	375

Table A-16
Historical Analytical Results for Sediment Samples at PICA 085 Site 113

		Site Name	113	113	113	113	113	113	113
		Location ID	I-113-SD-001	I-113-SD-001	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-003
		Sample ID	113SD-1(0-1)	113SD-1(0-0.5)	113SD-2DUP(0-1)	113SD-2(0-1)	113SD-2(0-0.5)	113SD-2B(1-2)	113SD-3(0-1)
		Depth Interval	0 - 1	0 - .5	0 - 1	0 - 1	0 - .5	1 - 2	0 - 1
		Sample Date	8/2/1996	10/15/1998	8/1/1996	8/1/1996	10/15/1998	5/10/2001	8/1/1996
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	FD	N	N	N	N
Chemical Name	CAS No	Unit							
Strontium	7440-24-6	mg/kg	6.52		24	16.7			10.4
Thallium	7440-28-0	mg/kg	< 0.1 U		< 0.1 U	< 0.1 U		< 1.2 U	< 0.1 U
Titanium	7440-32-6	mg/kg	190		282	202			164
Vanadium	7440-62-2	mg/kg	9.91		8.2	10.2		12.3	9.45
Zinc	7440-66-6	mg/kg	220		142	140		131	52.1
Zirconium	7440-67-7	mg/kg	4.5		6.28	4.1			6.14
Pesticides									
Mirex	2385-85-5	mg/kg	< 0.25 U		< 0.25 U	< 0.25 U			< 0.25 U
SVOC									
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	< 0.24 U		< 0.24 U	< 0.24 U			< 0.24 U
1,2,4-Trichlorobenzene	120-82-1	mg/kg	< 0.04 U		< 0.04 U	< 0.04 U			< 0.04 U
1,2-Dichlorobenzene	95-50-1	mg/kg	< 0.11 U		< 0.11 U	< 0.11 U			< 0.11 U
1,3-Dichlorobenzene	541-73-1	mg/kg	< 0.13 U		< 0.13 U	< 0.13 U			< 0.13 U
1,4-Dichlorobenzene	106-46-7	mg/kg	< 0.098 U		< 0.098 U	< 0.098 U			< 0.098 U
2,4,5-Trichlorophenol	95-95-4	mg/kg	< 0.1 U		< 0.1 U	< 0.1 U			< 0.1 U
2,4,6-Trichlorophenol	88-06-2	mg/kg	< 0.17 U		< 0.17 U	< 0.17 U			< 0.17 U
2,4-Dichlorophenol	120-83-2	mg/kg	< 0.18 U		< 0.18 U	< 0.18 U			< 0.18 U
2,4-Dimethylphenol	105-67-9	mg/kg	< 0.69 U		< 0.69 U	< 0.69 U			< 0.69 U
2,4-Dinitrophenol	51-28-5	mg/kg	< 1.2 U		< 1.2 U	< 1.2 U			< 1.2 U
2-Chloronaphthalene	91-58-7	mg/kg	< 0.036 U		< 0.036 U	< 0.036 U			< 0.036 U
2-Chlorophenol	95-57-8	mg/kg	< 0.06 U		< 0.06 U	< 0.06 U			< 0.06 U
2-Methylnaphthalene	91-57-6	mg/kg	< 0.049 U		< 0.049 U	< 0.049 U			< 0.049 U
2-Methylphenol	95-48-7	mg/kg	< 0.029 U		< 0.029 U	< 0.029 U			< 0.029 U
2-Nitroaniline	88-74-4	mg/kg	< 0.062 U		< 0.062 U	< 0.062 U			< 0.062 U
2-Nitrophenol	88-75-5	mg/kg	< 0.14 U		< 0.14 U	< 0.14 U			< 0.14 U
3,3'-Dichlorobenzidine	91-94-1	mg/kg	< 6.3 U		< 6.3 U	< 6.3 U			< 6.3 U
3-Nitroaniline	99-09-2	mg/kg	< 0.45 U		< 0.45 U	< 0.45 U			< 0.45 U
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg	< 0.55 U		< 0.55 U	< 0.55 U			< 0.55 U
4-Bromophenyl phenyl ether	101-55-3	mg/kg	< 0.033 U		< 0.033 U	< 0.033 U			< 0.033 U
4-Chloro-3-methylphenol	59-50-7	mg/kg	< 0.095 U		< 0.095 U	< 0.095 U			< 0.095 U
4-Chloroaniline	106-47-8	mg/kg	< 0.81 U		< 0.81 U	< 0.81 U			< 0.81 U
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	< 0.033 U		< 0.033 U	< 0.033 U			< 0.033 U
4-Methylphenol	106-44-5	mg/kg	< 0.24 U#		< 0.24 U#	< 0.24 U#			< 0.24 U#
4-Nitroaniline	100-01-6	mg/kg	< 0.41 U		< 0.41 U	< 0.41 U			< 0.41 U
4-Nitrophenol	100-02-7	mg/kg	< 1.4 U		< 1.4 U	< 1.4 U			< 1.4 U
Acenaphthene	83-32-9	mg/kg	< 0.036 U		< 0.036 U	< 0.036 U			< 0.036 U
Acenaphthylene	208-96-8	mg/kg	< 0.033 U		< 0.033 U	< 0.033 U			< 0.033 U
Aniline	62-53-3	mg/kg	< 0.65 U		< 0.65 U	< 0.65 U			< 0.65 U

Table A-16
Historical Analytical Results for Sediment Samples at PICA 085 Site 113

		Site Name	113	113	113	113	113	113	113
		Location ID	I-113-SD-001	I-113-SD-001	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-003
		Sample ID	113SD-1(0-1)	113SD-1(0-0.5)	113SD-2DUP(0-1)	113SD-2(0-1)	113SD-2(0-0.5)	113SD-2B(1-2)	113SD-3(0-1)
		Depth Interval	0 - 1	0 - .5	0 - 1	0 - 1	0 - .5	1 - 2	0 - 1
		Sample Date	8/2/1996	10/15/1998	8/1/1996	8/1/1996	10/15/1998	5/10/2001	8/1/1996
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	FD	N	N	N	N
Chemical Name	CAS No	Unit							
Anthracene	120-12-7	mg/kg	< 0.033 U		< 0.033 U	< 0.033 U			< 0.033 U
Benz(a)anthracene	56-55-3	mg/kg	< 0.17 U		< 0.17 U	< 0.17 U			< 0.17 U
Benzo(a)pyrene	50-32-8	mg/kg	< 0.25 U		< 0.25 U	< 0.25 U			< 0.25 U
Benzo(b)fluoranthene	205-99-2	mg/kg	< 0.21 U		< 0.21 U	< 0.21 U			< 0.21 U
Benzo(g,h,i)perylene	191-24-2	mg/kg	< 0.25 U		< 0.25 U	< 0.25 U			< 0.25 U
Benzo(k)fluoranthene	207-08-9	mg/kg	< 0.066 U		< 0.066 U	< 0.066 U			< 0.066 U
Benzyl alcohol	100-51-6	mg/kg	< 0.19 U		< 0.19 U	< 0.19 U			< 0.19 U
bis(2-Chloroethoxy)methane	111-91-1	mg/kg	< 0.059 U		< 0.059 U	< 0.059 U			< 0.059 U
bis(2-Chloroethyl)ether	111-44-4	mg/kg	< 0.033 U		< 0.033 U	< 0.033 U			< 0.033 U
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg	< 0.2 U		< 0.2 U	< 0.2 U			< 0.2 U
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	< 0.62 U		< 0.62 U	< 0.62 U			< 0.62 U
Butylbenzyl phthalate	85-68-7	mg/kg	< 0.17 U		< 0.17 U	< 0.17 U			< 0.17 U
Carbazole	86-74-8	mg/kg	< 0.14 U		< 0.14 U	< 0.14 U			< 0.14 U
Chrysene	218-01-9	mg/kg	< 0.12 U		< 0.12 U	< 0.12 U			< 0.12 U
Dibenz(a,h)anthracene	53-70-3	mg/kg	< 0.21 U		< 0.21 U	< 0.21 U			< 0.21 U
Dibenzofuran	132-64-9	mg/kg	< 0.035 U		< 0.035 U	< 0.035 U			< 0.035 U
Diethylphthalate	84-66-2	mg/kg	< 0.24 U		< 0.24 U	< 0.24 U			< 0.24 U
Dimethylphthalate	131-11-3	mg/kg	< 0.17 U		< 0.17 U	< 0.17 U			< 0.17 U
di-n-Butylphthalate	84-74-2	mg/kg	< 0.061 U		3.3	3.7			0.4
di-n-Octylphthalate	117-84-0	mg/kg	< 0.19 U		< 0.19 U	< 0.19 U			< 0.19 U
Diphenylamine	122-39-4	mg/kg	< 0.13 U		0.62	0.34			< 0.13 U
Fluoranthene	206-44-0	mg/kg	< 0.068 U		0.15	< 0.068 U			< 0.068 U
Fluorene	86-73-7	mg/kg	< 0.033 U		< 0.033 U	< 0.033 U			< 0.033 U
Hexachlorobenzene	118-74-1	mg/kg	< 0.033 U		< 0.033 U	< 0.033 U			< 0.033 U
Hexachlorobutadiene	87-68-3	mg/kg	< 0.23 U		< 0.23 U	< 0.23 U			< 0.23 U
Hexachlorocyclopentadiene	77-47-4	mg/kg	< 6.2 U		< 6.2 U	< 6.2 U			< 6.2 U
Hexachloroethane	67-72-1	mg/kg	< 0.15 U		< 0.15 U	< 0.15 U			< 0.15 U
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	< 0.29 U		< 0.29 U	< 0.29 U			< 0.29 U
Isophorone	78-59-1	mg/kg	< 0.033 U		< 0.033 U	< 0.033 U			< 0.033 U
Naphthalene	91-20-3	mg/kg	< 0.037 U		< 0.037 U	< 0.037 U			< 0.037 U
n-Nitroso-di-n-propylamine	621-64-7	mg/kg	< 0.2 U		< 0.2 U	< 0.2 U			< 0.2 U
n-Nitrosodiphenylamine	86-30-6	mg/kg	< 0.19 U		0.76	0.42			< 0.19 U
Pentachlorophenol	87-86-5	mg/kg	< 1.3 U		< 1.3 U	< 1.3 U			< 1.3 U
Phenanthrene	85-01-8	mg/kg	< 0.033 U		0.12	< 0.033 U			< 0.033 U
Phenol	108-95-2	mg/kg	< 0.11 U		< 0.11 U	< 0.11 U			< 0.11 U
Pyrene	129-00-0	mg/kg	< 0.033 U		0.14	< 0.033 U			< 0.033 U
VOC									
1,1,1-Trichloroethane	71-55-6	mg/kg	< 0.44 U		< 0.44 U	< 0.44 U			< 0.44 U

Table A-16
Historical Analytical Results for Sediment Samples at PICA 085 Site 113

		Site Name	113	113	113	113	113	113	113
		Location ID	I-113-SD-001	I-113-SD-001	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-003
		Sample ID	113SD-1(0-1)	113SD-1(0-0.5)	113SD-2DUP(0-1)	113SD-2(0-1)	113SD-2(0-0.5)	113SD-2B(1-2)	113SD-3(0-1)
		Depth Interval	0 - 1	0 - .5	0 - 1	0 - 1	0 - .5	1 - 2	0 - 1
		Sample Date	8/2/1996	10/15/1998	8/1/1996	8/1/1996	10/15/1998	5/10/2001	8/1/1996
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	FD	N	N	N	N
Chemical Name	CAS No	Unit							
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	mg/kg	< 0.82 U		< 0.82 U	< 0.82 U			< 0.82 U
1,1,2-Trichloroethane	79-00-5	mg/kg	< 0.54 U		< 0.54 U	< 0.54 U			< 0.54 U
1,1-Dichloroethane	75-34-3	mg/kg	< 0.23 U		< 0.23 U	< 0.23 U			< 0.23 U
1,1-Dichloroethene	75-35-4	mg/kg	< 0.39 U		< 0.39 U	< 0.39 U			< 0.39 U
1,2-Dichloroethane	107-06-2	mg/kg	< 0.17 U		< 0.17 U	< 0.17 U			< 0.17 U
1,2-Dichloroethene (total)	540-59-0	mg/kg	< 0.3 U		< 0.3 U	< 0.3 U			< 0.3 U
1,2-Dichloropropane	78-87-5	mg/kg	< 0.29 U		< 0.29 U	< 0.29 U			< 0.29 U
2-Butanone	78-93-3	mg/kg	< 0.07 U		< 0.07 U	< 0.07 U			< 0.07 U
2-Hexanone	591-78-6	mg/kg	< 0.032 U		< 0.032 U	< 0.032 U			< 0.032 U
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	< 0.027 U		< 0.027 U	< 0.027 U			< 0.027 U
Acetone	67-64-1	mg/kg	< 0.017 U		< 0.017 U	< 0.017 U			< 0.017 U
Acetonitrile	75-05-8	mg/kg	< 0.23 U		< 0.23 U	< 0.23 U			< 0.23 U
Benzene	71-43-2	mg/kg	< 0.15 U		< 0.15 U	< 0.15 U			< 0.15 U
Bromodichloromethane	75-27-4	mg/kg	< 0.29 U		< 0.29 U	< 0.29 U			< 0.29 U
Bromoform	75-25-2	mg/kg	< 0.69 U		< 0.69 U	< 0.69 U			< 0.69 U
Bromomethane	74-83-9	mg/kg	< 0.57 U		< 0.57 U	< 0.57 U			< 0.57 U
Carbon disulfide	75-15-0	mg/kg	< 0.44 U		< 0.44 U	< 0.44 U			< 0.44 U
Carbon tetrachloride	56-23-5	mg/kg	< 0.7 U		< 0.7 U	< 0.7 U			< 0.7 U
Chlorobenzene	108-90-7	mg/kg	< 0.086 U		< 0.086 U	< 0.086 U			< 0.086 U
Chloroethane	75-00-3	mg/kg	< 0.012 U		< 0.012 U	< 0.012 U			< 0.012 U
Chloroform	67-66-3	mg/kg	< 0.087 U		< 0.087 U	< 0.087 U			< 0.087 U
Chloromethane	74-87-3	mg/kg	< 0.88 U		< 0.88 U	< 0.88 U			< 0.88 U
cis-1,3-Dichloropropene	10061-01-5	mg/kg	< 0.32 U		< 0.32 U	< 0.32 U			< 0.32 U
Dibromochloromethane	124-48-1	mg/kg	< 0.31 U		< 0.31 U	< 0.31 U			< 0.31 U
Dichlorodifluoromethane	75-71-8	mg/kg	< 0.014 U		< 0.014 U	< 0.014 U			< 0.014 U
Ethanol	64-17-5	mg/kg	< 3.7 U		< 3.7 U	< 3.7 U			< 3.7 U
Ethyl benzene	100-41-4	mg/kg	< 0.17 U		< 0.17 U	< 0.17 U			< 0.17 U
Isopropanol	67-63-0	mg/kg	< 0.79 U		< 0.79 U	< 0.79 U			< 0.79 U
Methylene chloride	75-09-2	mg/kg	< 0.012 U		< 0.012 U	< 0.012 U			< 0.012 U
Styrene	100-42-5	mg/kg	< 0.26 U		< 0.26 U	< 0.26 U			< 0.26 U
tert-Butylalcohol	75-65-0	mg/kg	< 0.5 U		< 0.5 U	< 0.5 U			< 0.5 U
Tetrachloroethene	127-18-4	mg/kg	< 0.081 U		< 0.081 U	< 0.081 U			< 0.081 U
Toluene	108-88-3	mg/kg	< 0.078 U		< 0.078 U	< 0.078 U			< 0.078 U
trans-1,3-Dichloropropene	10061-02-6	mg/kg	< 0.28 U		< 0.28 U	< 0.28 U			< 0.28 U
Trichloroethene	79-01-6	mg/kg	< 0.28 U		< 0.28 U	< 0.28 U			< 0.28 U
Trichlorofluoromethane	75-69-4	mg/kg	< 0.59 U		0.77	0.96			< 0.59 U
Vinyl acetate	108-05-4	mg/kg	< 0.032 U		< 0.032 U	< 0.032 U			< 0.032 U
Vinyl chloride	75-01-4	mg/kg	< 0.62 U		< 0.62 U	< 0.62 U			< 0.62 U

Table A-16
Historical Analytical Results for Sediment Samples at PICA 085 Site 113

		Site Name	113	113	113	113	113	113	113
		Location ID	I-113-SD-001	I-113-SD-001	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-003
		Sample ID	113SD-1(0-1)	113SD-1(0-0.5)	113SD-2DUP(0-1)	113SD-2(0-1)	113SD-2(0-0.5)	113SD-2B(1-2)	113SD-3(0-1)
		Depth Interval	0 - 1	0 - .5	0 - 1	0 - 1	0 - .5	1 - 2	0 - 1
		Sample Date	8/2/1996	10/15/1998	8/1/1996	8/1/1996	10/15/1998	5/10/2001	8/1/1996
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	FD	N	N	N	N
Chemical Name	CAS No	Unit							
Xylenes	1330-20-7	mg/kg	< 0.15 U		< 0.15 U	< 0.15 U			< 0.15 U

Table A-16
Historical Analytical Results for Sediment Samples at PICA 085 Site 113

		Site Name	113	113	113	113	113	113	113
		Location ID	I-113-SD-001	I-113-SD-001	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-002	I-113-SD-003
		Sample ID	113SD-1(0-1)	113SD-1(0-0.5)	113SD-2DUP(0-1)	113SD-2(0-1)	113SD-2(0-0.5)	113SD-2B(1-2)	113SD-3(0-1)
		Depth Interval	0 - 1	0 - .5	0 - 1	0 - 1	0 - .5	1 - 2	0 - 1
		Sample Date	8/2/1996	10/15/1998	8/1/1996	8/1/1996	10/15/1998	5/10/2001	8/1/1996
		Sample Matrix	SE	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	FD	N	N	N	N
Chemical Name	CAS No	Unit							
WetChem									
% Solids	%Solid	%						86.1	
Ammonia	7664-41-7	mg/kg	32.4		46.6	39.9			32.2
Chloride	16887-00-6	mg/kg	< 6.05 U		< 6.05 U	< 6.05 U			< 6.05 U
Cyanide	57-12-5	mg/kg	< 0.92 U		< 0.92 U	< 0.92 U			< 0.92 U
Fluoride	16984-48-8	mg/kg	< 3.62 U		< 3.62 U	< 3.62 U			< 3.62 U
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	< 0.6 UJ		< 0.6 UJ	0.74 J			< 0.6 UJ
Phosphate	14265-44-2	mg/kg	110		210	120			83
Sulfate	14808-79-8	mg/kg	< 90.4 U		< 90.4 U	227			< 90.4 U
Sulfide	18496-25-8	mg/kg	< 6 U		22.5	28.5			< 6 U
Total organic carbon	TOC	mg/kg	6290	5790	14000	9860	5240		3670

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-17
Historical Analytical Results for Surface Water Samples at PICA 085 Site 113

		Site Name	113	113	113	113
		Location ID	I-113-SW-001	I-113-SW-002	I-113-SW-002	I-113-SW-003
		Sample ID	113SW-1(19960802)	113SW-2DUP(19960801)	113SW-2(19960801)	113SW-3(19960801)
		Depth Interval				
		Sample Date	8/2/1996	8/1/1996	8/1/1996	8/1/1996
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Explosives						
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.449 U	< 0.449 U	< 0.449 U	< 0.449 U
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.611 U	< 0.611 U	< 0.611 U	< 0.611 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.635 U	< 0.635 U	< 0.635 U	< 0.635 U
HMX	2691-41-0	ug/L	< 1.21 U	< 1.21 U	< 1.21 U	< 1.21 U
Nitrobenzene	98-95-3	ug/L	< 0.645 U	< 0.645 U	< 0.645 U	< 0.645 U
Nitrocellulose	9004-70-0	ug/L	< 553 U	< 553 U	< 553 U	< 553 U
Nitroglycerin	55-63-0	ug/L	< 10 U	< 10 UJ	< 10 UJ	< 10 UJ
Nitroguanidine	556-88-7	ug/L	< 30.9 U	< 30.9 U	< 30.9 U	< 30.9 U
PETN	78-11-5	ug/L	< 20 U	< 20 U	< 20 U	< 20 U
Picric Acid	88-89-1	ug/L	< 0.27 U	< 0.27 U	< 0.27 U	< 0.27 U
RDX	121-82-4	ug/L	< 1.17 U	< 1.17 U	< 1.17 U	< 1.17 U
Tetrazene	14097-21-3	ug/L	< 40 U	< 40 U	< 40 U	< 40 U
Tetryl	479-45-8	ug/L	< 1.56 U	< 1.56 U	< 1.56 U	< 1.56 U
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 0.0637 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.0738 U
Metals						
Aluminum	7429-90-5	ug/L	111	70.4	116	27.2
Antimony	7440-36-0	ug/L	< 1 U	< 1 U	< 1 U	< 1 U
Arsenic	7440-38-2	ug/L	< 1 U	< 1 U	< 1 U	< 1 U
Barium	7440-39-3	ug/L	20.4	20.7	20.7	19.1
Beryllium	7440-41-7	ug/L	< 5 U	< 5 U	< 5 U	< 5 U
Boron	7440-42-8	ug/L	< 50 U	< 50 U	< 50 U	< 50 U
Cadmium	7440-43-9	ug/L	< 3.01 U	< 3.01 U	< 3.01 U	< 3.01 U
Calcium	7440-70-2	ug/L	6860	7040	7630	6900
Chromium	7440-47-3	ug/L	< 6.96 U	< 6.96 U	< 6.96 U	< 6.96 U
Cobalt	7440-48-4	ug/L	< 50 U	< 50 U	< 50 U	< 50 U
Copper	7440-50-8	ug/L	8.03	< 5 U	< 5 U	< 5 U
Iron	7439-89-6	ug/L	739	591	564	486
Lead	7439-92-1	ug/L	8.55	2	3.12	< 1 U
Magnesium	7439-95-4	ug/L	2580	2600	2630	2560
Manganese	7439-96-5	ug/L	195	184	109	135
Mercury	7439-97-6	ug/L	0.54	< 0.243 U	< 0.243 U	< 0.243 U
Nickel	7440-02-0	ug/L	< 7.11 U	< 7.11 U	< 7.11 U	< 7.11 U
Potassium	7440-09-7	ug/L	< 1000 U	< 1000 U	< 1000 U	< 1000 U
Selenium	7782-49-2	ug/L	< 2 U	< 2 U	< 2 U	< 2 U

Table A-17
Historical Analytical Results for Surface Water Samples at PICA 085 Site 113

		Site Name	113	113	113	113
		Location ID	I-113-SW-001	I-113-SW-002	I-113-SW-002	I-113-SW-003
		Sample ID	113SW-1(19960802)	113SW-2DUP(19960801)	113SW-2(19960801)	113SW-3(19960801)
		Depth Interval				
		Sample Date	8/2/1996	8/1/1996	8/1/1996	8/1/1996
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Silver	7440-22-4	ug/L	< 4.42 U	< 4.42 U	< 4.42 U	< 4.42 U
Sodium	7440-23-5	ug/L	10600	10800	10900	10700
Strontium	7440-24-6	ug/L	30	31.9	36.1	32
Thallium	7440-28-0	ug/L	< 1 U	< 1 U	< 1 U	< 1 U
Titanium	7440-32-6	ug/L	4.5	4.14	2.68	< 2 U
Vanadium	7440-62-2	ug/L	< 4.69 U	< 4.69 U	< 4.69 U	< 4.69 U
Zinc	7440-66-6	ug/L	< 35.8 U	< 35.8 U	< 35.8 U	< 35.8 U
Zirconium	7440-67-7	ug/L	< 1 U	< 1 U	< 1 U	< 1 U
Pesticides						
Mirex	2385-85-5	ug/L	< 0.025 U	< 0.025 U	< 0.025 U	< 0.025 U
SVOC						
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	< 0.51 U	< 0.51 U	< 0.51 U	< 0.51 U
1,2,4-Trichlorobenzene	120-82-1	ug/L	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U
1,2-Dichlorobenzene	95-50-1	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,3-Dichlorobenzene	541-73-1	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
1,4-Dichlorobenzene	106-46-7	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2,4,5-Trichlorophenol	95-95-4	ug/L	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
2,4,6-Trichlorophenol	88-06-2	ug/L	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
2,4-Dichlorophenol	120-83-2	ug/L	< 2.9 U	< 2.9 U	< 2.9 U	< 2.9 U
2,4-Dimethylphenol	105-67-9	ug/L	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
2,4-Dinitrophenol	51-28-5	ug/L	< 21 U	< 21 U	< 21 U	< 21 U
2-Chloronaphthalene	91-58-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Chlorophenol	95-57-8	ug/L	< 0.99 U	< 0.99 U	< 0.99 U	< 0.99 U
2-Methylnaphthalene	91-57-6	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
2-Methylphenol	95-48-7	ug/L	< 3.9 U	< 3.9 U	< 3.9 U	< 3.9 U
2-Nitroaniline	88-74-4	ug/L	< 4.3 U	< 4.3 U	< 4.3 U	< 4.3 U
2-Nitrophenol	88-75-5	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
3,3'-Dichlorobenzidine	91-94-1	ug/L	< 12 U	< 12 U	< 12 U	< 12 U
3-Nitroaniline	99-09-2	ug/L	< 4.9 U	< 4.9 U	< 4.9 U	< 4.9 U
4,6-dinitro-2-Methylphenol	534-52-1	ug/L	< 17 U	< 17 U	< 17 U	< 17 U
4-Bromophenyl phenyl ether	101-55-3	ug/L	< 4.2 U	< 4.2 U	< 4.2 U	< 4.2 U
4-Chloro-3-methylphenol	59-50-7	ug/L	< 4 U	< 4 U	< 4 U	< 4 U
4-Chloroaniline	106-47-8	ug/L	< 7.3 U	< 7.3 U	< 7.3 U	< 7.3 U
4-Chlorophenyl phenyl ether	7005-72-3	ug/L	< 5.1 U	< 5.1 U	< 5.1 U	< 5.1 U
4-Methylphenol	106-44-5	ug/L	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 0.52 U#
4-Nitroaniline	100-01-6	ug/L	< 5.2 U	< 5.2 U	< 5.2 U	< 5.2 U
4-Nitrophenol	100-02-7	ug/L	< 12 U	< 12 U	< 12 U	< 12 U

Table A-17
Historical Analytical Results for Surface Water Samples at PICA 085 Site 113

		Site Name	113	113	113	113
		Location ID	I-113-SW-001	I-113-SW-002	I-113-SW-002	I-113-SW-003
		Sample ID	113SW-1(19960802)	113SW-2DUP(19960801)	113SW-2(19960801)	113SW-3(19960801)
		Depth Interval				
		Sample Date	8/2/1996	8/1/1996	8/1/1996	8/1/1996
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Acenaphthene	83-32-9	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Acenaphthylene	208-96-8	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Aniline	62-53-3	ug/L	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
Anthracene	120-12-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Benz(a)anthracene	56-55-3	ug/L	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Benzo(a)pyrene	50-32-8	ug/L	< 4.7 U	< 4.7 U	< 4.7 U	< 4.7 U
Benzo(b)fluoranthene	205-99-2	ug/L	< 5.4 U	< 5.4 U	< 5.4 U	< 5.4 U
Benzo(g,h,i)perylene	191-24-2	ug/L	< 6.1 U	< 6.1 U	< 6.1 U	< 6.1 U
Benzo(k)fluoranthene	207-08-9	ug/L	< 0.87 U	< 0.87 U	< 0.87 U	< 0.87 U
Benzoic Acid	65-85-0	ug/L	< 13 U	< 13 U	< 13 U	< 13 U
Benzyl alcohol	100-51-6	ug/L	< 0.72 U	< 0.72 U	< 0.72 U	< 0.72 U
bis(2-Chloroethoxy)methane	111-91-1	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
bis(2-Chloroethyl)ether	111-44-4	ug/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
bis(2-Chloroisopropyl)ether	39638-32-9	ug/L	< 5.3 U	< 5.3 U	< 5.3 U	< 5.3 U
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Butylbenzyl phthalate	85-68-7	ug/L	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Carbazole	86-74-8	ug/L	< 2 U	< 2 U	< 2 U	< 2 U
Chrysene	218-01-9	ug/L	< 2.4 U	< 2.4 U	< 2.4 U	< 2.4 U
Dibenz(a,h)anthracene	53-70-3	ug/L	< 6.5 U	< 6.5 U	< 6.5 U	< 6.5 U
Dibenzofuran	132-64-9	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 1.7 U
Diethylphthalate	84-66-2	ug/L	< 2 U	< 2 U	< 2 U	< 2 U
Dimethylphthalate	131-11-3	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
di-n-Butylphthalate	84-74-2	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
di-n-Octylphthalate	117-84-0	ug/L	< 15 U	< 15 U	< 15 U	< 15 U
Diphenylamine	122-39-4	ug/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoranthene	206-44-0	ug/L	< 3.3 U	< 3.3 U	< 3.3 U	< 3.3 U
Fluorene	86-73-7	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 3.7 U
Hexachlorobenzene	118-74-1	ug/L	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Hexachlorobutadiene	87-68-3	ug/L	< 3.4 U	< 3.4 U	< 3.4 U	< 3.4 U
Hexachlorocyclopentadiene	77-47-4	ug/L	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Hexachloroethane	67-72-1	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 1.5 U
Indeno(1,2,3-c,d)pyrene	193-39-5	ug/L	< 8.6 U	< 8.6 U	< 8.6 U	< 8.6 U
Isophorone	78-59-1	ug/L	< 4.8 U	< 4.8 U	< 4.8 U	< 4.8 U
Naphthalene	91-20-3	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
n-Nitroso-di-n-propylamine	621-64-7	ug/L	< 4.4 U	< 4.4 U	< 4.4 U	< 4.4 U
n-Nitrosodiphenylamine	86-30-6	ug/L	< 3 U	< 3 U	< 3 U	< 3 U
Pentachlorophenol	87-86-5	ug/L	< 0.042 U	< 0.042 U	< 0.042 U	< 0.042 U

Table A-17
Historical Analytical Results for Surface Water Samples at PICA 085 Site 113

		Site Name	113	113	113	113
		Location ID	I-113-SW-001	I-113-SW-002	I-113-SW-002	I-113-SW-003
		Sample ID	113SW-1(19960802)	113SW-2DUP(19960801)	113SW-2(19960801)	113SW-3(19960801)
		Depth Interval				
		Sample Date	8/2/1996	8/1/1996	8/1/1996	8/1/1996
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Phenanthrene	85-01-8	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Phenol	108-95-2	ug/L	< 9.2 U	< 9.2 U	< 9.2 U	< 9.2 U
Pyrene	129-00-0	ug/L	< 2.8 U	< 2.8 U	< 2.8 U	< 2.8 U
VOC						
1,1,1-Trichloroethane	71-55-6	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L	< 5 U	< 5 U	< 5 U	< 5 U
1,1,2-Trichloroethane	79-00-5	ug/L	< 1.2 U	< 1.2 U	< 1.2 U	< 1.2 U
1,1-Dichloroethane	75-34-3	ug/L	< 0.68 U	< 0.68 U	< 0.68 U	< 0.68 U
1,1-Dichloroethene	75-35-4	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloroethane	107-06-2	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloroethene (total)	540-59-0	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
1,2-Dichloropropane	78-87-5	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
2-Butanone	78-93-3	ug/L	< 6.4 U	< 6.4 U	< 6.4 U	< 6.4 U
2-Hexanone	591-78-6	ug/L	< 3.6 U	< 3.6 U	< 3.6 U	< 3.6 U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	< 3 U	< 3 U	< 3 U	< 3 U
Acetone	67-64-1	ug/L	< 13 U	< 13 U	< 13 U	< 13 U
Acetonitrile	75-05-8	ug/L	< 200 U	< 200 U	< 200 U	< 200 U
Benzene	71-43-2	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Bromodichloromethane	75-27-4	ug/L	< 0.59 U	< 0.59 U	< 0.59 U	< 0.59 U
Bromoform	75-25-2	ug/L	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Bromomethane	74-83-9	ug/L	< 5.8 U	< 5.8 U	< 5.8 U	< 5.8 U
Carbon disulfide	75-15-0	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Carbon tetrachloride	56-23-5	ug/L	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Chlorobenzene	108-90-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloroethane	75-00-3	ug/L	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U
Chloroform	67-66-3	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Chloromethane	74-87-3	ug/L	< 3.2 U	< 3.2 U	< 3.2 U	< 3.2 U
cis-1,3-Dichloropropene	10061-01-5	ug/L	< 0.58 U	< 0.58 U	< 0.58 U	< 0.58 U
Dibromochloromethane	124-48-1	ug/L	< 0.67 U	< 0.67 U	< 0.67 U	< 0.67 U
Dichlorodifluoromethane	75-71-8	ug/L	< 6.9 U	< 6.9 U	< 6.9 U	< 6.9 U
Ethanol	64-17-5	ug/L	< 2000 U	< 2000 U	< 2000 U	< 2000 U
Ethyl benzene	100-41-4	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Isopropanol	67-63-0	ug/L	< 400 U	< 400 U	< 400 U	< 400 U
Methylene chloride	75-09-2	ug/L	< 2.3 U	2.6	< 2.3 U	< 2.3 U
Styrene	100-42-5	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
tert-Butylalcohol	75-65-0	ug/L	< 500 U	< 500 U	< 500 U	< 500 U
Tetrachloroethene	127-18-4	ug/L	< 1.6 U	< 1.6 U	< 1.6 U	< 1.6 U
Toluene	108-88-3	ug/L	0.51	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,3-Dichloropropene	10061-02-6	ug/L	< 0.7 U	< 0.7 U	< 0.7 U	< 0.7 U
Trichloroethene	79-01-6	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Trichlorofluoromethane	75-69-4	ug/L	< 1.4 U	< 1.4 U	< 1.4 U	< 1.4 U
Vinyl acetate	108-05-4	ug/L	< 8.3 U	< 8.3 U	< 8.3 U	< 8.3 U
Vinyl chloride	75-01-4	ug/L	< 2.6 U	< 2.6 U	< 2.6 U	< 2.6 U
Xylenes	1330-20-7	ug/L	< 0.84 U	< 0.84 U	< 0.84 U	< 0.84 U

Table A-17
Historical Analytical Results for Surface Water Samples at PICA 085 Site 113

		Site Name	113	113	113	113
		Location ID	I-113-SW-001	I-113-SW-002	I-113-SW-002	I-113-SW-003
		Sample ID	113SW-1(19960802)	113SW-2DUP(19960801)	113SW-2(19960801)	113SW-3(19960801)
		Depth Interval				
		Sample Date	8/2/1996	8/1/1996	8/1/1996	8/1/1996
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
WetChem						
Ammonia	7664-41-7	ug/L	72.5	74.1	86.5	84
Chloride	16887-00-6	ug/L	23100	23100	23100	23100
Cyanide	57-12-5	ug/L	< 2.5 U	< 2.5 U	< 2.5 U	< 2.5 U
Fluoride	16984-48-8	ug/L	< 1230 U	< 1230 U	< 1230 U	< 1230 U
Nitrate/Nitrite	Nitrate/Nitrite	ug/L	< 10 U	< 10 U	< 10 U	< 10 U
Phosphate	14265-44-2	ug/L	14.1	18.6	25.8	28.9
Sulfate	14808-79-8	ug/L	< 10000 U	< 10000 U	< 10000 U	< 10000 U
Sulfide	18496-25-8	ug/L	< 50 U	< 50 U	< 50 U	< 50 U

Notes:
LOC - Level of Concern
ug/L - micrograms per liter
U - Non-detect at the specified reporting limit

Table A-18
Historical Analytical Results for Sediment Samples at PICA 135 Site 71

		Site Name	71
		Location ID	I-71-SD-001
		Sample ID	71SD-1(0-1)
		Depth Interval	0 - 1
		Sample Date	8/2/1996
		Sample Matrix	SE
Chemical Name	**CAS No**	**Unit**	
Explosives			
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.488 U
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.496 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.456 U
HMX	2691-41-0	mg/kg	< 0.666 U
Nitrobenzene	98-95-3	mg/kg	< 2.41 U
Nitrocellulose	9004-70-0	mg/kg	< 10.4 U
Nitroglycerin	55-63-0	mg/kg	< 4 U
Nitroguanidine	556-88-7	mg/kg	< 0.475 U
PETN	78-11-5	mg/kg	< 4 U
Picric Acid	88-89-1	mg/kg	< 0.108 U
RDX	121-82-4	mg/kg	< 0.587 U
Tetrazene	14097-21-3	mg/kg	< 1.19 U
Tetryl	479-45-8	mg/kg	< 0.731 U
Explosives / SVOC			
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.424 U
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.524 U
Metals			
Aluminum	7429-90-5	mg/kg	21000
Antimony	7440-36-0	mg/kg	< 0.1 U
Arsenic	7440-38-2	mg/kg	6.12
Barium	7440-39-3	mg/kg	86.7
Beryllium	7440-41-7	mg/kg	1.25
Boron	7440-42-8	mg/kg	< 5.91 U
Cadmium	7440-43-9	mg/kg	< 0.7 U
Calcium	7440-70-2	mg/kg	1060
Chromium	7440-47-3	mg/kg	21
Cobalt	7440-48-4	mg/kg	7.21
Copper	7440-50-8	mg/kg	24.7
Iron	7439-89-6	mg/kg	20400

Table A-18
Historical Analytical Results for Sediment Samples at PICA 135 Site 71

		Site Name	71
		Location ID	I-71-SD-001
		Sample ID	71SD-1(0-1)
		Depth Interval	0 - 1
		Sample Date	8/2/1996
		Sample Matrix	SE
Chemical Name	**CAS No**	**Unit**	
Lead	7439-92-1	mg/kg	29.8
Magnesium	7439-95-4	mg/kg	2400
Manganese	7439-96-5	mg/kg	84.9
Mercury	7439-97-6	mg/kg	< 0.05 U
Nickel	7440-02-0	mg/kg	17.7
Potassium	7440-09-7	mg/kg	594
Selenium	7782-49-2	mg/kg	2.35
Silver	7440-22-4	mg/kg	< 0.589 U
Sodium	7440-23-5	mg/kg	825
Strontium	7440-24-6	mg/kg	21.2
Thallium	7440-28-0	mg/kg	0.48
Titanium	7440-32-6	mg/kg	578
Vanadium	7440-62-2	mg/kg	39.6
Zinc	7440-66-6	mg/kg	66.8
Zirconium	7440-67-7	mg/kg	8.25
Pesticides			
Mirex	2385-85-5	mg/kg	< 0.25 U
SVOC			
1,2,4-Trichlorobenzene	120-82-1	mg/kg	< 0.04 U
1,2-Dichlorobenzene	95-50-1	mg/kg	< 0.11 U
1,3-Dichlorobenzene	541-73-1	mg/kg	< 0.13 U
1,4-Dichlorobenzene	106-46-7	mg/kg	< 0.098 U
2,4,5-Trichlorophenol	95-95-4	mg/kg	< 0.1 U
2,4,6-Trichlorophenol	88-06-2	mg/kg	< 0.17 U
2,4-Dichlorophenol	120-83-2	mg/kg	< 0.18 U
2,4-Dimethylphenol	105-67-9	mg/kg	< 0.69 U
2,4-Dinitrophenol	51-28-5	mg/kg	< 1.2 U
2-Chloronaphthalene	91-58-7	mg/kg	< 0.036 U
2-Chlorophenol	95-57-8	mg/kg	< 0.06 U
2-Methylnaphthalene	91-57-6	mg/kg	< 0.049 U

Table A-18
Historical Analytical Results for Sediment Samples at PICA 135 Site 71

		Site Name	71
		Location ID	I-71-SD-001
		Sample ID	71SD-1(0-1)
		Depth Interval	0 - 1
		Sample Date	8/2/1996
		Sample Matrix	SE
Chemical Name	**CAS No**	**Unit**	
2-Methylphenol	95-48-7	mg/kg	< 0.029 U
2-Nitroaniline	88-74-4	mg/kg	< 0.062 U
2-Nitrophenol	88-75-5	mg/kg	< 0.14 U
3,3'-Dichlorobenzidine	91-94-1	mg/kg	< 6.3 U
3-Nitroaniline	99-09-2	mg/kg	< 0.45 U
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg	< 0.55 U
4-Bromophenyl phenyl ether	101-55-3	mg/kg	< 0.033 U
4-Chloro-3-methylphenol	59-50-7	mg/kg	< 0.095 U
4-Chloroaniline	106-47-8	mg/kg	< 0.81 U
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	< 0.033 U
4-Methylphenol	106-44-5	mg/kg	< 0.24 U#
4-Nitroaniline	100-01-6	mg/kg	< 0.41 U
4-Nitrophenol	100-02-7	mg/kg	< 1.4 U
Acenaphthene	83-32-9	mg/kg	< 0.036 U
Acenaphthylene	208-96-8	mg/kg	< 0.033 U
Aniline	62-53-3	mg/kg	< 0.65 U
Anthracene	120-12-7	mg/kg	< 0.033 U
Benz(a)anthracene	56-55-3	mg/kg	< 0.17 U
Benzo(a)pyrene	50-32-8	mg/kg	< 0.25 U
Benzo(b)fluoranthene	205-99-2	mg/kg	< 0.21 U
Benzo(g,h,i)perylene	191-24-2	mg/kg	< 0.25 U
Benzo(k)fluoranthene	207-08-9	mg/kg	< 0.066 U
Benzyl alcohol	100-51-6	mg/kg	< 0.19 U
bis(2-Chloroethoxy)methane	111-91-1	mg/kg	< 0.059 U
bis(2-Chloroethyl)ether	111-44-4	mg/kg	< 0.033 U
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg	< 0.2 U
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	< 0.62 U
Butylbenzyl phthalate	85-68-7	mg/kg	< 0.17 U
Carbazole	86-74-8	mg/kg	< 0.14 U
Chrysene	218-01-9	mg/kg	< 0.12 U

Table A-18
Historical Analytical Results for Sediment Samples at PICA 135 Site 71

		Site Name	71
		Location ID	I-71-SD-001
		Sample ID	71SD-1(0-1)
		Depth Interval	0 - 1
		Sample Date	8/2/1996
		Sample Matrix	SE
Chemical Name	**CAS No**	**Unit**	
Dibenz(a,h)anthracene	53-70-3	mg/kg	< 0.21 U
Dibenzofuran	132-64-9	mg/kg	< 0.035 U
Diethylphthalate	84-66-2	mg/kg	< 0.24 U
Dimethylphthalate	131-11-3	mg/kg	< 0.17 U
di-n-Butylphthalate	84-74-2	mg/kg	< 0.061 U
di-n-Octylphthalate	117-84-0	mg/kg	< 0.19 U
Diphenylamine	122-39-4	mg/kg	< 0.13 U
Fluoranthene	206-44-0	mg/kg	< 0.068 U
Fluorene	86-73-7	mg/kg	< 0.033 U
Hexachlorobenzene	118-74-1	mg/kg	< 0.033 U
Hexachlorobutadiene	87-68-3	mg/kg	< 0.23 U
Hexachlorocyclopentadiene	77-47-4	mg/kg	< 6.2 U
Hexachloroethane	67-72-1	mg/kg	< 0.15 U
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	< 0.29 U
Isophorone	78-59-1	mg/kg	< 0.033 U
Naphthalene	91-20-3	mg/kg	< 0.037 U
n-Nitroso-di-n-propylamine	621-64-7	mg/kg	< 0.2 U
n-Nitrosodiphenylamine	86-30-6	mg/kg	< 0.19 U
Pentachlorophenol	87-86-5	mg/kg	< 1.3 U
Phenanthrene	85-01-8	mg/kg	< 0.033 U
Phenol	108-95-2	mg/kg	< 0.11 U
Pyrene	129-00-0	mg/kg	< 0.033 U
WetChem			
Ammonia	7664-41-7	mg/kg	230
Chloride	16887-00-6	mg/kg	< 6.05 U
Cyanide	57-12-5	mg/kg	< 0.92 U
Fluoride	16984-48-8	mg/kg	19.5
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	< 0.6 UJ
Phosphate	14265-44-2	mg/kg	510
Sulfate	14808-79-8	mg/kg	< 90.4 U

Table A-18
Historical Analytical Results for Sediment Samples at PICA 135 Site 71

		Site Name	71
		Location ID	I-71-SD-001
		Sample ID	71SD-1(0-1)
		Depth Interval	0 - 1
		Sample Date	8/2/1996
		Sample Matrix	SE
Chemical Name	**CAS No**	**Unit**	
Sulfide	18496-25-8	mg/kg	< 6 U
Total organic carbon	TOC	mg/kg	23200

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

UJ - Compound was analyzed but not detected. Detection limit is an estimated value.

Table A-19
Historical Analytical Results for Surface Water Samples at PICA 135 Site 71

			Site Name	71
			Location ID	I-71-SW-001
			Sample ID	71SW-1(19960802)
			Depth Interval	
			Sample Date	8/2/1996
			Sample Matrix	WS
			Sample Type Code	N
Chemical Name	**CAS No**	**Unit**		
Explosives				
1,3,5-Trinitrobenzene	99-35-4	ug/L	1100	< 0.449 U
1,3-Dinitrobenzene	99-65-0	ug/L	3.7	< 0.611 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	2.2	< 0.635 U
HMX	2691-41-0	ug/L	1800	< 1.21 U
Nitrobenzene	98-95-3	ug/L	16	< 0.645 U
Nitrocellulose	9004-70-0	ug/L		< 553 U
Nitroglycerin	55-63-0	ug/L	4.8	< 10 U
Nitroguanidine	556-88-7	ug/L	3700	< 30.9 U
PETN	78-11-5	ug/L		< 20 U
Picric Acid	88-89-1	ug/L		< 0.27 U
RDX	121-82-4	ug/L	0.61	< 1.17 U
Tetrazene	14097-21-3	ug/L		< 40 U
Tetryl	479-45-8	ug/L	370	< 1.56 U
Explosives / SVOC				
2,4-Dinitrotoluene	121-14-2	ug/L	0.11	< 0.0637 U
2,6-Dinitrotoluene	606-20-2	ug/L	37	< 0.0738 U
Metals				
Aluminum	7429-90-5	ug/L	190	134
Antimony	7440-36-0	ug/L	5.6	< 1 U
Arsenic	7440-38-2	ug/L	1.38	< 1 U
Barium	7440-39-3	ug/L	1000	23.1
Beryllium	7440-41-7	ug/L	73	< 5 U
Boron	7440-42-8	ug/L	3300	233
Cadmium	7440-43-9	ug/L	0.28	< 3.01 U
Calcium	7440-70-2	ug/L	500000	6040
Chromium	7440-47-3	ug/L	11.4	< 6.96 U
Cobalt	7440-48-4	ug/L	730	< 50 U
Copper	7440-50-8	ug/L	9.4	< 5 U

Table A-19
Historical Analytical Results for Surface Water Samples at PICA 135 Site 71

			Site Name	71
			Location ID	I-71-SW-001
			Sample ID	71SW-1(19960802)
			Depth Interval	
			Sample Date	8/2/1996
			Sample Matrix	WS
			Sample Type Code	N
Chemical Name	**CAS No**	**Unit**		
Iron	7439-89-6	ug/L	1790	871
Lead	7439-92-1	ug/L	3.2	1.45
Magnesium	7439-95-4	ug/L	175000	2220
Manganese	7439-96-5	ug/L	383	125
Mercury	7439-97-6	ug/L	0.144	< 0.243 U
Nickel	7440-02-0	ug/L	52	< 7.11 U
Potassium	7440-09-7	ug/L	1000000	< 1000 U
Selenium	7782-49-2	ug/L	5	< 2 U
Silver	7440-22-4	ug/L	3.8	< 4.42 U
Sodium	7440-23-5	ug/L	42300	9020
Strontium	7440-24-6	ug/L	22000	26.7
Thallium	7440-28-0	ug/L	7.3	< 1 U
Titanium	7440-32-6	ug/L	150000	4.59
Vanadium	7440-62-2	ug/L	11	< 4.69 U
Zinc	7440-66-6	ug/L	120	< 35.8 U
Zirconium	7440-67-7	ug/L		< 1 U
Pesticides				
Mirex	2385-85-5	ug/L	0.001	< 0.025 U
SVOC				
1,2,4-Trichlorobenzene	120-82-1	ug/L	30.6	< 1.8 U
1,2-Dichlorobenzene	95-50-1	ug/L	2520	< 1.7 U
1,3-Dichlorobenzene	541-73-1	ug/L	320	< 1.7 U
1,4-Dichlorobenzene	106-46-7	ug/L	343	< 1.7 U
2,4,5-Trichlorophenol	95-95-4	ug/L	1800	< 5.2 U
2,4,6-Trichlorophenol	88-06-2	ug/L	1.4	< 4.2 U
2,4-Dichlorophenol	120-83-2	ug/L	77	< 2.9 U
2,4-Dimethylphenol	105-67-9	ug/L	380	< 5.8 U
2,4-Dinitrophenol	51-28-5	ug/L	69	< 21 U
2-Chloronaphthalene	91-58-7	ug/L	1000	< 0.5 U

Table A-19
Historical Analytical Results for Surface Water Samples at PICA 135 Site 71

			Site Name	71
			Location ID	I-71-SW-001
			Sample ID	71SW-1(19960802)
			Depth Interval	
			Sample Date	8/2/1996
			Sample Matrix	WS
			Sample Type Code	N
Chemical Name	**CAS No**	**Unit**		
2-Chlorophenol	95-57-8	ug/L	81	< 0.99 U
2-Methylnaphthalene	91-57-6	ug/L	120	< 1.7 U
2-Methylphenol	95-48-7	ug/L	1800	< 3.9 U
2-Nitroaniline	88-74-4	ug/L	110	< 4.3 U
2-Nitrophenol	88-75-5	ug/L		< 3.7 U
3,3'-Dichlorobenzidine	91-94-1	ug/L	0.021	< 12 U
3-Nitroaniline	99-09-2	ug/L	3.3	< 4.9 U
4,6-dinitro-2-Methylphenol	534-52-1	ug/L	13	< 17 U
4-Bromophenyl phenyl ether	101-55-3	ug/L		< 4.2 U
4-Chloro-3-methylphenol	59-50-7	ug/L		< 4 U
4-Chloroaniline	106-47-8	ug/L	150	< 7.3 U
4-Chlorophenyl phenyl ether	7005-72-3	ug/L		< 5.1 U
4-Methylphenol	106-44-5	ug/L	180	< 0.52 U#
4-Nitroaniline	100-01-6	ug/L	3.3	< 5.2 U
4-Nitrophenol	100-02-7	ug/L		< 12 U
Acenaphthene	83-32-9	ug/L	670	< 1.7 U
Acenaphthylene	208-96-8	ug/L	797	< 0.5 U
Aniline	62-53-3	ug/L	12	< 4.4 U
Anthracene	120-12-7	ug/L	8300	< 0.5 U
Benz(a)anthracene	56-55-3	ug/L	0.0028	< 1.6 U
Benzo(a)pyrene	50-32-8	ug/L	0.0028	< 4.7 U
Benzo(b)fluoranthene	205-99-2	ug/L	0.0028	< 5.4 U
Benzo(g,h,i)perylene	191-24-2	ug/L	797	< 6.1 U
Benzo(k)fluoranthene	207-08-9	ug/L	0.0028	< 0.87 U
Benzoic Acid	65-85-0	ug/L	150000	< 13 U
Benzyl alcohol	100-51-6	ug/L	11000	< 0.72 U
bis(2-Chloroethoxy)methane	111-91-1	ug/L		< 1.5 U
bis(2-Chloroethyl)ether	111-44-4	ug/L	0.03	< 1.9 U
bis(2-Chloroisopropyl)ether	39638-32-9	ug/L	1250	< 5.3 U

Table A-19
Historical Analytical Results for Surface Water Samples at PICA 135 Site 71

			Site Name	71
			Location ID	I-71-SW-001
			Sample ID	71SW-1(19960802)
			Depth Interval	
			Sample Date	8/2/1996
			Sample Matrix	WS
			Sample Type Code	N
Chemical Name	**CAS No**	**Unit**		
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	1.2	< 4.8 U
Butylbenzyl phthalate	85-68-7	ug/L	239	< 3.4 U
Carbazole	86-74-8	ug/L	3.3	< 2 U
Chrysene	218-01-9	ug/L	0.0028	< 2.4 U
Dibenz(a,h)anthracene	53-70-3	ug/L	0.0028	< 6.5 U
Dibenzofuran	132-64-9	ug/L	12	< 1.7 U
Diethylphthalate	84-66-2	ug/L	17000	< 2 U
Dimethylphthalate	131-11-3	ug/L	270000	< 1.5 U
di-n-Butylphthalate	84-74-2	ug/L	2000	< 3.7 U
di-n-Octylphthalate	117-84-0	ug/L	1500	< 15 U
Diphenylamine	122-39-4	ug/L	910	< 2.5 U
Fluoranthene	206-44-0	ug/L	130	< 3.3 U
Fluorene	86-73-7	ug/L	1100	< 3.7 U
Hexachlorobenzene	118-74-1	ug/L	0.00028	< 1.6 U
Hexachlorobutadiene	87-68-3	ug/L	0.44	< 3.4 U
Hexachlorocyclopentadiene	77-47-4	ug/L	240	< 8.6 U
Hexachloroethane	67-72-1	ug/L	1.4	< 1.5 U
Indeno(1,2,3-c,d)pyrene	193-39-5	ug/L	0.0028	< 8.6 U
Isophorone	78-59-1	ug/L	35	< 4.8 U
Naphthalene	91-20-3	ug/L	6.5	< 0.5 U
n-Nitroso-di-n-propylamine	621-64-7	ug/L	0.005	< 4.4 U
n-Nitrosodiphenylamine	86-30-6	ug/L	3.3	< 3 U
Pentachlorophenol	87-86-5	ug/L	0.27	< 0.042 U
Phenanthrene	85-01-8	ug/L	797	< 0.5 U
Phenol	108-95-2	ug/L	20900	< 9.2 U
Pyrene	129-00-0	ug/L	797	< 2.8 U
WetChem				
Ammonia	7664-41-7	ug/L	210	137
Chloride	16887-00-6	ug/L	230000	17600

Table A-19
Historical Analytical Results for Surface Water Samples at PICA 135 Site 71

			Site Name	71
			Location ID	I-71-SW-001
			Sample ID	71SW-1(19960802)
			Depth Interval	
			Sample Date	8/2/1996
			Sample Matrix	WS
			Sample Type Code	N
Chemical Name	**CAS No**	**Unit**		
Cyanide	57-12-5	ug/L	5.2	2.91
Fluoride	16984-48-8	ug/L	2200	< 1230 U
Nitrate/Nitrite	Nitrate/Nitrite	ug/L		< 10 U
Phosphate	14265-44-2	ug/L		38
Sulfate	14808-79-8	ug/L	250000	< 10000 U
Sulfide	18496-25-8	ug/L	2200	76.7

Notes:

LOC - Level of Concern

ug/L - micrograms per liter

U - Non-detect at the specified reporting limit

Table A-20
Historical Analytical Results for Sediment Samples at PICA 135 Site 158

		Site Name	158	158	158	158	158	158
		Location ID	I-158-SD-001	I-158-SD-001	I-158-SD-001	I-158-SD-002	I-158-SD-003	I-158-SD-004
		Sample ID	158SD-1(0-1)	158SD-1(0-0.5)	158SD-1B(1-2)	158SD-2(0-1)	158SD-3A(0-1)	158SD-4A(0-1)
		Depth Interval	0 - 1	0 - .5	1 - 2	0 - 1	0 - 1	0 - 1
		Sample Date	8/6/1996	10/14/1998	5/17/2001	8/6/1996	5/17/2001	5/17/2001
		Sample Matrix	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**						
Explosives								
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.488 U			< 0.488 U		
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.496 U			< 0.496 U		
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.456 U			< 0.456 U		
HMX	2691-41-0	mg/kg	< 0.666 U			< 0.666 U		
Nitrobenzene	98-95-3	mg/kg	< 2.41 U			< 2.41 U		
Nitrocellulose	9004-70-0	mg/kg	< 10.4 U			< 10.4 U		
Nitroglycerin	55-63-0	mg/kg	< 4 U			< 4 U		
Nitroguanidine	556-88-7	mg/kg	< 0.475 U			< 0.475 U		
PETN	78-11-5	mg/kg	< 4 U			< 4 U		
Picric Acid	88-89-1	mg/kg	< 0.108 U			< 0.108 U		
RDX	121-82-4	mg/kg	< 0.587 U			< 0.587 U		
Tetrazene	14097-21-3	mg/kg	< 1.19 U			< 1.19 U		
Tetryl	479-45-8	mg/kg	< 0.731 U			< 0.731 U		
Explosives / SVOC								
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.424 U			< 0.424 U		
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.524 U			< 0.524 U		
Metals								
Aluminum	7429-90-5	mg/kg	8620		13100	7400	10800	9970
Antimony	7440-36-0	mg/kg	2.03		2.1 J	0.73	< 4.7 U	< 1.6 U
Arsenic	7440-38-2	mg/kg	11		21	5.84	11.1	2.2
Barium	7440-39-3	mg/kg	67.4		92	42.7	108	32.8
Beryllium	7440-41-7	mg/kg	1.27		1.6	< 0.5 U	1 J	0.21 J
Boron	7440-42-8	mg/kg	< 5.91 U			10.6		
Cadmium	7440-43-9	mg/kg	2.57		5.1	< 0.7 U	7.7	0.06 J
Calcium	7440-70-2	mg/kg	1790		2960	1050	5380	757 J
Chromium	7440-47-3	mg/kg	12.8		13.5	10.6	18.1	7.1
Cobalt	7440-48-4	mg/kg	10.8		20.7	5.96	15 J	3.2 J
Copper	7440-50-8	mg/kg	66		68.2	44.9	193	6.2
Iron	7439-89-6	mg/kg	13900		19500	11500	15400	10700

Table A-20
Historical Analytical Results for Sediment Samples at PICA 135 Site 158

		Site Name	158	158	158	158	158	158
		Location ID	I-158-SD-001	I-158-SD-001	I-158-SD-001	I-158-SD-002	I-158-SD-003	I-158-SD-004
		Sample ID	158SD-1(0-1)	158SD-1(0-0.5)	158SD-1B(1-2)	158SD-2(0-1)	158SD-3A(0-1)	158SD-4A(0-1)
		Depth Interval	0 - 1	0 - .5	1 - 2	0 - 1	0 - 1	0 - 1
		Sample Date	8/6/1996	10/14/1998	5/17/2001	8/6/1996	5/17/2001	5/17/2001
		Sample Matrix	SE	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**						
Lead	7439-92-1	mg/kg	361		1100	242	148	11.5
Magnesium	7439-95-4	mg/kg	2350		2060	2150	2870	695 J
Manganese	7439-96-5	mg/kg	336		222	120	358	137
Mercury	7439-97-6	mg/kg	13		28.2 D	15	1.1	0.05 J
Nickel	7440-02-0	mg/kg	19.2		28.2	12.3	24.3	4.5 J
Potassium	7440-09-7	mg/kg	648		595 J	589	1100 J	172 J
Selenium	7782-49-2	mg/kg	1.65		2.5	0.82	2.3 J	< 0.78 U
Silver	7440-22-4	mg/kg	1.89		< 1.6 U	< 0.589 U	1.7 J	< 0.78 U
Sodium	7440-23-5	mg/kg	858		< 1630 U	614	< 2350 U	< 779 U
Strontium	7440-24-6	mg/kg	17.7			23.1		
Thallium	7440-28-0	mg/kg	< 0.1 U		2.1 J	< 0.1 U	< 4.7 U	< 1.6 U
Titanium	7440-32-6	mg/kg	406			292		
Vanadium	7440-62-2	mg/kg	23.6		40.6	17.7	34.6	18.8
Zinc	7440-66-6	mg/kg	225		485 L	206	390	49.6
Zirconium	7440-67-7	mg/kg	< 2.5 U			< 2.5 U		
WetChem								
% Solids	%Solid	%			30.6		21.3	64.2
Ammonia	7664-41-7	mg/kg	249			162		
Chloride	16887-00-6	mg/kg	19.5			< 6.05 U		
Cyanide	57-12-5	mg/kg	< 0.92 U			< 0.92 U		
Fluoride	16984-48-8	mg/kg	11.7			6.62		
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	< 0.6 U			< 0.6 U		
Phosphate	14265-44-2	mg/kg	620			580		
Sulfate	14808-79-8	mg/kg	337			215		
Sulfide	18496-25-8	mg/kg	25.1			28		
Total organic carbon	TOC	mg/kg	55500	74700		17500		

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-20
Historical Analytical Results for Sediment Samples at PICA 135 Site 158

		158	158	158	158	158	158
		I-158-SD-005	I-158-SD-006	I-158-SD-006	I-158-SD-006	I-158-SD-007	I-158-SD-007
		158SD-5A(0-1)	158SD-6ADUP(0-1)	158SD-6A(0-1)	158SD-6B(2-3)	158SD-7A(0-1)	158SD-7B(2-3)
		0 - 1	0 - 1	0 - 1	2 - 3	0 - 1	2 - 3
		5/17/2001	5/22/2002	5/22/2002	5/22/2002	5/22/2002	5/22/2002
		SE	SE	SE	SE	SE	SE
		N	FD	N	N	N	N
Chemical Name	**CAS No**						
Explosives							
1,3,5-Trinitrobenzene	99-35-4						
1,3-Dinitrobenzene	99-65-0						
2,4,6-Trinitrotoluene	118-96-7						
HMX	2691-41-0						
Nitrobenzene	98-95-3						
Nitrocellulose	9004-70-0						
Nitroglycerin	55-63-0						
Nitroguanidine	556-88-7						
PETN	78-11-5						
Picric Acid	88-89-1						
RDX	121-82-4						
Tetrazene	14097-21-3						
Tetryl	479-45-8						
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2						
2,6-Dinitrotoluene	606-20-2						
Metals							
Aluminum	7429-90-5	16600	15200 J	17800 J	10900 J	13100 J	12100 J
Antimony	7440-36-0	< 5.8 U	3.2 J	< 8.3 U	< 7.1 U	< 8 U	< 7.9 U
Arsenic	7440-38-2	34.9	11.8 J	21.3 J	31.2 J	17.6 J	25.4 J
Barium	7440-39-3	194	149 J	168 J	109 J	131 J	144 J
Beryllium	7440-41-7	1.7 J	1.3 J	2.1 J	1.4 J	1.2 J	1.5 J
Boron	7440-42-8						
Cadmium	7440-43-9	2.8	12.1 J	13.7 J	4.2 J	7.1 J	4.8 J
Calcium	7440-70-2	4750	3600 J	3810 J	2500 J	2930 J	2770 J
Chromium	7440-47-3	19	23 J	24.7 J	12.7 J	17.9 J	14.9 J
Cobalt	7440-48-4	21.7 J	29.2 J	31.1 J	19.2 J	25.2 J	24.7 J
Copper	7440-50-8	63.6	364 J	324 J	84.1 J	203 J	110 J
Iron	7439-89-6	23700	22800 J	28600 J	21700 J	20400 J	20300 J

Table A-20
Historical Analytical Results for Sediment Samples at PICA 135 Site 158

		158	158	158	158	158	158
		I-158-SD-005	I-158-SD-006	I-158-SD-006	I-158-SD-006	I-158-SD-007	I-158-SD-007
		158SD-5A(0-1)	158SD-6ADUP(0-1)	158SD-6A(0-1)	158SD-6B(2-3)	158SD-7A(0-1)	158SD-7B(2-3)
		0 - 1	0 - 1	0 - 1	2 - 3	0 - 1	2 - 3
		5/17/2001	5/22/2002	5/22/2002	5/22/2002	5/22/2002	5/22/2002
		SE	SE	SE	SE	SE	SE
		N	FD	N	N	N	N
Chemical Name	**CAS No**						
Lead	7439-92-1	176	187 J	218 J	141 J	143 J	139 J
Magnesium	7439-95-4	2600 J	3920 J	3840 J	1650 J	2730 J	1860 J
Manganese	7439-96-5	567	443 J	637 J	567 J	448 J	436 J
Mercury	7439-97-6	0.75	1.5 J	1.6 J	3.2 J	2.7 J	4.1 J
Nickel	7440-02-0	31.2	32.7 J	42.5 J	22 J	28.4 J	29.4 J
Potassium	7440-09-7	714 J	1510 J	1570 J	705 J	1230 J	817 J
Selenium	7782-49-2	5.7	3.4 J	5.1 J	3.2 J	< 4 U	4.1 J
Silver	7440-22-4	< 2.9 U	7.4 J	22.1 J	1.9 J	8.2 J	8.6 J
Sodium	7440-23-5	< 2880 U	< 2630 U	< 4140 U	< 3550 U	< 3980 U	< 3970 U
Strontium	7440-24-6						
Thallium	7440-28-0	< 5.8 U	< 5.3 U	< 8.3 U	< 7.1 U	< 8 U	< 7.9 U
Titanium	7440-32-6						
Vanadium	7440-62-2	45.2	46.2 J	57.9 J	33 J	38.1 J	36.9 J
Zinc	7440-66-6	467	615 J	915 J	495 J	514 J	580 J
Zirconium	7440-67-7						
WetChem							
% Solids	%Solid	17.4	19	12.1	14.1	12.6	12.6
Ammonia	7664-41-7						
Chloride	16887-00-6						
Cyanide	57-12-5						
Fluoride	16984-48-8						
Nitrate/Nitrite	Nitrate/Nitrite						
Phosphate	14265-44-2						
Sulfate	14808-79-8						
Sulfide	18496-25-8						
Total organic carbon	TOC						

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-21
Historical Analytical Results for Surface Water at PICA 135 Site 158

		Site Name	158	158	158	158
		Location ID	I-158-SW-001	I-158-SW-002	I-158-SW-003	I-158-SW-003
		Sample ID	158SW-1(19960806)	158SW-2(19960806)	158SW-3DUP(20010517)	158SW-3(20010517)
		Depth Interval				
		Sample Date	8/6/1996	8/6/1996	5/17/2001	5/17/2001
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Explosives						
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.449 U	< 0.449 U		
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.611 U	< 0.611 U		
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.635 U	< 0.635 U		
HMX	2691-41-0	ug/L	< 1.21 U	< 1.21 U		
Nitrobenzene	98-95-3	ug/L	< 0.645 U	< 0.645 U		
Nitrocellulose	9004-70-0	ug/L	< 553 U	< 553 U		
Nitroglycerin	55-63-0	ug/L	< 10 U	< 10 U		
Nitroguanidine	556-88-7	ug/L	< 30.9 U	< 30.9 U		
PETN	78-11-5	ug/L	< 20 U	< 20 U		
Picric Acid	88-89-1	ug/L	< 0.27 U	< 0.27 U		
RDX	121-82-4	ug/L	< 1.17 U	< 1.17 U		
Tetrazene	14097-21-3	ug/L	< 40 U	< 40 U		
Tetryl	479-45-8	ug/L	< 1.56 U	< 1.56 U		
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.0637 U	< 0.0637 U		
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.0738 U	< 0.0738 U		
Metals						
Aluminum	7429-90-5	ug/L	69.9	95.8	< 92 R	< 92 R
Antimony	7440-36-0	ug/L	< 1 U	< 1 U	< 10 U	< 10 U
Arsenic	7440-38-2	ug/L	< 1 U	< 1 U	< 3 U	< 3 U
Barium	7440-39-3	ug/L	15.3	16.4	15 J	15 J
Beryllium	7440-41-7	ug/L	< 5 U	< 5 U	< 2 U	< 2 U
Boron	7440-42-8	ug/L	< 50 U	536		
Cadmium	7440-43-9	ug/L	< 3.01 U	< 3.01 U	< 2 U	0.3 J
Calcium	7440-70-2	ug/L	5390	5490	6300	6400
Chromium	7440-47-3	ug/L	< 6.96 U	< 6.96 U	< 10 U	< 10 U
Cobalt	7440-48-4	ug/L	< 50 U	< 50 U	< 50 U	< 50 U
Copper	7440-50-8	ug/L	< 5 U	< 5 U	4.8 J	< 9 U
Iron	7439-89-6	ug/L	230	221	560	590
Lead	7439-92-1	ug/L	< 1 U	< 1 U	< 3 U	< 3 U
Magnesium	7439-95-4	ug/L	2270	2270	2400 J	2500 J
Manganese	7439-96-5	ug/L	45.1	43.5	95	110

Table A-21
Historical Analytical Results for Surface Water at PICA 135 Site 158

		Site Name	158	158	158	158
		Location ID	I-158-SW-001	I-158-SW-002	I-158-SW-003	I-158-SW-003
		Sample ID	158SW-1(19960806)	158SW-2(19960806)	158SW-3DUP(20010517)	158SW-3(20010517)
		Depth Interval				
		Sample Date	8/6/1996	8/6/1996	5/17/2001	5/17/2001
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Mercury	7439-97-6	ug/L	< 0.243 U	< 0.243 U	< 0.092 U	< 0.092 U
Nickel	7440-02-0	ug/L	< 7.11 U	< 7.11 U	< 40 U	< 40 U
Potassium	7440-09-7	ug/L	< 1000 U	< 1000 U	690 J	700 J
Selenium	7782-49-2	ug/L	< 2 U	< 2 U	< 5 U	< 5 U
Silver	7440-22-4	ug/L	< 4.42 U	< 4.42 U	< 4 U	< 4 U
Sodium	7440-23-5	ug/L	9440	10400	11900	11900
Strontium	7440-24-6	ug/L	23.9	24.2		
Thallium	7440-28-0	ug/L	< 1 U	< 1 U	< 1 U	< 1 U
Titanium	7440-32-6	ug/L	< 2 U	< 2 U		
Vanadium	7440-62-2	ug/L	< 4.69 U	< 4.69 U	< 50 U	< 50 U
Zinc	7440-66-6	ug/L	< 35.8 U	< 35.8 U	< 20 U	< 20 U
Zirconium	7440-67-7	ug/L	< 1 U	< 1 U		
WetChem						
Ammonia	7664-41-7	ug/L	< 60 UJ	76.9 J		
Chloride	16887-00-6	ug/L	20900	20900		
Cyanide	57-12-5	ug/L	< 2.5 U	3.91		
Fluoride	16984-48-8	ug/L	< 1230 U	< 1230 U		
Nitrate/Nitrite	Nitrate/Nitrite	ug/L	79.3	65.7		
Phosphate	14265-44-2	ug/L	17.8	15		
Sulfate	14808-79-8	ug/L	< 10000 U	< 10000 U		
Sulfide	18496-25-8	ug/L	< 50 U	< 50 U		

Notes:

Cells exceeding the standard in Column E are shaded gray

LOC - Level of Concern

ug/L - micrograms per liter

U - Non-detect at the specified reporting limit

J - Estimated concentration

R - Rejected

Table A-21
Historical Analytical Results for Surface Water at PICA 135 Site 158

		158	158
		I-158-SW-004	I-158-SW-005
		158SW-4(20010517)	158SW-5(20010517)
		5/17/2001	5/17/2001
		WS	WS
Chemical Name	**CAS No**		
Explosives			
1,3,5-Trinitrobenzene	99-35-4		
1,3-Dinitrobenzene	99-65-0		
2,4,6-Trinitrotoluene	118-96-7		
HMX	2691-41-0		
Nitrobenzene	98-95-3		
Nitrocellulose	9004-70-0		
Nitroglycerin	55-63-0		
Nitroguanidine	556-88-7		
PETN	78-11-5		
Picric Acid	88-89-1		
RDX	121-82-4		
Tetrazene	14097-21-3		
Tetryl	479-45-8		
Explosives / SVOC			
2,4-Dinitrotoluene	121-14-2		
2,6-Dinitrotoluene	606-20-2		
Metals			
Aluminum	7429-90-5	< 92 R	< 92 R
Antimony	7440-36-0	< 10 U	< 10 U
Arsenic	7440-38-2	< 3 U	< 3 U
Barium	7440-39-3	16 J	22 J
Beryllium	7440-41-7	< 2 U	< 2 U
Boron	7440-42-8		
Cadmium	7440-43-9	< 2 U	< 2 U
Calcium	7440-70-2	6700	6800
Chromium	7440-47-3	< 10 U	< 10 U
Cobalt	7440-48-4	< 50 U	< 50 U
Copper	7440-50-8	< 9 U	5.3 J
Iron	7439-89-6	140	990
Lead	7439-92-1	< 3 U	< 3 U
Magnesium	7439-95-4	2800 J	2600 J
Manganese	7439-96-5	110	260

Table A-21
Historical Analytical Results for Surface Water at PICA 135 Site 158

		158	158
		I-158-SW-004	I-158-SW-005
		158SW-4(20010517)	158SW-5(20010517)
		5/17/2001	5/17/2001
		WS	WS
Chemical Name	**CAS No**		
Mercury	7439-97-6	< 0.092 U	< 0.092 U
Nickel	7440-02-0	< 40 U	< 40 U
Potassium	7440-09-7	730 J	830 J
Selenium	7782-49-2	< 5 U	< 5 U
Silver	7440-22-4	< 4 U	< 4 U
Sodium	7440-23-5	11900	12200
Strontium	7440-24-6		
Thallium	7440-28-0	< 1 U	< 1 U
Titanium	7440-32-6		
Vanadium	7440-62-2	< 50 U	1.1 J
Zinc	7440-66-6	< 20 U	14 J
Zirconium	7440-67-7		
WetChem			
Ammonia	7664-41-7		
Chloride	16887-00-6		
Cyanide	57-12-5		
Fluoride	16984-48-8		
Nitrate/Nitrite	Nitrate/Nitrite		
Phosphate	14265-44-2		
Sulfate	14808-79-8		
Sulfide	18496-25-8		

Notes:

Cells exceeding the standard in Column E are shad

LOC - Level of Concern

ug/L - micrograms per liter

U - Non-detect at the specified reporting limit

J - Estimated concentration

R - Rejected

Table A-22
Historical Analytical Results for Sediment Samples at PICA 135 Site 159

		Site Name	159	159	159	159	159	159
		Location ID	I-159-SD-001	I-159-SD-001	I-159-SD-002	I-159-SD-002	I-159-SP-001	I-SDBG-29
		Sample ID	159SD-1(0-1)	159SD-1(0-0.5)	159SD-2(0-1)	159SD-2B(1-2)	159SP-1(0-1)	SDBG-29(0-0.5)
		Depth Interval	0 - 1	0 - .5	0 - 1	1 - 2	0 - 1	0 - .5
		Sample Date	8/9/1996	10/14/1998	8/9/1996	5/17/2001	8/13/1996	11/2/1993
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Analyte Group								
Explosives								
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.488 U		< 0.488 U		< 0.488 U	< 0.922 U
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.496 U		< 0.496 U		< 0.496 U	< 0.504 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.456 U		< 0.456 U		< 0.456 U	< 2 U
3-Nitrotoluene	99-08-1	mg/kg						< 0.34 U
HMX	2691-41-0	mg/kg	< 0.666 U		< 0.666 U		< 0.666 U	< 2 U
Nitrobenzene	98-95-3	mg/kg	< 2.41 U		< 2.41 U		< 2.41 U	< 1.8 U
Nitrobenzene	98-95-3	mg/kg						< 1.14 U
Nitrocellulose	9004-70-0	mg/kg	< 10.4 U		< 10.4 U		< 10.4 U	105 B
Nitroglycerin	55-63-0	mg/kg	< 4 U		< 4 U		< 4 U	< 0.51 U
Nitroguanidine	556-88-7	mg/kg	< 0.475 UJ		< 0.475 UJ		< 0.475 UJ	
PETN	78-11-5	mg/kg	< 4 U		< 4 U		75.6	< 1 U
Picric Acid	88-89-1	mg/kg	< 0.108 U		< 0.108 U		< 0.108 U	
RDX	121-82-4	mg/kg	< 0.587 U		< 0.587 U		< 0.587 U	< 1.28 U
Tetrazene	14097-21-3	mg/kg	< 1.19 U		< 1.19 U		< 1.19 U	
Tetryl	479-45-8	mg/kg	< 0.731 U		< 0.731 U		< 0.731 U	< 2.11 U
Explosives / SVOC								
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.424 U		< 0.424 U		0.88	< 1.4 U
2,4-Dinitrotoluene	121-14-2	mg/kg						< 2.5 U
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.524 U		< 0.524 U		< 0.524 U	< 0.32 U
2,6-Dinitrotoluene	606-20-2	mg/kg						< 2 U
Metals								
Aluminum	7429-90-5	mg/kg	9130		6080	9610	3790	7320
Antimony	7440-36-0	mg/kg	0.84		0.58	< 1.3 U	14	< 1 U
Arsenic	7440-38-2	mg/kg	5.27		8.85	5.1	16.5	5.59
Barium	7440-39-3	mg/kg	51.5		39.2	54.3	303	44.3
Beryllium	7440-41-7	mg/kg	2.94		1.55	< 0.65 U	< 0.5 U	< 0.427 U
Boron	7440-42-8	mg/kg	< 5.91 U		< 5.91 U		< 5.91 U	
Cadmium	7440-43-9	mg/kg	2.44		< 0.7 U	< 0.26 U	6.59	< 1.2 U
Calcium	7440-70-2	mg/kg	3720		941	683	8910	10900

Table A-22
Historical Analytical Results for Sediment Samples at PICA 135 Site 159

		Site Name	159	159	159	159	159	159
		Location ID	I-159-SD-001	I-159-SD-001	I-159-SD-002	I-159-SD-002	I-159-SP-001	I-SDBG-29
		Sample ID	159SD-1(0-1)	159SD-1(0-0.5)	159SD-2(0-1)	159SD-2B(1-2)	159SP-1(0-1)	SDBG-29(0-0.5)
		Depth Interval	0 - 1	0 - .5	0 - 1	1 - 2	0 - 1	0 - .5
		Sample Date	8/9/1996	10/14/1998	8/9/1996	5/17/2001	8/13/1996	11/2/1993
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Chromium	7440-47-3	mg/kg	19.3		16.2	20.4	25.1	9.77
Cobalt	7440-48-4	mg/kg	12.1		7.88	10	11.5	6.41
Copper	7440-50-8	mg/kg	151		21	20	518	16.4
Iron	7439-89-6	mg/kg	68100		31800	28600	46100	19900
Lead	7439-92-1	mg/kg	72.9		56.4	23	748	15.7
Magnesium	7439-95-4	mg/kg	2270		2660	2630	1530	6900
Manganese	7439-96-5	mg/kg	438		688	490	248	285
Mercury	7439-97-6	mg/kg	0.21 J		< 0.05 UJ	0.01 J	3.14	< 0.05 U
Nickel	7440-02-0	mg/kg	17.5		13.7	18.2	41.6	7.96
Potassium	7440-09-7	mg/kg	694		895	1110	< 100 U	777
Selenium	7782-49-2	mg/kg	1.61 J		< 0.25 UJ	< 0.65 U	3.14 J	< 0.449 U
Silver	7440-22-4	mg/kg	< 0.589 U		< 0.589 U	< 0.65 U	6.1	< 0.803 U
Sodium	7440-23-5	mg/kg	816		432	< 654 U	1540	262
Strontium	7440-24-6	mg/kg	18.8		8.55		41.2	
Thallium	7440-28-0	mg/kg	< 0.1 U		< 0.1 U	< 1.3 U	< 0.1 U	< 34.3 U
Titanium	7440-32-6	mg/kg	320		191		< 50 U	
Vanadium	7440-62-2	mg/kg	39		20.7	25.2	< 3.39 U	18.1
Zinc	7440-66-6	mg/kg	155		69	55.9	2950	118
Zirconium	7440-67-7	mg/kg	< 2.5 U		4.52		< 2.5 U	
Other								
1,4-Oxathiane	15980-15-1	mg/kg						< 0.075 U
Dithiane	51330-42-8	mg/kg						< 0.065 U
PCBs								
Aroclor 1016	12674-11-2	mg/kg	< 0.0666 U		< 0.0666 U			< 0.1 U
Aroclor 1016	12674-11-2	mg/kg						< 0.32 U
Aroclor 1221	11104-28-2	mg/kg	< 0.082 UT		< 0.082 UT			< 0.1 UT
Aroclor 1232	11141-16-5	mg/kg	< 0.082 UT		< 0.082 UT			< 0.1 UT
Aroclor 1242	53469-21-9	mg/kg	< 0.082 UT		< 0.082 UT			< 0.1 UT
Aroclor 1248	12672-29-6	mg/kg	< 0.082 UT		< 0.082 UT			< 0.1 UT
Aroclor 1254	11097-69-1	mg/kg	< 0.082 UT		< 0.082 UT			< 0.0479 UT
Aroclor 1260	11096-82-5	mg/kg	< 0.0804 U		< 0.0804 U			< 0.0479 U
Aroclor 1260	11096-82-5	mg/kg						< 0.79 U
Aroclor 1262	37324-23-5	mg/kg						< 6.3 U

Table A-22
Historical Analytical Results for Sediment Samples at PICA 135 Site 159

		Site Name	159	159	159	159	159	159
		Location ID	I-159-SD-001	I-159-SD-001	I-159-SD-002	I-159-SD-002	I-159-SP-001	I-SDBG-29
		Sample ID	159SD-1(0-1)	159SD-1(0-0.5)	159SD-2(0-1)	159SD-2B(1-2)	159SP-1(0-1)	SDBG-29(0-0.5)
		Depth Interval	0 - 1	0 - .5	0 - 1	1 - 2	0 - 1	0 - .5
		Sample Date	8/9/1996	10/14/1998	8/9/1996	5/17/2001	8/13/1996	11/2/1993
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Pesticides								
4,4'-DDD	72-54-8	mg/kg	< 0.826 U		< 0.826 U			< 0.064 U
4,4'-DDD	72-54-8	mg/kg						< 0.27 U
4,4'-DDE	72-55-9	mg/kg	0.03		< 0.765 U			< 0.068 U
4,4'-DDE	72-55-9	mg/kg						< 0.27 U
4,4'-DDT	50-29-3	mg/kg	0.01		< 0.707 U			< 0.35 U
4,4'-DDT	50-29-3	mg/kg						< 0.1 U
Aldrin	309-00-2	mg/kg	< 0.729 U		< 0.729 U			< 0.14 UJ
Aldrin	309-00-2	mg/kg						< 1.3 U
alpha-BHC	319-84-6	mg/kg	< 0.907 U		< 0.907 U			< 1.3 U
alpha-BHC	319-84-6	mg/kg						< 0.28 U
alpha-Chlordane	5103-71-9	mg/kg	< 0.5 UT		< 0.5 UT			
Atrazine	1912-24-9	mg/kg						< 0.065 U
beta-BHC	319-85-7	mg/kg	< 0.257 U		< 0.257 U			< 1.3 U
beta-BHC	319-85-7	mg/kg						< 0.77 U
Chlordane	57-74-9	mg/kg						< 0.68 U
Chlordane	57-74-9	mg/kg						< 0.0684 U
delta-BHC	319-86-8	mg/kg	< 0.555 U		< 0.555 U			< 0.85 U
delta-BHC	319-86-8	mg/kg						< 0.21 U
Diazinon	333-41-5	mg/kg	< 0.0133 UT		< 0.0133 UT			
Dieldrin	60-57-1	mg/kg	< 0.629 U		< 0.629 U			< 0.079 U
Dieldrin	60-57-1	mg/kg						< 0.16 U
Endosulfan I	959-98-8	mg/kg	< 0.602 U		< 0.602 U			< 0.4 U
Endosulfan I	959-98-8	mg/kg						< 0.1 U
Endosulfan II	33213-65-9	mg/kg	< 0.663 U		< 0.663 U			< 2.4 U
Endosulfan II	33213-65-9	mg/kg						< 0.07 U
Endosulfan sulfate	1031-07-8	mg/kg	< 0.763 U		< 0.763 U			< 0.05 UT
Endosulfan sulfate	1031-07-8	mg/kg						< 1.2 U
Endrin	72-20-8	mg/kg	< 0.657 U		< 0.657 U			< 0.65 U
Endrin	72-20-8	mg/kg						< 1.3 U
Endrin aldehyde	7421-93-4	mg/kg	< 0.024 U		< 0.024 U			< 1.8 U
Endrin ketone	53494-70-5	mg/kg	< 0.024 UT		< 0.024 UT			< 0.05 UT
gamma-BHC (Lindane)	58-89-9	mg/kg	< 0.638 U		< 0.638 U			< 0.1 UJ
gamma-BHC (Lindane)	58-89-9	mg/kg						< 0.1 U

Table A-22
Historical Analytical Results for Sediment Samples at PICA 135 Site 159

		Site Name	159	159	159	159	159	159
		Location ID	I-159-SD-001	I-159-SD-001	I-159-SD-002	I-159-SD-002	I-159-SP-001	I-SDBG-29
		Sample ID	159SD-1(0-1)	159SD-1(0-0.5)	159SD-2(0-1)	159SD-2B(1-2)	159SP-1(0-1)	SDBG-29(0-0.5)
		Depth Interval	0 - 1	0 - .5	0 - 1	1 - 2	0 - 1	0 - .5
		Sample Date	8/9/1996	10/14/1998	8/9/1996	5/17/2001	8/13/1996	11/2/1993
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
gamma-Chlordane	5103-74-2	mg/kg	< 0.5 UT		< 0.5 UT			
Heptachlor	76-44-8	mg/kg	< 0.618 U		< 0.618 U			< 0.24 U
Heptachlor	76-44-8	mg/kg						< 0.22 U
Heptachlor epoxide	1024-57-3	mg/kg	< 0.62 U		< 0.62 U			< 0.13 U
Heptachlor epoxide	1024-57-3	mg/kg						< 0.48 U
Isodrin	465-73-6	mg/kg	< 0.461 U		< 0.461 U			< 0.48 U
Isodrin	465-73-6	mg/kg						< 0.3 U
Malathion	121-75-5	mg/kg	< 0.0133 UT		< 0.0133 UT			< 0.18 U
Methoxychlor	72-43-5	mg/kg	< 0.0711 U		< 0.0711 U			< 0.26 U
Methoxychlor	72-43-5	mg/kg						< 0.0359 U
Mirex	2385-85-5	mg/kg	< 0.25 U		< 0.25 U			< 0.14 U
Parathion	56-38-2	mg/kg						< 1.7 U
p-Chlorophenylmethyl sulfide	123-09-1	mg/kg						< 0.097 U
p-Chlorophenylmethyl sulfone	98-57-7	mg/kg						< 0.066 U
p-Chlorophenylmethyl sulfoxide	934-73-6	mg/kg						< 0.32 U
Supona	470-90-6	mg/kg						< 0.92 U
Toxaphene	8001-35-2	mg/kg	< 0.444 U		< 0.444 U			< 0.226 U
Toxaphene	8001-35-2	mg/kg						< 12 U
Vapona	62-73-7	mg/kg						< 0.068 U
Radiological								
Americium-241	86954-36-1	pCi/g	< 0.182 U		< 0.592 U			
Cesium-137	10045-97-3	pCi/g	0.94		0.13			
Cobalt-60	10198-40-0	pCi/g	< 0.0409 U		< 0.0329 U			
Gross Alpha	12587-46-1	pCi/g	2.59		2.59			
Gross beta	12587-47-2	pCi/g	4.53		2.54			
Radium-226	13982-63-3	pCi/g	0.59		0.74			
Total Uranium	7440-61-1 U	mg/kg	2.32		0.97		0.54	
Uranium-235	15117-96-1	pCi/g	0.03		0.01			
Uranium-238	7440-61-1 U-238	pCi/g	0.63		0.33			

Table A-22
Historical Analytical Results for Sediment Samples at PICA 135 Site 159

		Site Name	159	159	159	159	159	159
		Location ID	I-159-SD-001	I-159-SD-001	I-159-SD-002	I-159-SD-002	I-159-SP-001	I-SDBG-29
		Sample ID	159SD-1(0-1)	159SD-1(0-0.5)	159SD-2(0-1)	159SD-2B(1-2)	159SP-1(0-1)	SDBG-29(0-0.5)
		Depth Interval	0 - 1	0 - .5	0 - 1	1 - 2	0 - 1	0 - .5
		Sample Date	8/9/1996	10/14/1998	8/9/1996	5/17/2001	8/13/1996	11/2/1993
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
SVOC								
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	< 0.24 U		< 0.24 U			
1,2,4-Trichlorobenzene	120-82-1	mg/kg	< 0.04 U		< 0.04 U			< 0.22 U
1,2-Dichlorobenzene	95-50-1	mg/kg	< 0.11 U		< 0.11 U			< 0.042 U
1,2-Diphenylhydrazine	122-66-7	mg/kg						< 0.52 U
1,3-Dichlorobenzene	541-73-1	mg/kg	< 0.13 U		< 0.13 U			< 0.042 U
1,4-Dichlorobenzene	106-46-7	mg/kg	< 0.098 U		< 0.098 U			< 0.034 U
2,4,5-Trichlorophenol	95-95-4	mg/kg	< 0.1 U		< 0.1 U			< 0.49 U
2,4,6-Trichlorophenol	88-06-2	mg/kg	< 0.17 U		< 0.17 U			< 0.061 U
2,4-Dichlorophenol	120-83-2	mg/kg	< 0.18 U		< 0.18 U			< 0.065 U
2,4-Dimethylphenol	105-67-9	mg/kg	< 0.69 U		< 0.69 U			< 3 U
2,4-Dinitrophenol	51-28-5	mg/kg	< 1.2 U		< 1.2 U			< 4.7 U
2,6-Dinitroaniline	606-22-4	mg/kg						< 0.57 U
2-Chloronaphthalene	91-58-7	mg/kg	< 0.036 U		< 0.036 U			< 0.24 U
2-Chlorophenol	95-57-8	mg/kg	< 0.06 U		< 0.06 U			< 0.055 U
2-Methylnaphthalene	91-57-6	mg/kg	< 0.049 U		< 0.049 U			< 0.032 U
2-Methylphenol	95-48-7	mg/kg	< 0.029 U		< 0.029 U			< 0.098 U
2-Nitroaniline	88-74-4	mg/kg	< 0.062 U		< 0.062 U			
2-Nitrophenol	88-75-5	mg/kg	< 0.14 U		< 0.14 U			< 1.1 U
3,3'-Dichlorobenzidine	91-94-1	mg/kg	< 6.3 U		< 6.3 U			< 1.6 U
3,5-Dinitroaniline	618-87-1	mg/kg						< 1.6 U
3-Nitroaniline	99-09-2	mg/kg	< 0.45 U		< 0.45 U			< 3 U
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg	< 0.55 U		< 0.55 U			< 0.8 U
4-Bromophenyl phenyl ether	101-55-3	mg/kg	< 0.033 U		< 0.033 U			< 0.041 U
4-Chloro-3-methylphenol	59-50-7	mg/kg	< 0.095 U		< 0.095 U			< 0.93 U
4-Chloroaniline	106-47-8	mg/kg	< 0.81 U		< 0.81 U			
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	< 0.033 U		< 0.033 U			< 0.17 U
4-Methylphenol	106-44-5	mg/kg	< 0.24 U#		< 0.24 U#			< 0.24 U#
4-Nitroaniline	100-01-6	mg/kg	< 0.41 U		< 0.41 U			
4-Nitrophenol	100-02-7	mg/kg	< 1.4 U		< 1.4 U			< 3.3 U
Acenaphthene	83-32-9	mg/kg	< 0.036 U		0.11	< 0.43 U		< 0.041 U
Acenaphthylene	208-96-8	mg/kg	< 0.033 U		0.15	< 0.43 U		< 0.033 U

Table A-22
Historical Analytical Results for Sediment Samples at PICA 135 Site 159

		Site Name	159	159	159	159	159	159
		Location ID	I-159-SD-001	I-159-SD-001	I-159-SD-002	I-159-SD-002	I-159-SP-001	I-SDBG-29
		Sample ID	159SD-1(0-1)	159SD-1(0-0.5)	159SD-2(0-1)	159SD-2B(1-2)	159SP-1(0-1)	SDBG-29(0-0.5)
		Depth Interval	0 - 1	0 - .5	0 - 1	1 - 2	0 - 1	0 - .5
		Sample Date	8/9/1996	10/14/1998	8/9/1996	5/17/2001	8/13/1996	11/2/1993
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Aniline	62-53-3	mg/kg	< 0.65 U		< 0.65 U			
Anthracene	120-12-7	mg/kg	< 0.033 U		1.5	< 0.43 U		< 0.71 U
Benz(a)anthracene	56-55-3	mg/kg	< 0.17 U		3	< 0.43 U		
Benzo(a)pyrene	50-32-8	mg/kg	< 0.25 U		2.9	< 0.43 U		< 1.2 U
Benzo(b)fluoranthene	205-99-2	mg/kg	< 0.21 U		4.5	< 0.43 U		< 0.31 U
Benzo(g,h,i)perylene	191-24-2	mg/kg	< 0.25 U		1.3	< 0.43 U		< 0.18 U
Benzo(k)fluoranthene	207-08-9	mg/kg	< 0.066 U		2	< 0.43 U		< 0.13 U
Benzyl alcohol	100-51-6	mg/kg	< 0.19 U		< 0.19 U			< 0.032 U
bis(2-Chloroethoxy)methane	111-91-1	mg/kg	< 0.059 U		< 0.059 U			< 0.19 U
bis(2-Chloroethyl)ether	111-44-4	mg/kg	< 0.033 U		< 0.033 U			< 0.36 U
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg	< 0.2 U		< 0.2 U			< 0.44 U
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	< 0.62 U		< 0.62 U			< 0.48 U
Butylbenzyl phthalate	85-68-7	mg/kg	< 0.17 U		< 0.17 U			< 1.8 U
Carbazole	86-74-8	mg/kg	< 0.14 U		0.17 J			
Chrysene	218-01-9	mg/kg	< 0.12 U		3.6	< 0.43 U		< 0.032 U
Dibenz(a,h)anthracene	53-70-3	mg/kg	< 0.21 U		0.35	< 0.43 U		< 0.31 U
Dibenzofuran	132-64-9	mg/kg	< 0.035 U		0.27			< 0.38 U
Dicyclopentadiene	77-73-6	mg/kg						< 0.57 U
Diethylphthalate	84-66-2	mg/kg	< 0.24 U		< 0.24 U			< 0.24 U
Dimethylphthalate	131-11-3	mg/kg	< 0.17 U		< 0.17 U			< 0.063 U
di-n-Butylphthalate	84-74-2	mg/kg	< 0.061 U		< 0.061 U			< 1.3 U
di-n-Octylphthalate	117-84-0	mg/kg	< 0.19 U		< 0.19 U			< 0.23 U
Diphenylamine	122-39-4	mg/kg	< 0.13 U		< 0.13 U			
Fluoranthene	206-44-0	mg/kg	0.31		7.9	< 0.43 U		< 0.032 U
Fluorene	86-73-7	mg/kg	< 0.033 U		0.94	< 0.43 U		< 0.065 U
Hexachlorobenzene	118-74-1	mg/kg	< 0.033 U		< 0.033 U			< 0.08 U
Hexachlorobutadiene	87-68-3	mg/kg	< 0.23 U		< 0.23 U			< 0.97 U
Hexachlorocyclopentadiene	77-47-4	mg/kg	< 6.2 U		< 6.2 U			< 0.52 U
Hexachloroethane	67-72-1	mg/kg	< 0.15 U		< 0.15 U			< 1.8 U
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	< 0.29 U		1.7	< 0.43 U		< 2.4 U
Isophorone	78-59-1	mg/kg	< 0.033 U		< 0.033 U			< 0.39 U
Naphthalene	91-20-3	mg/kg	< 0.037 U		< 0.037 U	< 0.43 U		< 0.74 U
N-Nitrosodimethylamine	62-75-9	mg/kg						< 0.46 U
n-Nitroso-di-n-propylamine	621-64-7	mg/kg	< 0.2 U		< 0.2 U			< 1.1 U
n-Nitrosodiphenylamine	86-30-6	mg/kg	< 0.19 U		< 0.19 U			< 0.29 U
Pentachlorophenol	87-86-5	mg/kg	< 1.3 U		< 1.3 U			< 0.76 U

Table A-22
Historical Analytical Results for Sediment Samples at PICA 135 Site 159

		Site Name	159	159	159	159	159	159
		Location ID	I-159-SD-001	I-159-SD-001	I-159-SD-002	I-159-SD-002	I-159-SP-001	I-SDBG-29
		Sample ID	159SD-1(0-1)	159SD-1(0-0.5)	159SD-2(0-1)	159SD-2B(1-2)	159SP-1(0-1)	SDBG-29(0-0.5)
		Depth Interval	0 - 1	0 - .5	0 - 1	1 - 2	0 - 1	0 - .5
		Sample Date	8/9/1996	10/14/1998	8/9/1996	5/17/2001	8/13/1996	11/2/1993
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Phenanthrene	85-01-8	mg/kg	0.14		5.3	< 0.43 U		< 0.032 U
Phenol	108-95-2	mg/kg	< 0.11 U		< 0.11 U			< 0.052 U
Pyrene	129-00-0	mg/kg	0.23		7	< 0.43 U		< 0.083 U
TPH								
Diesel Fuel	68334-30-5	mg/kg	< 7.98 U		< 7.98 U			
Gasoline range organics	GRO	mg/kg	< 8 U		< 8 U			
Total Petroleum Hydrocarbons	TPH	mg/kg						25.1
TPH, aviation gas fraction	50815-00-4	mg/kg	< 8 U		< 8 U			
TRPH	TRPH	mg/kg	66.3		195			
VOC								
1,1,1-Trichloroethane	71-55-6	mg/kg	< 0.44 U		< 0.44 U			
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	mg/kg	0.04		0.03			
1,1,2-Trichloroethane	79-00-5	mg/kg	< 0.54 U		< 0.54 U			
1,1-Dichloroethane	75-34-3	mg/kg	< 0.23 U		< 0.23 U			
1,1-Dichloroethene	75-35-4	mg/kg	< 0.39 U		< 0.39 U			
1,2,3-Trichlorobenzene	87-61-6	mg/kg						< 0.032 U
1,2-Dichloroethane	107-06-2	mg/kg	< 0.17 U		< 0.17 U			
1,2-Dichloroethene (total)	540-59-0	mg/kg	< 0.3 U		< 0.3 U			
1,2-Dichloropropane	78-87-5	mg/kg	< 0.29 U		< 0.29 U			
2,3,6-Trichlorophenol	933-75-5	mg/kg						< 0.62 U
2-Butanone	78-93-3	mg/kg	< 0.07 U		< 0.07 U			
2-Hexanone	591-78-6	mg/kg	< 0.032 U		< 0.032 U			
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	< 0.027 U		< 0.027 U			
Acetone	67-64-1	mg/kg	< 0.017 U		< 0.017 U			
Acetonitrile	75-05-8	mg/kg	< 0.23 U		< 0.23 U			
Benzene	71-43-2	mg/kg	< 0.15 U		< 0.15 U			
Bromodichloromethane	75-27-4	mg/kg	< 0.29 U		< 0.29 U			
Bromoform	75-25-2	mg/kg	< 0.69 U		< 0.69 U			
Bromomethane	74-83-9	mg/kg	< 0.57 U		< 0.57 U			
Carbon disulfide	75-15-0	mg/kg	< 0.44 U		< 0.44 U			
Carbon tetrachloride	56-23-5	mg/kg	< 0.7 U		< 0.7 U			
Chlorobenzene	108-90-7	mg/kg	< 0.086 U		< 0.086 U			
Chloroethane	75-00-3	mg/kg	< 0.012 U		< 0.012 U			
Chloroform	67-66-3	mg/kg	< 0.087 U		< 0.087 U			
Chloromethane	74-87-3	mg/kg	< 0.88 U		< 0.88 U			
cis-1,3-Dichloropropene	10061-01-5	mg/kg	< 0.32 U		< 0.32 U			

Table A-22
Historical Analytical Results for Sediment Samples at PICA 135 Site 159

		Site Name	159	159	159	159	159	159
		Location ID	I-159-SD-001	I-159-SD-001	I-159-SD-002	I-159-SD-002	I-159-SP-001	I-SDBG-29
		Sample ID	159SD-1(0-1)	159SD-1(0-0.5)	159SD-2(0-1)	159SD-2B(1-2)	159SP-1(0-1)	SDBG-29(0-0.5)
		Depth Interval	0 - 1	0 - .5	0 - 1	1 - 2	0 - 1	0 - .5
		Sample Date	8/9/1996	10/14/1998	8/9/1996	5/17/2001	8/13/1996	11/2/1993
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Dibromochloromethane	124-48-1	mg/kg	< 0.31 U		< 0.31 U			
Dibromochloropropane	96-12-8	mg/kg						< 0.071 U
Dichlorodifluoromethane	75-71-8	mg/kg	< 0.014 U		< 0.014 U			
Ethanol	64-17-5	mg/kg	< 3.7 U		< 3.7 U			
Ethyl benzene	100-41-4	mg/kg	< 0.17 U		< 0.17 U			
Isopropanol	67-63-0	mg/kg	< 0.79 U		< 0.79 U			
Methylene chloride	75-09-2	mg/kg	0.02		< 0.012 U			
Styrene	100-42-5	mg/kg	< 0.26 U		< 0.26 U			
tert-Butylalcohol	75-65-0	mg/kg	< 0.5 U		< 0.5 U			
Tetrachloroethene	127-18-4	mg/kg	< 0.081 U		< 0.081 U			
Toluene	108-88-3	mg/kg	< 0.078 U		< 0.078 U			
trans-1,3-Dichloropropene	10061-02-6	mg/kg	< 0.28 U		< 0.28 U			
Trichloroethene	79-01-6	mg/kg	< 0.28 U		< 0.28 U			
Trichlorofluoromethane	75-69-4	mg/kg	< 0.59 U		< 0.59 U			
Vinyl acetate	108-05-4	mg/kg	< 0.032 U		< 0.032 U			
Vinyl chloride	75-01-4	mg/kg	< 0.62 U		< 0.62 U			
Xylenes	1330-20-7	mg/kg	< 0.15 U		< 0.15 U			
WetChem								
% Solids	%Solid	%				76.5		
Ammonia	7664-41-7	mg/kg	128		19.8		952	
Cation Exchange Capacity	CEC	mg/kg						4000 D
Chloride	16887-00-6	mg/kg	12.7		< 6.05 U		47.6	
Cyanide	57-12-5	mg/kg	< 0.92 U		< 0.92 U		< 0.92 U	0.39 J
Fluoride	16984-48-8	mg/kg	17.9		< 3.62 U		< 3.62 U	
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	< 0.6 U		< 0.6 U		< 0.6 U	
Phosphate	14265-44-2	mg/kg	1000		360		2400	
Sulfate	14808-79-8	mg/kg	< 90.4 U		< 90.4 U		< 90.4 U	
Sulfide	18496-25-8	mg/kg	99		< 6 U		8600	
Total organic carbon	TOC	mg/kg	47300	78700	4830		311000	13000

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

pCi/g - picocuries per gram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-22
Historical Analytical Results for Sediment Samples at PICA 135 Site 159

		Site Name	159	159	159	159	159	159
		Location ID	I-159-SD-001	I-159-SD-001	I-159-SD-002	I-159-SD-002	I-159-SP-001	I-SDBG-29
		Sample ID	159SD-1(0-1)	159SD-1(0-0.5)	159SD-2(0-1)	159SD-2B(1-2)	159SP-1(0-1)	SDBG-29(0-0.5)
		Depth Interval	0 - 1	0 - .5	0 - 1	1 - 2	0 - 1	0 - .5
		Sample Date	8/9/1996	10/14/1998	8/9/1996	5/17/2001	8/13/1996	11/2/1993
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						

D - Compounds at secondary dilution factor

Table A-23
Historical Analytical Results for Surface Water Samples at PICA 135 Site 159

		Site Name	159	159	159	159
		Location ID	I-159-SP-001	I-159-SW-001	I-159-SW-002	I-SWBG-29
		Sample ID	159SP-1(19960813)	159SW-1(19960809)	159SW-2(19960809)	SWBG-29(19931102)
		Depth Interval	0 - 1			
		Sample Date	8/13/1996	8/9/1996	8/9/1996	11/2/1993
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Analyte Group						
Explosives						
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.449 U	< 0.449 U	< 0.449 U	< 0.21 U
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.611 U	< 0.611 U	< 0.611 U	< 0.458 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.635 U	< 0.635 U	< 0.635 U	< 0.426 U
3-Nitrotoluene	99-08-1	ug/L				< 2.9 U
HMX	2691-41-0	ug/L	< 1.21 U	< 1.21 U	< 1.21 U	< 5.3 UJD
Nitrobenzene	98-95-3	ug/L	< 0.645 U	< 0.645 U	< 0.645 U	< 0.682 U
Nitrobenzene	98-95-3	ug/L				< 3.7 U
Nitrocellulose	9004-70-0	ug/L	< 553 U	< 553 U	< 553 U	553
Nitroglycerin	55-63-0	ug/L	< 10 U	< 10 U	< 10 U	< 1.49 U
Nitroguanidine	556-88-7	ug/L	< 30.9 U	< 30.9 U	< 30.9 U	
PETN	78-11-5	ug/L	< 20 U	< 20 U	< 20 U	< 2 U
Picric Acid	88-89-1	ug/L	< 0.27 U	< 0.27 U	< 0.27 U	
RDX	121-82-4	ug/L	< 1.17 U	< 1.17 U	< 1.17 U	< 0.416 U
Tetrazene	14097-21-3	ug/L	< 40 UJ	< 40 UJ	< 40 UJ	
Tetryl	479-45-8	ug/L	< 1.56 U	< 1.56 U	< 1.56 U	< 0.631 U
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.0637 U	< 0.0637 U	0.2	< 0.397 U
2,4-Dinitrotoluene	121-14-2	ug/L				< 5.8 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 0.6 U
2,6-Dinitrotoluene	606-20-2	ug/L				< 6.7 U
Metals						
Aluminum	7429-90-5	ug/L	< 23.5 U	177	295	< 112 U
Antimony	7440-36-0	ug/L	< 1 U	< 1 U	< 1 U	< 60 U
Arsenic	7440-38-2	ug/L	22.5	< 1 U	< 1 U	< 2.35 UJ
Barium	7440-39-3	ug/L	9.8	17.1	17	20.1
Beryllium	7440-41-7	ug/L	< 5 U	< 5 U	< 5 U	< 1.12 U
Boron	7440-42-8	ug/L	< 50 U	< 50 U	< 50 U	
Cadmium	7440-43-9	ug/L	< 3.01 U	< 3.01 U	< 3.01 U	< 6.78 U
Calcium	7440-70-2	ug/L	9050	6000	6290	7390
Chromium	7440-47-3	ug/L	< 6.96 U	< 6.96 U	< 6.96 U	< 16.8 U
Cobalt	7440-48-4	ug/L	< 50 U	< 50 U	< 50 U	< 25 U
Copper	7440-50-8	ug/L	< 5 U	8.73	6.88	< 18.8 U
Iron	7439-89-6	ug/L	50.5	776	546	< 77.5 U
Lead	7439-92-1	ug/L	2.45	21.5	4.79	< 4.47 U

Table A-23
Historical Analytical Results for Surface Water Samples at PICA 135 Site 159

		Site Name	159	159	159	159
		Location ID	I-159-SP-001	I-159-SW-001	I-159-SW-002	I-SWBG-29
		Sample ID	159SP-1(19960813)	159SW-1(19960809)	159SW-2(19960809)	SWBG-29(19931102)
		Depth Interval	0 - 1			
		Sample Date	8/13/1996	8/9/1996	8/9/1996	11/2/1993
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Magnesium	7439-95-4	ug/L	2790	2580	2650	2980
Manganese	7439-96-5	ug/L	< 2.5 U	92.1	93.9	15.2
Mercury	7439-97-6	ug/L	< 0.243 U	< 0.243 UJ	< 0.243 UJ	< 0.1 U
Nickel	7440-02-0	ug/L	< 7.11 U	< 7.11 U	< 7.11 U	< 32.1 U
Potassium	7440-09-7	ug/L	< 1000 U	< 1000 U	< 1000 U	< 1240 U
Selenium	7782-49-2	ug/L	< 2 U	< 2 U	< 2 U	< 2.53 UJ
Silver	7440-22-4	ug/L	< 4.42 U	< 4.42 U	< 4.42 U	< 0.333 U
Sodium	7440-23-5	ug/L	8670	9840	10500	8110
Strontium	7440-24-6	ug/L	37.4	27.1	27.5	
Thallium	7440-28-0	ug/L	< 1 U	< 1 U	< 1 U	< 125 U
Titanium	7440-32-6	ug/L	< 2 U	4.03	7.32	
Vanadium	7440-62-2	ug/L	< 4.69 U	< 4.69 U	< 4.69 U	< 27.6 U
Zinc	7440-66-6	ug/L	< 35.8 U	< 35.8 U	< 35.8 U	< 18 U
Zirconium	7440-67-7	ug/L	< 1 UJ	< 1 UJ	< 1 UJ	
Other						
1,4-Oxathiane	15980-15-1	ug/L				< 27 U
Diisopropyl methylphosphonate	1445-75-6	ug/L				< 21 U
Dimethylmethylphosphonate	756-79-6	ug/L				< 130 U
Dithiane	51330-42-8	ug/L				< 3.3 U
PCBs						
Aroclor 1016	12674-11-2	ug/L		< 0.16 U	< 0.16 U	< 0.385 U
Aroclor 1221	11104-28-2	ug/L		< 0.16 UT	< 0.16 UT	< 0.385 UT
Aroclor 1232	11141-16-5	ug/L		< 0.16 UT	< 0.16 UT	< 0.385 UT
Aroclor 1242	53469-21-9	ug/L		< 0.19 UT	< 0.19 UT	< 0.385 UT
Aroclor 1248	12672-29-6	ug/L		< 0.19 UT	< 0.19 UT	< 0.385 UT
Aroclor 1254	11097-69-1	ug/L		< 0.19 UT	< 0.19 UT	< 0.176 UT
Aroclor 1260	11096-82-5	ug/L		< 0.19 U	< 0.19 U	< 0.176 U
Pesticides						
4,4'-DDD	72-54-8	ug/L		< 0.0233 U	< 0.0233 U	< 0.81 U
4,4'-DDD	72-54-8	ug/L				< 18 U
4,4'-DDE	72-55-9	ug/L		< 0.027 U	< 0.027 U	< 0.39 U
4,4'-DDE	72-55-9	ug/L				< 14 U
4,4'-DDT	50-29-3	ug/L		< 0.034 U	< 0.034 U	< 18 U
4,4'-DDT	50-29-3	ug/L				< 0.25 U
Aldrin	309-00-2	ug/L		< 0.0918 U	< 0.0918 U	< 0.74 U
Aldrin	309-00-2	ug/L				< 13 U
alpha-BHC	319-84-6	ug/L		< 0.0385 U	< 0.0385 U	0.45 N
alpha-BHC	319-84-6	ug/L				< 5.3 U

Table A-23
Historical Analytical Results for Surface Water Samples at PICA 135 Site 159

		Site Name	159	159	159	159
		Location ID	I-159-SP-001	I-159-SW-001	I-159-SW-002	I-SWBG-29
		Sample ID	159SP-1(19960813)	159SW-1(19960809)	159SW-2(19960809)	SWBG-29(19931102)
		Depth Interval	0 - 1			
		Sample Date	8/13/1996	8/9/1996	8/9/1996	11/2/1993
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
alpha-Chlordane	5103-71-9	ug/L		< 0.075 UT	< 0.075 UT	

Table A-23
Historical Analytical Results for Surface Water Samples at PICA 135 Site 159

		Site Name	159	159	159	159
		Location ID	I-159-SP-001	I-159-SW-001	I-159-SW-002	I-SWBG-29
		Sample ID	159SP-1(19960813)	159SW-1(19960809)	159SW-2(19960809)	SWBG-29(19931102)
		Depth Interval	0 - 1			
		Sample Date	8/13/1996	8/9/1996	8/9/1996	11/2/1993
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Atrazine	1912-24-9	ug/L				< 5.9 U
beta-BHC	319-85-7	ug/L		< 0.024 U	< 0.024 U	< 0.99 U
beta-BHC	319-85-7	ug/L				< 17 U
Bromacil	314-40-9	ug/L				< 2.9 U
Chlordane	57-74-9	ug/L				< 0.0312 U
Chlordane	57-74-9	ug/L				< 37 U
delta-BHC	319-86-8	ug/L		< 0.0293 U	< 0.0293 U	< 0.34 U
Diazinon	333-41-5	ug/L		< 0.188 UT	< 0.188 UT	
Dieldrin	60-57-1	ug/L		< 0.024 U	< 0.024 U	< 0.74 U
Dieldrin	60-57-1	ug/L				< 26 U
Endosulfan I	959-98-8	ug/L		< 0.023 U	< 0.023 U	< 23 U
Endosulfan I	959-98-8	ug/L				< 0.25 U
Endosulfan II	33213-65-9	ug/L		< 0.023 U	< 0.023 U	< 42 U
Endosulfan II	33213-65-9	ug/L				< 0.77 U
Endosulfan sulfate	1031-07-8	ug/L		< 0.0786 U	< 0.0786 U	< 50 U
Endosulfan sulfate	1031-07-8	ug/L				0.03 N
Endrin	72-20-8	ug/L		< 0.0238 U	< 0.0238 U	< 0.0176 U
Endrin	72-20-8	ug/L				< 18 U
Endrin aldehyde	7421-93-4	ug/L		< 0.0285 U	< 0.0285 U	< 0.0504 U
Endrin aldehyde	7421-93-4	ug/L				< 5 U
Endrin ketone	53494-70-5	ug/L		< 0.0285 UT	< 0.0285 UT	< 0.25 UT
gamma-BHC (Lindane)	58-89-9	ug/L		< 0.0507 U	< 0.0507 U	< 7.2 U
gamma-BHC (Lindane)	58-89-9	ug/L				< 0.25 U
gamma-Chlordane	5103-74-2	ug/L		< 0.075 UT	< 0.075 UT	
Heptachlor	76-44-8	ug/L		< 0.0423 U	< 0.0423 U	< 38 U
Heptachlor	76-44-8	ug/L				< 0.25 U
Heptachlor epoxide	1024-57-3	ug/L		< 0.0245 U	< 0.0245 U	< 28 U
Heptachlor epoxide	1024-57-3	ug/L				< 0.63 U
Isodrin	465-73-6	ug/L		< 0.0562 U	< 0.0562 U	< 7.8 U
Isodrin	465-73-6	ug/L				< 0.25 U

Table A-23
Historical Analytical Results for Surface Water Samples at PICA 135 Site 159

		Site Name	159	159	159	159
		Location ID	I-159-SP-001	I-159-SW-001	I-159-SW-002	I-SWBG-29
		Sample ID	159SP-1(19960813)	159SW-1(19960809)	159SW-2(19960809)	SWBG-29(19931102)
		Depth Interval	0 - 1			
		Sample Date	8/13/1996	8/9/1996	8/9/1996	11/2/1993
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Malathion	121-75-5	ug/L		< 0.188 UT	< 0.188 UT	< 21 U
Methoxychlor	72-43-5	ug/L		< 0.057 U	< 0.057 U	< 0.075 U
Methoxychlor	72-43-5	ug/L				< 11 U
Mirex	2385-85-5	ug/L		< 0.025 U	< 0.025 U	< 24 U
Parathion	56-38-2	ug/L				< 37 U
p-Chlorophenylmethyl sulfide	123-09-1	ug/L				< 10 U
p-Chlorophenylmethyl sulfone	98-57-7	ug/L				< 5.3 U
p-Chlorophenylmethyl sulfoxide	934-73-6	ug/L				< 15 U
Supona	470-90-6	ug/L				< 19 U
Toxaphene	8001-35-2	ug/L		< 1.35 U	< 1.35 U	< 1.64 U
Vapona	62-73-7	ug/L				< 8.5 U
Radiological						
Americium-241	86954-36-1	pCi/L		< 3.56 U	< 3.78 U	
Cesium-137	10045-97-3	pCi/L		< 0.955 U	< 0.986 U	
Cobalt-60	10198-40-0	pCi/L		1.36	< 1.16 U	
Gross Alpha	12587-46-1	pCi/L		0.29	3.2	
Gross beta	12587-47-2	pCi/L		2	1.29	
Radium-226	13982-63-3	pCi/L		< 3.52 U	< 3.71 U	
Total Uranium	7440-61-1 U	ug/L	< 0.111 U	< 0.111 U	< 0.111 U	
Uranium-235	15117-96-1	pCi/L		0.08	< 0.022 U	
Uranium-238	7440-61-1 U-238	pCi/L		0.44	0.08	
SVOC						
1,1,2,2-Tetrachloroethane	79-34-5	ug/L		< 0.51 U	< 0.51 U	< 1.5 U
1,2,4-Trichlorobenzene	120-82-1	ug/L		< 1.8 UJ	< 1.8 UJ	< 2.4 U
1,2-Dichlorobenzene	95-50-1	ug/L		< 1.7 UJ	< 1.7 UJ	< 1.2 U
1,2-Diphenylhydrazine	122-66-7	ug/L				< 13 U
1,3-Dichlorobenzene	541-73-1	ug/L		< 1.7 UJ	< 1.7 UJ	< 1 U
1,3-Dichlorobenzene	541-73-1	ug/L				< 3.4 U
1,4-Dichlorobenzene	106-46-7	ug/L		< 1.7 UJ	< 1.7 UJ	< 1.5 U
2,4,5-Trichlorophenol	95-95-4	ug/L		< 5.2 UJ	< 5.2 UJ	< 2.8 U
2,4,6-Trichlorophenol	88-06-2	ug/L		< 4.2 UJ	< 4.2 UJ	< 3.6 U
2,4-Dichlorophenol	120-83-2	ug/L		< 2.9 UJ	< 2.9 UJ	< 8.4 U
2,4-Dimethylphenol	105-67-9	ug/L		< 5.8 UJ	< 5.8 UJ	< 4.4 U
2,4-Dinitrophenol	51-28-5	ug/L		< 21 UJ	< 21 UJ	< 180 U

Table A-23
Historical Analytical Results for Surface Water Samples at PICA 135 Site 159

		Site Name	159	159	159	159
		Location ID	I-159-SP-001	I-159-SW-001	I-159-SW-002	I-SWBG-29
		Sample ID	159SP-1(19960813)	159SW-1(19960809)	159SW-2(19960809)	SWBG-29(19931102)
		Depth Interval	0 - 1			
		Sample Date	8/13/1996	8/9/1996	8/9/1996	11/2/1993
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
2,6-Dinitroaniline	606-22-4	ug/L				< 8.8 U
2-Chloronaphthalene	91-58-7	ug/L		< 0.5 UJ	< 0.5 UJ	< 2.6 U
2-Chlorophenol	95-57-8	ug/L		< 0.99 UJ	< 0.99 UJ	< 2.8 U
2-Methylnaphthalene	91-57-6	ug/L		< 1.7 UJ	< 1.7 UJ	< 1.3 U
2-Methylphenol	95-48-7	ug/L		< 3.9 UJ	< 3.9 UJ	< 3.6 U
2-Nitroaniline	88-74-4	ug/L		< 4.3 UJ	< 4.3 UJ	
2-Nitrophenol	88-75-5	ug/L		< 3.7 UJ	< 3.7 UJ	< 8.2 U
3,3'-Dichlorobenzidine	91-94-1	ug/L		< 12 UJ	< 12 UJ	< 5 U
3,5-Dinitroaniline	618-87-1	ug/L				< 21 U
3-Nitroaniline	99-09-2	ug/L		< 4.9 UJ	< 4.9 UJ	< 15 U
4,6-dinitro-2-Methylphenol	534-52-1	ug/L		< 17 UJ	< 17 UJ	
4-Bromophenyl phenyl ether	101-55-3	ug/L		< 4.2 UJ	< 4.2 UJ	< 22 U
4-Chloro-3-methylphenol	59-50-7	ug/L		< 4 UJ	< 4 UJ	< 8.5 U
4-Chloroaniline	106-47-8	ug/L		< 7.3 UJ	< 7.3 UJ	
4-Chlorophenyl phenyl ether	7005-72-3	ug/L		< 5.1 UJ	< 5.1 UJ	< 23 U
4-Methylphenol	106-44-5	ug/L		< 0.52 UJ#	< 0.52 UJ#	< 2.8 U#
4-Nitroaniline	100-01-6	ug/L		< 5.2 UJ	< 5.2 UJ	
4-Nitrophenol	100-02-7	ug/L		< 12 UJ	< 12 UJ	< 96 U
Acenaphthene	83-32-9	ug/L		< 1.7 UJ	< 1.7 UJ	< 5.8 U
Acenaphthylene	208-96-8	ug/L		< 0.5 UJ	< 0.5 UJ	< 5.1 U
Aniline	62-53-3	ug/L		< 4.4 UJ	< 4.4 UJ	
Anthracene	120-12-7	ug/L		< 0.5 UJ	< 0.5 UJ	< 5.2 U
Benz(a)anthracene	56-55-3	ug/L		< 1.6 UJ	< 1.6 UJ	< 9.8 U
Benzo(a)pyrene	50-32-8	ug/L		< 4.7 UJ	< 4.7 UJ	< 14 U
Benzo(b)fluoranthene	205-99-2	ug/L		< 5.4 UJ	< 5.4 UJ	< 10 U
Benzo(g,h,i)perylene	191-24-2	ug/L		< 6.1 UJ	< 6.1 UJ	< 15 U
Benzo(k)fluoranthene	207-08-9	ug/L		< 0.87 UJ	< 0.87 UJ	< 10 U
Benzoic Acid	65-85-0	ug/L		< 13 UJ	< 13 UJ	
Benzyl alcohol	100-51-6	ug/L		< 0.72 UJ	< 0.72 UJ	< 4 U
bis(2-Chloroethoxy)methane	111-91-1	ug/L		< 1.5 UJ	< 1.5 UJ	< 6.8 U
bis(2-Chloroethyl)ether	111-44-4	ug/L		< 1.9 UJ	< 1.9 UJ	< 0.68 U
bis(2-Chloroisopropyl)ether	39638-32-9	ug/L		< 5.3 UJ	< 5.3 UJ	< 5 U
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L		< 4.8 UJ	< 4.8 UJ	< 7.7 U
Butylbenzyl phthalate	85-68-7	ug/L		< 3.4 UJ	< 3.4 UJ	< 28 U
Carbazole	86-74-8	ug/L		< 2 UJ	< 2 UJ	
Chrysene	218-01-9	ug/L		< 2.4 UJ	< 2.4 UJ	< 7.4 U
Dibenz(a,h)anthracene	53-70-3	ug/L		< 6.5 UJ	< 6.5 UJ	< 12 U
Dibenzofuran	132-64-9	ug/L		< 1.7 UJ	< 1.7 UJ	< 5.1 U

Table A-23
Historical Analytical Results for Surface Water Samples at PICA 135 Site 159

		Site Name	159	159	159	159
		Location ID	I-159-SP-001	I-159-SW-001	I-159-SW-002	I-SWBG-29
		Sample ID	159SP-1(19960813)	159SW-1(19960809)	159SW-2(19960809)	SWBG-29(19931102)
		Depth Interval	0 - 1			
		Sample Date	8/13/1996	8/9/1996	8/9/1996	11/2/1993
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Dichlorobenzenes	25321-22-6	ug/L				< 2 U
Dicyclopentadiene	77-73-6	ug/L				< 5.5 U
Diethylphthalate	84-66-2	ug/L		< 2 UJ	< 2 UJ	< 5.9 U
Dimethylphthalate	131-11-3	ug/L		< 1.5 UJ	< 1.5 UJ	< 2.2 U
di-n-Butylphthalate	84-74-2	ug/L		< 3.7 UJ	< 3.7 UJ	< 33 U
di-n-Octylphthalate	117-84-0	ug/L		< 15 UJ	< 15 UJ	< 1.5 U
Diphenylamine	122-39-4	ug/L		< 2.5 UJ	< 2.5 UJ	
Fluoranthene	206-44-0	ug/L		< 3.3 UJ	< 3.3 UJ	< 24 U
Fluorene	86-73-7	ug/L		< 3.7 UJ	< 3.7 UJ	< 9.2 U
Hexachlorobenzene	118-74-1	ug/L		< 1.6 UJ	< 1.6 UJ	< 12 U
Hexachlorobutadiene	87-68-3	ug/L		< 3.4 UJ	< 3.4 UJ	< 8.7 U
Hexachlorocyclopentadiene	77-47-4	ug/L		< 8.6 UJ	< 8.6 UJ	< 54 U
Hexachloroethane	67-72-1	ug/L		< 1.5 UJ	< 1.5 UJ	< 8.3 U
Indeno(1,2,3-c,d)pyrene	193-39-5	ug/L		< 8.6 UJ	< 8.6 UJ	< 21 U
Isophorone	78-59-1	ug/L		< 4.8 UJ	< 4.8 UJ	< 2.4 U
Naphthalene	91-20-3	ug/L		< 0.5 UJ	< 0.5 UJ	< 0.5 U
N-Nitrosodimethylamine	62-75-9	ug/L				< 9.7 U
n-Nitroso-di-n-propylamine	621-64-7	ug/L		< 4.4 UJ	< 4.4 UJ	< 6.8 U
n-Nitrosodiphenylamine	86-30-6	ug/L		< 3 UJ	< 3 UJ	< 3.7 U
Pentachlorophenol	87-86-5	ug/L		< 0.042 U	< 0.042 U	< 9.1 U
Phenanthrene	85-01-8	ug/L		< 0.5 UJ	< 0.5 UJ	< 9.9 U
Phenol	108-95-2	ug/L		< 9.2 UJ	< 9.2 UJ	< 2.2 U
Pyrene	129-00-0	ug/L		< 2.8 UJ	< 2.8 UJ	< 17 U
TPH						
Total Petroleum Hydrocarbons	TPH	ug/L				< 100 U
TRPH	TRPH	ug/L		< 174 U	< 174 U	
VOC						
1,1,1-Trichloroethane	71-55-6	ug/L		< 0.5 U	< 0.5 U	< 1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L		< 5 U	< 5 U	
1,1,2-Trichloroethane	79-00-5	ug/L		< 1.2 U	< 1.2 U	< 1 U
1,1-Dichloroethane	75-34-3	ug/L		< 0.68 U	< 0.68 U	< 1 U
1,1-Dichloroethene	75-35-4	ug/L		< 0.5 U	< 0.5 U	< 1 U
1,2,3-Trichlorobenzene	87-61-6	ug/L				< 5.8 U

Table A-23
Historical Analytical Results for Surface Water Samples at PICA 135 Site 159

		Site Name	159	159	159	159
		Location ID	I-159-SP-001	I-159-SW-001	I-159-SW-002	I-SWBG-29
		Sample ID	159SP-1(19960813)	159SW-1(19960809)	159SW-2(19960809)	SWBG-29(19931102)
		Depth Interval	0 - 1			
		Sample Date	8/13/1996	8/9/1996	8/9/1996	11/2/1993
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
1,2-Dichloroethane	107-06-2	ug/L		< 0.5 U	< 0.5 U	< 1 U
1,2-Dichloroethene (total)	540-59-0	ug/L		< 0.5 U	< 0.5 U	< 5 U
1,2-Dichloropropane	78-87-5	ug/L		< 0.5 U	< 0.5 U	< 1 U
1,3-Dichloropropane	142-28-9	ug/L				< 4.8 U
2,3,6-Trichlorophenol	933-75-5	ug/L				< 1.7 U
2-Butanone	78-93-3	ug/L		< 6.4 U	< 6.4 U	< 10 U
2-Chloroethyl vinyl ether	110-75-8	ug/L				< 3.5 U
2-Hexanone	591-78-6	ug/L		< 3.6 U	< 3.6 U	
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L		< 3 U	< 3 U	< 1.4 U
Acetone	67-64-1	ug/L		< 13 U	< 13 U	< 8 U
Acetonitrile	75-05-8	ug/L		< 200 U	< 200 U	
Acrylonitrile	107-13-1	ug/L				< 8.4 U
Benzene	71-43-2	ug/L		< 0.5 U	< 0.5 U	< 1 U
Bromodichloromethane	75-27-4	ug/L		< 0.59 U	< 0.59 U	< 1 U
Bromoform	75-25-2	ug/L		< 2.6 U	< 2.6 U	< 11 U
Bromomethane	74-83-9	ug/L		< 5.8 U	< 5.8 U	< 14 U
Carbon disulfide	75-15-0	ug/L		< 0.5 U	< 0.5 U	
Carbon tetrachloride	56-23-5	ug/L		< 0.58 U	< 0.58 U	< 1 U
Chlorobenzene	108-90-7	ug/L		< 0.5 U	< 0.5 U	< 1 U
Chloroethane	75-00-3	ug/L		< 1.9 U	< 1.9 U	< 8 U
Chloroform	67-66-3	ug/L		< 0.5 U	< 0.5 U	< 1 U
Chloromethane	74-87-3	ug/L		< 3.2 U	< 3.2 U	< 1.2 U
cis-1,3-Dichloropropene	10061-01-5	ug/L		< 0.58 U	< 0.58 U	
Dibromochloromethane	124-48-1	ug/L		< 0.67 U	< 0.67 U	< 1 U
Dibromochloropropane	96-12-8	ug/L				< 12 U
Dichlorodifluoromethane	75-71-8	ug/L		< 6.9 U	< 6.9 U	
Ethanol	64-17-5	ug/L		< 2000 U	< 2000 U	
Ethyl benzene	100-41-4	ug/L		< 0.5 U	< 0.5 U	< 1 U
Isopropanol	67-63-0	ug/L		< 400 U	< 400 U	
Methylene chloride	75-09-2	ug/L		< 2.3 U	11	< 1 U
m-Xylenes	108-38-3	ug/L				< 1 U
Styrene	100-42-5	ug/L		< 0.5 U	< 0.5 U	
tert-Butylalcohol	75-65-0	ug/L		< 500 U	< 500 U	

Table A-23
Historical Analytical Results for Surface Water Samples at PICA 135 Site 159

		Site Name	159	159	159	159
		Location ID	I-159-SP-001	I-159-SW-001	I-159-SW-002	I-SWBG-29
		Sample ID	159SP-1(19960813)	159SW-1(19960809)	159SW-2(19960809)	SWBG-29(19931102)
		Depth Interval	0 - 1			
		Sample Date	8/13/1996	8/9/1996	8/9/1996	11/2/1993
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Tetrachloroethene	127-18-4	ug/L		< 1.6 U	< 1.6 U	< 1 U
Toluene	108-88-3	ug/L		0.77	< 0.5 U	< 1 U
trans-1,3-Dichloropropene	10061-02-6	ug/L		< 0.7 U	< 0.7 U	
Trichloroethene	79-01-6	ug/L		< 0.5 U	< 0.5 U	< 1 U
Trichlorofluoromethane	75-69-4	ug/L		< 1.4 U	< 1.4 U	< 1 U
Vinyl acetate	108-05-4	ug/L		< 8.3 U	< 8.3 U	
Vinyl chloride	75-01-4	ug/L		< 2.6 U	< 2.6 U	< 12 U
Xylenes	1330-20-7	ug/L		< 0.84 U	< 0.84 U	< 2 U
WetChem						
Ammonia	7664-41-7	ug/L	< 60 UJ	< 60 UJ	61.6 J	
Chloride	16887-00-6	ug/L	14300	20900	22000	
Cyanide	57-12-5	ug/L	< 2.5 U	< 2.5 R	< 2.5 R	< 5 UJ
Fluoride	16984-48-8	ug/L	< 1230 U	< 1230 U	< 1230 U	
Hardness	HARDNESS	ug/L				29800
Nitrate/Nitrite	Nitrate/Nitrite	ug/L	85.3	69	60.8	
Phosphate	14265-44-2	ug/L	45.3	18.9	< 13.3 U	
Sulfate	14808-79-8	ug/L	14000	< 10000 U	< 10000 U	
Sulfide	18496-25-8	ug/L	< 50 U	< 50 U	< 50 U	

Notes:

LOC - Level of Concern
ug/L - micrograms per liter
pCi/L- picocuries per liter
U - Non-detect at the specified reporting limit
J - Estimated concentration

Table A-24
Historical Analtyical Results for Sediment Samples at PICA 137 Site 82

		Site Name	82	82	82	82	82
		Location ID	I-82-SD-001	I-82-SD-001	I-82-SD-002	I-82-SD-002	I-82-SD-003
		Sample ID	82SD-1(0-1)	82SD-1(0-0.5)	82SD-2(0-1)	82SD-2(0-0.5)	82SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	0 - 1	0 - .5	0 - 1
		Sample Date	8/1/1996	10/14/1998	8/1/1996	10/14/1998	2/12/2002
		Sample Matrix	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**					
Explosives							
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.488 U		< 0.488 U		
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.496 U		< 0.496 U		
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.456 U		< 0.456 U		
HMX	2691-41-0	mg/kg	< 0.666 U		< 0.666 U		
Nitrobenzene	98-95-3	mg/kg	< 2.41 U		< 2.41 U		
Nitrocellulose	9004-70-0	mg/kg	< 10.4 U		< 10.4 U		
Nitroglycerin	55-63-0	mg/kg	< 4 U		12.3		
Nitroguanidine	556-88-7	mg/kg	< 0.475 U		< 0.475 U		
PETN	78-11-5	mg/kg	< 4 U		< 4 U		
Picric Acid	88-89-1	mg/kg	< 0.108 U		< 0.108 U		
RDX	121-82-4	mg/kg	< 0.587 U		< 0.587 U		
Tetrazene	14097-21-3	mg/kg	< 1.19 U		< 1.19 U		
Tetryl	479-45-8	mg/kg	< 0.731 U		< 0.731 U		
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.424 U		< 0.424 U		
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.524 U		< 0.524 U		
Metals							
Aluminum	7429-90-5	mg/kg	19500		8580		
Antimony	7440-36-0	mg/kg	< 0.1 U		0.38		
Arsenic	7440-38-2	mg/kg	7.54		7.8		2.5 J
Barium	7440-39-3	mg/kg	58.8		39.1		
Beryllium	7440-41-7	mg/kg	< 0.5 U		< 0.5 U		
Boron	7440-42-8	mg/kg	< 5.91 U		14.3		
Cadmium	7440-43-9	mg/kg	< 0.7 U		1.83		
Calcium	7440-70-2	mg/kg	1550		5190		
Chromium	7440-47-3	mg/kg	16.7		14.9		
Cobalt	7440-48-4	mg/kg	7.5		3.62		
Copper	7440-50-8	mg/kg	20.4		27.7		
Iron	7439-89-6	mg/kg	15900		11100		

Table A-24
Historical Analtyical Results for Sediment Samples at PICA 137 Site 82

		Site Name	82	82	82	82	82
		Location ID	I-82-SD-001	I-82-SD-001	I-82-SD-002	I-82-SD-002	I-82-SD-003
		Sample ID	82SD-1(0-1)	82SD-1(0-0.5)	82SD-2(0-1)	82SD-2(0-0.5)	82SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	0 - 1	0 - .5	0 - 1
		Sample Date	8/1/1996	10/14/1998	8/1/1996	10/14/1998	2/12/2002
		Sample Matrix	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**					
Lead	7439-92-1	mg/kg	23.7		57.4		
Magnesium	7439-95-4	mg/kg	1800		2120		
Manganese	7439-96-5	mg/kg	114		139		
Mercury	7439-97-6	mg/kg	0.66		0.26		
Nickel	7440-02-0	mg/kg	15.7		11.4		
Potassium	7440-09-7	mg/kg	802		254		
Selenium	7782-49-2	mg/kg	1.57		1.04		
Silver	7440-22-4	mg/kg	26		1100		
Sodium	7440-23-5	mg/kg	945		541		
Strontium	7440-24-6	mg/kg	25.4		110		
Thallium	7440-28-0	mg/kg	0.39		1.24		
Titanium	7440-32-6	mg/kg	629		791		
Vanadium	7440-62-2	mg/kg	33.4		10.9		
Zinc	7440-66-6	mg/kg	58.2		249		
Zirconium	7440-67-7	mg/kg	10.1		19.3		
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	< 0.24 U		< 0.24 U		
VOC							
1,1,1-Trichloroethane	71-55-6	mg/kg	< 0.44 U		< 0.44 U		
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	mg/kg	< 0.82 U		< 0.82 U		
1,1,2-Trichloroethane	79-00-5	mg/kg	< 0.54 U		< 0.54 U		
1,1-Dichloroethane	75-34-3	mg/kg	< 0.23 U		< 0.23 U		
1,1-Dichloroethene	75-35-4	mg/kg	< 0.39 U		< 0.39 U		
1,2-Dichloroethane	107-06-2	mg/kg	< 0.17 U		< 0.17 U		
1,2-Dichloroethene (total)	540-59-0	mg/kg	< 0.3 U		< 0.3 U		
1,2-Dichloropropane	78-87-5	mg/kg	< 0.29 U		< 0.29 U		
2-Butanone	78-93-3	mg/kg	< 0.07 U		< 0.07 U		
2-Hexanone	591-78-6	mg/kg	< 0.032 U		< 0.032 U		
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	< 0.027 U		< 0.027 U		
Acetone	67-64-1	mg/kg	< 0.017 U		< 0.017 U		

Table A-24
Historical Analtyical Results for Sediment Samples at PICA 137 Site 82

		Site Name	82	82	82	82	82
		Location ID	I-82-SD-001	I-82-SD-001	I-82-SD-002	I-82-SD-002	I-82-SD-003
		Sample ID	82SD-1(0-1)	82SD-1(0-0.5)	82SD-2(0-1)	82SD-2(0-0.5)	82SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	0 - 1	0 - .5	0 - 1
		Sample Date	8/1/1996	10/14/1998	8/1/1996	10/14/1998	2/12/2002
		Sample Matrix	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**					
Acetonitrile	75-05-8	mg/kg	< 0.23 U		< 0.23 U		
Benzene	71-43-2	mg/kg	< 0.15 U		< 0.15 U		
Bromodichloromethane	75-27-4	mg/kg	< 0.29 U		< 0.29 U		
Bromoform	75-25-2	mg/kg	< 0.69 U		< 0.69 U		
Bromomethane	74-83-9	mg/kg	< 0.57 U		< 0.57 U		
Carbon disulfide	75-15-0	mg/kg	< 0.44 U		< 0.44 U		
Carbon tetrachloride	56-23-5	mg/kg	< 0.7 U		< 0.7 U		
Chlorobenzene	108-90-7	mg/kg	< 0.086 U		< 0.086 U		
Chloroethane	75-00-3	mg/kg	< 0.012 U		< 0.012 U		
Chloroform	67-66-3	mg/kg	< 0.087 U		< 0.087 U		
Chloromethane	74-87-3	mg/kg	< 0.88 U		< 0.88 U		
cis-1,3-Dichloropropene	10061-01-5	mg/kg	< 0.32 U		< 0.32 U		
Dibromochloromethane	124-48-1	mg/kg	< 0.31 U		< 0.31 U		
Dichlorodifluoromethane	75-71-8	mg/kg	< 0.014 U		< 0.014 U		
Ethanol	64-17-5	mg/kg	< 3.7 U		< 3.7 U		
Ethyl benzene	100-41-4	mg/kg	< 0.17 U		< 0.17 U		
Isopropanol	67-63-0	mg/kg	< 0.79 U		< 0.79 U		
Methylene chloride	75-09-2	mg/kg	< 0.012 U		< 0.012 U		
Styrene	100-42-5	mg/kg	< 0.26 U		< 0.26 U		
tert-Butylalcohol	75-65-0	mg/kg	< 0.5 U		< 0.5 U		
Tetrachloroethene	127-18-4	mg/kg	< 0.081 U		< 0.081 U		
Toluene	108-88-3	mg/kg	< 0.078 U		< 0.078 U		
trans-1,3-Dichloropropene	10061-02-6	mg/kg	< 0.28 U		< 0.28 U		
Trichloroethene	79-01-6	mg/kg	< 0.28 U		< 0.28 U		
Trichlorofluoromethane	75-69-4	mg/kg	< 0.59 U		< 0.59 U		
Vinyl acetate	108-05-4	mg/kg	< 0.032 U		< 0.032 U		
Vinyl chloride	75-01-4	mg/kg	< 0.62 U		< 0.62 U		
Xylenes	1330-20-7	mg/kg	< 0.15 U		< 0.15 U		

Table A-24
Historical Analtyical Results for Sediment Samples at PICA 137 Site 82

		Site Name	82	82	82	82	82
		Location ID	I-82-SD-001	I-82-SD-001	I-82-SD-002	I-82-SD-002	I-82-SD-003
		Sample ID	82SD-1(0-1)	82SD-1(0-0.5)	82SD-2(0-1)	82SD-2(0-0.5)	82SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	0 - 1	0 - .5	0 - 1
		Sample Date	8/1/1996	10/14/1998	8/1/1996	10/14/1998	2/12/2002
		Sample Matrix	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**					
WetChem							
% Solids	%Solid	%					68.9
Ammonia	7664-41-7	mg/kg	191		147		
Chloride	16887-00-6	mg/kg	57		12.1		
Cyanide	57-12-5	mg/kg	< 0.92 U		4.81		
Fluoride	16984-48-8	mg/kg	< 3.62 U		15.2		
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	< 0.6 UJ		< 0.6 UJ		
Phosphate	14265-44-2	mg/kg	1000		370		
Sulfate	14808-79-8	mg/kg	< 90.4 U		188		
Sulfide	18496-25-8	mg/kg	27.1		61.2		
Total organic carbon	TOC	mg/kg	54200	36500	68700	54700	

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

UJ - Compound was analyzed but not detected. Detection limit is an estimated value.

Table A-25
Historical Analytical Results for Surface Water Samples at PICA 137 Site 82

		Site Name	82	82	82
		Location ID	I-82-SW-001	I-82-SW-001	I-82-SW-002
		Sample ID	82SW-1(19960801)	I-82SW001 (111611)	82SW-2(19960801)
		Depth Interval			
		Sample Date	8/1/1996	11/16/2011	8/1/1996
		Sample Matrix	WS	WS	WS
Chemical Name	**CAS No**	**Unit**			
Explosives					
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.449 U		< 0.449 U
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.611 U		< 0.611 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.635 U		< 0.635 U
HMX	2691-41-0	ug/L	< 1.21 U		< 1.21 U
Nitrobenzene	98-95-3	ug/L	< 0.645 U		< 0.645 U
Nitrocellulose	9004-70-0	ug/L	< 553 U		< 553 U
Nitroglycerin	55-63-0	ug/L	< 10 UJ		< 10 UJ
Nitroguanidine	556-88-7	ug/L	< 30.9 U		< 30.9 U
PETN	78-11-5	ug/L	< 20 U		< 20 U
Picric Acid	88-89-1	ug/L	< 0.27 U		< 0.27 U
RDX	121-82-4	ug/L	< 1.17 U		< 1.17 U
Tetrazene	14097-21-3	ug/L	< 40 U		< 40 U
Tetryl	479-45-8	ug/L	< 1.56 U		< 1.56 U
Explosives / SVOC					
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.0637 U		< 0.0637 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.0738 U		< 0.0738 U
Metals					
Aluminum	7429-90-5	ug/L	42.4		137
Antimony	7440-36-0	ug/L	< 1 U		< 1 U
Arsenic	7440-38-2	ug/L	< 1 U		< 1 U
Barium	7440-39-3	ug/L	19.2		23.5
Beryllium	7440-41-7	ug/L	< 5 U		< 5 U
Boron	7440-42-8	ug/L	54.2		57.8
Cadmium	7440-43-9	ug/L	< 3.01 U		< 3.01 U
Calcium	7440-70-2	ug/L	6490		7060
Chromium	7440-47-3	ug/L	< 6.96 U		< 6.96 U
Cobalt	7440-48-4	ug/L	< 50 U		< 50 U
Copper	7440-50-8	ug/L	< 5 U		< 5 U
Iron	7439-89-6	ug/L	928		1710

Table A-25
Historical Analytical Results for Surface Water Samples at PICA 137 Site 82

		Site Name	82	82	82
		Location ID	I-82-SW-001	I-82-SW-001	I-82-SW-002
		Sample ID	82SW-1(19960801)	I-82SW001 (111611)	82SW-2(19960801)
		Depth Interval			
		Sample Date	8/1/1996	11/16/2011	8/1/1996
		Sample Matrix	WS	WS	WS
Chemical Name	**CAS No**	**Unit**			
Lead	7439-92-1	ug/L	< 1 U		2.71
Magnesium	7439-95-4	ug/L	2450		2600
Manganese	7439-96-5	ug/L	195		202
Mercury	7439-97-6	ug/L	< 0.243 U		< 0.243 U
Nickel	7440-02-0	ug/L	< 7.11 U		< 7.11 U
Potassium	7440-09-7	ug/L	< 1000 U		< 1000 U
Selenium	7782-49-2	ug/L	< 2 U		< 2 U
Silver	7440-22-4	ug/L	< 4.42 U		16.2
Sodium	7440-23-5	ug/L	10100		9700
Strontium	7440-24-6	ug/L	27.8		31.3
Thallium	7440-28-0	ug/L	< 1 U		< 1 U
Titanium	7440-32-6	ug/L	< 2 U		8.16
Vanadium	7440-62-2	ug/L	< 4.69 U		< 4.69 U
Zinc	7440-66-6	ug/L	< 35.8 U		< 35.8 U
Zirconium	7440-67-7	ug/L	< 1 U		< 1 U
Radiological					
Americium-241	86954-36-1	pCi/L	< 11.9 U		< 12.6 U
Cesium-137	10045-97-3	pCi/L	< 1.02 U		< 1.04 U
Cobalt-60	10198-40-0	pCi/L	< 1.01 U		< 1 U
Gross Alpha	12587-46-1	pCi/L	1.25		1.97
Gross beta	12587-47-2	pCi/L	3.52		3.43
Radium-226	13982-63-3	pCi/L	11.4	< 1 U	13.7
Total Uranium	7440-61-1 U	ug/L	< 0.111 U		< 0.111 U
Uranium-235	15117-96-1	pCi/L	< 0.062 U		< 0.0545 U
Uranium-238	7440-61-1 U-238	pCi/L	< 0.0815 U		< 0.0717 U
SVOC					
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	< 0.51 U		< 0.51 U
VOC					
1,1,1-Trichloroethane	71-55-6	ug/L	< 0.5 U		< 0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L	< 5 U		< 5 U

Table A-25
Historical Analytical Results for Surface Water Samples at PICA 137 Site 82

		Site Name	82	82	82
		Location ID	I-82-SW-001	I-82-SW-001	I-82-SW-002
		Sample ID	82SW-1(19960801)	I-82SW001 (111611)	82SW-2(19960801)
		Depth Interval			
		Sample Date	8/1/1996	11/16/2011	8/1/1996
		Sample Matrix	WS	WS	WS
Chemical Name	**CAS No**	**Unit**			
1,1,2-Trichloroethane	79-00-5	ug/L	< 1.2 U		< 1.2 U
1,1-Dichloroethane	75-34-3	ug/L	< 0.68 U		< 0.68 U
1,1-Dichloroethene	75-35-4	ug/L	< 0.5 U		< 0.5 U
1,2-Dichloroethane	107-06-2	ug/L	< 0.5 U		< 0.5 U
1,2-Dichloroethene (total)	540-59-0	ug/L	< 0.5 U		< 0.5 U
1,2-Dichloropropane	78-87-5	ug/L	< 0.5 U		< 0.5 U
2-Butanone	78-93-3	ug/L	< 6.4 U		< 6.4 U
2-Hexanone	591-78-6	ug/L	< 3.6 U		< 3.6 U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	< 3 U		< 3 U
Acetone	67-64-1	ug/L	< 13 U		< 13 U
Acetonitrile	75-05-8	ug/L	< 200 U		< 200 U
Benzene	71-43-2	ug/L	< 0.5 U		< 0.5 U
Bromodichloromethane	75-27-4	ug/L	< 0.59 U		< 0.59 U
Bromoform	75-25-2	ug/L	< 2.6 U		< 2.6 U
Bromomethane	74-83-9	ug/L	< 5.8 U		< 5.8 U
Carbon disulfide	75-15-0	ug/L	< 0.5 U		< 0.5 U
Carbon tetrachloride	56-23-5	ug/L	< 0.58 U		< 0.58 U
Chlorobenzene	108-90-7	ug/L	< 0.5 U		< 0.5 U
Chloroethane	75-00-3	ug/L	< 1.9 U		< 1.9 U
Chloroform	67-66-3	ug/L	< 0.5 U		< 0.5 U
Chloromethane	74-87-3	ug/L	< 3.2 U		< 3.2 U
cis-1,3-Dichloropropene	10061-01-5	ug/L	< 0.58 U		< 0.58 U
Dibromochloromethane	124-48-1	ug/L	< 0.67 U		< 0.67 U
Dichlorodifluoromethane	75-71-8	ug/L	< 6.9 U		< 6.9 U
Ethanol	64-17-5	ug/L	< 2000 U		< 2000 U
Ethyl benzene	100-41-4	ug/L	< 0.5 U		< 0.5 U
Isopropanol	67-63-0	ug/L	< 400 U		< 400 U
Methylene chloride	75-09-2	ug/L	4.6		< 2.3 U
Styrene	100-42-5	ug/L	< 0.5 U		< 0.5 U
tert-Butylalcohol	75-65-0	ug/L	< 500 U		< 500 U

Table A-25
Historical Analytical Results for Surface Water Samples at PICA 137 Site 82

		Site Name	82	82	82
		Location ID	I-82-SW-001	I-82-SW-001	I-82-SW-002
		Sample ID	82SW-1(19960801)	I-82SW001 (111611)	82SW-2(19960801)
		Depth Interval			
		Sample Date	8/1/1996	11/16/2011	8/1/1996
		Sample Matrix	WS	WS	WS
Chemical Name	**CAS No**	**Unit**			
Tetrachloroethene	127-18-4	ug/L	< 1.6 U		< 1.6 U
Toluene	108-88-3	ug/L	3.1		1.6
trans-1,3-Dichloropropene	10061-02-6	ug/L	< 0.7 U		< 0.7 U
Trichloroethene	79-01-6	ug/L	< 0.5 U		< 0.5 U
Trichlorofluoromethane	75-69-4	ug/L	< 1.4 U		< 1.4 U
Vinyl acetate	108-05-4	ug/L	< 8.3 U		< 8.3 U
Vinyl chloride	75-01-4	ug/L	< 2.6 U		< 2.6 U
Xylenes	1330-20-7	ug/L	< 0.84 U		< 0.84 U
WetChem					
Ammonia	7664-41-7	ug/L	99.1		< 60 U
Chloride	16887-00-6	ug/L	22000		20900
Cyanide	57-12-5	ug/L	< 2.5 U		< 2.5 U
Fluoride	16984-48-8	ug/L	< 1230 U		< 1230 U
Nitrate/Nitrite	Nitrate/Nitrite	ug/L	< 10 U		< 10 U
Phosphate	14265-44-2	ug/L	23.1		< 13.3 U
Sulfate	14808-79-8	ug/L	< 10000 U		< 10000 U
Sulfide	18496-25-8	ug/L	< 50 U		< 50 U

Notes:

LOC - Level of Concern

ug/L - micrograms per liter

U - Non-detect at the specified reporting limit

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SD-001	I-108-SD-001	I-108-SD-001	I-108-SD-002	I-108-SD-003
		Sample ID	108SD-1(0-1)	108SD-1(0-0.5)	108SD-1B(1-2)	108SD-2(0-1)	108SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	1 - 2	0 - 1	0 - 1
		Sample Date	7/12/1996	10/14/1998	5/11/2001	7/12/1996	5/11/2001
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Explosives							
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.488 U			< 0.488 U	
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.496 U			< 0.496 U	
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.456 U			< 0.456 U	
3-Nitrotoluene	99-08-1	mg/kg					
HMX	2691-41-0	mg/kg	< 0.666 U			< 0.666 U	
Nitrobenzene	98-95-3	mg/kg	< 2.41 U			< 2.41 U	< 0.52 U
Nitrobenzene	98-95-3	mg/kg					
Nitrocellulose	9004-70-0	mg/kg	< 10.4 U			< 10.4 U	
Nitroglycerin	55-63-0	mg/kg	< 4 U			< 4 U	
Nitroguanidine	556-88-7	mg/kg	< 0.475 U			< 0.475 U	
PETN	78-11-5	mg/kg	< 4 U			< 4 U	
Picric Acid	88-89-1	mg/kg	< 0.108 U			< 0.108 U	
RDX	121-82-4	mg/kg	< 0.587 U			< 0.587 U	
Tetrazene	14097-21-3	mg/kg	< 1.19 U			< 1.19 U	
Tetryl	479-45-8	mg/kg	< 0.731 U			< 0.731 U	
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.424 U			< 0.424 U	< 0.52 U
2,4-Dinitrotoluene	121-14-2	mg/kg					
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.524 U			< 0.524 U	< 0.52 U
2,6-Dinitrotoluene	606-20-2	mg/kg					
Metals							
Aluminum	7429-90-5	mg/kg	8960		4860	4920	14900
Antimony	7440-36-0	mg/kg	0.4		1 J	1.23	< 1.6 UJ
Arsenic	7440-38-2	mg/kg	2.11		4	9.55	4.5
Barium	7440-39-3	mg/kg	3400		54.9	323	596
Beryllium	7440-41-7	mg/kg	0.8		0.24 J	1.29	0.12 J
Boron	7440-42-8	mg/kg	< 5.91 U			12.1	
Cadmium	7440-43-9	mg/kg	< 0.7 U		0.26 J	< 0.7 U	< 0.32 U
Calcium	7440-70-2	mg/kg	773		1000	4950	1420
Chromium	7440-47-3	mg/kg	10.6		11.4 J	37.5	12.1 J
Cobalt	7440-48-4	mg/kg	5.33		6.1 J	5.28	1.5 J
Copper	7440-50-8	mg/kg	69.1		34.2	40.6	8.3

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SD-001	I-108-SD-001	I-108-SD-001	I-108-SD-002	I-108-SD-003
		Sample ID	108SD-1(0-1)	108SD-1(0-0.5)	108SD-1B(1-2)	108SD-2(0-1)	108SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	1 - 2	0 - 1	0 - 1
		Sample Date	7/12/1996	10/14/1998	5/11/2001	7/12/1996	5/11/2001
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Iron	7439-89-6	mg/kg	13800		8860	60100	10400
Lead	7439-92-1	mg/kg	49.8		41.1	72	10.1
Magnesium	7439-95-4	mg/kg	1380		1290	2630	913
Manganese	7439-96-5	mg/kg	120		69.6 J	937	160 J
Mercury	7439-97-6	mg/kg	0.36		0.84 J	0.42	0.32 J
Nickel	7440-02-0	mg/kg	13.3		16.1	19.2	5 J
Potassium	7440-09-7	mg/kg	362		778 J	347	162 J
Selenium	7782-49-2	mg/kg	0.49		0.98	1.76	0.67 J
Silver	7440-22-4	mg/kg	50		1.8	< 0.589 U	< 0.79 U
Sodium	7440-23-5	mg/kg	551		150 J	726	< 788 U
Strontium	7440-24-6	mg/kg	11.2			41	
Thallium	7440-28-0	mg/kg	< 0.1 U		< 1.6 U	< 0.1 U	1 J
Titanium	7440-32-6	mg/kg	129			209	
Vanadium	7440-62-2	mg/kg	12.2		19.2	8.44	24.8
Zinc	7440-66-6	mg/kg	138		106	340	47.5
Zirconium	7440-67-7	mg/kg	< 2.5 U			< 2.5 U	
Other							
1,4-Oxathiane	15980-15-1	mg/kg					
Dithiane	51330-42-8	mg/kg					
PCBs							
Aroclor 1016	12674-11-2	mg/kg					
Aroclor 1016	12674-11-2	mg/kg					
Aroclor 1221	11104-28-2	mg/kg					
Aroclor 1232	11141-16-5	mg/kg					
Aroclor 1242	53469-21-9	mg/kg					
Aroclor 1248	12672-29-6	mg/kg					
Aroclor 1254	11097-69-1	mg/kg					
Aroclor 1260	11096-82-5	mg/kg					
Aroclor 1260	11096-82-5	mg/kg					
Aroclor 1262	37324-23-5	mg/kg					
Pesticides							
4,4'-DDD	72-54-8	mg/kg					
4,4'-DDD	72-54-8	mg/kg					

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SD-001	I-108-SD-001	I-108-SD-001	I-108-SD-002	I-108-SD-003
		Sample ID	108SD-1(0-1)	108SD-1(0-0.5)	108SD-1B(1-2)	108SD-2(0-1)	108SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	1 - 2	0 - 1	0 - 1
		Sample Date	7/12/1996	10/14/1998	5/11/2001	7/12/1996	5/11/2001
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
4,4'-DDE	72-55-9	mg/kg					
4,4'-DDE	72-55-9	mg/kg					
4,4'-DDT	50-29-3	mg/kg					
4,4'-DDT	50-29-3	mg/kg					
Aldrin	309-00-2	mg/kg					
Aldrin	309-00-2	mg/kg					
alpha-BHC	319-84-6	mg/kg					
alpha-BHC	319-84-6	mg/kg					
Atrazine	1912-24-9	mg/kg					
beta-BHC	319-85-7	mg/kg					
beta-BHC	319-85-7	mg/kg					
Chlordane	57-74-9	mg/kg					
Chlordane	57-74-9	mg/kg					
delta-BHC	319-86-8	mg/kg					
delta-BHC	319-86-8	mg/kg					
Dieldrin	60-57-1	mg/kg					
Dieldrin	60-57-1	mg/kg					
Endosulfan I	959-98-8	mg/kg					
Endosulfan I	959-98-8	mg/kg					
Endosulfan II	33213-65-9	mg/kg					
Endosulfan II	33213-65-9	mg/kg					
Endosulfan sulfate	1031-07-8	mg/kg					
Endosulfan sulfate	1031-07-8	mg/kg					
Endrin	72-20-8	mg/kg					
Endrin	72-20-8	mg/kg					
Endrin aldehyde	7421-93-4	mg/kg					
Endrin ketone	53494-70-5	mg/kg					
gamma-BHC (Lindane)	58-89-9	mg/kg					
gamma-BHC (Lindane)	58-89-9	mg/kg					
Heptachlor	76-44-8	mg/kg					
Heptachlor	76-44-8	mg/kg					
Heptachlor epoxide	1024-57-3	mg/kg					
Heptachlor epoxide	1024-57-3	mg/kg					

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SD-001	I-108-SD-001	I-108-SD-001	I-108-SD-002	I-108-SD-003
		Sample ID	108SD-1(0-1)	108SD-1(0-0.5)	108SD-1B(1-2)	108SD-2(0-1)	108SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	1 - 2	0 - 1	0 - 1
		Sample Date	7/12/1996	10/14/1998	5/11/2001	7/12/1996	5/11/2001
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Isodrin	465-73-6	mg/kg					
Isodrin	465-73-6	mg/kg					
Malathion	121-75-5	mg/kg					
Methoxychlor	72-43-5	mg/kg					
Methoxychlor	72-43-5	mg/kg					
Mirex	2385-85-5	mg/kg	< 0.25 U			10	
Parathion	56-38-2	mg/kg					
p-Chlorophenylmethyl sulfide	123-09-1	mg/kg					
p-Chlorophenylmethyl sulfone	98-57-7	mg/kg					
p-Chlorophenylmethyl sulfoxide	934-73-6	mg/kg					
Supona	470-90-6	mg/kg					
Toxaphene	8001-35-2	mg/kg					
Toxaphene	8001-35-2	mg/kg					
Vapona	62-73-7	mg/kg					
Radiological							
Americium-241	86954-36-1	pCi/g	< 0.992 U				
Cesium-137	10045-97-3	pCi/g	0.15				
Cobalt-60	10198-40-0	pCi/g	< 0.0478 U				
Gross Alpha	12587-46-1	pCi/g	< 1.32 U				
Gross beta	12587-47-2	pCi/g	< 1.82 U				
Radium-226	13982-63-3	pCi/g	1.16				
Total Uranium	7440-61-1 U	mg/kg	2.44				
Uranium-235	15117-96-1	pCi/g	0.03				
Uranium-238	7440-61-1 U-238	pCi/g	0.95				
SVOC							
1-Methylnaphthalene	90-12-0	mg/kg					
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg					
1,2,4-Trichlorobenzene	120-82-1	mg/kg	< 0.04 U			< 0.04 U	< 0.52 U
1,2-Dichlorobenzene	95-50-1	mg/kg	< 0.11 U			< 0.11 U	< 0.52 U
1,2-Diphenylhydrazine	122-66-7	mg/kg					
2-Methylnaphthalene	91-57-6	mg/kg					
1,3-Dichlorobenzene	541-73-1	mg/kg	< 0.13 U			< 0.13 U	< 0.52 U
1,3-Dichlorobenzene	541-73-1	mg/kg					

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SD-001	I-108-SD-001	I-108-SD-001	I-108-SD-002	I-108-SD-003
		Sample ID	108SD-1(0-1)	108SD-1(0-0.5)	108SD-1B(1-2)	108SD-2(0-1)	108SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	1 - 2	0 - 1	0 - 1
		Sample Date	7/12/1996	10/14/1998	5/11/2001	7/12/1996	5/11/2001
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
1,4-Dichlorobenzene	106-46-7	mg/kg	< 0.098 U			< 0.098 U	< 0.52 U
2,4,5-Trichlorophenol	95-95-4	mg/kg	< 0.1 U			< 0.1 U	< 0.52 U
2,4,6-Trichlorophenol	88-06-2	mg/kg	< 0.17 U			< 0.17 U	< 0.52 U
2,4-Dichlorophenol	120-83-2	mg/kg	< 0.18 U			< 0.18 U	< 0.52 U
2,4-Dimethylphenol	105-67-9	mg/kg	< 0.69 U			< 0.69 U	< 0.52 U
2,4-Dinitrophenol	51-28-5	mg/kg	< 1.2 U			< 1.2 U	< 2.5 U
2,6-Dinitroaniline	606-22-4	mg/kg					
2-Chloronaphthalene	91-58-7	mg/kg	< 0.036 U			< 0.036 U	< 0.52 U
2-Chlorophenol	95-57-8	mg/kg	< 0.06 U			< 0.06 U	< 0.52 U
2-Methylnaphthalene	91-57-6	mg/kg	0.08			< 0.049 U	< 0.52 U
2-Methylphenol	95-48-7	mg/kg	< 0.029 U			< 0.029 U	< 0.52 U
2-Nitroaniline	88-74-4	mg/kg	< 0.062 U			< 0.062 U	< 2.5 U
2-Nitrophenol	88-75-5	mg/kg	< 0.14 U			< 0.14 U	< 0.52 U
3,3'-Dichlorobenzidine	91-94-1	mg/kg	< 6.3 U			< 6.3 U	< 2.5 UJ
3,5-Dinitroaniline	618-87-1	mg/kg					
3-Nitroaniline	99-09-2	mg/kg	< 0.45 U			< 0.45 U	< 2.5 U
4,6-dinitro-2-Methylphenol	534-52-1	mg/kg	< 0.55 U			< 0.55 U	< 2.5 U
4-Bromophenyl phenyl ether	101-55-3	mg/kg	< 0.033 U			< 0.033 U	< 0.52 U
4-Chloro-3-methylphenol	59-50-7	mg/kg	< 0.095 U			< 0.095 U	< 0.52 U
4-Chloroaniline	106-47-8	mg/kg	< 0.81 U			< 0.81 U	< 0.52 U
4-Chlorophenyl phenyl ether	7005-72-3	mg/kg	< 0.033 U			< 0.033 U	< 0.52 U
4-Methylphenol	106-44-5	mg/kg	< 0.24 U#			< 0.24 U#	< 0.52 U#
4-Nitroaniline	100-01-6	mg/kg	< 0.41 U			< 0.41 U	< 2.5 UJ
4-Nitrophenol	100-02-7	mg/kg	< 1.4 U			< 1.4 U	< 2.5 UJ
Acenaphthene	83-32-9	mg/kg	< 0.036 U		19 JD	< 0.036 U	< 0.52 U
Acenaphthylene	208-96-8	mg/kg	< 0.033 U		< 21 UD	< 0.033 U	< 0.52 U
Aniline	62-53-3	mg/kg	< 0.65 U			< 0.65 U	< 0.52 U
Anthracene	120-12-7	mg/kg	< 0.033 U		37 D	< 0.033 U	< 0.52 U
Benz(a)anthracene	56-55-3	mg/kg	< 0.17 U		37 D	< 0.17 U	< 0.52 UJ
Benzo(a)pyrene	50-32-8	mg/kg	< 0.25 U		30 D	< 0.25 U	< 0.52 U
Benzo(b)fluoranthene	205-99-2	mg/kg	< 0.21 U		27 D	< 0.21 U	< 0.52 U
Benzo(g,h,i)perylene	191-24-2	mg/kg	< 0.25 U		16 JD	< 0.25 U	< 0.52 U

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SD-001	I-108-SD-001	I-108-SD-001	I-108-SD-002	I-108-SD-003
		Sample ID	108SD-1(0-1)	108SD-1(0-0.5)	108SD-1B(1-2)	108SD-2(0-1)	108SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	1 - 2	0 - 1	0 - 1
		Sample Date	7/12/1996	10/14/1998	5/11/2001	7/12/1996	5/11/2001
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Benzo(k)fluoranthene	207-08-9	mg/kg	< 0.066 U		20 JD	< 0.066 U	< 0.52 U
Benzyl alcohol	100-51-6	mg/kg	< 0.19 U			< 0.19 U	
bis(2-Chloroethoxy)methane	111-91-1	mg/kg	< 0.059 U			< 0.059 U	< 0.52 U
bis(2-Chloroethyl)ether	111-44-4	mg/kg	< 0.033 U			< 0.033 U	< 0.52 U
bis(2-Chloroisopropyl)ether	39638-32-9	mg/kg	< 0.2 U			< 0.2 U	< 0.52 U
bis(2-Ethylhexyl)phthalate	117-81-7	mg/kg	< 0.62 U			< 0.62 U	< 0.52 U
Butylbenzyl phthalate	85-68-7	mg/kg	< 0.17 U			< 0.17 U	< 0.52 U
Carbazole	86-74-8	mg/kg	< 0.14 U			< 0.14 U	< 0.52 U
Chrysene	218-01-9	mg/kg	0.3		40 JD	< 0.12 U	< 0.52 UJ
Dibenz(a,h)anthracene	53-70-3	mg/kg	< 0.21 U		< 21 UD	< 0.21 U	< 0.52 U
Dibenzofuran	132-64-9	mg/kg	< 0.035 U			< 0.035 U	< 0.52 U
Dichlorobenzenes	25321-22-6	mg/kg					
Dicyclopentadiene	77-73-6	mg/kg					
Diethylphthalate	84-66-2	mg/kg	< 0.24 U			< 0.24 U	< 0.52 U
Dimethylphthalate	131-11-3	mg/kg	< 0.17 U			< 0.17 U	< 0.52 U
di-n-Butylphthalate	84-74-2	mg/kg	< 0.061 U			< 0.061 U	< 0.52 U
di-n-Octylphthalate	117-84-0	mg/kg	< 0.19 U			< 0.19 U	< 0.52 U
Diphenylamine	122-39-4	mg/kg	< 0.13 U			< 0.13 U	< 0.52 U
Fluoranthene	206-44-0	mg/kg	0.12		120 D	0.19	< 0.52 U
Fluorene	86-73-7	mg/kg	0.06		17 JD	< 0.033 U	< 0.52 U
Hexachlorobenzene	118-74-1	mg/kg	< 0.033 U			0.28	< 0.52 U
Hexachlorobutadiene	87-68-3	mg/kg	< 0.23 U			< 0.23 U	< 0.52 U
Hexachlorocyclopentadiene	77-47-4	mg/kg	< 6.2 U			< 6.2 U	< 2.5 U
Hexachloroethane	67-72-1	mg/kg	< 0.15 U			< 0.15 U	< 0.52 U
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	< 0.29 U		14 JD	< 0.29 U	< 0.52 U
Isophorone	78-59-1	mg/kg	< 0.033 U			< 0.033 U	< 0.52 U
Naphthalene	91-20-3	mg/kg	0.13		15 JD	< 0.037 U	< 0.52 U
N-Nitrosodimethylamine	62-75-9	mg/kg					
n-Nitroso-di-n-propylamine	621-64-7	mg/kg	< 0.2 U			< 0.2 U	< 0.52 U
n-Nitrosodiphenylamine	86-30-6	mg/kg	< 0.19 U			< 0.19 U	< 0.52 U
Pentachlorophenol	87-86-5	mg/kg	< 1.3 U			< 1.3 U	< 0.52 U
Phenanthrene	85-01-8	mg/kg	0.3		170 D	< 0.033 U	< 0.52 U

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SD-001	I-108-SD-001	I-108-SD-001	I-108-SD-002	I-108-SD-003
		Sample ID	108SD-1(0-1)	108SD-1(0-0.5)	108SD-1B(1-2)	108SD-2(0-1)	108SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	1 - 2	0 - 1	0 - 1
		Sample Date	7/12/1996	10/14/1998	5/11/2001	7/12/1996	5/11/2001
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Phenol	108-95-2	mg/kg	< 0.11 U			< 0.11 U	< 0.52 U
Pyrene	129-00-0	mg/kg	0.12		100 D	0.18	< 0.52 U

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SD-001	I-108-SD-001	I-108-SD-001	I-108-SD-002	I-108-SD-003
		Sample ID	108SD-1(0-1)	108SD-1(0-0.5)	108SD-1B(1-2)	108SD-2(0-1)	108SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	1 - 2	0 - 1	0 - 1
		Sample Date	7/12/1996	10/14/1998	5/11/2001	7/12/1996	5/11/2001
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
TPH							
Total Petroleum Hydrocarbons	TPH	mg/kg					
VOC							
1,1,1-Trichloroethane	71-55-6	mg/kg					
1,1,2-Trichloroethane	79-00-5	mg/kg					
1,1-Dichloroethane	75-34-3	mg/kg					
1,1-Dichloroethene	75-35-4	mg/kg					
1,2,3-Trichlorobenzene	87-61-6	mg/kg					
1,2-Dichloroethane	107-06-2	mg/kg					
1,2-Dichloroethene (total)	540-59-0	mg/kg					
1,2-Dichloropropane	78-87-5	mg/kg					
1,3-Dichloropropane	142-28-9	mg/kg					
2,3,6-Trichlorophenol	933-75-5	mg/kg					
2-Butanone	78-93-3	mg/kg					
2-Chloroethyl vinyl ether	110-75-8	mg/kg					
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg					
Acetone	67-64-1	mg/kg					
Acrylonitrile	107-13-1	mg/kg					
Benzene	71-43-2	mg/kg					
Bromodichloromethane	75-27-4	mg/kg					
Bromoform	75-25-2	mg/kg					
Bromomethane	74-83-9	mg/kg					
Carbon tetrachloride	56-23-5	mg/kg					
Chlorobenzene	108-90-7	mg/kg					
Chloroethane	75-00-3	mg/kg					
Chloroform	67-66-3	mg/kg					
Chloromethane	74-87-3	mg/kg					
Dibromochloromethane	124-48-1	mg/kg					
Dibromochloropropane	96-12-8	mg/kg					
Ethyl benzene	100-41-4	mg/kg					
Methylene chloride	75-09-2	mg/kg					
m-Xylenes	108-38-3	mg/kg					
Tetrachloroethene	127-18-4	mg/kg					

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SD-001	I-108-SD-001	I-108-SD-001	I-108-SD-002	I-108-SD-003
		Sample ID	108SD-1(0-1)	108SD-1(0-0.5)	108SD-1B(1-2)	108SD-2(0-1)	108SD-3A(0-1)
		Depth Interval	0 - 1	0 - .5	1 - 2	0 - 1	0 - 1
		Sample Date	7/12/1996	10/14/1998	5/11/2001	7/12/1996	5/11/2001
		Sample Matrix	SE	SE	SE	SE	SE
		Sample Type Code	N	N	N	N	N
Chemical Name	**CAS No**	**Unit**					
Toluene	108-88-3	mg/kg					
Trichloroethene	79-01-6	mg/kg					
Trichlorofluoromethane	75-69-4	mg/kg					
Vinyl chloride	75-01-4	mg/kg					
Xylenes	1330-20-7	mg/kg					
WetChem							
% Solids	%Solid	%			62.9		63.5
Ammonia	7664-41-7	mg/kg	37.7			185	
Cation Exchange Capacity	CEC	mg/kg					
Chloride	16887-00-6	mg/kg	< 6.05 U			< 6.05 U	
Cyanide	57-12-5	mg/kg	< 0.92 U			< 0.92 U	
Fluoride	16984-48-8	mg/kg	< 3.62 U			< 3.62 U	
Nitrate/Nitrite	Nitrate/Nitrite	mg/kg	1.12			1.08	
Phosphate	14265-44-2	mg/kg	590			910	
Sulfate	14808-79-8	mg/kg	277			< 90.4 U	
Sulfide	18496-25-8	mg/kg	190			190	
Total organic carbon	TOC	mg/kg	50100	117000		3090	

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

pCi/g - picocuries per gram

U - Non-detect at the specified reporting limit

UJ - Compound was analyzed but not detected. Detection limit is an estimated value.

J - Estimated concentration

R - Rejected

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-004	I-108-SD-005	I-108-SD-006	I-108-SD-007	I-108-SD-008	I-108-SD-009
		108SD-4A(0-1)	108SD-5A(0-1)	108SD-6A(0-1)	1-108SD007 (0-	1-108SD008 (0-	1-108SD009 (18
		0 - 1	0 - 1	0 - 1	0 - .5	0 - .5	1.5 - 2
		5/11/2001	5/11/2001	5/11/2001	11/15/2011	11/15/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
Explosives							
1,3,5-Trinitrobenzene	99-35-4						
1,3-Dinitrobenzene	99-65-0						
2,4,6-Trinitrotoluene	118-96-7						
3-Nitrotoluene	99-08-1						
HMX	2691-41-0						
Nitrobenzene	98-95-3	< 0.61 U	< 0.58 U	< 0.53 U			
Nitrobenzene	98-95-3						
Nitrocellulose	9004-70-0						
Nitroglycerin	55-63-0						
Nitroguanidine	556-88-7						
PETN	78-11-5						
Picric Acid	88-89-1						
RDX	121-82-4						
Tetrazene	14097-21-3						
Tetryl	479-45-8						
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	< 0.61 U	< 0.58 U	< 0.53 U			
2,4-Dinitrotoluene	121-14-2						
2,6-Dinitrotoluene	606-20-2	< 0.61 U	< 0.58 U	< 0.53 U			
2,6-Dinitrotoluene	606-20-2						
Metals							
Aluminum	7429-90-5	20500	64900	21700			
Antimony	7440-36-0	20.4 J	48.6 J	1.6 J			
Arsenic	7440-38-2	68.6	243	30.7	4.5	3.88	61
Barium	7440-39-3	25400 D	35200 D	9590 D			
Beryllium	7440-41-7	< 0.93 U	0.39 J	0.16 J			
Boron	7440-42-8						
Cadmium	7440-43-9	3.7	5.9	< 0.32 U			
Calcium	7440-70-2	2190	3320	729 J			
Chromium	7440-47-3	81.2 J	69.7 J	28.1 J			
Cobalt	7440-48-4	< 9.3 U	< 8.8 U	< 8.1 U			
Copper	7440-50-8	130	151	153	9.67	11.7	47.2

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-004	I-108-SD-005	I-108-SD-006	I-108-SD-007	I-108-SD-008	I-108-SD-009
		108SD-4A(0-1)	108SD-5A(0-1)	108SD-6A(0-1)	1-108SD007 (0-	1-108SD008 (0-	1-108SD009 (18
		0 - 1	0 - 1	0 - 1	0 - .5	0 - .5	1.5 - 2
		5/11/2001	5/11/2001	5/11/2001	11/15/2011	11/15/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
Iron	7439-89-6	9330	11100	20800			
Lead	7439-92-1	317	706	45.7	13.7	15.7	90
Magnesium	7439-95-4	5380	17500	2980			
Manganese	7439-96-5	168 J	343 J	107 J			
Mercury	7439-97-6	106 JD	113 JD	1 J	0.712	26.5	8.76
Nickel	7440-02-0	66.4	36.1	15.1			
Potassium	7440-09-7	257 J	229 J	442 J			
Selenium	7782-49-2	3	1.4	1.7			
Silver	7440-22-4	1.3	1	< 0.81 U	< 9.25 U	61.6	
Sodium	7440-23-5	260 J	809 J	< 809 U			
Strontium	7440-24-6						
Thallium	7440-28-0	< 1.9 U	1 J	< 1.6 U			
Titanium	7440-32-6						
Vanadium	7440-62-2	17.5	19.5	26.3			
Zinc	7440-66-6	3380 D	5650 D	277	44.8	95.6	1530
Zirconium	7440-67-7						
Other							
1,4-Oxathiane	15980-15-1						
Dithiane	51330-42-8						
PCBs							
Aroclor 1016	12674-11-2						
Aroclor 1016	12674-11-2						
Aroclor 1221	11104-28-2						
Aroclor 1232	11141-16-5						
Aroclor 1242	53469-21-9						
Aroclor 1248	12672-29-6						
Aroclor 1254	11097-69-1						
Aroclor 1260	11096-82-5						
Aroclor 1260	11096-82-5						
Aroclor 1262	37324-23-5						
Pesticides							
4,4'-DDD	72-54-8						
4,4'-DDD	72-54-8						

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-004	I-108-SD-005	I-108-SD-006	I-108-SD-007	I-108-SD-008	I-108-SD-009
		108SD-4A(0-1)	108SD-5A(0-1)	108SD-6A(0-1)	1-108SD007 (0-	1-108SD008 (0-	1-108SD009 (18
		0 - 1	0 - 1	0 - 1	0 - .5	0 - .5	1.5 - 2
		5/11/2001	5/11/2001	5/11/2001	11/15/2011	11/15/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
4,4'-DDE	72-55-9						
4,4'-DDE	72-55-9						
4,4'-DDT	50-29-3						
4,4'-DDT	50-29-3						
Aldrin	309-00-2						
Aldrin	309-00-2						
alpha-BHC	319-84-6						
alpha-BHC	319-84-6						
Atrazine	1912-24-9						
beta-BHC	319-85-7						
beta-BHC	319-85-7						
Chlordane	57-74-9						
Chlordane	57-74-9						
delta-BHC	319-86-8						
delta-BHC	319-86-8						
Dieldrin	60-57-1						
Dieldrin	60-57-1						
Endosulfan I	959-98-8						
Endosulfan I	959-98-8						
Endosulfan II	33213-65-9						
Endosulfan II	33213-65-9						
Endosulfan sulfate	1031-07-8						
Endosulfan sulfate	1031-07-8						
Endrin	72-20-8						
Endrin	72-20-8						
Endrin aldehyde	7421-93-4						
Endrin ketone	53494-70-5						
gamma-BHC (Lindane)	58-89-9						
gamma-BHC (Lindane)	58-89-9						
Heptachlor	76-44-8						
Heptachlor	76-44-8						
Heptachlor epoxide	1024-57-3						
Heptachlor epoxide	1024-57-3						

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-004	I-108-SD-005	I-108-SD-006	I-108-SD-007	I-108-SD-008	I-108-SD-009
		108SD-4A(0-1)	108SD-5A(0-1)	108SD-6A(0-1)	1-108SD007 (0-	1-108SD008 (0-	1-108SD009 (18
		0 - 1	0 - 1	0 - 1	0 - .5	0 - .5	1.5 - 2
		5/11/2001	5/11/2001	5/11/2001	11/15/2011	11/15/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
Isodrin	465-73-6						
Isodrin	465-73-6						
Malathion	121-75-5						
Methoxychlor	72-43-5						
Methoxychlor	72-43-5						
Mirex	2385-85-5						
Parathion	56-38-2						
p-Chlorophenylmethyl sulfide	123-09-1						
p-Chlorophenylmethyl sulfone	98-57-7						
p-Chlorophenylmethyl sulfoxide	934-73-6						
Supona	470-90-6						
Toxaphene	8001-35-2						
Toxaphene	8001-35-2						
Vapona	62-73-7						
Radiological							
Americium-241	86954-36-1						
Cesium-137	10045-97-3						
Cobalt-60	10198-40-0						
Gross Alpha	12587-46-1						
Gross beta	12587-47-2						
Radium-226	13982-63-3						
Total Uranium	7440-61-1 U						
Uranium-235	15117-96-1						
Uranium-238	7440-61-1 U-238						
SVOC							
1-Methylnaphthalene	90-12-0				< 0.0271 UJ	0.0621 J	
1,1,2,2-Tetrachloroethane	79-34-5						
1,2,4-Trichlorobenzene	120-82-1	< 0.61 U	< 0.58 U	< 0.53 U			
1,2-Dichlorobenzene	95-50-1	< 0.61 U	< 0.58 U	< 0.53 U			
1,2-Diphenylhydrazine	122-66-7						
2-Methylnaphthalene	91-57-6				< 0.0271 UJ	0.1 J	
1,3-Dichlorobenzene	541-73-1	< 0.61 U	< 0.58 U	< 0.53 U			
1,3-Dichlorobenzene	541-73-1						

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108 I-108-SD-004 108SD-4A(0-1) 0 - 1 5/11/2001 SE N	108 I-108-SD-005 108SD-5A(0-1) 0 - 1 5/11/2001 SE N	108 I-108-SD-006 108SD-6A(0-1) 0 - 1 5/11/2001 SE N	108 I-108-SD-007 1-108SD007 (0- 0 - .5 11/15/2011 SE N	108 I-108-SD-008 1-108SD008 (0- 0 - .5 11/15/2011 SE N	108 I-108-SD-009 1-108SD009 (18 1.5 - 2 11/14/2011 SE N
Chemical Name	**CAS No**						
1,4-Dichlorobenzene	106-46-7	< 0.61 U	< 0.58 U	< 0.53 U			
2,4,5-Trichlorophenol	95-95-4	< 0.61 U	< 0.58 U	< 0.53 U			
2,4,6-Trichlorophenol	88-06-2	< 0.61 U	< 0.58 U	< 0.53 U			
2,4-Dichlorophenol	120-83-2	< 0.61 U	< 0.58 U	< 0.53 U			
2,4-Dimethylphenol	105-67-9	< 0.61 U	< 0.58 U	< 0.53 U			
2,4-Dinitrophenol	51-28-5	< 3 U	< 2.8 U	< 2.6 U			
2,6-Dinitroaniline	606-22-4						
2-Chloronaphthalene	91-58-7	< 0.61 U	< 0.58 U	< 0.53 U			
2-Chlorophenol	95-57-8	< 0.61 U	< 0.58 U	< 0.53 U			
2-Methylnaphthalene	91-57-6	< 0.61 U	< 0.58 U	< 0.53 U			
2-Methylphenol	95-48-7	< 0.61 U	< 0.58 U	< 0.53 U			
2-Nitroaniline	88-74-4	< 3 U	< 2.8 U	< 2.6 U			
2-Nitrophenol	88-75-5	< 0.61 U	< 0.58 U	< 0.53 U			
3,3'-Dichlorobenzidine	91-94-1	< 3 UJ	< 2.8 UJ	< 2.6 UJ			
3,5-Dinitroaniline	618-87-1						
3-Nitroaniline	99-09-2	< 3 U	< 2.8 U	< 2.6 U			
4,6-dinitro-2-Methylphenol	534-52-1	< 3 U	< 2.8 U	< 2.6 U			
4-Bromophenyl phenyl ether	101-55-3	< 0.61 U	< 0.58 U	< 0.53 U			
4-Chloro-3-methylphenol	59-50-7	< 0.61 U	< 0.58 U	< 0.53 U			
4-Chloroaniline	106-47-8	< 0.61 U	< 0.58 U	< 0.53 U			
4-Chlorophenyl phenyl ether	7005-72-3	< 0.61 U	< 0.58 U	< 0.53 U			
4-Methylphenol	106-44-5	< 0.61 U#	< 0.58 U#	< 0.53 U#			
4-Nitroaniline	100-01-6	< 3 UJ	< 2.8 UJ	< 2.6 UJ			
4-Nitrophenol	100-02-7	< 3 UJ	< 2.8 UJ	< 2.6 UJ			
Acenaphthene	83-32-9	< 0.61 U	< 0.58 U	< 0.53 U	< 0.0271 UJ	0.0135 J	
Acenaphthylene	208-96-8	< 0.61 U	< 0.58 U	< 0.53 U	< 0.0271 UJ	0.0132 J	
Aniline	62-53-3	< 0.61 U	< 0.58 U	< 0.53 U			
Anthracene	120-12-7	< 0.61 U	< 0.58 U	< 0.53 U	0.0234 J	0.0261 J	
Benz(a)anthracene	56-55-3	< 0.61 UJ	< 0.58 UJ	< 0.53 UJ	0.037 J	0.127 J	
Benzo(a)pyrene	50-32-8	< 0.61 U	< 0.58 U	< 0.53 U	0.037 J	0.121 J	
Benzo(b)fluoranthene	205-99-2	< 0.61 U	0.24 J	< 0.53 U	0.0549 J	0.118 J	
Benzo(g,h,i)perylene	191-24-2	< 0.61 U	< 0.58 U	< 0.53 U	0.035 J	0.0845 J	

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108 I-108-SD-004 108SD-4A(0-1) 0 - 1 5/11/2001 SE N	108 I-108-SD-005 108SD-5A(0-1) 0 - 1 5/11/2001 SE N	108 I-108-SD-006 108SD-6A(0-1) 0 - 1 5/11/2001 SE N	108 I-108-SD-007 1-108SD007 (0- 0 - .5 11/15/2011 SE N	108 I-108-SD-008 1-108SD008 (0- 0 - .5 11/15/2011 SE N	108 I-108-SD-009 1-108SD009 (18 1.5 - 2 11/14/2011 SE N
Chemical Name	**CAS No**						
Benzo(k)fluoranthene	207-08-9	< 0.61 U	< 0.58 U	< 0.53 U	0.0391 J	0.108 J	
Benzyl alcohol	100-51-6						
bis(2-Chloroethoxy)methane	111-91-1	< 0.61 U	< 0.58 U	< 0.53 U			
bis(2-Chloroethyl)ether	111-44-4	< 0.61 U	< 0.58 U	< 0.53 U			
bis(2-Chloroisopropyl)ether	39638-32-9	< 0.61 U	< 0.58 U	< 0.53 U			
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.61 U	< 0.58 U	< 0.53 U			
Butylbenzyl phthalate	85-68-7	< 0.61 U	< 0.58 U	< 0.53 U			
Carbazole	86-74-8	< 0.61 U	< 0.58 U	< 0.53 U			
Chrysene	218-01-9	< 0.61 UJ	0.19 J	< 0.53 UJ	0.0555 J	0.131 J	
Dibenz(a,h)anthracene	53-70-3	< 0.61 U	< 0.58 U	< 0.53 U	< 0.0271 UJ	0.0377 J	
Dibenzofuran	132-64-9	< 0.61 U	< 0.58 U	< 0.53 U			
Dichlorobenzenes	25321-22-6						
Dicyclopentadiene	77-73-6						
Diethylphthalate	84-66-2	< 0.61 U	< 0.58 U	< 0.53 U			
Dimethylphthalate	131-11-3	< 0.61 U	< 0.58 U	< 0.53 U			
di-n-Butylphthalate	84-74-2	< 0.61 U	< 0.58 U	< 0.53 U			
di-n-Octylphthalate	117-84-0	< 0.61 U	< 0.58 U	< 0.53 U			
Diphenylamine	122-39-4	< 0.61 U	< 0.58 U	< 0.53 U			
Fluoranthene	206-44-0	< 0.61 U	0.28 J	< 0.53 U	0.0973 J	0.246 J	
Fluorene	86-73-7	< 0.61 U	< 0.58 U	< 0.53 U	< 0.0271 UJ	0.0234 J	
Hexachlorobenzene	118-74-1	< 0.61 U	5.4	< 0.53 U			
Hexachlorobutadiene	87-68-3	< 0.61 U	< 0.58 U	< 0.53 U			
Hexachlorocyclopentadiene	77-47-4	< 3 U	< 2.8 U	< 2.6 U			
Hexachloroethane	67-72-1	< 0.61 U	< 0.58 U	< 0.53 U			
Indeno(1,2,3-c,d)pyrene	193-39-5	< 0.61 U	< 0.58 U	< 0.53 U	0.0304 J	0.0766 J	
Isophorone	78-59-1	< 0.61 U	< 0.58 U	< 0.53 U			
Naphthalene	91-20-3	< 0.61 U	< 0.58 U	< 0.53 U	0.0243 J	0.0604 J	
N-Nitrosodimethylamine	62-75-9						
n-Nitroso-di-n-propylamine	621-64-7	< 0.61 U	< 0.58 U	< 0.53 U			
n-Nitrosodiphenylamine	86-30-6	< 0.61 U	< 0.58 U	< 0.53 U			
Pentachlorophenol	87-86-5	< 0.61 U	< 0.58 U	< 0.53 U			
Phenanthrene	85-01-8	< 0.61 U	< 0.58 U	< 0.53 U	0.0532 J	0.127 J	

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-004	I-108-SD-005	I-108-SD-006	I-108-SD-007	I-108-SD-008	I-108-SD-009
		108SD-4A(0-1)	108SD-5A(0-1)	108SD-6A(0-1)	1-108SD007 (0-	1-108SD008 (0-	1-108SD009 (18
		0 - 1	0 - 1	0 - 1	0 - .5	0 - .5	1.5 - 2
		5/11/2001	5/11/2001	5/11/2001	11/15/2011	11/15/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
Phenol	108-95-2	< 0.61 U	< 0.58 U	< 0.53 U			
Pyrene	129-00-0	< 0.61 U	0.24 J	< 0.53 U	0.072 J	0.222 J	

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-004	I-108-SD-005	I-108-SD-006	I-108-SD-007	I-108-SD-008	I-108-SD-009
		108SD-4A(0-1)	108SD-5A(0-1)	108SD-6A(0-1)	1-108SD007 (0-	1-108SD008 (0-	1-108SD009 (18
		0 - 1	0 - 1	0 - 1	0 - .5	0 - .5	1.5 - 2
		5/11/2001	5/11/2001	5/11/2001	11/15/2011	11/15/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
TPH							
Total Petroleum Hydrocarbons	TPH						
VOC							
1,1,1-Trichloroethane	71-55-6						
1,1,2-Trichloroethane	79-00-5						
1,1-Dichloroethane	75-34-3						
1,1-Dichloroethene	75-35-4						
1,2,3-Trichlorobenzene	87-61-6						
1,2-Dichloroethane	107-06-2						
1,2-Dichloroethene (total)	540-59-0						
1,2-Dichloropropane	78-87-5						
1,3-Dichloropropane	142-28-9						
2,3,6-Trichlorophenol	933-75-5						
2-Butanone	78-93-3						
2-Chloroethyl vinyl ether	110-75-8						
4-Methyl-2-pentanone (MIBK)	108-10-1						
Acetone	67-64-1						
Acrylonitrile	107-13-1						
Benzene	71-43-2						
Bromodichloromethane	75-27-4						
Bromoform	75-25-2						
Bromomethane	74-83-9						
Carbon tetrachloride	56-23-5						
Chlorobenzene	108-90-7						
Chloroethane	75-00-3						
Chloroform	67-66-3						
Chloromethane	74-87-3						
Dibromochloromethane	124-48-1						
Dibromochloropropane	96-12-8						
Ethyl benzene	100-41-4						
Methylene chloride	75-09-2						
m-Xylenes	108-38-3						
Tetrachloroethene	127-18-4						

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-004	I-108-SD-005	I-108-SD-006	I-108-SD-007	I-108-SD-008	I-108-SD-009
		108SD-4A(0-1)	108SD-5A(0-1)	108SD-6A(0-1)	1-108SD007 (0-	1-108SD008 (0-	1-108SD009 (18
		0 - 1	0 - 1	0 - 1	0 - .5	0 - .5	1.5 - 2
		5/11/2001	5/11/2001	5/11/2001	11/15/2011	11/15/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
Toluene	108-88-3						
Trichloroethene	79-01-6						
Trichlorofluoromethane	75-69-4						
Vinyl chloride	75-01-4						
Xylenes	1330-20-7						
WetChem							
% Solids	%Solid	54	57	61.8			
Ammonia	7664-41-7						
Cation Exchange Capacity	CEC						
Chloride	16887-00-6						
Cyanide	57-12-5						
Fluoride	16984-48-8						
Nitrate/Nitrite	Nitrate/Nitrite						
Phosphate	14265-44-2						
Sulfate	14808-79-8						
Sulfide	18496-25-8						
Total organic carbon	TOC						

Notes:

LOC - Level of Concern
mg/kg - milligrams per kilogram
pCi/g - picocuries per gram
U - Non-detect at the specified reporting limit
UJ - Compound was analyzed but not detected. Detection limit is an es
J - Estimated concentration
R - Rejected

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-009	I-108-SD-010	I-108-SD-010	I-108-SD-011	I-108-SD-011	I-108-SD-012
		1-108SD009 (0-	1-108SD010 (18	1-108SD010 (0-	1-108SD011 (18	1-108SD011 (0-	1-108SD012 (18
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5	1.5 - 2
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
Explosives							
1,3,5-Trinitrobenzene	99-35-4						
1,3-Dinitrobenzene	99-65-0						
2,4,6-Trinitrotoluene	118-96-7						
3-Nitrotoluene	99-08-1						
HMX	2691-41-0						
Nitrobenzene	98-95-3						
Nitrobenzene	98-95-3						
Nitrocellulose	9004-70-0						
Nitroglycerin	55-63-0						
Nitroguanidine	556-88-7						
PETN	78-11-5						
Picric Acid	88-89-1						
RDX	121-82-4						
Tetrazene	14097-21-3						
Tetryl	479-45-8						
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2						
2,4-Dinitrotoluene	121-14-2						
2,6-Dinitrotoluene	606-20-2						
2,6-Dinitrotoluene	606-20-2						
Metals							
Aluminum	7429-90-5						
Antimony	7440-36-0						
Arsenic	7440-38-2	46.1	552	437	4.67	6.98	3.42
Barium	7440-39-3						
Beryllium	7440-41-7						
Boron	7440-42-8						
Cadmium	7440-43-9						
Calcium	7440-70-2						
Chromium	7440-47-3						
Cobalt	7440-48-4						
Copper	7440-50-8	48.5	415	247	15.8	11	21.2

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-009	I-108-SD-010	I-108-SD-010	I-108-SD-011	I-108-SD-011	I-108-SD-012
		1-108SD009 (0-	1-108SD010 (18	1-108SD010 (0-	1-108SD011 (18	1-108SD011 (0-	1-108SD012 (18
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5	1.5 - 2
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
Iron	7439-89-6						
Lead	7439-92-1	97.4	1010	1630	17.9	14.7	13.5
Magnesium	7439-95-4						
Manganese	7439-96-5						
Mercury	7439-97-6	20.4	113	90.8	1.49	0.426	0.0848 UB
Nickel	7440-02-0						
Potassium	7440-09-7						
Selenium	7782-49-2						
Silver	7440-22-4						
Sodium	7440-23-5						
Strontium	7440-24-6						
Thallium	7440-28-0						
Titanium	7440-32-6						
Vanadium	7440-62-2						
Zinc	7440-66-6	1740	7050	6560	87	57.1	50
Zirconium	7440-67-7						
Other							
1,4-Oxathiane	15980-15-1						
Dithiane	51330-42-8						
PCBs							
Aroclor 1016	12674-11-2						
Aroclor 1016	12674-11-2						
Aroclor 1221	11104-28-2						
Aroclor 1232	11141-16-5						
Aroclor 1242	53469-21-9						
Aroclor 1248	12672-29-6						
Aroclor 1254	11097-69-1						
Aroclor 1260	11096-82-5						
Aroclor 1260	11096-82-5						
Aroclor 1262	37324-23-5						
Pesticides							
4,4'-DDD	72-54-8						
4,4'-DDD	72-54-8						

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-009	I-108-SD-010	I-108-SD-010	I-108-SD-011	I-108-SD-011	I-108-SD-012
		1-108SD009 (0-	1-108SD010 (18	1-108SD010 (0-	1-108SD011 (18	1-108SD011 (0-	1-108SD012 (18
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5	1.5 - 2
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
4,4'-DDE	72-55-9						
4,4'-DDE	72-55-9						
4,4'-DDT	50-29-3						
4,4'-DDT	50-29-3						
Aldrin	309-00-2						
Aldrin	309-00-2						
alpha-BHC	319-84-6						
alpha-BHC	319-84-6						
Atrazine	1912-24-9						
beta-BHC	319-85-7						
beta-BHC	319-85-7						
Chlordane	57-74-9						
Chlordane	57-74-9						
delta-BHC	319-86-8						
delta-BHC	319-86-8						
Dieldrin	60-57-1						
Dieldrin	60-57-1						
Endosulfan I	959-98-8						
Endosulfan I	959-98-8						
Endosulfan II	33213-65-9						
Endosulfan II	33213-65-9						
Endosulfan sulfate	1031-07-8						
Endosulfan sulfate	1031-07-8						
Endrin	72-20-8						
Endrin	72-20-8						
Endrin aldehyde	7421-93-4						
Endrin ketone	53494-70-5						
gamma-BHC (Lindane)	58-89-9						
gamma-BHC (Lindane)	58-89-9						
Heptachlor	76-44-8						
Heptachlor	76-44-8						
Heptachlor epoxide	1024-57-3						
Heptachlor epoxide	1024-57-3						

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-009	I-108-SD-010	I-108-SD-010	I-108-SD-011	I-108-SD-011	I-108-SD-012
		1-108SD009 (0-	1-108SD010 (18	1-108SD010 (0-	1-108SD011 (18	1-108SD011 (0-	1-108SD012 (18
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5	1.5 - 2
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
Isodrin	465-73-6						
Isodrin	465-73-6						
Malathion	121-75-5						
Methoxychlor	72-43-5						
Methoxychlor	72-43-5						
Mirex	2385-85-5						
Parathion	56-38-2						
p-Chlorophenylmethyl sulfide	123-09-1						
p-Chlorophenylmethyl sulfone	98-57-7						
p-Chlorophenylmethyl sulfoxide	934-73-6						
Supona	470-90-6						
Toxaphene	8001-35-2						
Toxaphene	8001-35-2						
Vapona	62-73-7						
Radiological							
Americium-241	86954-36-1						
Cesium-137	10045-97-3						
Cobalt-60	10198-40-0						
Gross Alpha	12587-46-1						
Gross beta	12587-47-2						
Radium-226	13982-63-3						
Total Uranium	7440-61-1 U						
Uranium-235	15117-96-1						
Uranium-238	7440-61-1 U-238						
SVOC							
1-Methylnaphthalene	90-12-0						
1,1,2,2-Tetrachloroethane	79-34-5						
1,2,4-Trichlorobenzene	120-82-1						
1,2-Dichlorobenzene	95-50-1						
1,2-Diphenylhydrazine	122-66-7						
2-Methylnaphthalene	91-57-6						
1,3-Dichlorobenzene	541-73-1						
1,3-Dichlorobenzene	541-73-1						

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-009	I-108-SD-010	I-108-SD-010	I-108-SD-011	I-108-SD-011	I-108-SD-012
		1-108SD009 (0-	1-108SD010 (18	1-108SD010 (0-	1-108SD011 (18	1-108SD011 (0-	1-108SD012 (18
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5	1.5 - 2
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
1,4-Dichlorobenzene	106-46-7						
2,4,5-Trichlorophenol	95-95-4						
2,4,6-Trichlorophenol	88-06-2						
2,4-Dichlorophenol	120-83-2						
2,4-Dimethylphenol	105-67-9						
2,4-Dinitrophenol	51-28-5						
2,6-Dinitroaniline	606-22-4						
2-Chloronaphthalene	91-58-7						
2-Chlorophenol	95-57-8						
2-Methylnaphthalene	91-57-6						
2-Methylphenol	95-48-7						
2-Nitroaniline	88-74-4						
2-Nitrophenol	88-75-5						
3,3'-Dichlorobenzidine	91-94-1						
3,5-Dinitroaniline	618-87-1						
3-Nitroaniline	99-09-2						
4,6-dinitro-2-Methylphenol	534-52-1						
4-Bromophenyl phenyl ether	101-55-3						
4-Chloro-3-methylphenol	59-50-7						
4-Chloroaniline	106-47-8						
4-Chlorophenyl phenyl ether	7005-72-3						
4-Methylphenol	106-44-5						
4-Nitroaniline	100-01-6						
4-Nitrophenol	100-02-7						
Acenaphthene	83-32-9						
Acenaphthylene	208-96-8						
Aniline	62-53-3						
Anthracene	120-12-7						
Benz(a)anthracene	56-55-3						
Benzo(a)pyrene	50-32-8						
Benzo(b)fluoranthene	205-99-2						
Benzo(g,h,i)perylene	191-24-2						

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-009	I-108-SD-010	I-108-SD-010	I-108-SD-011	I-108-SD-011	I-108-SD-012
		1-108SD009 (0-	1-108SD010 (18	1-108SD010 (0-	1-108SD011 (18	1-108SD011 (0-	1-108SD012 (18
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5	1.5 - 2
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
Benzo(k)fluoranthene	207-08-9						
Benzyl alcohol	100-51-6						
bis(2-Chloroethoxy)methane	111-91-1						
bis(2-Chloroethyl)ether	111-44-4						
bis(2-Chloroisopropyl)ether	39638-32-9						
bis(2-Ethylhexyl)phthalate	117-81-7						
Butylbenzyl phthalate	85-68-7						
Carbazole	86-74-8						
Chrysene	218-01-9						
Dibenz(a,h)anthracene	53-70-3						
Dibenzofuran	132-64-9						
Dichlorobenzenes	25321-22-6						
Dicyclopentadiene	77-73-6						
Diethylphthalate	84-66-2						
Dimethylphthalate	131-11-3						
di-n-Butylphthalate	84-74-2						
di-n-Octylphthalate	117-84-0						
Diphenylamine	122-39-4						
Fluoranthene	206-44-0						
Fluorene	86-73-7						
Hexachlorobenzene	118-74-1						
Hexachlorobutadiene	87-68-3						
Hexachlorocyclopentadiene	77-47-4						
Hexachloroethane	67-72-1						
Indeno(1,2,3-c,d)pyrene	193-39-5						
Isophorone	78-59-1						
Naphthalene	91-20-3						
N-Nitrosodimethylamine	62-75-9						
n-Nitroso-di-n-propylamine	621-64-7						
n-Nitrosodiphenylamine	86-30-6						
Pentachlorophenol	87-86-5						
Phenanthrene	85-01-8						

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-009	I-108-SD-010	I-108-SD-010	I-108-SD-011	I-108-SD-011	I-108-SD-012
		1-108SD009 (0-	1-108SD010 (18	1-108SD010 (0-	1-108SD011 (18	1-108SD011 (0-	1-108SD012 (18
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5	1.5 - 2
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
Phenol	108-95-2						
Pyrene	129-00-0						

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-009	I-108-SD-010	I-108-SD-010	I-108-SD-011	I-108-SD-011	I-108-SD-012
		1-108SD009 (0-	1-108SD010 (18	1-108SD010 (0-	1-108SD011 (18	1-108SD011 (0-	1-108SD012 (18
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5	1.5 - 2
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
TPH							
Total Petroleum Hydrocarbons	TPH						
VOC							
1,1,1-Trichloroethane	71-55-6						
1,1,2-Trichloroethane	79-00-5						
1,1-Dichloroethane	75-34-3						
1,1-Dichloroethene	75-35-4						
1,2,3-Trichlorobenzene	87-61-6						
1,2-Dichloroethane	107-06-2						
1,2-Dichloroethene (total)	540-59-0						
1,2-Dichloropropane	78-87-5						
1,3-Dichloropropane	142-28-9						
2,3,6-Trichlorophenol	933-75-5						
2-Butanone	78-93-3						
2-Chloroethyl vinyl ether	110-75-8						
4-Methyl-2-pentanone (MIBK)	108-10-1						
Acetone	67-64-1						
Acrylonitrile	107-13-1						
Benzene	71-43-2						
Bromodichloromethane	75-27-4						
Bromoform	75-25-2						
Bromomethane	74-83-9						
Carbon tetrachloride	56-23-5						
Chlorobenzene	108-90-7						
Chloroethane	75-00-3						
Chloroform	67-66-3						
Chloromethane	74-87-3						
Dibromochloromethane	124-48-1						
Dibromochloropropane	96-12-8						
Ethyl benzene	100-41-4						
Methylene chloride	75-09-2						
m-Xylenes	108-38-3						
Tetrachloroethene	127-18-4						

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108
		I-108-SD-009	I-108-SD-010	I-108-SD-010	I-108-SD-011	I-108-SD-011	I-108-SD-012
		1-108SD009 (0-	1-108SD010 (18	1-108SD010 (0-	1-108SD011 (18	1-108SD011 (0-	1-108SD012 (18
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5	1.5 - 2
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011
		SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N
Chemical Name	**CAS No**						
Toluene	108-88-3						
Trichloroethene	79-01-6						
Trichlorofluoromethane	75-69-4						
Vinyl chloride	75-01-4						
Xylenes	1330-20-7						
WetChem							
% Solids	%Solid						
Ammonia	7664-41-7						
Cation Exchange Capacity	CEC						
Chloride	16887-00-6						
Cyanide	57-12-5						
Fluoride	16984-48-8						
Nitrate/Nitrite	Nitrate/Nitrite						
Phosphate	14265-44-2						
Sulfate	14808-79-8						
Sulfide	18496-25-8						
Total organic carbon	TOC						

Notes:

LOC - Level of Concern
mg/kg - milligrams per kilogram
pCi/g - picocuries per gram
U - Non-detect at the specified reporting limit
UJ - Compound was analyzed but not detected. Detection limit is an es
J - Estimated concentration
R - Rejected

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108	108
		I-108-SD-012	I-108-SD-013	I-108-SD-013	I-108-SD-014	I-108-SD-014	I-108-SP-001	I-108-SP-002
		1-108SD012 (0-	1-108SD013 (18	1-108SD013 (0-	1-108SD014 (18	1-108SD014 (0-	108SP-1(-)	108SP-2(-)
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5		
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	8/16/1996	8/16/1996
		SE	SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N	N
Chemical Name	**CAS No**							
Explosives								
1,3,5-Trinitrobenzene	99-35-4						< 0.488 U	< 0.488 U
1,3-Dinitrobenzene	99-65-0						< 0.496 U	< 0.496 U
2,4,6-Trinitrotoluene	118-96-7						< 0.456 U	< 0.456 U
3-Nitrotoluene	99-08-1							
HMX	2691-41-0						< 0.666 U	< 0.666 U
Nitrobenzene	98-95-3						< 2.41 U	< 2.41 U
Nitrobenzene	98-95-3							
Nitrocellulose	9004-70-0						< 10.4 U	< 10.4 U
Nitroglycerin	55-63-0						< 4 U	< 4 U
Nitroguanidine	556-88-7						< 0.475 U	< 0.475 U
PETN	78-11-5						< 4 U	< 4 U
Picric Acid	88-89-1						< 0.108 U	< 0.108 U
RDX	121-82-4						< 0.587 U	< 0.587 U
Tetrazene	14097-21-3						< 1.19 U	< 1.19 U
Tetryl	479-45-8						< 0.731 U	< 0.731 U
Explosives / SVOC								
2,4-Dinitrotoluene	121-14-2						< 0.424 U	< 0.424 U
2,4-Dinitrotoluene	121-14-2							
2,6-Dinitrotoluene	606-20-2						< 0.524 U	< 0.524 U
2,6-Dinitrotoluene	606-20-2							
Metals								
Aluminum	7429-90-5						11500	10600
Antimony	7440-36-0						12.9	< 0.1 U
Arsenic	7440-38-2	10.8	117	87.1			28.5	< 0.25 U
Barium	7440-39-3						633	228
Beryllium	7440-41-7						2.4	1.68
Boron	7440-42-8						< 5.91 U	< 5.91 U
Cadmium	7440-43-9						5.78	2.4
Calcium	7440-70-2						3620	6550
Chromium	7440-47-3						90.5	17.9
Cobalt	7440-48-4						11	7.5
Copper	7440-50-8	13.5	530	354			500	494

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108	108
		I-108-SD-012	I-108-SD-013	I-108-SD-013	I-108-SD-014	I-108-SD-014	I-108-SP-001	I-108-SP-002
		1-108SD012 (0-	1-108SD013 (18	1-108SD013 (0-	1-108SD014 (18	1-108SD014 (0-	108SP-1(-)	108SP-2(-)
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5		
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	8/16/1996	8/16/1996
		SE	SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N	N
Chemical Name	**CAS No**							
Iron	7439-89-6						100000	38700
Lead	7439-92-1	21.4	549	2530			16000	468
Magnesium	7439-95-4						5200	4520
Manganese	7439-96-5						170	734
Mercury	7439-97-6	0.382 J	47.9	22.7			42	1.3
Nickel	7440-02-0						38.7	17.4
Potassium	7440-09-7						2590	989
Selenium	7782-49-2						1.16	< 0.25 U
Silver	7440-22-4						1.17	< 0.589 U
Sodium	7440-23-5						514	422
Strontium	7440-24-6						46	19.8
Thallium	7440-28-0						0.22	< 0.1 U
Titanium	7440-32-6						672	< 50 U
Vanadium	7440-62-2						43	11.9
Zinc	7440-66-6	85.8	1170	658			5100	630
Zirconium	7440-67-7						17.9	< 2.5 U
Other								
1,4-Oxathiane	15980-15-1							
Dithiane	51330-42-8							
PCBs								
Aroclor 1016	12674-11-2							
Aroclor 1016	12674-11-2							
Aroclor 1221	11104-28-2							
Aroclor 1232	11141-16-5							
Aroclor 1242	53469-21-9							
Aroclor 1248	12672-29-6							
Aroclor 1254	11097-69-1							
Aroclor 1260	11096-82-5							
Aroclor 1260	11096-82-5							
Aroclor 1262	37324-23-5							
Pesticides								
4,4'-DDD	72-54-8							
4,4'-DDD	72-54-8							

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108	108
		I-108-SD-012	I-108-SD-013	I-108-SD-013	I-108-SD-014	I-108-SD-014	I-108-SP-001	I-108-SP-002
		1-108SD012 (0-	1-108SD013 (18	1-108SD013 (0-	1-108SD014 (18	1-108SD014 (0-	108SP-1(-)	108SP-2(-)
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5		
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	8/16/1996	8/16/1996
		SE	SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N	N
Chemical Name	**CAS No**							
4,4'-DDE	72-55-9							
4,4'-DDE	72-55-9							
4,4'-DDT	50-29-3							
4,4'-DDT	50-29-3							
Aldrin	309-00-2							
Aldrin	309-00-2							
alpha-BHC	319-84-6							
alpha-BHC	319-84-6							
Atrazine	1912-24-9							
beta-BHC	319-85-7							
beta-BHC	319-85-7							
Chlordane	57-74-9							
Chlordane	57-74-9							
delta-BHC	319-86-8							
delta-BHC	319-86-8							
Dieldrin	60-57-1							
Dieldrin	60-57-1							
Endosulfan I	959-98-8							
Endosulfan I	959-98-8							
Endosulfan II	33213-65-9							
Endosulfan II	33213-65-9							
Endosulfan sulfate	1031-07-8							
Endosulfan sulfate	1031-07-8							
Endrin	72-20-8							
Endrin	72-20-8							
Endrin aldehyde	7421-93-4							
Endrin ketone	53494-70-5							
gamma-BHC (Lindane)	58-89-9							
gamma-BHC (Lindane)	58-89-9							
Heptachlor	76-44-8							
Heptachlor	76-44-8							
Heptachlor epoxide	1024-57-3							
Heptachlor epoxide	1024-57-3							

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108	108
		I-108-SD-012	I-108-SD-013	I-108-SD-013	I-108-SD-014	I-108-SD-014	I-108-SP-001	I-108-SP-002
		1-108SD012 (0-	1-108SD013 (18	1-108SD013 (0-	1-108SD014 (18	1-108SD014 (0-	108SP-1(-)	108SP-2(-)
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5		
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	8/16/1996	8/16/1996
		SE	SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N	N
Chemical Name	**CAS No**							
Isodrin	465-73-6							
Isodrin	465-73-6							
Malathion	121-75-5							
Methoxychlor	72-43-5							
Methoxychlor	72-43-5							
Mirex	2385-85-5						< 0.25 U	< 0.25 U
Parathion	56-38-2							
p-Chlorophenylmethyl sulfide	123-09-1							
p-Chlorophenylmethyl sulfone	98-57-7							
p-Chlorophenylmethyl sulfoxide	934-73-6							
Supona	470-90-6							
Toxaphene	8001-35-2							
Toxaphene	8001-35-2							
Vapona	62-73-7							
Radiological								
Americium-241	86954-36-1							
Cesium-137	10045-97-3							
Cobalt-60	10198-40-0							
Gross Alpha	12587-46-1							
Gross beta	12587-47-2							
Radium-226	13982-63-3							
Total Uranium	7440-61-1 U							
Uranium-235	15117-96-1							
Uranium-238	7440-61-1 U-238							
SVOC								
1-Methylnaphthalene	90-12-0							
1,1,2,2-Tetrachloroethane	79-34-5							
1,2,4-Trichlorobenzene	120-82-1						< 0.04 U	< 0.04 U
1,2-Dichlorobenzene	95-50-1						< 0.11 U	< 0.11 U
1,2-Diphenylhydrazine	122-66-7							
2-Methylnaphthalene	91-57-6							
1,3-Dichlorobenzene	541-73-1						< 0.13 U	< 0.13 U
1,3-Dichlorobenzene	541-73-1							

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108	108
		I-108-SD-012	I-108-SD-013	I-108-SD-013	I-108-SD-014	I-108-SD-014	I-108-SP-001	I-108-SP-002
		1-108SD012 (0-	1-108SD013 (18	1-108SD013 (0-	1-108SD014 (18	1-108SD014 (0-	108SP-1(-)	108SP-2(-)
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5		
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	8/16/1996	8/16/1996
		SE	SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N	N
Chemical Name	**CAS No**							
1,4-Dichlorobenzene	106-46-7						< 0.098 U	< 0.098 U
2,4,5-Trichlorophenol	95-95-4						< 0.1 U	< 0.1 U
2,4,6-Trichlorophenol	88-06-2						< 0.17 U	< 0.17 U
2,4-Dichlorophenol	120-83-2						< 0.18 U	< 0.18 U
2,4-Dimethylphenol	105-67-9						< 0.69 U	< 0.69 U
2,4-Dinitrophenol	51-28-5						< 1.2 U	< 1.2 U
2,6-Dinitroaniline	606-22-4							
2-Chloronaphthalene	91-58-7						< 0.036 U	< 0.036 U
2-Chlorophenol	95-57-8						< 0.06 U	< 0.06 U
2-Methylnaphthalene	91-57-6						< 0.049 U	< 0.049 U
2-Methylphenol	95-48-7						< 0.029 U	< 0.029 U
2-Nitroaniline	88-74-4						< 0.062 U	< 0.062 U
2-Nitrophenol	88-75-5						< 0.14 U	< 0.14 U
3,3'-Dichlorobenzidine	91-94-1						< 6.3 U	< 6.3 U
3,5-Dinitroaniline	618-87-1							
3-Nitroaniline	99-09-2						< 0.45 U	< 0.45 U
4,6-dinitro-2-Methylphenol	534-52-1						< 0.55 U	< 0.55 U
4-Bromophenyl phenyl ether	101-55-3						< 0.033 U	< 0.033 U
4-Chloro-3-methylphenol	59-50-7						< 0.095 U	< 0.095 U
4-Chloroaniline	106-47-8						< 0.81 U	< 0.81 U
4-Chlorophenyl phenyl ether	7005-72-3						< 0.033 U	< 0.033 U
4-Methylphenol	106-44-5						< 0.24 U#	< 0.24 U#
4-Nitroaniline	100-01-6						< 0.41 U	< 0.41 U
4-Nitrophenol	100-02-7						< 1.4 U	< 1.4 U
Acenaphthene	83-32-9						< 0.036 U	< 0.036 U
Acenaphthylene	208-96-8						< 0.033 U	< 0.033 U
Aniline	62-53-3						< 0.65 U	< 0.65 U
Anthracene	120-12-7						< 0.033 U	< 0.033 U
Benz(a)anthracene	56-55-3						< 0.17 U	< 0.17 U
Benzo(a)pyrene	50-32-8						< 0.25 U	< 0.25 U
Benzo(b)fluoranthene	205-99-2						< 0.21 U	< 0.21 U
Benzo(g,h,i)perylene	191-24-2						< 0.25 U	< 0.25 U

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108	108
		I-108-SD-012	I-108-SD-013	I-108-SD-013	I-108-SD-014	I-108-SD-014	I-108-SP-001	I-108-SP-002
		1-108SD012 (0-	1-108SD013 (18	1-108SD013 (0-	1-108SD014 (18	1-108SD014 (0-	108SP-1(-)	108SP-2(-)
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5		
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	8/16/1996	8/16/1996
		SE	SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N	N
Chemical Name	**CAS No**							
Benzo(k)fluoranthene	207-08-9						< 0.066 U	< 0.066 U
Benzyl alcohol	100-51-6						< 0.19 U	< 0.19 U
bis(2-Chloroethoxy)methane	111-91-1						< 0.059 U	< 0.059 U
bis(2-Chloroethyl)ether	111-44-4						< 0.033 U	< 0.033 U
bis(2-Chloroisopropyl)ether	39638-32-9						< 0.2 U	< 0.2 U
bis(2-Ethylhexyl)phthalate	117-81-7						< 0.62 U	< 0.62 U
Butylbenzyl phthalate	85-68-7						< 0.17 U	< 0.17 U
Carbazole	86-74-8						< 0.14 U	< 0.14 U
Chrysene	218-01-9						< 0.12 U	< 0.12 U
Dibenz(a,h)anthracene	53-70-3						< 0.21 U	< 0.21 U
Dibenzofuran	132-64-9						< 0.035 U	< 0.035 U
Dichlorobenzenes	25321-22-6							
Dicyclopentadiene	77-73-6							
Diethylphthalate	84-66-2						< 0.24 U	< 0.24 U
Dimethylphthalate	131-11-3						< 0.17 U	< 0.17 U
di-n-Butylphthalate	84-74-2						0.15	< 0.061 U
di-n-Octylphthalate	117-84-0						< 0.19 U	< 0.19 U
Diphenylamine	122-39-4						< 0.13 U	< 0.13 U
Fluoranthene	206-44-0						< 0.068 U	< 0.068 U
Fluorene	86-73-7						< 0.033 U	< 0.033 U
Hexachlorobenzene	118-74-1						0.25	< 0.033 U
Hexachlorobutadiene	87-68-3						< 0.23 U	< 0.23 U
Hexachlorocyclopentadiene	77-47-4						< 6.2 U	< 6.2 U
Hexachloroethane	67-72-1						< 0.15 U	< 0.15 U
Indeno(1,2,3-c,d)pyrene	193-39-5						< 0.29 U	< 0.29 U
Isophorone	78-59-1						< 0.033 U	< 0.033 U
Naphthalene	91-20-3						< 0.037 U	< 0.037 U
N-Nitrosodimethylamine	62-75-9							
n-Nitroso-di-n-propylamine	621-64-7						< 0.2 U	< 0.2 U
n-Nitrosodiphenylamine	86-30-6						< 0.19 U	< 0.19 U
Pentachlorophenol	87-86-5						< 1.3 U	< 1.3 U
Phenanthrene	85-01-8						0.07	< 0.033 U

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108	108
		I-108-SD-012	I-108-SD-013	I-108-SD-013	I-108-SD-014	I-108-SD-014	I-108-SP-001	I-108-SP-002
		1-108SD012 (0-	1-108SD013 (18	1-108SD013 (0-	1-108SD014 (18	1-108SD014 (0-	108SP-1(-)	108SP-2(-)
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5		
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	8/16/1996	8/16/1996
		SE	SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N	N
Chemical Name	**CAS No**							
Phenol	108-95-2						< 0.11 U	< 0.11 U
Pyrene	129-00-0						0.11	< 0.033 U

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108	108
		I-108-SD-012	I-108-SD-013	I-108-SD-013	I-108-SD-014	I-108-SD-014	I-108-SP-001	I-108-SP-002
		1-108SD012 (0-	1-108SD013 (18	1-108SD013 (0-	1-108SD014 (18	1-108SD014 (0-	108SP-1(-)	108SP-2(-)
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5		
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	8/16/1996	8/16/1996
		SE	SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N	N
Chemical Name	**CAS No**							
TPH								
Total Petroleum Hydrocarbons	TPH							
VOC								
1,1,1-Trichloroethane	71-55-6							
1,1,2-Trichloroethane	79-00-5							
1,1-Dichloroethane	75-34-3							
1,1-Dichloroethene	75-35-4							
1,2,3-Trichlorobenzene	87-61-6							
1,2-Dichloroethane	107-06-2							
1,2-Dichloroethene (total)	540-59-0							
1,2-Dichloropropane	78-87-5							
1,3-Dichloropropane	142-28-9							
2,3,6-Trichlorophenol	933-75-5							
2-Butanone	78-93-3							
2-Chloroethyl vinyl ether	110-75-8							
4-Methyl-2-pentanone (MIBK)	108-10-1							
Acetone	67-64-1							
Acrylonitrile	107-13-1							
Benzene	71-43-2							
Bromodichloromethane	75-27-4							
Bromoform	75-25-2							
Bromomethane	74-83-9							
Carbon tetrachloride	56-23-5							
Chlorobenzene	108-90-7							
Chloroethane	75-00-3							
Chloroform	67-66-3							
Chloromethane	74-87-3							
Dibromochloromethane	124-48-1							
Dibromochloropropane	96-12-8							
Ethyl benzene	100-41-4							
Methylene chloride	75-09-2							
m-Xylenes	108-38-3							
Tetrachloroethene	127-18-4							

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108	108	108	108	108	108	108
		I-108-SD-012	I-108-SD-013	I-108-SD-013	I-108-SD-014	I-108-SD-014	I-108-SP-001	I-108-SP-002
		1-108SD012 (0-	1-108SD013 (18	1-108SD013 (0-	1-108SD014 (18	1-108SD014 (0-	108SP-1(-)	108SP-2(-)
		0 - .5	1.5 - 2	0 - .5	1.5 - 2	0 - .5		
		11/14/2011	11/14/2011	11/14/2011	11/14/2011	11/14/2011	8/16/1996	8/16/1996
		SE	SE	SE	SE	SE	SE	SE
		N	N	N	N	N	N	N
Chemical Name	**CAS No**							
Toluene	108-88-3							
Trichloroethene	79-01-6							
Trichlorofluoromethane	75-69-4							
Vinyl chloride	75-01-4							
Xylenes	1330-20-7							
WetChem								
% Solids	%Solid							
Ammonia	7664-41-7						102	46.3
Cation Exchange Capacity	CEC							
Chloride	16887-00-6						< 6.05 U	< 6.05 U
Cyanide	57-12-5						2.34	< 0.92 U
Fluoride	16984-48-8						< 3.62 U	< 3.62 U
Nitrate/Nitrite	Nitrate/Nitrite						2.83	3.8
Phosphate	14265-44-2						2300	1200
Sulfate	14808-79-8						< 90.4 U	< 90.4 U
Sulfide	18496-25-8						< 6 U	< 6 U
Total organic carbon	TOC						61500	14900

Notes:

LOC - Level of Concern
mg/kg - milligrams per kilogram
pCi/g - picocuries per gram
U - Non-detect at the specified reporting limit
UJ - Compound was analyzed but not detected. Detection limit is an es
J - Estimated concentration
R - Rejected

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108
		I-SDBG-30
		SDBG-30(0-0.5)
		0 - .5
		11/2/1993
		SE
		N
Chemical Name	**CAS No**	
Explosives		
1,3,5-Trinitrobenzene	99-35-4	< 0.922 U
1,3-Dinitrobenzene	99-65-0	< 0.504 U
2,4,6-Trinitrotoluene	118-96-7	< 2 U
3-Nitrotoluene	99-08-1	< 0.34 U
HMX	2691-41-0	< 2 U
Nitrobenzene	98-95-3	< 1.8 U
Nitrobenzene	98-95-3	< 1.14 U
Nitrocellulose	9004-70-0	127 B
Nitroglycerin	55-63-0	< 0.51 U
Nitroguanidine	556-88-7	
PETN	78-11-5	< 1 U
Picric Acid	88-89-1	
RDX	121-82-4	< 1.28 U
Tetrazene	14097-21-3	
Tetryl	479-45-8	< 2.11 U
Explosives / SVOC		
2,4-Dinitrotoluene	121-14-2	< 1.4 U
2,4-Dinitrotoluene	121-14-2	< 2.5 U
2,6-Dinitrotoluene	606-20-2	< 2 U
2,6-Dinitrotoluene	606-20-2	< 0.32 U
Metals		
Aluminum	7429-90-5	4260
Antimony	7440-36-0	< 1 U
Arsenic	7440-38-2	10
Barium	7440-39-3	41.2
Beryllium	7440-41-7	0.75
Boron	7440-42-8	
Cadmium	7440-43-9	< 1.2 U
Calcium	7440-70-2	2370
Chromium	7440-47-3	5.34
Cobalt	7440-48-4	4.93
Copper	7440-50-8	19.3

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108
		I-SDBG-30
		SDBG-30(0-0.5)
		0 - .5
		11/2/1993
		SE
		N
Chemical Name	**CAS No**	
Iron	7439-89-6	24700
Lead	7439-92-1	11
Magnesium	7439-95-4	2350
Manganese	7439-96-5	246
Mercury	7439-97-6	0.06
Nickel	7440-02-0	4.54
Potassium	7440-09-7	886
Selenium	7782-49-2	< 0.449 U
Silver	7440-22-4	< 0.803 U
Sodium	7440-23-5	202
Strontium	7440-24-6	
Thallium	7440-28-0	< 34.3 U
Titanium	7440-32-6	
Vanadium	7440-62-2	17.9
Zinc	7440-66-6	66.3
Zirconium	7440-67-7	
Other		
1,4-Oxathiane	15980-15-1	< 0.075 U
Dithiane	51330-42-8	< 0.065 U
PCBs		
Aroclor 1016	12674-11-2	< 0.1 U
Aroclor 1016	12674-11-2	< 0.32 U
Aroclor 1221	11104-28-2	< 0.1 UT
Aroclor 1232	11141-16-5	< 0.1 UT
Aroclor 1242	53469-21-9	< 0.1 UT
Aroclor 1248	12672-29-6	< 0.1 UT
Aroclor 1254	11097-69-1	< 0.0479 UT
Aroclor 1260	11096-82-5	< 0.0479 U
Aroclor 1260	11096-82-5	< 0.79 U
Aroclor 1262	37324-23-5	< 6.3 U
Pesticides		
4,4'-DDD	72-54-8	< 0.27 U
4,4'-DDD	72-54-8	< 0.064 U

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108
		I-SDBG-30
		SDBG-30(0-0.5)
		0 - .5
		11/2/1993
		SE
		N
Chemical Name	**CAS No**	
4,4'-DDE	72-55-9	< 0.068 U
4,4'-DDE	72-55-9	< 0.27 U
4,4'-DDT	50-29-3	< 0.35 U
4,4'-DDT	50-29-3	< 0.1 U
Aldrin	309-00-2	< 1.3 U
Aldrin	309-00-2	< 0.14 UJ
alpha-BHC	319-84-6	< 1.3 U
alpha-BHC	319-84-6	< 0.28 U
Atrazine	1912-24-9	< 0.065 U
beta-BHC	319-85-7	< 0.77 U
beta-BHC	319-85-7	< 1.3 U
Chlordane	57-74-9	< 0.68 U
Chlordane	57-74-9	< 0.0684 U
delta-BHC	319-86-8	< 0.21 U
delta-BHC	319-86-8	< 0.85 U
Dieldrin	60-57-1	< 0.16 U
Dieldrin	60-57-1	< 0.079 U
Endosulfan I	959-98-8	< 0.4 U
Endosulfan I	959-98-8	< 0.1 U
Endosulfan II	33213-65-9	< 0.07 U
Endosulfan II	33213-65-9	< 2.4 U
Endosulfan sulfate	1031-07-8	< 0.05 UT
Endosulfan sulfate	1031-07-8	< 1.2 U
Endrin	72-20-8	< 1.3 U
Endrin	72-20-8	< 0.65 U
Endrin aldehyde	7421-93-4	< 1.8 U
Endrin ketone	53494-70-5	< 0.05 UT
gamma-BHC (Lindane)	58-89-9	< 0.1 U
gamma-BHC (Lindane)	58-89-9	< 0.1 UJ
Heptachlor	76-44-8	< 0.24 U
Heptachlor	76-44-8	< 0.22 U
Heptachlor epoxide	1024-57-3	< 0.48 U
Heptachlor epoxide	1024-57-3	< 0.13 U

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108
		I-SDBG-30
		SDBG-30(0-0.5)
		0 - .5
		11/2/1993
		SE
		N
Chemical Name	**CAS No**	
Isodrin	465-73-6	< 0.48 U
Isodrin	465-73-6	< 0.3 U
Malathion	121-75-5	< 0.18 U
Methoxychlor	72-43-5	< 0.26 U
Methoxychlor	72-43-5	< 0.0359 U
Mirex	2385-85-5	< 0.14 U
Parathion	56-38-2	< 1.7 U
p-Chlorophenylmethyl sulfide	123-09-1	< 0.097 U
p-Chlorophenylmethyl sulfone	98-57-7	< 0.066 U
p-Chlorophenylmethyl sulfoxide	934-73-6	< 0.32 U
Supona	470-90-6	< 0.92 U
Toxaphene	8001-35-2	< 0.226 U
Toxaphene	8001-35-2	< 12 U
Vapona	62-73-7	< 0.068 U
Radiological		
Americium-241	86954-36-1	
Cesium-137	10045-97-3	
Cobalt-60	10198-40-0	
Gross Alpha	12587-46-1	
Gross beta	12587-47-2	
Radium-226	13982-63-3	
Total Uranium	7440-61-1 U	
Uranium-235	15117-96-1	
Uranium-238	7440-61-1 U-238	
SVOC		
1-Methylnaphthalene	90-12-0	
1,1,2,2-Tetrachloroethane	79-34-5	< 0.2 U
1,2,4-Trichlorobenzene	120-82-1	< 0.22 U
1,2-Dichlorobenzene	95-50-1	< 0.042 U
1,2-Diphenylhydrazine	122-66-7	< 0.52 U
2-Methylnaphthalene	91-57-6	
1,3-Dichlorobenzene	541-73-1	< 0.14 U
1,3-Dichlorobenzene	541-73-1	< 0.042 U

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108
		I-SDBG-30
		SDBG-30(0-0.5)
		0 - .5
		11/2/1993
		SE
		N
Chemical Name	**CAS No**	
1,4-Dichlorobenzene	106-46-7	< 0.034 U
2,4,5-Trichlorophenol	95-95-4	< 0.49 U
2,4,6-Trichlorophenol	88-06-2	< 0.061 U
2,4-Dichlorophenol	120-83-2	< 0.065 U
2,4-Dimethylphenol	105-67-9	< 3 U
2,4-Dinitrophenol	51-28-5	< 4.7 U
2,6-Dinitroaniline	606-22-4	< 0.57 U
2-Chloronaphthalene	91-58-7	< 0.24 U
2-Chlorophenol	95-57-8	< 0.055 U
2-Methylnaphthalene	91-57-6	< 0.032 U
2-Methylphenol	95-48-7	< 0.098 U
2-Nitroaniline	88-74-4	
2-Nitrophenol	88-75-5	< 1.1 U
3,3'-Dichlorobenzidine	91-94-1	< 1.6 U
3,5-Dinitroaniline	618-87-1	< 1.6 U
3-Nitroaniline	99-09-2	< 3 U
4,6-dinitro-2-Methylphenol	534-52-1	< 0.8 U
4-Bromophenyl phenyl ether	101-55-3	< 0.041 U
4-Chloro-3-methylphenol	59-50-7	< 0.93 U
4-Chloroaniline	106-47-8	
4-Chlorophenyl phenyl ether	7005-72-3	< 0.17 U
4-Methylphenol	106-44-5	< 0.24 U#
4-Nitroaniline	100-01-6	
4-Nitrophenol	100-02-7	< 3.3 U
Acenaphthene	83-32-9	< 0.041 U
Acenaphthylene	208-96-8	< 0.033 U
Aniline	62-53-3	
Anthracene	120-12-7	< 0.71 U
Benz(a)anthracene	56-55-3	
Benzo(a)pyrene	50-32-8	< 1.2 U
Benzo(b)fluoranthene	205-99-2	< 0.31 U
Benzo(g,h,i)perylene	191-24-2	< 0.18 U

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108
		I-SDBG-30
		SDBG-30(0-0.5)
		0 - .5
		11/2/1993
		SE
		N
Chemical Name	**CAS No**	
Benzo(k)fluoranthene	207-08-9	< 0.13 U
Benzyl alcohol	100-51-6	< 0.032 U
bis(2-Chloroethoxy)methane	111-91-1	< 0.19 U
bis(2-Chloroethyl)ether	111-44-4	< 0.36 U
bis(2-Chloroisopropyl)ether	39638-32-9	< 0.44 U
bis(2-Ethylhexyl)phthalate	117-81-7	< 0.48 U
Butylbenzyl phthalate	85-68-7	< 1.8 U
Carbazole	86-74-8	
Chrysene	218-01-9	< 0.032 U
Dibenz(a,h)anthracene	53-70-3	< 0.31 U
Dibenzofuran	132-64-9	< 0.38 U
Dichlorobenzenes	25321-22-6	< 0.2 U
Dicyclopentadiene	77-73-6	< 0.57 U
Diethylphthalate	84-66-2	< 0.24 U
Dimethylphthalate	131-11-3	< 0.063 U
di-n-Butylphthalate	84-74-2	< 1.3 U
di-n-Octylphthalate	117-84-0	< 0.23 U
Diphenylamine	122-39-4	
Fluoranthene	206-44-0	0.36
Fluorene	86-73-7	< 0.065 U
Hexachlorobenzene	118-74-1	< 0.08 U
Hexachlorobutadiene	87-68-3	< 0.97 U
Hexachlorocyclopentadiene	77-47-4	< 0.52 U
Hexachloroethane	67-72-1	< 1.8 U
Indeno(1,2,3-c,d)pyrene	193-39-5	< 2.4 U
Isophorone	78-59-1	< 0.39 U
Naphthalene	91-20-3	< 0.74 U
N-Nitrosodimethylamine	62-75-9	< 0.46 U
n-Nitroso-di-n-propylamine	621-64-7	< 1.1 U
n-Nitrosodiphenylamine	86-30-6	< 0.29 U
Pentachlorophenol	87-86-5	< 0.76 U
Phenanthrene	85-01-8	0.28

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108
		I-SDBG-30
		SDBG-30(0-0.5)
		0 - .5
		11/2/1993
		SE
		N
Chemical Name	**CAS No**	
Phenol	108-95-2	< 0.052 U
Pyrene	129-00-0	0.62

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108
		I-SDBG-30
		SDBG-30(0-0.5)
		0 - .5
		11/2/1993
		SE
		N
Chemical Name	**CAS No**	
TPH		
Total Petroleum Hydrocarbons	TPH	13.3
VOC		
1,1,1-Trichloroethane	71-55-6	< 0.2 U
1,1,2-Trichloroethane	79-00-5	< 0.33 U
1,1-Dichloroethane	75-34-3	< 0.49 U
1,1-Dichloroethene	75-35-4	< 0.27 U
1,2,3-Trichlorobenzene	87-61-6	< 0.032 U
1,2-Dichloroethane	107-06-2	< 0.32 U
1,2-Dichloroethene (total)	540-59-0	< 0.32 U
1,2-Dichloropropane	78-87-5	< 0.53 U
1,3-Dichloropropane	142-28-9	< 0.2 U
2,3,6-Trichlorophenol	933-75-5	< 0.62 U
2-Butanone	78-93-3	< 4.3 U
2-Chloroethyl vinyl ether	110-75-8	< 0.5 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.63 U
Acetone	67-64-1	< 3.3 U
Acrylonitrile	107-13-1	< 2 U
Benzene	71-43-2	< 0.1 U
Bromodichloromethane	75-27-4	< 0.2 U
Bromoform	75-25-2	< 0.2 U
Bromomethane	74-83-9	< 0.26 U
Carbon tetrachloride	56-23-5	< 0.31 U
Chlorobenzene	108-90-7	< 0.1 U
Chloroethane	75-00-3	< 0.64 U
Chloroform	67-66-3	< 0.24 U
Chloromethane	74-87-3	< 0.96 U
Dibromochloromethane	124-48-1	< 0.25 U
Dibromochloropropane	96-12-8	< 0.071 U
Ethyl benzene	100-41-4	< 0.19 U
Methylene chloride	75-09-2	< 4.4 U
m-Xylenes	108-38-3	< 0.23 U
Tetrachloroethene	127-18-4	< 0.16 U

Table A-26
Historical Analytical Results for Sediment Samples at PICA 143 Site 108

		108
		I-SDBG-30
		SDBG-30(0-0.5)
		0 - .5
		11/2/1993
		SE
		N
Chemical Name	**CAS No**	
Toluene	108-88-3	< 0.1 U
Trichloroethene	79-01-6	< 0.23 U
Trichlorofluoromethane	75-69-4	< 0.23 U
Vinyl chloride	75-01-4	< 1.8 U
Xylenes	1330-20-7	< 0.78 U
WetChem		
% Solids	%Solid	
Ammonia	7664-41-7	
Cation Exchange Capacity	CEC	1600
Chloride	16887-00-6	
Cyanide	57-12-5	< 0.25 UJ
Fluoride	16984-48-8	
Nitrate/Nitrite	Nitrate/Nitrite	
Phosphate	14265-44-2	
Sulfate	14808-79-8	
Sulfide	18496-25-8	
Total organic carbon	TOC	7500

Notes:

LOC - Level of Concern
mg/kg - milligrams per kilogram
pCi/g - picocuries per gram
U - Non-detect at the specified reporting limit
UJ - Compound was analyzed but not detected. Detection limit is an es
J - Estimated concentration
R - Rejected

Table A-27
Historical Analytical Results for Surface Water Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SP-003	I-108-SW-001	I-108-SW-002	I-108-SW-005	I-SWBG-30
		Sample ID	108SP-3(19960815)	108SW-1(19960712)	108SW-2(19960712)	108SW-5(20020307)	SWBG-30(19931102)
		Depth Interval					
		Sample Date	8/15/1996	7/12/1996	7/12/1996	3/7/2002	11/2/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
Explosives							
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.449 U	< 0.449 U	< 0.449 U		< 0.21 U
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.611 U	< 0.611 U	< 0.611 U		< 0.458 U
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.635 U	< 0.635 U	< 0.635 U		< 0.426 U
3-Nitrotoluene	99-08-1	ug/L					< 2.9 U
HMX	2691-41-0	ug/L	< 1.21 U	< 1.21 U	< 1.21 U		< 5.3 UJD
Nitrobenzene	98-95-3	ug/L	< 0.645 U	< 0.645 U	< 0.645 U	< 10 U	< 3.7 U
Nitrobenzene	98-95-3	ug/L					< 0.682 U
Nitrocellulose	9004-70-0	ug/L	< 553 U	< 553 UJ	< 553 UJ		681
Nitroglycerin	55-63-0	ug/L	< 10 U	< 10 U	< 10 U		< 1.49 U
Nitroguanidine	556-88-7	ug/L	< 30.9 U	< 30.9 U	< 30.9 U		
PETN	78-11-5	ug/L	< 20 U	< 20 U	< 20 U		< 2 U
Picric Acid	88-89-1	ug/L	< 0.27 UJ	< 0.27 U	< 0.27 U		
RDX	121-82-4	ug/L	< 1.17 U	< 1.17 U	< 1.17 U		< 0.416 U
Tetrazene	14097-21-3	ug/L	< 40 U	< 40 U	< 40 U		
Tetryl	479-45-8	ug/L	< 1.56 U	< 1.56 U	< 1.56 U		< 0.631 U
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.0637 U	< 0.0637 U	< 0.0637 U	< 10 U	< 0.397 U
2,4-Dinitrotoluene	121-14-2	ug/L					< 5.8 U
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.0738 U	< 0.0738 U	< 0.0738 U	< 10 U	< 6.7 U
2,6-Dinitrotoluene	606-20-2	ug/L					< 0.6 U
Metals							
Aluminum	7429-90-5	ug/L	36500	47.1	1830	59 J	< 112 U
Antimony	7440-36-0	ug/L	62.5	< 1 U	1.03	< 10 U	< 60 U
Arsenic	7440-38-2	ug/L	41.8 J	< 1 U	2.59	< 10 U	< 2.35 UJ
Barium	7440-39-3	ug/L	2410	17.6	366	20 J	22.3
Beryllium	7440-41-7	ug/L	< 5 U	< 5 U	< 5 U	0.61 J	< 1.12 U
Boron	7440-42-8	ug/L	671	< 50 U	< 50 U		
Cadmium	7440-43-9	ug/L	244	< 3.01 U	< 3.01 U	< 2 U	< 6.78 U
Calcium	7440-70-2	ug/L	44200	6750	33200	9600 J	7010
Chromium	7440-47-3	ug/L	662	< 6.96 U	< 6.96 U	< 10 U	< 16.8 U
Cobalt	7440-48-4	ug/L	< 50 U	< 50 U	< 50 U	< 50 U	< 25 U
Copper	7440-50-8	ug/L	2290	< 5 U	20.7	< 9 U	< 18.8 U
Iron	7439-89-6	ug/L	127000	331	3570	120 J	138
Lead	7439-92-1	ug/L	13000	< 1 U	43.6	< 3 U	< 4.47 U
Magnesium	7439-95-4	ug/L	10200	2600	4930	3500 J	2990
Manganese	7439-96-5	ug/L	1400	84.3	1480	27 J	20
Mercury	7439-97-6	ug/L	8.4	< 0.243 U	< 0.243 U	< 0.092 U	< 0.1 U
Nickel	7440-02-0	ug/L	173	< 7.11 U	< 7.11 U	< 40 U	< 32.1 U
Potassium	7440-09-7	ug/L	9360	< 1000 U	4210	870 J	< 1240 U

Table A-27
Historical Analytical Results for Surface Water Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SP-003	I-108-SW-001	I-108-SW-002	I-108-SW-005	I-SWBG-30
		Sample ID	108SP-3(19960815)	108SW-1(19960712)	108SW-2(19960712)	108SW-5(20020307)	SWBG-30(19931102)
		Depth Interval					
		Sample Date	8/15/1996	7/12/1996	7/12/1996	3/7/2002	11/2/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
Selenium	7782-49-2	ug/L	21	< 2 U	< 2 U	< 5 U	< 2.53 UJ
Silver	7440-22-4	ug/L	4.51	< 4.42 U	< 4.42 U	< 4 U	< 0.333 U
Sodium	7440-23-5	ug/L	5080	12100	4430	17500 J	10700
Strontium	7440-24-6	ug/L	660	31	280		
Thallium	7440-28-0	ug/L	< 1 U	< 1 U	< 1 U	5.7 J	< 125 U
Titanium	7440-32-6	ug/L	1400	< 2 U	36.8		
Vanadium	7440-62-2	ug/L	188	< 4.69 U	< 4.69 U	0.87 J	< 27.6 U
Zinc	7440-66-6	ug/L	60000	< 35.8 U	241	< 20 U	< 18 U
Zirconium	7440-67-7	ug/L	8.31 J	< 1 U	< 1 U		
Other							
1,4-Oxathiane	15980-15-1	ug/L					< 27 U
Diisopropyl methylphosphonate	1445-75-6	ug/L					< 21 U
Dimethylmethylphosphonate	756-79-6	ug/L					< 130 U
Dithiane	51330-42-8	ug/L					< 3.3 U
PCBs							
Aroclor 1016	12674-11-2	ug/L					< 0.385 U
Aroclor 1221	11104-28-2	ug/L					< 0.385 UT
Aroclor 1232	11141-16-5	ug/L					< 0.385 UT
Aroclor 1242	53469-21-9	ug/L					< 0.385 UT
Aroclor 1248	12672-29-6	ug/L					< 0.385 UT
Aroclor 1254	11097-69-1	ug/L					< 0.176 UT
Aroclor 1260	11096-82-5	ug/L					< 0.176 U
Pesticides							
4,4'-DDD	72-54-8	ug/L					< 18 U
4,4'-DDD	72-54-8	ug/L					< 0.81 U
4,4'-DDE	72-55-9	ug/L					< 0.39 U
4,4'-DDE	72-55-9	ug/L					< 14 U
4,4'-DDT	50-29-3	ug/L					< 18 U
4,4'-DDT	50-29-3	ug/L					< 0.25 U
Aldrin	309-00-2	ug/L					< 13 U
Aldrin	309-00-2	ug/L					< 0.74 U
alpha-BHC	319-84-6	ug/L					< 0.25 U
alpha-BHC	319-84-6	ug/L					< 5.3 U
Atrazine	1912-24-9	ug/L					< 5.9 U
beta-BHC	319-85-7	ug/L					< 0.99 U
beta-BHC	319-85-7	ug/L					< 17 U
Bromacil	314-40-9	ug/L					< 2.9 U
Chlordane	57-74-9	ug/L					< 0.0312 U
Chlordane	57-74-9	ug/L					< 37 U

Table A-27
Historical Analytical Results for Surface Water Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SP-003	I-108-SW-001	I-108-SW-002	I-108-SW-005	I-SWBG-30
		Sample ID	108SP-3(19960815)	108SW-1(19960712)	108SW-2(19960712)	108SW-5(20020307)	SWBG-30(19931102)
		Depth Interval					
		Sample Date	8/15/1996	7/12/1996	7/12/1996	3/7/2002	11/2/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
delta-BHC	319-86-8	ug/L					< 0.34 U
Dieldrin	60-57-1	ug/L					< 26 U
Dieldrin	60-57-1	ug/L					< 0.74 U
Endosulfan I	959-98-8	ug/L					< 0.25 U
Endosulfan I	959-98-8	ug/L					< 23 U
Endosulfan II	33213-65-9	ug/L					< 42 U
Endosulfan II	33213-65-9	ug/L					< 0.77 U
Endosulfan sulfate	1031-07-8	ug/L					0.04 N
Endosulfan sulfate	1031-07-8	ug/L					< 50 U
Endrin	72-20-8	ug/L					< 18 U
Endrin	72-20-8	ug/L					< 0.0176 U
Endrin aldehyde	7421-93-4	ug/L					< 5 U
Endrin aldehyde	7421-93-4	ug/L					< 0.0504 U
Endrin ketone	53494-70-5	ug/L					< 0.25 UT
gamma-BHC (Lindane)	58-89-9	ug/L					< 0.25 U
gamma-BHC (Lindane)	58-89-9	ug/L					< 7.2 U
Heptachlor	76-44-8	ug/L					< 0.25 U
Heptachlor	76-44-8	ug/L					< 38 U
Heptachlor epoxide	1024-57-3	ug/L					< 28 U
Heptachlor epoxide	1024-57-3	ug/L					< 0.63 U
Isodrin	465-73-6	ug/L					< 7.8 U
Isodrin	465-73-6	ug/L					< 0.25 U
Malathion	121-75-5	ug/L					< 21 U
Methoxychlor	72-43-5	ug/L					< 0.075 U
Methoxychlor	72-43-5	ug/L					< 11 U
Mirex	2385-85-5	ug/L	51	< 0.025 U	8.2		< 24 U
Parathion	56-38-2	ug/L					< 37 U
p-Chlorophenylmethyl sulfide	123-09-1	ug/L					< 10 U
p-Chlorophenylmethyl sulfone	98-57-7	ug/L					< 5.3 U
p-Chlorophenylmethyl sulfoxide	934-73-6	ug/L					< 15 U
Supona	470-90-6	ug/L					< 19 U
Toxaphene	8001-35-2	ug/L					< 1.64 U
Vapona	62-73-7	ug/L					< 8.5 U
Radiological							
Americium-241	86954-36-1	pCi/L		1.92			
Cesium-137	10045-97-3	pCi/L		< 1.02 U			
Cobalt-60	10198-40-0	pCi/L		< 1.09 U			
Gross Alpha	12587-46-1	pCi/L		1.73			
Gross beta	12587-47-2	pCi/L		3.85			

Table A-27
Historical Analytical Results for Surface Water Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SP-003	I-108-SW-001	I-108-SW-002	I-108-SW-005	I-SWBG-30
		Sample ID	108SP-3(19960815)	108SW-1(19960712)	108SW-2(19960712)	108SW-5(20020307)	SWBG-30(19931102)
		Depth Interval					
		Sample Date	8/15/1996	7/12/1996	7/12/1996	3/7/2002	11/2/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
Radium-226	13982-63-3	pCi/L		< 3.59 U			
Total Uranium	7440-61-1 U	ug/L		< 0.111 U			
Uranium-235	15117-96-1	pCi/L		< 0.0167 U			
Uranium-238	7440-61-1 U-238	pCi/L		< 0.0212 U			
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5	ug/L					< 1.5 U
1,2,4-Trichlorobenzene	120-82-1	ug/L	< 1.8 U	< 1.8 U	< 1.8 U	< 10 U	< 2.4 U
1,2-Dichlorobenzene	95-50-1	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 10 U	< 1.2 U
1,2-Diphenylhydrazine	122-66-7	ug/L					< 13 U
1,3-Dichlorobenzene	541-73-1	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 10 U	< 3.4 U
1,3-Dichlorobenzene	541-73-1	ug/L					< 1 U
1,4-Dichlorobenzene	106-46-7	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 10 U	< 1.5 U
2,4,5-Trichlorophenol	95-95-4	ug/L	< 5.2 U	< 5.2 U	< 5.2 U	< 10 U	< 2.8 U
2,4,6-Trichlorophenol	88-06-2	ug/L	< 4.2 U	< 4.2 U	< 4.2 U	< 10 U	< 3.6 U
2,4-Dichlorophenol	120-83-2	ug/L	< 2.9 U	< 2.9 U	< 2.9 U	< 10 U	< 8.4 U
2,4-Dimethylphenol	105-67-9	ug/L	< 5.8 U	< 5.8 U	< 5.8 U	< 10 U	< 4.4 U
2,4-Dinitrophenol	51-28-5	ug/L	< 21 U	< 21 U	< 21 U	< 50 U	< 180 U
2,6-Dinitroaniline	606-22-4	ug/L					< 8.8 U
2-Chloronaphthalene	91-58-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 10 U	< 2.6 U
2-Chlorophenol	95-57-8	ug/L	< 0.99 U	< 0.99 U	< 0.99 U	< 10 U	< 2.8 U
2-Methylnaphthalene	91-57-6	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 10 U	< 1.3 U
2-Methylphenol	95-48-7	ug/L	< 3.9 U	< 3.9 U	< 3.9 U	< 10 U	< 3.6 U
2-Nitroaniline	88-74-4	ug/L	< 4.3 U	< 4.3 U	< 4.3 U	< 50 U	
2-Nitrophenol	88-75-5	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 10 U	< 8.2 U
3,3'-Dichlorobenzidine	91-94-1	ug/L	< 12 U	< 12 U	< 12 U	< 50 U	< 5 U
3,5-Dinitroaniline	618-87-1	ug/L					< 21 U
3-Nitroaniline	99-09-2	ug/L	< 4.9 U	< 4.9 U	< 4.9 U	< 50 U	< 15 U
4,6-dinitro-2-Methylphenol	534-52-1	ug/L	< 17 U	< 17 U	< 17 U	< 50 U	
4-Bromophenyl phenyl ether	101-55-3	ug/L	< 4.2 U	< 4.2 U	< 4.2 U	< 10 U	< 22 U
4-Chloro-3-methylphenol	59-50-7	ug/L	< 4 U	< 4 U	< 4 U	< 10 U	< 8.5 U
4-Chloroaniline	106-47-8	ug/L	< 7.3 U	< 7.3 U	< 7.3 U	< 10 U	
4-Chlorophenyl phenyl ether	7005-72-3	ug/L	< 5.1 U	< 5.1 U	< 5.1 U	< 10 U	< 23 U
4-Methylphenol	106-44-5	ug/L	< 0.52 U#	< 0.52 U#	< 0.52 U#	< 10 U#	< 2.8 U#
4-Nitroaniline	100-01-6	ug/L	< 5.2 U	< 5.2 U	< 5.2 U	< 50 U	
4-Nitrophenol	100-02-7	ug/L	< 12 U	< 12 U	< 12 U	< 50 U	< 96 U
Acenaphthene	83-32-9	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 10 U	< 5.8 U
Acenaphthylene	208-96-8	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 10 U	< 5.1 U
Aniline	62-53-3	ug/L	< 4.4 U	< 4.4 U	< 4.4 U	< 10 U	
Anthracene	120-12-7	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 10 U	< 5.2 U

Table A-27
Historical Analytical Results for Surface Water Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SP-003	I-108-SW-001	I-108-SW-002	I-108-SW-005	I-SWBG-30
		Sample ID	108SP-3(19960815)	108SW-1(19960712)	108SW-2(19960712)	108SW-5(20020307)	SWBG-30(19931102)
		Depth Interval					
		Sample Date	8/15/1996	7/12/1996	7/12/1996	3/7/2002	11/2/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
Benz(a)anthracene	56-55-3	ug/L	< 1.6 U	< 1.6 U	< 1.6 U	< 10 U	< 9.8 U
Benzo(a)pyrene	50-32-8	ug/L	< 4.7 U	< 4.7 U	< 4.7 U	< 10 U	< 14 U
Benzo(b)fluoranthene	205-99-2	ug/L	< 5.4 U	< 5.4 U	< 5.4 U	< 10 U	< 10 U
Benzo(g,h,i)perylene	191-24-2	ug/L	< 6.1 U	< 6.1 U	< 6.1 U	< 10 U	< 15 U
Benzo(k)fluoranthene	207-08-9	ug/L	< 0.87 U	< 0.87 U	< 0.87 U	< 10 U	< 10 U
Benzoic Acid	65-85-0	ug/L	< 13 U	< 13 U	< 13 U		
Benzyl alcohol	100-51-6	ug/L	< 0.72 U	< 0.72 U	< 0.72 U		< 4 U
bis(2-Chloroethoxy)methane	111-91-1	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 10 U	< 6.8 U
bis(2-Chloroethyl)ether	111-44-4	ug/L	< 1.9 U	< 1.9 U	< 1.9 U	< 10 U	< 0.68 U
bis(2-Chloroisopropyl)ether	39638-32-9	ug/L	< 5.3 U	< 5.3 U	< 5.3 U	< 10 U	< 5 U
bis(2-Ethylhexyl)phthalate	117-81-7	ug/L	< 4.8 U	< 4.8 U	< 4.8 U	< 10 U	< 7.7 U
Butylbenzyl phthalate	85-68-7	ug/L	< 3.4 U	< 3.4 U	< 3.4 U	< 10 U	< 28 U
Carbazole	86-74-8	ug/L	< 2 U	< 2 U	< 2 U	< 10 U	
Chrysene	218-01-9	ug/L	< 2.4 U	< 2.4 U	< 2.4 U	< 10 U	< 7.4 U
Dibenz(a,h)anthracene	53-70-3	ug/L	< 6.5 U	< 6.5 U	< 6.5 U	< 10 U	< 12 U
Dibenzofuran	132-64-9	ug/L	< 1.7 U	< 1.7 U	< 1.7 U	< 10 U	< 5.1 U
Dichlorobenzenes	25321-22-6	ug/L					< 2 U
Dicyclopentadiene	77-73-6	ug/L					< 5.5 U
Diethylphthalate	84-66-2	ug/L	< 2 U	< 2 U	< 2 U	< 10 U	< 5.9 U
Dimethylphthalate	131-11-3	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 10 U	< 2.2 U
di-n-Butylphthalate	84-74-2	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 10 U	< 33 U
di-n-Octylphthalate	117-84-0	ug/L	< 15 U	< 15 U	< 15 U	< 10 U	< 1.5 U
Diphenylamine	122-39-4	ug/L	< 2.5 U	< 2.5 U	< 2.5 U	< 10 U	
Fluoranthene	206-44-0	ug/L	< 3.3 U	< 3.3 U	< 3.3 U	< 10 U	< 24 U
Fluorene	86-73-7	ug/L	< 3.7 U	< 3.7 U	< 3.7 U	< 10 U	< 9.2 U
Hexachlorobenzene	118-74-1	ug/L	< 1.6 U	< 1.6 U	< 1.6 U	< 10 U	< 12 U
Hexachlorobutadiene	87-68-3	ug/L	< 3.4 U	< 3.4 U	< 3.4 U	< 10 U	< 8.7 U
Hexachlorocyclopentadiene	77-47-4	ug/L	< 8.6 U	< 8.6 U	< 8.6 U	< 50 U	< 54 U
Hexachloroethane	67-72-1	ug/L	< 1.5 U	< 1.5 U	< 1.5 U	< 10 U	< 8.3 U
Indeno(1,2,3-c,d)pyrene	193-39-5	ug/L	< 8.6 U	< 8.6 U	< 8.6 U	< 10 U	< 21 U
Isophorone	78-59-1	ug/L	< 4.8 U	< 4.8 U	< 4.8 U	< 10 U	< 2.4 U
Naphthalene	91-20-3	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 10 U	< 0.5 U
N-Nitrosodimethylamine	62-75-9	ug/L					< 9.7 U
n-Nitroso-di-n-propylamine	621-64-7	ug/L	< 4.4 U	< 4.4 U	< 4.4 U	< 10 U	< 6.8 U
n-Nitrosodiphenylamine	86-30-6	ug/L	< 3 U	< 3 U	< 3 U	< 10 U	< 3.7 U
Pentachlorophenol	87-86-5	ug/L	< 0.042 U	< 0.042 U	< 0.042 U	< 10 U	< 9.1 U
Phenanthrene	85-01-8	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 10 U	< 9.9 U
Phenol	108-95-2	ug/L	< 9.2 U	< 9.2 U	< 9.2 U	< 10 U	< 2.2 U
Pyrene	129-00-0	ug/L	< 2.8 U	< 2.8 U	< 2.8 U	< 10 U	< 17 U

Table A-27
Historical Analytical Results for Surface Water Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SP-003	I-108-SW-001	I-108-SW-002	I-108-SW-005	I-SWBG-30
		Sample ID	108SP-3(19960815)	108SW-1(19960712)	108SW-2(19960712)	108SW-5(20020307)	SWBG-30(19931102)
		Depth Interval					
		Sample Date	8/15/1996	7/12/1996	7/12/1996	3/7/2002	11/2/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
TPH							
Total Petroleum Hydrocarbons	TPH	ug/L					< 100 U
VOC							
1,1,1-Trichloroethane	71-55-6	ug/L					< 1 U
1,1,2-Trichloroethane	79-00-5	ug/L					< 1 U
1,1-Dichloroethane	75-34-3	ug/L					< 1 U
1,1-Dichloroethene	75-35-4	ug/L					< 1 U
1,2,3-Trichlorobenzene	87-61-6	ug/L					< 5.8 U
1,2-Dichloroethane	107-06-2	ug/L					< 1 U
1,2-Dichloroethene (total)	540-59-0	ug/L					< 5 U
1,2-Dichloropropane	78-87-5	ug/L					< 1 U
1,3-Dichloropropane	142-28-9	ug/L					< 4.8 U
2,3,6-Trichlorophenol	933-75-5	ug/L					< 1.7 U
2-Butanone	78-93-3	ug/L					< 10 U
2-Chloroethyl vinyl ether	110-75-8	ug/L					< 3.5 U
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L					< 1.4 U
Acetone	67-64-1	ug/L					< 8 U
Acrylonitrile	107-13-1	ug/L					< 8.4 U
Benzene	71-43-2	ug/L					< 1 U
Bromodichloromethane	75-27-4	ug/L					< 1 U
Bromoform	75-25-2	ug/L					< 11 U
Bromomethane	74-83-9	ug/L					< 14 U
Carbon tetrachloride	56-23-5	ug/L					< 1 U
Chlorobenzene	108-90-7	ug/L					< 1 U
Chloroethane	75-00-3	ug/L					< 8 U
Chloroform	67-66-3	ug/L					< 1 U
Chloromethane	74-87-3	ug/L					< 1.2 U
Dibromochloromethane	124-48-1	ug/L					< 1 U
Dibromochloropropane	96-12-8	ug/L					< 12 U
Ethyl benzene	100-41-4	ug/L					< 1 U
Methylene chloride	75-09-2	ug/L					< 1 U
m-Xylenes	108-38-3	ug/L					< 1 U
Tetrachloroethene	127-18-4	ug/L					< 1 U
Toluene	108-88-3	ug/L					< 1 U
Trichloroethene	79-01-6	ug/L					< 1 U
Trichlorofluoromethane	75-69-4	ug/L					< 1 U
Vinyl chloride	75-01-4	ug/L					< 12 U
Xylenes	1330-20-7	ug/L					< 2 U

Table A-27
Historical Analytical Results for Surface Water Samples at PICA 143 Site 108

		Site Name	108	108	108	108	108
		Location ID	I-108-SP-003	I-108-SW-001	I-108-SW-002	I-108-SW-005	I-SWBG-30
		Sample ID	108SP-3(19960815)	108SW-1(19960712)	108SW-2(19960712)	108SW-5(20020307)	SWBG-30(19931102)
		Depth Interval					
		Sample Date	8/15/1996	7/12/1996	7/12/1996	3/7/2002	11/2/1993
		Sample Matrix	WS	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**					
WetChem							
Ammonia	7664-41-7	ug/L	3800	< 60 U	1820		
Chloride	16887-00-6	ug/L	< 2120 U	26300	< 2120 U		
Cyanide	57-12-5	ug/L	< 2.5 U	< 2.5 U	5.82		< 5 UJ
Fluoride	16984-48-8	ug/L	< 1230 U	< 1230 U	< 1230 U		
Hardness	HARDNESS	ug/L					28900
Nitrate/Nitrite	Nitrate/Nitrite	ug/L	150	< 10 U	830		
Phosphate	14265-44-2	ug/L	17000	41.3	670		
Sulfate	14808-79-8	ug/L	10000	< 10000 U	< 10000 U		
Sulfide	18496-25-8	ug/L	20000	< 50 U	< 50 U		

Notes:

LOC - Level of Concern
ug/L - micrograms per liter
pCi/L - picocuries per liter
U - Non-detect at the specified reporting limit
UJ - Compound was analyzed but not detected. Detection limit is an estimated value.
J - Estimated concentration

Table A-28
Historical Analytical Results for Sediment Samples at PICA 148 Site 148

		Site Name	148	148	148
		Location ID	I-148-SD-001	I-148-SD-002	I-148-SD-003
		Sample ID	148SD-1(0-1)	148SD-2(0-1)	148SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1
		Sample Date	11/22/2005	11/22/2005	11/22/2005
		Sample Matrix	SE	SE	SE
		Sample Type Code	N	N	N
Chemical Name	CAS No	Unit			
Explosives					
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.25 U	< 0.25 U	< 0.25 U
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.25 U	< 0.25 U	< 0.25 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.25 U	< 0.25 U	< 0.25 U
2-amino-4,6-Dinitrotoluene	35572-78-2	mg/kg	< 0.25 U	< 0.25 U	< 0.25 U
2-Nitrotoluene	88-72-2	mg/kg	< 0.25 U	< 0.25 U	< 0.25 U
3-Nitrotoluene	99-08-1	mg/kg	< 0.25 U	< 0.25 U	< 0.25 U
4-amino-2,6-Dinitrotoluene	19406-51-0	mg/kg	< 0.25 U	< 0.25 U	< 0.25 U
4-Nitrotoluene	99-99-0	mg/kg	< 0.25 U	< 0.25 U	< 0.25 U
HMX	2691-41-0	mg/kg	< 0.5 U	< 0.5 U	< 0.5 U
Nitrobenzene	98-95-3	mg/kg	< 0.25 U	< 0.25 U	< 0.25 U
RDX	121-82-4	mg/kg	< 0.5 U	< 0.5 U	< 0.5 U
Tetryl	479-45-8	mg/kg	< 0.65 U	< 0.65 U	< 0.65 U
Explosives / SVOC					
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.25 U	< 0.25 U	< 0.25 U
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.25 U	< 0.25 U	< 0.25 U
Metals					
Aluminum	7429-90-5	mg/kg	4730	4170	7820
Antimony	7440-36-0	mg/kg	< 7.5 U	< 7.3 U	< 8 U
Arsenic	7440-38-2	mg/kg	2.3	3.8	3.5
Barium	7440-39-3	mg/kg	38.4	23.1 J	49.6
Beryllium	7440-41-7	mg/kg	0.4 J	0.55 J	0.75
Cadmium	7440-43-9	mg/kg	0.2 J	0.14 J	0.22 J

Table A-28
Historical Analytical Results for Sediment Samples at PICA 148 Site 148

		Site Name	148	148	148
		Location ID	I-148-SD-001	I-148-SD-002	I-148-SD-003
		Sample ID	148SD-1(0-1)	148SD-2(0-1)	148SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1
		Sample Date	11/22/2005	11/22/2005	11/22/2005
		Sample Matrix	SE	SE	SE
		Sample Type Code	N	N	N
Chemical Name	CAS No	Unit			
Calcium	7440-70-2	mg/kg	1910	272 J	569 J
Chromium	7440-47-3	mg/kg	11	5.7	10.4
Cobalt	7440-48-4	mg/kg	5.8 J	5.3 J	7
Copper	7440-50-8	mg/kg	22.2	20.3	27.6
Iron	7439-89-6	mg/kg	11600	12300	13600
Lead	7439-92-1	mg/kg	31.3	58	67
Magnesium	7439-95-4	mg/kg	1760	1030	1230
Manganese	7439-96-5	mg/kg	256	71.2	78.1
Mercury	7439-97-6	mg/kg	0.07 J	0.02 J	0.06 J
Nickel	7440-02-0	mg/kg	10.1	8.3	11.6
Potassium	7440-09-7	mg/kg	475 J	397 J	390 J
Selenium	7782-49-2	mg/kg	< 0.62 U	< 0.61 U	< 0.67 U
Silver	7440-22-4	mg/kg	< 1.2 U	< 1.2 U	< 1.3 U
Sodium	7440-23-5	mg/kg	< 622 U	< 612 U	< 667 U
Thallium	7440-28-0	mg/kg	< 1.2 U	0.76 J	< 1.3 U
Vanadium	7440-62-2	mg/kg	10.5	12.2	18.4
Zinc	7440-66-6	mg/kg	50.1	52.9	69.4
SVOC					
1-Methylnaphthalene	90-12-0	mg/kg	< 0.41 U	< 0.4 U	< 0.44 U
2-Methylnaphthalene	91-57-6	mg/kg	< 0.41 U	< 0.4 U	< 0.44 U
Acenaphthene	83-32-9	mg/kg	< 0.41 U	< 0.4 U	< 0.44 U
Acenaphthylene	208-96-8	mg/kg	< 0.41 U	< 0.4 U	< 0.44 U
Anthracene	120-12-7	mg/kg	0.01 J	< 0.4 U	< 0.44 U
Benz(a)anthracene	56-55-3	mg/kg	0.04 J	< 0.4 U	0.03 J
Benzo(a)pyrene	50-32-8	mg/kg	0.03 J	< 0.4 U	0.02 J
Benzo(b)fluoranthene	205-99-2	mg/kg	0.04 J	< 0.4 U	0.03 J
Benzo(g,h,i)perylene	191-24-2	mg/kg	0.02 J	< 0.4 U	0.02 J
Benzo(k)fluoranthene	207-08-9	mg/kg	0.01 J	< 0.4 U	0.01 J
Chrysene	218-01-9	mg/kg	0.05 J	< 0.4 U	0.02 J

Table A-28
Historical Analytical Results for Sediment Samples at PICA 148 Site 148

		Site Name	148	148	148
		Location ID	I-148-SD-001	I-148-SD-002	I-148-SD-003
		Sample ID	148SD-1(0-1)	148SD-2(0-1)	148SD-3(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1
		Sample Date	11/22/2005	11/22/2005	11/22/2005
		Sample Matrix	SE	SE	SE
		Sample Type Code	N	N	N
Chemical Name	CAS No	Unit			
Dibenz(a,h)anthracene	53-70-3	mg/kg	< 0.41 U	< 0.4 U	< 0.44 U
Fluoranthene	206-44-0	mg/kg	0.06 J	< 0.4 U	0.04 J
Fluorene	86-73-7	mg/kg	< 0.41 U	< 0.4 U	< 0.44 U
Indeno(1,2,3-c,d)pyrene	193-39-5	mg/kg	0.01 J	< 0.4 U	0.01 J
Naphthalene	91-20-3	mg/kg	< 0.41 U	< 0.4 U	< 0.44 U
Phenanthrene	85-01-8	mg/kg	0.02 J	< 0.4 U	0.01 J
Pyrene	129-00-0	mg/kg	0.06 J	< 0.4 U	0.04 J
WetChem					
% Solids	%Solid	%	80.4	81.7	74.9

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		Site Name	103	103	103	103	103	103
		Location ID	L-103-SD-001	L-103-SD-002	L-103-SD-003	L-103-SD-004	L-103-SD-004	L-103-SD-005
		Sample ID	103SD-1(0-1)	103SD-2(0-1)	103SD-3(0-1)	103SD-4DUP(0-1)	103SD-4(0-1)	103SD-5(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Explosives								
1,3,5-Trinitrobenzene	99-35-4	mg/kg	< 0.112 UJ	< 0.119 UJ	< 0.103 UJ	< 0.103 UJ	< 0.102 UJ	< 0.103 UJ
1,3-Dinitrobenzene	99-65-0	mg/kg	< 0.112 U	< 0.119 U	< 0.103 U	< 0.103 U	< 0.102 U	< 0.103 U
2,4,6-Trinitrotoluene	118-96-7	mg/kg	< 0.112 U	< 0.119 U	< 0.103 U	< 0.103 U	< 0.102 U	< 0.103 U
2-amino-4,6-Dinitrotoluene	35572-78-2	mg/kg	< 0.112 U	< 0.119 U	< 0.103 U	< 0.103 U	< 0.102 U	< 0.103 U
2-Nitrotoluene	88-72-2	mg/kg	< 0.224 U	< 0.239 U	< 0.205 U	< 0.205 U	< 0.204 U	< 0.205 U
3-Nitrotoluene	99-08-1	mg/kg	< 0.224 U	< 0.239 U	< 0.205 U	< 0.205 U	< 0.204 U	< 0.205 U
4-amino-2,6-Dinitrotoluene	19406-51-0	mg/kg	< 0.112 U	< 0.119 U	< 0.103 U	< 0.103 U	< 0.102 U	< 0.103 U
4-Nitrotoluene	99-99-0	mg/kg	< 0.224 U	< 0.239 U	< 0.205 U	< 0.205 U	< 0.204 U	< 0.205 U
HMX	2691-41-0	mg/kg	< 0.224 U	< 0.239 U	< 0.205 U	< 0.205 U	< 0.204 U	< 0.205 U
Nitrobenzene	98-95-3	mg/kg	< 0.112 U	< 0.119 U	< 0.103 U	< 0.103 U	< 0.102 U	< 0.103 U
RDX	121-82-4	mg/kg	< 0.224 U	< 0.239 U	< 0.205 U	< 0.205 U	< 0.204 U	< 0.205 U
Tetryl	479-45-8	mg/kg	< 0.224 R	< 0.239 R	< 0.205 R	< 0.205 R	< 0.204 R	< 0.205 R
Explosives / SVOC								
2,4-Dinitrotoluene	121-14-2	mg/kg	< 0.112 U	< 0.119 U	< 0.103 U	< 0.103 U	< 0.102 U	< 0.103 U
2,6-Dinitrotoluene	606-20-2	mg/kg	< 0.112 U	< 0.119 U	< 0.103 U	< 0.103 U	< 0.102 U	< 0.103 U
Metals								
Aluminum	7429-90-5	mg/kg	10700	16000	5610	9210	7310	6340
Antimony	7440-36-0	mg/kg	0.26	0.39	0.07	0.16	0.12	< 0.059 U
Arsenic	7440-38-2	mg/kg	2.46	4.32	2.13	2.3	1.9	2.42
Barium	7440-39-3	mg/kg	112	87	22.7	38.8	30	30.8
Beryllium	7440-41-7	mg/kg	1.16	0.74	0.3	0.52	0.48	0.39
Cadmium	7440-43-9	mg/kg	1.01	0.79	0.11	0.72	0.58	0.37
Calcium	7440-70-2	mg/kg	36100	3150	2360	3880	2950	1390
Chromium	7440-47-3	mg/kg	4.69	23.7	11.8	18.4	14.4	10.7
Cobalt	7440-48-4	mg/kg	< 5.391 U	8.15	5.31	12.6	7.28	5.1
Copper	7440-50-8	mg/kg	21.1	36.7	10.7	37.4	31.1	12.6
Iron	7439-89-6	mg/kg	18800	16100	11300	25900	19100	14700
Lead	7439-92-1	mg/kg	34.2	47.5	7.34	16.1	14	7.66
Magnesium	7439-95-4	mg/kg	10700	2620	2080	2780	2110	1490
Manganese	7439-96-5	mg/kg	1110	144	271	408	267	165
Mercury	7439-97-6	mg/kg	< 0.054 R	0.14	< 0.025 U	0.03	0.02	< 0.024 U
Nickel	7440-02-0	mg/kg	7.12	15.3	11.9	10.4	7.73	6.75
Potassium	7440-09-7	mg/kg	1080	1230	418	958	815	611

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		Site Name	103	103	103	103	103	103
		Location ID	L-103-SD-001	L-103-SD-002	L-103-SD-003	L-103-SD-004	L-103-SD-004	L-103-SD-005
		Sample ID	103SD-1(0-1)	103SD-2(0-1)	103SD-3(0-1)	103SD-4DUP(0-1)	103SD-4(0-1)	103SD-5(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Selenium	7782-49-2	mg/kg	2.44	1.66	< 0.488 U	1.12	0.86	< 0.475 U
Silver	7440-22-4	mg/kg	< 0.067 R	0.14	0.05	0.04	0.04	< 0.03 U
Sodium	7440-23-5	mg/kg	787	177	114	211	175	93.5
Thallium	7440-28-0	mg/kg	< 0.054 U	0.21	0.03	0.08	0.07	0.06
Vanadium	7440-62-2	mg/kg	11.1	41.4	10.5	46.3	34.1	24.6
Zinc	7440-66-6	mg/kg	628	254	33.3	267	206	138
PCBs								
Aroclor 1016	12674-11-2	mg/kg	< 0.072 U	< 0.082 U	< 0.033 U	< 0.034 U	< 0.031 U	< 0.032 U
Aroclor 1221	11104-28-2	mg/kg	< 0.072 U	< 0.082 U	< 0.033 U	< 0.034 U	< 0.031 U	< 0.032 U
Aroclor 1232	11141-16-5	mg/kg	< 0.036 U	< 0.041 U	< 0.016 U	< 0.017 U	< 0.015 U	< 0.016 U
Aroclor 1242	53469-21-9	mg/kg	< 0.036 U	< 0.041 U	< 0.016 U	< 0.017 U	< 0.015 U	< 0.016 U
Aroclor 1248	12672-29-6	mg/kg	< 0.072 U	< 0.082 U	< 0.033 U	< 0.034 U	< 0.031 U	< 0.032 U
Aroclor 1254	11097-69-1	mg/kg	0.26	< 0.082 U	< 0.033 U	< 0.034 U	< 0.031 U	< 0.032 U
Aroclor 1260	11096-82-5	mg/kg	< 0.072 U	< 0.082 U	< 0.033 U	< 0.034 U	< 0.031 U	< 0.032 U
Pesticides								
4,4'-DDD	72-54-8	mg/kg	< 0.198 U	0.03 J	< 0.09 U	< 0.093 U	< 0.084 U	< 0.089 U
4,4'-DDE	72-55-9	mg/kg	< 0.18 U	0.01 J	< 0.082 U	0.27 J	0.28 J	< 0.081 U
4,4'-DDT	50-29-3	mg/kg	< 0.18 U	< 0.206 U	< 0.082 U	0.37 J	0.3 J	< 0.081 U
Aldrin	309-00-2	mg/kg	0.3	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
alpha-BHC	319-84-6	mg/kg	< 0.185 U	< 0.212 U	< 0.085 U	< 0.087 U	< 0.079 U	< 0.083 U
beta-BHC	319-85-7	mg/kg	< 0.18 U	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
Chlordane	57-74-9	mg/kg	< 0.898 U	< 0.01 U	< 0.411 U	0.04 J	0.04 J	< 0.404 U
delta-BHC	319-86-8	mg/kg	< 0.18 U	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
Dieldrin	60-57-1	mg/kg	0.37	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
Endosulfan I	959-98-8	mg/kg	0.9	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
Endosulfan II	33213-65-9	mg/kg	0.01	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
Endosulfan sulfate	1031-07-8	mg/kg	< 0.18 U	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
Endrin	72-20-8	mg/kg	< 0.18 U	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
Endrin aldehyde	7421-93-4	mg/kg	< 0.18 U	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
Endrin ketone	53494-70-5	mg/kg	0.02	< 0.206 U	< 0.082 U	0.24	< 0.077 U	< 0.081 U
gamma-BHC (Lindane)	58-89-9	mg/kg	< 0.18 U	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
Heptachlor	76-44-8	mg/kg	< 0.18 U	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		Site Name	103	103	103	103	103	103
		Location ID	L-103-SD-001	L-103-SD-002	L-103-SD-003	L-103-SD-004	L-103-SD-004	L-103-SD-005
		Sample ID	103SD-1(0-1)	103SD-2(0-1)	103SD-3(0-1)	103SD-4DUP(0-1)	103SD-4(0-1)	103SD-5(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Heptachlor epoxide	1024-57-3	mg/kg	< 0.18 U	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
Methoxychlor	72-43-5	mg/kg	0.08 J	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
Toxaphene	8001-35-2	mg/kg	< 0.18 U	< 0.206 U	< 0.082 U	< 0.085 U	< 0.077 U	< 0.081 U
SVOC								
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	< 0.013 U	< 0.015 U	< 0.617 UJ	< 0.635 UJ	< 0.575 U	< 0.606 U
VOC								
1,1,1-Trichloroethane	71-55-6	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	mg/kg						
1,1,2-Trichloroethane	79-00-5	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
1,1-Dichloroethane	75-34-3	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
1,1-Dichloroethene	75-35-4	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
1,2-Dichloroethane	107-06-2	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
1,2-Dichloropropane	78-87-5	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
2-Butanone	78-93-3	mg/kg	< 0.054 U	< 0.062 U	< 0.025 U	< 0.025 U	< 0.023 U	< 0.024 U
2-Hexanone	591-78-6	mg/kg	< 0.054 U	< 0.062 U	< 0.025 U	< 0.025 U	< 0.023 U	< 0.024 U
4-Methyl-2-pentanone (MIBK)	108-10-1	mg/kg	< 0.054 U	< 0.062 U	< 0.025 U	< 0.025 U	< 0.023 U	< 0.024 U
Acetone	67-64-1	mg/kg	< 0.027 U	< 0.031 (U)	< 0.012 U	< 0.013 U	< 0.012 U	< 0.012 U
Acetonitrile	75-05-8	mg/kg						
Benzene	71-43-2	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Bromodichloromethane	75-27-4	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Bromoform	75-25-2	mg/kg	< 0.013 U	< 0.015 U	< 0.617 UJ	< 0.635 UJ	< 0.575 U	< 0.606 U
Bromomethane	74-83-9	mg/kg	< 0.027 U	< 0.031 U	< 0.012 U	< 0.013 U	< 0.012 U	< 0.012 U
Carbon disulfide	75-15-0	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Carbon tetrachloride	56-23-5	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Chlorobenzene	108-90-7	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Chloroethane	75-00-3	mg/kg	< 0.054 U	< 0.062 U	< 0.025 U	< 0.025 U	< 0.023 U	< 0.024 U
Chloroform	67-66-3	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Chloromethane	74-87-3	mg/kg	< 0.027 U	< 0.031 U	< 0.012 UJ	< 0.013 UJ	< 0.012 U	< 0.012 U
cis-1,2-Dichloroethene	156-59-2	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
cis-1,3-Dichloropropene	10061-01-5	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Dibromochloromethane	124-48-1	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		Site Name	103	103	103	103	103	103
		Location ID	L-103-SD-001	L-103-SD-002	L-103-SD-003	L-103-SD-004	L-103-SD-004	L-103-SD-005
		Sample ID	103SD-1(0-1)	103SD-2(0-1)	103SD-3(0-1)	103SD-4DUP(0-1)	103SD-4(0-1)	103SD-5(0-1)
		Depth Interval	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		Sample Date	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998
		Sample Matrix	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**	**Unit**						
Dichlorodifluoromethane	75-71-8	mg/kg						
Ethyl benzene	100-41-4	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Methylene chloride	75-09-2	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 (U)
Styrene	100-42-5	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Tetrachloroethene	127-18-4	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Toluene	108-88-3	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
trans-1,2-Dichloroethene	156-60-5	mg/kg	< 13.477 U	< 15.432 U	< 6.165 U	< 6.353 U	< 5.754 U	< 6.061 U
trans-1,3-Dichloropropene	10061-02-6	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Trichloroethene	79-01-6	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
Trichlorofluoromethane	75-69-4	mg/kg						
Vinyl chloride	75-01-4	mg/kg	< 0.027 U	< 0.031 U	< 0.012 UJ	< 0.013 UJ	< 0.012 U	< 0.012 U
Xylenes	1330-20-7	mg/kg	< 0.013 U	< 0.015 U	< 0.617 U	< 0.635 U	< 0.575 U	< 0.606 U
WetChem								
% Solids	%Solid	%						
Cyanide	57-12-5	mg/kg						

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

R - Rejected

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103	103	103	103	103	103	103
		L-103-SD-006	L-103-SD-007	L-103-SD-008	L-103-SD-009	L-103-SD-010A	L-103-SD-011	L-103-SD-012
		103SD-6(0-1)	103SD-7(0-1)	103SD-8(0-1)	103SD-9(0-1)	103SD-10(0-1)	103SD-11(0-1)	103SD-12(0-1)
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998
		SE	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**							
Explosives								
1,3,5-Trinitrobenzene	99-35-4	< 0.101 UJ	< 0.102 UJ	< 0.101 UJ	< 0.102 UJ	< 0.102 UJ	< 0.108 UJ	< 0.102 UJ
1,3-Dinitrobenzene	99-65-0	< 0.101 U	< 0.102 U	< 0.101 U	< 0.102 U	< 0.102 U	< 0.108 U	< 0.102 U
2,4,6-Trinitrotoluene	118-96-7	< 0.101 U	< 0.102 U	< 0.101 U	< 0.102 U	< 0.102 U	< 0.108 U	< 0.102 U
2-amino-4,6-Dinitrotoluene	35572-78-2	< 0.101 U	< 0.102 U	< 0.101 UJ	< 0.102 U	< 0.102 U	< 0.108 U	< 0.102 U
2-Nitrotoluene	88-72-2	< 0.203 U	< 0.204 U	< 0.202 UJ	< 0.205 U	< 0.204 U	< 0.216 U	< 0.204 U
3-Nitrotoluene	99-08-1	< 0.203 U	< 0.204 U	< 0.202 U	< 0.205 U	< 0.204 U	< 0.216 U	< 0.204 U
4-amino-2,6-Dinitrotoluene	19406-51-0	< 0.101 U	< 0.102 U	< 0.101 U	< 0.102 U	< 0.102 U	< 0.108 U	< 0.102 U
4-Nitrotoluene	99-99-0	< 0.203 U	< 0.204 U	< 0.202 U	< 0.205 U	< 0.204 U	< 0.216 U	< 0.204 U
HMX	2691-41-0	< 0.203 U	< 0.204 U	< 0.202 U	< 0.205 U	< 0.204 U	< 0.216 U	< 0.204 U
Nitrobenzene	98-95-3	< 0.101 U	< 0.102 U	< 0.101 UJ	< 0.102 U	< 0.102 U	< 0.108 U	< 0.102 U
RDX	121-82-4	< 0.203 U	< 0.204 U	< 0.202 U	< 0.205 U	< 0.204 U	< 0.216 U	< 0.204 U
Tetryl	479-45-8	< 0.203 R	< 0.204 R	< 0.202 R	< 0.205 R	< 0.204 R	< 0.216 R	< 0.204 R
Explosives / SVOC								
2,4-Dinitrotoluene	121-14-2	< 0.101 U	< 0.102 U	< 0.101 U	< 0.102 U	< 0.102 U	< 0.108 U	< 0.102 U
2,6-Dinitrotoluene	606-20-2	< 0.101 U	< 0.102 U	< 0.101 U	< 0.102 U	< 0.102 U	< 0.108 U	< 0.102 U
Metals								
Aluminum	7429-90-5	7890	5290	8270	11000	8900	17900	14400
Antimony	7440-36-0	< 0.057 U	0.18	< 0.061 U	0.2	0.12	< 0.094 U	< 0.062 U
Arsenic	7440-38-2	0.63	1.91	2.02	1.42	0.93	2.29	1.28
Barium	7440-39-3	36.7	71.4	42.8	61.4	45.3	68.6	65.4
Beryllium	7440-41-7	0.3	0.24	0.38	0.38	0.32	0.51	0.47
Cadmium	7440-43-9	0.08	0.42	0.11	0.27	0.15	0.26	0.06
Calcium	7440-70-2	2560	3020	2220	3120	2780	3280	2390
Chromium	7440-47-3	13.1	8.58	15.9	20.5	16.1	25	30.5
Cobalt	7440-48-4	9.72	10.4	10	12.3	12	6.71	11.5
Copper	7440-50-8	17.8	12.3	13.2	29.6	20.5	22.5	23
Iron	7439-89-6	16400	29900	14600	18400	17300	16000	23900
Lead	7439-92-1	5.8	24.7	4.68	14.2	6.23	18.4	5.07
Magnesium	7439-95-4	3350	1830	2100	3300	3100	1970	3500
Manganese	7439-96-5	83.1	1220	91.9	101	162	107	177
Mercury	7439-97-6	< 0.023 U	< 0.023 R	0.04	0.03	< 0.028 U	0.07	< 0.025 U
Nickel	7440-02-0	14.3	7.89	10.4	15.4	15	12.2	16.9
Potassium	7440-09-7	872	684	936	1620	1400	825	1600

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103	103	103	103	103	103	103
		L-103-SD-006	L-103-SD-007	L-103-SD-008	L-103-SD-009	L-103-SD-010A	L-103-SD-011	L-103-SD-012
		103SD-6(0-1)	103SD-7(0-1)	103SD-8(0-1)	103SD-9(0-1)	103SD-10(0-1)	103SD-11(0-1)	103SD-12(0-1)
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998	12/15/1998
		SE	SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**							
Selenium	7782-49-2	< 0.46 U	0.6	< 0.488 U	0.64	< 0.559 U	1.17	< 0.493 U
Silver	7440-22-4	< 0.029 U	< 0.028 R	0.03	0.05	< 0.035 U	0.05	0.03
Sodium	7440-23-5	187	89.2	169	269	257	218	255
Thallium	7440-28-0	0.07	0.03	0.11	0.14	0.11	0.14	0.17
Vanadium	7440-62-2	29.9	16.7	32.5	41.8	31	35.5	46.4
Zinc	7440-66-6	40	352	34.7	117	63.2	96.3	41.5
PCBs								
Aroclor 1016	12674-11-2	< 0.034 U	< 0.036 U	< 0.033 U	< 0.033 U	< 0.038 U	< 0.052 U	< 0.033 U
Aroclor 1221	11104-28-2	< 0.034 U	< 0.036 U	< 0.033 U	< 0.033 U	< 0.038 U	< 0.052 U	< 0.033 U
Aroclor 1232	11141-16-5	< 0.017 U	< 0.018 U	< 0.017 U	< 0.017 U	< 0.019 U	< 0.025 U	< 0.017 U
Aroclor 1242	53469-21-9	< 0.017 U	< 0.018 U	< 0.017 U	< 0.017 U	< 0.019 U	< 0.025 U	< 0.017 U
Aroclor 1248	12672-29-6	< 0.034 U	< 0.036 U	< 0.033 U	< 0.033 U	< 0.038 U	< 0.052 U	< 0.033 U
Aroclor 1254	11097-69-1	< 0.034 U	0.07	< 0.033 U	< 0.033 U	< 0.038 U	< 0.052 U	< 0.033 U
Aroclor 1260	11096-82-5	< 0.034 U	< 0.036 U	< 0.033 U	< 0.033 U	< 0.038 U	< 0.052 U	< 0.033 U
Pesticides								
4,4'-DDD	72-54-8	< 0.093 U	0.18 J	< 0.091 U	0.29 J	< 0.103 U	0.25 J	< 0.091 U
4,4'-DDE	72-55-9	< 0.084 U	0.27 J	< 0.083 U	0.19 J	< 0.094 U	< 0.129 U	< 0.083 U
4,4'-DDT	50-29-3	< 0.084 U	0.02 J	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Aldrin	309-00-2	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
alpha-BHC	319-84-6	< 0.087 U	< 0.092 U	< 0.086 U	< 0.106 U	< 0.097 U	< 0.132 U	< 0.085 U
beta-BHC	319-85-7	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Chlordane	57-74-9	< 0.42 U	< 0.445 U	< 0.415 U	< 0.514 U	< 0.47 U	< 0.642 U	< 0.414 U
delta-BHC	319-86-8	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Dieldrin	60-57-1	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Endosulfan I	959-98-8	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Endosulfan II	33213-65-9	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Endosulfan sulfate	1031-07-8	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Endrin	72-20-8	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Endrin aldehyde	7421-93-4	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Endrin ketone	53494-70-5	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
gamma-BHC (Lindane)	58-89-9	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Heptachlor	76-44-8	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103 L-103-SD-006 103SD-6(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-007 103SD-7(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-008 103SD-8(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-009 103SD-9(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-010A 103SD-10(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-011 103SD-11(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-012 103SD-12(0-1) 0 - 1 12/15/1998 SE
Chemical Name	**CAS No**							
Heptachlor epoxide	1024-57-3	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Methoxychlor	72-43-5	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
Toxaphene	8001-35-2	< 0.084 U	< 0.089 U	< 0.083 U	< 0.103 U	< 0.094 U	< 0.129 U	< 0.083 U
SVOC								
1,1,2,2-Tetrachloroethane	79-34-5	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
VOC								
1,1,1-Trichloroethane	71-55-6	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1							
1,1,2-Trichloroethane	79-00-5	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
1,1-Dichloroethane	75-34-3	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
1,1-Dichloroethene	75-35-4	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
1,2-Dichloroethane	107-06-2	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
1,2-Dichloropropane	78-87-5	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
2-Butanone	78-93-3	< 0.025 U	< 0.027 UJ	< 0.025 U	< 0.031 U	< 0.028 U	< 0.039 U	< 0.025 UJ
2-Hexanone	591-78-6	< 0.025 U	< 0.027 UJ	< 0.025 U	< 0.031 U	< 0.028 U	< 0.039 U	< 0.025 UJ
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.025 U	< 0.027 UJ	< 0.025 U	< 0.031 U	< 0.028 U	< 0.039 U	< 0.025 UJ
Acetone	67-64-1	< 0.013 (U)	< 0.013 UJ	< 0.012 (U)	< 0.015 (U)	< 0.014 (U)	< 0.019 (U)	< 0.012 (U)J
Acetonitrile	75-05-8							
Benzene	71-43-2	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Bromodichloromethane	75-27-4	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Bromoform	75-25-2	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Bromomethane	74-83-9	< 0.013 U	< 0.013 UJ	< 0.012 U	< 0.015 U	< 0.014 U	< 0.019 U	< 0.012 UJ
Carbon disulfide	75-15-0	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Carbon tetrachloride	56-23-5	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Chlorobenzene	108-90-7	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Chloroethane	75-00-3	< 0.025 U	< 0.027 UJ	< 0.025 U	< 0.031 U	< 0.028 U	< 0.039 U	< 0.025 UJ
Chloroform	67-66-3	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Chloromethane	74-87-3	< 0.013 U	< 0.013 UJ	< 0.012 U	< 0.015 U	< 0.014 U	< 0.019 U	< 0.012 UJ
cis-1,2-Dichloroethene	156-59-2	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
cis-1,3-Dichloropropene	10061-01-5	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Dibromochloromethane	124-48-1	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103 L-103-SD-006 103SD-6(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-007 103SD-7(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-008 103SD-8(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-009 103SD-9(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-010A 103SD-10(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-011 103SD-11(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-012 103SD-12(0-1) 0 - 1 12/15/1998 SE
Chemical Name	**CAS No**							
Dichlorodifluoromethane	75-71-8							
Ethyl benzene	100-41-4	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Methylene chloride	75-09-2	< 0.631 U	< 0.668 UJ	< 0.623 (U)	< 0.772 U	< 0.705 (U)	< 0.963 U	< 0.622 UJ
Styrene	100-42-5	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Tetrachloroethene	127-18-4	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Toluene	108-88-3	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
trans-1,2-Dichloroethene	156-60-5	< 6.313 U	< 6.676 UJ	< 6.227 U	< 7.716 U	< 7.052 U	< 9.634 U	< 6.219 UJ
trans-1,3-Dichloropropene	10061-02-6	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Trichloroethene	79-01-6	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
Trichlorofluoromethane	75-69-4							
Vinyl chloride	75-01-4	< 0.013 U	< 0.013 UJ	< 0.012 U	< 0.015 U	< 0.014 U	< 0.019 U	< 0.012 UJ
Xylenes	1330-20-7	< 0.631 U	< 0.668 UJ	< 0.623 U	< 0.772 U	< 0.705 U	< 0.963 U	< 0.622 UJ
WetChem								
% Solids	%Solid							
Cyanide	57-12-5							

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

R - Rejected

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103	103	103	103	103	103
		L-103-SD-013	L-103-SD-014	L-103-SD-015	L-103-SD-016	L-103-SD-016	L-103-SD-017
		103SD-13(0-1)	103SD-14(0-1)	103SD-15(0-1)	103SD-16DUP(0-1)	103SD-16(0-1)	103SD-17DUP(0-1)
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/15/1998	12/15/1998	12/15/1998	11/15/2000	11/15/2000	11/15/2000
		SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**						
Explosives							
1,3,5-Trinitrobenzene	99-35-4	< 0.101 UJ	< 0.123 UJ	< 0.124 UJ			
1,3-Dinitrobenzene	99-65-0	< 0.101 U	< 0.123 U	< 0.124 U			
2,4,6-Trinitrotoluene	118-96-7	< 0.101 U	< 0.123 U	< 0.124 U			
2-amino-4,6-Dinitrotoluene	35572-78-2	< 0.101 U	< 0.123 U	< 0.124 U			
2-Nitrotoluene	88-72-2	< 0.202 U	< 0.246 U	< 0.248 U			
3-Nitrotoluene	99-08-1	< 0.202 U	< 0.246 U	< 0.248 U			
4-amino-2,6-Dinitrotoluene	19406-51-0	< 0.101 U	< 0.123 U	< 0.124 U			
4-Nitrotoluene	99-99-0	< 0.202 U	< 0.246 U	< 0.248 U			
HMX	2691-41-0	< 0.202 U	< 0.246 U	< 0.248 U			
Nitrobenzene	98-95-3	< 0.101 U	< 0.123 U	< 0.124 U			
RDX	121-82-4	< 0.202 U	< 0.246 U	< 0.248 U			
Tetryl	479-45-8	< 0.202 R	< 0.246 R	< 0.248 R			
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2	< 0.101 U	< 0.123 U	< 0.124 U			
2,6-Dinitrotoluene	606-20-2	< 0.101 U	< 0.123 U	< 0.124 U			
Metals							
Aluminum	7429-90-5	6330	20500	17300			
Antimony	7440-36-0	0.09	0.48	0.24			
Arsenic	7440-38-2	0.71	5.28	1.82			
Barium	7440-39-3	26.4	110	80.5			
Beryllium	7440-41-7	0.2	0.76	0.65			
Cadmium	7440-43-9	0.07	1.1	0.45			
Calcium	7440-70-2	3330	5350	7220			
Chromium	7440-47-3	12.1	22.7	13.1			
Cobalt	7440-48-4	8.17	6.82	< 7.22 U			
Copper	7440-50-8	19.7	48.2	24.4			
Iron	7439-89-6	14400	12500	4370			
Lead	7439-92-1	3.67	649	13.3			
Magnesium	7439-95-4	2840	1440	1320			
Manganese	7439-96-5	122	173	113			
Mercury	7439-97-6	< 0.025 U	0.23	0.18			
Nickel	7440-02-0	10.9	12.9	9.78			
Potassium	7440-09-7	1140	739	408			

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103	103	103	103	103	103
		L-103-SD-013	L-103-SD-014	L-103-SD-015	L-103-SD-016	L-103-SD-016	L-103-SD-017
		103SD-13(0-1)	103SD-14(0-1)	103SD-15(0-1)	103SD-16DUP(0-1)	103SD-16(0-1)	103SD-17DUP(0-1)
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		12/15/1998	12/15/1998	12/15/1998	11/15/2000	11/15/2000	11/15/2000
		SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**						
Selenium	7782-49-2	< 0.488 U	2.79	2.12			
Silver	7440-22-4	< 0.031 U	0.21	< 0.09 U			
Sodium	7440-23-5	236	187	253			
Thallium	7440-28-0	0.07	0.26	0.07			
Vanadium	7440-62-2	21.8	32.4	14.7			
Zinc	7440-66-6	46.3	438	252			
PCBs							
Aroclor 1016	12674-11-2	< 0.033 U	< 0.089 U	< 0.096 UJ			
Aroclor 1221	11104-28-2	< 0.033 U	< 0.089 U	< 0.096 UJ			
Aroclor 1232	11141-16-5	< 0.017 U	< 0.044 U	< 0.048 UJ			
Aroclor 1242	53469-21-9	< 0.017 U	< 0.044 U	< 0.048 UJ			
Aroclor 1248	12672-29-6	< 0.033 U	< 0.089 U	< 0.096 UJ			
Aroclor 1254	11097-69-1	< 0.033 U	< 0.089 U	< 0.096 UJ			
Aroclor 1260	11096-82-5	< 0.033 U	< 0.089 U	< 0.096 UJ			
Pesticides							
4,4'-DDD	72-54-8	< 0.091 U	0.73 J	< 0.265 U			
4,4'-DDE	72-55-9	< 0.083 U	< 0.223 U	< 0.241 U			
4,4'-DDT	50-29-3	< 0.083 U	< 0.223 U	< 0.241 U			
Aldrin	309-00-2	< 0.083 U	< 0.223 U	< 0.241 U			
alpha-BHC	319-84-6	< 0.085 U	< 0.23 U	< 0.248 U			
beta-BHC	319-85-7	< 0.083 U	< 0.223 U	< 0.241 U			
Chlordane	57-74-9	< 0.414 U	< 0.011 U	< 0.012 U			
delta-BHC	319-86-8	< 0.083 U	< 0.223 U	< 0.241 U			
Dieldrin	60-57-1	< 0.083 U	< 0.223 U	< 0.241 U			
Endosulfan I	959-98-8	< 0.083 U	< 0.223 U	< 0.241 U			
Endosulfan II	33213-65-9	< 0.083 U	< 0.223 U	< 0.241 U			
Endosulfan sulfate	1031-07-8	< 0.083 U	< 0.223 U	< 0.241 U			
Endrin	72-20-8	< 0.083 U	< 0.223 U	< 0.241 U			
Endrin aldehyde	7421-93-4	< 0.083 U	< 0.223 U	< 0.241 U			
Endrin ketone	53494-70-5	< 0.083 U	< 0.223 U	< 0.241 U			
gamma-BHC (Lindane)	58-89-9	< 0.083 U	< 0.223 U	< 0.241 U			
Heptachlor	76-44-8	< 0.083 U	< 0.223 U	< 0.241 U			

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103 L-103-SD-013 103SD-13(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-014 103SD-14(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-015 103SD-15(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-016 103SD-16DUP(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-016 103SD-16(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-017 103SD-17DUP(0-1) 0 - 1 11/15/2000 SE
Chemical Name	**CAS No**						
Heptachlor epoxide	1024-57-3	< 0.083 U	< 0.223 U	< 0.241 U			
Methoxychlor	72-43-5	< 0.083 U	< 0.223 U	< 0.241 U			
Toxaphene	8001-35-2	< 0.083 U	< 0.223 U	< 0.241 U			
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
VOC							
1,1,1-Trichloroethane	71-55-6	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1					< 1 U	< 0.95 U
1,1,2-Trichloroethane	79-00-5	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
1,1-Dichloroethane	75-34-3	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
1,1-Dichloroethene	75-35-4	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
1,2-Dichloroethane	107-06-2	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
1,2-Dichloropropane	78-87-5	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
2-Butanone	78-93-3	< 0.025 U	< 0.067 U	< 0.072 U		< 21 U	< 19 U
2-Hexanone	591-78-6	< 0.025 U	< 0.067 U	< 0.072 U		< 10 U	< 9.5 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.025 U	< 0.067 U	< 0.072 U		< 10 U	< 9.5 U
Acetone	67-64-1	< 0.012 (U)	< 0.033 (U)	< 0.036 (U)		< 21 (U)	< 19 (U)
Acetonitrile	75-05-8					< 42 R	< 38 R
Benzene	71-43-2	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Bromodichloromethane	75-27-4	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Bromoform	75-25-2	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Bromomethane	74-83-9	< 0.012 U	< 0.033 U	< 0.036 U		< 2.1 U	< 1.9 U
Carbon disulfide	75-15-0	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Carbon tetrachloride	56-23-5	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Chlorobenzene	108-90-7	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Chloroethane	75-00-3	< 0.025 U	< 0.067 U	< 0.072 U		< 2.1 U	< 1.9 U
Chloroform	67-66-3	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Chloromethane	74-87-3	< 0.012 U	< 0.033 U	< 0.036 UJ		< 2.1 U	< 1.9 U
cis-1,2-Dichloroethene	156-59-2	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
cis-1,3-Dichloropropene	10061-01-5	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Dibromochloromethane	124-48-1	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103 L-103-SD-013 103SD-13(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-014 103SD-14(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-015 103SD-15(0-1) 0 - 1 12/15/1998 SE	103 L-103-SD-016 103SD-16DUP(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-016 103SD-16(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-017 103SD-17DUP(0-1) 0 - 1 11/15/2000 SE
Chemical Name	**CAS No**						
Dichlorodifluoromethane	75-71-8					< 2.1 U	0.32 J
Ethyl benzene	100-41-4	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Methylene chloride	75-09-2	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Styrene	100-42-5	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Tetrachloroethene	127-18-4	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Toluene	108-88-3	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
trans-1,2-Dichloroethene	156-60-5	< 6.219 U	< 16.722 U	< 18.051 U		< 1 U	< 0.95 U
trans-1,3-Dichloropropene	10061-02-6	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Trichloroethene	79-01-6	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
Trichlorofluoromethane	75-69-4					< 1 U	< 0.95 U
Vinyl chloride	75-01-4	< 0.012 U	< 0.033 U	< 0.036 UJ		< 2.1 U	< 1.9 U
Xylenes	1330-20-7	< 0.622 U	< 0.017 U	< 0.018 U		< 1 U	< 0.95 U
WetChem							
% Solids	%Solid				67.1	59.8	66.1
Cyanide	57-12-5					< 0.84 U	< 0.76 U

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

R - Rejected

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103	103	103	103	103	103
		L-103-SD-017	L-103-SD-018	L-103-SD-018	L-103-SD-019	L-103-SD-020	L-103-SD-021
		103SD-17(0-1)	103SD-18DUP(0-1)	103SD-18(0-1)	103SD-19(0-1)	103SD-20(0-1)	103SD-21(0-1)
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		11/15/2000	11/15/2000	11/15/2000	11/15/2000	11/15/2000	11/15/2000
		SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**						
Explosives							
1,3,5-Trinitrobenzene	99-35-4						
1,3-Dinitrobenzene	99-65-0						
2,4,6-Trinitrotoluene	118-96-7						
2-amino-4,6-Dinitrotoluene	35572-78-2						
2-Nitrotoluene	88-72-2						
3-Nitrotoluene	99-08-1						
4-amino-2,6-Dinitrotoluene	19406-51-0						
4-Nitrotoluene	99-99-0						
HMX	2691-41-0						
Nitrobenzene	98-95-3						
RDX	121-82-4						
Tetryl	479-45-8						
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2						
2,6-Dinitrotoluene	606-20-2						
Metals							
Aluminum	7429-90-5						
Antimony	7440-36-0						
Arsenic	7440-38-2						
Barium	7440-39-3						
Beryllium	7440-41-7						
Cadmium	7440-43-9						
Calcium	7440-70-2						
Chromium	7440-47-3						
Cobalt	7440-48-4						
Copper	7440-50-8						
Iron	7439-89-6						
Lead	7439-92-1						
Magnesium	7439-95-4						
Manganese	7439-96-5						
Mercury	7439-97-6						
Nickel	7440-02-0						
Potassium	7440-09-7						

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103	103	103	103	103	103
		L-103-SD-017	L-103-SD-018	L-103-SD-018	L-103-SD-019	L-103-SD-020	L-103-SD-021
		103SD-17(0-1)	103SD-18DUP(0-1)	103SD-18(0-1)	103SD-19(0-1)	103SD-20(0-1)	103SD-21(0-1)
		0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1
		11/15/2000	11/15/2000	11/15/2000	11/15/2000	11/15/2000	11/15/2000
		SE	SE	SE	SE	SE	SE
Chemical Name	**CAS No**						
Selenium	7782-49-2						
Silver	7440-22-4						
Sodium	7440-23-5						
Thallium	7440-28-0						
Vanadium	7440-62-2						
Zinc	7440-66-6						
PCBs							
Aroclor 1016	12674-11-2						
Aroclor 1221	11104-28-2						
Aroclor 1232	11141-16-5						
Aroclor 1242	53469-21-9						
Aroclor 1248	12672-29-6						
Aroclor 1254	11097-69-1						
Aroclor 1260	11096-82-5						
Pesticides							
4,4'-DDD	72-54-8						
4,4'-DDE	72-55-9						
4,4'-DDT	50-29-3						
Aldrin	309-00-2						
alpha-BHC	319-84-6						
beta-BHC	319-85-7						
Chlordane	57-74-9						
delta-BHC	319-86-8						
Dieldrin	60-57-1						
Endosulfan I	959-98-8						
Endosulfan II	33213-65-9						
Endosulfan sulfate	1031-07-8						
Endrin	72-20-8						
Endrin aldehyde	7421-93-4						
Endrin ketone	53494-70-5						
gamma-BHC (Lindane)	58-89-9						
Heptachlor	76-44-8						

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103 L-103-SD-017 103SD-17(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-018 103SD-18DUP(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-018 103SD-18(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-019 103SD-19(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-020 103SD-20(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-021 103SD-21(0-1) 0 - 1 11/15/2000 SE
Chemical Name	**CAS No**						
Heptachlor epoxide	1024-57-3						
Methoxychlor	72-43-5						
Toxaphene	8001-35-2						
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
VOC							
1,1,1-Trichloroethane	71-55-6	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
1,1,2-Trichloroethane	79-00-5	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
1,1-Dichloroethane	75-34-3	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
1,1-Dichloroethene	75-35-4	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
1,2-Dichloroethane	107-06-2	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
1,2-Dichloropropane	78-87-5	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
2-Butanone	78-93-3	< 20 U		< 15 U	< 15 U	< 18 U	< 16 U
2-Hexanone	591-78-6	< 10 U		< 7.6 U	< 7.6 U	< 8.8 U	< 8 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 10 U		< 7.6 U	< 7.6 U	< 8.8 U	< 8 U
Acetone	67-64-1	< 20 (U)		< 15 (U)	< 15 (U)	< 18 (U)	< 16 (U)
Acetonitrile	75-05-8	< 40 R		< 31 R	< 30 R	< 35 R	< 32 R
Benzene	71-43-2	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Bromodichloromethane	75-27-4	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Bromoform	75-25-2	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Bromomethane	74-83-9	< 2 U		< 1.5 U	< 1.5 U	< 1.8 U	< 1.6 U
Carbon disulfide	75-15-0	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Carbon tetrachloride	56-23-5	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Chlorobenzene	108-90-7	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Chloroethane	75-00-3	< 2 U		< 1.5 U	< 1.5 U	< 1.8 U	< 1.6 U
Chloroform	67-66-3	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Chloromethane	74-87-3	< 2 U		< 1.5 U	< 1.5 U	< 1.8 U	< 1.6 U
cis-1,2-Dichloroethene	156-59-2	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
cis-1,3-Dichloropropene	10061-01-5	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Dibromochloromethane	124-48-1	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U

Table A-29
Historical Analytical Results for Sediment Samples at PICA 164 Site 103

		103 L-103-SD-017 103SD-17(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-018 103SD-18DUP(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-018 103SD-18(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-019 103SD-19(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-020 103SD-20(0-1) 0 - 1 11/15/2000 SE	103 L-103-SD-021 103SD-21(0-1) 0 - 1 11/15/2000 SE
Chemical Name	**CAS No**						
Dichlorodifluoromethane	75-71-8	0.37 J		0.28 J	0.28 J	0.39 J	0.32 J
Ethyl benzene	100-41-4	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Methylene chloride	75-09-2	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Styrene	100-42-5	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Tetrachloroethene	127-18-4	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Toluene	108-88-3	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
trans-1,2-Dichloroethene	156-60-5	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
trans-1,3-Dichloropropene	10061-02-6	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Trichloroethene	79-01-6	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Trichlorofluoromethane	75-69-4	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
Vinyl chloride	75-01-4	< 2 U		< 1.5 U	< 1.5 U	< 1.8 U	< 1.6 U
Xylenes	1330-20-7	< 1 U		< 0.76 U	< 0.76 U	< 0.88 U	< 0.8 U
WetChem							
% Solids	%Solid	62.2	80.7	81.9	82.1	70.8	77.7
Cyanide	57-12-5	< 0.8 U		< 0.61 U	< 0.61 U	< 0.71 U	< 0.64 U

Notes:

LOC - Level of Concern

mg/kg - milligrams per kilogram

U - Non-detect at the specified reporting limit

J - Estimated concentration

R - Rejected

Table A-30
Historical Analytical Results for Surface Water Samples at PICA 164 Site 103

		Site Name	103	103	103	103
		Location ID	L-103-SW-002	L-103-SW-003	L-103-SW-004	L-103-SW-016
		Sample ID	103SW-2(19990512)	103SW-3(19990512)	103SW-4(19990512)	103SW-16(20001115)
		Depth Interval				
		Sample Date	5/12/1999	5/12/1999	5/12/1999	11/15/2000
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Explosives						
1,3,5-Trinitrobenzene	99-35-4	ug/L	< 0.3 U	< 0.3 U	< 0.3 U	
1,3-Dinitrobenzene	99-65-0	ug/L	< 0.1 U	< 0.1 U	< 0.1 U	
2,4,6-Trinitrotoluene	118-96-7	ug/L	< 0.1 U	< 0.1 U	< 0.1 U	
2-amino-4,6-Dinitrotoluene	35572-78-2	ug/L	< 0.1 U	< 0.1 U	< 0.1 U	
2-Nitrotoluene	88-72-2	ug/L	< 1 U	< 1 U	< 1 U	
3-Nitrotoluene	99-08-1	ug/L	< 1 U	< 1 U	< 1 U	
4-amino-2,6-Dinitrotoluene	19406-51-0	ug/L	< 0.1 U	< 0.1 U	< 0.1 U	
4-Nitrotoluene	99-99-0	ug/L	< 1 U	< 1 U	< 1 U	
HMX	2691-41-0	ug/L	< 1 U	< 1 U	< 1 U	
Nitrobenzene	98-95-3	ug/L	< 1 U	< 1 U	< 1 U	
RDX	121-82-4	ug/L	< 0.8 U	< 0.8 U	< 0.8 U	
Tetryl	479-45-8	ug/L	< 1 U	< 1 U	< 1 U	
Explosives / SVOC						
2,4-Dinitrotoluene	121-14-2	ug/L	< 0.1 U	< 0.1 U	< 0.1 U	
2,6-Dinitrotoluene	606-20-2	ug/L	< 0.3 U	< 0.3 U	< 0.3 U	
Metals						
Aluminum	7429-90-5	ug/L	< 200 U	470	< 200 U	
Antimony	7440-36-0	ug/L	< 60 U	< 60 U	< 60 U	
Arsenic	7440-38-2	ug/L	< 10 U	< 10 U	< 10 U	
Barium	7440-39-3	ug/L	< 200 U	41 J	< 200 U	
Beryllium	7440-41-7	ug/L	< 5 U	< 5 U	< 5 U	
Cadmium	7440-43-9	ug/L	< 5 U	< 5 U	< 5 U	
Calcium	7440-70-2	ug/L	17500	42100	18000	
Chromium	7440-47-3	ug/L	< 10 U	< 10 U	< 10 U	
Cobalt	7440-48-4	ug/L	< 50 U	< 50 U	< 50 U	
Copper	7440-50-8	ug/L	< 25 U	< 25 U	< 25 U	
Iron	7439-89-6	ug/L	290	19800	280	
Lead	7439-92-1	ug/L	< 3 U	< 3 U	< 3 U	
Magnesium	7439-95-4	ug/L	3800 J	9600	3800 J	

Table A-30
Historical Analytical Results for Surface Water Samples at PICA 164 Site 103

		Site Name	103	103	103	103
		Location ID	L-103-SW-002	L-103-SW-003	L-103-SW-004	L-103-SW-016
		Sample ID	103SW-2(19990512)	103SW-3(19990512)	103SW-4(19990512)	103SW-16(20001115)
		Depth Interval				
		Sample Date	5/12/1999	5/12/1999	5/12/1999	11/15/2000
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Manganese	7439-96-5	ug/L	28	1200	32	
Mercury	7439-97-6	ug/L	< 0.2 U	< 0.2 U	< 0.2 U	
Nickel	7440-02-0	ug/L	< 40 U	< 40 U	< 40 U	
Potassium	7440-09-7	ug/L	< 5000 U	980 J	< 5000 U	
Selenium	7782-49-2	ug/L	< 5 U	< 5 U	< 5 U	
Silver	7440-22-4	ug/L	< 10 U	< 10 U	< 10 U	
Sodium	7440-23-5	ug/L	13700	17300	13900	
Thallium	7440-28-0	ug/L	< 10 U	< 10 U	< 10 U	
Vanadium	7440-62-2	ug/L	< 50 U	< 50 U	< 50 U	
Zinc	7440-66-6	ug/L	21	450	59	
PCBs						
Aroclor 1016	12674-11-2	ug/L	< 1 U	< 1 U	< 1 U	
Aroclor 1221	11104-28-2	ug/L	< 1 U	< 1 U	< 1 U	
Aroclor 1232	11141-16-5	ug/L	< 1 U	< 1 U	< 1 U	
Aroclor 1242	53469-21-9	ug/L	< 1 U	< 1 U	< 1 U	
Aroclor 1248	12672-29-6	ug/L	< 1 U	< 1 U	< 1 U	
Aroclor 1254	11097-69-1	ug/L	< 1 U	< 1 U	< 1 U	
Aroclor 1260	11096-82-5	ug/L	< 1 U	< 1 U	< 1 U	
Pesticides						
4,4'-DDD	72-54-8	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
4,4'-DDE	72-55-9	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
4,4'-DDT	50-29-3	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
Aldrin	309-00-2	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
alpha-BHC	319-84-6	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
alpha-Chlordane	5103-71-9	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
beta-BHC	319-85-7	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
delta-BHC	319-86-8	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
Dieldrin	60-57-1	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
Endosulfan I	959-98-8	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
Endosulfan II	33213-65-9	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
Endosulfan sulfate	1031-07-8	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
Endrin	72-20-8	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	

Table A-30
Historical Analytical Results for Surface Water Samples at PICA 164 Site 103

		Site Name	103	103	103	103
		Location ID	L-103-SW-002	L-103-SW-003	L-103-SW-004	L-103-SW-016
		Sample ID	103SW-2(19990512)	103SW-3(19990512)	103SW-4(19990512)	103SW-16(20001115)
		Depth Interval				
		Sample Date	5/12/1999	5/12/1999	5/12/1999	11/15/2000
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Endrin aldehyde	7421-93-4	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
Endrin ketone	53494-70-5	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
gamma-BHC (Lindane)	58-89-9	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
gamma-Chlordane	5103-74-2	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
Heptachlor	76-44-8	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
Heptachlor epoxide	1024-57-3	ug/L	< 0.05 U	< 0.05 U	< 0.05 U	
Methoxychlor	72-43-5	ug/L	< 0.1 U	< 0.1 U	< 0.1 U	
Toxaphene	8001-35-2	ug/L	< 2 U	< 2 U	< 2 U	
SVOC						
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
VOC						
1,1,1-Trichloroethane	71-55-6	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
1,1,2-Trichloroethane	79-00-5	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
1,1-Dichloroethane	75-34-3	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
1,1-Dichloroethene	75-35-4	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
1,2-Dichloroethane	107-06-2	ug/L	< 1 (U)	< 1 (U)	< 1 (U)	< 1 UJ
1,2-Dichloropropane	78-87-5	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
2-Butanone	78-93-3	ug/L	< 10 R	< 10 R	< 10 R	< 10 UJ
2-Hexanone	591-78-6	ug/L	< 10 U	< 10 U	< 10 U	< 10 UJ
4-Methyl-2-pentanone (MIBK)	108-10-1	ug/L	< 10 U	< 10 U	< 10 U	< 5 UJ
Acetone	67-64-1	ug/L	< 10 R	< 10 R	< 10 R	< 10 (U)J
Acetonitrile	75-05-8	ug/L	< 20 R	< 20 R	< 20 R	< 20 R
Benzene	71-43-2	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
Bromodichloromethane	75-27-4	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
Bromoform	75-25-2	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
Bromomethane	74-83-9	ug/L	< 2 U	< 2 U	< 2 U	< 2 UJ
Carbon disulfide	75-15-0	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ

Table A-30
Historical Analytical Results for Surface Water Samples at PICA 164 Site 103

		Site Name	103	103	103	103
		Location ID	L-103-SW-002	L-103-SW-003	L-103-SW-004	L-103-SW-016
		Sample ID	103SW-2(19990512)	103SW-3(19990512)	103SW-4(19990512)	103SW-16(20001115)
		Depth Interval				
		Sample Date	5/12/1999	5/12/1999	5/12/1999	11/15/2000
		Sample Matrix	WS	WS	WS	WS
Chemical Name	**CAS No**	**Unit**				
Carbon tetrachloride	56-23-5	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
Chlorobenzene	108-90-7	ug/L	< 1 (U)	< 1 (U)	< 1 (U)	< 1 UJ
Chloroethane	75-00-3	ug/L	< 2 U	< 2 U	< 2 U	< 2 UJ
Chloroform	67-66-3	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
Chloromethane	74-87-3	ug/L	< 2 U	< 2 U	< 2 U	< 2 UJ
cis-1,2-Dichloroethene	156-59-2	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 UJ
cis-1,3-Dichloropropene	10061-01-5	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
Dibromochloromethane	124-48-1	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
Dichlorodifluoromethane	75-71-8	ug/L	< 2 U	< 2 U	< 2 U	< 2 UJ
Ethyl benzene	100-41-4	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
Methylene chloride	75-09-2	ug/L	< 1 (U)	< 1 (U)	< 1 (U)	< 1 UJ
Styrene	100-42-5	ug/L	< 1 U	0.15 J	< 1 U	< 1 UJ
Tetrachloroethene	127-18-4	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
Toluene	108-88-3	ug/L	< 1 U	0.42 J	< 1 U	< 1 UJ
trans-1,2-Dichloroethene	156-60-5	ug/L	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 UJ
trans-1,3-Dichloropropene	10061-02-6	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
Trichloroethene	79-01-6	ug/L	< 1 U	< 1 U	< 1 U	< 1 UJ
Trichlorofluoromethane	75-69-4	ug/L	< 2 U	< 2 U	< 2 U	< 2 UJ
Vinyl chloride	75-01-4	ug/L	< 2 U	< 2 U	< 2 U	< 2 UJ
Xylenes	1330-20-7	ug/L	< 1 U	0.37 J	< 1 U	< 1 UJ
WetChem						
Cyanide	57-12-5	ug/L				< 10 U

Notes:

LOC - Level of Concern
ug/L - micrograms per liter
U - Non-detect at the specified reporting limit
J - Estimated concentration
R - Rejected

Table A-30
Historical Analytical Results for Surface Water Samples at PICA 164 Site 103

		103	103	103	103	103	103
		L-103-SW-017	L-103-SW-017	L-103-SW-018	L-103-SW-019	L-103-SW-020	L-103-SW-021
		103SW-17DUP(20001115)	103SW-17(20001115)	103SW-18(20001115)	103SW-19(20001115)	103SW-20(20001115)	103SW-21(20001115)
		11/15/2000	11/15/2000	11/15/2000	11/15/2000	11/15/2000	11/15/2000
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Explosives							
1,3,5-Trinitrobenzene	99-35-4						
1,3-Dinitrobenzene	99-65-0						
2,4,6-Trinitrotoluene	118-96-7						
2-amino-4,6-Dinitrotoluene	35572-78-2						
2-Nitrotoluene	88-72-2						
3-Nitrotoluene	99-08-1						
4-amino-2,6-Dinitrotoluene	19406-51-0						
4-Nitrotoluene	99-99-0						
HMX	2691-41-0						
Nitrobenzene	98-95-3						
RDX	121-82-4						
Tetryl	479-45-8						
Explosives / SVOC							
2,4-Dinitrotoluene	121-14-2						
2,6-Dinitrotoluene	606-20-2						
Metals							
Aluminum	7429-90-5						
Antimony	7440-36-0						
Arsenic	7440-38-2						
Barium	7440-39-3						
Beryllium	7440-41-7						
Cadmium	7440-43-9						
Calcium	7440-70-2						
Chromium	7440-47-3						
Cobalt	7440-48-4						
Copper	7440-50-8						
Iron	7439-89-6						
Lead	7439-92-1						
Magnesium	7439-95-4						

Table A-30
Historical Analytical Results for Surface Water Samples at PICA 164 Site 103

		103	103	103	103	103	103
		L-103-SW-017	L-103-SW-017	L-103-SW-018	L-103-SW-019	L-103-SW-020	L-103-SW-021
		103SW-17DUP(20001115)	103SW-17(20001115)	103SW-18(20001115)	103SW-19(20001115)	103SW-20(20001115)	103SW-21(20001115)
		11/15/2000	11/15/2000	11/15/2000	11/15/2000	11/15/2000	11/15/2000
		WS	WS	WS	WS	WS	WS
Chemical Name	**CAS No**						
Manganese	7439-96-5						
Mercury	7439-97-6						
Nickel	7440-02-0						
Potassium	7440-09-7						
Selenium	7782-49-2						
Silver	7440-22-4						
Sodium	7440-23-5						
Thallium	7440-28-0						
Vanadium	7440-62-2						
Zinc	7440-66-6						
PCBs							
Aroclor 1016	12674-11-2						
Aroclor 1221	11104-28-2						
Aroclor 1232	11141-16-5						
Aroclor 1242	53469-21-9						
Aroclor 1248	12672-29-6						
Aroclor 1254	11097-69-1						
Aroclor 1260	11096-82-5						
Pesticides							
4,4'-DDD	72-54-8						
4,4'-DDE	72-55-9						
4,4'-DDT	50-29-3						
Aldrin	309-00-2						
alpha-BHC	319-84-6						
alpha-Chlordane	5103-71-9						
beta-BHC	319-85-7						
delta-BHC	319-86-8						
Dieldrin	60-57-1						
Endosulfan I	959-98-8						
Endosulfan II	33213-65-9						
Endosulfan sulfate	1031-07-8						
Endrin	72-20-8						

Table A-30
Historical Analytical Results for Surface Water Samples at PICA 164 Site 103

		103 L-103-SW-017 103SW-17DUP(20001115) 11/15/2000 WS	103 L-103-SW-017 103SW-17(20001115) 11/15/2000 WS	103 L-103-SW-018 103SW-18(20001115) 11/15/2000 WS	103 L-103-SW-019 103SW-19(20001115) 11/15/2000 WS	103 L-103-SW-020 103SW-20(20001115) 11/15/2000 WS	103 L-103-SW-021 103SW-21(20001115) 11/15/2000 WS
Chemical Name	**CAS No**						
Endrin aldehyde	7421-93-4						
Endrin ketone	53494-70-5						
gamma-BHC (Lindane)	58-89-9						
gamma-Chlordane	5103-74-2						
Heptachlor	76-44-8						
Heptachlor epoxide	1024-57-3						
Methoxychlor	72-43-5						
Toxaphene	8001-35-2						
SVOC							
1,1,2,2-Tetrachloroethane	79-34-5	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
VOC							
1,1,1-Trichloroethane	71-55-6	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1,2-Trichloroethane	79-00-5	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethane	75-34-3	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,1-Dichloroethene	75-35-4	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichloroethane	107-06-2	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
1,2-Dichloropropane	78-87-5	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
2-Butanone	78-93-3	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
2-Hexanone	591-78-6	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U
4-Methyl-2-pentanone (MIBK)	108-10-1	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U	< 5 U
Acetone	67-64-1	< 10 (U)	< 10 (U)	< 10 (U)J	< 10 (U)J	< 10 (U)J	< 10 (U)J
Acetonitrile	75-05-8	< 20 R	< 20 R	< 20 R	< 20 R	< 20 R	< 20 R
Benzene	71-43-2	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ	< 1 UJ
Bromodichloromethane	75-27-4	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromoform	75-25-2	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Bromomethane	74-83-9	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Carbon disulfide	75-15-0	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U

Table A-30
Historical Analytical Results for Surface Water Samples at PICA 164 Site 103

		103 L-103-SW-017 103SW-17DUP(20001115) 11/15/2000 WS	103 L-103-SW-017 103SW-17(20001115) 11/15/2000 WS	103 L-103-SW-018 103SW-18(20001115) 11/15/2000 WS	103 L-103-SW-019 103SW-19(20001115) 11/15/2000 WS	103 L-103-SW-020 103SW-20(20001115) 11/15/2000 WS	103 L-103-SW-021 103SW-21(20001115) 11/15/2000 WS
Chemical Name	**CAS No**						
Carbon tetrachloride	56-23-5	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chlorobenzene	108-90-7	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chloroethane	75-00-3	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Chloroform	67-66-3	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Chloromethane	74-87-3	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
cis-1,2-Dichloroethene	156-59-2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
cis-1,3-Dichloropropene	10061-01-5	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Dibromochloromethane	124-48-1	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Dichlorodifluoromethane	75-71-8	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Ethyl benzene	100-41-4	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Methylene chloride	75-09-2	< 1 (U)	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Styrene	100-42-5	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Tetrachloroethene	127-18-4	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Toluene	108-88-3	0.24 J	0.24 J	< 1 U	< 1 U	< 1 U	< 1 U
trans-1,2-Dichloroethene	156-60-5	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
trans-1,3-Dichloropropene	10061-02-6	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Trichloroethene	79-01-6	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
Trichlorofluoromethane	75-69-4	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Vinyl chloride	75-01-4	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U	< 2 U
Xylenes	1330-20-7	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U	< 1 U
WetChem							
Cyanide	57-12-5	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U	< 10 U

Notes:

LOC - Level of Concern
ug/L - micrograms per liter
U - Non-detect at the specified reporting limit
J - Estimated concentration
R - Rejected

Appendix B

Picatinny LOC Tables

Table B-1
Guidance to be Considered for Picatinny Arsenal Surface and Subsurface Soil (a)
(mg/kg)

Chemical	Soil Remediation Standards (b)		USEPA Regional Screening Level (c)					Surface Soil Background Value (d)	Subsurface Soil Background Value (d)	LOCs w/o regard to IGW #;s	Level of Concern: Surface and Subsurface Soil, Site Characterization/ Prioritization	
			Industrial		Residential							
	Residential	Non-residential	Non-carcinogen	Carcinogen $1x10^{-6}$	Non-carcinogen	Carcinogen $1x10^{-6}$	C/N				LOC (e)	LOC Chosen
Volatiles												
Acetone	70,000	—	610,000	—	61,000	—	N	—	—	920,000	610,000	RSL
Acetonitrile	—	—	3,700	—	870	—	N	—	—		3,700	RSL
Acrolein	0.5	1	0.68	—	0.16	—	N	—	—	1	1	NJNR
Acrylonitrile	0.9	3	67	1.2		0.24	C	—	—	5.3	3.0	NJNR
Benzene	2	5	470	5.6	90	1.1	C	—	—	5	5	NJNR
Bromodichloromethane	1	3	20,000	46	1,600	10	C	—	—	3	3	NJNR
Bromoform	81	280	12,000	220	1,200	61	C	—	—	280	280	NJNR
Bromomethane	25	59	35	—	7.9	—	N	—	—	59	59	NJNR
2-Butanone	3,100	44,000	190,000	—	47,000	—	N	—	—	44,000	44,000	NJNR
tert-Butylalcohol	1,400	11,000	—	—	—	—	-	—	—	11,000	11,000	NJNR
Carbon disulfide	7,800	110,000	3,000	—	670	—	N	—	—	110,000	110,000	NJNR
Carbon tetrachloride	0.6	2	470	1.3	47	0.25	C	—	—	2	2	NJNR
Chlorobenzene	510	7,400	1,500	—	310	—	N	—	—	7,400	7,400	NJNR
Chloroethane	220	1,100	62,000	—	15,000	—	C	—	—	1,100	1,100	NJNR
2-Chloroethyl vinyl ether	—	—	—	—	—	—	-	—	—	—	—	—
Chloroform	0.6	2	1,100	1.5	220	0.3	C	—	—	2	2	NJNR
Chloromethane	4	12	510	8.4	120	1.7	C	—	—	12	12	NJNR
Dibromochloromethane	3	8	12,000	21	1,200	5.8	C	—	—	8	8	NJNR
Dichlorodifluoromethane	490	230,000	780	—	190	—	N	—	—	230,000	230,000	NJNR
1,1-Dichloroethane	8	24	200,000	17	16,000	3.4	N	—	—	24	24	NJNR
1,2-Dichloroethane	0.9	3	15,000	2.2	1,400	0.45	C	—	—	3	3	NJNR
1,1-Dichloroethene	11	150	1,100	—	250	—	N	—	—	150	150	NJNR
1,2-Dichloroethene (total) (f)	230	560	9,200	—	700	—	N	—	—	560	560	NJNR
cis-1,2-Dichloroethene	230	560	10,000	—	780	—	N	—	—	560	560	NJNR
trans-1,2-Dichloroethene	300	720	500	—	110	—	N	—	—	720	720	NJNR
1,2-Dichloropropane	2	5	71	4.7	17	0.93	C	—	—	5	5	NJNR
cis-1,3-Dichloropropene (g)	2	7	330	8.4	78	1.7	N	—	—	7	7	NJNR
trans-1,3-Dichloropropene (g)	2	7	330	8.4	78	1.7	N	—	—	7	7	NJNR
Ethanol	—	—	—	—	—	—	-	—	—	—	—	—
Ethyl benzene	7,800	110,000	22,000	29	3,600	5.7	C	—	—	110,000	110,000	NJNR
Ethylene oxide	—	—	—	0.8	—	0.16	C	—	—	2.9	0.8	RSL
2-Hexanone	—	—	—	—	—	—	-	—	—	—	—	—
Isopropanol	—	—	—	—	—	—	-	—	—	—	—	—
4-Methyl-2-pentanone (MIBK)	—	—	52,000	—	5,300	—	N	—	—	—	52,000	RSL
Methylene chloride	34	97	9,400	54	1,700	11	C	—	—	97	97	NJNR
Styrene	90	260	38,000	—	6,500	—	N	—	—	260	260	NJNR
1,1,2,2-Tetrachloroethane	1	3	4,100	2.9	310	0.59	C	—	—	3	3	NJNR
Tetrachloroethene	2	5	2,400	2.7	380	0.57	C	—	—	5	5	NJNR
Tetrahydrofuran	—	—	—	—	—	—	-	—	—	380	—	—
Toluene	6,300	91,000	46,000	—	5,000	—	N	—	—	91,000	91,000	NJNR
1,1,1 -Trichloroethane	290	4,200	39,000	—	9,000	—	N	—	—	4,200	4,200	NJNR
1,1,2-Trichloroethane	2	6	4,100	5.5	310	1.1	C	—	—	6	6	NJNR
Trichloroethene	7	20	—	14	—	2.8	C	—	—	20	20	NJNR
Trichlorofluoromethane	23,000	340,000	3,400	—	800	—	N	—	—	340,000	340,000	NJNR
1,1,2-Trichloro-1,2,2-trifluoroethane	—	—	180,000	—	43,000	—	N	—	—	31,000,000	180,000	RSL
TVH (C4-C12)	—	—	—	—	—	—	-	—	—		—	—
Vinyl acetate	—	—	4,200	—	990	—	N	—	—	1,000,000	4,200	RSL

Table B-1
Guidance to be Considered for Picatinny Arsenal Surface and Subsurface Soil (a)
(mg/kg)

Chemical	Soil Remediation Standards (b)		USEPA Regional Screening Level (c)					Surface Soil Background Value (d)	Subsurface Soil Background Value (d)	LOCs w/o regard to IGW #;s	Level of Concern: Surface and Subsurface Soil, Site Characterization/ Prioritization	
			Industrial		Residential							
	Residential	Non-residential	Non-carcinogen	Carcinogen $1x10^{-6}$	Non-carcinogen	Carcinogen $1x10^{-6}$	C/N				LOC (e)	LOC Chosen
Vinyl chloride	0.7	2	400	1.7	74	0.06	C	—	—	2	2	NJNR
Xylenes	12,000	170,000	2,600	—	600	—	N	—	—	170,000	170,000	NJNR
Semivolatiles												
Acenaphthene	3,400	37,000	33,000	—	7,800	—	N	—	—	37,000	37,000	NJNR
Acenaphthylene	—	300,000	—	—	—	—	-	—	—	300,000	300,000	NJNR
Aniline	—	—	4,300	300	430	85	C	—	—	500	4,300	RSL
Anthracene	17,000	30,000	170,000	—	17,000	—	N	—	—	30,000	30,000	NJNR
Benzo(a)anthracene	0.6	2	—	2.1	—	0.15	C	—	—	2	2	NJNR
Benzidine	0.7	0.7	1,800	0.0075	180	0.0005	C	—	—	0.7	0.7	NJNR
Benzo(a) pyrene	0.2	0.2	—	0.21	—	0.015	C	—	—	0.2	0.2	NJNR
Benzo(b) fluoranthene	0.6	2	—	2.1	—	0.15	C	—	—	2	2	NJNR
Benzo(g,h,i) perylene (h)	380,000	30,000	17,000	—	1,700	—	N	—	—	30,000	30,000	NJNR
Benzo (k) fluoranthene	6	23	—	21	—	1.5	C	—	—	23	23	NJNR
Benzoic acid	—	—	2,500,000	—	240,000	—	N	—	—	4,100,000	2,500,000	RSL
Benzyl alcohol	—	—	310,000	—	31,000	—	N	—	—	510,000	310,000	RSL
4-Bromophenyl phenyl ether	—	—	—	—	—	—	-	—	—	—	—	—
di-n-Butylphthalate	6,100	68,000	—	—	—	—	-	—	—	68,000	68,000	NJNR
Butylbenzyl phthalate	1,200	14,000	120,000	910	12,000	260	N	—	—	14,000	14,000	NJNR
Carbazole	24	96	—	—	—	—	-	—	—	96	96	NJNR
4-Chloroaniline	9	66	2,500	32	240	9	C	—	—	66	66	NJNR
bis(2-Chloroethoxy) methane	—	—	1,800	—	180	—	N	—	—	—	—	—
bis(2-Chloroethyl) ether	0.4	2	—	0.9	—	0.19	C	—	—	2	2	NJNR
bis(2-Chloroisopropyl) ether	23	67	—	—	—	—	-	—	—	67	67	NJNR
4-Chloro-3-methylphenol	—	—	—	—	—	—	-	—	—	—	—	—
2-Chloronaphthalene	—	—	82,000	—	6,300	—	N	—	—	82,000	82,000	RSL
2-Chlorophenol	310	2,200	5,100	—	390	—	N	—	—	2,200	2,200	NJNR
4-Chlorophenyl phenyl ether	—	—	—	—	—	—	-	—	—	—	—	—
Chrysene	62	230	—	210	—	15	C	—	—	230	230	NJNR
Dibenz(a,h)anthracene	0.2	0.2	—	0.21	—	0.015	C	—	—	0.2	0.2	NJNR
Dibenzofuran	—	—	—	—	—	—	-	—	—	1,000	—	—
Dichlorobenzenes (i)	5	13	42,000	13	10,000	2.6	C	—	—	13	13	NJNR
1,2-Dichlorobenzene	5,300	59,000	10,000	—	2,000	—	N	—	—	59,000	59,000	NJNR
1,3-Dichlorobenzene (i)	5,300	59,000	42,000	13	—	2.6	-	—	—	59,000	59,000	NJNR
1,4-Dichlorobenzene	5	13	42,000	13	10,000	2.6	C	—	—	13	13	NJNR
3,3'-Dichlorobenzidine	1	4	—	3.8	—	1.1	C	—	—	4	4	NJNR
2,4-Dichlorophenol	180	2,100	1,800	—	180	—	N	—	—	2,100	2,100	NJNR
Diethylphthalate	49,000	550,000	490,000	—	49,000	—	N	—	—	550,000	550,000	NJNR
2,4-Dimethylphenol	1,200	14,000	12,000	—	1,200	—	N	—	—	14,000	14,000	NJNR
Dimethylphthalate	—	—	—	—	—	—	-	—	—	10,000,000	—	NJNR
2,4-Dinitrophenol	120	1,400	1,200	—	120	—	N	—	—	1,400	1,400	NJNR
Diphenylamine	—	—	15,000	—	1,500		N	—	—	26,000	15,000	RSL
1,2-Diphenylhydrazine	0.7	2	—	2.2	—	0.61	C	—	—	2	2	NJNR
bis(2-Ethylhexyl) phthalate	35	140	12,000	120	1,200	35	C	—	—	140	140	NJNR
Fluoranthene	2,300	24,000	22,000	—	2,300	—	N	—	—	24,000	24,000	NJNR
Fluorene	2,300	24,000	22,000	—	2,300	—	N	—	—	24,000	24,000	NJNR
Hexachlorobenzene	0.3	1	490	1.1	49	0.3	C	—	—	1	1	NJNR
Hexachlorobutadiene	6	25	620	22	61	6.2	C	—	—	25	25	NJNR
Hexachlorocyclopentadiene	45	110	3,700	—	370	—	N	—	—	110	110	NJNR

Table B-1
Guidance to be Considered for Picatinny Arsenal Surface and Subsurface Soil (a)
(mg/kg)

Chemical	Soil Remediation Standards (b)		USEPA Regional Screening Level (c)					Surface Soil Background Value (d)	Subsurface Soil Background Value (d)	LOCs w/o regard to IGW #;s	Level of Concern: Surface and Subsurface Soil, Site Characterization/ Prioritization	
			Industrial		Residential							
	Residential	Non-residential	Non-carcinogen	Carcinogen $1x10^{-6}$	Non-carcinogen	Carcinogen $1x10^{-6}$	C/N				LOC (e)	LOC Chosen
Hexachloroethane	35	140	620	120	61	35	C	—	—	140	140	NJNR
Indeno(1,2,3-c,d)pyrene	0.6	2	—	2.1	0.15	—	N	—	—	2	2	NJNR
Isophorone	510	2,000	120,000	1,800	12,000	510	C	—	—	2,000	2,000	NJNR
2-Methylnaphthalene	230	2,400	4,100	—	310	—	N	—	—	2,400	2,400	NJNR
2-Methylphenol	310	3,400	—	—	—	—	-	—	—	3,400	3,400	NJNR
4-Methylphenol	31	340	—	—	—	—	-	—	—	340	340	NJNR
4,6-dinitro-2-Methylphenol	6	68	—	—	—	—	-	—	—	68	68	NJNR
Naphthalene	6	17	670	20	150	4	C	—	—	17	17	NJNR
2-Nitroaniline	39	23,000	—	—	—	—	-	—	—	23,000	23,000	NJNR
3-Nitroaniline	—	—	180	82	18	23	C	—	—	—	82	RSL
4-Nitroaniline	—	—	1,800	82	180	23	C	—	—	—	82	RSL
2-Nitrophenol	—	—	—	—	—	—	-	—	—	—	—	—
4-Nitrophenol	—	—	—	—	—	—	-	—	—	—	—	—
n-Nitrosodimethylamine	0.7	0.7	4.9	0.034	—	0.022	C	—	—	0.7	0.7	NJNR
n-Nitroso-di-n-propylamine	0.2	0.3	—	0.25	—	0.069	C	—	—	0.3	0.3	NJNR
n-Nitrosodiphenylamine	99	390	—	350	—	99	C	—	—	390	390	NJNR
di-n-Octylphthalate	2,400	27,000	—	—	—	—	-	—	—	27,000	27000	NJNR
Pentachlorophenol	3	10	12,000	9	1,400	3	C	—	—	10	10	NJNR
Phenanthrene (h)	—	300,000	17,000	—	1,700	—	N	—	—	300,000	300,000	NJNR
Phenol	18,000	210,000	180,000	—	18,000	—	N	—	—	210,000	210,000	NJNR
Pyrene	1,700	18,000	17,000	—	1,700	—	N	—	—	18,000	18,000	NJNR
1,2,4-Trichlorobenzene	73	820	400	790	87	180	C	—	—	820	820	NJNR
2,4,5-Trichlorophenol	6,100	68,000	62,000	—	6,100	—	N	—	—	68,000	68,000	NJNR
2,4,6-Trichlorophenol	19	74	620	160	61	44	C	—	—	74	74	NJNR
Pesticides												
Aldrin	0.040	0.2	18	0.1	1.8	0.029	C	—	—	0.2	0.2	NJNR
alpha-BHC	0.1	0.5	—	0.27	—	0.08	C	—	—	0.5	0.5	NJNR
beta-BHC	0.4	2	—	0.96	—	0.27	C	—	—	2	2	NJNR
delta-BHC (j)	0.4	2	—	2.1	21	0.52	C	—	—	2	2	NJNR
gamma-BHC (Lindane) (k)	0.4	2	240	2.1	21	0.52	C	—	—	2	2	NJNR
Chlordane	0.2	1	400	6.5	35	1.6	C	—	—	1	1	NJNR
alpha-Chlordane (l)	0.2	1	400	6.5	2.6	10000	C	—	—	1	1	NJNR
gamma-Chlordane (l)	0.2	1	400	6.5	2.6	10000	C	—	—	1	1	NJNR
4,4'-DDD	3	13	—	7.2	—	2	C	—	—	13	13	NJNR
4,4'-DDE	2	9	—	5.1	—	1.4	C	—	—	9	9	NJNR
4,4'-DDT	2	8	—	7	36	1.7	C	—	—	8	8	NJNR
Diazinon	—	—	550	—	55	—	N	—	—	920	550	RSL
Dieldrin	0.04	0.2	31	0.11	3.1	0.03	C	—	—	0.2	0.2	NJNR
Endosulfan I (m)	470	6,800	3,700	—	370	—	N	—	—	6,800	6,800	NJNR
Endosulfan II (m)	470	6,800	3,700	—	370	—	N	—	—	6,800	6,800	NJNR
Endosulfan sulfate (m)	470	6,800	3,700	—	370	—	N	—	—	6,800	6,800	NJNR
Endrin	23	340	180	—	18	—	N	—	—	340	340	NJNR
Endrin aldehyde (n)	23	340	180	—	18	—	N	—	—	340	340	NJNR
Endrin ketone (n)	23	340	180	—	18	—	N	—	—	340	340	NJNR
Heptachlor	0.1	0.7	310	0.38	31	0.11	C	—	—	0.7	0.7	NJNR
Heptachlor epoxide	0.07	0.3	8	0.19	0.79	0.053	C	—	—	0.3	0.3	NJNR
Isodrin	—	—	—	—	—	—	-	—	—	—	—	—
Malathion	—	—	12,000	—	1,200	—	N	—	—	20,000	12,000	RSL

Table B-1
Guidance to be Considered for Picatinny Arsenal Surface and Subsurface Soil (a)
(mg/kg)

Chemical	Soil Remediation Standards (b)		USEPA Regional Screening Level (c)					Surface Soil Background Value (d)	Subsurface Soil Background Value (d)	LOCs w/o regard to IGW #;s	Level of Concern: Surface and Subsurface Soil, Site Characterization/ Prioritization	
			Industrial		Residential							
	Residential	Non-residential	Non-carcinogen	Carcinogen $1x10^{-6}$	Non-carcinogen	Carcinogen $1x10^{-6}$	C/N				LOC (e)	LOC Chosen
Methoxychlor	390	5,700	3,100	—	310	—	N	—	—	5,700	5,700	NJNR
Mirex	—	—	120	0.096	12	0.027	C	—	—	200	120	RSL
Toxaphene	0.6	3	—	1.6	—	0.44	C	—	—	3	3	NJNR
PCBs (o)												
Aroclor 1016	0.2	1	37	21	3.9	6.3	C	—	—	1	1	NJNR
Aroclor 1221	0.2	1	—	0.62	—	0.17	C	—	—	1	1	NJNR
Aroclor 1232	0.2	1	—	0.62	—	0.17	C	—	—	1	1	NJNR
Aroclor 1242	0.2	1	—	0.74	—	0.22	C	—	—	1	1	NJNR
Aroclor 1248	0.2	1	—	0.74	—	0.22	C	—	—	1	1	NJNR
Aroclor 1254	0.2	1	11	0.74	1.1	0.22	C	—	—	1	1	NJNR
Aroclor 1260	0.2	1	—	0.74	—	0.22	C	—	—	1	1	NJNR
Explosives												
1,3-Dinitrobenzene	—	—	62	—	6.1	—	N	—	—	100	62	RSL
2,4-Dinitrotoluene (q)	0.94	4.2	1,200	—	120	—	N	—	—	4.2	4.2	NJNR
2,6-Dinitrotoluene (q)	0.94	4.2	620	—	61	—	N	—	—	4.2	4.2	NJNR
2-amino-4,6-Dinitrotoluene	—	—	2,000	—	150	—	N	—	—	200	2,000	RSL
4-amino-2,6-Dinitrotoluene	—	—	1,900	—	150	—	N	—	—	200	1,900	RSL
HMX (q)	3,900	10,000	49,000	—	3,800	—	N	—	—	10,000	10,000	NJNR
Nitrobenzene	31	340	280	—	31	—	N	—	—	340	340	NJNR
Nitrocellulose	—	—	—	—	—	—	-	—	—	—	—	—
Nitroglycerin	—	—	62	100	6.1	29	C	—	—	200	62	RSL
Nitroguanidine	—	—	62,000	—	6,100	—	N/-	—	—	—	62,000	RSL
2-Nitrotoluene (ortho)	—	—	920	13	70	2.9	C	—	—	10,000	920	RSL
3-Nitrotoluene (meta)	—	—	12,000	—	1,200	—	N	—	—	—	12,000	RSL
4-Nitrotoluene (para)	—	—	2,500	110	240	30	C	—	—	180	110	RSL
2- and 4-Nitrotoluene (s)	—	—	920	13	70	—	—	—	—	10,000	13	RSL
PETN	—	—	—	—	—	—	-	—	—	—	—	—
Picric acid	—	—	—	—	—	—	-	—	—	—	—	—
RDX (q)	5.8	26	2,800	24	230	5.5	C	—	—	26	26	NJNR
Tetrazene	—	—	—	—	—	—	-	—	—	—	—	—
Tetryl (q)	780	10,000	2,500	—	240	—	N	—	—	10,000	10,000	NJNR
1,3,5-Trinitrobenzene	—	—	27,000	—	2,200	—	N	—	—	31,000	27,000	RSL
2,4,6-Trinitrotoluene (q)	21	95	420	79	36	19	C	—	—	95	95	NJNR
Herbicide												
2,4'-D	—	—	—	—	—	—	-	—	—	10,000	—	—
Dalapon	—	—	18,000	—	1,800	—	N	—	—	31,000	18,000	RSL
2,4'-DB	—	—	—	—	—	—	-	—	—	8,200	—	—
Dicamba	—	—	18,000	—	1,800	—	N	—	—	31,000	18,000	RSL
Dichloroprop	—	—	—	—	—	—	-	—	—	—	—	—
Dinoseb	—	—	620	—	61	—	N	—	—	1,000	620	RSL
2,4,5-T	—	—	—	—	—	—	-	—	—	10,000	—	—
2,4,5-TP (Silvex)	—	—	—	—	—	—	-	—	—	8,200	—	—
Dioxins/ furans (t)												
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	—	—	—	—	—	—	-	—	—	0.0019	—	—
Total heptachlorodibenzo-p-dioxins	—	—	—	—	—	—	-	—	—	—	—	—
1,2,3,4,6,7,8-Heptachlorodibenzofuran	—	—	—	—	—	—	-	—	—	0.0019	—	—
1,2,3,4,7,8,9-Heptachlorodibenzofuran	—	—	—	—	—	—	-	—	—	0.0019	—	—

Table B-1
Guidance to be Considered for Picatinny Arsenal Surface and Subsurface Soil (a)
(mg/kg)

Chemical	Soil Remediation Standards (b)		USEPA Regional Screening Level (c)					Surface Soil Background Value (d)	Subsurface Soil Background Value (d)	LOCs w/o regard to IGW #;s	Level of Concern: Surface and Subsurface Soil, Site Characterization/ Prioritization	
			Industrial		Residential							
	Residential	Non-residential	Non-carcinogen	Carcinogen $1x10^{-6}$	Non-carcinogen	Carcinogen $1x10^{-6}$	C/N				LOC (e)	LOC Chosen
Total heptachlorodibenzofurans	—	—	—	—	—	—	-	—	—	—	—	—
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	—	—	—	—	—	—	-	—	—	0.00019	—	—
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	—	—	—	—	—	—	-	—	—	0.00019	—	—
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	—	—	—	—	—	—	-	—	—	0.00019	—	—
Total hexachlorodibenzo-p-dioxins	—	—	—	0.00039	—	0.000094	C	—	—	—	0.00039	RSL
1,2,3,4,7,8-Hexachlorodibenzofuran	—	—	—	—	—	—	-	—	—	0.00019	—	—
1,2,3,6,7,8-Hexachlorodibenzofuran	—	—	—	—	—	—	-	—	—	0.00019	—	—
1,2,3,7,8,9-Hexachlorodibenzofuran	—	—	—	—	—	—	-	—	—	0.00019	—	—
2,3,4,6,7,8-Hexachlorodibenzofuran	—	—	—	—	—	—	-	—	—	0.00019	—	—
Total hexachlorodibenzofurans	—	—	—	—	—	—	-	—	—	—	—	—
Octachlorodibenzodioxin	—	—	—	0.061	—	0.015	C	—	—	0.06	0.061	RSL
Octachlorodibenzofuran	—	—	—	0.044	—	0.012	C	—	—	0.06	0.044	RSL
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	—	—	—	—	—	—	-	—	—	0.000019	—	—
Total pentachlorodibenzo-p-dioxins	—	—	—	—	—	—	-	—	—	—	—	—
1,2,3,7,8-Pentachlorodibenzofuran	—	—	—	0.00044	—	0.00012	C	—	—	0.00063	0.00044	RSL
2,3,4,7,8-Pentachlorodibenzofuran	—	—	—	0.000044	—	0.000012	C	—	—	0.000063	0.000044	RSL
Total pentachlorodibenzofurans	—	—	—	—	—	—	-	—	—	—	—	—
2,3,7,8-Tetrachlorodibenzo-p-dioxin	—	—	0.00085	0.000018	0.000072	0.00000450	C	—	—	0.000019	0.000018	RSL
Total tetrachlorodibenzo-p-dioxins	—	—	—	—	—	—	-	—	—	—	—	—
2,3,7,8-Tetrachlorodibenzofuran	—	—	—	0.00013	—	0.000037	C	—	—	0.00019	0.00013	RSL
Total tetrachlorodibenzofurans	—	—	—	—	—	—	-	—	—	—	—	—
Glycols												
Ethylene glycol	—	—	1,200,000	—	120,000	—	N	—	—	2,000,000	1,200,000	RSL
Hydrazines												
Hydrazine	—	—	1,200,000	0.95	280,000	0.21	C	—	—	0.95	0.95	RSL
Monomethyl hydrazine	—	—	—	—	—	—	-	—	—	—	—	—
Unsymmetrical dimethyl hydrazine	—	—	—	—	—	—	-	—	—	—	—	—
Inorganics												
Aluminum	78,000	—	990,000	—	77,000	—	N	20,500	20,500	1,000,000	990,000	RSL
Antimony	31	450	410	—	31	—	N	0.960	0.811	450	450	NJNR
Arsenic	19	19	260	1.6	22	0.39	C	9.23	8.57	19	19	NJNR
Barium	16,000	59,000	190,000	—	15,000	—	N	157	187	59,000	59,000	NJNR
Beryllium	16	140	2,000	6900	160	1400	C	1.30	0.570	140	140	NJNR
Boron	—	—	200,000	—	16,000	—	N	—	3.89	200,000	200,000	RSL
Cadmium (u)	78	78	810	9300	70	1800	N	0.660	0.147	78	78	NJNR
Calcium (v)	—	—	—	—	—	—	-	8,500	4,030	1,000,000	1,000,000	ADI
Chromium (w)	—	—	3,100	200	230	39	C	32.3	28.9	3,100	200	RSL
Cobalt	1,600	590	300	1900	23	370	N	10.4	13.1	590	590	NJNR
Copper	3,100	45,000	41,000	—	3,100	—	N	35.5	20.3	45,000	45,000	NJNR
Cyanide	1,600	23,000	20,000	—	1,600	—	N	—	—	23,000	23,000	NJNR
Iron	—	—	720,000	—	55,000	—	N	26,500	44,400	720,000	720,000	RSL
Lead (x)	400	800	800	—	400		N	74.6	24.1	800	800	NJNR
Magnesium (v)	—	—	—	—	—	—	-	2,440	3,390	1,000,000	—	—
Manganese (y)	11,000	5,900	23,000	—	1,800	—	N	1,250	842	5,900	5,900	NJNR
Mercury (z)	23	65	28	—	7.8	—	N	0.302	0.273	65	65	NJNR
Nickel	1,600	23,000	20,000	—	1,600	—	N	19.5	21.4	23,000	23,000	NJNR
Potassium (v)	—	—	—	—	—	—	-	742	929	1,000,000	1,000,000	ADI

Table B-1
Guidance to be Considered for Picatinny Arsenal Surface and Subsurface Soil (a)
(mg/kg)

Chemical	Soil Remediation Standards (b)		USEPA Regional Screening Level (c)					Surface Soil Background Value (d)	Subsurface Soil Background Value (d)	LOCs w/o regard to IGW #;s	Level of Concern: Surface and Subsurface Soil, Site Characterization/ Prioritization	
			Industrial		Residential							
	Residential	Non-residential	Non-carcinogen	Carcinogen $1x10^{-6}$	Non-carcinogen	Carcinogen $1x10^{-6}$	C/N				LOC (e)	LOC Chosen
Selenium	390	5,700	5,100	—	390	—	N	4.08	3.21	5,700	5,700	NJNR
Silver	390	5,700	5,100	—	390	—	N	ND	0.559	5,700	5,700	NJNR
Sodium (v)	—	—	—	—	—	—	-	393	316	1,000,000	1,000,000	ADI
Strontium	—	—	610,000	—	47,000	—	N	50.0	18.4	610,000	610,000	RSL
Thallium	5	79	66	—	5.1	—	N	1.19	1.50	79	79	NJNR
Titanium	—	—	—	—	—	—	-	954	1,040	—	—	—
Vanadium (metallic)	78	1,100	7,200	—	550	—	N	45.6	46.0	1,100	1,100	NJNR
Zinc	23,000	110,000	310,000	—	23,000	—	N	77.0	56.1	110,000	110,000	NJNR
Zirconium	—	—	—	—	—	—	-	11.1	15.5	—	—	—
TCLP Metals												
Arsenic	—	—	—	—	—	—	-	—	—	—	—	—
Barium	—	—	—	—	—	—	-	—	—	—	—	—
Cadmium	—	—	—	—	—	—	-	—	—	—	—	—
Chromium	—	—	—	—	—	—	-	—	—	—	—	—
Lead	—	—	—	—	—	—	-	—	—	—	—	—
Mercury	—	—	—	—	—	—	-	—	—	—	—	—
Selenium	—	—	—	—	—	—	-	—	—	—	—	—
Silver	—	—	—	—	—	—	-	—	—	—	—	—
Anions												
Ammonia	—	—	—	—	—	—	-	3.74	2.00	—	—	—
Chloride	—	—	—	—	—	—	-	124	70.5	—	—	—
Fluoride (aa)	—	—	61,000	—	4,700	—	N	4.74	6.12	61,000	61,000	RSL
Nitrate	—	—	1,600,000	—	130,000	—	N	13.6	4.22	1,600,000	1,600,000	RSL
Nitrite	—	—	100,000	—	7,800	—	N	0.272	0.131	100,000	100,000	RSL
Perchlorate	—	—	720	—	55	—	-	—	—	720	720	RSL
Phosphate	—	—	—	—	—	—	-	—	—	—	—	—
Total phosphates	—	—	—	—	—	—	-	—	—	—	—	—
Phosphorous (v)	—	—	1,000,000	—	1,000,000	—	-	460	230	1,000,000	1,000,000	RSL
Sulfate	—	—	—	—	—	—	-	65.0	65.8	—	—	—
Sulfide	—	—	—	—	—	—	-	350	65.0	—	—	—
White phosphorus	—	—	20	—	1.6	—	N	—	—	20	20	RSL
TOC												
Total organic carbon	—	—	—	—	—	—	-	—	—	—	—	—
Fuel Related Contaminants												
Diesel fuel	—	—	—	—	—	—	-	—	—	—	—	—
Gasoline Range Organics	—	—	—	—	—	—	-	—	—	—	—	—
Total Volatile Petroleum Hydrocarbons	—	—	—	—	—	—	-	—	—	—	—	—
Total Extractable Hydrocarbons	—	—	—	—	—	—	-	—	—	—	—	—
Total Extractable Petroleum	—	—	—	—	—	—	-	—	—	—	—	—
Total Recoverable Petroleum	—	—	—	—	—	—	-	—	—	—	—	—
TPH	—	—	—	—	—	—	-	—	—	—	—	—
TPH, aviation gas fraction	—	—	—	—	—	—	-	—	—	—	—	—
TPH, diesel pattern	—	—	—	—	—	—	-	—	—	—	—	—
TPH, gas fraction	—	—	—	—	—	—	-	—	—	—	—	—
TPH, motor oil	—	—	—	—	—	—	-	—	—	—	—	—
Radiological Parameters (ab)												
Americium-241	—	—	—	—	—	—	-	ND	ND	—	—	—

Table B-1
Guidance to be Considered for Picatinny Arsenal Surface and Subsurface Soil (a)
(mg/kg)

Chemical	Soil Remediation Standards (b)		USEPA Regional Screening Level (c)					Surface Soil Background Value (d)	Subsurface Soil Background Value (d)	LOCs w/o regard to IGW #;s	Level of Concern: Surface and Subsurface Soil, Site Characterization/ Prioritization	
			Industrial		Residential							
	Residential	Non-residential	Non-carcinogen	Carcinogen $1x10^{-6}$	Non-carcinogen	Carcinogen $1x10^{-6}$	C/N				LOC (e)	LOC Chosen
Cesium-137	—	—	—	—	—	—	-	0.850	0.270	—	—	—
Cobalt-60	—	—	—	—	—	—	-	ND	ND	—	—	—
Gross alpha	—	—	—	—	—	—	-	24.0	25.6	—	—	—
Gross beta	—	—	—	—	—	—	-	33.7	32.8	—	—	—
Krypton-85	—	—	—	—	—	—	-	—	—	—	—	—
Protactinium-234	—	—	—	—	—	—	-	—	—	—	—	—
Radium-226	3	5	—	—	—	—	-	1.31	1.46	—	5	NJNR
Radium-228	—	—	—	—	—	—	-	1.82	1.24	—	—	—
Thorium-234	—	—	—	—	—	—	-	—	—	—	—	—
Uranium (ac)	—	—	3,100	—	230	—	N	4.67	3.58	200	3,100	RSL
Uranium-234	62	69	—	—	—	—	-	1.56	1.35	—	69	NJNR
Uranium-235	29	37	—	—	—	—	-	0.109	0.133	—	37	NJNR
Uranium-238	54	64	—	—	—	—	-	1.65	1.11	—	64	NJNR
Uranium 235/238 Ratio	—	—	—	—	—	—	-	—	—	—	—	—
Asbestos												
Actinolite	—	—	—	—	—	—	-	—	—	—	—	—
Amosite	—	—	—	—	—	—	-	—	—	—	—	—
Anthopyllite	—	—	—	—	—	—	-	—	—	—	—	—
Chrysotile	—	—	—	—	—	—	-	—	—	—	—	—
Crocidolite	—	—	—	—	—	—	-	—	—	—	—	—
Tremolite	—	—	—	—	—	—	-	—	—	—	—	—

ADI = Allowable Daily Intake
ARAR = Applicable or Relevant and Appropriate Requirement
C/N = Carcinogenic or noncarcinogenic according to USEPA (2003).
RSL = USEPA Regional Screening Level
LOC = Level of Concern
ND = Not detected
NJNR = New Jersey Non-residential
TBC = To Be Considered
— = No value available
(a) Note that chemicals without guidance values are presented in this table.
(b) NJDEP Soil Remediation Standards (June 2, 2008).
(c) USEPA Reginal Screening levels (RSL)(2008). Industrial exposures are based on 250 days, while residential exposures are based on 350 days. A hazard index of 1 was used for noncarcinogenic RSLs.
(d) Surface and subsurface soil background values are from the PTA Background Study Report and are the lower of the maximum concentration or the mean plus three standard deviations for a given chemical.
(e) The NJDEP Non-residential Soil Remediation Standard is the primary comparison criteria for surface and subsurface soil. In the absence of State Remediation Standard, the USEPA Regional Screening Levels (RSLs) will be used unless Site background levels are higher than the RSLs. Residential values are presented for informational purposes only.
(f) NJDEP values are for 1,2-Dichloroethene (mixed polymer).
(g) NJDEP values are for cis- and trans-1,3-dichloropropene. The RSL value for 1,3-Dichloropropene was used.
(h) The RSL values for pyrene were used for noncarcinogenic polycyclic aromatic hydrocarbons (PAHs) lacking criteria.
(i) Values based on 1,4-dichlorobenzene.
(j) The NJDEP values for gamma-BHC were used.
(k) The RSL value for gamma-BHC was used.
(l) The NJNR values for chlordane were used.
(m) The impact to groundwater and RSL values for endosulfan were used.
(n) The values for endrin were used.
(o) NJDEP values for PCBs were used.
(p) New Jersey Impact to Groundwater value for 2,4-/2,6-mixture of dinitrotoluene was used.

Table B-1
Guidance to be Considered for Picatinny Arsenal Surface and Subsurface Soil (a)
(mg/kg)

Chemical	Soil Remediation Standards (b)		USEPA Regional Screening Level (c)					Surface Soil Background Value (d)	Subsurface Soil Background Value (d)		Level of Concern	
											Surface and Subsurface Soil	
			Industrial		Residential					LOCs	Site Characterization/ Prioritization	
	Residential	Non-residential	Non-carcinogen	Carcinogen $1x10^{-6}$	Non-carcinogen	Carcinogen $1x10^{-6}$	C/N			w/o regard to IGW #;s	LOC (e)	LOC Chosen

(q) NJDEP Residential and Non-residential Remediation Standard values were developed for PTA by NJDEP.
(r) This note removed/no longer applicable.
(s) Values are based on 2-Nitrotoluene.
(t) USEPA RSL values for PCDD/PCDF congeners were derived using toxicity criterion for 2,3,7,8-TCDD modified by toxic equivalency factors (TEFs) (USEPA 2000).
(u) The food RSL value for cadmium was used.
(v) The value presented in the RSL column is an allowable daily intake (ADI) level for essential human nutrients.
(w) The RSL value for chromium VI was used.
(x) For Lead and Lead compounds
(y) The non-food RSL value for manganese was used.
(z) The RSL value for methyl mercury was used.
(aa) The RSL value for fluorine was used.
(ab) The values for radiological parameters are in units of pCi/g.
(ac) Uranium units are mg/kg. The RSL for the most conservative soluble salts was used.

Table B-2
Guidance to be Considered for Picatinny Arsenal Sediment (a)
(mg/kg)

Chemical	ISQGs	New York Sediment Criteria	SQBs	ER-Ls	USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (d)	Sediment Background Value (e)	Level of Concern: Site Characterization/ Prioritization		Final LOC (Higher of LOC and Background Value [g])	Final LOC Chosen
	CCME 2002	NYSDEC 1999	ORNL 1997	NJDEP 1998	Non-carcinogen	Carcinogen 1x10•6	Nonresidential		LOC(f)	LOC Chosen		
Volatiles												
Acetone	—	—	0.0087	—	610,000	—	—	—	0.0087	SQB	0.0087	SQB
Acetonitrile	—	—	—	—	3,700	—	—	—	3,700	RSL	3,700	RSL
Acrolein	—	—	—	—	0.68	—	1	—	0.68	RSL	0.68	RSL
Acrylonitrile	—	—	—	—	67	1.2	3	—	1.2	RSL	1.2	RSL
Benzene	—	0.28	0.16	0.34	470	5.6	5	—	0.16	SQB	0.16	SQB
Bromodichloromethane	—	—	—	—	20,000	46	3	—	3	NJNR	3	NJNR
Bromoform	—	—	—	—	12,000	220	280	—	220	RSL	220	RSL
Bromomethane	—	—	—	—	35	—	59	—	35	RSL	35	RSL
2-Butanone	—	—	0.27	—	190,000	—	44,000	—	0.27	SQB	0.27	SQB
tert-Butylalcohol	—	—	—	—	—	—	11,000	—	11,000	NJNR	11,000	NJNR
Carbon disulfide	—	—	0.00085	—	3,000	—	110,000	—	0.00085	SQB	0.00085	SQB
Carbon tetrachloride	—	—	0.047	—	470	1.3	2	—	0.047	SQB	0.047	SQB
Chlorobenzene	—	0.035	0.41	—	1,500	—	7,400	—	0.035	NYSDEC	0.035	NYSDEC
Chloroethane	—	—	—	—	62,000	—	1,100	—	1,100	NJNR	1,100	NJNR
2-Chloroethyl vinyl ether	—	—	—	—	—	—	—	—	—	—	—	—
Chloroform	—	—	0.022	—	1,100	1.5	2	—	0.022	SQB	0.022	SQB
Chloromethane	—	—	—	—	510	8.4	12	—	8.4	RSL	8.4	RSL
Dibromochloromethane	—	—	—	—	12,000	21	8	—	8	NJNR	8	NJNR
Dichlorodifluoromethane	—	—	—	—	780	—	230,000	—	780	RSL	780	RSL
1,1-Dichloroethane	—	—	0.027	—	200,000	17	24	—	0.027	SQB	0.027	SQB
1,2-DichIoroethane	—	—	0.25	—	15,000	2.2	3	—	0.25	SQB	0.25	SQB
1,1-Dichloroethene	—	—	0.031	—	1,100	—	150	—	0.031	SQB	0.031	SQB
1,2-Dichloroethene (total) (h)	—	—	0.4	—	9,200	—	560	—	0.4	SQB	0.4	SQB
cis-1,2-Dichloroethene (i)	—	—	0.4	—	10,000	—	560	—	0.4	SQB	0.4	SQB
trans-1,2-Dichloroethene (i)	—	—	0.4	—	500	—	720	—	0.4	SQB	0.4	SQB
1,2-Dichloropropane	—	—	—	—	71	4.7	5	—	4.7	RSL	4.7	RSL
cis-1,3-Dichloropropene (i)	—	—	0.000051	—	330	8.4	7	—	0.000051	SQB	0.000051	SQB
trans-1,3-Dichloropropene (j)	—	—	0.000051	—	330	8.4	7	—	0.000051	SQB	0.000051	SQB
Ethanol	—	—	—	—	—	—	—	—	—	—	—	—
Ethyl benzene	—	0.24	0.089	1.4	22,000	29	110,000	—	0.089	SQB	0.089	SQB
Ethylene oxide	—	—	—	—	—	0.8	—	—	0.8	RSL	0.8	RSL
2-Hexanone	—	—	0.022	—	—	—	—	—	0.022	SQB	0.022	SQB
Isopropanol	—	—	—	—	—	—	—	—	—	—	—	—

Table B-2
Guidance to be Considered for Picatinny Arsenal Sediment (a)
(mg/kg)

Chemical	ISQGs	New York Sediment Criteria	SQBs	ER-Ls	USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (d)	Sediment Background Value (e)	Level of Concern: Site Characterization/ Prioritization		Final LOC (Higher of LOC and Background Value [g])	Final LOC Chosen
	CCME 2002	NYSDEC 1999	ORNL 1997	NJDEP 1998	Non-carcinogen	Carcinogen 1x10•^{6}	Nonresidential		LOC(f)	LOC Chosen		
4-Methyl-2-pentanone (MIBK)	—	—	0.033	—	52,000	—	—	—	0.033	SQB	0.033	SQB
Methylene chloride	—	—	0.37	—	9,400	54	97	—	0.37	SQB	0.37	SQB
Styrene	—	—	—	—	38,000	—	260	—	260	NJNR	260	NJNR
1,1,2,2-Tetrachloroethane	—	—	1.4	—	4,100	2.9	3	—	1.4	SQB	1.4	SQB
Tetrachloroethene	—	—	0.41	0.45	2,400	2.7	5	—	0.41	SQB	0.41	SQB
Tetrahydrofuran	—	—	—	—	—	—	—	—	—	—	—	—
Toluene	—	0.49	0.05	2.5	46,000	—	91,000	—	0.05	SQB	0.05	SQB
1,1,1 -Trichloroethane	—	—	0.03	—	39,000	—	4,200	—	0.03	SQB	0.03	SQB
1,1,2-Trichloroethane	—	—	1.2	—	4,100	5.5	6	—	1.2	SQB	1.2	SQB
Trichloroethene	—	—	0.22	1.6	—	14	20	—	0.22	SQB	0.22	SQB
Trichlorofluoromethane	—	—	—	—	3,400	—	340,000	—	3,400	RSL	3,400	RSL
1,1,2-Trichloro-1,2,2-trifluoroethane	—	—	—	—	180,000	—	—	—	180,000	IRBC	180,000	IRBC
1,2,4-Trimethylbenzene	—	1.86	—	—	—	—	—	—	1.86	NYSDEC	1.86	NYSDEC
1,3,5-Trimethylbenzene	—	—	—	—	—	—	—	—	—	—	—	—
Vinyl acetate	—	—	0.00084	—	4,200	•	—	—	0.00084	SQB	0.00084	SQB
Vinyl chloride	—	—	—	—	400	1.7	2	—	1.7	RSL	1.7	RSL
Xylenes	—	0.92	0.16	0.12	2,600	•	170,000	—	0.16	SQB	0.16	SQB
Semivolatiles												
Acenaphthene	0.00671	1.4	1.3	0.016	33,000	•	37,000	—	0.00671	ISQG	0.00671	ISQG
Acenaphthylene (k)	0.00587	—	—	0.044	17,000	•	300,000	—	0.00587	ISQG	0.00587	ISQG
Aniline	—	—	—	—	4,300	300	—	—	300	RSL	300	RSL
Anthracene (l)	0.0469	1.07	0.03162	0.085	170,000	—	30,000	—	0.03162	SQB	0.03162	SQB
Benz(a)anthracene	0.0317	0.12	0.11	0.261	—	2.1	2	—	0.0317	ISQG	0.0317	ISQG
Benzidine	—	—	0.0017	—	1,800	0.0075	0.7	—	0.0017	SQB	0.0017	SQB
Benzo(a)pyrene	0.0319	—	0.14	0.430	—	0.21	0.2	—	0.0319	ISQG	0.0319	ISQG
Benzo(b)fluoranthene (m)	—	—	0.0272	—	—	2.1	2	—	0.0272	SQB	0.0272	SQB
Benzo(g,h,i)perylene (k,l)	—	—	0.29	0.170	17,000	—	30,000	—	0.29	SQB	0.29	SQB
Benzo(k)fluoranthene (m)	—	—	0.0272	0.240	—	21	23	—	0.0272	SQB	0.0272	SQB
Benzoic acid	—	—	—	—	2,500,000	—	—	—	2,500,000	RSL	2,500,000	RSL
Benzyl alcohol	—	—	0.0011	—	310,000	—	—	—	0.0011	SQB	0.0011	SQB
4-Bromophenyl phenyl ether	—	—	1.2	—	—	—	—	—	1.2	SQB	1.2	SQB
di-n-Butytphthalate	—	—	11	—	62,000	—	68,000	—	11	SQB	11	SQB
Butylbenzyl phthalate	—	—	11	—	120,000	910	14,000	—	11	SQB	11	SQB
Carbazole	—	—	—	—	—	—	96	—	96	NJNR	96	NJNR
4-Chloroaniline	—	—	—	—	2,500	32	66	—	32	RSL	32	RSL

Table B-2
Guidance to be Considered for Picatinny Arsenal Sediment (a)
(mg/kg)

Chemical	ISQGs	New York Sediment Criteria	SQBs	ER-Ls	USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (d)	Sediment Background Value (e)	Level of Concern: Site Characterization/ Prioritization		Final LOC (Higher of LOC and Background Value [g])	Final LOC Chosen
	CCME 2002	NYSDEC 1999	ORNL 1997	NJDEP 1998	Non-carcinogen	Carcinogen 1x10•6	Nonresidential		LOC(f)	LOC Chosen		
bis(2-Chloroethoxy)methane	—	—	—	—	1,800	—	—	—	1,800	RSL	1,800	RSL
bis(2-Chloroethyl)ether	—	—	—	—	—	0.9	2	—	0.9	RSL	0.9	RSL
bis(2-Chloroisopropyl)ether	—	—	—	—	41,000	17	67	—	17	RSL	17	RSL
4-Chloro-3-methylphenol	—	—	—	—	—	—	—	—	—	—	—	—
2-Chloronaphthalene	—	—	—	—	82,000	—	—	—	82,000	RSL	82,000	RSL
2-Chlorophenol	—	—	—	—	5,100	—	2,200	—	2,200	NJNR	2,200	NJNR
4-Chlorophenyl phenyl ether	—	—	—	—	—	—	—	—	—	—	—	—
Chrysene (l)	0.0571	—	0.5	0.384	—	210	230	—	0.0571	ISQG	0.0571	ISQG
Dibenz(a,h)anthracene	0.00622	—	—	0.063	—	0.21	0.2	—	0.00622	ISQG	0.00622	ISQG
Dibenzofuran	—	—	0.42	—	—	—	—	—	0.42	SQB	0.42	SQB
Dichlorobenzenes (n)	—	0.12	—	—	42,000	13	13	—	0.12	NYSDEC	0.12	NYSDEC
1,2-Dichlorobenzene (o)	—	0.12	0.33	—	10,000	—	59,000	—	0.12	NYSDEC	0.12	NYSDEC
1,3-Dichlorobenzene (o)	—	0.12	1.7	—	42,000	13	59,000	—	0.12	NYSDEC	0.12	NYSDEC
1,4-Dichlorobenzene	—	0.12	0.34	—	42,000	13	13	—	0.12	NYSDEC	0.12	NYSDEC
3,3'-Dichlorobenzidine	—	—	—	—	—	3.8	4	—	3.8	RSL	3.8	RSL
2,4-Dichlorophenol	—	—	—	—	1,800	—	2,100	—	1,800	RSL	1,800	RSL
Diethylphthalate	—	—	0.6	—	490,000	—	550,000	—	0.6	SQB	0.6	SQB
2,4-Dimethylphenol	—	—	—	—	12,000	—	14,000	—	12,000	RSL	12,000	RSL
Dimethylphthalate	—	—	—	—	—	—	—	—	—	—	—	—
2,4-Dinitrophenol	—	—	—	—	1,200	—	1,400	—	1,200	RSL	1,200	RSL
Diphenylamine	—	—	—	—	15,000	—	—	—	15,000	RSL	15,000	RSL
1,2-Diphenylhydrazine	—	—	—	—	—	2.2	2	—	2	NJNR	2	NJNR
bis(2-Ethylhexyl)phthalate	—	2	890	—	12,000	120	140	—	2	NYSDEC	2	NYSDEC
Fluoranthene (l)	0.111	10.2	0.06423	0.600	22,000	—	24,000	—	0.06423	SQB	0.06423	SQB
Fluorene (l)	0.0212	0.08	0.03464	0.019	22,000	—	24,000	—	0.0212	ISQG	0.0212	ISQG
Hexachlorobenzene	—	55.7	—	0.020	490	1.1	1	—	55.7	NYSDEC	55.7	NYSDEC
Hexachlorobutadiene	—	0.055	—	—	620	22	25	—	0.055	NYSDEC	0.055	NYSDEC
Hexachlorocyclopentadiene	—	0.044	—	—	3,700	—	110	—	0.044	NYSDEC	0.044	NYSDEC
Hexachloroethane	—	—	1	—	620	120	140	—	1	SQB	1	SQB
Indeno(1,2,3-c,d)pyrene (l)	—	—	0.078	0.200	—	2.1	2	—	0.078	SQB	0.078	SQB
Isophorone	—	—	—	—	120,000	1,800	2,000	—	1,800	RSL	1,800	RSL
2-Methylnaphthalene	0.0202	0.34	—	0.070	4,100	—	2,400	—	0.0202	ISQG	0.0202	ISQG
2-Methylphenol	—	—	0.012	—	31,000	—	3,400	—	0.012	SQB	0.012	SQB
4-Methylphenol	—	—	—	—	31,000	—	340	—	340	NJNR	340	NJNR
4,6-dinitro-2-Methylphenol	—	—	—	—	62	—	68	—	62	RSL	62	RSL

Table B-2
Guidance to be Considered for Picatinny Arsenal Sediment (a)
(mg/kg)

Chemical	ISQGs	New York Sediment Criteria	SQBs	ER-Ls	USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (d)	Sediment Background Value (e)	Level of Concern: Site Characterization/ Prioritization		Final LOC (Higher of LOC and Background Value [g])	Final LOC Chosen
	CCME 2002	NYSDEC 1999	ORNL 1997	NJDEP 1998	Non-carcinogen	Carcinogen 1x10•^{6}	Nonresidential		LOC(f)	LOC Chosen		
Naphthalene (l)	0.0346	0.30	0.03275	0.16	670	20	17	—	0.03275	SQB	0.03275	SQB
2-Nitroaniline	—	—	—	—	—	—	23,000	—	23,000	NJNR	23,000	NJNR
3-Nitroaniline	—	—	—	—	180	82	—	—	82	RSL	82	RSL
4-Nitroaniline	—	—	—.	—	1,800	82	—	—	82	RSL	82	RSL
2-Nitrophenol	—	—	—	—	—	—	—	—	—	—	—	—
4-Niirophenol	—	—	—	—	—	—	—	—	—	—	—	—
n-Nitrosodimethylamine	—	—	—	—	4.9	0.034	0.7	—	0.034	RSL	0.034	RSL
n-Nitroso-di-n-propylamine	—	—	—	—	—	0.25	0.3	—	0.25	RSL	0.25	RSL
n-Nilrosodiphenylamine	—	—	—	—	—	350	390	—	350	RSL	350	RSL
di-n-Octylphthalate	—	—	—	—	—	—	27,000	—	27,000	NJNR	27,000	NJNR
Pentachlorophenol	—	0.4	—	—	12,000	9	10	—	0.4	NYSDEC	0.4	NYSDEC
Phenanthrene (k)	0.0419	1.2	1.8	0.240	17,000	—	300,000	—	0.0419	ISQG	0.0419	ISQG
Phenol (p)	—	0.005	0.031	—	180,000	—	210,000	—	0.005	NYSDEC	0.005	NYSDEC
Pyrene	0.0530	9.61	0.57	0.665	17,000	—	18,000	—	0.0530	ISQG	0.0530	ISQG
1,2,4-Trichlorobenzene (q)	—	0.91	9.6	—	400	790	820	—	0.91	NYSDEC	0.91	NYSDEC
2,4,5-Trichlorophenol	—	—	—	—	62,000	—	68,000	—	62,000	RSL	62,000	RSL
2,4,6-Trichlorophenol	—	—	—	—	620	160	74	—	74	NJNR	74	NJNR
Pesticides												
Aldrin	—	—	—	0.002	18	0.1	0.2	—	0.002	ER-L	0.002	ER-L
alpha-BHC (r)	0.00094	—	0.12	0.006	—	0.27	0.5	—	0.00094	ISQG	0.00094	ISQG
beta-BHC (r)	0.00094	—	0.12	0.005	—	0.96	2	—	0.00094	ISQG	0.00094	ISQG
delta-BHC (r,s)	0.00094	—	0.12	0.003	—	2.1	2	—	0.00094	ISQG	0.00094	ISQG
gamma-BHC (Lindane)	0.00094	—	0.0037	0.003	240	2.1	2	—	0.00094	ISQG	0.00094	ISQG
Chlordane	0.0045	0.0003	2.8	0.007	400	6.5	1	—	0.0003	NYSDEC	0.0003	NYSDEC
alpha-Chlordane (t)	0.0045	0.0003	2.8	0.007	400	6.5	1	—	0.0003	NYSDEC	0.0003	NYSDEC
gamma-Chlordane (t)	0.0045	0.0003	2.8	0.007	400	6.5	1	—	0.0003	NYSDEC	0.0003	NYSDEC
4,4'-DDD	0.00354	—	0.11	—	—	7.2	13	—	0.00354	ISQG	0.00354	ISQG
4,4'-DDE	0.00142	—	—	0.0022	—	5.1	9	—	0.00142	ISQG	0.00142	ISQG
4,4'-DDT (u)	0.00119	0.01	0.34	0.0016	430	7	8	—	0.00119	ISQG	0.00119	ISQG
Diazinon	—	0.00007	0.0019	—	550	—	—	—	0.00007	NYSDEC	0.00007	NYSDEC
Dieldrin	0.00285	0.09	0.11	0.002	31	0.11	0.2	—	0.00285	ISQG	0.00285	ISQG
Endosulfan I (v)	—	0.0003	0.0055	—	3,700	—	6,800	—	0.0003	NYSDEC	0.0003	NYSDEC
Endosulfan II (v)	—	0.0003	0.0055	—	3,700	—	6,800	—	0.0003	NYSDEC	0.0003	NYSDEC
Endosulfan sulfate (v)	—	0.0003	0.0055	—	3,700	—	6,800	—	0.0003	NYSDEC	0.0003	NYSDEC
Endrin	0.00267	0.04	0.042	0.003	180	—	340	—	0.00267	ISQG	0.00267	ISQG

Table B-2
Guidance to be Considered for Picatinny Arsenal Sediment (a)
(mg/kg)

Chemical	ISQGs	New York Sediment Criteria	SQBs	ER-Ls	USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (d)	Sediment Background Value (e)	Level of Concern: Site Characterization/ Prioritization		Final LOC (Higher of LOC and Background Value [g])	Final LOC Chosen
	CCME 2002	NYSDEC 1999	ORNL 1997	NJDEP 1998	Non-carcinogen	Carcinogen 1x10•6	Nonresidential		LOC(f)	LOC Chosen		
Endrin aldehyde (w)	0.00267	0.04	0.042	0.003	180	—	340	—	0.00267	ISQG	0.00267	ISQG
Endrin ketone (w)	0.00267	0.04	0.042	0.003	180	—	340	—	0.00267	ISQG	0.00267	ISQG
Heptachlor (x)	0.00060	0.001	0.068	0.005	310	0.38	0.7	—	0.00060	ISQG	0.00060	ISQG
Heptachlor epoxide (y)	0.00060	0.001	0.068	0.005	8	0.19	0.3	—	0.0006	ISQG	0.00060	ISQG
Isodrin	—	—	—	—	—	—	—	—	—	—	—	—
Malathion	—	0.0002	—	—	12,000	—	—	—	0.0002	NYSDEC	0.0002	NYSDEC
Methoxychlor	—	0.006	0.019	—	3,100	—	5,700	—	0.006	NYSDEC	0.006	NYSDEC
Mirex	—	0.007	—	0.007	120	0.096	—	—	0.007	NYSDEC	0.007	NYSDEC
Toxaphene	0.0001	0.0001	—	—	—	1.6	3	—	0.0001	ISQG, NYSDEC	0.0001	ISQG, NYSDEC
PCBs												
Aroclor 1016 (z,aa)	0.0341	0.193	0.03162	0.007	37	21	1	—	0.03162	SQB	0.03162	SQB
Aroclor1221 (z,aa,ab)	0.0341	0.193	0.12	0.070	—	0.62	1	—	0.0341	ISQG	0.0341	ISQG
Aroclor 1232 (z,aa,ab)	0.0341	0.193	0.6	0.070	—	0.62	1	—	0.0341	ISQG	0.0341	ISQG
Aroclor 1242 (z,aa,ab)	0.0341	0.193	0.17	0.070	—	0.74	1	—	0.0341	ISQG	0.0341	ISQG
Aroclor 1248 (z,aa)	0.0341	0.193	1	0.030	—	0.74	1	—	0.0341	ISQG	0.0341	ISQG
Arocior 1254 (aa)	0.060	0.193	0.81	0.060	11	0.74	1	—	0.060	ISQG	0.060	ISQG
Aroclor 1260 (z,aa)	0.0341	0.193	4,500	0.005	—	0.74	1	—	0.0341	ISQG	0.0341	ISQG
Explosives												
1,3-Dinitrobenzene	—	—	—	—	62	—	—	—	62	IRBC	62	IRBC
2,4-Dinitrotoluene (ac)	—	—	—	—	1,200	—	4.2	—	4.2 (ac)	NJNR	4.2	NJNR
2,6-Dinitrotoluene (ac)	—	—	—	—	620	—	4.2	—	4.2 (ac)	NJNR	4.2	NJNR
2-amino-4,6-Dinitrotoluene (ad)	—	—	—	—	2,000	—	—	—	2,000	RSL	2,000	RSL
4-amino-2,6-Dinitrotoluene (ad)	—	—	—	—	1,900	—	—	—	1,900	RSL	1,900	RSL
HMX (ac)	—	—	—	—	49,000	—	10,000	—	10,000 (ac)	NJNR	10,000	NJNR
Nitrobenzene	—	—	—	—	280	—	340	—	280	RSL	280	RSL
Nitrocellulose	—	—	—	—	—	—	—	—	—	—	—	—
Nitroglycerin	—	—	—	—	62	100	—	—	62	RSL	62	RSL
Nitroguanidine	—	—	—	—	62,000	—	—	—	62,000	RSL	62,000	RSL
2-Nitrotoluene	—	—	—	—	920	13	—	—	13	RSL	13	RSL
3-Nitrotoluene	—	—	—	—	12,000	—	—	—	12,000	RSL	12,000	RSL
4-Nitrotoluene	—	—	—	—	2,500	110	—	—	110	RSL	110	RSL
PETN	—	—	—	—	—	—	—	—	—	—	—	—
Picric acid	—	—	—	—	—	—	—	—	—	—	—	—
RDX (ac)	—	—	—	—	2,800	24	26	—	26 (ac)	NJNR	26 (ac)	NJNR
Tetrazene	—	—	—	—	—	—	—	—	—	—	—	—

Table B-2
Guidance to be Considered for Picatinny Arsenal Sediment (a)
(mg/kg)

Chemical	ISQGs	New York Sediment Criteria	SQBs	ER-Ls	USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (d)	Sediment Background Value (e)	Level of Concern: Site Characterization/ Prioritization		Final LOC (Higher of LOC and Background Value [g])	Final LOC Chosen
	CCME 2002	NYSDEC 1999	ORNL 1997	NJDEP 1998	Non-carcinogen	Carcinogen 1x10•^{6}	Nonresidential		LOC(f)	LOC Chosen		
Tetryl (ac)	—	—	—	—	2,500	—	10,000	—	10,000 (ac)	NJNR	10,000 (ac)	NJNR
1,3,5-Trinitrobenzene	—	—	—	—	27,000	—	—	—	27,000	RSL	27,000	RSL
2,4,6-Trinitrotoluene (ac)	—	—	—	—	420	79	95	—	95 (ac)	NJNR	95 (ac)	NJNR
Herbicides												
2,4'-D	—	—	—	—	—	—	—	—	—	—	—	—
Dalapon	—	—.	—	—	18,000	—	—	—	18,000	RSL	18,000	RSL
2,4'-DB	—	—	—	—	—	—	—	—	—	—	—	—
Dicamba	—	—	—	—	18,000	—	—	—	18,000	RSL	18,000	RSL
Dichloroprop	—	—	—	—	—	—	—	—	—	—	—	—
Dinoseb	—	—	—	—	620	—	—	—	620	RSL	620	RSL
2,4,5-T	—	—	—	—	—	—	—	—	—	—	—	—
2,4,5-TP (Silvex)	—	—	—	—	—	—	—	—	—	—	—	—
Dioxins/ furans (ae)												
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dio	0.00085	—	—	—	—	—	—	—	0.00085	ISQG	0.00085	ISQG
Total heptachlorodibenzo-p-dioxins	—	—	—	—	—	—	—	—	—	—	—	—
1,2,3,4,6,7,8-Heptachlorodibenzofuran	0.000085	—	—	—	—	—	—	—	0.000085	ISQG	0.000085	ISQG
1 ,2,3,4,7,8,9-Heptachlorodibenzofuran	0.000085	—	—	—	—	—	—	—	0.000085	ISQG	0.000085	ISQG
Total heptachiorodibenzofurans	—	—	—	—	—	—	—	—	—	—	—	—
1,2,3,4,7,8-Hexachlorodibenzo-p-	0.00000017	—	—	—	—	—	—	—	0.0000017	ISQG	0.0000017	ISQG
1,2,3,6,7,8-Hexachlorodibenzo-p-	0.0000085	—	—	—	—	—	—	—	0.000085	ISQG	0.000085	ISQG
1,2,3,7,8,9-Hexachtorodibenzo-p-	0.0000085	—	—	—	—	—	—	—	0.000085	ISQG	0.000085	ISQG
Total hexachlorodibenzo-p-dioxins	—	—	—	—	—	0.00039	—	—	0.00039	RSL	0.00039	RSL
1,2,3,4,7,8-Hexachlorodibenzofuran	0.0000085	—	—	—	—	—	—	—	0.000085	ISQG	0.0000085	ISQG
1,2,3,6,7,8-Hexachlorodibenzofuran	0.0000085	—	—	—	—	—	—	—	0.000085	ISQG	0.0000085	ISQG
1,2,3,7,8,9-Hexachlorodibenzofuran	0.0000085	—	—	—	—	—	—	—	0.000085	ISQG	0.0000085	ISQG
2,3,4,6,7,8-Hexachlorodibenzofuran	0.0000085	—	—	—	—	—	—	—	0.000085	ISQG	0.0000085	ISQG
Total hexachlorodibenzofurans	—	—	—	—	—	—	—	—	—	—	—	—
Octachlorodibenzodioxin	0.0085	—	—	—	—	0.061	—	—	0.0085	ISQG	0.0085	ISQG
Octachlorodibenzofuran	0.0085	—	—	—	—	0.044	—	—	0.0085	ISQG	0.0085	ISQG
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	0.00000085	—	—	—	—	—	—	—	0.00000085	ISQG	0.00000085	ISQG
Total pentachiorodibenzo-p-dioxins	—	—	—	—	—	—	—	—	—,	—	—	—
1,2,3,7,8-Pentachlorodlbenzofuran	0.000017	—	—	—	—	0.00044	—	—	0.000017	ISQG	0.000017	ISQG
2,3,4,7,8-Pentachlorodibenzofuran	0.0000017	—	—	—	—	0.000044	—	—	0.0000017	ISQG	0.0000017	ISQG
Total pentachlorodibenzofurans	—	—	—	—	—	—	—	—	—	—	—	—
2,3,7,8-Tetrachiorodibenzo-p-dioxin	0.00000085	—	—	—	0.00085	0.000018	—	—	0.00000085	ISQG	0.00000085	ISQG

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(mg/kg)

Chemical	ISQGs	New York Sediment Criteria	SQBs	ER-Ls	USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (d)	Sediment Background Value (e)	Level of Concern: Site Characterization/ Prioritization		Final LOC (Higher of LOC and Background Value [g])	Final LOC Chosen
	CCME 2002	NYSDEC 1999	ORNL 1997	NJDEP 1998	Non-carcinogen	Carcinogen 1x10•6	Nonresidential		LOC(f)	LOC Chosen		
Total tetrachlorodibenzo-p-dioxins	—	—	—	—	—	—	—	—	—	—	—	—
2,3,7,8-Tetrachlorodibenzofuran	0.000017	—	—	—	—	0.00013	—	—	0.000017	ISQG	0.000017	ISQG
Total tetrachlorodibenzofurans	—	—	—	—	—	—	—	—	—	—	—	—
Glycols												
Ethylene glycol	—	—	—	—	1,200,000	—	—	—	1,200,000	RSL	1,200,000	RSL
Hydrazines												
Hydrazine	—	—	—	—	1,200,000	0.95	—	—	0.95	RSL	0.95	RSL
Monomethyl hydrazine	—	—	—	—	—	—	—	—	—	—	—	—
Unsymmetrical dimethyl hydrazine	—	—	—	—	—	—	—	—	—	—	—	—
Inorganics												
Aluminum	—	—	—	—	990,000	—	—	12,800	990,000	RSL	990,000	RSL
Antimony	—	—	—	—	410	—	450	0.354	410	RSL	410	RSL
Arsenic	5.9	—	12.1	8.2	260	1.6	19	16.0	5.9	ISQG	16.0	BG Value
Barium	—	—	—	—	190,000	—	59,000	161	59,000	NJNR	59,000	NJNR
Beryllium	—	—	—	—	2,000	6,900	140	1.55	140	NJNR	140	NJNR
Boron	—	—	—	—	200,000	—	—	ND	200,000	RSL	200,000	RSL
Cadmium (af)	0.6	—	0.592	1.2	810	9,300	78	1.70	0.592	SQB	1.70	BG Value
Calcium (ag)	—	—	—	—	—	—	—	5,990	1,000,000	ADI	1,000,000	ADI
Chromium (ah)	37.3	—	56	81	3,100	200	—	23.8	37.3	ISQG	37.3	ISQG
Cobalt	—	—	—	—	300	1900	590	10.2	300	RSL	300	RSL
Copper	35.7	—	28	34	41,000	—	45,000	27.2	28	SQB	28	SQB
Cyanide	—	—	—	—	20,000	—	23,000	—	20,000	RSL	20,000	RSL
Iron	—	—	—	—	720,000	—	—	67,600	720,000	RSL	720,000	RSL
Lead (ai)	35	—	34.2	47	800	—	800	38.8	34.2	SQB	38.8	BG Value
Magnesium (ag)	—	—	—	—	—	—	—	4,260	1,000,000	ADI	1,000,000	ADI
Manganese (aj)	—	—	1,673	—	23,000	—	5,900	832	1,673	SQB	1,673	SQB
Mercury (ak)	0.17	—	—	0.15	28	—	65	0.249	0.17	ISQG	0.249	BG Value
Nickel	—	—	39.6	21	20,000	—	23,000	17.2	39.6	SQB	39.6	SQB
Potassium (ag)	—	—	—	—	—	—	—	821	1,000,000	ADI	1,000,000	ADI
Selenium	—	—	—	—	5,100	—	5,700	0.955	5,100	RSL	5,100	RSL
Silver	—	—	—	1.0	5,100	—	5,700	0.801	1.0	ER-L	1.0	ER-L
Sodium (ag)	—	—	—	—	—	—	—	638	1,000,000	ADI	1,000,000	ADI
Strontium	—	—	—	—	610,000	—	—	16.0	16	NJNR	16	NJNR
Thallium	—	—	—	—	66	—	79	0.844	66	RSL	66	RSL
Titanium	—	—	—	—	—	—	—	573	—	—	—	—

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(mg/kg)

Chemical	ISQGs	New York Sediment Criteria	SQBs	ER-Ls	USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (d)	Sediment Background Value (e)	Level of Concern: Site Characterization/ Prioritization		Final LOC (Higher of LOC and Background Value [g])	Final LOC Chosen
	CCME 2002	NYSDEC 1999	ORNL 1997	NJDEP 1998	Non-carcinogen	Carcinogen 1x10•^{6}	Nonresidential		LOC(f)	LOC Chosen		
Vanadium	—	—	—	—	7,200	—	1,100	72.4	1,100	RSL	1,100	RSL
Zinc	123	—	159	150	310,000	—	110,000	171	123	ISQG	171	BG Value
Zirconium	—	—	—	—	—	—	—	10.3	—	—	—	—
Anions												
Ammonia	—	—	—	—	—	—	—	26.6	—	—	—	—
Chloride	—	—	—	—	—	—	—	151	—	—	—	—
Fluoride (al)	—	—	—	—	61,000	—	—	8.55	61,000	RSL	61,000	RSL
Nitrate	—	—	—	—	1,600,000	—	—	0.509	1,600,000	RSL	1,600,000	RSL
Nitrite (am)	—	—	—	—	100,000	—	—	0.824	100,000	RSL	100,000	RSL
Phosphate	—	—	—	—	—	—	—	—	—	—-	—-	—-
Total phosphates	—	—	—	—	—	—	—	1,200	—	—-	—-	—-
Sulfate	—	—	—	—	—	—	—	467	—	—-	—-	—-
Sulfide	—	—	—	—	—	—	—	430	—	—-	—-	—-
White phosphorus	—	—	—	—	20	—	—	—	20	RSL	20	RSL
TOC												
Total organic carbon (an)	—	—	—	—	—	—	—	54,000	—	—	—	—
Fuel Related Contaminants												
Diesel fuel	—	—	—	—	—	—	—	—	—	—	—	—
Total Volatile Petroleum Hydrocarbons	—	—	—	—	—	—	—	—	—	—	—	—
Total Extractable Petroleum	—	—	—	—	—	—	—	—	—	—	—	—
Total Recoverable Petroleum	—	—	—	—	—	—	—	—	—	—	—	—
TPH	—	—	—	—	—	—	—	—	—	—	—	—
TPH, aviation gas fraction	—	—	—	—	—	—	—	—	—	—	—	—
TPH, diesel pattern	—	—	—	—	—	—	—	—	—	—	—	—
TPH, gas fraction	—	—	—	—	—	—	—	—	—	—	—	—
TPH, motor oil	—	—	—	—	—	—	—	—	—	—	—	—
Radiological Parameters (ao)												
Americium-241	—	—	—	—	—	—	—	ND	—	—	—	—
Cesium-137	—	—	—	—	—	—	—	0.560	—	—	—	—
Cobalt-60	—	—	—	—	—	—	—	ND	—	—	—	—
Gross alpha	—	—	—	—	—	—	—	20.0	—	—	—	—
Gross beta	—	—	—	—	—	—	—	30.7	—	—	—	—
Krypton-85	—	—	—	—	—	—	—	—	—	—	—	—
Protactinium-234	—	—	—	—	—	—	—	—	—	—	—	—
Radium-226	—	—	—	—	—	—	5	1.13	5	NJNR	5	NJNR

Table B-2
Guidance to be Considered for Picatinny Arsenal Sediment (a)
(mg/kg)

Chemical	ISQGs	New York Sediment Criteria	SQBs	ER-Ls	USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (d)	Sediment Background Value (e)	Level of Concern: Site Characterization/ Prioritization		Final LOC (Higher of LOC and Background Value [g])	Final LOC Chosen
	CCME 2002	NYSDEC 1999	ORNL 1997	NJDEP 1998	Non-carcinogen	Carcinogen 1x10•^{6}	Nonresidential		LOC(f)	LOC Chosen		
Radium-228	—	—	—	—	—	—	—	1.33	—	—	—	—
Thorium-234	—	—	—	—	—	—	—	—	—	—	—	—
Uranium (ap)	—	—	—	—	3,100	—	—	1.51	3,100	RSL	3,100	RSL
Uranium-234	—	—	—	—	—	—	69	1.25	69	RSL	69	RSL
Uranium-235	—	—	—	—	—	—	37	0.0760	37	RSL	37	RSL
Uranium-238	—	—	—	—	—	—	64	0.890	64	RSL	64	RSL
Uranium 235/238 Ratio	—	—	—	—	—	—	—	0.00700	—	—	—	—
Asbestos												
Actinolite	—	—	—	—	—	—	—	—	—	—	—	—
Amosite	—	—	—	—	—	—	—	—	—	—	—	—
Anthopyllite	—	—	—	—	—	—	—	—	—	—	—	—
Chrysotile	—	—	—	—	—	—	—	—	—	—	—	—
Crocidolite	—	—	—	—	—	—	—	—	—	—	—	—
Tremolite	—	—	—	—	—	—	—	—	—	—	—	—

ADI = Allowable Daily Intake
ARAR = Applicable or Relevant and Appropriate Requirement
ER-L = Effect Range-Low
ISQG = Interim Sediment Quality Guideline
LOC = Level of Concern
ND = Not detected.
NYSDEC = New York State Department of Environmental Conservation Sediment Criteria
RSL = USEPA Regional Screening Level
SQB = Sediment Quality Benchmark
TBC = To Be Considered
— = No value available.
(a) Note that chemicals without guidance values are presented in this table.
(b) USEPA (2008) Industrial exposures are based on 250 days/year. A hazard index of 1 was used for noncarcinogenic RSLs.
(c) USEPA (2008) Residential exposures are based on 350 days/year. Residential values are presented for informational purposes only. A hazard index of 1 was used for noncarcinogenic RBCs.
(d) NJDEP Soil Remediation Standards (2008).
(e) Sediment background values are from the PTA Background Study Report and are the lower of the maximum concentration or the mean plus three standard deviations for a given chemical.
(f) The selection order for the sediment LOC is as follows: 1) the lower of the ISQGs, NY Sediment Criteria, and SQBs (the lower of the SQB and threshold effect concentration [TEC] was selected from the ORNL, 1997 publication); 2) in their absence ER-Ls from NJDEP, 1998 (Tables 2 and 3) were used; 3) in the absence of ER-Ls, the lower of RSL (industrial soil) and New Jersey Non-residential (NJNR) soil remediation standards were used.
(g) The final LOC value is the higher of the LOC and sediment background value. If no LOC was available, no final LOC is presented.
(h) The NJNR value for cis-1,2-dichloroethene was used.
(i) SQB value for 1,2-Dichloroethene (total) was used.
(j) The values for 1,3-Dichloropropene were used.
(k) The RSL and NJNR values for pyrene were used for noncarcinogenic polycyclic aromatic hydrocarbons (PAHs) lacking criteria.
(l) TEC value was used from ORNL.
(m) SQB value for benzo(b,k)fluoranthene was used.
(n) The RSL and NJNR values for 1,4-dichlorobenzene were used.

Table B-2
Guidance to be Considered for Picatinny Arsenal Sediment (a)
(mg/kg)

Chemical	ISQGs	New York Sediment Criteria	SQBs	ER-Ls	USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (d)	Sediment Background Value (e)	Level of Concern			
									Site Characterization/ Prioritization		Final LOC (Higher of LOC and Background Value [g])	Final LOC Chosen
	CCME 2002	NYSDEC 1999	ORNL 1997	NJDEP 1998	Non-carcinogen	Carcinogen 1x10•^{6}	Nonresidential		LOC(f)	LOC Chosen		

(o) NYSDEC value for dichlorobenzenes was used.
(p) NYSDEC value for total unchlorinated phenols.
(q) NYSDEC value for trichlorobenzene was used.
(r) The ISQG value for gamma-BHC was used. The SQB for BHC (other) was used.
(s) The ER-L, RSL, and NJNR values for gamma-BHC were used.
(t) The values for chlordane were used.
(u) The ER-L for DDT (total) was used.
(v) The values for endosulfan were used.
(w) The values for endrin were used.
(x) The ISQG and ER-L values for heptachlor epoxide were used.
(y) The SQB for heptachlor was used.
(z) The ISQG for total PCBs was used.
(aa) The NYSDEC and NJNR values for total PCBs were used.
(ab) The NJDEP value for total PCBs was used.
(ac) NJNR values were developed for PTA by NJDEP.
(ad) The RSL value for aminodinitrotoluenes was used.
(ae) USEPA RSL values for PCDD/PCDF congeners were derived using toxicity criterion for 2,3,7,8-TCDD modified by toxic equivalency factors (TEFs) for humans (USEPA, 2000). ISQG values were modified using TEFs for fish (Van den Berg et al., 1998).
(af) The food RSL value for cadmium was used.
(ag) The value presented in the RSL column is an allowable daily intake (ADI) level for essential human nutrients.
(ah) The RSLvalue for chromium VI was used.
(ai) Lead does not have an RSL, however the 400 mg/kg residential soil screening level for children (USEPA 1994) is presented in the RSL column.
(aj) The non-food RSL value for manganese was used.
(ak) The RSL value for methyl mercury was used.
(al) The RSL value for fluorine was used.
(am) The background value for nitrate/nitrite was used.
(an) The background value is the maximum detected concentration.
(ao) The values for radiological parameters are in units of pCi/g.
(ap) Uranium units are mg/kg. The RSL for the most conservative soluble salts was used.

Table B-3
Guidance to be Considered for Picatinny Arsenal Surface Water (a)
(mg/kg)

CRITERIA CHANGED

Chemical	USEPA Water Quality Criteria (b)				N.J. Surface Water Quality Criteria (FW-2) (c)	USEPA Residential Tap Water RSLs (d)			Surface Water Background Value (e)	Level of Concern: Site Characterization / Prioritization		Level of Concern: Final LOC (Higher of LOC and Background value when is available [g])	
	Acute	Chronic	Human Health Risk for Water & Organisms	Human Health Risk for Organisms Only	SWQC	Non-carcinogen	Carcinogen $1X10^{-6}$	C/N		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen
Volatiles													
Acetone	—	—	—	—	—	22,000	—	N	—	22,000	TWRSL	—	—
Acetonitrile	—	—	—	—	—	130	—	N	—	130	TWRSL	—	—
Acrolein	—	—	190	290	6.1 [h]	0.042	—	N	—	6.1	SWQC	—	—
Acrylonitrile	—	—	0.051	0.25	0.051 [hc]	3.7	0.045	C	—	0.051	Water & Organisms, SWQC	—	—
Benzene	—	—	2.2	51	0.15 [hc]	44	0.41	C	—	0.15	SWQC	—	—
Bromodichloromethane	—	—	0.55	17	0.55 [hc]	730	1.10	C	—	0.55	Water Organisms, SWQC	—	—
Bromoform	—	—	4.3	140	4.3 [hc]	730	8.50	C	—	4.3	Water & Organisms, SWQC	—	—
Bromomethane	—	—	47	1,500	47 [h]	8.70	—	N	—	47	Water & Organisms, SWQC	—	—
2-Butanone	—	—	—	—	—	7,100	—	N	—	7,100	TWRSL	—	—
tert-Butylalcohol	—	—	—	—	—	—	—	-	—	—	—	—	—
Carbon disulfide	—	—	—	—	—	1,000	—	N	—	1,000	TWRSL	—	—
Carbon tetrachloride	—	—	0.23	1.6	0.33 [hc]	24	0.2	C	—	0.23	Water & Organisms	—	—
Chlorobenzene	—	—	130	1,600	210 [h]	91	—	N	—	130	Water & Organisms	—	—
Chloroethane	—	—	—	—	—	21,000	—	N	—	21,000	TWRSL	—	—
2-Chloroethyl vinyl ether	—	—	—	—	—	—	—	-	—	—	—	—	—
Chloroform	—	—	5.7	470	68 [h]	130	0.19	C	—	5.7	Water & Organisms	—	—
Chloromethane	—	—	—	—	—	190	1.8	C	—	1.8	TWRSL	—	—
Dibromochloromethane	—	—	0.40	13	0.40 [hc]	730	0.8	C	—	0.40	Water & Organisms, SWQC	—	—
Dichlorodifluoromethane	—	—	—	—	—	390	—	N	—	390	TWRSL	—	—
1,1-Dichloroethane (h)	—	—	—	—	0.29 [hc]	7,300	2.4	C	—	0.29	SWQC	—	—
1,2-Dichloroethane	—	—	0.38	37	0.29 [hc]	640	0.15	C	—	0.29	SWQC	—	—
1,1-Dichloroethene	—	—	330	7,100	4.7 [h]	340	—	N	—	4.7	SWQC	—	—
1,2-Dichloroethene (total) (i)	—	—	140	10,000	590 [h]	330	—	N	—	140	Water & Organisms	—	—
cis-1,2-Dichloroethene (i)	—	—	140	10,000	590 [h]	370	—	N	—	140	Water & Organisms	—	—
trans-1,2-Dichloroethene	—	—	140	10,000	590 [h]	110	—	N	—	140	Water & Organisms	—	—
1,2-Dichloropropane	—	—	0.50	15	0.5 [hc]	8.3	0.39	C	—	0.50	Water & Organisms, SWQC	—	—
cis-1,3-Dichloropropene (j)	—	—	0.34	21	0.34 [hc]	40	0.43	N	—	0.34	Water & Organisms, SWQC	—	—
trans-1,3-Dichloropropene (j)	—	—	0.34	21	0.34 [hc]	40	0.43	N	—	0.34	Water & Organisms, SWQC	—	—
Ethanol	—	—	—	—	—	—	—	-	—	—	—	—	—
Ethyl benzene	—	—	530	2,100	530 [h]	1,300	1.5	C	—	530	Water & Organisms, SWQC	—	—
Ethylene oxide	—	—	—	—	—	—	0.044	C	—	0.044	TWRSL	—	—
2-Hexanone	—	—	—	—	—	—	—	-	—	—	—	—	—
Isopropanol	—	—	—	—	—	—	—	-	—	—	—	—	—
4-Methyl-2-pentanone (MIBK)	—	—	—	—	—	2,000	—	N	—	2,000	TWRSL	—	—
Methylene chloride	—	—	4.6	590	2.5 [hc]	1,100	4.8	C	—	2.5	SWQC	—	—
Styrene	—	—	—	—	—	1,600	—	N	—	1,600	TWRSL	—	—
1,1,2,2-Tetrachloroethane	—	—	0.17	4.0	4.7 [h]	150	0.067	C	—	0.17	Water & Organisms	—	—
Tetrachloroethene	—	—	0.69	3.3	0.34 [hc]	220	0.11	C	—	0.34	SWQC	—	—
Toluene	—	—	1,300	15,000	1,300 [h]	2,300	—	N	—	1,300	Water & Organisms, SWQC	—	—
1,1,1-Trichloroethane	—	—	—	—	120 [h]	9,100	—	N	—	120	SWQC	—	—
1,1,2-Trichloroethane	—	—	0.59	16	13 [h]	150	0.24	C	—	0.59	Water & Organisms	—	—

Table B-3
Guidance to be Considered for Picatinny Arsenal Surface Water (a)
(mg/kg)

Chemical	USEPA Water Quality Criteria (b)				N.J. Surface Water Quality Criteria (FW-2) (c)	USEPA Residential Tap Water RSLs (d)			Surface Water Background Value (e)	Level of Concern			
										Site Characterization / Prioritization		Final LOC (Higher of LOC and Background value when is available [g])	
	Acute	Chronic	Human Health Risk for Water & Organisms	Human Health Risk for Organisms Only	SWQC	Non-carcinogen	Carcinogen $1X10^{-6}$	C/N		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen
Trichloroethene	—	—	2.5	30	1.0 [hc]	—	1.7	C	—	1.0	SWQC	—	—
Trichlorofluoromethane	—	—	—	—	—	1,300	—	N	—	1,300	TWRSL	—	—
1,1,2-Trichloro-1,2,2-trifluoroethane	—	—	—	—	—	59,000	—	N	—	59,000	TWRSL	—	—
Vinyl acetate	—	—	—	—	—	410	—	N	—	410	TWRSL	—	—
Vinyl chloride	—	—	0.025	2.4	0.082 [hc]	72	0.016	C	—	0.025	Water & Organisms	—	—
Xylenes	—	—	—	—	—	200	—	N	—	200	TWRSL	—	—
Semivolatiles													
Acenaphthene	—	—	670	990	670 [h]	2,200		N	—	670	Water & Organisms, SWQC	—	—
Acenaphthylene (k)	—	—	830	4,000	830 [h]	1,100	—	N	—	830	Water & Organisms, SWQC	—	—
Aniline	—	—	—	—	—	260	12	C	—	12	TWRSL	—	—
Anthracene	—	—	8,300	40,000	8300 [h]	11,000	—	N	—	8,300	Water & Organisms, SWQC	—	—
Benz(a)anthracene	—	—	0.0038	0.018	0.038 [hc]	—	0.029	C	—	0.0038	Water & Organisms, SWQC	—	—
Benzidine	—	—	0.000086	0.00020	0.000086 [hc]	110	0.000094	C	—	0.000086	Water & Organisms, SWQC	—	—
Benzo(a)pyrene	—	—	0.0038	0.018	0.0038 [hc]	—	0.0029	C	—	0.0038	Water & Organisms, SWQC	—	—
Benzo(b)fluoranthene	—	—	0.0038	0.018	0.038 [hc]	—	0.029	C	—	0.0038	Water & Organisms	—	—
Benzo(g,h,i)perylene (k)	—	—	830	4,000	830 [h]	1,100	—	N	—	830	Water & Organisms, SWQC	—	—
Benzo(k)fluoranthene	—	—	0.0038	0.018	0.38 [hc]	—	0.29	C	—	0.0038	Water & Organisms	—	—
Benzoic Acid	—	—	—	—	—	150,000	—	N	—	150,000	TWRSL	—	—
Benzyl alcohol	—	—	—	—	—	18,000	—	N	—	18,000	TWRSL	—	—
4-Bromophenyl phenyl ether	—	—	—	—	—	—	—	-	—	—	—	—	—
di-n-Butylphthalate	—	—	2,000	4,500	2,000 [h]	3,700	—	N	—	2,000	Water & Organisms, SWQC	—	—
Butylbenzyl phthalate	—	—	1,500	1,900	150 [h]	7,300	35	C	—	150	SWQC	—	—
Carbazole	—	—	—	—	—	—	—	-	—	—	—	—	—
4-Chloroaniline	—	—	—	—	—	150	1.2	C	—	150	TWRSL	—	—
bis(2-Chloroethoxy)methane	—	—	—	—	—	110	—	N	—	110	TWRSL	—	—
bis(2-Chloroethyl)ether	—	—	0.03	0.53	0.03 [hc]	—	0.012	C	—	0.030	Water & Organisms, SWQC	—	—
bis(2-Chloroisopropyl)ether	—	—	1,400	65,000	1400 [h]	1,500	0.32	C	—	1,400	Water & Organisms, SWQC	—	—
4-Chloro-3-methylphenol	—	—	—	—	—	—	—	-	—	—	—	—	—
2-Chloronaphthalene	—	—	1,000	1,600	1000 [h]	2,900	—	N	—	1,000	Water & Organisms, SWQC	—	—
2-Chlorophenol	—	—	81	150	81 [h]	180	—	N	—	81	Water & Organisms, SWQC	—	—
4-Chlorophenyl phenyl ether	—	—	—	—	—	—	—	-	—	—	—	—	—
Chrysene	—	—	0.0038	0.018	3.8 [hc]	—	2.9	C	—	0.0038	Water & Organisms	—	—
Dibenz(a,h)anthracene	—	—	0.0038	0.018	0.0038 [hc]	—	0.0029	C	—	0.0038	Water & Organisms, SWQC	—	—
Dibenzofuran	—	—	—	—	—	—	—	-	—	—	—	—	—
Dichlorobenzenes (l)	—	—	63	190	550 [h]	1,700	0.43	C	—	63	Water & Organisms	—	—
1,2-Dichlorobenzene	—	—	420	1,300	2000 [h]	370	—	N	—	420	Water & Organisms	—	—
1,3-Dichlorobenzene (l)	—	—	320	960	2200 [h]	1,700	0.43	C	—	320	Water & Organisms	—	—
1,4-Dichlorobenzene	—	—	63	190	550 [h]	1,700	0.43	C	—	63	Water & Organisms	—	—
3,3'-Dichlorobenzidine	—	—	0.021	0.028	0.021 [hc]	—	0.15	C	—	0.021	Water & Organisms, SWQC	—	—
2,4-Dichlorophenol	—	—	77	290	77 [h]	110	—	N	—	77	Water & Organisms, SWQC	—	—
Diethylphthalate	—	—	17,000	44,000	17,000 [h]	29,000	—	N	—	17,000	Water & Organisms, SWQC	—	—
2,4-Dimethylphenol	—	—	380	850	380 [h]	730	—	N	—	380	Water & Organisms, SWQC	—	—
Dimethylphthalate	—	—	270,000	1,100,000	—	—	—	N	—	270,000	Water & Organisms	—	—

Table B-3
Guidance to be Considered for Picatinny Arsenal Surface Water (a)
(mg/kg)

Chemical	USEPA Water Quality Criteria (b)				N.J. Surface Water Quality Criteria (FW-2) (c)	USEPA Residential Tap Water RSLs (d)			Surface Water Background Value (e)	Level of Concern			
										Site Characterization / Prioritization		Final LOC (Higher of LOC and Background value when is available [g])	
	Acute	Chronic	Human Health Risk for Water & Organisms	Human Health Risk for Organisms Only	SWQC	Non-carcinogen	Carcinogen $1X10^{-6}$	C/N		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen
2,4-Dinitrophenol	—	—	69	5,300	69 [h]	73	—	N	—	69	Water & Organisms, SWQC	—	—
Diphenylamine	—	—	—	—	—	910	—	N	—	910	TWRSL	—	—
1,2-Diphenylhydrazine	—	—	0.036	0.2	0.036 [hc]	—	0.084	C	—	0.036	Water & Organisms, SWQC	—	—
bis(2-Ethylhexyl)phthalate	—	—	1.2	2.2	1.2 [hc]	730	4.8	C	—	1.2	Water & Organisms, SWQC	—	—
Fluoranthene	—	—	130	140	130 [h]	1,500	—	N	—	130	Water & Organisms, SWQC	—	—
Fluorene	—	—	1,100	5,300	1,100 [h]	1,500	—	N	—	1,100	Water & Organisms, SWQC	—	—
Hexachlorobenzene	—	—	0.00028	0.00029	0.00028 [hc]	29	0.042	C	—	0.00028	Water & Organisms, SWQC	—	—
Hexachlorobutadiene	—	—	0.44	18	0.44 [hc]	37	0.86	C	—	0.44	Water & Organisms, SWQC	—	—
Hexachlorocyclopentadiene	—	—	40	1,100	40 [h]	220	—	N	—	40	Water & Organisms, SWQC	—	—
Hexachloroethane	—	—	1.4	3.3	1.4 [hc]	37	4.8	C	—	1.4	Water & Organisms, SWQC	—	—
Indeno(1,2,3-c,d)pyrene	—	—	0.0038	0.018	0.038 [hc]	—	0.029	C	—	0.0038	Water & Organisms	—	—
Isophorone	—	—	35	960	35 [hc]	7,300	71	C	—	35	Water & Organisms, SWQC	—	—
2-Methylnaphthalene	—	—	—	—	—	150	—	N	—	150	TWRSL	—	—
2-Methylphenol	—	—	—	—	—	—	—	-	—	—	—	—	—
4-Methylphenol	—	—	—	—	—	—	—	-	—	—	—	—	—
4,6-dinitro-2-Methylphenol	—	—	13	280	13 [h]	3.7	—	N	—	13	Water & Organisms, SWQC	—	—
Naphthalene	—	—	—	—	—	6.2	0.14	N	—	6.2	TWRSL	—	—
2-Nitroaniline	—	—	—	—	—	—	—	-	—	—	—	—	—
3-Nitroaniline	—	—	—	—	—	11	3.2	C	—	3.2	TWRSL	—	—
4-Nitroaniline	—	—	—	—	—	110	3.2	C	—	3.2	TWRSL	—	—
2-Nitrophenol	—	—	—	—	—	—	—	-	—	—	—	—	—
4-Nitrophenol	—	—	—	—	—	—	—	-	—	—	—	—	—
n-Nitrosodimethylamine	—	—	0.00069	3.0	0.00069 [hc]	0.29	0.00042	C	—	0.00069	Water & Organisms, SWQC	—	—
n-Nitroso-di-n-propylamine	—	—	0.005	0.51	0.005 [hc]	—	0.0096	C	—	0.0050	Water & Organisms, SWQC	—	—
n-Nitrosodiphenylamine	—	—	3.3	6.0	3.3 [hc]	—	14	C	—	3.3	Water & Organisms, SWQC	—	—
di-n-Octylphthalate	—	—	—	—	—	—	—	-	—	—	—	—	—
Pentachlorophenol (m)	19	15	0.27	3.0	0.27 [hc]	1,100	0.56	C	—	0.27	Water & Organisms, SWQC	—	—
Phenanthrene (k)	—	—	830	4,000	830 [h]	1,100	—	N	—	830	Water & Organisms, SWQC	—	—
Phenol	—	—	21,000	1,700,000	10000 [h]	11,000	—	N	—	10,000	SWQC	—	—
Pyrene	—	—	830	4,000	830 [h]	1,100	—	N	—	830	Water & Organisms, SWQC	—	—
1,2,4-Trichlorobenzene	—	—	35	70	21 [h]	8.2	19	C	—	21	SWQC	—	—
2,4,5-Trichlorophenol	—	—	1,800	3,600	1800 [h]	3,700	—	N	—	1,800	Water & Organisms, SWQC	—	—
2,4,6-Trichlorophenol	—	—	1.4	2.4	0.58 [hc]	37	6.1	C	—	0.58	SWQC	—	—
Pesticides													
alpha-BHC	—	—	0.0026	0.0049	0.0026 [hc]	—	0.011	C	—	0.0026	Water & Organisms, SWQC	—	—
beta-BHC	—	—	0.0091	0.017	0.0091 [hc]	—	0.037	C	—	0.0091	Water & Organisms, SWQC	—	—
delta-BHC (n)	0.95	—	0.98	1.8	0.95 [a]	11	0.061	C	—	0.95	Acute	—	—
gamma-BHC (Lindane)	0.95	—	0.98	1.8	0.95 [a]	11	0.061	C	—	0.95	Acute	—	—
Chlordane	2.4	0.0043	0.0008	0.00081	0.0001 [hc]	18	0.19	C	—	0.0001	SWQC	—	—
alpha-Chlordane (o)	2.4	0.0043	0.0008	0.00081	0.0001 [hc]	18	0.19	C	—	0.0001	SWQC	—	—
gamma-Chlordane (o)	2.4	0.0043	0.0008	0.00081	0.0001 [hc]	18	0.19	C	—	0.0001	SWQC	—	—
4,4'-DDD	—	—	0.00031	0.00031	0.00031 [hc]	—	0.28	C	—	0.00031	Water & Organisms, Organisms	—	—
4,4'-DDE	—	—	0.00022	0.00022	0.00022 [hc]	—	0.20	C	—	0.00022	Water & Organisms, Organisms	—	—
4,4'-DDT	1.1	0.001	0.00022	0.00022	0.00022 [hc]	—	0.20	C	—	0.00022	Water & Organisms, Organisms	—	—

Table B-3
Guidance to be Considered for Picatinny Arsenal Surface Water (a)
(mg/kg)

Chemical	USEPA Water Quality Criteria (b)				N.J. Surface Water Quality Criteria (FW-2) (c)	USEPA Residential Tap Water RSLs (d)			Surface Water Background Value (e)	Level of Concern			
										Site Characterization / Prioritization		Final LOC (Higher of LOC and Background value when is available [g])	
	Acute	Chronic	Human Health Risk for Water & Organisms	Human Health Risk for Organisms Only	SWQC	Non-carcinogen	Carcinogen $1X10^{-6}$	C/N		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen
Diazinon	0.17	0.17	—	—	—	33	—	N	—	0.17	Acute, Chronic	—	—
Dieldrin	0.24	0.056	0.000052	0.000054	0.000052 [hc]	1.8	0.0042	C	—	0.000052	Water & Organisms, SWQC	—	—
Endosulfan I (p) (q) (r)	0.22	0.056	62	89	0.056 [c]	220	—	N	—	0.056	Chronic	—	—
Endosulfan II (p) (q) (r)	0.22	0.056	62	89	0.056 [c]	220	—	N	—	0.056	Chronic	—	—
Endosulfan sulfate (p)	—	—	62	89	62 [h]	220	—	N	—	62	Water & Organisms, SWQC	—	—
Endrin	0.086	0.036	0.059	0.06	0.036 [c]	11	—	N	—	0.036	Chronic, SWQC	—	—
Endrin aldehyde (s)	—	—	0.29	0.30	0.059 [h]	11	—	N	—	0.059	SWQC	—	—
Endrin ketone (s)	0.086	0.036	0.059	0.06	0.036 [c]	11	—	N	—	0.036	Chronic, SWQC	—	—
Heptachlor	0.52	0.0038	0.000079	0.000079	0.000079 [hc]	18	0.015	C	—	0.000079	Water & Organisms, Organisms	—	—
Heptachlor epoxide (t)	0.52	0.0038	0.000039	0.000039	0.000039 [hc]	0.47	0.0074	C	—	0.000039	Water & Organisms, Organisms	—	—
Isodrin	—	—	—	—	—	—	—	-	—	—	—	—	—
Malathion	—	0.1	—	—	0.1 [c]	730	—	N	—	0.1	Chronic, SWQC	—	—
Methoxychlor	—	0.03	100	—	0.03 [c]	180	—	N	—	0.03	Chronic, SWQC	—	—
Mirex	—	0.001	—	—	0.001 [c]	7.3	0.0037	C	—	0.001	Chronic, SWQC	—	—
Toxaphene	0.73	0.0002	0.00028	0.00028	0.0002 [c]		0.061	C	—	0.0002	Chronic, SWQC	—	—
PCBs (u)													
Aroclor 1016	—	0.014	0.000064	0.000064	0.000064 [hc]	2.6	0.96	C	—	0.000064	Water & Organisms, Organisms	—	—
Aroclor 1221	—	0.014	0.000064	0.000064	0.000064 [hc]	—	0.0068	C	—	0.000064	Water & Organisms, Organisms	—	—
Aroclor 1232	—	0.014	0.000064	0.000064	0.000064 [hc]	—	0.0068	C	—	0.000064	Water & Organisms, Organisms	—	—
Aroclor 1242	—	0.014	0.000064	0.000064	0.000064 [hc]	—	0.034	C	—	0.000064	Water & Organisms, Organisms	—	—
Aroclor 1248	—	0.014	0.000064	0.000064	0.000064 [hc]	—	0.034	C	—	0.000064	Water & Organisms, Organisms	—	—
Aroclor 1254	—	0.014	0.000064	0.000064	0.000064 [hc]	0.73	0.034	C	—	0.000064	Water & Organisms, Organisms	—	—
Aroclor 1260	—	0.014	0.000064	0.000064	0.000064 [hc]	—	0.034	C	—	0.000064	Water & Organisms, Organisms	—	—
Explosives													
1,3-Dinitrobenzene	—	—	—	—	—	3.7	—	N	—	3.7	TWRSL	—	—
2,4-Dinitrotoluene	—	—	0.11	3.4	0.11 [hc]	73	—	N	—	0.11	Water & Organisms, SWQC	—	—
2,6-Dinitrotoluene	—	—	—	—	—	37	—	N	—	37	TWRSL	—	—
2-amino-4,6-Dinitrotoluene	—	—	—	—	—	73	—	N	—	73	TWRSL	—	—
4-amino-2,6-Dinitrotoluene	—	—	—	—	—	73	—	N	—	73	TWRSL	—	—
HMX	—	—	—	—	—	1,800	—	N	—	1,800	TWRSL	—	—
Nitrobenzene	—	—	17	690	17 [h]	3.4	—	N	—	17.0	Water & Organisms, SWQC	—	—
Nitrocellulose	—	—	—	—	—	—	—	-	—	—	—	—	—
Nitroglycerin	—	—	—	—	—	3.7	4	C	—	3.7	TWRSL	—	—
Nitroguanidine	—	—	—	—	—	3,700	—	N	—	3,700	TWRSL	—	—
2-Nitrotoluene	—	—	—	—	—	33	0.31	C	—	0.31	TWRSL	—	—
3-Nitrotoluene	—	—	—	—	—	730	—	N	—	730	TWRSL	—	—
4-Nitrotoluene	—	—	—	—	—	150	4.2	C	—	4.2	TWRSL	—	—
2- and 4-Nitrotoluene	—	—	—	—	—	—	—	-	—	—	—	—	—
PETN	—	—	—	—	—	—	—	-	—	—	—	—	—
Picric acid	—	—	—	—	—	—	—	-	—	—	—	—	—
RDX	—	—	—	—	—	110	0.61	C	—	2	FDWHA	—	—
Tetrazene	—	—	—	—	—	—	—	-	—	—	—	—	—

Table B-3
Guidance to be Considered for Picatinny Arsenal Surface Water (a)
(mg/kg)

Chemical	USEPA Water Quality Criteria (b)				N.J. Surface Water Quality Criteria (FW-2) (c)	USEPA Residential Tap Water RSLs (d)			Surface Water Background Value (e)	Level of Concern			
										Site Characterization / Prioritization		Final LOC (Higher of LOC and Background value when is available [g])	
	Acute	Chronic	Human Health Risk for Water & Organisms	Human Health Risk for Organisms Only	SWQC	Non-carcinogen	Carcinogen $1X10^{-6}$	C/N		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen
1,3,5-Trinitrobenzene	—	—	—	—	—	1,100	—	N	—	1,100	TWRSL	—	—
2,4,6-Trinitrotoluene	—	—	—	—	—	18	2.2	C	—	2.2	TWRSL	—	—
Herbicides													
2,4'-D	—	—	100	—	—	—	—	-	—	100	Water & Organisms	—	—
Dalapon	—	—	—	—	—	1,100	—	N	—	1,100	TWRSL	—	—
2,4'-DB	—	—	—	—	—	—	—	-	—	—	—	—	—
Dicamba	—	—	—	—	—	1,100	—	N	—	1,100	TWRSL	—	—
Dichloroprop	—	—	—	—	—	—	—	-	—	—	—	—	—
Dinoseb	—	—	—	—	—	37	—	N	—	37	TWRSL	—	—
2,4,5-T	—	—	—	—	—	—	—	-	—	—	—	—	—
2,4,5-TP (Silvex)	—	—	10	—	—	—	—	-	—	10	Water & Organisms	—	—
Dioxins/Furans (w)													
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	—	—	—	—	—	—	—	-		—	—	—	—
Total heptachlorodibenzo-p-dioxins	—	—	—	—	—	—	—	-	—	—	—	—	—
1,2,3,4,6,7,8-Heptachlorodibenzofuran	—	—	—	—	—	—	—	-	—	—	—	—	—
1,2,3,4,7,8,9-Heptachlorodibenzofuran	—	—	—	—	—	—	—	-	—	—	—	—	—
Total heptachlorodibenzofurans	—	—	—	—	—	—	—	-	—	—	—	—	—
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	—	—	—	—	—	—	—	-	—	—	—	—	—
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	—	—	—	—	—	—	—	-	—	—	—	—	—
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	—	—	—	—	—	—	—	-	—	—	—	—	—
Total hexachlorodibenzo-p-dioxins	—	—	—	—	—	—	0.000011	C	—	0.000011	TWRSL	—	—
1,2,3,4,7,8-Hexachlorodibenzofuran	—	—	—	—	—	—	—	-	—	—	—	—	—
1,2,3,6,7,8-Hexachlorodibenzofuran	—	—	—	—	—	—	—	-	—	—	—	—	—
1,2,3,7,8,9-Hexachlorodibenzofuran	—	—	—	—	—	—	—	-	—	—	—	—	—
2,3,4,6,7,8-Hexachlorodibenzofuran	—	—	—	—	—	—	—	-	—	—	—	—	—
Total hexachlorodibenzofurans	—	—	—	—	—	—	—	-	—	—	—	—	—
Octachlorodibenzodioxin	—	—	—	—	—	—	0.0017	C	—	0.0017	TWRSL	—	—
Octachlorodibenzofuran	—	—	—	—	—	—	0.0017	C	—	0.0017	TWRSL	—	—
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	—	—	—	—	—	—	—	-	—	—	—	—	—
Total pentachlorodibenzo-p-dioxins	—	—	—	—	—	—	—	-	—	—	—	—	—
1,2,3,7,8-Pentachlorodibenzofuran	—	—	—	—	—	—	0.000017	C	—	0.000017	TWRSL	—	—
2,3,4,7,8-Pentachlorodibenzofuran	—	—	—	—	—	—	0.0000017	C	—	0.0000017	TWRSL	—	—
Total pentachlorodibenzofurans	—	—	—	—	—	—	—	-	—	—	_	—	—
2,3,7,8-Tetrachlorodibenzo-p-dioxin	—	—	5.0E-09	5.1E-09	0.000000005 [hc]	0.000037	0.00000052	C	—	0.0000000050	Water & Organisms, SWQC	—	—
Total tetrachlorodibenzo-p-dioxins	—	—	—	—	—	—	—	-	—	—	—	—	—
2,3,7,8-Tetrachlorodibenzofuran	—	—	—	—	—	—	0.0000052	C	—	0.0000052	TWRSL	—	—
Total tetrachlorodibenzofurans	—	—	—	—	—	—	—	-	—	—	—	—	—
Glycols													
Ethylene glycol	—	—	—	—	—	73,000	—	N	—	73,000	TWRSL	—	—

Table B-3
Guidance to be Considered for Picatinny Arsenal Surface Water (a)
(mg/kg)

Chemical	USEPA Water Quality Criteria (b)				N.J. Surface Water Quality Criteria (FW-2) (c)	USEPA Residential Tap Water RSLs (d)			Surface Water Background Value (e)	Level of Concern: Site Characterization / Prioritization		Level of Concern: Final LOC (Higher of LOC and Background value when is available [g])	
	Acute	Chronic	Human Health Risk for Water & Organisms	Human Health Risk for Organisms Only	SWQC	Non-carcinogen	Carcinogen $1X10^{-6}$	C/N		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen
Hydrazines													
Hydrazine	—	—	—	—	—	—	0.022	C	—	0.022	TWRSL	—	—
Monomethyl hydrazine	—	—	—	—	—	—	—	-	—	—	—	—	—
Unsymmetrical dimethyl hydrazine	—	—	—	—	—	—	—	-	—	—	—	—	—
Inorganics													
Aluminum (x)	750	87	—	—	—	37,000	—	N	190	87	Chronic	190	BG Value
Antimony	—	—	5.6	640	5.6 [h]	15	—	N	ND	5.6	Water & Organisms	5.6	Water & Organisms
Arsenic	340 (y) (z)	150 (y) (z)	0.018 (aa)	0.14 (aa)	0.017 [hc] (z) (aj)	11	0.045	C	1.38	0.0170	SWQC	1.38	BG Value
Barium	—	—	1,000	—	2,000 [h]	7,300	—	N	38.0	1,000	Water & Organisms	1,000	Water & Organisms
Beryllium	—	—	—	—	6 [h]	73	—	N	ND	73	TWRSL	73	TWRSL
Boron	—	—	—	—	—	7,300	—	N	51.7	7,300	TWRSL	7,300	TWRSL
Cadmium	2.1 (y) (ab)	0.28 (y) (ab)	—	—	3.4 [h] (aj)	18	—	N	ND	0.28	Chronic	0.28	Chronic
Calcium (ac)	—	—	—	—	—	—	—	-	16,600	500,000	ADI	500,000	ADI
Chromium (ad)	16.3 (y)	11.4 (y)	—	—	10 [c]	110	—	N	ND	10	SWQC	10	SWQC
Cobalt	—	—	—	—	—	11	—	N	3.11	11	TWRSL	11	TWRSL
Copper	13.5 (y) (ab)	9.4 (y) (ab)	1,300	—	1300 [h] (aj)	1,500	—	N	ND	9.4	Chronic	9.4	Chronic
Cyanide	22 (ae)	5.2 (ae)	140	140	5.2 [c]	730	—	N	—	5.2	Chronic, SWQC	5.2	Chronic, SWQC
Iron	—	1,000	300	—	—	26,000	—	N	1,790	300	Water & Organisms	1,790	BG Value
Lead (x)	82 (y) (ab)	3.2 (y) (ab)	—	—	5 [h] (aj)	15	15	C	2.36	3.2	Chronic	3.2	Chronic
Magnesium (ac)	—	—	—	—	—	—	—	-	6,570	175,000	ADI	175,000	ADI
Manganese (ag)	—	—	50	100	—	880	—	N	383	50	Water & Organisms	383	BG Value
Mercury (ah)	1.6 (y) (ai)	0.91 (y) (ai)	—	—	0.05 [h] (aj)	3.7	—	N	ND	0.05	SWQC	0.05	SWQC
Nickel	471 (y) (ab)	52 (y) (ab)	610	4,600	500 [h] (aj)	730	—	N	ND	52	Chronic	52	Chronic
Potassium (ac)	—	—	—	—	—	—	—	-	1,860	1,000,000	ADI	1,000,000	ADI
Selenium	—	5.0 (aj)	170	4,200	5 [c] (aj)	180	—	N	ND	5.0	Chronic, SWQC	5.0	Chronic, SWQC
Silver	3.8 (y) (ab)	—	—	—	170 [h] (aj)	180	—	N	ND	3.8	Acute	3.8	Acute
Sodium (ac)	—	—	—	—	—	—	—	-	42,300	20,000	ADI	42,300	BG Value
Strontium	—	—	—	—	—	22,000	—	N	95.0	22,000	TWRSL	22,000	TWRSL
Thallium	—	—	0.24	0.47	0.24 [h] (aj)	2.4	—	N	7.30	0.24	Water & Organisms, SWQC	7.30	BG Value
Titanium	—	—	—	—	—	—	—	-	16.0	—	—	—	—
Vanadium	—	—	—	—	—	260	—	N	2.70	260	TWRSL	260	TWRSL
Zinc	123 (y) (ab)	122 (y) (ab)	7,400	26,000	7,400 [h] (aj)	11,000	—	N	31.1	122	Chronic	122	Chronic
Zirconium	—	—	—	—	—	—	—	-	ND	—	—	—	—
Anions													
Ammonia	—	—	—	—	(ak)	—	—	-	88.0	—	—	—	—
Chloride	860,000	230,000	—	—	230,000 [c]	—	—	-	110,000	230,000	Chronic, SWQC	230,000	Chronic, SWQC
Fluoride (al)	—	—	—	—	—	2,200	—	N	127	2,200	TWRSL	2,200	TWRSL
Nitrate	—	—	10,000	—	10,000 [h]	58,000	—	N	330	10,000	Water & Organisms, SWQC	10,000	Water & Organisms, SWQC
Nitrite (am)	—	—	—	—	—	3,700	—	N	15.4	3,700	TWRSL	3,700	TWRSL
Perchlorate	—	—	—	—	—	26	—	-	—	26	TWRSL	26	TWRSL
Phosphate	—	—	—	—	—	—	—	-	—	—	—	—	—
Total Phosphorus (ac)	—	—	—	—	50	—	—	-	—	50	SWQC	50	SWQC
Sulfate	—	—	—	—	—	—	—	-	12,900	250,000	SWQC	250,000	SWQC

Table B-3
Guidance to be Considered for Picatinny Arsenal Surface Water (a)
(mg/kg)

Chemical	USEPA Water Quality Criteria (b)				N.J. Surface Water Quality Criteria (FW-2) (c)	USEPA Residential Tap Water RSLs (d)			Surface Water Background Value (e)	Level of Concern			
										Site Characterization / Prioritization		Final LOC (Higher of LOC and Background value when is available [g])	
	Acute	Chronic	Human Health Risk for Water & Organisms	Human Health Risk for Organisms Only	SWQC	Non-carcinogen	Carcinogen $1X10^{-6}$	C/N		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen
Sulfide (an)	—	2	—	—	2 [c]	—	—	-	2,200	2	Chronic, SWQC	2,200	BG Value
White phosphorus	—	—	—	—	—	0.73	—	N	—	0.73	TWRSL	0.73	TWRSL
TOC													
Total organic carbon	—	—	—	—	—	—	—	-	—	—	—	—	—
Fuel Related Contaminants													
Diesel fuel	—	—	—	—	—	—	—	-	—	—	—	—	—
Total Volatile Petroleum Hydrocarbons	—	—	—	—	—	—	—	-	—	—	—	—	—
Total Extractabte Petroleum	—	—	—	—	—	—	—	-	—	—	—	—	—
Total Recoverable Petroleum	—	—	—	—	—	—	—	-	—	—	—	—	—
TPH	—	—	—	—	—	—	—	-	—	—	—	—	—
TPH, aviation gas fraction	—	—	—	—	—	—	—	-	—	—	—	—	—
TPH, diesel pattern	—	—	—	—	—	—	—	-	—	—	—	—	—
TPH, gas fraction	—	—	—	—	—	—	—	-	—	—	—	—	—
TPH, motor oil	—	—	—	—	—	—	—	-	—	—	—	—	—
Radiological Parameters (ad)													
Americium-241	—	—	—	—	—	—	—	-	ND	—	—	—	—
Cesium-137	—	—	—	—	—	—	—	-	ND	—	—	—	—
Cobalt-60	—	—	—	—	—	—	—	-	3.39	—	—	—	—
Gross alpha	—	—	—	—	—	—	—	-	ND	—	—	—	—
Gross beta	—	—	—	—	—	—	—	-	4.69	—	—	—	—
Krypton-85	—	—	—	—	—	—	—	-	—	—	—	—	—
Protactinium-234	—	—	—	—	—	—	—	-	—	—	—	—	—
Radium-226	—	—	—	—	—	—	—	-	0.260	—	—	—	—
Radium-228	—	—	—	—	—	—	—	-	ND	—	—	—	—
Thorium-234	—	—	—	—	—	—	—	-	—	—	—	—	—
Uranium (ap)	—	—	—	—	—	110	—	N	ND	110	TWRSL	—	—
Uranium-234	—	—	—	—	—	—	—	-	0.160	—	—	—	—
Uranium-235	—	—	—	—	—	—	—	-	ND	—	—	—	—
Uranium-238	—	—	—	—	—	—	—	-	0.0840	—	—	—	—
Uranium 235/238 Ratio	—	—	—	—	—	—	—	-	—	—	—	—	—
Asbestos (aq) (ar)													
Actinolite	—	—	7,000,000	—	7000000	—	—	-	—	7,000,000	Water & Organisms, SWQC	—	—
Amosite	—	—	7,000,000	—	7000000	—	—	-	—	7,000,000	Water & Organisms, SWQC	—	—
Anthophyllite	—	—	7,000,000	—	7000000	—	—	-	—	7,000,000	Water & Organisms, SWQC	—	—
Chrysolite	—	—	7,000,000	—	7000000	—	—	-	—	7,000,000	Water & Organisms, SWQC	—	—
Crocidolite	—	—	7,000,000	—	7000000	—	—	-	—	7,000,000	Water & Organisms, SWQC	—	—
Tremolite	—	—	7,000,000	—	7000000	—	—	-	—	7,000,000	Water & Organisms, SWQC	—	—

ADI = Allowable Daily Intake
ARAR = Applicable or Relevant and Appropriate Requirement
C/N = Carcinogenic or noncarcinogenic according to USEPA (2008).
LOC = Level of Concern
ND = Not detected.
SWQC = Surface Water Quality Criteria

Table B-3
Guidance to be Considered for Picatinny Arsenal Surface Water (a)
(mg/kg)

Chemical	USEPA Water Quality Criteria (b)				N.J. Surface Water Quality Criteria (FW-2) (c)	USEPA Residential Tap Water RSLs (d)			Surface Water Background Value (e)	Level of Concern			
										Site Characterization / Prioritization		Final LOC (Higher of LOC and Background value when is available [g])	
	Acute	Chronic	Human Health Risk for Water & Organisms	Human Health Risk for Organisms Only	SWQC	Non-carcinogen	Carcinogen $1X10^{-6}$	C/N		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen

TBC = To Be Considered
TWRSL = USEPA Tap Water Regional Screening Level
— = No value available.
(a) Note that chemicals without any guidance values are presented in this table.
(b) USEPA (2006). National Recommended Water Quality Criteria. These water quality criteria are the USEPA's current recommended criteria, reflecting the latest scientific knowledge as required by Section 304(a)(1) of the Clean Water Act. The acute criteria are based on maximum exposure concentrations and the chronic criteria are based on a continuous concentration.
(c) NJDEP (2008). Surface water quality criteria fall into one of six categories: acute aquatic life criteria, chronic aquatic life criteria, noncarcinogenic effects-based human health criteria, carcinogenic effects-based human health criteria, toxic substances considered to be possible human carcinogens criteria, and organoleptic effects-based criteria. In most cases, State values are only available for one of the six categories, as a result, only the lowest of the available State values is presented in this table. The surface water at Picatinny is classified as FW2-NT (general surface water classified as nontrout fresh water).
N.J. Surface Water Quality Criteria notes:
[a] FW2 value represents acute aquatic life protection criterion generally expressed as a one hour average.
[c] FW2 value represents chronic aquatic life protection criterion expressed as a four day average.
[h] FW2 value is a noncarcinogenic effect-based human health criterion expressed as a 30-day average.
[hc] FW2 value is a carcinogenic effect-based human health criterion expressed as a 70-year average.
(d) USEPA (2008). USEPA Regional Screening Levels for consumption of tap water and inhalation while showering. These values are residential exposures based on 350 days/year. A hazard index of 1 was used for noncarcinogenic RSLs.
(e) Surface water background values are from the PTA Background Study Report and are the lower of the maximum concentration or the mean plus three standard deviations for a given chemical.
(f) LOC is the lowest value from USEPA Water Quality Criteria and NJ Surface Water Quality Criteria. Only in the absence of water quality criteria is the USEPA Tap Water (10^{-6}) RSL selected as the LOC.
(g) The final LOC value is the higher of the LOC and surface water background value. If no LOC was available, no final LOC was presented.
(h) N.J. Surface Water Quality Criteria value for 1,2-dichloroethane.
(i) N.J. Surface Water Quality Criteria and USEPA Water Quality Criteria for trans-1,2-dichloroethene.
(j) USEPA Water Quality Criteria and N.J. Surface Water Quality Criteria for 1,3-dichloropropene.
(k) Criteria for pyrene were used for noncarcinogenic polycyclic aromatic hydrocarbons (PAHs) lacking criteria.
(l) Criteria for 1,4-dichlorobenzene were used for dichlorobenzenes and RSLs for 1,4-dichlorobenzene was used for 1,3-dichlorobenzene.
(m) Criteria is pH dependent. A pH of 7.8 was used for USEPA Water Quality Criteria and a pH of 7.5 was used for N.J. Surface Water Quality Criteria.
(n) Criteria for gamma-BHC were used.
(o) Criteria for chlordane were used.
(p) USEPA RSL value for endosulfan.
(q) Aquatic USEPA Water Quality Criteria value was derived from data for endosulfan.
(r) N.J. Surface Water Quality Criteria value for endosulfan (alpha and beta).
(s) Criteria for endrin were used for endrin ketone and the USEPA RSL for endrin was used for endrin aldehyde.
(t) USEPA Water Quality Criteria value was derived from data for heptachlor.
(u) Aquatic USEPA Water Quality Criteria for total PCBs.
(v) This note removed/no longer applicable.
(w) USEPA RSL values for PCDD/PCDF congeners were derived using toxicity criterion for 2,3,7,8-TCDD modified by toxic equivalency factors (TEFs) (USEPA 2000).
(x) USEPA Water Quality Criteria values based on a pH range of 6.5 to 9.0 and are expressed in terms of total recoverable metal in the water column.
(y) USEPA Water Quality criteria was converted to total metal in the water column from a dissolved value using a conversion factor in accordance with Appendix A of USEPA (2002).
(z) Criteria values are for arsenic III.
(aa) USEPA Water Quality Criteria refers to the inorganic form only.
(ab) USEPA Water Quality Criteria for this metal assume a hardness concentration of 100 mg/L in the water column.
(ac) The value presented in the RSL column is an allowable daily intake (ADI) level for essential human nutrients.
(ad) Values for chromium VI were used.
(ae) This recommended water quality criterion is expressed as µg free cyanide (as CN/L).

Table B-3
Guidance to be Considered for Picatinny Arsenal Surface Water (a)
(mg/kg)

Chemical	USEPA Water Quality Criteria (b)				N.J. Surface Water Quality Criteria (FW-2) (c)	USEPA Residential Tap Water RSLs (d)			Surface Water Background Value (e)	Level of Concern			
										Site Characterization / Prioritization		Final LOC (Higher of LOC and Background value when is available [g])	
	Acute	Chronic	Human Health Risk for Water & Organisms	Human Health Risk for Organisms Only	SWQC	Non-carcinogen	Carcinogen $1X10^{-6}$	C/N		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen

(af) Lead does not have an RSL, however the 15 ug/L action level (USEPA 1996a) is presented in the RSL column.
(ag) The non-food RSL value for manganese was used.
(ah) The RSL value for methyl mercury was used.
(ai) These recommended water quality criteria were derived from data for inorganic mercury (II).
(aj) This recommended water quality criterion was expressed in terms of total recoverable metal in the water column.
(ak) NJ value was based on typical pH ranges and temperature ranges measured at surface water sampling bcations throughout PTA, the following range of un-ionized ammonia concentrations were calculated as site-specific surface water quality criteria (SWQC) for the FW2-NT surface water classification at PTA. For summer, the acute SWQC range from 339 ug/L to 1,277 ug/L; the chronic SWQC range from 91 ug/L to 343 ug/L. For winter, the acute SWQC range from 756 ug/L to 3,239 ug/L; the chronic SWQC range from 195 ug/L to 838 ug/L.
(al) USEPA RSL for fluorine.
(am) The background value for nitrate/nitrite was used.
(an) Value for sulfkte-hydrogen sulfide was used.
(ao) The values for radiological parameters are in units of pCi/L.
(ap) Uranium is in unite of ug/L. The RSL for the most conservative soluble salts was used.
(aq) Asbestos units are fibers/L.
(ar) N.J. Surface Water Quality Criteria assume fibers longer than 10 micrometers.

Appendix C

NJDEP Fish Consumption Recommendations

James E. McGreevey
Governor

State of New Jersey
Department of Environmental Protection

Bradley M. Campbell
Commissioner

RECEIVED
MAY 25 2002

MAY 24 2002

Mr. Ted Gabel, Project Manager for Environmental Restoration
Environmental Affairs Office
SMCAR-EA
U.S. Army Armament Research, Development and Engineering Center (ARDEC)
Picatinny Arsenal, New Jersey 07806-5000

RE: Fish Tissue Data Review
Picatinny Arsenal, Morris County

Dear Mr. Gabel:

The New Jersey Department of Environmental Protection (Department) has completed a review of the above referenced data submitted via e-mail by Picatinny Arsenal. The data are analysis results of contaminants in fish tissue collected from the Arsenal's water bodies as part of the Fish Collection and Human Health Risk Assessment Work Plan. The data was compared to existing guidelines that the Department uses for determining fish consumption advisories for the general public. Results of this review indicate that one or more species from all of the water bodies exceed guidelines for mercury concentrations in fish tissue. Table 1 (enclosed) summarizes the mercury data by water body and species, along with recommended fish consumption advisories. The other detected contaminants do not exceed current NJ guidelines. Please be aware that the Department is currently reviewing its fish consumption advisory guidelines for other contaminants (e.g., PCBs). Therefore, these recommended advisories might need to be altered if and when these guidelines are changed.

If you have any questions regarding these comments please contact me at 609-984-2065.

Sincerely,

Gregory C. Zalaskus, Case Manager
Bureau of Case Management

enclosure

c: Gary Buchanan, BRA w/o enclosure
Bill Roach, USEPA w/enclosure
Jim Kealy, BEERA w/enclosure
Joe Marchesani, BGWPA w/enclosure

Table 1. Summary of Mercury Concentrations in Fish Tissue by Species and Waterbody, and Recommended Fish Consumption Advisories for Anglers using the Arsenal's Waterbodies, Picatinny Arsenal, New Jersey, May 2002.

Waterbody	Data & Recommended Advisory	Species						
		Largemouth Bass	Chain Pickerel	Yellow Perch	Black Crappie	Brown Bullhead	Channel Catfish	Carp
Lake Denmark	Tissue Concentration (ppm Hg)	0.54/0.44	-	-	0.66	0.13/0.14/ 0.21	-	0.17
	General Population	1 meal per week	-	-	1 meal per week	No restrictions	-	No restrictions
	High-Risk Individuals	1 meal per month	-	-	Do not eat	1 meal per week	-	1 meal per week
Green Pond Brook	Tissue Concen. (ppm Hg)	0.58	0.76	0.46	-	-	-	-
	General Population	1 meal per week	1 meal per week	1 meal per week	-	-	-	-
	High-Risk Individuals	Do not eat	Do not eat	1 meal per month	-	-	-	-
Picatinny Lake	Tissue Concen. (ppm Hg)	1.1/0.74/0.87 /0.68	0.70	0.50	-	-	-	-
	General Population	1 meal per week	1 meal per week	1 meal per week	-	-	-	-
	High-Risk Individuals	Do not eat	Do not eat	1 meal per month	-	-	-	-
G-2 Pond	Tissue Concen. (ppm Hg)	0.54/0.70	-	0.41	-	0.11	-	-
	General Population	1 meal per week	-	1 meal per week	-	No restrictions	-	-
	High-Risk Individuals	Do not eat	-	1 meal per month	-	1 meal per week	-	-

1500 Pond	Tissue Concen. (ppm Hg)	0.33/0.36/ 0.35	-	-	-	-	-	-
	General Population	1 meal per week	-	-	-	-	-	-
	High-Risk Individuals	1 meal per month	-	-	-	-	-	-
EOD Pond	Tissue Concen. (ppm Hg)	0.22/0.34	-	-	0.21	-	-	-
	General Population	No restrictions	-	-	No restrictions	-	-	-
	High-Risk Individuals	1 meal per month	-	-	1 meal per month	-	-	-
Fishers Pond	Tissue Concen. (ppm Hg)	0.58	-	0.42	-	-	0.26	-
	General Population	1 meal per week	-	1 meal per week	-	-	No restrictions	-
	High-Risk Individuals	Do not eat	-	1 meal per month	-	-	1 meal per month	-
North/South Basin	Tissue Concen. (ppm Hg)	-	0.20/0.38	0.12	0.15	-	-	-
	General Population	-	1 meal per week	No restrictions	No restrictions	-	-	-
	High-Risk Individuals	-	1 meal per month	1 meal per week	1 meal per week	-	-	-

Appendix D

Results of November 2011 Sampling Event and HHRA/ERA Evaluation

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ENVIRONMENT

Mr. Thomas Meyer
c/o Ms. Nancy Flaherty
U.S. Army Corps of Engineers
Baltimore District CENAB-EN-HM
10 S. Howard Street, Room 10000
Baltimore, MD 21201

Subject:
Draft Picatinny Lake Sediment and Surface Water Sampling Results Letter

Date:
February 6, 2012

Contact:
Tim Llewellyn

Phone:
410.987.0032

Email:
Tim.Llewellyn@arcadis-us.com

Our ref:
GP06PICA.57LK

Dear Mr. Meyer:

ARCADIS U.S., Inc. (ARCADIS) has been retained by the United States Department of the Army (U.S. Army) to address environmental impacts at Site 53/PICA 057, Picatinny Lake at Picatinny Arsenal (Picatinny), New Jersey. Although the Draft-Final Lakes Human Health and Risk Assessment (HHRA) (ARCADIS, 2010) did not identify any sediment or surface water constituents that posed an unacceptable risk, the New Jersey Department of Environmental Protection (NJDEP) requested additional sediment and surface water sampling. In response, ARCADIS prepared a Sediment and Surface Water Work Plan (WP) (ARCADIS, 2011) to conduct sediment sampling at Picatinny Lake in the vicinity of Sites 40, 63/65, 82, 108, and 113, and to conduct surface water sampling in the vicinity of Site 82. The purpose of this sampling was to further assess the extent of the historical detected concentrations of specified constituents at these Sites. Data collected by this work is reported herein and has been utilized to further assess overall risks associated with the lake as a whole. The 2011 data:

- Confirms that there are no unacceptable risks for ecological receptors within the lake as a whole;
- Confirms earlier re-sampling at Site 40 that elevated explosives are not present in lake sediments and removal actions are not required at that site;
- Indicates that concentrations are generally consistent with previous findings; and,
- Confirms there are no unacceptable risks to human receptors other than fish ingestion (potentially unrelated to site-specific conditions).

Accordingly, based on the results of this work, it is recommended that these new data be incorporated into the Draft Final Feasibility Study (FS) and submitted for approval by NJDEP (United States Environmental Protection Agency [USEPA] has already concurred to the document). The FS evaluates No Further Action or Institutional Controls (for fish ingestion). Consistent with discussions at the October 2011 meeting, the Army anticipates submitting a Proposed Plan recommending Institutional Controls.

Summary of Work Performed

Samples were collected in November at locations and for analyses specifically requested by the NJDEP and as planned in the approved 2011 WP unless otherwise noted due to field conditions. This work was conducted in accordance with the Final Facility-Wide Field Sampling Plan (FSP) (ARCADIS, 2007a); the Final Quality Assurance Project Plan (QAPP) (ARCADIS, 2007b); the Final Facility Wide Health and Safety Plan (HASP) (ARCADIS, 2006); and Installation regulations on boating activities on Picatinny Lake.

Summary of Site Specific Sampling

Data tables for sediment and surface water samples are provided by Tables 1 and 2, respectively. Figures showing the new and historical sample locations are provided by Figures 1 through 5. Both the tables and figures provide a comparison of the data to the ecological Levels of Concern (LOC) for sediment and surface water. A summary of the revised ecological risk assessment is provided. Additionally, Attachment 1 provides a comparison of the data to the Human Health LOCs and an assessment of impacts of the new data on the human health risk assessment.

Site 40

NJDEP Comment: "…NJDEP recommends that additional sediment samples be collected from the vicinity of previous sample locations 1-40-SD-003 and 1-40-SD-005 and at least one other location approximately midway between these two previous sample locations."

Background: Specific historical sample locations where elevated concentrations were detected in 1998 include I-40-SD-003 (1,100 milligrams per kilogram [mg/kg] of 2,4,6-Trinitrotoluene [2,4,6-TNT] and 2,500 mg/kg of Cyclo-trimethylene trinitramine [RDX]) and I-40-SD-005 (7,680 JD mg/kg of RDX).

Sample Results: The November 2011 sediment sampling results are summarized in Table 1. The historical and new sample locations at Site 40 are shown in Figure 1.

As shown on Figure 1, the February 2011 and November 2011 sampling events re-sampled sediment at the aforementioned two locations for RDX and 2,4,6-TNT at two depth intervals (0 to 6 inches and 18 to 24 inches). Sample results from both 2011 events indicate that RDX and 2,4,6-TNT concentrations at these locations are either non-detect or below the LOC. In addition, a sample was collected in between I-40-SD-003 and I-40-SD-005 (I-40-SD-015). As shown in Figure 1 and in Table 1, results from these additional locations also indicate that concentrations of RDX and 2,4,6-TNT are either non-detect or below the LOC. Consistent with previous recommendations, there are no drivers for a sediment removal action at this location.

Site 63/65

NJDEP Comment: "Previously, NJDEP stated 'Sediment and Surface water Contamination in Picatinny Lake near shore sediments adjacent to Site 63/65 – Building 506, Steam and Power Plant has contamination that has been detected in the Remedial Investigation (RI) sampling. Sediments contain elevated concentrations of mercury (up to 10 parts per million [ppm]), lead (up to 212 ppm), copper (up to 189 ppm), arsenic (up to 28 ppm), and Polynulear Aromatic Hydrocarbons (PAHs) (bap up to 3 ppm).' The RI report stated that the vertical extent of the contamination has not been completed and may be significant at the outfall locations…The FS should discuss some rationale why additional assessment is not planned…"

Background: Within the area of Site 63/65, the vicinity of Building 506 – Steam and Power Plant, historical sediment samples contained elevated concentrations of mercury (11.2 J mg/kg), lead (212 mg/kg), copper (228 J mg/kg), and arsenic (34.8 J mg/kg) in samples from I-65-SD-002, and PAHs (3 mg/kg of benzo(a)pyrene in I-65-SD-003). These parameters were further investigated by the 2011 work.

Sample Results: The November 2011 sediment sampling results are summarized in Table 1. The historical and new sample locations at Site 63/65 are shown in Figure 2. Several samples were collected at Site 63/65 to evaluate the aforementioned metals and PAHs. Figure 2 shows exceedances of the LOC for these specific parameters in historical and 2011 samples. While there are PAH concentrations in the 2011 data that exceed the LOCs, the concentrations are generally much less than those from the historical sample locations and only slightly exceed the LOCs. Results for the various metals vary in concentrations with some being higher than the historical values and others less. These data continue to indicate there are no unacceptable impacts to the lake environment.

Site 82

<u>NJDEP Comment:</u> "Previously, NJDEP stated 'Metal Contamination of the sediment and surface water in Picatinny Lake near Site 82 – Building 908, X-Ray Photo processing laboratory: Sediment and surface water samples contain elevated silver (up to 1,100 ppm) in sediment samples and surface water (up to 16.2 parts per billion ppb).' The samples were reportedly collected near the outfall of the former overflow line from the spent silver collection unit. Surface water samples also contain elevated radium-226 (up to 13.7 ppb)…NJDEP had requested additional horizontal and vertical delineation in this area near the plant outfall pipes. This was apparently never accomplished. The FS should provide some rationale why additional assessment is not planned in this area…"

<u>Background:</u> Historical sediment and surface water samples near Site 82, the vicinity of Building 908 – X-Ray Photo Processing Lab, contained elevated concentrations of silver (1100 mg/kg in I-82-SD-002; 0.0162 milligrams per liter [mg/L] in I-82-SW-002). Additionally, radium-226 was reported in surface water samples (13.7 picocuries per liter [pCi/L] in I-82-SW-002; 11.4 pCi/L in I-82-SW-001). These parameters were further investigated by the 2011 work.

<u>Sample Results:</u> Table 1 includes the Site 82 sediment data, and Table 2 presents the Site 82 surface water data. Two surface water samples were collected and analyzed for radium-226, and sample I-82-SW-002 was also analyzed for silver, as outlined in the WP. As shown in Table 2, all of the surface water results were non-detect. Figure 3 shows the locations of historical and 2011 sediment sample locations and shows the silver concentrations that exceed the LOC. The 2011 sediment results for Site 82 exceeded the silver LOC and are at similar concentrations to the previous data. It is noted that the extensive sampling across Lake Picatinny has already indicated that these impacts are localized to this portion of Site 82, and the 2011 data continue to indicate there are no acceptable impacts to the lake environment.

Site 108

<u>NJDEP Comment:</u> "Previously, NJDEP stated 'The RI data indicates significant contamination in the surface soils and near shore sediments in the vicinity of this site…NJDEP had previously requested additional horizontal and vertical delineation of sediment contamination in this area. The FS should provide some rationale why additional assessment / remediation is not planned in this area…"

<u>Background:</u> Historical sediment samples collected near Site 108, the area of Flare Island, contained elevated concentrations of metals (arsenic, copper, lead, mercury,

zinc) and PAHs. Specific historical sample locations where elevated concentrations were detected include I-108-SD-001, I-108-SD-004, I-108-SD-005, and I-108-SD-006. These parameters were further investigated by the 2011 work.

Sample Results: Table 1 provides the summary of the Site 108 2011 data. Figure 4 shows the historical and 2011 sample locations and results for the specific constituents that were analyzed in 2011. Two sample locations were planned near historical sample I-108-SD-001 (near the buildings to the south of Flare Island); however, due to obstructions, the samples at the 18 to 24-inch depth could not be collected. The 2011 concentrations of PAHs around historical sample I-108-SD-001 indicate that, although several are above the LOC, concentrations are much less than the historical concentrations.

The 2011 samples collected around Flare Island and analyzed for metals indicate that several of the metals, including lead, locally exceed LOCs and several are at similar or greater concentrations than the historical metals concentrations (Table 1 and Figure 4). However, the 2011 data continue to indicate there are no acceptable impacts to the lake environment. Additionally, the surface soils on Flare Island, which are believed to be the source for elevated concentrations in sediments, will be addressed through placement of a soil cap under a separate decision document.

Site 113

NJDEP Comment: "Previously, NJDEP stated "elevated metals [were] detected in Lake sediments in this area particularly 113SD-1 (copper 18,000 ppm, mercury 21 ppm, lead 287 ppm, and antimony 12 ppm.)' A sediment bioassay at 113SD-1 exhibited no survival or emergence of the test organisms. NJDEP had previously requested additional sampling at this location. The Army must provide some rationale why additional assessment is not planned in this area…"

Background: Historical sediment samples within the area of Site 113, the vicinity of Former Building 561 – Propellant Plant, particularly I-113-SD-001, contained elevated concentrations of the following: copper (18000 mg/kg), lead (284 mg/kg), and mercury (21 mg/kg). The historical concentration of antimony in sediment does not exceed the LOC.

Table 1 provides the summary of the Site 113 2011 data. Figure 5 shows the historical and 2011 sample locations and results for the specific constituents that were analyzed at this site in 2011. As shown in the figure, the concentrations of metals from the 2011 samples varied relative to the historical sample concentrations, with some being lower than the historical concentrations and others being greater.

However, overall concentrations are generally low and these data continue to indicate there are no acceptable impacts to the lake environment.

Risk Evaluation

Attachment 1 provides a detailed summary of the human and ecological risk evaluations based on the 2011 data.

Ecological Receptors: The previously reported ecological risk assessment presented in the FS focused on the following receptors and associated lines of evidence:

- Aquatic Biota (fish community)
    - Concentrations in water
    - Bioassay results
    - Biosurvey results
- Benthic Biota (benthic invertebrate community)
    - Concentrations in sediment
    - Bioassay results
    - Biosurvey results
- Semi-aquatic Carniovores
    - Concentrations in water
    - Concentrations in sediment
    - Concentrations in prey tissue
- Semi-aquatic herbivores
    - Concentrations in water
    - Concentrations in sediment
    - Modeled concentrations in plant tissue

In determining the final weight of evidence for each receptor, emphasis was placed on those lines of evidence that provide actual measures of the receptor health and impacts (i.e., toxicity tests, community surveys, dose modeling relying on measured prey tissue concentrations). The Ecological Risk Assessment (ERA) concluded that population level risks to ecological receptors associated with Picatinny Lake as a whole are low. This conclusion was based on the fact that despite the presence of various chemicals at concentrations above the LOC, very little toxicity was observed in laboratory toxicity tests, no significant impact on abundance or diversity was noted in community surveys, and measured tissue concentrations did not indicate that chemicals were accumulating to a significant extent in prey items. Therefore, although the additional 2011 sediment data confirm that there may be isolated and localized pockets of elevated constituent concentrations, there is no evidence that they are significantly impacting the overall population of ecological receptors associated with Picatinny Lake. This is indicated by the lack of significant toxicity

associated with those areas in the bioassays and the fact that those chemicals do not appear to be accumulating in prey tissue to an extent that would result in risks to upper trophic level species. It is noted that at Site 40 samples I-40-SD-003 and I-40-SD-005 contained elevated levels of constituents in 1998 but that these concentrations are no longer present as evidenced by several rounds of sediment data.

Human Health: Attachment 1 provides a detailed analysis of the 2011 data relative to the existing human health risk assessment. Data are compared to human health LOCs and qualitatively assessed. As detailed by that document, the analytical results from the 2011 sediment sampling event have no significant impact on the risk and hazard estimates presented in the 2009 HHRA for lake-wide exposures by recreational youth visitors which are within the generally accepted risk range.

Based on the results of the work reported herein, it is recommended that these new data be incorporated into the Draft Final FS and submitted for approval by NJDEP (USEPA has already concurred to the document). The FS evaluates No Further Action or Institutional Controls (for fish ingestion). Consistent with discussions at the October 2011 meeting, the Army anticipates submitting a Proposed Plan recommending Institutional Controls. Please do not hesitate to contact us if you have any questions on the results presented in this letter.

Sincerely,

ARCADIS U.S., Inc.

Kimberly A. Panhorst
Phase Manager

Tim Llewellyn
Project Manager

Enclosures:
Table 1 – Picatinny Lake Sediment Sample Results
Table 2 – Picatinny Lake Surface Water Sample Results
Figure 1 – RDX & 2,4,6-TNT LOC Exceedances in Sediment Site 40/PICA 057 Picatinny Lake
Figure 2 – Select Constituent LOC Exceedances in Sediment Site 63/65 /PICA 057 Picatinny Lake
Figure 3 – Silver LOC Exceedances in Sediment Site 82/PICA 057 Picatinny Lake

Figure 4 – Select Constituent LOC Exceedances in Sediment Site 108/PICA 057 Picatinny Lake
Figure 5 – Select Metals LOC Exceedances in Sediment Site 113/PICA 057 Picatinny Lake
Attachment 1 – Risk Memorandum

Copies:
Nancy Flaherty, USACE
Ted Gabel, IMA-NERO
Mary Ellen Maly, USAEC
Emily Schiffmacher, USACE

References

ARCADIS. 2006. Final Picatinny Arsenal Facility-Wide Health and Safety Plan. U.S. Army Garrison Picatinny Arsenal, New Jersey. September.

ARCADIS. 2007a. Final Picatinny Arsenal Facility-Wide Field Sampling Plan U.S. Army Garrison Picatinny Arsenal, New Jersey. May.

ARCADIS. 2007b. Final Quality Assurance Project Plan. U.S. Army Garrison Picatinny Arsenal, New Jersey. August.

ARCADIS. 2010. Draft Final Feasibility Study for Site 54/PICA 015, Site 53/PICA 057, and Site 103/PICA 164. September.

ARCADIS. 2011. Revised Picatinny Lake Sediment and Surface Water Sampling Work Plan Letter. November 3, 2011.

Tables

Table 1. Picatinny Lake Sediment Sample Results
November 2011
Picatinny Arsenal
Picatinny, New Jersey

CAS No	Chemical Name	LOC	Location ID / Sample ID / Depth Interval (inches) / Sample Date / Unit	I-108-SD-007 / I-108SD007 (0-6) / 0 - 6 / 11/15/2011	I-108-SD-008 / I-108SD008 (0-6) / 0 - 6 / 11/15/2011	I-108-SD-009 / I-108SD009 (0-6) / 0 - 6 / 11/14/2011	I-108-SD-009 / I-108SD009 (18-24) / 18 - 24 / 11/14/2011	I-108-SD-010 / I-108SD010 (0-6) / 0 - 6 / 11/14/2011
Metals								
7440-36-0	Antimony	410	mg/kg					
7440-38-2	Arsenic	16.0	mg/kg			3.88	4.5	**46.1**
7440-50-8	Copper	28	mg/kg			11.7	9.67	**48.5**
7439-92-1	Lead	38.8	mg/kg			15.7	13.7	**97.4**
7440-22-4	Silver	1.0	mg/kg	< 9.25 U	**61.6**			
7440-66-6	Zinc	171	mg/kg			95.6	44.8	**1740**
7439-97-6	Mercury	0.249	mg/kg			**26.5**	**0.712**	**20.4**
SVOCs								
90-12-0	1-Methylnaphthalene		mg/kg	<0.0271 UJ	0.0621 J			
91-57-6	2-Methylnaphthalene	0.0202	mg/kg	<0.0271 UJ	**0.100 J**			
83-32-9	Acenaphthene	0.00671	mg/kg	<0.0271 UJ	**0.0135 J**			
208-96-8	Acenaphthylene	0.00587	mg/kg	<0.0271 UJ	**0.0132 J**			
120-12-7	Anthracene	0.0316	mg/kg	0.0234 J	0.0261 J			
56-55-3	Benz(a)anthracene	0.0317	mg/kg	**0.037 J**	**0.127 J**			
50-32-8	Benzo(a)pyrene	0.0319	mg/kg	**0.037 J**	**0.121 J**			
205-99-2	Benzo(b)fluoranthene	0.0272	mg/kg	**0.0549 J**	**0.118 J**			
191-24-2	Benzo(g,h,i)perylene	0.29	mg/kg	0.035 J	0.0845 J			
207-08-9	Benzo(k)fluoranthene	0.0272	mg/kg	**0.0391 J**	**0.108 J**			
218-01-9	Chrysene	0.0571	mg/kg	0.0555 J	**0.131 J**			
53-70-3	Dibenz(a,h)anthracene	0.00622	mg/kg	<0.0271 UJ	**0.0377 J**			
206-44-0	Fluoranthene	0.0642	mg/kg	**0.0973 J**	**0.246 J**			
86-73-7	Fluorene	0.0212	mg/kg	<0.0271 UJ	**0.0234 J**			
193-39-5	Indeno(1,2,3-c,d)pyrene	0.078	mg/kg	0.0304 J	0.0766 J			
91-20-3	Naphthalene	0.0328	mg/kg	0.0243 J	**0.0604 J**			
85-01-8	Phenanthrene	0.0419	mg/kg	**0.0532 J**	**0.127 J**			
129-00-0	Pyrene	0.053	mg/kg	**0.072 J**	**0.222 J**			
Explosives								
118-96-7	2,4,6-Trinitrotoluene	95	mg/kg					
121-82-4	RDX	26	mg/kg					

Notes:
Bold - indicates Level of Concern (LOC) is exceeded
J - indicates estimated value
U - indicates non detection
mg/kg - milligrams per kilogram

Table 1. Picatinny Lake Sediment Sample Results
November 2011
Picatinny Arsenal
Picatinny, New Jersey

			Location ID	**I-108-SD-010**	**I-108-SD-011**	**I-108-SD-011**	**I-108-SD-012**	**I-108-SD-012**
			Sample ID	**I-108SD010 (18-24)**	**I-108SD011 (0-6)**	**I-108SD011 (18-24)**	**I-108SD012 (18-24)**	**I-108SD012 (0-6)**
			Depth Interval (inches)	**18 - 24**	**0 - 6**	**18 - 24**	**18 - 24**	**0 - 6**
			Sample Date	**11/14/2011**	**11/14/2011**	**11/14/2011**	**11/14/2011**	**11/14/2011**
CAS No	**Chemical Name**	**LOC**	**Unit**					
Metals								
7440-36-0	Antimony	410	mg/kg					
7440-38-2	Arsenic	16.0	mg/kg	**61**	**437**	**552**	4.67	6.98
7440-50-8	Copper	28	mg/kg	**47.2**	**247**	**415**	15.8	11
7439-92-1	Lead	38.8	mg/kg	**90**	**1630**	**1010**	17.9	14.7
7440-22-4	Silver	1.0	mg/kg					
7440-66-6	Zinc	171	mg/kg	**1530**	**6560**	**7050**	87	57.1
7439-97-6	Mercury	0.249	mg/kg	**8.76**	**90.8**	**113**	**1.49**	**0.426**
SVOCs								
90-12-0	1-Methylnaphthalene		mg/kg					
91-57-6	2-Methylnaphthalene	0.0202	mg/kg					
83-32-9	Acenaphthene	0.00671	mg/kg					
208-96-8	Acenaphthylene	0.00587	mg/kg					
120-12-7	Anthracene	0.0316	mg/kg					
56-55-3	Benz(a)anthracene	0.0317	mg/kg					
50-32-8	Benzo(a)pyrene	0.0319	mg/kg					
205-99-2	Benzo(b)fluoranthene	0.0272	mg/kg					
191-24-2	Benzo(g,h,i)perylene	0.29	mg/kg					
207-08-9	Benzo(k)fluoranthene	0.0272	mg/kg					
218-01-9	Chrysene	0.0571	mg/kg					
53-70-3	Dibenz(a,h)anthracene	0.00622	mg/kg					
206-44-0	Fluoranthene	0.0642	mg/kg					
86-73-7	Fluorene	0.0212	mg/kg					
193-39-5	Indeno(1,2,3-c,d)pyrene	0.078	mg/kg					
91-20-3	Naphthalene	0.0328	mg/kg					
85-01-8	Phenanthrene	0.0419	mg/kg					
129-00-0	Pyrene	0.053	mg/kg					
Explosives								
118-96-7	2,4,6-Trinitrotoluene	95	mg/kg					
121-82-4	RDX	26	mg/kg					

Notes:
Bold - indicates Level of Concern (LOC) is exceeded
J - indicates estimated value
U - indicates non detection
mg/kg - milligrams per kilogram

Table 1. Picatinny Lake Sediment Sample Results
November 2011
Picatinny Arsenal
Picatinny, New Jersey

			Location ID	**I-108-SD-013**	**I-108-SD-013**	**I-108-SD-014**	**I-108-SD-014**	**I-113-SD-004**
			Sample ID	**I-108SD013 (0-6)**	**I-108SD013 (18-24)**	**I-108SD014 (0-6)**	**I-108SD014 (18-24)**	**I-113SD004 (0-6)**
			Depth Interval (inches)	**0 - 6**	**18 - 24**	**0 - 6**	**18 - 24**	**0 - 6**
			Sample Date	**11/14/2011**	**11/14/2011**	**11/14/2011**	**11/14/2011**	**11/16/2011**
CAS No	**Chemical Name**	**LOC**	**Unit**					
Metals								
7440-36-0	Antimony	410	mg/kg					15.5
7440-38-2	Arsenic	16.0	mg/kg	10.8	3.42	**87.1**	**117**	
7440-50-8	Copper	28	mg/kg	13.5	21.2	**354**	**530**	**4400 J**
7439-92-1	Lead	38.8	mg/kg	21.4	13.5	**2530**	**549**	**286 J**
7440-22-4	Silver	1.0	mg/kg					
7440-66-6	Zinc	171	mg/kg	85.8	50	**658**	**1170**	
7439-97-6	Mercury	0.249	mg/kg	**0.382 J**	0.0848 UB	**22.7**	**47.9**	**245**
SVOCs								
90-12-0	1-Methylnaphthalene		mg/kg					
91-57-6	2-Methylnaphthalene	0.0202	mg/kg					
83-32-9	Acenaphthene	0.00671	mg/kg					
208-96-8	Acenaphthylene	0.00587	mg/kg					
120-12-7	Anthracene	0.0316	mg/kg					
56-55-3	Benz(a)anthracene	0.0317	mg/kg					
50-32-8	Benzo(a)pyrene	0.0319	mg/kg					
205-99-2	Benzo(b)fluoranthene	0.0272	mg/kg					
191-24-2	Benzo(g,h,i)perylene	0.29	mg/kg					
207-08-9	Benzo(k)fluoranthene	0.0272	mg/kg					
218-01-9	Chrysene	0.0571	mg/kg					
53-70-3	Dibenz(a,h)anthracene	0.00622	mg/kg					
206-44-0	Fluoranthene	0.0642	mg/kg					
86-73-7	Fluorene	0.0212	mg/kg					
193-39-5	Indeno(1,2,3-c,d)pyrene	0.078	mg/kg					
91-20-3	Naphthalene	0.0328	mg/kg					
85-01-8	Phenanthrene	0.0419	mg/kg					
129-00-0	Pyrene	0.053	mg/kg					
Explosives								
118-96-7	2,4,6-Trinitrotoluene	95	mg/kg					
121-82-4	RDX	26	mg/kg					

Notes:
Bold - indicates Level of Concern (LOC) is exceeded
J - indicates estimated value
U - indicates non detection
mg/kg - milligrams per kilogram

Table 1. Picatinny Lake Sediment Sample Results
November 2011
Picatinny Arsenal
Picatinny, New Jersey

			Location ID	**I-113-SD-004**	**I-113-SD-005**	**I-113-SD-005**	**I-113-SD-006**	**I-113-SD-006**
			Sample ID	**I-113SD004 (18-24)**	**I-113SD005 (0-6)**	**I-113SD005 (18-24)**	**I-113SD006 (18-24)**	**I-113SD006 (0-6)**
			Depth Interval (inches)	**18 - 24**	**0 - 6**	**18 - 24**	**18 - 24**	**0 - 6**
			Sample Date	**11/16/2011**	**11/16/2011**	**11/16/2011**	**11/16/2011**	**11/16/2011**
CAS No	**Chemical Name**	**LOC**	**Unit**					
Metals								
7440-36-0	Antimony	410	mg/kg	< 1.82 U	8.97	< 1.11 U	< 1.14 U	< 1.57 U
7440-38-2	Arsenic	16.0	mg/kg					
7440-50-8	Copper	28	mg/kg	6.23 J	**1500 J**	2.63 J	7.35 J	5.94 J
7439-92-1	Lead	38.8	mg/kg	6.22 J	**311 J**	1.4 J	4.91 J	7.81 J
7440-22-4	Silver	1.0	mg/kg					
7440-66-6	Zinc	171	mg/kg					
7439-97-6	Mercury	0.249	mg/kg	**0.498 J**	**196**	0.121 UB	**2.85 J**	**0.895 J**
SVOCs								
90-12-0	1-Methylnaphthalene		mg/kg					
91-57-6	2-Methylnaphthalene	0.0202	mg/kg					
83-32-9	Acenaphthene	0.00671	mg/kg					
208-96-8	Acenaphthylene	0.00587	mg/kg					
120-12-7	Anthracene	0.0316	mg/kg					
56-55-3	Benz(a)anthracene	0.0317	mg/kg					
50-32-8	Benzo(a)pyrene	0.0319	mg/kg					
205-99-2	Benzo(b)fluoranthene	0.0272	mg/kg					
191-24-2	Benzo(g,h,i)perylene	0.29	mg/kg					
207-08-9	Benzo(k)fluoranthene	0.0272	mg/kg					
218-01-9	Chrysene	0.0571	mg/kg					
53-70-3	Dibenz(a,h)anthracene	0.00622	mg/kg					
206-44-0	Fluoranthene	0.0642	mg/kg					
86-73-7	Fluorene	0.0212	mg/kg					
193-39-5	Indeno(1,2,3-c,d)pyrene	0.078	mg/kg					
91-20-3	Naphthalene	0.0328	mg/kg					
85-01-8	Phenanthrene	0.0419	mg/kg					
129-00-0	Pyrene	0.053	mg/kg					
Explosives								
118-96-7	2,4,6-Trinitrotoluene	95	mg/kg					
121-82-4	RDX	26	mg/kg					

Notes:
Bold - indicates Level of Concern (LOC) is exceeded
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mg/kg - milligrams per kilogram

Table 1. Picatinny Lake Sediment Sample Results
November 2011
Picatinny Arsenal
Picatinny, New Jersey

			Location ID	**I-113-SD-006**	**I-113-SD-007**	**I-113-SD-007**	**I-40-SD-003**	**I-40-SD-003**
			Sample ID	**I-113SDDUP001 (0-6)**	**I-113007 (18-24)**	**I-113007 (0-6)**	**I-40SD003 (0-6)**	**I-40SD003 (18-24)**
			Depth Interval (inches)	**0 - 6**	**18 - 24**	**0 - 6**	**0 - 6**	**18 - 24**
			Sample Date	**11/16/2011**	**11/16/2011**	**11/16/2011**	**11/15/2011**	**11/15/2011**
CAS No	**Chemical Name**	**LOC**	**Unit**					
Metals								
7440-36-0	Antimony	410	mg/kg	2.85	< 2.44 U	< 5.46 U		
7440-38-2	Arsenic	16.0	mg/kg					
7440-50-8	Copper	28	mg/kg	**120 J**	24.9	**28.1**		
7439-92-1	Lead	38.8	mg/kg	**63.1 J**	15.9	15.6		
7440-22-4	Silver	1.0	mg/kg					
7440-66-6	Zinc	171	mg/kg					
7439-97-6	Mercury	0.249	mg/kg	**38.3 J**	**2.05 J**	**2.06 J**		
SVOCs								
90-12-0	1-Methylnaphthalene		mg/kg					
91-57-6	2-Methylnaphthalene	0.0202	mg/kg					
83-32-9	Acenaphthene	0.00671	mg/kg					
208-96-8	Acenaphthylene	0.00587	mg/kg					
120-12-7	Anthracene	0.0316	mg/kg					
56-55-3	Benz(a)anthracene	0.0317	mg/kg					
50-32-8	Benzo(a)pyrene	0.0319	mg/kg					
205-99-2	Benzo(b)fluoranthene	0.0272	mg/kg					
191-24-2	Benzo(g,h,i)perylene	0.29	mg/kg					
207-08-9	Benzo(k)fluoranthene	0.0272	mg/kg					
218-01-9	Chrysene	0.0571	mg/kg					
53-70-3	Dibenz(a,h)anthracene	0.00622	mg/kg					
206-44-0	Fluoranthene	0.0642	mg/kg					
86-73-7	Fluorene	0.0212	mg/kg					
193-39-5	Indeno(1,2,3-c,d)pyrene	0.078	mg/kg					
91-20-3	Naphthalene	0.0328	mg/kg					
85-01-8	Phenanthrene	0.0419	mg/kg					
129-00-0	Pyrene	0.053	mg/kg					
Explosives								
118-96-7	2,4,6-Trinitrotoluene	95	mg/kg				< 0.247 U	< 0.247 U
121-82-4	RDX	26	mg/kg				< 0.247 U	< 0.247 U

Notes:
Bold - indicates Level of Concern (LOC) is exceeded
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U - indicates non detection
mg/kg - milligrams per kilogram

Table 1. Picatinny Lake Sediment Sample Results
November 2011
Picatinny Arsenal
Picatinny, New Jersey

CAS No	Chemical Name	LOC	Location ID / Sample ID / Depth Interval (inches) / Sample Date / Unit	I-40-SD-005 I-40SD005 (0-6) 0 - 6 11/15/2011	I-40-SD-005 I-40SD005 (18-24) 18 - 24 11/15/2011	I-40-SD-015 I-40SD015 (0-6) 0 - 6 11/15/2011	I-40-SD-015 I-40SD015 (18-24) 18 - 24 11/15/2011	I-65-SD-005 I-65SD005 (18-24) 18 - 24 11/14/2011
Metals								
7440-36-0	Antimony	410	mg/kg					
7440-38-2	Arsenic	16.0	mg/kg					4.99 J
7440-50-8	Copper	28	mg/kg					**56.6**
7439-92-1	Lead	38.8	mg/kg					6.1
7440-22-4	Silver	1.0	mg/kg					
7440-66-6	Zinc	171	mg/kg					
7439-97-6	Mercury	0.249	mg/kg					0.175 J
SVOCs								
90-12-0	1-Methylnaphthalene		mg/kg					< 0.0264 UJ
91-57-6	2-Methylnaphthalene	0.0202	mg/kg					< 0.0264 UJ
83-32-9	Acenaphthene	0.00671	mg/kg					< 0.0264 UJ
208-96-8	Acenaphthylene	0.00587	mg/kg					< 0.0264 UJ
120-12-7	Anthracene	0.0316	mg/kg					< 0.0264 UJ
56-55-3	Benz(a)anthracene	0.0317	mg/kg					< 0.0264 UJ
50-32-8	Benzo(a)pyrene	0.0319	mg/kg					**0.0531 J**
205-99-2	Benzo(b)fluoranthene	0.0272	mg/kg					< 0.0264 UJ
191-24-2	Benzo(g,h,i)perylene	0.29	mg/kg					< 0.0264 UJ
207-08-9	Benzo(k)fluoranthene	0.0272	mg/kg					< 0.0264 UJ
218-01-9	Chrysene	0.0571	mg/kg					< 0.0264 UJ
53-70-3	Dibenz(a,h)anthracene	0.00622	mg/kg					< 0.0264 UJ
206-44-0	Fluoranthene	0.0642	mg/kg					< 0.0264 UJ
86-73-7	Fluorene	0.0212	mg/kg					< 0.0264 UJ
193-39-5	Indeno(1,2,3-c,d)pyrene	0.078	mg/kg					< 0.0264 UJ
91-20-3	Naphthalene	0.0328	mg/kg					< 0.0264 UJ
85-01-8	Phenanthrene	0.0419	mg/kg					< 0.0264 UJ
129-00-0	Pyrene	0.053	mg/kg					< 0.0264 UJ
Explosives								
118-96-7	2,4,6-Trinitrotoluene	95	mg/kg	0.354	0.287	4.54	< 0.249 U	
121-82-4	RDX	26	mg/kg	< 0.246 U	< 0.247 U	< 0.247 U	< 0.249 U	

Notes:
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mg/kg - milligrams per kilogram

Table 1. Picatinny Lake Sediment Sample Results
November 2011
Picatinny Arsenal
Picatinny, New Jersey

			Location ID	**I-65-SD-005**	**I-65-SD-006**	**I-65-SD-006**	**I-65-SD-007**	**I-65-SD-007**
			Sample ID	**I-65SD005 (0-6)**	**I-65SD006 (0-6)**	**I-65SD006 (18-24)**	**I-65SD007 (0-6)**	**I-65SD007 (18-24)**
			Depth Interval (inches)	**0 - 6**	**0 - 6**	**18 - 24**	**0 - 6**	**18 - 24**
			Sample Date	**11/14/2011**	**11/14/2011**	**11/14/2011**	**11/14/2011**	**11/14/2011**
CAS No	**Chemical Name**	**LOC**	**Unit**					
Metals								
7440-36-0	Antimony	410	mg/kg					
7440-38-2	Arsenic	16.0	mg/kg	**26.7**	**16.2**	5	15.8	4.73 J
7440-50-8	Copper	28	mg/kg	**159**	**680**	**35.2**	**102**	**39.3**
7439-92-1	Lead	38.8	mg/kg	**92.2**	**418**	27.8	**136**	3.58
7440-22-4	Silver	1.0	mg/kg					
7440-66-6	Zinc	171	mg/kg					
7439-97-6	Mercury	0.249	mg/kg	**6.05**	**8.58**	0.0455 UB	**0.785 J**	< 2.22 U
SVOCs								
90-12-0	1-Methylnaphthalene		mg/kg	0.149	0.03	0.00909	< 0.0222 UJ	< 0.0236 U
91-57-6	2-Methylnaphthalene	0.0202	mg/kg	**0.298**	**0.0476**	0.0167	< 0.0222 UJ	0.0126 J
83-32-9	Acenaphthene	0.00671	mg/kg	<0.00854 U	<0.0196 U	< 0.00702 U	**0.0157 UJ**	< 0.0236 U
208-96-8	Acenaphthylene	0.00587	mg/kg	**0.0102**	**0.0145 J**	< 0.00702 U	< 0.0222 U	< 0.0236 U
120-12-7	Anthracene	0.0316	mg/kg	**0.0579**	**0.046**	< 0.00702 U	**0.0326 J**	< 0.0236 U
56-55-3	Benz(a)anthracene	0.0317	mg/kg	**0.219 J**	**0.170 J**	0.00725 J	**0.0505 J**	0.0153 J
50-32-8	Benzo(a)pyrene	0.0319	mg/kg	**0.200 J**	**0.147 J**	0.00586 J	**0.0327 J**	**0.577 J**
205-99-2	Benzo(b)fluoranthene	0.0272	mg/kg	**0.204**	**0.134**	0.0077	0.0262 J	0.0168 J
191-24-2	Benzo(g,h,i)perylene	0.29	mg/kg	0.114	0.0861	0.00374 J	0.0163 J	< 0.0236 U
207-08-9	Benzo(k)fluoranthene	0.0272	mg/kg	**0.17**	**0.164**	0.00602 J	**0.0366 J**	< 0.0236 U
218-01-9	Chrysene	0.0571	mg/kg	**0.229**	**0.181**	0.00945	0.046 J	0.0214 J
53-70-3	Dibenz(a,h)anthracene	0.00622	mg/kg	**0.0352 J**	**0.0403 J**	< 0.00702 UJ	< 0.0222 UJ	< 0.0236 UJ
206-44-0	Fluoranthene	0.0642	mg/kg	**0.462**	**0.346**	0.0195	**0.109**	0.0317
86-73-7	Fluorene	0.0212	mg/kg	**0.0303**	0.0133 J	0.00463 J	0.0147 J	0.0161 J
193-39-5	Indeno(1,2,3-c,d)pyrene	0.078	mg/kg	**0.107 J**	**0.0827 J**	0.00434 J	0.0152 J	0.067 J
91-20-3	Naphthalene	0.0328	mg/kg	**0.127**	**0.0449**	0.00764	< 0.0222 UJ	< 0.0236 U
85-01-8	Phenanthrene	0.0419	mg/kg	**0.266**	**0.154**	0.0131	**0.0925 J**	0.0194 J
129-00-0	Pyrene	0.053	mg/kg	**0.272**	**0.266**	0.0137	**0.0814 J**	0.0253
Explosives								
118-96-7	2,4,6-Trinitrotoluene	95	mg/kg					
121-82-4	RDX	26	mg/kg					

Notes:
Bold - indicates Level of Concern (LOC) is exceeded
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mg/kg - milligrams per kilogram

Table 1. Picatinny Lake Sediment Sample Results
November 2011
Picatinny Arsenal
Picatinny, New Jersey

			Location ID	**I-65-SD-008**	**I-65-SD-008**	**I-82-SD-004**	**I-82-SD-004**	**I-82-SD-005**
			Sample ID	**I-65SD008 (0-6)**	**I-65SD008 (18-24)**	**I-82SD004 (0-6)**	**I-82SD004 (18-24)**	**I-82SD005 (0-6)**
			Depth Interval (inches)	**0 - 6**	**18 - 24**	**0 - 6**	**18 - 24**	**0 - 6**
			Sample Date	**11/14/2011**	**11/14/2011**	**11/15/2011**	**11/15/2011**	**11/15/2011**
CAS No	**Chemical Name**	**LOC**	**Unit**					
Metals								
7440-36-0	Antimony	410	mg/kg					
7440-38-2	Arsenic	16.0	mg/kg	14.1	**27.1**			
7440-50-8	Copper	28	mg/kg	**204**	**204**			
7439-92-1	Lead	38.8	mg/kg	**89.1**	**42.4**			
7440-22-4	Silver	1.0	mg/kg			**1200**	**1420**	**997**
7440-66-6	Zinc	171	mg/kg					
7439-97-6	Mercury	0.249	mg/kg	**1.38 J**	**0.525 J**			
SVOCs								
90-12-0	1-Methylnaphthalene		mg/kg	0.0598	< 0.0144 UJ			
91-57-6	2-Methylnaphthalene	0.0202	mg/kg	**0.124**	**0.0276 J**			
83-32-9	Acenaphthene	0.00671	mg/kg	< 0.0197 U	< 0.0144 UJ			
208-96-8	Acenaphthylene	0.00587	mg/kg	< 0.0197 U	< 0.0144 UJ			
120-12-7	Anthracene	0.0316	mg/kg	< 0.0197 U	0.00903 J			
56-55-3	Benz(a)anthracene	0.0317	mg/kg	0.028 J	0.0287 J			
50-32-8	Benzo(a)pyrene	0.0319	mg/kg	0.022 J	0.0232 J			
205-99-2	Benzo(b)fluoranthene	0.0272	mg/kg	0.0223	0.0228 J			
191-24-2	Benzo(g,h,i)perylene	0.29	mg/kg	0.0155 J	0.0164 J			
207-08-9	Benzo(k)fluoranthene	0.0272	mg/kg	0.0235	0.0224 J			
218-01-9	Chrysene	0.0571	mg/kg	0.0312	0.0278 J			
53-70-3	Dibenz(a,h)anthracene	0.00622	mg/kg	< 0.0197 UJ	< 0.0144 UJ			
206-44-0	Fluoranthene	0.0642	mg/kg	0.0596	0.0609 J			
86-73-7	Fluorene	0.0212	mg/kg	0.0128 J	0.00866 J			
193-39-5	Indeno(1,2,3-c,d)pyrene	0.078	mg/kg	0.0156 J	0.0161 J			
91-20-3	Naphthalene	0.0328	mg/kg	**0.0432**	0.0138 J			
85-01-8	Phenanthrene	0.0419	mg/kg	**0.0585**	0.0404 J			
129-00-0	Pyrene	0.053	mg/kg	0.0439	0.0514 J			
Explosives								
118-96-7	2,4,6-Trinitrotoluene	95	mg/kg					
121-82-4	RDX	26	mg/kg					

Notes:
Bold - indicates Level of Concern (LOC) is exceeded
J - indicates estimated value
U - indicates non detection
mg/kg - milligrams per kilogram

Table 1. Picatinny Lake Sediment Sample Results
November 2011
Picatinny Arsenal
Picatinny, New Jersey

			Location ID	**I-82-SD-005**	**I-82-SD-006**	**I-82-SD-006**	**I-82-SD-006**
			Sample ID	**I-82SD005 (18-24)**	**I-82DUP001 (18-24)**	**I-82SD006 (18-24)**	**I-82SD006 (0-6)**
			Depth Interval (inches)	**18 - 24**	**18 - 24**	**18 - 24**	**0 - 6**
			Sample Date	**11/15/2011**	**11/14/2011**	**11/15/2011**	**11/15/2011**
CAS No	**Chemical Name**	**LOC**	**Unit**				
Metals							
7440-36-0	Antimony	410	mg/kg				
7440-38-2	Arsenic	16.0	mg/kg				
7440-50-8	Copper	28	mg/kg				
7439-92-1	Lead	38.8	mg/kg				
7440-22-4	Silver	1.0	mg/kg	**1430**	**457**	**75.6**	**1040**
7440-66-6	Zinc	171	mg/kg				
7439-97-6	Mercury	0.249	mg/kg				
SVOCs							
90-12-0	1-Methylnaphthalene		mg/kg				
91-57-6	2-Methylnaphthalene	0.0202	mg/kg				
83-32-9	Acenaphthene	0.00671	mg/kg				
208-96-8	Acenaphthylene	0.00587	mg/kg				
120-12-7	Anthracene	0.0316	mg/kg				
56-55-3	Benz(a)anthracene	0.0317	mg/kg				
50-32-8	Benzo(a)pyrene	0.0319	mg/kg				
205-99-2	Benzo(b)fluoranthene	0.0272	mg/kg				
191-24-2	Benzo(g,h,i)perylene	0.29	mg/kg				
207-08-9	Benzo(k)fluoranthene	0.0272	mg/kg				
218-01-9	Chrysene	0.0571	mg/kg				
53-70-3	Dibenz(a,h)anthracene	0.00622	mg/kg				
206-44-0	Fluoranthene	0.0642	mg/kg				
86-73-7	Fluorene	0.0212	mg/kg				
193-39-5	Indeno(1,2,3-c,d)pyrene	0.078	mg/kg				
91-20-3	Naphthalene	0.0328	mg/kg				
85-01-8	Phenanthrene	0.0419	mg/kg				
129-00-0	Pyrene	0.053	mg/kg				
Explosives							
118-96-7	2,4,6-Trinitrotoluene	95	mg/kg				
121-82-4	RDX	26	mg/kg				

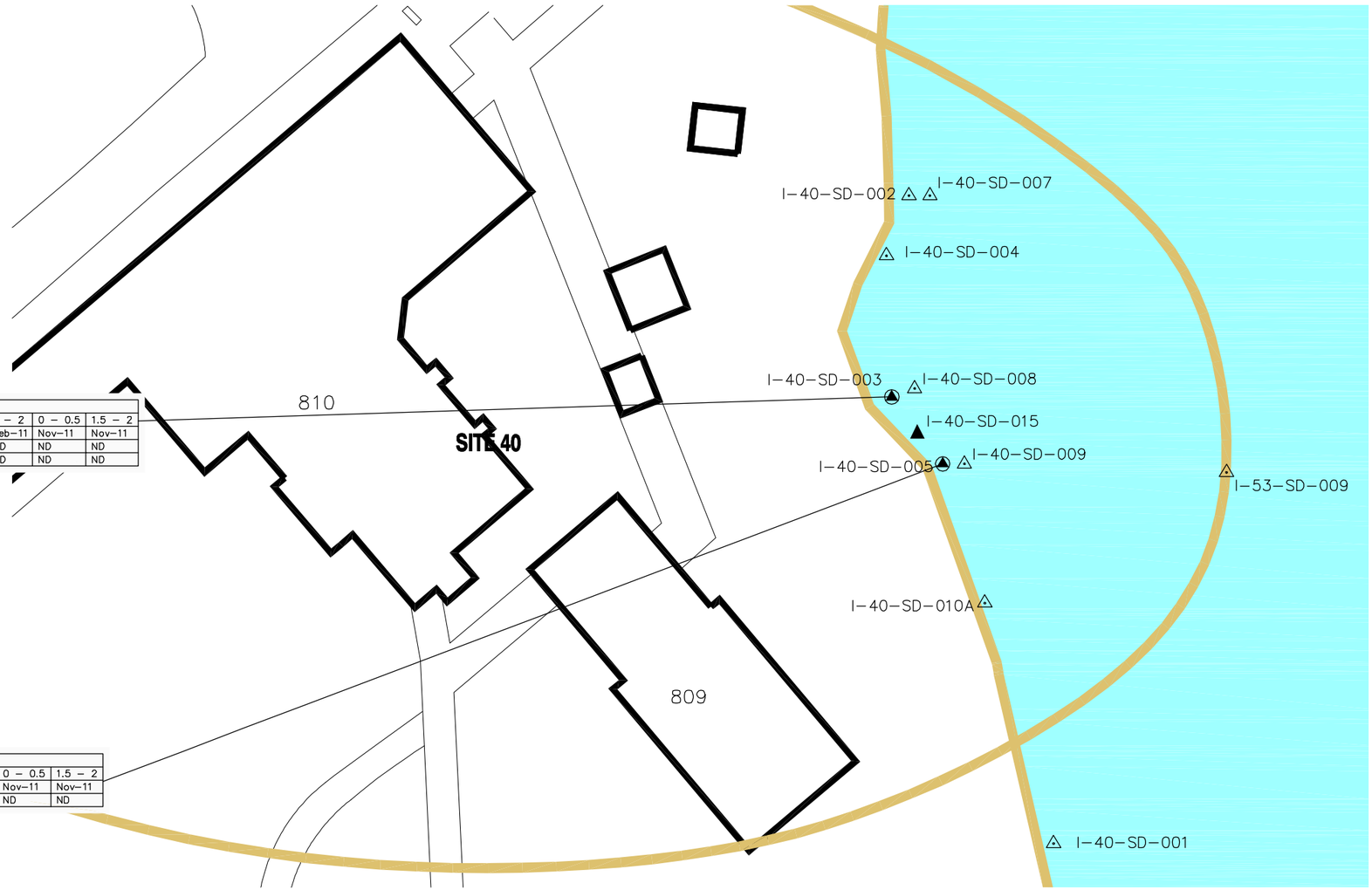
Notes:
Bold - indicates Level of Concern (LOC) is exceeded
J - indicates estimated value
U - indicates non detection
mg/kg - milligrams per kilogram

Table 2. Picatinny Lake Surface Water Sample Results
November 2011
Picatinny Arsenal
Picatinny, New Jersey

				Location ID	**I-82-SW-001**	**I-82-SW-002**
				Sample ID	**I-82SW001 (111611)**	**I-82SW002 (111611)**
				Sample Date	**11/16/2011**	**11/16/2011**
Analytical Group	**CAS No**	**Chemical Name**	**LOC**	**Unit**		
Radiological	13982-63-3	Radium-226		pCi/L	< 1 U	< 1 U
Metals	7440-22-4	Silver	0.0038	mg/L		< 0.001 U

Notes:
Bold - indicates Level of Concern (LOC) is exceeded
U - indicates non detection
pCi/L - picocuries per liter
mg/L - milligrams per liter

Figures



I-40-SD-003							
Depth (ft)		0 – 1	1 – 2	0 – 1	1 – 2	0 – 0.5	1.5 – 2
Compound	LOC	Jul-96	May-01	Feb-11	Feb-11	Nov-11	Nov-11
2,4,6-Trinitrotoluene (mg/kg)	95	1100	ND	NE	ND	ND	ND
RDX (mg/kg)	26	2500	ND	ND	ND	ND	ND

I-40-SD-005							
Depth (ft)		0 – .5	0 – 1	0 – 1(dup)	1 – 2	0 – 0.5	1.5 – 2
Compound	LOC	Oct-98	Feb-11	Feb-11	Feb-11	Nov-11	Nov-11
RDX (mg/kg)	26	7680 JD	ND	ND	ND	ND	ND

LEGEND

- HISTORICAL & 2011 SEDIMENT SAMPLE
- 2011 SEDIMENT SAMPLE
- HISTORICAL SEDIMENT SAMPLE
- ROADS
- WATER BODIES
- BUILDING
- APPROXIMATE SITE LOCATION
- D — ALL COMPOUNDS IDENTIFIED IN AN ANALYSIS AT THE SECONDARY DILUTION FACTOR
- J — ESTIMATED VALUE
- NA — NOT ANALYZED
- ND — NOT DETECTED
- NE — NO EXCEEDANCE

Date\Time : Mon, 06 Feb 2012 – 11:14am
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0 40
SCALE IN FEET

PLOT SIZE: 11x17

REV. ISSUED DATE DESCRIPTION

KEYPLAN

SEAL

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1114 Benfield Blvd.
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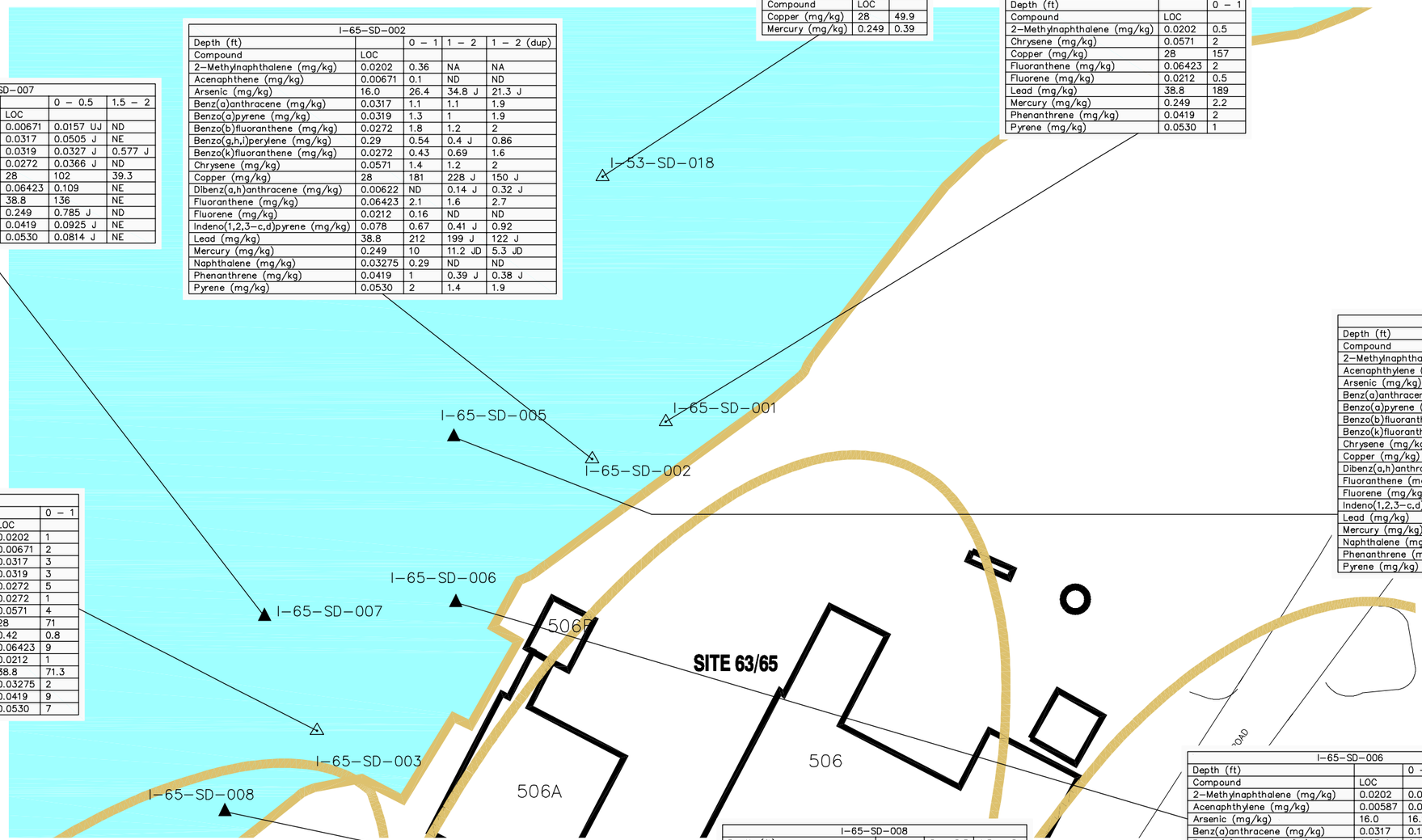
PROJECT TITLE
PICATINNY ARSENAL
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
T. LLEWELLYN	M. MOHIUDDIN	K. PANHORST	T. LLEWELLYN

SHEET TITLE
RDX & 2,4,6-TNT LOC EXCEEDANCES IN SEDIMENT SITE 40/PICA 057 PICATINNY LAKE

TASK/PHASE NUMBER: EA001
DRAWN BY: A. FOX
PROJECT NUMBER: GP06PICA.P057
DRAWING NUMBER: 1



I-53-SD-018		
Depth (ft)		0 – 1
Compound	LOC	
Copper (mg/kg)	28	49.9
Mercury (mg/kg)	0.249	0.39

I-65-SD-001		
Depth (ft)		0 – 1
Compound	LOC	
2-Methylnaphthalene (mg/kg)	0.0202	0.5
Chrysene (mg/kg)	0.0571	2
Copper (mg/kg)	28	157
Fluoranthene (mg/kg)	0.06423	2
Fluorene (mg/kg)	0.0212	0.5
Lead (mg/kg)	38.8	189
Mercury (mg/kg)	0.249	2.2
Phenanthrene (mg/kg)	0.0419	2
Pyrene (mg/kg)	0.0530	1

I-65-SD-002				
Depth (ft)		0 – 1	1 – 2	1 – 2 (dup)
Compound	LOC			
2-Methylnaphthalene (mg/kg)	0.0202	0.36	NA	NA
Acenaphthene (mg/kg)	0.00671	0.1	ND	ND
Arsenic (mg/kg)	16.0	26.4	34.8 J	21.3 J
Benz(a)anthracene (mg/kg)	0.0317	1.1	1.1	1.9
Benzo(a)pyrene (mg/kg)	0.0319	1.3	1	1.9
Benzo(b)fluoranthene (mg/kg)	0.0272	1.8	1.2	2
Benzo(g,h,i)perylene (mg/kg)	0.29	0.54	0.4 J	0.86
Benzo(k)fluoranthene (mg/kg)	0.0272	0.43	0.69	1.6
Chrysene (mg/kg)	0.0571	1.4	1.2	2
Copper (mg/kg)	28	181	228 J	150 J
Dibenz(a,h)anthracene (mg/kg)	0.00622	ND	0.14 J	0.32 J
Fluoranthene (mg/kg)	0.06423	2.1	1.6	2.7
Fluorene (mg/kg)	0.0212	0.16	ND	ND
Indeno(1,2,3-c,d)pyrene (mg/kg)	0.078	0.67	0.41 J	0.92
Lead (mg/kg)	38.8	212	199 J	122 J
Mercury (mg/kg)	0.249	10	11.2 JD	5.3 JD
Naphthalene (mg/kg)	0.03275	0.29	ND	ND
Phenanthrene (mg/kg)	0.0419	1	0.39 J	0.38 J
Pyrene (mg/kg)	0.0530	2	1.4	1.9

I-65-SD-007			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Acenaphthene (mg/kg)	0.00671	0.0157 UJ	ND
Benz(a)anthracene (mg/kg)	0.0317	0.0505 J	NE
Benzo(a)pyrene (mg/kg)	0.0319	0.0327 J	0.577 J
Benzo(k)fluoranthene (mg/kg)	0.0272	0.0366 J	ND
Copper (mg/kg)	28	102	39.3
Fluoranthene (mg/kg)	0.06423	0.109	NE
Lead (mg/kg)	38.8	136	NE
Mercury (mg/kg)	0.249	0.785 J	ND
Phenanthrene (mg/kg)	0.0419	0.0925 J	NE
Pyrene (mg/kg)	0.0530	0.0814 J	NE

I-65-SD-005			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
2-Methylnaphthalene (mg/kg)	0.0202	0.298	ND
Acenaphthylene (mg/kg)	0.00587	0.0102	ND
Arsenic (mg/kg)	16.0	26.7	NE
Benz(a)anthracene (mg/kg)	0.0317	0.219 J	ND
Benzo(a)pyrene (mg/kg)	0.0319	0.2 J	0.0531 J
Benzo(b)fluoranthene (mg/kg)	0.0272	0.204	ND
Benzo(k)fluoranthene (mg/kg)	0.0272	0.17	ND
Chrysene (mg/kg)	0.0571	0.229	ND
Copper (mg/kg)	28	159	56.6
Dibenz(a,h)anthracene (mg/kg)	0.00622	0.0352 J	ND
Fluoranthene (mg/kg)	0.06423	0.462	ND
Fluorene (mg/kg)	0.0212	0.0303	ND
Indeno(1,2,3-c,d)pyrene (mg/kg)	0.078	0.107 J	ND
Lead (mg/kg)	38.8	92.2	NE
Mercury (mg/kg)	0.249	6.05	NE
Naphthalene (mg/kg)	0.03275	0.127	ND
Phenanthrene (mg/kg)	0.0419	0.266	ND
Pyrene (mg/kg)	0.0530	0.272	ND

I-65-SD-003		
Depth (ft)		0 – 1
Compound	LOC	
2-Methylnaphthalene (mg/kg)	0.0202	1
Acenaphthene (mg/kg)	0.00671	2
Benz(a)anthracene (mg/kg)	0.0317	3
Benzo(a)pyrene (mg/kg)	0.0319	3
Benzo(b)fluoranthene (mg/kg)	0.0272	5
Benzo(k)fluoranthene (mg/kg)	0.0272	1
Chrysene (mg/kg)	0.0571	4
Copper (mg/kg)	28	71
Dibenzofuran (mg/kg)	0.42	0.8
Fluoranthene (mg/kg)	0.06423	9
Fluorene (mg/kg)	0.0212	1
Lead (mg/kg)	38.8	71.3
Naphthalene (mg/kg)	0.03275	2
Phenanthrene (mg/kg)	0.0419	9
Pyrene (mg/kg)	0.0530	7

I-65-SD-006			
Depth (ft)		0 – 0.5	1.5 – 2.0
Compound	LOC		
2-Methylnaphthalene (mg/kg)	0.0202	0.0476	NE
Acenaphthylene (mg/kg)	0.00587	0.0145 J	ND
Arsenic (mg/kg)	16.0	16.2	NE
Benz(a)anthracene (mg/kg)	0.0317	0.17 J	NE
Benzo(a)pyrene (mg/kg)	0.0319	0.147 J	NE
Benzo(b)fluoranthene (mg/kg)	0.0272	0.134	NE
Benzo(k)fluoranthene (mg/kg)	0.0272	0.164	NE
Chrysene (mg/kg)	0.0571	0.181	NE
Copper (mg/kg)	28	680	35.2
Dibenz(a,h)anthracene (mg/kg)	0.00622	0.0403 J	ND
Fluoranthene (mg/kg)	0.06423	0.346	NE
Indeno(1,2,3-c,d)pyrene (mg/kg)	0.078	0.0827 J	NE
Lead (mg/kg)	38.8	418	NE
Mercury (mg/kg)	0.249	8.58	NE
Naphthalene (mg/kg)	0.03275	0.0449	NE
Phenanthrene (mg/kg)	0.0419	0.154	NE
Pyrene (mg/kg)	0.0530	0.266	NE

I-65-SD-008			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
2-Methylnaphthalene (mg/kg)	0.0202	0.124	0.0276 J
Arsenic (mg/kg)	16.0	NE	27.1
Copper (mg/kg)	28	204	204
Lead (mg/kg)	38.8	89.1	42.4
Mercury (mg/kg)	0.249	1.38 J	0.525 J
Naphthalene (mg/kg)	0.03275	0.0432	NE
Phenanthrene (mg/kg)	0.0419	0.0585	NE

LEGEND

- ▲ 2011 SEDIMENT SAMPLE
- △ HISTORICAL SEDIMENT SAMPLE
- ROADS
- WATER BODIES
- BUILDING
- APPROXIMATE SITE LOCATION
- D ALL COMPOUNDS IDENTIFIED IN AN ANALYSIS AT THE SECONDARY DILUTION FACTOR
- J ESTIMATED VALUE
- NA NOT ANALYZED
- ND NOT DETECTED
- NE NO EXCEEDANCE

Date\Time : Mon, 06 Feb 2012 – 11:12am
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0 40
SCALE IN FEET

PLOT SIZE: 11x17

REV. ISSUED DATE DESCRIPTION

KEYPLAN

SEAL

ARCADIS
1114 Benfield Blvd.
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PROJECT TITLE
PICATINNY ARSENAL
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
T. LLEWELLYN	M. MOHIUDDIN	K. PANHORST	T. LLEWELLYN

SHEET TITLE
SELECT CONSTITUENT LOC EXCEEDANCES IN SEDIMENT SITE 63/65 /PICA 057 PICATINNY LAKE

TASK/PHASE NUMBER	DRAWN BY
EA001	A. FOX
PROJECT NUMBER	DRAWING NUMBER
GP06PICA.P057	2

I-82-SD-001		
Depth (ft)		0 – 1
Compound	LOC	
Silver (mg/kg)	1.0	26

I-82-SD-002		
Depth (ft)		0 – 1
Compound	LOC	
Silver (mg/kg)	1.0	1100

I-82-SD-006				
Depth (ft)		0 – 0.5	1.5 – 2	1.5 – 2 (dup)
Compound	LOC			
Silver (mg/kg)	1	1040	75.6	457

I-82-SD-005			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Silver (mg/kg)	1.0	997	1430

I-82-SD-004			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Silver (mg/kg)	1.0	1200	1420

LEGEND

- ▲ 2011 SEDIMENT SAMPLE
- △ HISTORICAL SEDIMENT SAMPLE
- ROADS
- WATER BODIES
- BUILDING
- APPROXIMATE SITE LOCATION
- D ALL COMPOUNDS IDENTIFIED IN AN ANALYSIS AT THE SECONDARY DILUTION FACTOR
- J ESTIMATED VALUE
- NA NOT ANALYZED
- ND NOT DETECTED
- NE NO EXCEEDANCE

Date\Time : Mon, 06 Feb 2012 – 11:10am
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0 60
SCALE IN FEET

PLOT SIZE: 11x17

REV. ISSUED DATE DESCRIPTION

KEYPLAN

SEAL

ARCADIS
1114 Benfield Blvd.
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Millersville, MD 21108
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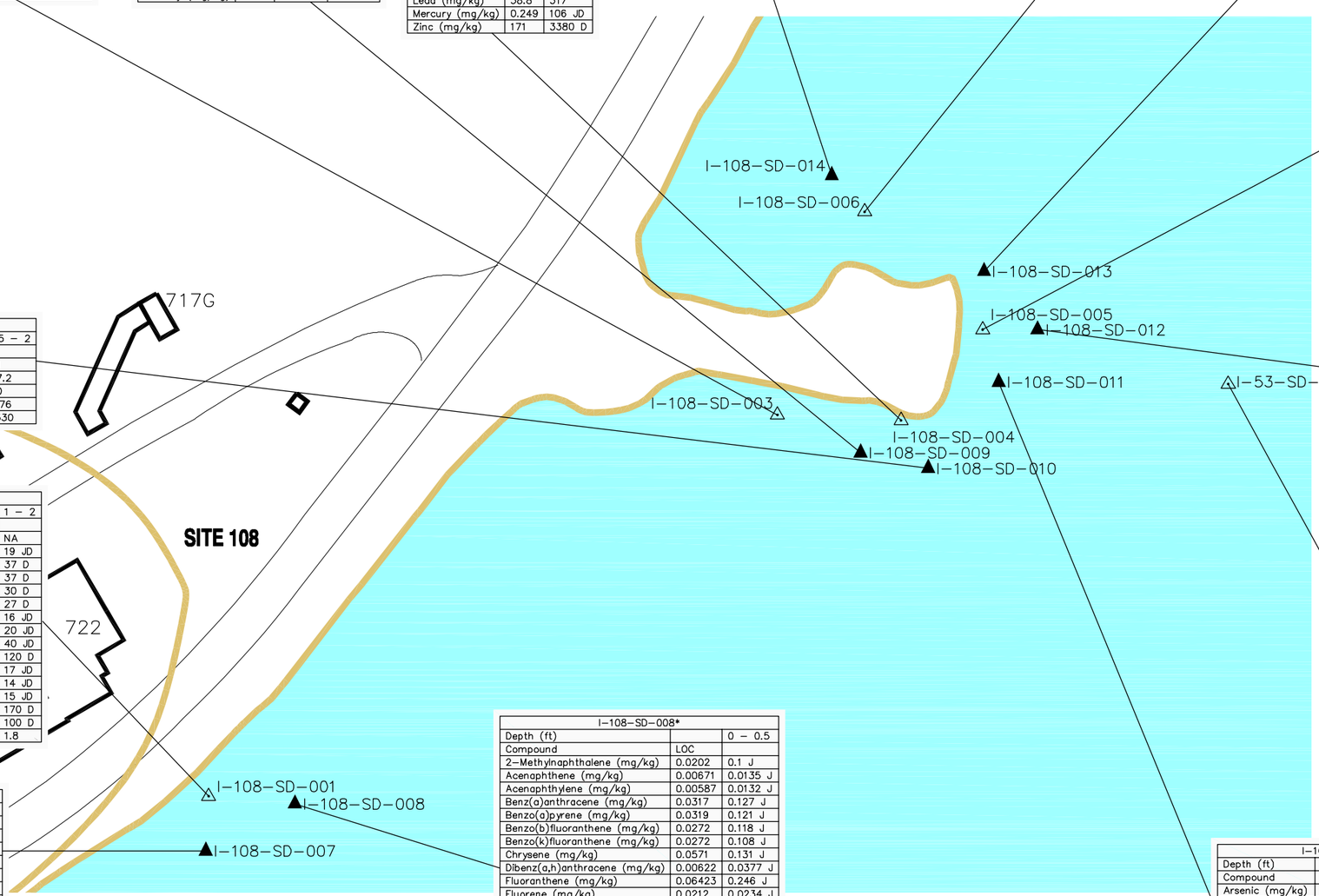
www.arcadis-us.com

PROJECT TITLE
PICATINNY ARSENAL
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
T. LLEWELLYN	M. MOHIUDDIN	K. PANHORST	T. LLEWELLYN
SHEET TITLE: SILVER LOC EXCEEDANCES IN SEDIMENT SITE 82/PICA 057 PICATINNY LAKE		TASK/PHASE NUMBER: EA001	DRAWN BY: A. FOX
		PROJECT NUMBER: GP06PICA.P057	DRAWING NUMBER: 3



I-108-SD-003		
Depth (ft)		0 – 1
Compound	LOC	
Mercury (mg/kg)	0.249	0.32 J

I-108-SD-009			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Mercury (mg/kg)	0.249	26.5	0.712

I-108-SD-004		
Depth (ft)		0 – 1
Compound	LOC	
Arsenic (mg/kg)	16.0	68.6
Copper (mg/kg)	28	130
Lead (mg/kg)	38.8	317
Mercury (mg/kg)	0.249	106 JD
Zinc (mg/kg)	171	3380 D

I-108-SD-014			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Arsenic (mg/kg)	16.0	87.1	117
Copper (mg/kg)	28	354	530
Lead (mg/kg)	38.8	2530	549
Mercury (mg/kg)	0.249	22.7	47.9
Zinc (mg/kg)	171	658	1170

I-108-SD-006		
Depth (ft)		0 – 1
Compound	LOC	
Arsenic (mg/kg)	16.0	30.7
Copper (mg/kg)	28	153
Lead (mg/kg)	38.8	45.7
Mercury (mg/kg)	0.249	1 J
Zinc (mg/kg)	171	277

I-108-SD-013			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Mercury (mg/kg)	0.249	0.382 J	NE

I-108-SD-005		
Depth (ft)		0 – 1
Compound	LOC	
Arsenic (mg/kg)	16.0	243
Copper (mg/kg)	28	151
Lead (mg/kg)	38.8	706
Mercury (mg/kg)	0.249	113 JD
Zinc (mg/kg)	171	5650 D

I-108-SD-010			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Arsenic (mg/kg)	16.0	46.1	61
Copper (mg/kg)	28	48.5	47.2
Lead (mg/kg)	38.8	97.4	90
Mercury (mg/kg)	0.249	20.4	8.76
Zinc (mg/kg)	171	1740	1530

I-108-SD-012			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Mercury (mg/kg)	0.249	0.426	1.49

I-108-SD-001			
Depth (ft)		0 – 1	1 – 2
Compound	LOC		
2-Methylnaphthalene (mg/kg)	0.0202	0.08	NA
Acenaphthene (mg/kg)	0.00671	ND	19 JD
Anthracene (mg/kg)	0.03162	ND	37 D
Benz(a)anthracene (mg/kg)	0.0317	ND	37 D
Benzo(a)pyrene (mg/kg)	0.0319	ND	30 D
Benzo(b)fluoranthene (mg/kg)	0.0272	ND	27 D
Benzo(g,h,i)perylene (mg/kg)	0.29	ND	16 JD
Benzo(k)fluoranthene (mg/kg)	0.0272	ND	20 JD
Chrysene (mg/kg)	0.0571	0.3	40 JD
Fluoranthene (mg/kg)	0.06423	0.12	120 D
Fluorene (mg/kg)	0.0212	0.06	17 JD
Indeno(1,2,3-c,d)pyrene (mg/kg)	0.078	ND	14 JD
Naphthalene (mg/kg)	0.03275	0.13	15 JD
Phenanthrene (mg/kg)	0.0419	0.3	170 D
Pyrene (mg/kg)	0.0530	0.12	100 D
Silver (mg/kg)	1.0	50	1.8

I-53-SD-019		
Depth (ft)		0 – 1
Compound	LOC	
Copper (mg/kg)	28	38.5

I-108-SD-007*		
Depth (ft)		0 – 0.5
Compound	LOC	
Benz(a)anthracene (mg/kg)	0.0317	0.037 J
Benzo(a)pyrene (mg/kg)	0.0319	0.037 J
Benzo(b)fluoranthene (mg/kg)	0.0272	0.0549 J
Benzo(k)fluoranthene (mg/kg)	0.0272	0.0391 J
Fluoranthene (mg/kg)	0.06423	0.0973 J
Phenanthrene (mg/kg)	0.0419	0.0532 J
Pyrene (mg/kg)	0.0530	0.072 J

I-108-SD-008*		
Depth (ft)		0 – 0.5
Compound	LOC	
2-Methylnaphthalene (mg/kg)	0.0202	0.1 J
Acenaphthene (mg/kg)	0.00671	0.0135 J
Acenaphthylene (mg/kg)	0.00587	0.0132 J
Benz(a)anthracene (mg/kg)	0.0317	0.127 J
Benzo(a)pyrene (mg/kg)	0.0319	0.121 J
Benzo(b)fluoranthene (mg/kg)	0.0272	0.118 J
Benzo(k)fluoranthene (mg/kg)	0.0272	0.108 J
Chrysene (mg/kg)	0.0571	0.131 J
Dibenz(a,h)anthracene (mg/kg)	0.00622	0.0377 J
Fluoranthene (mg/kg)	0.06423	0.246 J
Fluorene (mg/kg)	0.0212	0.0234 J
Naphthalene (mg/kg)	0.03275	0.0604 J
Phenanthrene (mg/kg)	0.0419	0.127 J
Pyrene (mg/kg)	0.0530	0.222 J
Silver (mg/kg)	1.0	61.6

I-108-SD-011			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Arsenic (mg/kg)	16.0	437	552
Copper (mg/kg)	28	247	415
Lead (mg/kg)	38.8	1630	1010
Mercury (mg/kg)	0.249	90.8	113
Zinc (mg/kg)	171	6560	7050

LEGEND

- ▲ 2011 SEDIMENT SAMPLE
- △ HISTORICAL SEDIMENT SAMPLE
- ROADS
- WATER BODIES
- BUILDING
- APPROXIMATE SITE LOCATION
- D ALL COMPOUNDS IDENTIFIED IN AN ANALYSIS AT THE SECONDARY DILUTION FACTOR
- J ESTIMATED VALUE
- NA NOT ANALYZED
- ND NOT DETECTED
- NE NO EXCEEDANCE
- * COULD NOT COLLECT SAMPLE FROM 1.5 – 2 FT. DEPTH DUE TO OBSTRUCTION AT DEPTH.

Date\Time : Mon, 06 Feb 2012 - 11:06am
Path\Name : G:\ENVCAD\BRIGHTON\ACT\PICATINNY\PICA 057\SITE 53\Site 108.dwg - Layout Tab : LAYOUT1

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PLOT SIZE: 11x17

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KEYPLAN

SEAL

ARCADIS
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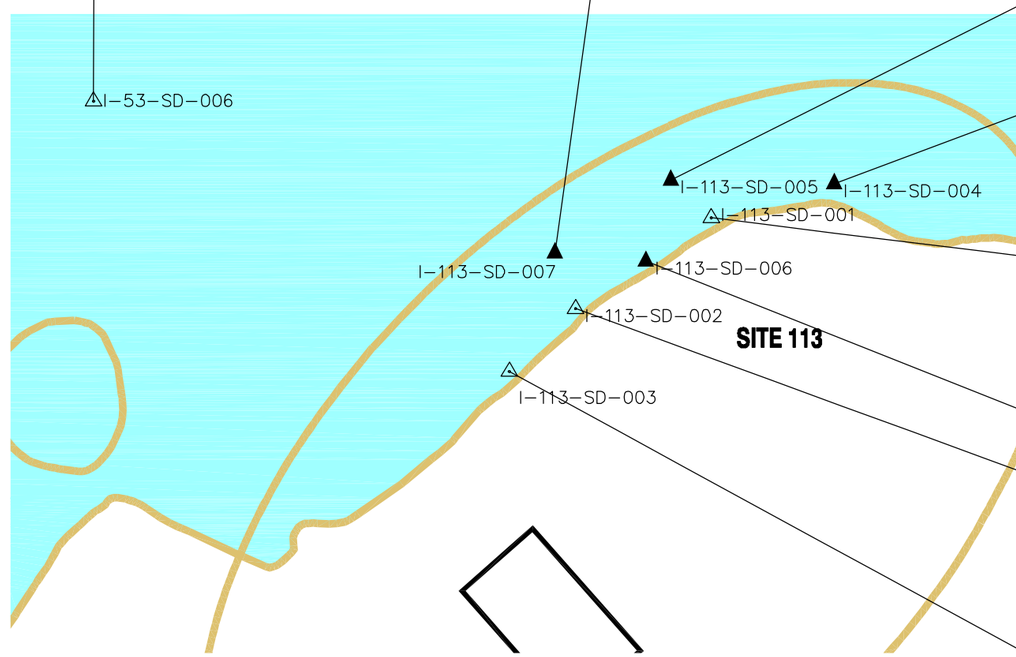
PROJECT TITLE
PICATINNY ARSENAL
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
T. LLEWELLYN	M. MOHIUDDIN	K. PANHORST	T. LLEWELLYN

SHEET TITLE
SELECT CONSTITUENT LOC EXCEEDANCES IN SEDIMENT
SITE 108/PICA 057
PICATINNY LAKE

TASK/PHASE NUMBER	DRAWN BY
EA001	A. FOX
PROJECT NUMBER	DRAWING NUMBER
GP06PICA.P057	4



I-53-SD-006		
Depth (ft)		0 – 1
Compound	LOC	
Copper (mg/kg)	28	38.8
Mercury (mg/kg)	0.249	1.19

I-113-SD-007			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Copper (mg/kg)	28	28.1	NE
Mercury (mg/kg)	0.249	2.06 J	2.05 J

I-113-SD-005			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Copper (mg/kg)	28	1500 J	NE
Lead (mg/kg)	38.8	311 J	NE
Mercury (mg/kg)	0.249	196	NE

I-113-SD-004			
Depth (ft)		0 – 0.5	1.5 – 2
Compound	LOC		
Copper (mg/kg)	28	4400 J	NE
Lead (mg/kg)	38.8	286 J	NE
Mercury (mg/kg)	0.249	245	0.498 J

I-113-SD-001		
Depth (ft)		0 – 1
Compound	LOC	
Copper (mg/kg)	28	18000
Lead (mg/kg)	38.8	284
Mercury (mg/kg)	0.249	21

I-113-SD-006				
Depth (ft)		0 – 0.5	0 – 0.5 (dup)	1.5 – 2
Compound	LOC			
Copper (mg/kg)	28	NE	120 J	NE
Lead (mg/kg)	38.8	NE	63.1 J	NE
Mercury (mg/kg)	0.249	0.895 J	38.3 J	2.85 J

I-113-SD-002				
Depth (ft)		0 – 1	0 – 1 (dup)	1 – 2
Compound	LOC			
Lead (mg/kg)	38.8	125	207	153
Mercury (mg/kg)	0.249	0.34	0.34	NE

I-113-SD-003		
Depth (ft)		0 – 1
Compound	LOC	
Lead (mg/kg)	38.8	54.1

LEGEND

- ▲ 2011 SEDIMENT SAMPLE
- △ HISTORICAL SEDIMENT SAMPLE
- ROADS
- WATER BODIES
- BUILDING
- APPROXIMATE SITE LOCATION
- D ALL COMPOUNDS IDENTIFIED IN AN ANALYSIS AT THE SECONDARY DILUTION FACTOR
- J ESTIMATED VALUE
- NA NOT ANALYZED
- ND NOT DETECTED
- NE NO EXCEEDANCE

Date\Time : Mon, 06 Feb 2012 – 11:06am
Path\Name : G:\ENVCAD\BRIGHTON\ACT\PICATINNY\PICA 057\SITE 53\Site 113.dwg – Layout Tab : LAYOUT1

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PROJECT TITLE
PICATINNY ARSENAL
NEW JERSEY

PROJECT MANAGER	DEPARTMENT MANAGER	LEAD DESIGN PROF.	CHECKED BY
T. LLEWELLYN	M. MOHIUDDIN	K. PANHORST	T. LLEWELLYN

SHEET TITLE
SELECT METALS LOC EXCEEDANCES IN SEDIMENT SITE 113/PICA 057 PICATINNY LAKE

TASK/PHASE NUMBER: EA001
DRAWN BY: A. FOX
PROJECT NUMBER: GP06PICA.P057
DRAWING NUMBER: 5

Attachment 1

Risk Memorandum

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MEMO

To:
Kimberly Panhorst

Copies:

From:
Barbara Pugh
Senior Scientist Risk Assessor

Nancy Bonnevie
Principal Scientist

Date:
January 31, 2012

ARCADIS Project No.:
GP06PICA.57LK.DH001

Subject:
The potential impact of new sediment data (collected in 2011 from Picatinny Lake) on the conclusions of the Human Health and Ecological Risk Assessment.

This memo presents the findings of a review of the impact of recent analytical results from sediment samples collected from Picatinny Lake in 2011 on the conclusions of the Human Health Risk Assessment (HHRA) and Ecological Risk Assessment (ERA) presented in the *Draft Final Lakes Feasibility Study* (FS) (ARCADIS, 2010). This review is limited to sediment data in Picatinny Lake only.

Human Health Risk Assessment

The HHRA presented in the FS included the following risk evaluations:

- The results of a baseline HHRA conducted for the Phase II Round 1 Remedial Investigation (Shaw, 2005). The 2005 HHRA evaluation considered potential exposures by industrial/research workers to constituents of potential concern (COPC) in sediment within discrete areas of Picatinny Lake.
- The results of a HHRA conducted by IT (2000) in which recreational youth visitors were assumed to contact COPCs in sediment at discrete individual sites surrounding the lake.
- The results of a supplemental HHRA (ARCADIS, 2009) in which potential exposures by recreational youth visitors to sediment within 100 feet (ft) of the shoreline on a lake-wide basis were evaluated.

Based on information presented in Appendix C of the FS (ARCADIS, 2010), the HHRA methodology used in the 2009 supplemental risk assessment followed the approach used by IT (2000) in evaluating recreational youth visitors, with updates to reflect current risk assessment guidance. The risk estimates provided in Table 3-1 of the FS (ARCADIS, 2010) were used in this review. It is assumed the information presented in Table 3-1 reflects the risk estimates provided by both Shaw and IT in their respective HHRAs.

The COPCs evaluated in the supplemental HHRA were identified by comparing the maximum detected concentration for each analyte to levels of concern (LOC) based on the protection of human health (HH LOCs) (see Table 3 in Appendix C of ARCADIS 2010). The sediment COPCs included one volatile organic compound (VOC), nine semivolatile organic compounds (SVOCs) including six polynuclear aromatic hydrocarbons (PAHs), two inorganic compounds (arsenic and mercury), and two explosive compounds (hexahydro-1,3,5-trinitro-1,3,5-triazine [RDX] and 2,4,6- trinitrotoluene [TNT]). Table 1 summarizes the comparison of the maximum detected concentrations in the 2011 sediment samples to the maximum detected concentrations in the dataset evaluated in the 2009 HHRA.

In determining the COPCs from historical and 2011 data, the following information regarding the 2011 sampling events was considered:

> The New Jersey Department of Environmental Protection (NJDEP) provided comments (September 23, 2011) regarding the FS and requested sediment sampling at specific sites for specific constituents in order to provide delineation of the stated constituents at Sites 63/65, 82, 108, and 113. Sediment sample locations at these sites, therefore, were <u>not</u> located at previously sampled locations in the *Revised Picatinny Lake Sediment and Surface Water Sampling Work Plan Letter* (ARCADIS, November 3, 2011) (i.e., they were not intended to 'replace' the historical data). Rather, the 2011 sediment sample locations were stepped out from the historical locations in order to define the limits of the elevated constituents at these sites. Therefore, the combined set of data including that evaluated in the 2009 HHRA and that collected in 2011 is the entire data set that is evaluated to identify COPCs in Table 1 for these sites. If data from either data set contained concentrations that exceeded the HH LOC, the associated constituents are retained as COPCs in accordance with the protocol established in the 2009 HHRA.
>
> For Site 40, the two locations where elevated concentrations of RDX and 2,4,6-TNT were identified in historical sediment samples were re-sampled in February 2011 at NJDEP's request. The results of the February 2011 samples indicated that concentrations of both compounds were non-detect or below the level of concern and well below the human health screening level. In their September 23, 2011 comments, the NJDEP requested additional sampling at these two locations to confirm the February 2011 results. Therefore, the two sediment locations with historically elevated concentrations of RDX and 2,4,6-TNT were re-sampled in November 2011 with similar results as the February 2011 results. In addition to re-sampling the noted two historical sampling locations, an additional sediment sample was collected half-way in between these two locations. The November 2011 results for both explosives from this additional sample location were non-detect or below the screening levels. Therefore, because the 2011 sediment data represent current concentrations at Site 40, and the concentrations are below the HH LOC, RDX and 2,4,6-TNT are no longer COPCs.

Table 1: Comparison of maximum detected sediment concentrations in 2011 sampling event to that presented in 2009 HHRA

Analytical Group/ CAS No.	Chemical Name	HH LOC (mg/Kg)	2009 [Max] (mg/Kg)	2009 COPC y/n	2011 [Max] (mg/Kg)	Comparison 2011 [Max] to 2009 [Max]	2011 COPC y/n
Inorganic Compounds							
7440-36-0	Antimony	410	48.6	No	15.5	Lower	No
7440-38-2	Arsenic	16	**243**	**Yes**	**552**	Higher	**Yes**
7440-50-8	Copper	41000	18000	No	4400	Lower	No
7439-92-1	Lead	800	706	No	**2530**	Higher	**Yes**
7439-97-6	Mercury	28	**113**	**Yes**	**245**	Higher	**Yes**
7440-22-4	Silver	5100	1100	No	1430	Higher	No
7440-66-6	Zinc	110000	5650	No	7050	Higher	No
SVOCs							
90-12-0	1-Methylnaphthalene	2400	Not Detected	No	0.149	Higher	No
91-57-6	2-Methylnaphthalene	2400	1	No	0.298	Lower	No
83-32-9	Acenaphthene	33000	19	No	0.0271	Lower	No
208-96-8	Acenaphthylene	17000	0.15	No	0.0271	Lower	No
120-12-7	Anthracene	30000	37	No	0.0579	Lower	No
56-55-3	Benz(a)anthracene	2	**37**	**Yes**	0.219	Lower	**Yes**(1)
50-32-8	Benzo(a)pyrene	0.2	**30**	Yes	**0.577**	Lower	**Yes**(1)
205-99-2	Benzo(b)fluoranthene	2	**27**	**Yes**	0.204	Lower	**Yes**(1)
191-24-2	Benzo(g,h,i)perylene	17000	16	No	0.114	Lower	No
207-08-9	Benzo(k)fluoranthene	21	20	No	0.17	Lower	No
218-01-9	Chrysene	210	40	Yes(2)	0.229	Lower	Yes(2)
53-70-3	Dibenz(a,h)anthracene	0.2	**0.35**	**Yes**	0.0403	Lower	**Yes**(1)
206-44-0	Fluoranthene	22000	120	No	0.462	Lower	No
86-73-7	Fluorene	22000	17	No	0.0303	Lower	No
193-39-5	Indeno(1,2,3-c,d)pyrene	2	**14**	**Yes**	0.107	Lower	**Yes**(1)
91-20-3	Naphthalene	17	**35**	**Yes**	0.127	Lower	**Yes**(1)
85-01-8	Phenanthrene	17000	170	No	0.266	Lower	No
129-00-0	Pyrene	17000	100	No	0.272	Lower	No
Explosives							
118-96-7	2,4,6-TNT	79	**1100**	**Yes**	4.54	Lower	No (3)
121-82-4	RDX	24	**7680**	**Yes**	<0.249	Lower	No (3)

Table 1 Notes: Exceedances of HH LOC are **boldfaced**

Maximum concentrations for 2009 obtained from Table 5 in Appendix C of FS (ARCADIS, 2010)

(1) Although 2011 sediment samples contain lower concentrations, the maximum detected concentration from either the 2009 or the 2011 sampling event of this analyte exceeds the HH LOC. As a result, analyte is retained as a COPC.

(2) Chrysene is retained as a COPC because it is a carcinogenic PAH and other carcinogenic PAHs are identified as COPCs.

(3) 2011 Samples collected from same locations as maximum 2009 concentrations. As a result, analyte is not identified as a COPC.

Mg/kg = milligrams per kilogram

The maximum detected concentrations of arsenic and mercury in the 2011 sampling event are higher than that evaluated in the 2009 HHRA. Both inorganic compounds were identified as sediment COPCs in the 2009 HHRA and would be retained as COPCs. Further, the detected concentrations of lead in the 2011 sediment samples are higher than that in 2009 and now exceed the HH LOC, triggering lead to be identified as a COPC in sediment.

The detected concentrations of both explosive compounds RDX and TNT are substantially lower than the 2009 dataset. It is noted that the 2011 sediment samples were collected in the same locations as the historic samples with the maximum detected concentrations (I-40-SD-003 and I40-SD-005). If the more recent samples are now representative of current site conditions at the same sampling locations presented in the 2009 HHRA, RDX and TNT would no longer be identified as COPCs.

Although the potential exposures of a recreational youth visitor and an industrial/research worker were considered in the 2009 HHRA, this evaluation only considers the potential exposures and risks to the recreational youth visitor; the recreational youth visitor is considered the more exposed of the two receptor groups evaluated in the 2009 HHRA and is therefore the more conservative assessment.

Impact on 2009 HHRA Lake-Wide Risk Estimates

The 2009 risk estimate (4E-5) associated with lake-wide sediment exposure by the recreational youth worker was within United States Environmental Protection Agency's (USEPA's) range of acceptable risks (1E-4 to 1E-6). Potential exposure to maximum detected concentrations of RDX in sediment contributed 60 percent to the total cancer risk estimate (ARCADIS, 2010). As previously noted, RDX was not detected in sediment samples collected in 2011 from two sampling locations associated with the detected concentrations in the 2009 HHRA (I-40-SD-003 and I40-SD-005). As a result, the lake-wide risk estimates for the recreational youth visitor exposure scenario will be still lower than those presented in the 2009 HHRA, and still within USEPA's two order of magnitude acceptable risk range.

The carcinogenic PAHs contributed 4 percent to the total cancer risk estimate (4E-5) in the 2009 HHRA. With the exception of chrysene, the exposure point concentration (EPC) of each of the PAHs was based on the 95% upper concentration limit (95% UCL) of the arithmetic mean concentration. The maximum detected concentration of chrysene was used as the sediment EPC. Given that the concentrations of each of the carcinogenic PAHs are lower than the 2009 concentrations in sediment, it likely that the 95% UCLs and corresponding risks would also be lower.

A similar pattern is observed when considering the data for naphthalene and the non-cancer hazard index (HI=1) for lake-wide exposures. The relative contribution of naphthalene (hazard quotient [HQ] of 0.00013) to the 2009 lake-wide hazard index for non-cancer health effects was less than 1 percent using a 95% UCL as the EPC for naphthalene. Given that the concentrations of naphthalene are lower than the 2009 concentrations in sediment, it likely that the 95% UCLs and corresponding hazard estimate for naphthalene would also be lower.

The detected concentrations of arsenic and mercury in the 2011 sediment samples are greater than (approximately double) the detected concentrations of these inorganic compounds in the 2009 dataset.

The actual sediment dataset used to develop the 2009 EPCs was not identified for this evaluation. Using a compilation of all sediment data, including the 2011 data and the 2009 sediment data as presented in Appendix A of ARCADIS 2010 for all Site/PICA sites within the Picatinny site, the estimated lake-wide EPC based on the 95% UCL for arsenic is 61.3 mg/kg, slightly less than double the EPC (33 mg/kg; 95% UCL) used to evaluate arsenic exposures in the 2009 HHRA. Using the EPC representing the combined 2011/2009 datasets, the estimated cancer risk for potential lake-wide exposure to arsenic in sediments is 3E-6. This represents a cumulative cancer risk of 2E-5 assuming no exposure to RDX (assuming no detection if the 2009 data is no longer considered representative of current conditions). The overall risk estimate remains within USEPA's acceptable risk range. Similarly, the estimated HQ associated with lake-wide arsenic exposures based on the combined 2009 and 2011 data increases to 9.1E-2, with a negligible increase to the total HI (which is based on the sum of HQs).

For mercury, the revised EPC based on a 95% UCL of the 2009 and 2011 data is 37.3 mg/kg and the corresponding estimated HQ is 0.047 (versus 0.031 in 2009). Based on the information presented in Table 3-1 (ARCADIS, 2010), the total HI associated with sediment exposures to a recreational youth visitor is 1. When one considers the 2011 sediment data for mercury, there is no material impact on the total HI.

As previously noted, lead is identified as a COPC in sediment based on the 2011 data based on a comparison of the maximum detected concentration to the HH LOC. USEPA (2007) recommends that exposures to lead be evaluated using the arithmetic average concentration. The lake-wide arithmetic mean concentration of lead based on the combined 2009 and 2011 dataset is estimated to be 160 mg/kg, which is well below the HH LOC. As a result, lead concentrations in sediment representing the lake-wide exposure do not pose a level of concern for human health.

Ecological Risk Assessment

The ERA presented in the FS focused on the following receptors and associated lines of evidence:

- Aquatic Biota (fish community)
    - Concentrations in water
    - Bioassay results
    - Biosurvey results
- Benthic Biota (benthic invertebrate community)
    - Concentrations in sediment
    - Bioassay results
    - Biosurvey results
- Semi-aquatic Carniovores
    - Concentrations in water
    - Concentrations in sediment
    - Concentrations in prey tissue
- Semi-aquatic herbivores
    - Concentrations in water
    - Concentrations in sediment
    - Modeled concentrations in plant tissue

In determining the final weight of evidence for each receptor, emphasis was placed on those lines of evidence that provide actual measures of the receptor health and impacts (i.e., toxicity tests, community surveys, dose modeling relying on measured prey tissue concentrations). The ERA concluded that population level risks to ecological receptors associated with Picatinny Lake as a whole are low despite the presence of various chemicals at concentrations above the LOC because very little toxicity was observed in laboratory toxicity tests, no significant impact on abundance or diversity was noted in community surveys, and measured tissue concentrations did not indicate that chemicals were accumulating to a significant extent in prey items. Therefore, although the additional sediment data confirm that there may be other localized pockets of elevated metals concentrations (e.g., arsenic at Site 108, Copper at Site 113), these concentrations do not appear to be significantly impacting the overall population of ecological receptors associated with Picatinny Lake as indicated by the lack of significant toxicity associated with those areas in the bioassays and the fact that those chemicals do not appear to be accumulating in prey tissue to an extent that would result in risks to upper trophic level species.

Summary

The analytical results from the 2011 sediment sampling event have no significant impact on the risk and hazard estimates presented in the 2009 HHRA for lake-wide exposures by recreational youth visitors. Similarly, these data also have no significant impact on the risk and hazard estimates presented in the 2000 ERA for lake-wide exposures to ecological receptors.

References

ARCADIS. 2010. Draft Final Lakes Feasibility Study (FS). September.

ARCADIS. 2011. Revised Picatinny Lake Sediment and Surface Water Sampling Work Plan Letter.

United States Environmental Protection Agency (USEPA). 2007. Estimating the Soil Lead Concentration Term for the Integrated Exposure Uptake Biokinetic (IEUBK) Model. Office of Solid Waste and Emergency Response (OSWER) #9200.1-78. September.

USEPA. 2010. ProUCL Version 4.00.05 User Guide (Draft). EPA/600/R-07/038, May 2010.

Appendix E

Risk Assessment Memorandum

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MEMO

To:
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USACHPPPM

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Ted Gabel (Picatinny)
Nancy Flaherty (USACE)

From:
Tim Llewellyn
Kimberly Panhorst

Date:
May 22, 2009

ARCADIS Project No.:
GP06PICA.P057

Subject:
Supplemental Evaluation of On-Site Youth Visitor Exposures to Picatinny Lake Sediment and Surface Water, Picatinny Arsenal, New Jersey

---

Human health and ecological risk assessments have previously been conducted for Picatinny Lake (IT 2000a,b; IT 2001; Shaw 2005a; Shaw 2000a,b). The ecological risk assessment conducted for Picatinny Lake considered the potential risks and hazards to ecological receptors that might have potential for exposure to sediments and surface water in the lake as a whole and did not identify significant risks to those receptors (IT 2000a,b). An additional risk assessment conducted by Shaw (2005a) evaluated potential exposures associated with direct contact of workers with soils on individual sites around Picatinny Lake and discussed the results of an earlier assessment of potential risks associated with the consumption of fish from the surface water bodies on the Picatinny site that was conducted by IT. The Shaw (2005a) assessment reported unacceptable noncancer hazards for ingestion of fish, and fish consumption advisories were instituted for anglers using surface water bodies on the site (Shaw 2005a) that are consistent with state-wide fish consumption advisories.

A separate risk assessment was conducted by IT (2001) to evaluate the potential risks associated with direct contact with Picatinny Lake sediment and surface water by On-Site Youth Visitors (IT 2001). That assessment considered the human health risks associated with each of the individual sites that surround the lake (Sites 33, 40, 71, 82, 108, 113, 156, 157, 158, and 159) and based each site-specific analysis on the analytical results for the specific constituents contained within each individual area so that the constituents of potential concern (COPCs) varied from site to site. The results of those evaluations indicated that risks to the On-Site Youth Visitor at all of the Sites, with the singular exception of Site 40, were within USEPA's acceptable risk range, and that the calculated hazard indices were below USEPA's

benchmark of 1. At Site 40,the potential exposure to 2,4,6-trinitrotoluene resulted in a hazard index greater than 1 (IT 2001).

The previous IT (2001) risk assessment did not, however, evaluate potential risks associated with exposures to constituents in surface water and sediment on a lake-wide basis (IT 2001). IT (2001) also did not consider that the On-Site Youth Visitors may not be restricted to a single site along the lake but instead may move around to different portions of the lake during their visits, thereby potentially experiencing exposure to sediments and surface water from a number of different areas on a given day of exposure. As a result, this supplemental evaluation considers potential risks and hazards to the same group of receptors (e.g., current/future On-Site Youth Visitors) who may have contact with these media from all portions of the lake. It combines the available sediment and surface water sampling data collected from the individual sites surrounding the lake into a single exposure point and evaluates potential risks and hazards associated with exposures to those media on a lake-wide basis. As discussed below, it follows the same methodology used in the original risk assessments for the On-Site Youth Visitor (IT 2001), except where a more updated approach has been recommended in USEPA guidance.

Data Summary

Sample data selected for use in this supplemental risk assessment include analytical data from surface water and sediment samples collected from Picatinny Lake. Because it is reasonable to assume that On-Site Youth Visitors would only have direct contact with surface sediments near the shoreline, sediment samples collected from greater than 1 foot below sediment surface (bss) and/or greater than 100 feet from the shoreline were excluded from the assessment. In addition, because boat speeds are restricted to “no wake” speeds (Regulation 200-3 dated August 2006), it is unlikely that deeper sediments would be stirred by boating activities on the lake. The majority of surface (i.e., less than 1 foot bss) sediment samples were collected within 20 to 30 feet of the shoreline, with only two samples (53SD-8 and 53SD-20) collected beyond this approximate range.

The analytical data for sediment and surface water used in the chemical and radionuclide risk assessments are summarized in Tables 1 and 2, respectively. The frequency of detection, range of detection limits, and range of detected concentrations are presented for each constituent analyzed. A mean concentration and the 95th upper confidence limit on the mean concentration (95 UCL) were calculated using USEPA’s ProUCL (version 4) software for constituent datasets having at least 8 samples and a minimum of 5 detected values.

Potential risks to On-Site Youth Visitors resulting from exposure to chemicals and radionuclides detected in Picatinny Lake sediment and surface water were evaluated separately. As such, these assessments are discussed separately below.

Chemical Risk Assessment

COPCs were selected by comparing the maximum detected concentration of each constituent to site-specific levels of concern (LOCs) based on the protection of human health. Human Health LOCs are presented in Tables 3 and 4. As shown in Table 5, a total of 15 COPCs were identified. These include methylene chloride, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, bis(2-ethylhexylphthalate), dibenzo(a,h)anthracene, hexachlorobenzene, indeno(1,2,3-cd)pyrene, mirex, naphthalene, arsenic, mercury, RDX, and 2,4,6-trinitrotoluene.

There were 12 additional constituents for which no LOCs were available, including dibenzofuran, calcium, magnesium, potassium, sodium, titanium, zirconium, nitrocellulose, PETN, picric acid, diesel fuel, and total recoverable petroleum hydrocarbons. Toxicity values are unavailable for 11 of these constituents. Thus, none of these 11 constituents was carried forward into the risk calculations. While there is no published toxicity value for dibenzofuran, USEPA (2007) has recently developed a screening-level Provisional Peer-Reviewed Toxicity Reference Value (PPRTV) for dibenzofuran of 1E-3 mg/kg-day, which results in an industrial worker Regional Screening Level (RSL) of 959 mg/kg using USEPA default exposure parameters and equations (USEPA online Regional Screening Level Calculator, http://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search). The maximum detected concentration of dibenzofuran in soil (0.8 mg/kg) is approximately four orders of magnitude lower than this industrial soil RSL, and dibenzofuran was not detected in surface water. Thus it was not carried forward into the baseline risk assessment calculations.

Although the maximum detected concentration of lead in surface water (43.6 ug/L) was greater than the human health LOC (5 ug/L), USEPA (1999) guidance recommends that exposures to lead be evaluated using the arithmetic mean concentration as the exposure point concentration (EPC). This is because the pharmacokinetic models used by USEPA to develop screening levels use average or mean concentrations to estimate upper percentile blood lead concentrations. The arithmetic mean concentration of lead in surface water calculated using half the detection limit for non-detect analytical results (2.6 ug/L) is less than the human health LOC. Thus, lead was not selected as a COPC.

Exposure was quantified using standard exposure equations consistent with the USEPA (1989, 1991, 2004) *Risk Assessment Guidance for Superfund (RAGS), Volume I, Human Health Evaluation Manual.* The equations for sediment and surface water ingestion are identical to the equations used in the IT (2001) risk assessment. The equations for dermal contact with sediment and surface water have been updated to be consistent with the USEPA (2004) *Risk Assessment Guidance for Superfund (RAGS), Volume I, Human Health Evaluation Manual Part E, Supplemental Guidance for Dermal Risk Assessment*,

but, with one exception, utilize the same exposure parameters and evaluate the same exposure pathways presented in the previous assessment. Equations used to estimate risk and hazard are presented in Table 6.

Exposure point concentrations (EPCs) used in the risk calculations consisted of 95 UCLs, where possible. When constituents had a sample size of less than 8 or had less than 5 detected values (Table 7), the maximum concentration was conservatively used as the EPC.

Exposure parameters used for this analysis are presented in Tables 8 and 9. The same parameters used in the original risk assessment for incidental ingestion of and direct contact with sediment and surface water were used in this evaluation, except for the dermal adherence factor. Since the IT (2001) risk assessment was completed, USEPA (2004) has updated its guidance for dermal exposures. While the original risk assessment used a dermal adherence factor of 1.5 mg/cm^2, this supplemental assessment uses an updated value of 0.2 mg/cm^2 based on measured soil adherence to the skin of children playing in wet soil (USEPA 2004).

Noncarcinogenic and carcinogenic toxicity values are presented in Tables 10 and 11, respectively, as are the gastrointestinal absorption factors (ABS_{GI}) for each constituent. Toxicity values were selected according to the USEPA (2003) hierarchy for selecting toxicity values.

The estimated cancer risk for the On-Site Youth Visitor who might come into contact with sediment and surface water during recreational activities at Picatinny Lake was 4E-5, which falls within USEPA's range of acceptable risks (1E-6 to 1E-4) (Table 12). The majority of the estimated risk is attributed to potential exposure to RDX (60 percent) and mirex (30 percent) via incidental ingestion of and dermal contact with sediment. This risk is likely overstated, since the EPCs used to estimate risk from exposure to these constituents consist of maximum detected concentrations. RDX was detected in only 3 of 43 sediment samples, and mirex was detected in only 1 of 24 sediment samples. Therefore, the use of the maximum detected concentrations to estimate exposure likely biases the risk estimate high.

The calculated hazard index of 2 marginally exceeds the USEPA's noncancer benchmark of 1 (Table 12). The majority of the calculated hazard is attributed to potential exposure to RDX (47 percent) via incidental ingestion of and dermal contact with sediment. However, when the hazard index is segregated by target organ (as shown in Table 12), none of the effect-based hazard indices exceeds the USEPA's noncancer benchmark of 1. As is the case with estimated cancer risks, the calculated hazard is also likely overstated, since the EPCs used to estimate hazard from exposure to these constituents consisted of maximum detected concentrations. As stated above, RDX was detected in 3 of 43 sediment samples; therefore, the use of the maximum detected concentrations to estimate exposure likely overestimated the estimated hazard indices.

Radionuclide Risk Assessment

Radionuclide COPCs selection was completed similar to the chemical COPC selection process. The maximum detected concentration of each radionuclide was compared to Human Health LOCs, where available. As shown in Table 13, Human Health LOCs in sediment are unavailable for americium-241, cesium-137, cobalt-60, and for radionuclides analyzed in surface water. As shown in Table 14, no radionuclide COPCs were identified. Thus, none of the radionuclides were carried forward into the risk calculations.

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Attachment 1
Calculation of Site-Specific Preliminary Remediation Goal for Lead in Soil
Picatinny Arsenal, New Jersey

Exposure Variable	Description of Exposure Variable	Units	Revised PRGs for Lead in Soil*	
			Site Worker	Construction Worker
$PbB_{fetal,\ 0.95}$	95th percentile PbB in fetus	ug/dL	10	10
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4
GSD_i	Geometric standard deviation PbB	--	2.0	2.0
PbB_0	Baseline PbB	ug/dL	1.98	1.98
IR_{S+D}	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.100
$AF_{S,\ D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12
$EF_{S,\ D}$	Exposure frequency (same for soil and dust)	days/yr	219	125
$AT_{S,\ D}$	Averaging time (same for soil and dust)	days/yr	365	365
PRG		**mg/kg**	**1,092**	**957**

***Equation 1**

$$\textbf{PRG} = \frac{([PbB_{95}fetal/(R*(GSD_i^{1.645})])-PbB_0)*AT_{S,D}}{BKSF*(IR_{S+D}*AF_{S,D}*EF_{S,D})}$$

Table 1
Sediment Data Summary
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Analyte	Units	Frequency of Detection		Range of Detection Limits	Range of Detected Concentrations	Mean Concentration	95 UCL	Maximum On-Site Concentration
Volatile Organic Compounds								
Acetone	mg/kg	5/18	28%	0.017 - 0.017	0.12 - 0.35	0.15	0.18	0.35
Acetonitrile	mg/kg	0/18	0%	0.23 - 0.23	ND - ND	--	--	ND
Benzene	mg/kg	0/18	0%	0.15 - 0.15	ND - ND	--	--	ND
Bromodichloromethane	mg/kg	0/18	0%	0.29 - 0.29	ND - ND	--	--	ND
Bromoform	mg/kg	0/18	0%	0.69 - 0.69	ND - ND	--	--	ND
Bromomethane	mg/kg	0/18	0%	0.57 - 0.57	ND - ND	--	--	ND
2-Butanone	mg/kg	0/18	0%	0.07 - 0.07	ND - ND	--	--	ND
Carbon Disulfide	mg/kg	0/18	0%	0.44 - 0.44	ND - ND	--	--	ND
Carbon Tetrachloride	mg/kg	0/18	0%	0.7 - 0.7	ND - ND	--	--	ND
Chlorobenzene	mg/kg	0/18	0%	0.086 - 0.086	ND - ND	--	--	ND
Chloroethane	mg/kg	0/18	0%	0.012 - 0.012	ND - ND	--	--	ND
Chloroform	mg/kg	0/18	0%	0.087 - 0.087	ND - ND	--	--	ND
Chloromethane	mg/kg	0/18	0%	0.88 - 0.88	ND - ND	--	--	ND
cis-1,3-Dichloropropene	mg/kg	0/18	0%	0.32 - 0.32	ND - ND	--	--	ND
Dibromochloromethane	mg/kg	0/18	0%	0.31 - 0.31	ND - ND	--	--	ND
Dichlorodifluoromethane	mg/kg	0/18	0%	0.014 - 0.014	ND - ND	--	--	ND
1,1-Dichloroethane	mg/kg	0/18	0%	0.23 - 0.23	ND - ND	--	--	ND
1,2-Dichloroethane	mg/kg	0/18	0%	0.17 - 0.17	ND - ND	--	--	ND
1,1-Dichloroethene	mg/kg	0/18	0%	0.39 - 0.39	ND - ND	--	--	ND
1,2-Dichloroethene (total)	mg/kg	0/18	0%	0.3 - 0.3	ND - ND	--	--	ND
1,2-Dichloropropane	mg/kg	0/18	0%	0.29 - 0.29	ND - ND	--	--	ND
Ethanol	mg/kg	0/18	0%	3.7 - 3.7	ND - ND	--	--	ND
Ethylbenzene	mg/kg	0/18	0%	0.17 - 0.17	ND - ND	--	--	ND
2-Hexanone	mg/kg	0/18	0%	0.032 - 0.032	ND - ND	--	--	ND
Isopropanol	mg/kg	0/18	0%	0.79 - 0.79	ND - ND	--	--	ND
Methylene Chloride	mg/kg	5/18	28%	0.012 - 0.012	0.01 - 0.21	0.026	0.048	0.21
4-Methyl-2-pentanone	mg/kg	0/18	0%	0.027 - 0.027	ND - ND	--	--	ND
Styrene	mg/kg	0/18	0%	0.26 - 0.26	ND - ND	--	--	ND
tert-Butyl Alcohol	mg/kg	0/18	0%	0.5 - 0.5	ND - ND	--	--	ND
1,1,2,2-Tetrachloroethane	mg/kg	0/18	0%	0.24 - 0.24	ND - ND	--	--	ND
Tetrachloroethene	mg/kg	0/18	0%	0.081 - 0.081	ND - ND	--	--	ND
Toluene	mg/kg	1/18	6%	0.078 - 0.078	0.55 - 0.55	--	--	0.55
trans-1,3-Dichloropropene	mg/kg	0/18	0%	0.28 - 0.28	ND - ND	--	--	ND
1,1,1-Trichloroethane	mg/kg	0/18	0%	0.44 - 0.44	ND - ND	--	--	ND
1,1,2-Trichloroethane	mg/kg	0/18	0%	0.54 - 0.54	ND - ND	--	--	ND
Trichloroethene	mg/kg	0/18	0%	0.28 - 0.28	ND - ND	--	--	ND
Trichlorofluoromethane	mg/kg	6/18	33%	0.59 - 0.59	0.01 - 0.96	0.11	0.79	0.96
1,1,2-trichloro-1,2,2-trifluoroethane	mg/kg	2/18	11%	0.82 - 0.82	0.03 - 0.04	--	--	0.04
Vinyl Acetate	mg/kg	0/18	0%	0.032 - 0.032	ND - ND	--	--	ND
Vinyl Chloride	mg/kg	0/18	0%	0.62 - 0.62	ND - ND	--	--	ND
Xylenes (total)	mg/kg	0/18	0%	0.15 - 0.15	ND - ND	--	--	ND
Semivolatile Organic Compounds								
Acenaphthene	mg/kg	6/42	14%	0.036 - 1	0.1 - 19	0.6	5.5	19
Acenaphthylene	mg/kg	3/42	7%	0.033 - 21	0.02 - 0.15	--	--	0.15
Aniline	mg/kg	0/33	0%	0.42 - 6	ND - ND	--	--	ND
Anthracene	mg/kg	12/42	29%	0.033 - 1	0.01 - 37	1	10	37
Benzo(a)anthracene	mg/kg	12/42	29%	0.12 - 2	0.03 - 37	1.2	2.7	37
Benzo(a)pyrene	mg/kg	9/42	21%	0.16 - 2	0.02 - 30	0.99	2.3	30
Benzo(b)fluoranthene	mg/kg	11/42	26%	0.12 - 2	0.03 - 27	1	2.2	27
Benzo(g,h,i)perylene	mg/kg	7/42	17%	0.19 - 2.3	0.02 - 16	0.48	1.2	16
Benzo(k)fluoranthene	mg/kg	12/42	29%	0.066 - 1.5	0.01 - 20	0.62	5.5	20
Benzoic Acid	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl Alcohol	mg/kg	0/24	0%	0.19 - 2	ND - ND	--	--	ND
bis(2-Chloroethoxy)methane	mg/kg	0/37	0%	0.059 - 1	ND - ND	--	--	ND
bis(2-Chloroethyl)ether	mg/kg	0/37	0%	0.033 - 1	ND - ND	--	--	ND
bis(2-Chloroisopropyl)ether	mg/kg	0/37	0%	0.08 - 2	ND - ND	--	--	ND
bis(2-Ethylhexyl)phthalate	mg/kg	1/37	3%	0.21 - 6	3.2 - 3.2	--	--	3.2
4-Bromophenyl-phenyl ether	mg/kg	0/37	0%	0.033 - 2	ND - ND	--	--	ND
Butylbenzylphthalate	mg/kg	0/37	0%	0.12 - 2	ND - ND	--	--	ND
Carbazole	mg/kg	3/37	8%	0.12 - 1.5	0.13 - 1	--	--	1
4-Chloroaniline	mg/kg	0/37	0%	0.35 - 8	ND - ND	--	--	ND
4-Chloro-3-Methylphenol	mg/kg	0/37	0%	0.095 - 2	ND - ND	--	--	ND
2-Chloronaphthalene	mg/kg	3/37	8%	0.036 - 0.61	0.15 - 4.8	--	--	4.8
2-Chlorophenol	mg/kg	0/37	0%	0.06 - 2	ND - ND	--	--	ND
4-Chlorophenyl-phenyl ether	mg/kg	0/37	0%	0.033 - 1.5	ND - ND	--	--	ND
Chrysene	mg/kg	15/42	36%	0.12 - 1.5	0.02 - 40	1.3	3	40
Dibenzo(a,h)anthracene	mg/kg	1/42	2%	0.19 - 21	0.35 - 0.35	--	--	0.35
Dibenzofuran	mg/kg	5/37	14%	0.035 - 1	0.08 - 0.8	0.11	0.15	0.8
1,2-Dichlorobenzene	mg/kg	1/37	3%	0.08 - 1	5.2 - 5.2	--	--	5.2
1,3-Dichlorobenzene	mg/kg	1/37	3%	0.08 - 1	0.78 - 0.78	--	--	0.78
1,4-Dichlorobenzene	mg/kg	1/37	3%	0.08 - 1	1.3 - 1.3	--	--	1.3
3,3'-Dichlorobenzidine	mg/kg	0/37	0%	0.59 - 60	ND - ND	--	--	ND
2,4-Dichlorophenol	mg/kg	0/37	0%	0.16 - 2	ND - ND	--	--	ND
Diethylphthalate	mg/kg	0/37	0%	0.08 - 2	ND - ND	--	--	ND

Table 1
Sediment Data Summary
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Analyte	Units	Frequency of Detection		Range of Detection Limits	Range of Detected Concentrations	Mean Concentration	95 UCL	Maximum On-Site Concentration
2,4-Dimethylphenol	mg/kg	0/37	0%	0.16 - 7	ND - ND	--	--	ND
Dimethylphthalate	mg/kg	0/37	0%	0.12 - 2	ND - ND	--	--	ND
Di-n-Butylphthalate	mg/kg	8/37	22%	0.061 - 1	0.16 - 3.7	0.34	0.51	3.7
4,6-Dinitro-2-methylphenol	mg/kg	0/37	0%	0.55 - 15	ND - ND	--	--	ND
2,4-Dinitrophenol	mg/kg	0/37	0%	1.2 - 19	ND - ND	--	--	ND
2,4-Dinitrotoluene	mg/kg	0/13	0%	0.16 - 2	ND - ND	--	--	ND
2,6-Dinitrotoluene	mg/kg	0/13	0%	0.16 - 2	ND - ND	--	--	ND
Di-n-Octylphthalate	mg/kg	0/37	0%	0.16 - 2	ND - ND	--	--	ND
Diphenylamine	mg/kg	4/33	12%	0.13 - 1	0.34 - 2.3	--	--	2.3
Fluoranthene	mg/kg	21/42	50%	0.068 - 0.7	0.04 - 120	3.6	21.6	120
Fluorene	mg/kg	8/42	19%	0.033 - 1	0.06 - 17	0.54	2.4	17
Hexachlorobenzene	mg/kg	2/37	5%	0.033 - 1.5	0.28 - 5.4	--	--	5.4
Hexachlorobutadiene	mg/kg	0/37	0%	0.16 - 2	ND - ND	--	--	ND
Hexachlorocyclopentadiene	mg/kg	0/37	0%	1.2 - 60	ND - ND	--	--	ND
Hexachloroethane	mg/kg	0/37	0%	0.12 - 2	ND - ND	--	--	ND
Indeno(1,2,3-cd)pyrene	mg/kg	7/42	17%	0.19 - 3	0.01 - 14	0.43	1	14
Isophorone	mg/kg	0/37	0%	0.033 - 2	ND - ND	--	--	ND
1-Methylnaphthalene	mg/kg	0/3	0%	0.4 - 0.44	ND - ND	--	--	ND
2-Methylnaphthalene	mg/kg	4/40	10%	0.049 - 1.5	0.08 - 1	--	--	1
2-Methylphenol	mg/kg	0/37	0%	0.029 - 2	ND - ND	--	--	ND
4-Methylphenol	mg/kg	0/37	0%	0.16 - 2	ND - ND	--	--	ND
Mirex	mg/kg	1/24	4%	0.25 - 2	10 - 10	--	--	10
Naphthalene	mg/kg	9/42	21%	0.037 - 0.61	0.06 - 35	1.4	3	35
2-Nitroaniline	mg/kg	0/37	0%	0.062 - 4.4	ND - ND	--	--	ND
3-Nitroaniline	mg/kg	0/37	0%	0.35 - 4.4	ND - ND	--	--	ND
4-Nitroaniline	mg/kg	0/37	0%	0.35 - 4.4	ND - ND	--	--	ND
Nitrobenzene	mg/kg	0/13	0%	0.08 - 1	ND - ND	--	--	ND
2-Nitrophenol	mg/kg	0/37	0%	0.14 - 2	ND - ND	--	--	ND
4-Nitrophenol	mg/kg	0/37	0%	0.59 - 10	ND - ND	--	--	ND
N-Nitrosodimethylamine	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	mg/kg	0/37	0%	0.12 - 2	ND - ND	--	--	ND
N-Nitrosodiphenylamine	mg/kg	6/37	16%	0.08 - 2	0.13 - 3.5	0.34	0.55	3.5
Pentachlorophenol	mg/kg	0/37	0%	0.42 - 10	ND - ND	--	--	ND
Phenanthrene	mg/kg	20/42	48%	0.033 - 1	0.01 - 170	4.6	45.4	170
Phenol	mg/kg	0/37	0%	0.11 - 2	ND - ND	--	--	ND
Pyrene	mg/kg	25/42	60%	0.033 - 0.61	0.04 - 100	3	18	100
1,2,4-Trichlorobenzene	mg/kg	0/37	0%	0.04 - 1.5	ND - ND	--	--	ND
2,4,5-Trichlorophenol	mg/kg	0/37	0%	0.1 - 4.4	ND - ND	--	--	ND
2,4,6-Trichlorophenol	mg/kg	0/37	0%	0.17 - 4.4	ND - ND	--	--	ND
Pesticides								
4,4'-DDD	mg/kg	2/6	33%	0.08 - 0.826	0.01 - 0.6	--	--	0.6
4,4'-DDE	mg/kg	2/6	33%	0.07 - 0.765	0.03 - 0.26	--	--	0.26
4,4'-DDT	mg/kg	2/6	33%	0.07 - 0.707	0.01 - 0.45	--	--	0.45
Aldrin	mg/kg	0/6	0%	0.07 - 0.729	ND - ND	--	--	ND
Alpha-BHC	mg/kg	0/6	0%	0.08 - 0.907	ND - ND	--	--	ND
Alpha-Chlordane	mg/kg	0/6	0%	0.07 - 0.5	ND - ND	--	--	ND
Beta-BHC	mg/kg	0/6	0%	0.07 - 0.257	ND - ND	--	--	ND
Delta-BHC	mg/kg	0/6	0%	0.07 - 0.555	ND - ND	--	--	ND
Diazinon	mg/kg	0/2	0%	0.0133 - 0.0133	ND - ND	--	--	ND
Dieldrin	mg/kg	0/6	0%	0.07 - 0.629	ND - ND	--	--	ND
Endosulfan I	mg/kg	0/6	0%	0.07 - 0.602	ND - ND	--	--	ND
Endosulfan II	mg/kg	0/6	0%	0.07 - 0.663	ND - ND	--	--	ND
Endosulfan Sulfate	mg/kg	1/6	17%	0.07 - 0.763	0.2 - 0.2	--	--	0.2
Endrin	mg/kg	0/6	0%	0.07 - 0.657	ND - ND	--	--	ND
Endrin Aldehyde	mg/kg	0/4	0%	0.024 - 0.09	ND - ND	--	--	ND
Endrin Ketone	mg/kg	0/6	0%	0.024 - 0.1	ND - ND	--	--	ND
Gamma-BHC (Lindane)	mg/kg	0/6	0%	0.07 - 0.638	ND - ND	--	--	ND
Gamma-Chlordane	mg/kg	0/6	0%	0.07 - 0.5	ND - ND	--	--	ND
Heptachlor	mg/kg	0/6	0%	0.07 - 0.618	ND - ND	--	--	ND
Heptachlor Epoxide	mg/kg	0/6	0%	0.07 - 0.62	ND - ND	--	--	ND
Isodrin	mg/kg	0/2	0%	0.461 - 0.461	ND - ND	--	--	ND
Malathion	mg/kg	0/2	0%	0.0133 - 0.0133	ND - ND	--	--	ND
Methoxychlor	mg/kg	0/6	0%	0.07 - 0.1	ND - ND	--	--	ND
Technical Chlordane	mg/kg	0/4	0%	0.39 - 0.54	ND - ND	--	--	ND
Toxaphene	mg/kg	0/6	0%	0.07 - 0.444	ND - ND	--	--	ND
Polychlorinated Biphenyls								
Aroclor-1016	mg/kg	0/10	0%	0.027 - 0.675	ND - ND	--	--	ND
Aroclor-1221	mg/kg	0/10	0%	0.027 - 0.675	ND - ND	--	--	ND
Aroclor-1232	mg/kg	0/10	0%	0.013 - 0.325	ND - ND	--	--	ND
Aroclor-1242	mg/kg	0/10	0%	0.013 - 0.325	ND - ND	--	--	ND
Aroclor-1248	mg/kg	0/10	0%	0.027 - 0.675	ND - ND	--	--	ND
Aroclor-1254	mg/kg	1/10	10%	0.027 - 0.675	0.03 - 0.03	--	--	0.03
Aroclor-1260	mg/kg	1/10	10%	0.027 - 0.675	0.14 - 0.14	--	--	0.14
Inorganics								
Aluminum	mg/kg	53/53	100%	-- - --	2310 - 64900	9490	15100	64900

Table 1
Sediment Data Summary
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Analyte	Units	Frequency of Detection		Range of Detection Limits	Range of Detected Concentrations	Mean Concentration	95 UCL	Maximum On-Site Concentration
Antimony	mg/kg	26/53	49%	0.05 - 8.3	0.16 - 48.6	2.4	4.3	48.6
Arsenic	mg/kg	52/54	96%	0.25 - 0.32	0.82 - 243	12.5	32.5	243
Barium	mg/kg	53/53	100%	-- - --	18.7 - 35200	1550	6690	35200
Beryllium	mg/kg	34/53	64%	0.5 - 0.93	0.12 - 2.94	0.66	0.79	2.94
Boron	mg/kg	11/35	31%	5.1 - 7.53	8.68 - 61.4	11.6	14.4	61.4
Cadmium	mg/kg	23/53	43%	0.25 - 0.7	0.02 - 13.7	1.1	1.7	13.7
Calcium	mg/kg	53/53	100%	-- - --	181 - 24400	3500	4920	24400
Chromium	mg/kg	44/49	90%	4.05 - 4.05	3.7 - 81.2	15.3	24.2	81.2
Cobalt	mg/kg	47/53	89%	1.42 - 9.3	1.5 - 31.1	6.6	9.8	31.1
Copper	mg/kg	53/53	100%	-- - --	3.87 - 18000	429	2550	18000
Cyanide	mg/kg	2/31	6%	0.92 - 0.92	3.07 - 4.81	--	--	4.81
Iron	mg/kg	53/53	100%	-- - --	3840 - 68100	16100	18700	68100
Lead	mg/kg	53/53	100%	-- - --	1.77 - 706	105	137	706
Magnesium	mg/kg	53/53	100%	-- - --	335 - 17500	2790	3230	17500
Manganese	mg/kg	53/53	100%	-- - --	32.3 - 1000	278	353	1000
Mercury	mg/kg	48/53	91%	0.05 - 0.05	0.02 - 113	6.4	24.5	113
Nickel	mg/kg	50/53	94%	1.71 - 1.71	4.4 - 66.4	14.8	17.3	66.4
Potassium	mg/kg	48/53	91%	100 - 100	143 - 4070	522	878	4070
Selenium	mg/kg	35/53	66%	0.25 - 4	0.36 - 5.7	1.2	1.5	5.7
Silver	mg/kg	25/53	47%	0.589 - 2.9	0.05 - 1100	23.3	232	1100
Sodium	mg/kg	36/53	68%	72 - 4140	52.6 - 2970	629	776	2970
Strontium	mg/kg	35/35	100%	-- - --	2.34 - 230	33.9	49.5	230
Thallium	mg/kg	21/53	40%	0.03 - 8.3	0.02 - 1.3	0.27	0.37	1.3
Titanium	mg/kg	32/35	91%	50 - 50	129 - 791	279	326	791
Total Uranium	mg/kg	5/5	100%	-- - --	0.97 - 3.99	--	--	3.99
Total Uranium	mg/kg	5/5	100%	-- - --	0.97 - 3.99	--	--	3.99
Vanadium	mg/kg	50/53	94%	3.39 - 3.39	4.9 - 57.9	19.1	21.7	57.9
Zinc	mg/kg	50/53	94%	8.03 - 8.03	7.56 - 5650	400	1000	5650
Zirconium	mg/kg	19/35	54%	2.5 - 2.5	0.6 - 19.3	4	5.2	19.3
Petroleum Hydrocarbons								
Diesel Fuel	mg/kg	2/10	20%	7.98 - 8.24	22.6 - 144	--	--	144
Diesel Range Organics	NA	NA	NA	NA	NA	NA	NA	NA
Gasoline	NA	NA	NA	NA	NA	NA	NA	NA
Gasoline range organics	mg/kg	0/10	0%	8 - 8.3	ND - ND	--	--	ND
TPH, aviation gas fraction	mg/kg	0/10	0%	8 - 8	ND - ND	--	--	ND
TRPH	mg/kg	9/10	90%	27.6 - 27.6	66.3 - 5500	966	3270	5500
Explosives								
2-Amino-4,6-Dinitrotoluene	mg/kg	2/12	17%	0.1 - 0.25	0.13 - 45.7	--	--	45.7
4-Amino-2,6-Dinitrotoluene	mg/kg	2/12	17%	0.1 - 0.25	0.3 - 19.9	--	--	19.9
1,3-Dinitrobenzene	mg/kg	0/43	0%	0.1 - 0.496	ND - ND	--	--	ND
HMX	mg/kg	3/43	7%	0.2 - 0.666	2.69 - 1550	--	--	1550
Nitrocellulose	mg/kg	7/35	20%	10.4 - 14.2	56.4 - 770	100	140	770
Nitroglycerin	mg/kg	2/35	6%	4 - 4.25	11.8 - 12.3	--	--	12.3
Nitroguanidine	mg/kg	0/35	0%	0.475 - 0.8	ND - ND	--	--	ND
2-Nitrotoluene	mg/kg	0/12	0%	0.2 - 0.25	ND - ND	--	--	ND
3-Nitrotoluene	mg/kg	0/12	0%	0.2 - 0.25	ND - ND	--	--	ND
4-Nitrotoluene	mg/kg	0/12	0%	0.2 - 0.25	ND - ND	--	--	ND
PETN	mg/kg	1/35	3%	4 - 4.25	62.5 - 62.5	--	--	62.5
Picric Acid	mg/kg	2/31	6%	0.108 - 0.108	0.5 - 13	--	--	13
RDX	mg/kg	3/43	7%	0.2 - 0.587	0.12 - 7680	--	--	7680
Tetrazene	mg/kg	0/31	0%	1.19 - 1.19	ND - ND	--	--	ND
Tetryl	mg/kg	0/43	0%	0.2 - 0.731	ND - ND	--	--	ND
1,3,5-Trinitrobenzene	mg/kg	2/39	5%	0.1 - 0.488	0.1 - 2.85	--	--	2.85
2,4,6-Trinitrotoluene	mg/kg	9/43	21%	0.1 - 0.456	0.06 - 1100	27.6	294	1100
Dioxins/Furans								
1,2,3,4,6,7,8-HpCDD	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDF	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PeCDD	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PeCDF	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PeCDF	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzodioxin	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzofuran	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzofurans	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxins	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzofurans	NA	NA	NA	NA	NA	NA	NA	NA

Table 1
Sediment Data Summary
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Analyte	Units	Frequency of Detection		Range of Detection Limits	Range of Detected Concentrations	Mean Concentration	95 UCL	Maximum On-Site Concentration
Total hexachlorodibenzo-p-dioxins	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzofurans	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxins	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzofurans	NA	NA	NA	NA	NA	NA	NA	NA
Total tetrachlorodibenzo-p-dioxins	NA	NA	NA	NA	NA	NA	NA	NA
Radionuclides								
Americium-241	pCi/g	1/5	20%	0.0763 - 0.992	0.3 - 0.3	--	--	0.3
Cesium-137	pCi/g	5/5	100%	-- - --	0.13 - 0.94	--	--	0.94
Cobalt-60	pCi/g	0/5	0%	0.0329 - 0.0478	ND - ND	--	--	ND
Gross Alpha	pCi/g	4/5	80%	1.32 - 1.32	1.25 - 2.59	--	--	2.59
Gross Beta	pCi/g	4/5	80%	1.82 - 1.82	1.98 - 4.53	--	--	4.53
Radium-226	pCi/g	5/5	100%	-- - --	0.59 - 1.78	--	--	1.78
Uranium-235	pCi/g	5/5	100%	-- - --	0.01 - 0.05	--	--	0.05
Uranium-238	pCi/g	5/5	100%	-- - --	0.33 - 1.02	--	--	1.02

Abbreviations:
mg/kg = milligrams per kilogram
pCi/g = picocuries per gram
NA = not analyzed
ND = not detected
95 UCL = 95th upper confidence limit on the mean
-- = not applicable

Notes:
1. Mean concentrations and 95 UCLs were calculated for analytes with at least 5 detected concentrations and at least 8 samples, and selected based on the recommendations presented in ProUCL version 4.
2. The mean concentration presented for lead is the arithmetic mean.

Table 2
Surface Water Data Summary
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Analyte	Units	Frequency of Detection		Range of Detection Limits	Range of Detected Concentrations	Mean Concentration (1)	95 UCL (1)	Maximum On-Site Concentration
Volatile Organic Compounds								
Acetone	ug/L	0/37	0%	13 - 13	ND - ND	--	--	ND
Acetonitrile	ug/L	0/37	0%	200 - 200	ND - ND	--	--	ND
Benzene	ug/L	0/37	0%	0.5 - 0.5	ND - ND	--	--	ND
Bromodichloromethane	ug/L	0/37	0%	0.59 - 0.59	ND - ND	--	--	ND
Bromoform	ug/L	0/37	0%	2.6 - 2.6	ND - ND	--	--	ND
Bromomethane	ug/L	0/37	0%	5.8 - 5.8	ND - ND	--	--	ND
2-Butanone	ug/L	0/37	0%	6.4 - 6.4	ND - ND	--	--	ND
Carbon Disulfide	ug/L	0/37	0%	0.5 - 0.5	ND - ND	--	--	ND
Carbon Tetrachloride	ug/L	0/37	0%	0.58 - 0.58	ND - ND	--	--	ND
Chlorobenzene	ug/L	0/37	0%	0.5 - 0.5	ND - ND	--	--	ND
Chloroethane	ug/L	0/37	0%	1.9 - 1.9	ND - ND	--	--	ND
Chloroform	ug/L	1/37	3%	0.5 - 0.5	1.9 - 1.9	--	--	1.9
Chloromethane	ug/L	0/37	0%	3.2 - 3.2	ND - ND	--	--	ND
cis-1,3-Dichloropropene	ug/L	0/37	0%	0.58 - 0.58	ND - ND	--	--	ND
Dibromochloromethane	ug/L	0/37	0%	0.67 - 0.67	ND - ND	--	--	ND
Dichlorodifluoromethane	ug/L	0/37	0%	6.9 - 6.9	ND - ND	--	--	ND
1,1-Dichloroethane	ug/L	0/37	0%	0.68 - 0.68	ND - ND	--	--	ND
1,2-Dichloroethane	ug/L	0/37	0%	0.5 - 0.5	ND - ND	--	--	ND
1,1-Dichloroethene	ug/L	0/37	0%	0.5 - 0.5	ND - ND	--	--	ND
1,2-Dichloroethene (total)	ug/L	0/37	0%	0.5 - 0.5	ND - ND	--	--	ND
1,2-Dichloropropane	ug/L	0/37	0%	0.5 - 0.5	ND - ND	--	--	ND
Ethanol	ug/L	0/37	0%	2000 - 2000	ND - ND	--	--	ND
Ethylbenzene	ug/L	0/37	0%	0.5 - 0.5	ND - ND	--	--	ND
2-Hexanone	ug/L	0/37	0%	3.6 - 3.6	ND - ND	--	--	ND
Isopropanol	ug/L	0/37	0%	400 - 400	ND - ND	--	--	ND
Methylene Chloride	ug/L	14/37	38%	2.3 - 2.3	2.5 - 17	4.8	6.3	17
4-Methyl-2-pentanone	ug/L	0/37	0%	3 - 3	ND - ND	--	--	ND
Styrene	ug/L	0/37	0%	0.5 - 0.5	ND - ND	--	--	ND
tert-Butyl Alcohol	ug/L	0/35	0%	500 - 500	ND - ND	--	--	ND
1,1,2,2-Tetrachloroethane	ug/L	0/37	0%	0.51 - 0.51	ND - ND	--	--	ND
Tetrachloroethene	ug/L	0/37	0%	1.6 - 1.6	ND - ND	--	--	ND
Toluene	ug/L	24/37	65%	0.5 - 0.5	0.51 - 6.6	1.2	1.6	6.6
trans-1,3-Dichloropropene	ug/L	0/37	0%	0.7 - 0.7	ND - ND	--	--	ND
1,1,1-Trichloroethane	ug/L	0/37	0%	0.5 - 0.5	ND - ND	--	--	ND
1,1,2-Trichloroethane	ug/L	0/37	0%	1.2 - 1.2	ND - ND	--	--	ND
Trichloroethene	ug/L	0/37	0%	0.5 - 0.5	ND - ND	--	--	ND
Trichlorofluoromethane	ug/L	0/37	0%	1.4 - 1.4	ND - ND	--	--	ND
1,1,2-trichloro-1,2,2-trifluoroethane	ug/L	0/37	0%	5 - 5	ND - ND	--	--	ND
Vinyl Acetate	ug/L	0/37	0%	8.3 - 8.3	ND - ND	--	--	ND
Vinyl Chloride	ug/L	0/37	0%	2.6 - 2.6	ND - ND	--	--	ND
Xylenes (total)	ug/L	1/37	3%	0.84 - 0.84	0.87 - 0.87	--	--	0.87
Semivolatile Organic Compounds								
Acenaphthene	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
Acenaphthylene	ug/L	0/44	0%	0.5 - 10	ND - ND	--	--	ND
Aniline	ug/L	0/46	0%	2 - 10	ND - ND	--	--	ND
Anthracene	ug/L	0/46	0%	0.5 - 10	ND - ND	--	--	ND
Benzo(a)anthracene	ug/L	0/46	0%	1.5 - 10	ND - ND	--	--	ND
Benzo(a)pyrene	ug/L	0/46	0%	2 - 10	ND - ND	--	--	ND
Benzo(b)fluoranthene	ug/L	0/46	0%	1.5 - 10	ND - ND	--	--	ND
Benzo(g,h,i)perylene	ug/L	0/46	0%	2.5 - 10	ND - ND	--	--	ND
Benzo(k)fluoranthene	ug/L	0/46	0%	0.87 - 10	ND - ND	--	--	ND
Benzoic Acid	ug/L	0/43	0%	13 - 13	ND - ND	--	--	ND
Benzyl Alcohol	ug/L	0/43	0%	0.72 - 0.72	ND - ND	--	--	ND
bis(2-Chloroethoxy)methane	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
bis(2-Chloroethyl)ether	ug/L	0/46	0%	1.5 - 10	ND - ND	--	--	ND
bis(2-Chloroisopropyl)ether	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
bis(2-Ethylhexyl)phthalate	ug/L	2/46	4%	4.1 - 10	11 - 15	--	--	15
4-Bromophenyl-phenyl ether	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
Butylbenzylphthalate	ug/L	0/46	0%	1.5 - 10	ND - ND	--	--	ND
Carbazole	ug/L	0/46	0%	2 - 10	ND - ND	--	--	ND
4-Chloroaniline	ug/L	0/46	0%	4 - 10	ND - ND	--	--	ND
4-Chloro-3-Methylphenol	ug/L	0/46	0%	1.5 - 10	ND - ND	--	--	ND
2-Chloronaphthalene	ug/L	0/46	0%	0.5 - 10	ND - ND	--	--	ND
2-Chlorophenol	ug/L	0/46	0%	0.99 - 10	ND - ND	--	--	ND
4-Chlorophenyl-phenyl ether	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
Chrysene	ug/L	0/46	0%	1.5 - 10	ND - ND	--	--	ND
Dibenzo(a,h)anthracene	ug/L	0/46	0%	2.5 - 10	ND - ND	--	--	ND
Dibenzofuran	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
1,2-Dichlorobenzene	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
1,3-Dichlorobenzene	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
1,4-Dichlorobenzene	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
3,3'-Dichlorobenzidine	ug/L	0/46	0%	5 - 50	ND - ND	--	--	ND
2,4-Dichlorophenol	ug/L	0/46	0%	2 - 10	ND - ND	--	--	ND

Table 2
Surface Water Data Summary
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Analyte	Units	Frequency of Detection		Range of Detection Limits	Range of Detected Concentrations	Mean Concentration (1)	95 UCL (1)	Maximum On-Site Concentration
Diethylphthalate	ug/L	2/46	4%	1 - 10	2.7 - 2.8	--	--	2.8
2,4-Dimethylphenol	ug/L	0/46	0%	2 - 10	ND - ND	--	--	ND
Dimethylphthalate	ug/L	0/46	0%	1.5 - 10	ND - ND	--	--	ND
Di-n-Butylphthalate	ug/L	2/46	4%	3.7 - 10	0.5 - 0.51	--	--	0.51
4,6-Dinitro-2-methylphenol	ug/L	0/46	0%	17 - 50	ND - ND	--	--	ND
2,4-Dinitrophenol	ug/L	0/46	0%	21 - 50	ND - ND	--	--	ND
2,4-Dinitrotoluene	ug/L	0/3	0%	2 - 10	ND - ND	--	--	ND
2,6-Dinitrotoluene	ug/L	0/3	0%	2 - 10	ND - ND	--	--	ND
Di-n-Octylphthalate	ug/L	0/46	0%	2.4 - 15	ND - ND	--	--	ND
Diphenylamine	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
Fluoranthene	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
Fluorene	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
Hexachlorobenzene	ug/L	0/46	0%	1.6 - 10	ND - ND	--	--	ND
Hexachlorobutadiene	ug/L	0/46	0%	2 - 10	ND - ND	--	--	ND
Hexachlorocyclopentadiene	ug/L	0/46	0%	8.6 - 50	ND - ND	--	--	ND
Hexachloroethane	ug/L	0/46	0%	1.5 - 10	ND - ND	--	--	ND
Indeno(1,2,3-cd)pyrene	ug/L	0/46	0%	2.5 - 10	ND - ND	--	--	ND
Isophorone	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
1-Methylnaphthalene	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
2-Methylphenol	ug/L	0/46	0%	2 - 10	ND - ND	--	--	ND
4-Methylphenol	ug/L	0/46	0%	0.52 - 10	ND - ND	--	--	ND
Mirex	ug/L	1/45	2%	0.025 - 10	8.2 - 8.2	--	--	8.2
Naphthalene	ug/L	0/46	0%	0.5 - 10	ND - ND	--	--	ND
2-Nitroaniline	ug/L	0/46	0%	4.3 - 50	ND - ND	--	--	ND
3-Nitroaniline	ug/L	0/46	0%	4.9 - 50	ND - ND	--	--	ND
4-Nitroaniline	ug/L	0/46	0%	5 - 50	ND - ND	--	--	ND
Nitrobenzene	ug/L	0/3	0%	1 - 10	ND - ND	--	--	ND
2-Nitrophenol	ug/L	0/46	0%	2 - 10	ND - ND	--	--	ND
4-Nitrophenol	ug/L	0/46	0%	10 - 50	ND - ND	--	--	ND
N-Nitrosodimethylamine	ug/L	0/2	0%	1 - 1	ND - ND	--	--	ND
N-Nitroso-di-n-propylamine	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
N-Nitrosodiphenylamine	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
Pentachlorophenol	ug/L	0/41	0%	0.042 - 10	ND - ND	--	--	ND
Phenanthrene	ug/L	0/46	0%	0.5 - 10	ND - ND	--	--	ND
Phenol	ug/L	0/46	0%	2 - 10	ND - ND	--	--	ND
Pyrene	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
1,2,4-Trichlorobenzene	ug/L	0/46	0%	1 - 10	ND - ND	--	--	ND
2,4,5-Trichlorophenol	ug/L	0/46	0%	4 - 10	ND - ND	--	--	ND
2,4,6-Trichlorophenol	ug/L	0/46	0%	4.2 - 10	ND - ND	--	--	ND
Pesticides								
4,4'-DDD	ug/L	0/6	0%	0.0233 - 0.6	ND - ND	--	--	ND
4,4'-DDE	ug/L	0/6	0%	0.027 - 0.5	ND - ND	--	--	ND
4,4'-DDT	ug/L	0/6	0%	0.034 - 0.5	ND - ND	--	--	ND
Aldrin	ug/L	0/6	0%	0.0918 - 0.5	ND - ND	--	--	ND
Alpha-BHC	ug/L	0/6	0%	0.0385 - 0.5	ND - ND	--	--	ND
Alpha-Chlordane	ug/L	0/6	0%	0.075 - 0.5	ND - ND	--	--	ND
Beta-BHC	ug/L	0/6	0%	0.024 - 0.5	ND - ND	--	--	ND
Delta-BHC	ug/L	0/6	0%	0.0293 - 0.5	ND - ND	--	--	ND
Diazinon	ug/L	0/6	0%	0.05 - 0.188	ND - ND	--	--	ND
Dieldrin	ug/L	0/6	0%	0.024 - 0.5	ND - ND	--	--	ND
Endosulfan I	ug/L	0/6	0%	0.023 - 0.5	ND - ND	--	--	ND
Endosulfan II	ug/L	0/6	0%	0.023 - 0.5	ND - ND	--	--	ND
Endosulfan Sulfate	ug/L	0/6	0%	0.0786 - 0.5	ND - ND	--	--	ND
Endrin	ug/L	0/6	0%	0.0238 - 0.5	ND - ND	--	--	ND
Endrin Aldehyde	ug/L	0/6	0%	0.0285 - 0.5	ND - ND	--	--	ND
Endrin Ketone	ug/L	0/6	0%	0.0285 - 0.5	ND - ND	--	--	ND
Gamma-BHC (Lindane)	ug/L	0/6	0%	0.0507 - 0.5	ND - ND	--	--	ND
Gamma-Chlordane	ug/L	0/6	0%	0.075 - 0.5	ND - ND	--	--	ND
Heptachlor	ug/L	0/6	0%	0.0423 - 0.5	ND - ND	--	--	ND
Heptachlor Epoxide	ug/L	0/6	0%	0.0245 - 0.5	ND - ND	--	--	ND
Isodrin	ug/L	0/4	0%	0.0562 - 0.0562	ND - ND	--	--	ND
Malathion	ug/L	0/6	0%	0.05 - 0.188	ND - ND	--	--	ND
Methoxychlor	ug/L	0/6	0%	0.057 - 0.5	ND - ND	--	--	ND
Technical Chlordane	ug/L	0/2	0%	0.025 - 0.025	ND - ND	--	--	ND
Toxaphene	ug/L	0/6	0%	0.5 - 1.35	ND - ND	--	--	ND
Polychlorinated Biphenyls								
Aroclor-1016	ug/L	0/10	0%	0.1 - 0.16	ND - ND	--	--	ND
Aroclor-1221	ug/L	0/10	0%	0.1 - 0.16	ND - ND	--	--	ND
Aroclor-1232	ug/L	0/10	0%	0.1 - 0.16	ND - ND	--	--	ND
Aroclor-1242	ug/L	0/10	0%	0.1 - 0.19	ND - ND	--	--	ND
Aroclor-1248	ug/L	0/10	0%	0.1 - 0.19	ND - ND	--	--	ND
Aroclor-1254	ug/L	0/10	0%	0.1 - 0.19	ND - ND	--	--	ND
Aroclor-1260	ug/L	0/10	0%	0.1 - 0.19	ND - ND	--	--	ND

Table 2
Surface Water Data Summary
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Analyte	Units	Frequency of Detection		Range of Detection Limits	Range of Detected Concentrations	Mean Concentration (1)	95 UCL (1)	Maximum On-Site Concentration
Inorganics								
Aluminum	ug/L	51/56	91%	23.5 - 100	25.9 - 1830	106	249	1830
Antimony	ug/L	1/59	2%	0.667 - 10	1.03 - 1.03	--	--	1.03
Arsenic	ug/L	7/59	12%	1 - 10	1.01 - 2.59	1.1	1.2	2.59
Barium	ug/L	58/59	98%	2.5 - 2.5	11.7 - 973	41.1	116	973
Beryllium	ug/L	1/59	2%	0.222 - 5	0.61 - 0.61	--	--	0.61
Boron	ug/L	15/52	29%	50 - 50	42.8 - 536	60.2	77.4	536
Cadmium	ug/L	3/59	5%	0.111 - 3.01	0.3 - 0.54	--	--	0.54
Calcium	ug/L	58/59	98%	1000 - 1000	5390 - 33200	8000	10700	33200
Chromium	ug/L	3/59	5%	2 - 10	24.9 - 59.9	--	--	59.9
Cobalt	ug/L	0/59	0%	0.667 - 50	ND - ND	--	--	ND
Copper	ug/L	11/59	19%	3 - 9	1.7 - 20.7	3.4	4.4	20.7
Cyanide	ug/L	4/48	8%	2.5 - 2.5	2.91 - 18.6	--	--	18.6
Iron	ug/L	58/59	98%	36.8 - 36.8	120 - 3570	593	859	3570
Lead (2)	ug/L	16/59	27%	0.667 - 3	1.13 - 43.6	2.6	5.6	43.6
Magnesium	ug/L	58/59	98%	1000 - 1000	2220 - 7080	2850	3360	7080
Manganese	ug/L	58/59	98%	2.5 - 2.5	12.9 - 1480	129	238	1480
Mercury	ug/L	2/59	3%	0.092 - 0.243	0.38 - 0.54	--	--	0.54
Nickel	ug/L	2/59	3%	5 - 40	14.5 - 18.1	--	--	18.1
Potassium	ug/L	10/59	17%	1000 - 1000	690 - 4210	865	984	4210
Selenium	ug/L	0/59	0%	2 - 6.11	ND - ND	--	--	ND
Silver	ug/L	1/59	2%	0.111 - 4.42	16.2 - 16.2	--	--	16.2
Sodium	ug/L	58/59	98%	2290 - 2290	4430 - 38600	11400	13700	38600
Strontium	ug/L	52/52	100%	-- - --	23.9 - 280	40	50.5	280
Thallium	ug/L	1/59	2%	0.111 - 1	5.7 - 5.7	--	--	5.7
Titanium	ug/L	14/52	27%	2 - 2	2.07 - 36.8	3.9	5.3	36.8
Total Uranium	ug/L	0/7	0%	0.111 - 0.111	ND - ND	--	--	ND
Total Uranium	ug/L	0/7	0%	0.111 - 0.111	ND - ND	--	--	ND
Vanadium	ug/L	2/59	3%	2 - 50	0.87 - 1.1	--	--	1.1
Zinc	ug/L	3/59	5%	15 - 35.8	14 - 241	--	--	241
Zirconium	ug/L	0/52	0%	1 - 2	ND - ND	--	--	ND
Petroleum Hydrocarbons								
Diesel Fuel	ug/L	0/2	0%	340 - 340	ND - ND	--	--	ND
Diesel Range Organics	ug/L	0/25	0%	330 - 350	ND - ND	--	--	ND
Gasoline	ug/L	0/2	0%	340 - 340	ND - ND	--	--	ND
Gasoline range organics	ug/L	0/25	0%	330 - 350	ND - ND	--	--	ND
TPH, aviation gas fraction	ug/L	0/27	0%	330 - 340	ND - ND	--	--	ND
TRPH	ug/L	0/28	0%	169 - 194	ND - ND	--	--	ND
Explosives								
2-Amino-4,6-Dinitrotoluene	ug/L	0/5	0%	0.05 - 0.2	ND - ND	--	--	ND
4-Amino-2,6-Dinitrotoluene	ug/L	0/5	0%	0.05 - 0.2	ND - ND	--	--	ND
1,3-Dinitrobenzene	ug/L	0/55	0%	0.05 - 0.611	ND - ND	--	--	ND
HMX	ug/L	1/55	2%	0.1 - 1.21	96.6 - 96.6	--	--	96.6
Nitrocellulose	ug/L	0/52	0%	553 - 553	ND - ND	--	--	ND
Nitroglycerin	ug/L	1/52	2%	4 - 10	250 - 250	--	--	250
Nitroguanidine	ug/L	0/52	0%	26 - 30.9	ND - ND	--	--	ND
2-Nitrotoluene	ug/L	0/5	0%	0.1 - 0.2	ND - ND	--	--	ND
3-Nitrotoluene	ug/L	0/5	0%	0.1 - 0.2	ND - ND	--	--	ND
4-Nitrotoluene	ug/L	0/5	0%	0.1 - 0.2	ND - ND	--	--	ND
PETN	ug/L	0/52	0%	8 - 20	ND - ND	--	--	ND
Picric Acid	ug/L	0/51	0%	0.24 - 0.27	ND - ND	--	--	ND
RDX	ug/L	1/55	2%	0.1 - 1.17	24.5 - 24.5	--	--	24.5
Tetrazene	ug/L	0/52	0%	9.8 - 40	ND - ND	--	--	ND
Tetryl	ug/L	0/55	0%	0.1 - 1.56	ND - ND	--	--	ND
1,3,5-Trinitrobenzene	ug/L	0/55	0%	0.05 - 0.449	ND - ND	--	--	ND
2,4,6-Trinitrotoluene	ug/L	1/55	2%	0.05 - 0.635	5.77 - 5.77	--	--	5.77
Dioxins/Furans								
1,2,3,4,6,7,8-HpCDD	ug/L	0/2	0%	0.14 - 0.24	ND - ND	--	--	ND
1,2,3,4,6,7,8-HpCDF	ug/L	0/2	0%	0.076 - 0.095	ND - ND	--	--	ND
1,2,3,4,7,8,9-HpCDF	ug/L	0/2	0%	0.093 - 0.12	ND - ND	--	--	ND
1,2,3,4,7,8-HxCDD	ug/L	0/2	0%	0.11 - 0.12	ND - ND	--	--	ND
1,2,3,4,7,8-HxCDF	ug/L	0/2	0%	0.086 - 0.11	ND - ND	--	--	ND
1,2,3,6,7,8-HxCDD	ug/L	0/2	0%	0.11 - 0.13	ND - ND	--	--	ND
1,2,3,6,7,8-HxCDF	ug/L	0/2	0%	0.084 - 0.11	ND - ND	--	--	ND
1,2,3,7,8,9-HxCDD	ug/L	0/2	0%	0.11 - 0.12	ND - ND	--	--	ND
1,2,3,7,8,9-HxCDF	ug/L	0/2	0%	0.1 - 0.13	ND - ND	--	--	ND
1,2,3,7,8-PeCDD	ug/L	0/2	0%	0.15 - 0.16	ND - ND	--	--	ND
1,2,3,7,8-PeCDF	ug/L	0/2	0%	0.12 - 0.13	ND - ND	--	--	ND
2,3,4,6,7,8-HxCDF	ug/L	0/2	0%	0.088 - 0.11	ND - ND	--	--	ND
2,3,4,7,8-PeCDF	ug/L	0/2	0%	0.12 - 0.13	ND - ND	--	--	ND
2,3,7,8-TCDD	ug/L	0/2	0%	0.11 - 0.13	ND - ND	--	--	ND
2,3,7,8-TCDF	ug/L	0/2	0%	0.13 - 0.15	ND - ND	--	--	ND
Octachlorodibenzodioxin	ug/L	0/2	0%	0.14 - 0.29	ND - ND	--	--	ND
Octachlorodibenzofuran	ug/L	0/2	0%	0.099 - 0.12	ND - ND	--	--	ND

Table 2
Surface Water Data Summary
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Analyte	Units	Frequency of Detection		Range of Detection Limits	Range of Detected Concentrations	Mean Concentration (1)	95 UCL (1)	Maximum On-Site Concentration
Total heptachlorodibenzofurans	ug/L	0/2	0%	0.076 - 0.095	ND - ND	--	--	ND
Total heptachlorodibenzo-p-dioxins	ug/L	0/2	0%	0.14 - 0.24	ND - ND	--	--	ND
Total hexachlorodibenzofurans	ug/L	0/2	0%	0.084 - 0.11	ND - ND	--	--	ND
Total hexachlorodibenzo-p-dioxins	ug/L	0/2	0%	0.11 - 0.12	ND - ND	--	--	ND
Total pentachlorodibenzofurans	ug/L	0/2	0%	0.12 - 0.13	ND - ND	--	--	ND
Total pentachlorodibenzo-p-dioxins	ug/L	0/2	0%	0.15 - 0.16	ND - ND	--	--	ND
Total tetrachlorodibenzofurans	ug/L	0/2	0%	0.13 - 0.15	ND - ND	--	--	ND
Total tetrachlorodibenzo-p-dioxins	ug/L	0/2	0%	0.11 - 0.13	ND - ND	--	--	ND
Radionuclides								
Americium-241	pCi/L	1/7	14%	3.31 - 12.6	1.92 - 1.92	--	--	1.92
Cesium-137	pCi/L	0/7	0%	0.955 - 1.07	ND - ND	--	--	ND
Cobalt-60	pCi/L	1/7	14%	1 - 1.16	1.36 - 1.36	--	--	1.36
Gross Alpha	pCi/L	6/7	86%	0.49 - 0.49	0.29 - 3.2	--	--	3.2
Gross Beta	pCi/L	7/7	100%	-- - --	1.29 - 10.7	--	--	10.7
Radium-226	pCi/L	2/7	29%	3.41 - 3.71	11.4 - 13.7	--	--	13.7
Uranium-235	pCi/L	1/7	14%	0.013 - 0.062	0.08 - 0.08	--	--	0.08
Uranium-238	pCi/L	4/7	57%	0.0212 - 0.0815	0.03 - 0.44	--	--	0.44

Abbreviations:
ug/L = micrograms per liter
pCi/L = picocuries per liter
NA = not analyzed
ND = not detected
95 UCL = 95th upper confidence limit on the mean
-- = not applicable

Notes:
1. Mean concentrations and 95 UCLs were calculated for analytes with at least 5 detected concentrations and at least 8 samples, and selected based on the recommendations presented in ProUCL version 4.
2. The mean concentration presented for lead is the arithmetic mean, calculated using half the detection limit for non-detect analytical results.

Table 3
Derivation of Human Health Levels of Concern for Sediment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Chemical	Notes	Human Health Levels			Sediment Background Value (d)	Level of Concern			
		USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (c)		Site Characterization/ Prioritization		Final Human Health LOC (Higher of LOC and Background Value [f])	Final Human Health LOC Chosen
		Non-carcinogen (Target Hazard = 1)	Carcinogen (Target Risk = 1x10•^{6})	Nonresidential		LOC(e)	LOC Chosen		
Volatile Organic Compounds									
Acetone		610,000	NA	NA	NA	610,000	RSL	610,000	RSL
Acetonitrile		3,700	NA	NA	NA	3,700	RSL	3,700	RSL
Benzene		470	5.6	5	NA	5	NJ SRS	5	NJ SRS
Bromodichloromethane		20,000	46	3	NA	3	NJ SRS	3	NJ SRS
Bromoform		12,000	220	280	NA	220	RSL	220	RSL
Bromomethane		35	NA	59	NA	35	RSL	35	RSL
2-Butanone		190,000	NA	44,000	NA	44,000	NJ SRS	44,000	NJ SRS
tert-Butyl Alcohol		NA	NA	11,000	NA	11,000	NJ SRS	11,000	NJ SRS
Carbon disulfide		3,000	NA	110,000	NA	3,000	RSL	3,000	RSL
Carbon tetrachloride		470	1.3	2	NA	1.3	RSL	1.3	RSL
Chlorobenzene		1,500	NA	7,400	NA	1,500	RSL	1,500	RSL
Chloroethane		62,000	NA	1,100	NA	1,100	NJ SRS	1,100	NJ SRS
Chloroform		1,100	1.5	2	NA	1.5	RSL	1.5	RSL
Chloromethane		510	8.4	12	NA	8.4	RSL	8.4	RSL
Dibromochloromethane		12,000	21	8	NA	8	NJ SRS	8	NJ SRS
Dichlorodifluoromethane		780	NA	230,000	NA	780	RSL	780	RSL
1,1-Dichloroethane		200,000	17	24	NA	17	RSL	17	RSL
1,2-Dichloroethane		15,000	2.2	3	NA	2.2	RSL	2.2	RSL
1,1-Dichloroethene		1,100	NA	150	NA	150	NJ SRS	150	NJ SRS
1,2-Dichloroethene (total)	(g)	9,200	NA	560	NA	560	NJ SRS	560	NJ SRS
1,2-Dichloropropane		71	4.7	5	NA	4.7	RSL	4.7	RSL
cis-1,3-Dichloropropene	(h)	330	8.4	7	NA	7	NJ SRS	7	NJ SRS
trans-1,3-Dichloropropene	(h)	330	8.4	7	NA	7	NJ SRS	7	NJ SRS
Ethanol		NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene		22,000	29	110,000	NA	29	RSL	29	RSL
2-Hexanone		NA	NA	NA	NA	NA	NA	NA	NA
Isopropanol		NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone		52,000	NA	NA	NA	52,000	RSL	52,000	RSL
Methylene chloride		9,400	54	97	NA	54	RSL	54	RSL
Styrene		38,000	NA	260	NA	260	NJ SRS	260	NJ SRS
1,1,2,2-Tetrachloroethane		4,100	2.9	3	NA	2.9	RSL	2.9	RSL
Tetrachloroethene		2,400	2.7	5	NA	2.7	RSL	2.7	RSL
Toluene		46,000	NA	91,000	NA	46,000	RSL	46,000	RSL
1,1,1-Trichloroethane		39,000	NA	4,200	NA	4,200	NJ SRS	4,200	NJ SRS
1,1,2-Trichloroethane		4,100	5.5	6	NA	5.5	RSL	5.5	RSL
Trichloroethene		NA	14	20	NA	14	RSL	14	RSL
Trichlorofluoromethane		3,400	NA	340,000	NA	3,400	RSL	3,400	RSL
1,1,2-Trichloro-1,2,2-trifluoroethane		180,000	NA	NA	NA	180,000	RSL	180,000	RSL
Vinyl acetate		4,200	NA	NA	NA	4,200	RSL	4,200	RSL
Vinyl chloride		400	1.7	2	NA	1.7	RSL	1.7	RSL
Xylenes (total)		2,600	NA	170,000	NA	2,600	RSL	2,600	RSL
Semivolatile Organic Compounds									
Acenaphthene		33,000	NA	37,000	NA	33,000	RSL	33,000	RSL
Acenaphthylene	(i)	17,000	NA	300,000	NA	17,000	RSL	17,000	RSL
Aniline		4,300	300	NA	NA	300	RSL	300	RSL
Anthracene		170,000	NA	30,000	NA	30,000	NJ SRS	30,000	NJ SRS
Benzo(a)anthracene		NA	2.1	2	NA	2	NJ SRS	2	NJ SRS
Benzo(a)pyrene		NA	0.21	0.2	NA	0.2	NJ SRS	0.2	NJ SRS
Benzo(b)fluoranthene		NA	2.1	2	NA	2	NJ SRS	2	NJ SRS
Benzo(g,h,i)perylene	(i)	17,000	NA	30,000	NA	17,000	RSL	17,000	RSL
Benzo(k)fluoranthene		NA	21	23	NA	21	RSL	21	RSL
Benzoic acid		2,500,000	NA	NA	NA	2,500,000	RSL	2,500,000	RSL
Benzyl alcohol		310,000	NA	NA	NA	310,000	RSL	310,000	RSL
4-Bromophenyl-phenyl ether		NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate		62,000	NA	68,000	NA	62,000	RSL	62,000	RSL
Butylbenzylphthalate		120,000	910	14,000	NA	910	RSL	910	RSL

Table 3
Derivation of Human Health Levels of Concern for Sediment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Chemical	Notes	Human Health Levels			Sediment Background Value (d)	Level of Concern			
		USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (c)		Site Characterization/ Prioritization		Final Human Health LOC (Higher of LOC and Background Value [f])	Final Human Health LOC Chosen
		Non-carcinogen (Target Hazard = 1)	Carcinogen (Target Risk = $1x10^{-6}$)	Nonresidential		LOC(e)	LOC Chosen		
Carbazole		NA	NA	96	NA	96	NJ SRS	96	NJ SRS
4-Chloroaniline		2,500	32	66	NA	32	RSL	32	RSL
bis(2-Chloroethoxy)methane		1,800	NA	NA	NA	1,800	RSL	1,800	RSL
bis(2-Chloroethyl)ether		NA	0.9	2	NA	0.9	RSL	0.9	RSL
bis(2-Chloroisopropyl)ether		41,000	17	67	NA	17	RSL	17	RSL
4-Chloro-3-methylphenol		NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene		82,000	NA	NA	NA	82,000	RSL	82,000	RSL
2-Chlorophenol		5,100	NA	2,200	NA	2,200	NJ SRS	2,200	NJ SRS
4-Chlorophenyl-phenyl ether		NA	NA	NA	NA	NA	NA	NA	NA
Chrysene		NA	210	230	NA	210	RSL	210	RSL
Dibenzo(a,h)anthracene		NA	0.21	0.2	NA	0.2	NJ SRS	0.2	NJ SRS
Dibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene		10,000	NA	59,000	NA	10,000	RSL	10,000	RSL
1,3-Dichlorobenzene	(j)	42,000	13	59,000	NA	13	RSL	13	RSL
1,4-Dichlorobenzene		42,000	13	13	NA	13	RSL	13	RSL
3,3'-Dichlorobenzidine		NA	3.8	4	NA	3.8	RSL	3.8	RSL
2,4-Dichlorophenol		1,800	NA	2,100	NA	1,800	RSL	1,800	RSL
Diethylphthalate		490,000	NA	550,000	NA	490,000	RSL	490,000	RSL
2,4-Dimethylphenol		12,000	NA	14,000	NA	12,000	RSL	12,000	RSL
Dimethylphthalate		NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol		1,200	NA	1,400	NA	1,200	RSL	1,200	RSL
Diphenylamine		15,000	NA	NA	NA	15,000	RSL	15,000	RSL
bis(2-Ethylhexyl)phthalate		12,000	120	140	NA	120	RSL	120	RSL
Fluoranthene		22,000	NA	24,000	NA	22,000	RSL	22,000	RSL
Fluorene		22,000	NA	24,000	NA	22,000	RSL	22,000	RSL
Hexachlorobenzene		490	1.1	1	NA	1	NJ SRS	1	NJ SRS
Hexachlorobutadiene		620	22	25	NA	22	RSL	22	RSL
Hexachlorocyclopentadiene		3,700	NA	110	NA	110	NJ SRS	110	NJ SRS
Hexachloroethane		620	120	140	NA	120	RSL	120	RSL
Indeno(1,2,3-cd)pyrene		NA	2.1	2	NA	2	NJ SRS	2	NJ SRS
Isophorone		120,000	1,800	2,000	NA	1,800	RSL	1,800	RSL
2-Methylnaphthalene		4,100	NA	2,400	NA	2,400	NJ SRS	2,400	NJ SRS
2-Methylphenol		31,000	NA	3,400	NA	3,400	NJ SRS	3,400	NJ SRS
4-Methylphenol		3,100	NA	340	NA	340	NJ SRS	340	NJ SRS
4,6-dinitro-2-Methylphenol		62	NA	68	NA	62	RSL	62	RSL
Naphthalene		670	20	17	NA	17	NJ SRS	17	NJ SRS
2-Nitroaniline		NA	NA	23,000	NA	23,000	NJ SRS	23,000	NJ SRS
3-Nitroaniline		180	82	NA	NA	82	RSL	82	RSL
4-Nitroaniline		1,800	82	NA	NA	82	RSL	82	RSL
2-Nitrophenol		NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol		NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodimethylamine		4.9	0.034	0.7	NA	0.034	RSL	0.034	RSL
n-Nitroso-di-n-propylamine		NA	0.25	0.3	NA	0.25	RSL	0.25	RSL
n-Nitrosodiphenylamine		NA	350	390	NA	350	RSL	350	RSL
di-n-Octylphthalate		NA	NA	27,000	NA	27,000	NJ SRS	27,000	NJ SRS
Pentachlorophenol		12,000	9	10	NA	9	RSL	9	RSL
Phenanthrene	(i)	17,000	NA	300,000	NA	17,000	RSL	17,000	RSL
Phenol		180,000	NA	210,000	NA	180,000	RSL	180,000	RSL
Pyrene		17,000	NA	18,000	NA	17,000	RSL	17,000	RSL
1,2,4-Trichlorobenzene		400	790	820	NA	400	RSL	400	RSL
2,4,5-Trichlorophenol		62,000	NA	68,000	NA	62,000	RSL	62,000	RSL
2,4,6-Trichlorophenol		620	160	74	NA	74	NJ SRS	74	NJ SRS

Table 3
Derivation of Human Health Levels of Concern for Sediment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Chemical	Notes	Human Health Levels			Sediment Background Value (d)	Level of Concern			
		USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (c)		Site Characterization/ Prioritization		Final Human Health LOC (Higher of LOC and Background Value [f])	Final Human Health LOC Chosen
		Non-carcinogen (Target Hazard = 1)	Carcinogen (Target Risk = $1x10^{-6}$)	Nonresidential		LOC(e)	LOC Chosen		
Pesticides									
Aldrin		18	0.1	0.2	NA	0.1	RSL	0.1	RSL
alpha-BHC		NA	0.27	0.5	NA	0.27	RSL	0.27	RSL
beta-BHC		NA	0.96	2	NA	0.96	RSL	0.96	RSL
delta-BHC	(k)	240	2.1	2	NA	2	NJ SRS	2	NJ SRS
gamma-BHC (Lindane)		240	2.1	2	NA	2	NJ SRS	2	NJ SRS
alpha-Chlordane	(l)	400	6.5	1	NA	1	NJ SRS	1	NJ SRS
gamma-Chlordane	(l)	400	6.5	1	NA	1	NJ SRS	1	NJ SRS
4,4'-DDD		NA	7.2	13	NA	7.2	RSL	7.2	RSL
4,4'-DDE		NA	5.1	9	NA	5.1	RSL	5.1	RSL
4,4'-DDT		430	7	8	NA	7	RSL	7	RSL
Diazinon		550	NA	NA	NA	550	RSL	550	RSL
Dieldrin		31	0.11	0.2	NA	0.11	RSL	0.11	RSL
Endosulfan I	(m)	3,700	NA	6,800	NA	3,700	RSL	3,700	RSL
Endosulfan II	(m)	3,700	NA	6,800	NA	3,700	RSL	3,700	RSL
Endosulfan sulfate	(m)	3,700	NA	6,800	NA	3,700	RSL	3,700	RSL
Endrin		180	NA	340	NA	180	RSL	180	RSL
Endrin aldehyde	(n)	180	NA	340	NA	180	RSL	180	RSL
Endrin ketone	(n)	180	NA	340	NA	180	RSL	180	RSL
Heptachlor		310	0.38	0.7	NA	0.38	RSL	0.38	RSL
Heptachlor epoxide		8	0.19	0.3	NA	0.19	RSL	0.19	RSL
Isodrin		NA	NA	NA	NA	NA	NA	NA	NA
Malathion		12,000	NA	NA	NA	12,000	RSL	12,000	RSL
Methoxychlor		3,100	NA	5,700	NA	3,100	RSL	3,100	RSL
Mirex		120	0.096	NA	NA	0.096	RSL	0.096	RSL
Toxaphene		NA	1.6	3	NA	1.6	RSL	1.6	RSL
Polychlorinated Biphenyls									
Aroclor-1016	(o)	37	21	1	NA	1	NJ SRS	1	NJ SRS
Aroclor-1221	(o)	NA	0.62	1	NA	0.62	RSL	0.62	RSL
Aroclor-1232	(o)	NA	0.62	1	NA	0.62	RSL	0.62	RSL
Aroclor-1242	(o)	NA	0.74	1	NA	0.74	RSL	0.74	RSL
Aroclor-1248	(o)	NA	0.74	1	NA	0.74	RSL	0.74	RSL
Aroclor-1254	(o)	11	0.74	1	NA	0.74	RSL	0.74	RSL
Aroclor-1260	(o)	NA	0.74	1	NA	0.74	RSL	0.74	RSL
Explosives									
1,3-Dinitrobenzene		62	NA	NA	NA	62	RSL	62	RSL
2,4-Dinitrotoluene	(p)	1,200	NA	4.2	NA	4	NJ SRS	4	NJ SRS
2,6-Dinitrotoluene	(p)	620	NA	4.2	NA	4.2	NJ SRS	4.2	NJ SRS
2-amino-4,6-Dinitrotoluene		2,000	NA	NA	NA	2,000	RSL	2,000	RSL
4-amino-2,6-Dinitrotoluene		1,900	NA	NA	NA	1,900	RSL	1,900	RSL
HMX	(p)	49,000	NA	10,000	NA	10,000	NJ SRS	10,000	NJ SRS
Nitrobenzene		280	NA	340	NA	280	RSL	280	RSL
Nitrocellulose		NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin		62	100	NA	NA	62	RSL	62	RSL
Nitroguanidine		62,000	NA	NA	NA	62,000	RSL	62,000	RSL
2-Nitrotoluene		920	13	NA	NA	13	RSL	13	RSL
3-Nitrotoluene		12,000	NA	NA	NA	12,000	RSL	12,000	RSL
4-Nitrotoluene		2,500	110	NA	NA	110	RSL	110	RSL
PETN		NA	NA	NA	NA	NA	NA	NA	NA
Picric acid		NA	NA	NA	NA	NA	NA	NA	NA
RDX	(p)	2,800	24	26	NA	24	RSL	24	RSL
Tetrazene		NA	NA	NA	NA	NA	NA	NA	NA
Tetryl	(p)	2,500	NA	10,000	NA	2,500	RSL	2,500	RSL
1,3,5-Trinitrobenzene		27,000	NA	NA	NA	27,000	RSL	27,000	RSL
2,4,6-Trinitrotoluene	(p)	420	79	95	NA	79	RSL	79	RSL
Dioxins/ Furans (ae)									
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin		NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxins		NA	NA	NA	NA	NA	NA	NA	NA

Table 3
Derivation of Human Health Levels of Concern for Sediment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Chemical	Notes	Human Health Levels			Sediment Background Value (d)	Level of Concern			
		USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (c)		Site Characterization/ Prioritization		Final Human Health LOC (Higher of LOC and Background Value [f])	Final Human Health LOC Chosen
		Non-carcinogen (Target Hazard = 1)	Carcinogen (Target Risk = $1x10^{-6}$)	Nonresidential		LOC(e)	LOC Chosen		
1,2,3,4,6,7,8-Heptachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA
1 ,2,3,4,7,8,9-Heptachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzofurans		NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin		NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin		NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin		NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzo-p-dioxins		NA	0.00039	NA	NA	0.00039	RSL	0.00039	RSL
1,2,3,4,7,8-Hexachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzofurans		NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzodioxin		NA	0.061	NA	NA	0.0610	RSL	0.061	RSL
Octachlorodibenzofuran		NA	0.044	NA	NA	0.0440	RSL	0.044	RSL
1,2,3,7,8-Pentachlorodibenzo-p-dioxin		NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxins		NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran		NA	0.00044	NA	NA	0.000440	RSL	0.00044	RSL
2,3,4,7,8-Pentachlorodibenzofuran		NA	0.000044	NA	NA	0.0000440	RSL	0.000044	RSL
Total pentachlorodibenzofurans		NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzo-p-dioxin		0.00085	0.000018	NA	NA	0.00001800	RSL	0.000018	RSL
Total tetrachlorodibenzo-p-dioxins		NA	NA	NA	NA	0.00001800	RSL	0.000018	RSL
2,3,7,8-Tetrachlorodibenzofuran		NA	0.00013	NA	NA	0.00013000	RSL	0.00013	RSL
Total tetrachlorodibenzofurans		NA	NA	NA	NA	NA	NA	NA	NA
Inorganics									
Aluminum		990,000	NA	NA	12,800	990,000	RSL	990,000	RSL
Antimony		410	NA	450	0.354	410	RSL	410	RSL
Arsenic		260	1.6	19	16	1.6	RSL	16	BG Value
Barium		190,000	NA	59,000	161	59,000	NJ SRS	59,000	NJ SRS
Beryllium		2,000	6,900	140	1.55	140	NJ SRS	140	NJ SRS
Boron		200,000	NA	NA	ND	200,000	RSL	200,000	RSL
Cadmium	(q)	810	9,300	78	1.7	78	NJ SRS	78	NJ SRS
Calcium	(r)	NA	NA	NA	5,990	1,000,000	ADI	1,000,000	ADI
Chromium	(s)	3,100	200	NA	23.8	200	RSL	200	RSL
Cobalt		300	1900	590	10.2	300	RSL	300	RSL
Copper		41,000	NA	45,000	27.2	41,000	RSL	41,000	RSL
Cyanide		20,000	NA	23,000	NA	20,000	RSL	20,000	RSL
Iron		720,000	NA	NA	67,600	720,000	RSL	720,000	RSL
Lead	(t)	800	NA	800	38.8	800	RSL	800	RSL
Magnesium	(r)	NA	NA	NA	4,260	1,000,000	ADI	1000000	ADI
Manganese	(u)	23,000	NA	5,900	832	5,900	NJ SRS	5,900	NJ SRS
Mercury	(v)	28	NA	65	0.249	28	RSL	28	RSL
Nickel		20,000	NA	23,000	17.2	20,000	RSL	20,000	RSL
Potassium	(r)	NA	NA	NA	821	1,000,000	ADI	1000000	ADI
Selenium		5,100	NA	5,700	0.955	5,100	RSL	5,100	RSL
Silver		5,100	NA	5,700	0.801	5,100	RSL	5,100	RSL
Sodium	(r)	NA	NA	NA	638	1,000,000	ADI	1000000	ADI
Strontium		610,000	NA	NA	16	610,000	RSL	610000	RSL
Thallium		66	NA	79	0.844	66	RSL	66	RSL
Titanium		NA	NA	NA	573	NA	NA	NA	NA
Uranium		3,100	NA	NA	1.51	3,100	RSL	3,100	RSL
Vanadium		7,200	NA	1,100	72.4	1,100	NJ SRS	1,100	NJ SRS
Zinc		310,000	NA	110,000	171	110,000	NJ SRS	110,000	NJ SRS
Zirconium		NA	NA	NA	10.3	NA	NA	NA	NA
Petroleum Hydrocarbons									
Diesel fuel		NA	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Petroleum		NA	NA	NA	NA	NA	NA	NA	NA
TPH, aviation gas fraction		NA	NA	NA	NA	NA	NA	NA	NA
TPH, diesel pattern		NA	NA	NA	NA	NA	NA	NA	NA

Table 3
Derivation of Human Health Levels of Concern for Sediment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Chemical	Notes	Human Health Levels			Sediment Background Value (d)	Level of Concern			
		USEPA Regional Screening Levels, industrial soil (b)		NJDEP Soil Remediation Standards (c)		Site Characterization/ Prioritization		Final Human Health LOC (Higher of LOC and Background Value [f])	Final Human Health LOC Chosen
		Non-carcinogen (Target Hazard = 1)	Carcinogen (Target Risk = $1x10^{-6}$)	Nonresidential		LOC(e)	LOC Chosen		
TPH, gas fraction		NA	NA	NA	NA	NA	NA	NA	NA
Radionuclides (x)									
Americium-241		NA	NA	NA	ND	NA	NA	NA	NA
Cesium-137		NA	NA	NA	0.56	NA	NA	NA	NA
Cobalt-60		NA	NA	NA	ND	NA	NA	NA	NA
Gross alpha		NA	NA	NA	20	NA	NA	NA	NA
Gross beta		NA	NA	NA	30.7	NA	NA	NA	NA
Radium-226		NA	NA	5	1.13	5	NJ SRS	5	NJ SRS
Uranium-235		NA	NA	37	0.076	37	NJ SRS	37	NJ SRS
Uranium-238		NA	NA	64	0.89	64	NJ SRS	64	NJ SRS

ADI = Allowable Daily Intake
LOC = Level of Concern
ND = Not detected.
RSL = USEPA Regional Screening Level
NA = No value available.
(a) Note that chemicals without guidance values are presented in this table.
(b) USEPA (2008) Industrial Regional Screening Levels. Exposures are based on 250 days/year. A hazard index of 1 was used for noncarcinogenic RSLs.
(c) NJDEP Soil Remediation Standards (2008).
(d) Sediment background values are from the PTA Background Study Report and are the lower of the maximum concentration or the mean plus three standard deviations for a given chemical.
(e) Human Health LOCs for sediment were identified as the lower of the USEPA RSL (industrial soil) and New Jersey Non-Residential Direct Contact Soil Remediation Standard (NJDEP SRS).
(f) The final Human Health LOC value is the higher of the human health LOC for sediment and the sediment background value. If a Human Health LOC for sediment is unavailable, no final LOC is presented.
(g) The NJDEP SRS value for cis-1,2-dichloroethene was used.
(h) Values for 1,3-dichloropropene were used.
(i) RSL values for pyrene were used for noncarcinogenic polycyclic aromatic hydrocarbons (PAHs) lacking criteria.
(j) RSL values for 1,4-dichlorobenzene were used.
(k) The NJDEP SRS value for gamma-BHC was used.
(l) RSL and NJDEP SRS values for chlordane were used.
(m) RSL and NJDEP SRS values for endosulfan were used.
(n) RSL and NJDEP SRS values for endrin were used.
(o) The NJDEP SRS value for total PCBs was used.
(p) Non-residential values were developed for PTA by NJDEP.
(q) The food RSL value for cadmium was used.
(r) The value presented in the LOC column is an allowable daily intake (ADI) level for essential human nutrients.
(s) The RSL value for chromium VI was used.
(t) Lead does not have an RSL. The 800 mg/kg industrial soil screening level is presented in the RSL column.
(u) The non-food RSL value for manganese was used.
(v) The RSL value for methylmercury was used.
(w) The values for radiological parameters are in units of pCi/g.

Table 4
Derivation of Human Health Levels of Concern for Surface Water
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Chemical	Notes	USEPA National Ambient Water Quality Criteria for Human Health (b)		N.J. Surface Water Quality Criteria (FW-2) (c)		USEPA Residential Tap Water RSLs (d)		Surface Water Background Value (e)	Level of Concern			
									Site Characterization / Prioritization		Final LOC (Higher of LOC and Background value when is available [g])	
		Water & Organisms	Organisms Only	SWQC	Notes	Non-carcinogen (Target Hazard = 1)	Carcinogen (Target Risk = $1x10^{-6}$)		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen
Volatile Organic Compounds												
Acetone		NA	NA	NA	NA	22,000	NA	NA	22,000	RSL	22,000	RSL
Acetonitrile		NA	NA	NA	NA	130	NA	NA	130	RSL	130	RSL
Benzene		2.2	51	0.15	hc	44	0.41	NA	0.15	NJ SWQC	0.15	NJ SWQC
Bromodichloromethane		0.55	17	0.55	hc	730	1.1	NA	0.55	Water & Organisms, NAWQC	0.55	Water & Organisms, NAWQC
Bromoform		4.3	140	4.3	hc	730	8.5	NA	4.3	Water & Organisms, NAWQC	4.3	Water & Organisms, NAWQC
Bromomethane		47	1,500	47	h	8.7	NA	NA	47	Water & Organisms, NAWQC	47	Water & Organisms, NAWQC
2-Butanone		NA	NA	NA	NA	7,100	NA	NA	7,100	RSL	7,100	RSL
tert-Butyl Alcohol		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide		NA	NA	NA	NA	1,000	NA	NA	1,000	RSL	1,000	RSL
Carbon tetrachloride		0.23	1.6	0.33	hc	24	0.2	NA	0.23	Water & Organisms, NAWQC	0.23	Water & Organisms, NAWQC
Chlorobenzene		130	1,600	210	h	91	NA	NA	130	Water & Organisms, NAWQC	130	Water & Organisms, NAWQC
Chloroethane		NA	NA	NA	NA	21,000	NA	NA	21,000	RSL	21,000	RSL
Chloroform		5.7	470	68	h	130	0.19	NA	5.7	Water & Organisms, NAWQC	5.7	Water & Organisms, NAWQC
Chloromethane		NA	NA	NA	NA	190	1.8	NA	1.8	RSL	1.8	RSL
Dibromochloromethane		0.4	13	0.40	hc	730	0.8	NA	0.4	Water & Organisms, NAWQC	0.4	Water & Organisms, NAWQC
Dichlorodifluoromethane		NA	NA	NA	NA	390	NA	NA	390	RSL	390	RSL
1,1-Dichloroethane	(h)	NA	NA	0.29	hc	7,300	2.4	NA	0.29	NJ SWQC	0.29	NJ SWQC
1,2-Dichloroethane		0.38	37	0.29	hc	640	0.15	NA	0.29	NJ SWQC	0.29	NJ SWQC
1,1-Dichloroethene		330	7,100	4.7	h	340	NA	NA	4.7	NJ SWQC	4.7	NJ SWQC
1,2-Dichloroethene (total)	(i)	140	10,000	590	h	330	NA	NA	140	Water & Organisms, NAWQC	140	Water & Organisms, NAWQC
1,2-Dichloropropane		0.5	15	0.5	hc	8.3	0.39	NA	0.5	Water & Organisms, NAWQC	0.5	Water & Organisms, NAWQC
cis-1,3-Dichloropropene	(j)	0.34	21	0.34	hc	40	0.43	NA	0.34	Water & Organisms, NAWQC	0.34	Water & Organisms, NAWQC
trans-1,3-Dichloropropene	(j)	0.34	21	0.34	hc	40	0.43	NA	0.34	Water & Organisms, NAWQC	0.34	Water & Organisms, NAWQC
Ethanol		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene		530	2,100	530	h	1,300	1.5	NA	530	Water & Organisms, NAWQC	530	Water & Organisms, NAWQC
2-Hexanone		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropanol		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-pentanone		NA	NA	NA	NA	2,000	NA	NA	2,000	RSL	2,000	RSL
Methylene chloride		4.6	590	2.5	hc	1,100	4.8	NA	2.5	NJ SWQC	2.5	NJ SWQC
Styrene		NA	NA	NA	NA	1,600	NA	NA	1,600	RSL	1,600	RSL
1,1,2,2-Tetrachloroethane		0.17	4	4.7	h	150	0.067	NA	0.17	Water & Organisms, NAWQC	0.17	Water & Organisms, NAWQC
Tetrachloroethene		0.69	3.3	0.34	hc	220	0.11	NA	0.34	NJ SWQC	0.34	NJ SWQC
Toluene		1,300	15,000	1,300	h	2,300	NA	NA	1,300	Water & Organisms, NAWQC	1,300	Water & Organisms, NAWQC
1,1,1-Trichloroethane		NA	NA	120	h	9,100	NA	NA	120	NJ SWQC	120	NJ SWQC
1,1,2-Trichloroethane		0.59	16	13	h	150	0.24	NA	0.59	Water & Organisms, NAWQC	0.59	Water & Organisms, NAWQC
Trichloroethene		2.5	30	1	hc	NA	1.7	NA	1	NJ SWQC	1	NJ SWQC
Trichlorofluoromethane		NA	NA	NA	NA	1,300	NA	NA	1,300	RSL	1,300	RSL
1,1,2-Trichloro-1,2,2-trifluoroethane		NA	NA	NA	NA	59,000	NA	NA	59,000	RSL	59,000	RSL
Vinyl acetate		NA	NA	NA	NA	410	NA	NA	410	RSL	410	RSL
Vinyl chloride		0.025	2.4	0.082	hc	72	0.016	NA	0.025	Water & Organisms, NAWQC	0.025	Water & Organisms, NAWQC
Xylenes (total)		NA	NA	NA	NA	200	NA	NA	200	RSL	200	RSL
Semivolatile Organic Compounds												
Acenaphthene		670	990	670	h	2,200	NA	NA	670	Water & Organisms, NAWQC	670	Water & Organisms, NAWQC
Acenaphthylene	(k)	830	4,000	830	h	1,100	NA	NA	830	Water & Organisms, NAWQC	830	Water & Organisms, NAWQC
Aniline		NA	NA	NA	NA	260	12	NA	12	RSL	12	RSL
Anthracene		8,300	40,000	8,300	h	11,000	NA	NA	8,300	Water & Organisms, NAWQC	8,300	Water & Organisms, NAWQC
Benzo(a)anthracene		0.0038	0.018	0.038	hc	NA	0.029	NA	0.0038	Water & Organisms, NAWQC	0.0038	Water & Organisms, NAWQC
Benzo(a)pyrene		0.0038	0.018	0.0038	hc	NA	0.0029	NA	0.0038	Water & Organisms, NAWQC	0.0038	Water & Organisms, NAWQC
Benzo(b)fluoranthene		0.0038	0.018	0.038	hc	NA	0.029	NA	0.0038	Water & Organisms, NAWQC	0.0038	Water & Organisms, NAWQC
Benzo(g,h,i)perylene	(k)	830	4,000	830	h	1,100	NA	NA	830	Water & Organisms, NAWQC	830	Water & Organisms, NAWQC
Benzo(k)fluoranthene		0.0038	0.018	0.38	hc	NA	0.29	NA	0.0038	Water & Organisms, NAWQC	0.0038	Water & Organisms, NAWQC
Benzoic Acid		NA	NA	NA	NA	150,000	NA	NA	150,000	RSL	150,000	RSL
Benzyl alcohol		NA	NA	NA	NA	18,000	NA	NA	18,000	RSL	18,000	RSL
4-Bromophenyl-phenyl ether		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
di-n-Butylphthalate		2,000	4,500	2,000	h	3,700	NA	NA	2,000	Water & Organisms, NAWQC	2,000	Water & Organisms, NAWQC
Butylbenzylphthalate		1,500	1,900	150	h	7,300	35	NA	150	NJ SWQC	150	NJ SWQC
Carbazole		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline		NA	NA	NA	NA	150	1.2	NA	1.2	RSL	1.2	RSL
bis(2-Chloroethoxy)methane		NA	NA	NA	NA	110	NA	NA	110	RSL	110	RSL
bis(2-Chloroethyl)ether		0.030	0.53	0.030	hc	NA	0.012	NA	0.03	Water & Organisms, NAWQC	0.03	Water & Organisms, NAWQC
bis(2-Chloroisopropyl)ether		1,400	65,000	1,400	h	1,500	0.32	NA	1,400	Water & Organisms, NAWQC	1,400	Water & Organisms, NAWQC
4-Chloro-3-methylphenol		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene		1,000	1,600	1,000	h	2,900	NA	NA	1,000	Water & Organisms, NAWQC	1,000	Water & Organisms, NAWQC
2-Chlorophenol		81	150	81	h	180	NA	NA	81	Water & Organisms, NAWQC	81	Water & Organisms, NAWQC
4-Chlorophenyl-phenyl ether		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene		0.0038	0.018	3.8	hc	NA	2.9	NA	0.0038	Water & Organisms, NAWQC	0.0038	Water & Organisms, NAWQC
Dibenzo(a,h)anthracene		0.0038	0.018	0.0038	hc	NA	0.0029	NA	0.0038	Water & Organisms, NAWQC	0.0038	Water & Organisms, NAWQC
Dibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene		420	1,300	2,000	h	370	NA	NA	420	Water & Organisms, NAWQC	420	Water & Organisms, NAWQC
1,3-Dichlorobenzene	(l)	320	960	2,200	h	1700	0.43	NA	320	Water & Organisms, NAWQC	320	Water & Organisms, NAWQC
1,4-Dichlorobenzene		63	190	550	h	1700	0.43	NA	63	Water & Organisms, NAWQC	63	Water & Organisms, NAWQC
3,3'-Dichlorobenzidine		0.021	0.028	0.021	hc	NA	0.15	NA	0.021	Water & Organisms, NAWQC	0.021	Water & Organisms, NAWQC
2,4-Dichlorophenol		77	290	77	h	110	NA	NA	77	Water & Organisms, NAWQC	77	Water & Organisms, NAWQC
Diethylphthalate		17,000	44,000	17,000	h	29,000	NA	NA	17,000	Water & Organisms, NAWQC	17,000	Water & Organisms, NAWQC
2,4-Dimethylphenol		380	850	380	h	730	NA	NA	380	Water & Organisms, NAWQC	380	Water & Organisms, NAWQC
Dimethylphthalate		270,000	1,100,000	NA	NA	NA	NA	NA	270,000	Water & Organisms, NAWQC	270,000	Water & Organisms, NAWQC
2,4-Dinitrophenol		69	5,300	69	h	73	NA	NA	69	Water & Organisms, NAWQC	69	Water & Organisms, NAWQC
Diphenylamine		NA	NA	NA	NA	910	NA	NA	910	RSL	910	RSL
bis(2-Ethylhexyl)phthalate		1.2	2.2	1.2	hc	730	4.8	NA	1.2	Water & Organisms, NAWQC	1.2	Water & Organisms, NAWQC
Fluoranthene		130	140	130	h	1,500	NA	NA	130	Water & Organisms, NAWQC	130	Water & Organisms, NAWQC
Fluorene		1,100	5,300	1,100	h	1,500	NA	NA	1,100	Water & Organisms, NAWQC	1,100	Water & Organisms, NAWQC
Hexachlorobenzene		0.00028	0.00029	0.00028	hc	29	0.042	NA	0.00028	Water & Organisms, NAWQC	0.00028	Water & Organisms, NAWQC
Hexachlorobutadiene		0.44	18	0.44	hc	37	0.86	NA	0.44	Water & Organisms, NAWQC	0.44	Water & Organisms, NAWQC
Hexachlorocyclopentadiene		40	1,100	40	h	220	NA	NA	40	Water & Organisms, NAWQC	40	Water & Organisms, NAWQC
Hexachloroethane		1.4	3.3	1.4	hc	37	4.8	NA	1.4	Water & Organisms, NAWQC	1.4	Water & Organisms, NAWQC
Indeno(1,2,3-cd)pyrene		0.0038	0.018	0.038	hc	NA	0.029	NA	0.0038	Water & Organisms, NAWQC	0.0038	Water & Organisms, NAWQC
Isophorone		35	960	35	hc	7,300	71	NA	35	Water & Organisms, NAWQC	35	Water & Organisms, NAWQC
2-Methylnaphthalene		NA	NA	NA	NA	150	NA	NA	150	RSL	150	RSL
2-Methylphenol		NA	NA	NA	NA	1,800	NA	NA	1,800	RSL	1,800	RSL
4-Methylphenol		NA	NA	NA	NA	180	NA	NA	180	RSL	180	RSL
4,6-dinitro-2-Methylphenol		13	280	13	h	3.7	NA	NA	13	Water & Organisms, NAWQC	13	Water & Organisms, NAWQC
Naphthalene		NA	NA	NA	NA	6.2	0.14	NA	0.14	RSL	0.14	RSL
2-Nitroaniline		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Nitroaniline		NA	NA	NA	NA	11	3.2	NA	3.2	RSL	3.2	RSL
4-Nitroaniline		NA	NA	NA	NA	110	3.2	NA	3.2	RSL	3.2	RSL
2-Nitrophenol		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Nitrophenol		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Nitrosodimethylamine		0.00069	3	0.00069	hc	0.29	0.00042	NA	0.00069	Water & Organisms, NAWQC	0.00069	Water & Organisms, NAWQC
n-Nitroso-di-n-propylamine		0.005	0.51	0.0050	hc	NA	0.0096	NA	0.005	Water & Organisms, NAWQC	0.005	Water & Organisms, NAWQC

Table 4
Derivation of Human Health Levels of Concern for Surface Water
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Chemical	Notes	USEPA National Ambient Water Quality Criteria for Human Health (b)		N.J. Surface Water Quality Criteria (FW-2) (c)		USEPA Residential Tap Water RSLs (d)		Surface Water Background Value (e)	Level of Concern			
									Site Characterization / Prioritization		Final LOC (Higher of LOC and Background value when is available [g])	
		Water & Organisms	Organisms Only	SWQC	Notes	Non-carcinogen (Target Hazard = 1)	Carcinogen (Target Risk = $1x10^{-6}$)		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen
n-Nitrosodiphenylamine		3.3	6	3.3	hc	NA	14	NA	3.3	Water & Organisms, NAWQC	3.3	Water & Organisms, NAWQC
di-n-Octylphthalate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol		0.27	3	0.27	hc	1100	0.56	NA	0.27	Water & Organisms, NAWQC	0.27	Water & Organisms, NAWQC
Phenanthrene	(k)	830	4,000	830	h	1100	NA	NA	830	Water & Organisms, NAWQC	830	Water & Organisms, NAWQC
Phenol		21,000	1,700,000	10,000	h	11,000	NA	NA	10,000	NJ SWQC	10,000	NJ SWQC
Pyrene		830	4,000	830	h	1,100	NA	NA	830	Water & Organisms, NAWQC	830	Water & Organisms, NAWQC
1,2,4-Trichlorobenzene		35	70	21	h	8.2	19	NA	21	NJ SWQC	21	NJ SWQC
2,4,5-Trichlorophenol		1,800	3,600	1,800	h	3,700	NA	NA	1,800	Water & Organisms, NAWQC	1,800	Water & Organisms, NAWQC
2,4,6-Trichlorophenol		1.4	2.4	0.58	hc	37	6.1	NA	0.58	NJ SWQC	0.58	NJ SWQC
Pesticides												
alpha-BHC		0.0026	0.0049	0.0026	hc	NA	0.011	NA	0.0026	Water & Organisms, NAWQC	0.0026	Water & Organisms, NAWQC
beta-BHC		0.0091	0.017	0.0091	hc	NA	0.037	NA	0.0091	Water & Organisms, NAWQC	0.0091	Water & Organisms, NAWQC
delta-BHC	(m)	0.98	1.8	0.137	hcc	11	0.061	NA	0.137	NJ SWQC	0.137	NJ SWQC
gamma-BHC (Lindane)		0.98	1.8	0.98	h	11	0.061	NA	0.98	Water & Organisms, NAWQC	0.98	Water & Organisms, NAWQC
alpha-Chlordane	(n)	0.0008	0.00081	0.00010	hc	18	0.19	NA	0.0001	NJ SWQC	0.0001	NJ SWQC
gamma-Chlordane	(n)	0.0008	0.00081	0.00010	hc	18	0.19	NA	0.0001	NJ SWQC	0.0001	NJ SWQC
4,4'-DDD		0.00031	0.00031	0.00031	hc	NA	0.28	NA	0.00031	Water & Organisms, NAWQC	0.00031	Water & Organisms, NAWQC
4,4'-DDE		0.00022	0.00022	0.00022	hc	NA	0.2	NA	0.00022	Water & Organisms, NAWQC	0.00022	Water & Organisms, NAWQC
4,4'-DDT		0.00022	0.00022	0.00022	hc	18	0.2	NA	0.00022	Water & Organisms, NAWQC	0.00022	Water & Organisms, NAWQC
Diazinon		NA	NA	NA	NA	33	NA	NA	33	RSL	33	RSL
Dieldrin		0.000052	0.000054	0.000052	hc	1.8	0.0042	NA	0.000052	Water & Organisms, NAWQC	0.000052	Water & Organisms, NAWQC
Endosulfan I	(o)	62	89	62	h	220	NA	NA	62	Water & Organisms, NAWQC	62	Water & Organisms, NAWQC
Endosulfan II	(o)	62	89	62	h	220	NA	NA	62	Water & Organisms, NAWQC	62	Water & Organisms, NAWQC
Endosulfan sulfate	(o)	62	89	62	h	220	NA	NA	62	Water & Organisms, NAWQC	62	Water & Organisms, NAWQC
Endrin		0.059	0.060	0.059	h	11	NA	NA	0.059	Water & Organisms, NAWQC	0.059	Water & Organisms, NAWQC
Endrin aldehyde	(p)	0.29	0.30	0.059	h	11	NA	NA	0.059	NJ SWQC	0.059	NJ SWQC
Endrin ketone	(p)	0.059	0.06	0.059	h	11	NA	NA	0.059	Water & Organisms, NAWQC	0.059	Water & Organisms, NAWQC
Heptachlor		0.000079	0.000079	0.000079	hc	18	0.015	NA	0.000079	Water & Organisms, NAWQC	0.000079	Water & Organisms, NAWQC
Heptachlor epoxide		0.000039	0.000039	0.000039	hc	0.47	0.0074	NA	0.000039	Water & Organisms, NAWQC	0.000039	Water & Organisms, NAWQC
Isodrin		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Malathion		NA	NA	NA	NA	730	NA	NA	730	RSL	730	RSL
Methoxychlor		100	NA	40	h	180	NA	NA	40	NJ SWQC	40	NJ SWQC
Mirex		NA	NA	NA	NA	7.3	0.0037	NA	0.0037	RSL	0.0037	RSL
Toxaphene		0.00028	0.00028	0.00028	hc	NA	0.061	NA	0.00028	Water & Organisms, NAWQC	0.00028	Water & Organisms, NAWQC
Polychlorinated Biphenyls												
Aroclor-1016	(q)	0.000064	0.000064	0.000064	hc	2.6	0.96	NA	0.000064	Water & Organisms, NAWQC	0.000064	Water & Organisms, NAWQC
Aroclor-1221	(q)	0.000064	0.000064	0.000064	hc	NA	0.0068	NA	0.000064	Water & Organisms, NAWQC	0.000064	Water & Organisms, NAWQC
Aroclor-1232	(q)	0.000064	0.000064	0.000064	hc	NA	0.0068	NA	0.000064	Water & Organisms, NAWQC	0.000064	Water & Organisms, NAWQC
Aroclor-1242	(q)	0.000064	0.000064	0.000064	hc	NA	0.034	NA	0.000064	Water & Organisms, NAWQC	0.000064	Water & Organisms, NAWQC
Aroclor-1248	(q)	0.000064	0.000064	0.000064	hc	NA	0.034	NA	0.000064	Water & Organisms, NAWQC	0.000064	Water & Organisms, NAWQC
Aroclor-1254	(q)	0.000064	0.000064	0.000064	hc	0.73	0.034	NA	0.000064	Water & Organisms, NAWQC	0.000064	Water & Organisms, NAWQC
Aroclor-1260	(q)	0.000064	0.000064	0.000064	hc	NA	0.034	NA	0.000064	Water & Organisms, NAWQC	0.000064	Water & Organisms, NAWQC
Explosives												
1,3-Dinitrobenzene		NA	NA	NA	NA	3.7	NA	NA	3.7	RSL	3.7	RSL
2,4-Dinitrotoluene		0.11	3.4	0.11	hc	73	NA	NA	0.11	Water & Organisms, NAWQC	0.11	Water & Organisms, NAWQC
2,6-Dinitrotoluene		NA	NA	NA	NA	37	NA	NA	37	RSL	37	RSL
2-amino-4,6-Dinitrotoluene		NA	NA	NA	NA	73	NA	NA	73	RSL	73	RSL
4-amino-2,6-Dinitrotoluene		NA	NA	NA	NA	73	NA	NA	73	RSL	73	RSL
HMX		NA	NA	NA	NA	1,800	NA	NA	1,800	RSL	1,800	RSL
Nitrobenzene		17	690	17	h	3.4	NA	NA	17	Water & Organisms, NAWQC	17	Water & Organisms, NAWQC
Nitrocellulose		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitroglycerin		NA	NA	NA	NA	3.7	4	NA	3.7	RSL	3.7	RSL
Nitroguanidine		NA	NA	NA	NA	3,700	NA	NA	3,700	RSL	3,700	RSL
2-Nitrotoluene		NA	NA	NA	NA	33	0.31	NA	0.31	RSL	0.31	RSL
3-Nitrotoluene		NA	NA	NA	NA	730	NA	NA	730	RSL	730	RSL
4-Nitrotoluene		NA	NA	NA	NA	150	4.2	NA	4.2	RSL	4.2	RSL
PETN		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Picric acid		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
RDX		NA	NA	NA	NA	110	0.61	NA	0.61	RSL	0.61	RSL
Tetrazene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trinitrobenzene		NA	NA	NA	NA	1,100	NA	NA	1,100	RSL	1,100	RSL
2,4,6-Trinitrotoluene		NA	NA	NA	NA	18	2.2	NA	2.2	RSL	2.2	RSL
Dioxins/Furans (w)												
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin		NA	NA	NA	NA	NA	NA		NA	NA	NA	NA
Total heptachlorodibenzo-p-dioxins		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-Heptachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1 ,2,3,4,7,8,9-Heptachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total heptachlorodibenzofurans		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzo-p-dioxins		NA	NA	NA	NA	NA	0.000011	NA	0.000011	RSL	0.000011	RSL
1,2,3,4,7,8-Hexachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-Hexachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-Hexachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-Hexachlorodibenzofuran		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total hexachlorodibenzofurans		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Octachlorodibenzodioxin		NA	NA	NA	NA	NA	0.0017	NA	0.0017	RSL	0.0017	RSL
Octachlorodibenzofuran		NA	NA	NA	NA	NA	0.0017	NA	0.0017	RSL	0.0017	RSL
1,2,3,7,8-Pentachlorodibenzo-p-dioxin		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total pentachlorodibenzo-p-dioxins		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-Pentachlorodibenzofuran		NA	NA	NA	NA	NA	0.000017	NA	0.000017	RSL	0.000017	RSL
2,3,4,7,8-Pentachlorodibenzofuran		NA	NA	NA	NA	NA	0.0000017	NA	0.0000017	RSL	0.0000017	RSL
Total pentachlorodibenzofurans		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-Tetrachlorodibenzo-p-dioxin		5E-09	5.1E-09	0.000000005	hc	0.000037	0.00000052	NA	0.000000005	Water & Organisms, NAWQC	5E-09	Water & Organisms, NAWQC
Total tetrachlorodibenzo-p-dioxins		5E-09	5.1E-09	0.000000005	hc	NA	NA	NA	0.000000005	Water & Organisms, NAWQC	5E-09	Water & Organisms, NAWQC
2,3,7,8-Tetrachlorodibenzofuran		NA	NA	NA	NA	NA	0.0000052	NA	0.0000052	RSL	0.0000052	RSL
Total tetrachlorodibenzofurans		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics												
Aluminum		NA	NA	NA	NA	37,000	NA	190	37,000	RSL	37,000	RSL
Antimony		5.6	640	5.6	h, T	15	NA	ND	5.6	Water & Organisms, NAWQC	5.6	Water & Organisms, NAWQC
Arsenic		0.018	0.14	0.017	hc, T	11	0.045	1.38	0.017	NJ SWQC	1.38	BG Value
Barium		1,000	NA	2,000	h, T	7,300	NA	38	1,000	Water & Organisms, NAWQC	1,000	Water & Organisms, NAWQC
Beryllium		NA	NA	6.0	h, T	73	NA	ND	6	NJ SWQC	6	NJ SWQC
Boron		NA	NA	NA	NA	7,300	NA	51.7	7,300	RSL	7,300	RSL
Cadmium		NA	NA	3.4	h, T	18	NA	ND	3.4	NJ SWQC	3.4	NJ SWQC
Calcium	(r)	NA	NA	NA	NA	NA	NA	16,600	500,000	ADI	500,000	ADI
Chromium	(s)	NA	NA	NA	NA	110	NA	ND	110	RSL	110	RSL
Cobalt		NA	NA	NA	NA	11	NA	3.11	11	RSL	11	RSL
Copper		1,300	NA	1,300	h, T	1,500	NA	ND	1,300	Water & Organisms, NAWQC	1,300	Water & Organisms, NAWQC
Cyanide		140	140	140	h	730	NA	NA	140	Water & Organisms, NAWQC	140	Water & Organisms, NAWQC
Iron		300	NA	NA	NA	26,000	NA	1,790	300	Water & Organisms, NAWQC	1,790	BG Value

Table 4
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Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Chemical	Notes	USEPA National Ambient Water Quality Criteria for Human Health (b)		N.J. Surface Water Quality Criteria (FW-2) (c)		USEPA Residential Tap Water RSLs (d)		Surface Water Background Value (e)	Level of Concern			
									Site Characterization / Prioritization		Final LOC (Higher of LOC and Background value when is available [g])	
		Water & Organisms	Organisms Only	SWQC	Notes	Non-carcinogen (Target Hazard = 1)	Carcinogen (Target Risk = $1x10^{-6}$)		LOC (f)	LOC Chosen	Final LOC	Final LOC Chosen
Lead	(t)	NA	NA	5.0	h, T	15	NA	2.36	5	NJ SWQC	5	NJ SWQC
Magnesium	(r)	NA	NA	NA	NA	NA	NA	6,570	175,000	ADI	175,000	ADI
Manganese	(u)	50	100	NA	NA	880	NA	383	50	Water & Organisms, NAWQC	383	BG Value
Mercury	(v)	NA	NA	0.050	h, T	3.7	NA	ND	0.05	NJ SWQC	0.05	NJ SWQC
Nickel		610	4,600	500	h, T	730	NA	ND	500	NJ SWQC	500	NJ SWQC
Potassium	(r)	NA	NA	NA	NA	NA	NA	1,860	1,000,000	ADI	1,000,000	ADI
Selenium		170	4,200	170	h, T	180	NA	ND	170	Water & Organisms, NAWQC	170	Water & Organisms, NAWQC
Silver		NA	NA	170	h, T	180	NA	ND	170	NJ SWQC	170	NJ SWQC
Sodium	(r)	NA	NA	NA	NA	NA	NA	42,300	20,000	ADI	42,300	BG Value
Strontium		NA	NA	NA	NA	22,000	NA	95	22,000	RSL	22,000	RSL
Thallium		0.24	0.47	0.24	h, T	2.4	NA	7.3	0.24	Water & Organisms, NAWQC	7.3	BG Value
Titanium		NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA
Uranium		NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Vanadium		NA	NA	NA	NA	260	NA	2.7	260	RSL	260	RSL
Zinc		7,400	26,000	7,400	h	11,000	NA	31.1	7,400	Water & Organisms, NAWQC	7,400	Water & Organisms, NAWQC
Zirconium		NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Petroleum Hydrocarbons												
Diesel fuel		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Petroleum		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH, aviation gas fraction		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH, diesel pattern		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH, gas fraction		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Radionuclides (ad)												
Americium-241		NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Cesium-137		NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Cobalt-60		NA	NA	NA	NA	NA	NA	3.39	NA	NA	NA	NA
Gross alpha		NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Gross beta		NA	NA	NA	NA	NA	NA	4.69	NA	NA	NA	NA
Radium-226		NA	NA	NA	NA	NA	NA	0.26	NA	NA	NA	NA
Uranium-235		NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA
Uranium-238		NA	NA	NA	NA	NA	NA	0.084	NA	NA	NA	NA

Abbreviations:
ADI = Allowable Daily Intake
LOC = Level of Concern
ND = Not detected.
SWQC = Surface Water Quality Criteria
RSL = USEPA Tap Water Regional Screening Level
NA = No value available.

Notes:
(a) Note that chemicals without any guidance values are presented in this table.
(b) USEPA (2006). National Recommended Water Quality Criteria. These water quality criteria are the USEPA's current recommended criteria, reflecting the latest scientific knowledge as required by Section 304(a)(1) of the Clean Water Act The acute criteria are based on maximum exposure concentrations and the chronic criteria are based on a continuous concentration. Fifteen parameters were updated in 2003.
(c) NJDEP (2008). Surface water quality criteria fall into one of six categories: acute aquatic life criteria, chronic aquatic life criteria, noncarcinogenic effects-based human health criteria, carcinogenic effects-based human health criteria, toxic substances considered to be possible human carcinogens criteria, and organoleptic effects-based criteria. In most cases, State values are only available for one of the six categories, as a result, only the lowest of the available State values is presented in this table. The surface water at Picatinny is classified as FW2-NT (general surface water classified as nontrout fresh water).
N.J. Surface Water Quality Criteria notes:
[h] FW2 value is a noncarcinogenic effect-based human health criterion expressed as a 30-day average.
[hc] FW2 value is a carcinogenic effect-based human health criterion expressed as a 70-year average.
[T] Total recoverable criterion.
(d) USEPA (2008) Regional Screening Levels for consumption of tap water and inhalation while showering. These values are residential exposures based on 350 days/year. A hazard index of 1 was used for noncarcinogenic RSLs.
(e) Surface water background values are from the PTA Background Study Report and are the lower of the maximum concentration or the mean plus three standard deviations for a given chemical.
(f) LOC is the lowest value from USEPA Water Quality Criteria and NJ Surface Water Quality Criteria. Only in the absence of water quality criteria is the USEPA Tap Water (10^{-6}) RSL selected as the LOC.
(g) The final LOC value is the higher of the LOC and surface water background value. If no LOC was available, no final LOC was presented.
(h) N.J. Surface Water Quality Criteria value for 1,2-dichloroethane.
(i) N.J. Surface Water Quality Criteria and USEPA Water Quality Criteria for trans-1,2-dichloroethene.
(j) Values for 1,3-dichloropropene were used.
(k) The values for pyrene were used for noncarcinogenic polycyclic aromatic hydrocarbons (PAHs) lacking criteria.
(l) RSL values based on 1,4-dichlorobenzene.
(m) N.J. SWQC and RSL values for gamma-BHC were used.
(n) Values for chlordane were used.
(o) The RSL value for endosulfan was used.
(p) Values for endrin were used for endrin ketone and the RSL for endrin was used for endrin aldehyde.
(q) The USEPA National Ambient Water Quality Criteria and N.J. SWQC for total PCBs were used.
(r) The value presented in the LOC column is an allowable daily intake (ADI) level for essential human nutrients.
(s) Values for chromium VI were used.
(t) Lead does not have an RSL. The 15 ug/L action level (USEPA 1996a) is presented in the RSL column.
(u) The non-food RSL value for manganese was used.
(v) The RSL value for methyl mercury was used.

Table 5
Selection of Constituents of Potential Concern - Chemical Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

	Sediment Analytical Data			Surface Water Analytical Data		
Analyte	Maximum On-Site Concentration (mg/kg)	Human Health LOC (mg/kg)	COPC?	Maximum On-Site Concentration (mg/L)	Human Health LOC (mg/L)	COPC?
Volatile Organic Compounds						
Acetone	0.35	610,000	no	ND	22	no
Acetonitrile	ND	3,700	no	ND	0.13	no
Benzene	ND	5	no	ND	0.00015	no
Bromodichloromethane	ND	3	no	ND	0.00055	no
Bromoform	ND	220	no	ND	0.0043	no
Bromomethane	ND	35	no	ND	0.047	no
2-Butanone	ND	44,000	no	ND	7	no
Carbon Disulfide	ND	3,000	no	ND	1	no
Carbon Tetrachloride	ND	1.3	no	ND	0.00023	no
Chlorobenzene	ND	1,500	no	ND	0.13	no
Chloroethane	ND	1,100	no	ND	21	no
Chloroform	ND	1.5	no	0.0019	0.0057	no
Chloromethane	ND	8.4	no	ND	0.0018	no
cis-1,3-Dichloropropene	ND	7	no	ND	0.00034	no
Dibromochloromethane	ND	8	no	ND	0.0004	no
Dichlorodifluoromethane	ND	780	no	ND	0.39	no
1,1-Dichloroethane	ND	17	no	ND	0.00029	no
1,2-Dichloroethane	ND	2.2	no	ND	0.00029	no
1,1-Dichloroethene	ND	150	no	ND	0.0047	no
1,2-Dichloroethene (total)	ND	560	no	ND	0.14	no
1,2-Dichloropropane	ND	4.7	no	ND	0.0005	no
Ethanol	ND	NA	no	ND	NA	no
Ethylbenzene	ND	29	no	ND	0.53	no
2-Hexanone	ND	NA	no	ND	NA	no
Isopropanol	ND	NA	no	ND	NA	no
Methylene Chloride	0.21	54	no	0.0063	0.0025	YES
4-Methyl-2-pentanone	ND	52,000	no	ND	2	no
Styrene	ND	260	no	ND	2	no
tert-Butyl Alcohol	ND	11,000	no	ND	NA	no
1,1,2,2-Tetrachloroethane	ND	2.9	no	ND	0.00017	no
Tetrachloroethene	ND	2.7	no	ND	0.00034	no
Toluene	0.55	46,000	no	0.0016	1	no
trans-1,3-Dichloropropene	ND	7	no	ND	0.00034	no
1,1,1-Trichloroethane	ND	4,200	no	ND	0.12	no
1,1,2-Trichloroethane	ND	5.5	no	ND	0.00059	no
Trichloroethene	ND	14	no	ND	0.001	no
Trichlorofluoromethane	0.96	3,400	no	ND	1	no
1,1,2-trichloro-1,2,2-trifluoroethane	0.04	180,000	no	ND	59	no
Vinyl Acetate	ND	4,200	no	ND	0.41	no
Vinyl Chloride	ND	1.7	no	ND	0.000025	no
Xylenes (total)	ND	2600	no	0.00087	0.2	no
Semivolatile Organic Compounds						
Acenaphthene	19	33,000	no	ND	0.67	no
Acenaphthylene	0.15	17,000	no	ND	0.83	no
Aniline	ND	300	no	ND	0.012	no
Anthracene	37	30,000	no	ND	8	no
Benzo(a)anthracene	37	2	YES	ND	0.0000038	no
Benzo(a)pyrene	30	0.2	YES	ND	0.0000038	no
Benzo(b)fluoranthene	27	2	YES	ND	0.0000038	no
Benzo(g,h,i)perylene	16	17,000	no	ND	0.83	no
Benzo(k)fluoranthene	20	21	no	ND	0.0000038	no
Benzoic Acid	NA	2,500,000	no	ND	150	no
Benzyl Alcohol	ND	310,000	no	ND	18	no
bis(2-Chloroethoxy)methane	ND	1,800	no	ND	0.11	no
bis(2-Chloroethyl)ether	ND	0.9	no	ND	0.00003	no
bis(2-Chloroisopropyl)ether	ND	17	no	ND	1	no
bis(2-Ethylhexyl)phthalate	3.2	120	no	0.015	0.0012	YES
4-Bromophenyl-phenyl ether	ND	NA	no	ND	NA	no
Butylbenzylphthalate	ND	910	no	ND	0.15	no
Carbazole	1	96	no	ND	NA	no
4-Chloroaniline	ND	32	no	ND	0.0012	no
4-Chloro-3-Methylphenol	ND	NA	no	ND	NA	no
2-Chloronaphthalene	4.8	82,000	no	ND	1	no
2-Chlorophenol	ND	2,200	no	ND	0.081	no
4-Chlorophenyl-phenyl ether	ND	NA	no	ND	NA	no
Chrysene	40	210	no	ND	0.0000038	no
Dibenzo(a,h)anthracene	0.35	0.2	YES	ND	0.0000038	no
Dibenzofuran	0.8	NA	no	ND	NA	no
1,2-Dichlorobenzene	5.2	10,000	no	ND	0.42	no
1,3-Dichlorobenzene	0.78	13	no	ND	0.32	no
1,4-Dichlorobenzene	1.3	13	no	ND	0.063	no
3,3'-Dichlorobenzidine	ND	3.8	no	ND	0.000021	no
2,4-Dichlorophenol	ND	1,800	no	ND	0.077	no
Diethylphthalate	ND	490,000	no	0.0028	17	no

Table 5
Selection of Constituents of Potential Concern - Chemical Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

	Sediment Analytical Data			Surface Water Analytical Data		
Analyte	Maximum On-Site Concentration (mg/kg)	Human Health LOC (mg/kg)	COPC?	Maximum On-Site Concentration (mg/L)	Human Health LOC (mg/L)	COPC?
2,4-Dimethylphenol	ND	12,000	no	ND	0.38	no
Dimethylphthalate	ND	NA	no	ND	270	no
Di-n-Butylphthalate	3.7	62,000	no	0.00051	2	no
4,6-Dinitro-2-methylphenol	ND	62	no	ND	0.013	no
2,4-Dinitrophenol	ND	1,200	no	ND	0.069	no
2,4-Dinitrotoluene	ND	4	no	ND	0.00011	no
2,6-Dinitrotoluene	ND	4.2	no	ND	0.037	no
Di-n-Octylphthalate	ND	27,000	no	ND	NA	no
Diphenylamine	2.3	15,000	no	ND	0.91	no
Fluoranthene	120	22,000	no	ND	0.13	no
Fluorene	17	22,000	no	ND	1	no
Hexachlorobenzene	5.4	1	YES	ND	0.00000028	no
Hexachlorobutadiene	ND	22	no	ND	0.00044	no
Hexachlorocyclopentadiene	ND	110	no	ND	0.04	no
Hexachloroethane	ND	120	no	ND	0.0014	no
Indeno(1,2,3-cd)pyrene	14	2	YES	ND	0.0000038	no
Isophorone	ND	1,800	no	ND	0.035	no
1-Methylnaphthalene	ND	NA	no	NA	NA	no
2-Methylnaphthalene	1	2,400	no	ND	0.15	no
2-Methylphenol	ND	3,400	no	ND	1.8	no
4-Methylphenol	ND	340	no	ND	0.18	no
Mirex	10	0.096	YES	0.0082	0.0000037	YES
Naphthalene	35	17	YES	ND	0.00014	no
2-Nitroaniline	ND	23,000	no	ND	NA	no
3-Nitroaniline	ND	82	no	ND	0.0032	no
4-Nitroaniline	ND	82	no	ND	0.0032	no
Nitrobenzene	ND	280	no	ND	0.017	no
2-Nitrophenol	ND	NA	no	ND	NA	no
4-Nitrophenol	ND	NA	no	ND	NA	no
N-Nitrosodimethylamine	NA	0.034	no	ND	0.00000069	no
N-Nitroso-di-n-propylamine	ND	0.25	no	ND	0.000005	no
N-Nitrosodiphenylamine	3.5	350	no	ND	0.0033	no
Pentachlorophenol	ND	9	no	ND	0.00027	no
Phenanthrene	170	17,000	no	ND	0.83	no
Phenol	ND	180,000	no	ND	10	no
Pyrene	100	17,000	no	ND	0.83	no
1,2,4-Trichlorobenzene	ND	400	no	ND	0.021	no
2,4,5-Trichlorophenol	ND	62,000	no	ND	2	no
2,4,6-Trichlorophenol	ND	74	no	ND	0.00058	no
Pesticides						
4,4'-DDD	0.6	7.2	no	ND	0.00000031	no
4,4'-DDE	0.26	5.1	no	ND	0.00000022	no
4,4'-DDT	0.45	7	no	ND	0.00000022	no
Aldrin	ND	0.1	no	ND	NA	no
Alpha-BHC	ND	0.27	no	ND	0.0000026	no
Alpha-Chlordane	ND	1	no	ND	0.0000001	no
Beta-BHC	ND	0.96	no	ND	0.0000091	no
Delta-BHC	ND	2	no	ND	0.000137	no
Diazinon	ND	550	no	ND	0.033	no
Dieldrin	ND	0.11	no	ND	0.000000052	no
Endosulfan I	ND	3,700	no	ND	0.062	no
Endosulfan II	ND	3,700	no	ND	0.062	no
Endosulfan Sulfate	0.2	3,700	no	ND	0.062	no
Endrin	ND	180	no	ND	0.000059	no
Endrin Aldehyde	ND	180	no	ND	0.000059	no
Endrin Ketone	ND	180	no	ND	0.000059	no
Gamma-BHC (Lindane)	ND	2	no	ND	0.00098	no
Gamma-Chlordane	ND	1	no	ND	0.0000001	no
Heptachlor	ND	0.38	no	ND	0.000000079	no
Heptachlor Epoxide	ND	0.19	no	ND	0.000000039	no
Isodrin	ND	NA	no	ND	NA	no
Malathion	ND	12,000	no	ND	0.73	no
Methoxychlor	ND	3,100	no	ND	0.04	no
Technical Chlordane	ND	NA	no	ND	NA	no
Toxaphene	ND	1.6	no	ND	0.00000028	no
Polychlorinated Biphenyls						
Aroclor-1016	ND	1	no	ND	0.000000064	no
Aroclor-1221	ND	0.62	no	ND	0.000000064	no
Aroclor-1232	ND	0.62	no	ND	0.000000064	no
Aroclor-1242	ND	0.74	no	ND	0.000000064	no
Aroclor-1248	ND	0.74	no	ND	0.000000064	no
Aroclor-1254	0.03	0.74	no	ND	0.000000064	no
Aroclor-1260	0.14	0.74	no	ND	0.000000064	no
Inorganics						
Aluminum	64,900	990,000	no	0.249	37	no

Table 5
Selection of Constituents of Potential Concern - Chemical Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

	Sediment Analytical Data			Surface Water Analytical Data		
Analyte	Maximum On-Site Concentration (mg/kg)	Human Health LOC (mg/kg)	COPC?	Maximum On-Site Concentration (mg/L)	Human Health LOC (mg/L)	COPC?
Antimony	48.6	410	no	0.00103	0.0056	no
Arsenic	243	16	YES	0.0012	0.00138	no
Barium	35,200	59,000	no	0.116	1	no
Beryllium	2.94	140	no	0.00061	0.006	no
Boron	61.4	200,000	no	0.0774	7	no
Cadmium	13.7	78	no	0.00054	0.0034	no
Calcium	24,400	1000000	no	10.7	500	no
Chromium	81.2	200	no	0.0599	0.11	no
Cobalt	31.1	300	no	ND	0.011	no
Copper	18,000	41,000	no	0.0044	1	no
Cyanide	4.81	20,000	no	0.0186	0.14	no
Iron	68,100	720,000	no	0.859	2	no
Lead	105	800	no	0.0033	0.005	no
Magnesium	17,500	1000000	no	3.36	175	no
Manganese	1,000	5,900	no	0.238	0.383	no
Mercury	113	28	YES	0.00054	0.00005	YES
Nickel	66.4	20,000	no	0.0181	0.5	no
Potassium	4,070	1000000	no	0.984	1,000	no
Selenium	5.7	5,100	no	ND	0.17	no
Silver	1,100	5,100	no	0.0162	0.17	no
Sodium	2,970	1000000	no	13.7	42	no
Strontium	230	610,000	no	0.0505	22	no
Thallium	1.3	66	no	0.0057	0.0073	no
Titanium	791	NA	no	0.0053	NA	no
Total Uranium	3.99	3,100	no	ND	NA	no
Vanadium	57.9	1,100	no	0.0011	0.26	no
Zinc	5,650	110,000	no	0.241	7	no
Zirconium	19.3	NA	no	ND	NA	no
Petroleum Hydrocarbons						
Diesel Fuel	144	NA	no	ND	NA	no
Diesel Range Organics	NA	NA	no	ND	NA	no
Gasoline	NA	NA	no	ND	NA	no
Gasoline range organics	ND	NA	no	ND	NA	no
TPH, aviation gas fraction	ND	NA	no	ND	NA	no
TRPH	5,500	NA	no	ND	NA	no
Explosives						
2-Amino-4,6-Dinitrotoluene	45.7	2,000	no	ND	0.073	no
4-Amino-2,6-Dinitrotoluene	19.9	1,900	no	ND	0.073	no
1,3-Dinitrobenzene	ND	62	no	ND	0.0037	no
HMX	1,550	10,000	no	0.0966	2	no
Nitrocellulose	770	NA	no	ND	NA	no
Nitroglycerin	12.3	62	no	0.25	0.0037	no[2]
Nitroguanidine	ND	62,000	no	ND	4	no
2-Nitrotoluene	ND	13	no	ND	0.00031	no
3-Nitrotoluene	ND	12,000	no	ND	0.73	no
4-Nitrotoluene	ND	110	no	ND	0.0042	no
PETN	62.5	NA	no	ND	NA	no
Picric Acid	13	NA	no	ND	NA	no
RDX	7,680	24	YES	0.0245	0.00061	YES
Tetrazene	ND	NA	no	ND	NA	no
Tetryl	ND	2,500	no	ND	NA	no
1,3,5-Trinitrobenzene	2.85	27,000	no	ND	1	no
2,4,6-Trinitrotoluene	1,100	79	YES	0.00577	0.0022	YES
Dioxins/Furans						
1,2,3,4,6,7,8-HpCDD	NA	NA	no	ND	NA	no
1,2,3,4,6,7,8-HpCDF	NA	NA	no	ND	NA	no
1,2,3,4,7,8,9-HpCDF	NA	NA	no	ND	NA	no
1,2,3,4,7,8-HxCDD	NA	NA	no	ND	NA	no
1,2,3,4,7,8-HxCDF	NA	NA	no	ND	NA	no
1,2,3,6,7,8-HxCDD	NA	NA	no	ND	NA	no
1,2,3,6,7,8-HxCDF	NA	NA	no	ND	NA	no
1,2,3,7,8,9-HxCDD	NA	NA	no	ND	NA	no
1,2,3,7,8,9-HxCDF	NA	NA	no	ND	NA	no
1,2,3,7,8-PeCDD	NA	NA	no	ND	NA	no
1,2,3,7,8-PeCDF	NA	0.00044	no	ND	0.000000017	no
2,3,4,6,7,8-HxCDF	NA	NA	no	ND	NA	no
2,3,4,7,8-PeCDF	NA	0.000044	no	ND	1.7E-09	no
2,3,7,8-TCDD	NA	0.000018	no	ND	5E-12	no
2,3,7,8-TCDF	NA	0.00013	no	ND	5.2E-09	no
Octachlorodibenzodioxin	NA	0.061	no	ND	0.0000017	no
Octachlorodibenzofuran	NA	0.044	no	ND	0.0000017	no
Total heptachlorodibenzofurans	NA	NA	no	ND	NA	no
Total heptachlorodibenzo-p-dioxins	NA	NA	no	ND	NA	no
Total hexachlorodibenzofurans	NA	NA	no	ND	NA	no
Total hexachlorodibenzo-p-dioxins	NA	0.00039	no	ND	0.000000011	no

Table 5
Selection of Constituents of Potential Concern - Chemical Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

	Sediment Analytical Data			Surface Water Analytical Data		
Analyte	Maximum On-Site Concentration (mg/kg)	Human Health LOC (mg/kg)	COPC?	Maximum On-Site Concentration (mg/L)	Human Health LOC (mg/L)	COPC?
Total pentachlorodibenzofurans	NA	NA	no	ND	NA	no
Total pentachlorodibenzo-p-dioxins	NA	NA	no	ND	NA	no
Total tetrachlorodibenzofurans	NA	NA	no	ND	NA	no
Total tetrachlorodibenzo-p-dioxins	NA	0.000018	no	ND	5E-12	no

Abbreviations:
COPC = constituent of potential concern
mg/L = milligrams per liter
mg/kg = milligram per kilogram
LOC = Site-Specific Level of Concern for Picatinny Arsenal
NA = not analyzed or not available
ND = not detected

Notes:
1. Although the maximum detected lead concentration in surface water exceeds the human health LOC, the mean concentration in surface water (0.0032 mg/l) is less than the human health LOC (0.005 mg/L). Given that average (i.e., mean) concentrations are used to evaluate lead exposures, lead has not been selected as a COPC for this risk assessment.
2. Nitroglycerin in surface water was not selected as a COPC due to the low frequency of detection (well below 5%).

Table 6
Risk and Hazard Equations - Chemical Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Sediment Ingestion

$$Risk = \frac{EPC_{sed} * FI_{sed} * IR_{sed} * EF * ED * CF_{sed}}{BW * AT} * CSF_O$$

$$HQ = \frac{\left[\frac{EPC_{sed} * FI_{sed} * IR_{sed} * EF * ED * CF_{sed}}{BW * AT}\right]}{RfD_O}$$

Risk = carcinogenic risk (unitless)
HQ = hazard quotient (unitless)
EPC_{sed} = COPC concentration in sediment (mg/kg)
IR_{sed} = incidental sediment ingestion rate (mg/day)
FI_{sed} = fraction ingested (unitless)
EF = exposure frequency (days/yr)
ED = exposure duration (yrs)
CF_{sed} = conversion factor ($1x10^{-6}$ kg/mg)
BW = body weight (kg)
AT = averaging time (days)
CSF_O = oral cancer slope factor (per mg/kg-day)
RfD_O = oral reference dose (mg/kg-day)

Surface Water Ingestion

$$Risk = \frac{EPC_W * IR_W * EF * ED}{BW * AT} * CSF_O$$

$$HQ = \frac{\left[\frac{EPC_W * IR_W * EF * ED}{BW * AT}\right]}{RfD_O}$$

Risk = carcinogenic risk (unitless)
HQ = hazard quotient (unitless)
EPC_W = COPC concentration in water (mg/L)
IR_W = water ingestion rate (L water/day)
EF = exposure frequency (days/yr)
ED = exposure duration (yrs)
BW = body weight (kg)
AT = averaging time (days)
CSF_O = oral cancer slope factor (per mg/kg-day)
RfD_O = oral reference dose (mg/kg-day)

Sediment Dermal Contact

$$Risk = \frac{DA_{event} * EV_{sed} * EF * ED * SA_{sed}}{BW * AT} * CSF_D$$

$$HQ = \frac{\left[\frac{DA_{event} * EV_{sed} * EF * ED * SA_{sed}}{BW * AT}\right]}{RfD_D}$$

$$DA_{event} = EPC_{sed} * CF_{sed} * FC_{sed} * AF_{sed} * ABS_D$$

Risk = carcinogenic risk (unitless)
HQ = hazard quotient (unitless)
DA_{event} = dose per event (mg/cm^2-event)
EPC_{sed} = COPC concentration in sediment (mg/kg)
SA_{sed} = skin surface area available for contact (cm^2/event)
AF_{sed} = sediment-to-skin adherence factor (mg/cm^2-event)
FC_{sed} = fraction in contact with sediment (unitless)
ABS_d = dermal absorption factor (unitless)
EV_{sed} = event frequency (events/day)
EF = exposure frequency (days/yr)
ED = exposure duration (yrs)
CF_{sed} = conversion factor ($1x10^{-6}$ kg/mg)
BW = body weight (kg)
AT = averaging time (days)
CSF_D = dermal cancer slope factor (per mg/kg-day)
RfD_D = dermal reference dose (mg/kg-day)

Surface Water Dermal Contact

$$Risk = \frac{DA_{event} * EV * EF * ED * SA_w}{BW * AT} * CSF_D$$

$$HQ = \frac{\left[\frac{DA_{event} * EV * EF * ED * SA_w}{BW * AT}\right]}{RfD_D}$$

Organics

If t_{event} • t*,

$$DA_{event} = 2 * FA * K_p * EPC_W * CF_W * \sqrt{\frac{6 * \tau_{event} * t_{event}}{\pi}}$$

If t_{event} > t*,

$$DA_{event} = FA * K_p * EPC_W * CF_W * \left[\frac{t_{event}}{1+B} + 2\tau_{event}\left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right]$$

Inorganics

$$DA_{event} = K_p * EPC_W * CF_W * t_{event}$$

Risk = carcinogenic risk (unitless)
HQ = hazard quotient (unitless)
DA_{event} = dose per event (mg/cm^2-event)
EV = event frequency (events/day)
EF = exposure frequency (days/yr)
ED = exposure duration (yrs)
SA_w = skin surface area available for contact (cm^2/event)
BW = body weight (kg)
AT = averaging time (days)
t_{event} = event duration (hours/event)
t* = time to reach steady state (hours), equivalent to 2.4 x τ_{event}
FA = fraction absorbed (unitless)
K_p = permeability coefficient (cm/hour)
EPC_w = COPC concentration in water (mg/L)
CF_w = conversion factor ($1x10^{-3}$ L/cm)
τ_{event} = lag time per event (hours/event)
B = permeability ratio (unitless)
CSF_D = dermal cancer slope factor (per mg/kg-day)
RfD_D = dermal reference dose (mg/kg-day)

Notes:
1. Equations obtained from USEPA (1989, 1991, 2004) Risk Assessment Guidance for Superfund (RAGS), Volume I, Human Health Evaluation Manual and are consistent with the IT (2001) risk assessment.

Table 7
Exposure Point Concentrations - Chemical Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Constituent	Sediment EPC (mg/kg)	Notes	Surface Water EPC (mg/L)	Notes
Volatile Organic Compounds				
Methylene Chloride	4.8E-02	1	6.3E-03	1
Semivolatile Organic Compounds				
Benzo(a)anthracene	2.7E+00	1	ND	
Benzo(a)pyrene	2.3E+00	1	ND	
Benzo(b)fluoranthene	2.2E+00	1	ND	
bis(2-Ethylhexyl)phthalate	3.2E+00	2	1.5E-02	2
Dibenzo(a,h)anthracene	3.5E-01	2	ND	
Hexachlorobenzene	5.4E+00	2	ND	
Indeno(1,2,3-cd)pyrene	1.0E+00	1	ND	
Mirex	1.0E+01	2	8.2E-03	2
Naphthalene	3.0E+00	1	ND	
Inorganics				
Arsenic	3.3E+01	1	1.2E-03	1
Mercury	2.5E+01	1	5.4E-04	2
Explosives				
RDX	7.7E+03	2	2.5E-02	2
2,4,6-Trinitrotoluene	2.9E+02	1	5.8E-03	2

Abbreviations:
EPC = exposure point concentration
mg/L = milligrams per liter
mg/kg = milligrams per kilogram
ND = not detected

Notes:
1. The EPC is the 95th upper confidence limit on the mean concentration (95 UCL).
2. Due to sample size and detection frequency, a 95 UCL could not be calculated. The EPC is the maximum detected concentration.

Table 8
Human Health Exposure Parameters - Chemical Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Parameter	Symbol	Units	On-Site Youth Visitor	Notes
General				
Averaging Time (carcinogenic)	AT_c	days	25,550	1
Averaging Time (noncarcinogenic)	AT_{nc}	days	2,190	1
Body Weight	BW	kg	55	1
Exposure Duration	ED	yr	6	1
Exposure Frequency	EF	days/yr	65	1
Sediment - Ingestion				
Incidental Sediment Ingestion Rate	IR_{sed}	mg/day	100	1
Fraction Ingested	FI_{sed}	unitless	1	1
Conversion Factor	CF_{sed}	kg/mg	1.00E-06	1
Sediment - Dermal Contact				
Exposed Skin Surface Area	SA_{sed}	cm^2	6,200	1
Skin Adherence Factor	AF_{sed}	mg/cm^2-event	0.2	2
Event Frequency	EV_{sed}	events/day	1	1
Fraction of Contact	FC_{sed}	unitless	1	1
Surface Water - Ingestion				
Surface Water Ingestion Rate	IR_w	L/day	0.05	1
Surface Water - Dermal Contact				
Exposed Skin Surface Area	SA_w	cm^2	6,200	1
Event Frequency	EV_w	events/day	1	1
Event Duration	t_{event}	hr/event	2	1
Conversion Factor	CF_w	L/cm^3	1.00E-03	1

Abbreviations:
cm^2 = square centimeter
kg = kilogram
L = liter
mg = milligram
yr = year

Notes:
1. Exposure parameter values are consistent with the parameter values used in the 2005 risk assessment (Shaw 2005).
2. USEPA (2004) Risk Assessment Guidance for Superfund, Volume I, Part E. Value for children playing (wet soil).

Table 9
Dermal Exposure Parameters - Chemical Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Constituent	Lag Time per Event τ_{event} (hr/event)	Notes	Permeability Ratio B (unitless)	Notes	Time to Reach Steady State t* (hr)	Notes	Fraction Absorbed FA (unitless)	Notes	Permeability Coefficient K_p (cm/hr)	Notes	Dermal Absorption Factor ABS_D (unitless)	Notes
Volatile Organic Compounds												
Methylene Chloride	3.2E-01	1	1.3E-02	1	7.6E-01	1	1.0E+00	1	3.5E-03	1	0	1
Semivolatile Organic Compounds												
Benzo(a)anthracene	2.0E+00	1	2.8E+00	1	8.5E+00	1	1.0E+00	1	4.7E-01	1	0.13	1
Benzo(a)pyrene	2.7E+00	1	4.3E+00	1	1.2E+01	1	1.0E+00	1	7.0E-01	1	0.13	1
Benzo(b)fluoranthene	2.8E+00	1	4.3E+00	1	1.2E+01	1	1.0E+00	1	7.0E-01	1	0.13	1
bis(2-Ethylhexyl)phthalate	1.7E+01	1	1.9E-01	1	4.0E+01	1	8.0E-01	1	2.5E-02	1	0.1	1
Dibenzo(a,h)anthracene	3.9E+00	1	9.7E+00	1	1.8E+01	1	6.0E-01	1	1.5E+00	1	0.13	1
Hexachlorobenzene	4.2E+00	1	8.7E-01	1	1.6E+01	1	9.0E-01	1	1.3E-01	1	0.1	1
Indeno(1,2,3-cd)pyrene	3.8E+00	1	6.7E+00	1	1.7E+01	1	6.0E-01	1	1.0E+00	1	0.13	1
Mirex	NA		NA		NA		NA		NA		0.1	1
Naphthalene	5.6E-01	1	2.0E-01	1	1.3E+00	1	1.0E+00	1	4.7E-02	1	0.13	1
Inorganics												
Arsenic	NA		NA		NA		NA		1.0E-03	1	0.03	1
Mercury	NA		NA		NA		NA		1.0E-03	1	0.001	2
Explosives												
RDX	NA		NA		NA		NA		NA		0.01	2
2,4,6-Trinitrotoluene	NA		NA		NA		NA		NA		0.01	2

Abbreviations:
NA = not available or not applicable

Notes:
1. USEPA (2004) Risk Assessment Guidance for Superfund, Volume I, Part E.
2. USEPA (2000) Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins.

Table 10
Noncarcinogenic Oral and Dermal Toxicity Factors - Chemical Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Constituent	ORAL TOXICITY				DERMAL TOXICITY		
	Chronic Exposure				Absorption Efficiency		Chronic
	RfD (mg/kg/day)	Notes	Target Site	Confidence Level/ Uncertainty Factor	ABS_{GI} (unitless)	Notes	RfD (mg/kg/day)
Volatile Organic Compounds							
Methylene Chloride	6.0E-02	1	liver	Medium/100	1	4	6.0E-02
Semivolatile Organic Compounds							
Benzo(a)anthracene	NA				1	4	NA
Benzo(a)pyrene	NA				1	4	NA
Benzo(b)fluoranthene	NA				1	4	NA
bis(2-Ethylhexyl)phthalate	2.0E-02	1	liver	Medium/1000	1	4	2.0E-02
Dibenzo(a,h)anthracene	NA				1	4	NA
Hexachlorobenzene	8.0E-04	1	liver	Medium/100	1	4	8.0E-04
Indeno(1,2,3-cd)pyrene	NA				1	4	NA
Mirex	2.0E-04	1	liver, thyroid	High/300	1	4	2.0E-04
Naphthalene	2.0E-02	1	non-specific	Low/3000	1	4	2.0E-02
Inorganics							
Arsenic	3.0E-04	1	skin	Medium/3	1	4	3.0E-04
Mercury	3.0E-04	1	autoimmune system	High/1000	0.07	4	2.1E-05
Explosives							
RDX	3.0E-03	1	prostate	High/100	1	4	3.0E-03
2,4,6-Trinitrotoluene	5.0E-04	1	liver	Medium/1000	1	4	5.0E-04

Abbreviations:
ABS_{GI} = oral absorption efficiency factor
mg/kg/day = milligrams per kilogram per day
NA = not available
RfD = reference dose

Notes:
1. USEPA (2009) Integrated Risk Information System (IRIS).
2. USEPA (2009) Provisional Peer-Reviewed Toxicity Values (PPRTV) Database. (Manuscripts have been requested, but not received. Values were obtained from the USEPA [2009] Regional Screening Level Table.)
3. USEPA (1997) Health Effects Assessment Summary Tables (HEAST)
4. USEPA (2004) Risk Assessment Guidance for Superfund, Vol I: Human Health Evaluation Manual, Part E.

Table 11
Carcinogenic Oral and Dermal Toxicity Factors - Chemical Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

	ORAL TOXICITY				DERMAL TOXICITY		
Constituent	CSF $(mg/kg/day)^{-1}$	Notes	Carcinogenic Effect and Site	Weight of Evidence Classification	ABS_{GI} (unitless)	Notes	CSF $(mg/kg/day)^{-1}$
Volatile Organic Compounds							
Methylene Chloride	7.5E-03	1	hepatocellular adenomas or carcinomas (NTP) and hepatocellular cancer and neoplastic nodules (NCA)	B2, probable human carcinogen	1	5	7.5E-03
Semivolatile Organic Compounds							
Benzo(a)anthracene	7.3E-01	4	no critical study identified	B2, probable human carcinogen	1	5	7.3E-01
Benzo(a)pyrene	7.3E+00	1	forestomach, squamous cell papillomas and carcinomas	B2, probable human carcinogen	1	5	7.3E+00
Benzo(b)fluoranthene	7.3E-01	4	no critical study identified	B2, probable human carcinogen	1	5	7.3E-01
bis(2-Ethylhexyl)phthalate	1.4E-02	1	hepatocellular carcinoma and adenoma	B2, probable human carcinogen	1	5	1.4E-02
Dibenzo(a,h)anthracene	7.3E+00	4	no critical study identified	B2, probable human carcinogen	1	5	7.3E+00
Hexachlorobenzene	1.6E+00	1	hepatocellular carcinoma	B2, probable human carcinogen	1	5	1.6E+00
Indeno(1,2,3-cd)pyrene	7.3E-01	4	no critical study identified	B2, probable human carcinogen	1	5	7.3E-01
Mirex	1.8E+01	3	hepatocellular carcinoma	B2, probable human carcinogen	1	5	1.8E+01
Naphthalene	NA		no critical study identified	C, possible human carcinogen	1	5	NA
Inorganics							
Arsenic	1.5E+00	1	skin cancer	A, human carcinogen	1	5	1.5E+00
Mercury	NA		no critical study identified	C, possible human carcinogen	1	5	NA
Explosives							
RDX	1.1E-01	1	Hepatocellular adenomas and carcinomas	C, possible human carcinogen	1	5	1.1E-01
2,4,6-Trinitrotoluene	3.0E-02	1	urinary bladder, transitional cell papilloma and transitional squamous cell carcinomas	C, possible human carcinogen	1	5	3.0E-02

Abbreviations:
ABS_{GI} = oral absorption efficiency factor
CSF = cancer slope factor
$(mg/kg/day)^{-1}$ = per milligram per kilogram per day
NA = not available

Notes:
1. USEPA (2009) Integrated Risk Information System (IRIS).
2. USEPA (2009) Provisional Peer-Reviewed Toxicity Values (PPRTV) Database. (Manuscripts have been requested, but not received. Values were obtained from the USEPA [2009] Regional Screening Level Table.)
3. Cal/EPA (2008) Office of Environmental Health Hazard Assessment (OEHHA) Toxicity Criteria Database
4. Carcinogenic PAHs were evaluated using toxicity equivalence factors in accordance with USEPA (1993) Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons.
5. USEPA (2004) Risk Assessment Guidance for Superfund, Vol I: Human Health Evaluation Manual, Part E.

Table 12
Risk and Hazard Calculations for the On-Site Youth Visitor - Chemical Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

Constituent	Sediment EPC (mg/kg)	Surface Water EPC (mg/l)	CARCINOGENIC RISK								NONCARCINOGENIC HAZARD							
			Sediment			Surface Water			Total ELCR (unitless)	Percent Total	Soil			Surface Water			Total HI (unitless)	Percent Total
			oral (unitless)	dermal (unitless)	total (unitless)	oral (unitless)	dermal (unitless)	total (unitless)			oral (unitless)	dermal (unitless)	total (unitless)	oral (unitless)	dermal (unitless)	total (unitless)		
Volatile Organic Compounds																		
Methylene Chloride	4.8E-02	6.3E-03	1.0E-11	0.0E+00	1.0E-11	6.6E-10	7.5E-10	1.4E-09	1.4E-09	<1%	2.6E-07	0.0E+00	2.6E-07	1.7E-05	2.0E-05	3.7E-05	3.7E-05	<1%
Semivolatile Organic Compounds																		
Benzo(a)anthracene	2.7E+00	ND	5.5E-08	8.8E-08	1.4E-07	ND	ND	ND	1.4E-07	<1%	NA	NA	NA	NA	NA	ND	NA	--
Benzo(a)pyrene	2.3E+00	ND	4.7E-07	7.5E-07	1.2E-06	ND	ND	ND	1.2E-06	3%	NA	NA	NA	NA	NA	ND	NA	--
Benzo(b)fluoranthene	2.2E+00	ND	4.5E-08	7.2E-08	1.2E-07	ND	ND	ND	1.2E-07	<1%	NA	NA	NA	NA	NA	ND	NA	--
bis(2-Ethylhexyl)phthalate	3.2E+00	1.5E-02	1.2E-09	1.5E-09	2.8E-09	2.9E-09	1.1E-07	1.2E-07	1.2E-07	<1%	5.2E-05	6.4E-05	1.2E-04	1.2E-04	4.8E-03	4.9E-03	5.0E-03	<1%
Dibenzo(a,h)anthracene	3.5E-01	ND	7.1E-08	1.1E-07	1.9E-07	ND	ND	ND	1.9E-07	<1%	NA	NA	NA	NA	NA	ND	NA	--
Hexachlorobenzene	5.4E+00	ND	2.4E-07	3.0E-07	5.4E-07	ND	ND	ND	5.4E-07	1%	2.2E-03	2.7E-03	4.9E-03	ND	ND	ND	4.9E-03	<1%
Indeno(1,2,3-cd)pyrene	1.0E+00	ND	2.0E-08	3.3E-08	5.3E-08	ND	ND	ND	5.3E-08	<1%	NA	NA	NA	NA	NA	ND	NA	--
Mirex	1.0E+01	8.2E-03	5.0E-06	6.2E-06	1.1E-05	2.0E-06	NV	2.0E-06	1.3E-05	30%	1.6E-02	2.0E-02	3.6E-02	6.6E-03	8.2E-03	1.5E-02	5.1E-02	4%
Naphthalene	3.0E+00	ND	NC	NC	NC	NC	NC	NC	NC	--	4.9E-05	7.8E-05	1.3E-04	ND	ND	ND	1.3E-04	<1%
Inorganics																		
Arsenic	3.3E+01	1.2E-03	1.4E-06	5.0E-07	1.9E-06	2.5E-08	NV	2.5E-08	1.9E-06	4%	3.5E-02	1.3E-02	4.8E-02	6.5E-04	1.2E-03	1.8E-03	5.0E-02	4%
Mercury	2.5E+01	5.4E-04	NC	NC	NC	NC	NC	NC	NC	--	2.6E-02	4.7E-03	3.1E-02	2.9E-04	5.4E-04	8.3E-04	3.2E-02	2%
Explosives																		
RDX	7.7E+03	2.5E-02	2.3E-05	2.9E-06	2.6E-05	3.7E-08	NV	3.7E-08	2.6E-05	60%	8.3E-01	1.0E-01	9.3E-01	1.3E-03	2.5E-02	2.6E-02	9.6E-01	72%
2,4,6-Trinitrotoluene	2.9E+02	5.8E-03	2.4E-07	3.0E-08	2.8E-07	2.4E-09	NV	2.4E-09	2.8E-07	<1%	1.9E-01	2.4E-02	2.1E-01	1.9E-03	5.8E-03	7.6E-03	2.2E-01	17%
Total Risk/Hazard			**3E-05**	**1E-05**	**4E-05**	**2E-06**	**1E-07**	**2E-06**	**4E-05**		**1E+00**	**2E-01**	**1E+00**	**1E-02**	**5E-02**	**6E-02**	**1E+00**	

Abbreviations:
ELCR = excess carcinogenic lifetime risk
EPC = exposure point concentration
HI = hazard index
mg/kg = milligram per kilogram
mg/L = milligram per liter
NA = not available or not applicable
NC = not evaluated as a carcinogen
ND = not detected
NV = dermal parameter values are not available

Hazard Indices by Target Organ:

liver	2.8E-01
thyroid	5.1E-02
non-specific	1.3E-04
skin	5.0E-02
autoimmune system	3.2E-02
prostate	9.6E-01

Table 13
Levels of Concern for Human Health - Radionuclide Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

	Sediment Screening Levels			Surface Water Screening Levels		
Analyte	Human Health LOC (pCi/g)	Background Concentration (pCi/g)	Final Human Health LOC (pCi/g)	Human Health LOC (pCi/L)	Background Concentration (pCi/L)	Final Human Health LOC (pCi/L)
Radionuclides						
Americium-241	NA	ND	NA	NA	ND	NA
Cesium-137	NA	5.60E-01	NA	NA	ND	NA
Cobalt-60	NA	ND	NA	NA	3.39E+00	NA
Gross Alpha	NA	2.00E+01	NA	NA	ND	NA
Gross Beta	NA	3.07E+01	NA	NA	4.69E+00	NA
Radium-226	5.00E+00	1.13E+00	5.00E+00	NA	2.60E-01	NA
Uranium-235	3.70E+01	7.60E-02	3.70E+01	NA	ND	NA
Uranium-238	6.40E+01	8.90E-01	6.40E+01	NA	8.40E-02	NA

Abbreviations:
pCI/g = picocuries per gram
pCi/L = picocuries per liter
NA = not analyzed or not applicable
ND = not detected
LOCs = Levels of Concern

Table 14
Selection of Constituents of Potential Concern - Radionuclide Risk Assessment
Human Health Risk Assessment
Picatinny Lake
Picatinny Arsenal, New Jersey

	Sediment Analytical Data			Surface Water Analytical Data		
Analyte	Maximum On-Site Concentration (pCi/g)	Human Health LOC (pCi/g)	COPC?	Maximum On-Site Concentration (pCi/L)	Human Health LOC (pCi/L)	COPC?
Radionuclides						
Americium-241	0.3	NA	no	1.92	NA	no
Cesium-137	0.94	NA	no	ND	NA	no
Cobalt-60	ND	NA	no	1.36	NA	no
Gross Alpha	2.59	NA	no	3.2	NA	no
Gross Beta	4.53	NA	no	10.7	NA	no
Radium-226	1.78	5	no	13.7	NA	no
Uranium-235	0.05	37	no	0.08	NA	no
Uranium-238	1.02	64	no	0.44	NA	no

Abbreviations:
COPC = Constituent of Potential Concern
LOC = Site-Specific Level of Concern for Picatinny Arsenal
pCi/g = picocuries per gram
pCi/L = picocuries per liter
NA = not analyzed or not applicable
ND = not detected

Appendix F

Engineering Assumptions for
Response Action Alternatives

Alternative 2 – Institutional Controls (ICs)
Description:

Institutional Controls (ICs) will be implemented to minimize the exposure pathway for areas which land use (military/industrial) and fish consumption require restriction. ICs will consist of implementation/maintenance of fish consumption advisories and the installation of signs.

ASSUMPTIONS:

1. ICs will consist of sign installation and implementation/maintenance of existing restrictions for fish consumption activities
2. Permitting not required
3. Site is easily accessible

ADMINISTRATIVE ACTIONS

Engineers Estimate

1. Institutional Controls

Assumptions:
- 100 signs at $550 each (includes installation labor and MEC support)
- GIS support at $3,040
- Staff to coordinate LUC implementation and prepare public notice; 8 hours at $95/hour
- Estimated cost would be $58,800

ANNUAL INSPECTION AND FIVE YEAR REVIEW

Engineering Estimate

1. Annual Inspection and Reporting

Assumptions:
- Annual inspection requires 16 hours to complete at $95/hour
- Report requires 24 hours at $95/hour

Engineering Estimate

2. Five Year Review

Assumptions:
- Draft, Draft Final and Final reports
- Lump sum per site of $15,000

IMPLEMENTATION COST

Engineering Estimate

1. Administration and Legal

Assumptions:
- Assume 5% of capital costs.

Engineering Estimate

2. Remedial Design

Assumptions:
- Assume $10,000.

Engineering Estimate

3. Completion Report

Assumptions:
- Assume $10,000.

Engineering Estimate

4. Cost Contingency

Assumptions:
- Assume 15% of capital costs.

Engineering Estimate

5. O&M Contingency

Assumptions:
- Assume 15% of O&M Costs.