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FINAL FIELD TASK MODIFICATION REQUEST FOR ADDITIONAL PCB SOURCE DELINEATION SAMPLING, ROCK CORING AND SEDIMENT TRAP INSTALLATION AT SOLID WASTE MANAGEMENT UNIT 17 (SWMU 17) PCB CAPACITOR BURIAL POLE YARD

NSA CRANE IN

06/01/2015

TETRA TECH INC

NAVFAC Atlantic Biological Resource Services

Contract: N62470-08-D-1008; Task Order: F270

June 1, 2015

Final Field Task Modification Request for Additional PCB Source Delineation Sampling, Rock Coring, and Sediment Trap Installation at SWMU 17 - PCB Capacitor Burial/Pole Yard

Naval Support Activity Crane, Indiana

Prepared for:
NAVFAC Mid-Atlantic
9742 Maryland Ave.
Norfolk, VA 23511

Prepared by:
Tetra Tech, Inc.
1320 North Courthouse Road, Suite 600
Arlington, VA 22201

TETRA TECH
FIELD TASK MODIFICATION REQUEST
SAMPLING AND ANALYSIS PLAN (FINAL)

Naval Support Activity (NSA) Crane	CTO F270, 112IG05219	NA
Project/Installation Name	**CTO and Project Number**	**Task Mod. Number**
QAPP Addendum No. 4 (See Table 1)	SWMU 17	6/1/2015
Modification To (e.g., Work Plan)	**Site/Sample Location**	**Date**

ACTIVITY DESCRIPTION:
The reason for this Field Task Modification Request (FTMR) is provided in the “Reason for Change” section of this FTMR. Figure 1 shows the location of NSA Crane SWMU 17 and Figures 2 through 6 are used to depict current site conditions and proposed activities described in this FTMR. The organizational structure and contact information for key project members and support staff are provided in Exhibits A and B. A summary of revisions to the Sampling and Analysis Plan is provided in Table 1. Activities described in this FTMR will take place in two stages as summarized below. Sequencing of activities during a particular stage will be flexible to facilitate the most efficient implementation of work, and Mobilization #2 tasks may be moved to Mobilization #1 if time and site conditions permit. Each of these activities are described in more detail in Attachments 1 through 5. Attachment 6 contains the current National Environmental Laboratory Accreditation Program (NELAP) laboratory accreditation information.

NOTE: Example sequential sampling location numbers (see Table 2) have been generated in advance of sampling, but selection of sampling locations will depend on field conditions. This FTMR provides guidance for establishing sampling locations, but the actual locations will be determined, location and sample numbers will be assigned, and locations will be surveyed in the field. The first sequential sample location and sample numbers are shown in Table 2 for each environmental medium.

For the Project duration: Management/coordination of the project.

Prior to Field Work:
- Acquisition of Indiana Department of Environmental Management 401 Water Quality Certification and related permits to allow installation of sediment traps.
- Mobilization to the site for field work. This includes acquisition of NSA Crane permits (e.g., digging permits and hot work permits, as applicable to each phase of work, determined in close coordination with the NSA Crane Environmental Site Manager).

During Field Work:
For each mobilization, the sequence of activities may be adjusted to make the most efficient use of resources and to accommodate possible changing site conditions, however, **sediment trap installation must occur during Mobilization #1**.
Mobilization #1
- Closed-circuit television pipe survey and smoke test of the 2-foot-diameter sewer line to trace the path of the line and to establish its integrity between Ditch 3 and Building 2721. See Attachment 1. Conducted by subcontractor.
- Trenching along the former 4-inch floor drain (VCT pipe) line to establish its integrity and collect samples at points of potential PCB release. If no such points are identified, default sampling will occur. Trenching conducted by subcontractor; sampling conducted by Tetra Tech. See Attachment 2.
- Sediment sampling to delineate the extent of polychlorinated biphenyl (PCB) contamination in Ditch 3 sediments. Conducted by Tetra Tech. See Attachment 3.
- Sediment trap installation (see Attachment 4) to prevent downstream migration of contaminated sediment. One trap will be installed at the location of an existing sediment retention structure about 70 feet downstream of the concrete storm sewer culvert (See Figure 3); the other at least 400 feet downstream of this storm sewer culvert in a hydrologically effective location for trapping sediment.

Mobilization #2 (If time/conditions permit, one or more of these tasks could be completed in Mobilization #1):

- Bedrock coring (see Attachment 5) to determine whether PCBs have migrated to shallow bedrock. Coring will be biased toward most contaminated or potentially contaminated bedrock locations.
- Delineation sampling in soil and sediment to determine the extent of PCB contamination in the newly discovered PCB source area. This will be accomplished using a DPT subcontractor and possibly hand augering by Tetra Tech personnel. Sampling locations will be located spatially based on findings from Mobilization #1. See Attachment 3 for details.
- Restoration of disturbed site areas,
- Land survey of sampling locations and key site features (see Attachment 3).
- Packaging and shipping of samples for fixed-base laboratory PCB analysis and waste characterization.

After Field Work:
Preparation of a report to summarize the extent of PCB contamination. This report will summarize work completed under this FTMR, samples collected and total PCB concentrations (measured as Aroclors) in those samples, and graphical figures showing the extent of sediment and soil contamination associated with the newly discovered PCB contamination source.

REASON FOR CHANGE:
Interim Measures (IMs) were conducted at Solid Waste Management Unit (SWMU) 17 (see Figures 1 and 2) in 2013 and 2014 to remove PCB-contaminated soil and sediment. While implementing Phase 2 of the IM in 2014, sediment containing as much as 6,500 mg/kg total PCBs was discovered at the top of Ditch 3 downslope from Building 2721. Building 2721 is currently an Explosives Ordnance Division facility but used to be an electrical transformer repair shop. Figures 3 through 6 show PCB contamination conditions near Building 2721 and in Ditch 3 after the completion of IM Phase 2. The extent of PCB contamination in and around this newly discovered area of PCB contamination has not been delineated. A limited amount of data collected during the IM Phase 2 showed that contamination already is present in sediments located downstream of this PCB source area where previously contaminated sediment had been removed to bedrock. Delineation of the PCB source is needed to support control of the source and prevention of further downstream sediment contamination and spread of soil contamination near the top of Ditch 3. Two potential PCB conduits are known at the top of Ditch 3: a storm sewer that discharges at a 2-foot-diameter concrete culvert and a former 4-inch vitreous clay tile (VCT) pipe that appears to discharge at the top of Ditch 3 upslope of the culvert. Understanding the pathways and integrities of these two conduits is necessary to understanding the possible release points and extent of PCB contamination.

Recommended Disposition: Approve the additional sampling as described above.

Tom Johnston ______________ 5-26-15
Project Manager, Tetra Tech — Date

NAVFAC Concurrence: COLE.LINDA.L.1229378780 (Digitally signed by COLE.LINDA.L.1229378780 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USN, cn=COLE.LINDA.L.1229378780 Date: 2015.05.28 06:37:56 -04'00') (Linda Cole) 05/28/2015 (Date)

NSA Crane Concurrence: BRENT.THOMAS.J.1230322356 (Digitally signed by BRENT.THOMAS.J.1230322356 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USN, cn=BRENT.THOMAS.J.1230322356 Date: 2015.05.28 09:31:56 -04'00') (Tom Brent) 05/28/2015 (Date)

EPA Concurrence: See attached email (Peter Ramanauskas) ______ (Date)

Approved Disposition: Conduct work as describe under "Recommended Disposition."

T.E. Johnston ______________ 5-29-15
Project Manager (Signature) — Date

Distribution:

Program/Project File – TO F270/112IG05219
Project Manager – Tom Johnston, Tetra Tech
Field Operations Leader – James Goerdt, Tetra Tech
Project Chemist – Michelle Allen, Tetra Tech

Linda Cole, NAVFAC Mid-Atlantic
Tom Brent, Env. Site Mgr. NSA Crane
Tim Sears, FEAD Mgr., NSA Crane
Chris Soucier, Program Manager, Tt
Deborah Cohen, Activity Coordinator, Tt

From:	Ramanauskas, Peter
To:	Brent, Thomas CIV NAVFAC MIDLANT, PWD Crane
Cc:	Cole, Linda L CIV NAVFAC MIDLANT, IPTNE; Johnston, Tom
Subject:	RE: SWMU 17 FTMR
Date:	Tuesday, May 19, 2015 10:23:25 AM

Hi Tom,

Thanks for sharing that. I took a quick look through it and do not object to the additional investigation work you wish to do. Let's see what the results are and we can discuss next steps for addressing the source, delineating additional impacts, and additional remedial activities as necessary. I may be travelling to Indiana during the week of June 8th and can see if I can stop in at Crane to talk.

Some thoughts with respect to bedrock coring: I noted that the plan indicates that "Some allowance may be made for collecting cores adjacent to Ditch 3 in areas such as west of Building 2721 where PCB contamination could be in bedrock outside the ditch." Are you thinking of placing some of these coreholes upstream/upland in the area where you saw black sludge/oil seeping out of the hillside to see if you intersect an impacted fracture? You may also want to consider doing some angled borings to intersect more fractures. Additionally, you may want to think about coreholes in the suspected source areas along the pipe & VCT and/or up near the building to see if you've got oil sitting in rock. I understand that this would likely need a drill rig, so something to keep in mind for a future effort perhaps. We may also want to look at applying geophysical methods to search for fractures in the source area if need be.

Anyway, just wanted to get you some feedback.

Thanks,
Pete

-----Original Message-----
From: Brent, Thomas CIV NAVFAC MIDLANT, PWD Crane [mailto:thomas.brent@navy.mil]
Sent: Monday, May 18, 2015 10:01 AM
To: Ramanauskas, Peter
Cc: Cole, Linda L CIV NAVFAC MIDLANT, IPTNE; Johnston, Tom
Subject: SWMU 17 FTMR

Pete,

Since you will be out for 2 weeks beginning Thursday, I thought it prudent to go ahead and send you the FTMR via AMRDEC. The FTMR provides a fairly brief write-up of the additional actions and investigations we're planning for SWMU 17. Hopefully, you can take a quick look to see if there are any glaring issues (especially since I'm not positive you'll get the hard copy before you leave). You should receive a notification from AMRDEC shortly. I know you've got a tremendous amount on your plate, but this should be an easy one to knock out.

Thanks,
Tom

EXHIBIT A

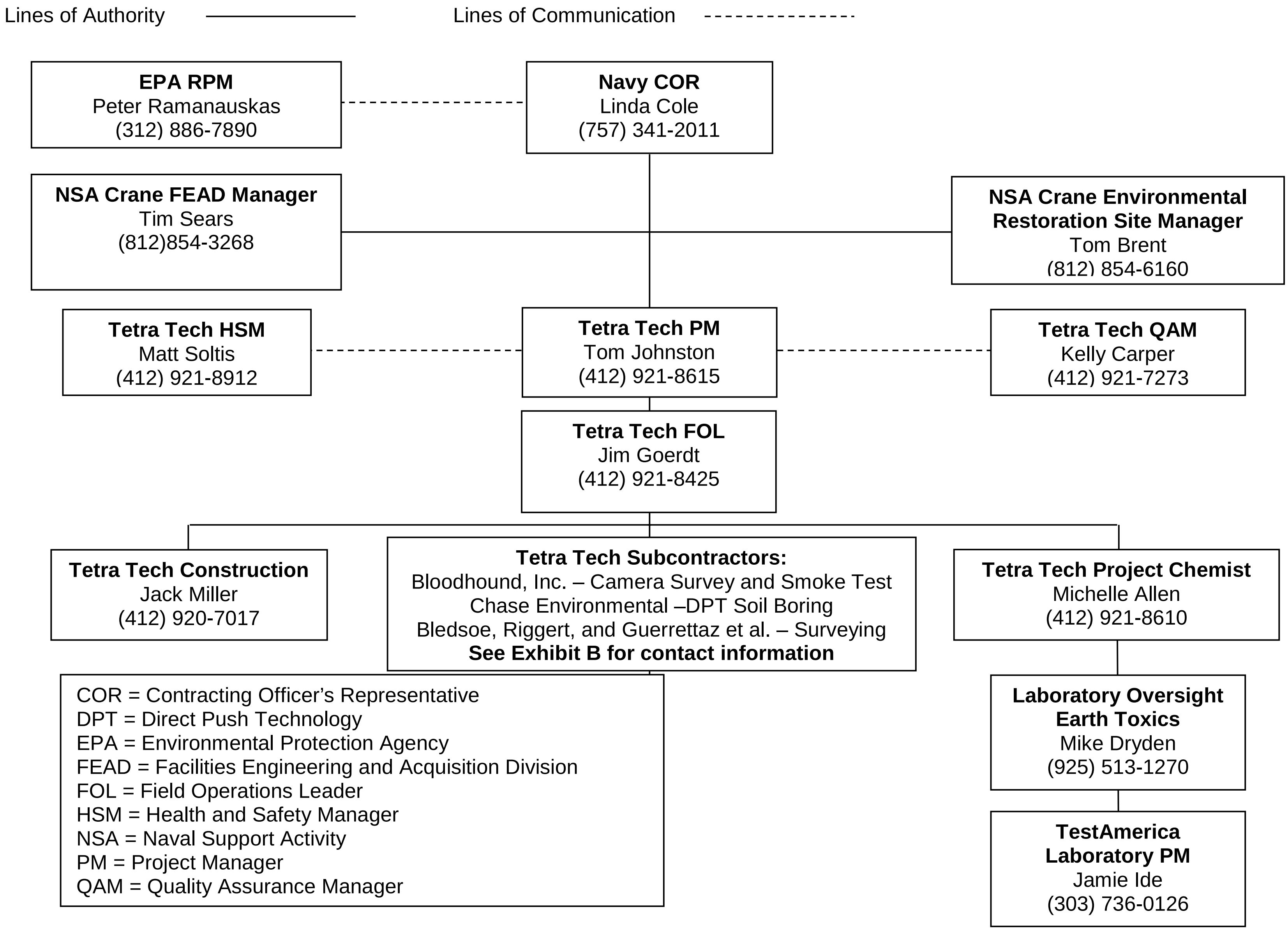

Lines of Authority
Lines of Communication
EPA RPM
Peter Ramanauskas
(312) 886-7890
Navy COR
Linda Cole
(757) 341-2011
NSA Crane FEAD Manager
Tim Sears
(812)854-3268
NSA Crane Environmental Restoration Site Manager
Tom Brent
(812) 854-6160
Tetra Tech HSM
Matt Soltis
(412) 921-8912
Tetra Tech PM
Tom Johnston
(412) 921-8615
Tetra Tech QAM
Kelly Carper
(412) 921-7273
Tetra Tech FOL
Jim Goerdt
(412) 921-8425
Tetra Tech Construction
Jack Miller
(412) 920-7017
Tetra Tech Subcontractors:
Bloodhound, Inc. – Camera Survey and Smoke Test
Chase Environmental –DPT Soil Boring
Bledsoe, Riggert, and Guerrettaz et al. – Surveying
See Exhibit B for contact information
Tetra Tech Project Chemist
Michelle Allen
(412) 921-8610
Laboratory Oversight Earth Toxics
Mike Dryden
(925) 513-1270
TestAmerica Laboratory PM
Jamie Ide
(303) 736-0126
COR = Contracting Officer's Representative
DPT = Direct Push Technology
EPA = Environmental Protection Agency
FEAD = Facilities Engineering and Acquisition Division
FOL = Field Operations Leader
HSM = Health and Safety Manager
NSA = Naval Support Activity
PM = Project Manager
QAM = Quality Assurance Manager

EXHIBIT B

NSA CRANE
FIELD PHONE LIST
Emergency 812 854 1333

Name	Office Number	Mobile Number	Email	Title, Role, or Responsibility
NAVFAC MIDLANT				
Linda Cole	757-341-2011	757-218-8747	linda.cole@navy.mil	Contractor Officer's Representative
NSA Crane				
Tom Brent	812-854-6160	812-296-6482	thomas.brent@navy.mil	Base Contact (Env. Site Manager)
Dispatch	812-854-3300	NA	NA	Communications
Fire Dept. - Work Permit	812-854-3343	812-854-1235	NA	Fire Safety
Steve Reddick	NA	812-296-0522	stephen.reddick@navy.mil	Public Works Department/Utilities
Denny Gordon	812-854-8579	812-381-2129	NA	Navy Explosive Safety Officer
Katelin Thard	812-854-6276	NA	NA	Army Explosive Safety Officer
Tetra Tech Construction / Oversight				
Tom Johnston	412-921-8615	412-417-3396	tom.johnston@tetratech.com	Project Manager
Jack Miller	412-920-7017	412-596-6392	jack.miller@tetratech.com	Crane Construction Manager
Jim Goerdt	412-921-8425	412-443-0244	jim.goerdt@tetratech.com	Field Operations Leader
Field Trailer	812-854-0280	NA	NA	NA
Camera Survey and Smoke Test Subcontractor (Blood Hound, Inc.)				
Brad Mason	NA	317-503-2342	bmason@bhug.com	Senior Technician
Bledsoe, Riggert, and Guerrettaz (Surveyor)				
Corey Allen	812-275-0001	812-329-9919	callen@brgcivil.com	Surveyor
Direct-Push Technology Subcontractor				
John Barton	502-267-1455	859-619-5009	jbarton@chaseenv.com	Project Manager
Test America Laboratory				
Jamie Ide	303-736-0126	NA	Jamie.Ide@testamericainc.com	Project Manager

Ship samples to the following laboratory address for analysis:
Sample Receiving
4955 Yarrow Street
Arvada, CO 80002
(303) 736-0103
www.testamericainc.com

TABLE 1

**SUMMARY OF SAMPLING AND ANALYSIS PLAN REVISIONS PRIOR TO THIS FTMR
SOLID WASTE MANAGEMENT UNIT 17
NSA CRANE
CRANE, INDIANA**

Document Issue Date	Document Title
December 2001	Quality Assurance Project Plan for PCB Capacitor Burial/Pole Yard Solid Waste Management Unit (SWMU) 17 Resource Conservation and Recovery Act Facility Investigation and Verification
June 2005	Quality Assurance Project Plan Addendum for PCB Capacitor Burial/Pole Yard Solid Waste Management Unit (SWMU) 17/04. Resource Conservation and Recovery Act Facility Investigation and Verification of Removal. Naval Surface Warfare Center, Crane
April 2006	Quality Assurance Project Plan Addendum 2 for PCB Capacitor Burial/Pole Yard SWMU 17. Naval Surface Warfare Center, Crane
September 2006	Quality Assurance Project Plan Addendum 3 for Building 2721 Investigation (Phase 4) PCB Capacitor Burial/Pole Yard SWMU 17. Naval Surface Warfare Center, Crane
August 2008	Quality Assurance Project Plan Addendum No. 4 For PCB Capacitor Burial/Pole Yard Building 2721 Investigation (Phase 5) SWMU 17, Naval Surface Warfare Center Crane
April 2012	Technical Memorandum, Prescriptive Remediation Sampling and Analysis for SWMU 17 - PCB Capacitor Burial/Pole Yard, Naval Support Activity Crane
Multiple FTMRs April to September 2012	Multiple Field Task Modification Requests (FTMRs). These FTMRs are documented in the Report for Additional Investigation In Support of Prescriptive PCB Remediation at Solid Waste Management (SWMU) 17 - PCB Capacitor Burial/Pole Yard, Naval Support Activity Crane, Indiana. This report has not been finalized but the draft version is included as Appendix A of the SWMU 17 Interim Measures Report (Draft Final dated 8 April 2015), which is currently being reviewed by EPA Region 5.
March 2013	Completion and implementation of the Interim Measures Work Plan for SWMU 17 – PCB Capacitor Burial/Pole Yard. This plan required confirmation sampling in support of excavations designed to remove contaminated soil and sediment containing greater than 1 mg/kg total PCBs (as Aroclors). Excavations began in April 2013.
Multiple FTMRs April 2013 to September 2014	Several FTMRs were written to govern extended sampling in support of Interim Measures Phases 1 and 2 at SWMU 17. These FTMRs are included as Appendix C of the SWMU 17 Interim Measures Report (Draft Final dated 8 April 2015), which is currently being reviewed by EPA Region 5.

TABLE 2
SAMPLE NUMBERS FOR DELINEATION SEDIMENT, SOIL, AND SURFACE WATER SAMPLING AT SOLID WASTE MANAGEMENT UNIT 17 NSA CRANE CRANE, INDIANA

Sample location numbers have been generated in advance of sampling, but the sampling locations will depend on field conditions. Therefore, this FTMR is to be used as a guide for identifying sampling locations, but actual locations will be determined and surveyed in the field. Surface water sample collection is not planned but may be done at the discretion of the Navy. Soil, sediment, and surface water locations will be numbered according to formats in the examples below, with the sampling location and samples number sequences being extended to accommodate additional samples as needed.

Example Soil Location and Sample IDs:

SOIL SAMPLES	
Location	**Sample**
17SB480	17SS4800002
17SB480	17SB4800204
17SB480	17SB4800406
17SB480	17SB4800608
17SB480	17SB4800810
17SB480	17SB4801012
17SB480	17SB4801214
17SB481	17SS4810002
17SB481	17SB4810204
17SB481	17SB4810406
17SB481	17SB4810608
17SB481	17SB4810810
17SB481	17SB4811012
17SB481	17SB4811214

SURFACE WATER SAMPLES	
Location[1]	**Sample**
17SW/SD153	17SW153mm/dd/yy
17SW/SD154	17SW154mm/dd/yy
17SW/SD155	17SW155mm/dd/yy

1 If a surface water sample is collected from the same location as a sediment sample, use the sediment sample location number.

Example Sediment Location and Sample IDs:

SEDIMENT SAMPLES	
Location	**Sample**
17SW/SD142	17SD1420012
17SW/SD143	17SD1430012
17SW/SD144	17SD1440012
17SW/SD150	17SD1500012

WASTEWATER SAMPLES	
Location[1]	**Sample**
NA	17WW01mm/dd/yy
NA	17WW02mm/dd/yy
NA	17WW03mm/dd/yy

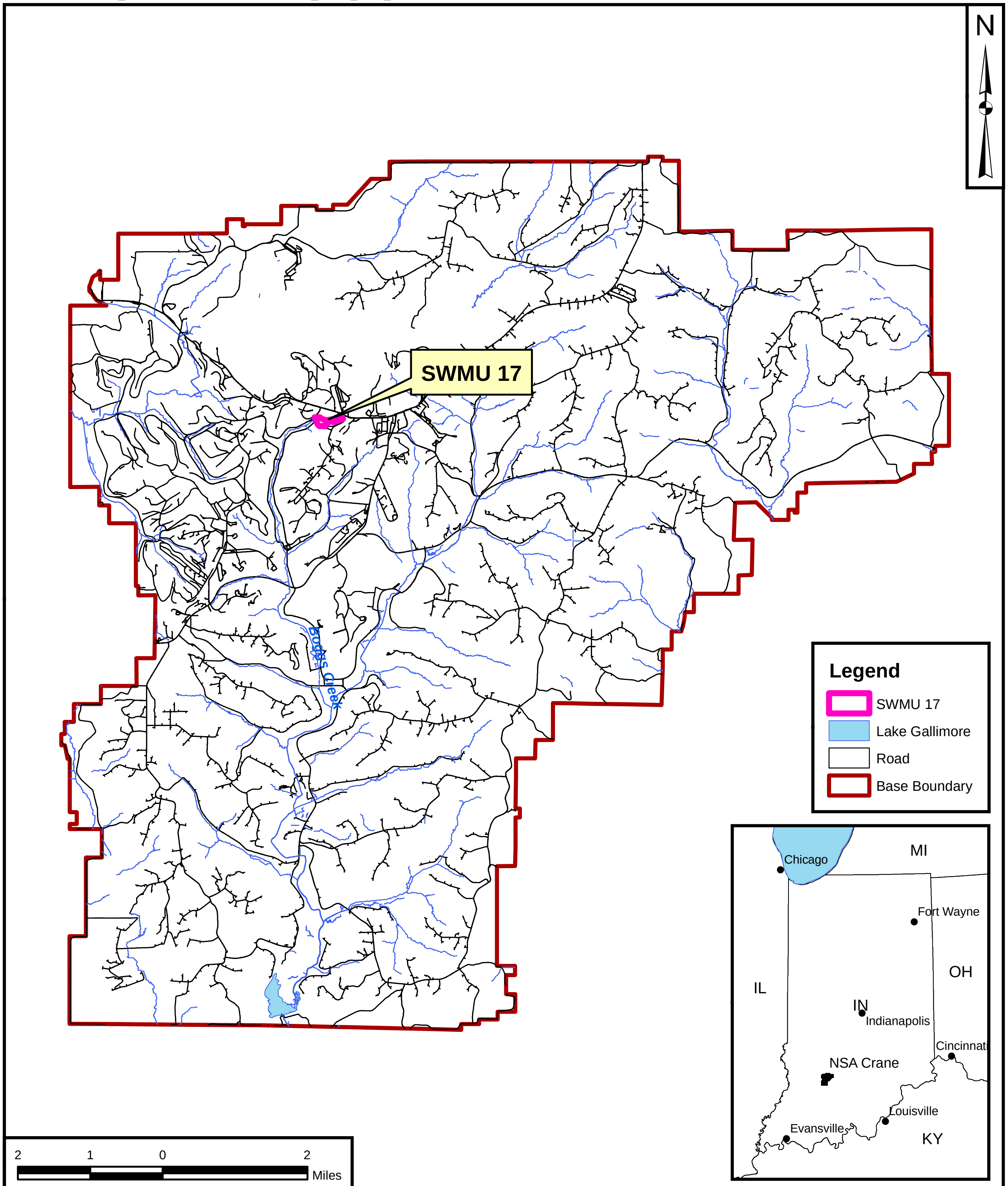
TABLE 3

LABORATORY ANALYSIS SENSITIVITY LIMITS AND METHOD SPECIFICATIONS
FIELD TASK MODIFICATION REQUEST FOR ADDITIONAL PCB SOURCE DELINEATION, ROCK CORING, AND SEDIMENT TRAP INSTALLATION

Analysis Group Description	Method Description	Method Code				
Soil/Sediment Analysis	**Polychlorinated Biphenyls (PCBs) by Gas Chromatography**	**8082A_DOD5**				
Soil/Sediment Analysis	**Microwave Extraction**	**3546**				
	Analyte Description	CAS Number	Limit of Quantitation	Limit of Detection	Detection Limit	Units
	Tetrachloro-m-xylene	877-09-8	10.0	5.00	1.06	µg/Kg
	Aroclor-1016	12674-11-2	33.0	10.0	5.09	µg/kg
	Aroclor-1221	11104-28-2	47.0	20.0	15.6	µg/kg
	Aroclor-1232	11141-16-5	33.0	15.0	5.12	µg/kg
	Aroclor-1242	53469-21-9	33.0	10.0	9.12	µg/kg
	Aroclor-1248	12672-29-6	33.0	10.0	5.61	µg/kg
	Aroclor-1254	11097-69-1	33.0	10.0	5.52	µg/kg
	Aroclor-1260	11096-82-5	33.0	10.0	2.65	µg/kg
	DCB Decachlorobiphenyl	2051-24-3	10.0	5.00	1.06	µg/kg
	Aroclor-1262	37324-23-5	33.0	10.0	11.6	µg/kg
	Aroclor-1268	11100-14-4	33.0	10.0	3.95	µg/kg

Water Analysis	**Polychlorinated Biphenyls (PCBs) by Gas Chromatography**	**8082A_DOD5**				
Water Analysis	**Liquid-Liquid Extraction (Separatory**	**3510C**				
	Analyte Description	CAS Number	Limit of Quantitation	Limit of Detection	Detection Limit	Units
	Aroclor-1016	12674-11-2	1.00	0.300	0.124	µg/L
	Aroclor-1221	11104-28-2	1.00	0.300	0.214	µg/L
	Aroclor-1232	11141-16-5	1.00	0.400	0.166	µg/L
	Aroclor-1242	53469-21-9	1.00	0.300	0.104	µg/L
	Aroclor-1248	12672-29-6	1.00	0.200	0.0915	µg/L
	Aroclor-1254	11097-69-1	1.00	0.300	0.114	µg/L
	Aroclor-1260	11096-82-5	1.00	0.300	0.160	µg/L
	Aroclor-1262	37324-23-5	1.00	0.200	0.0845	µg/L
	Aroclor-1268	11100-14-4	1.00	0.600	0.363	µg/L
	Tetrachloro-m-xylene	877-09-8	0.100	0.0300	0.0206	µg/L
	DCB Decachlorobiphenyl	2051-24-3	0.100	0.0300	0.0222	µg/L

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_BASE_SITE_MAP.MXD 04/16/15 JEE

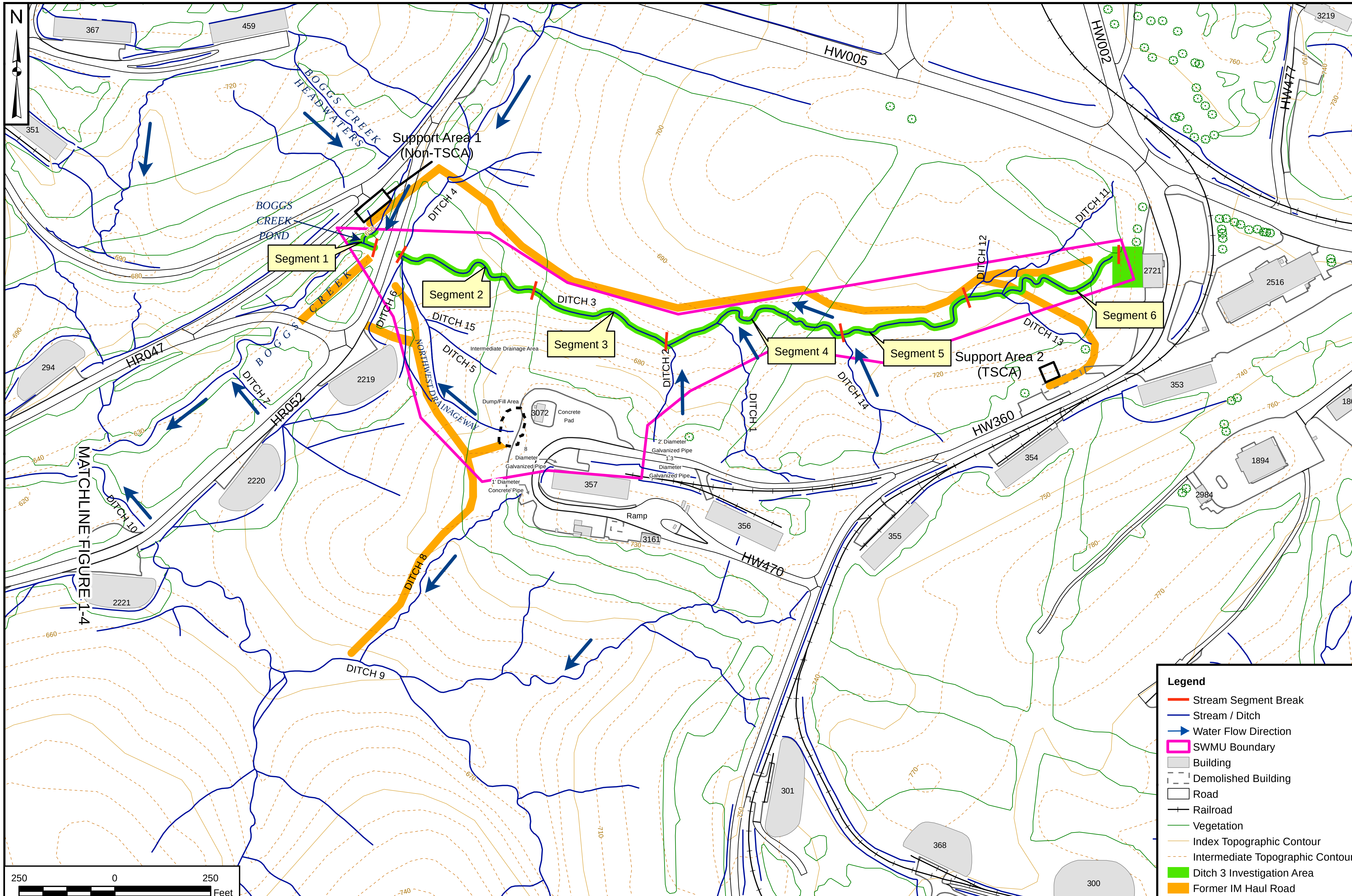


DRAWN BY	DATE
T. WHEATON	11/04/09
CHECKED BY	DATE
T. JOHNSTON	04/16/15
REVISED BY	DATE
K. MOORE	04/16/15
SCALE AS NOTED	

SITE LOCATION MAP
SWMU 17 - PCB CAPACITOR BURIAL / POLE YARD
FTMR FOR ADDITIONAL PCB SOURCE DELINEATION,
ROCK CORING AND SEDIMENT TRAP INSTALLATION
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER		
F270		
APPROVED BY	DATE	
___	___	
APPROVED BY	DATE	
___	___	
FIGURE NO. 1		REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\UPDATED PROPOSED SD SAMPLE LOCS.MXD 05/07/15 JEE



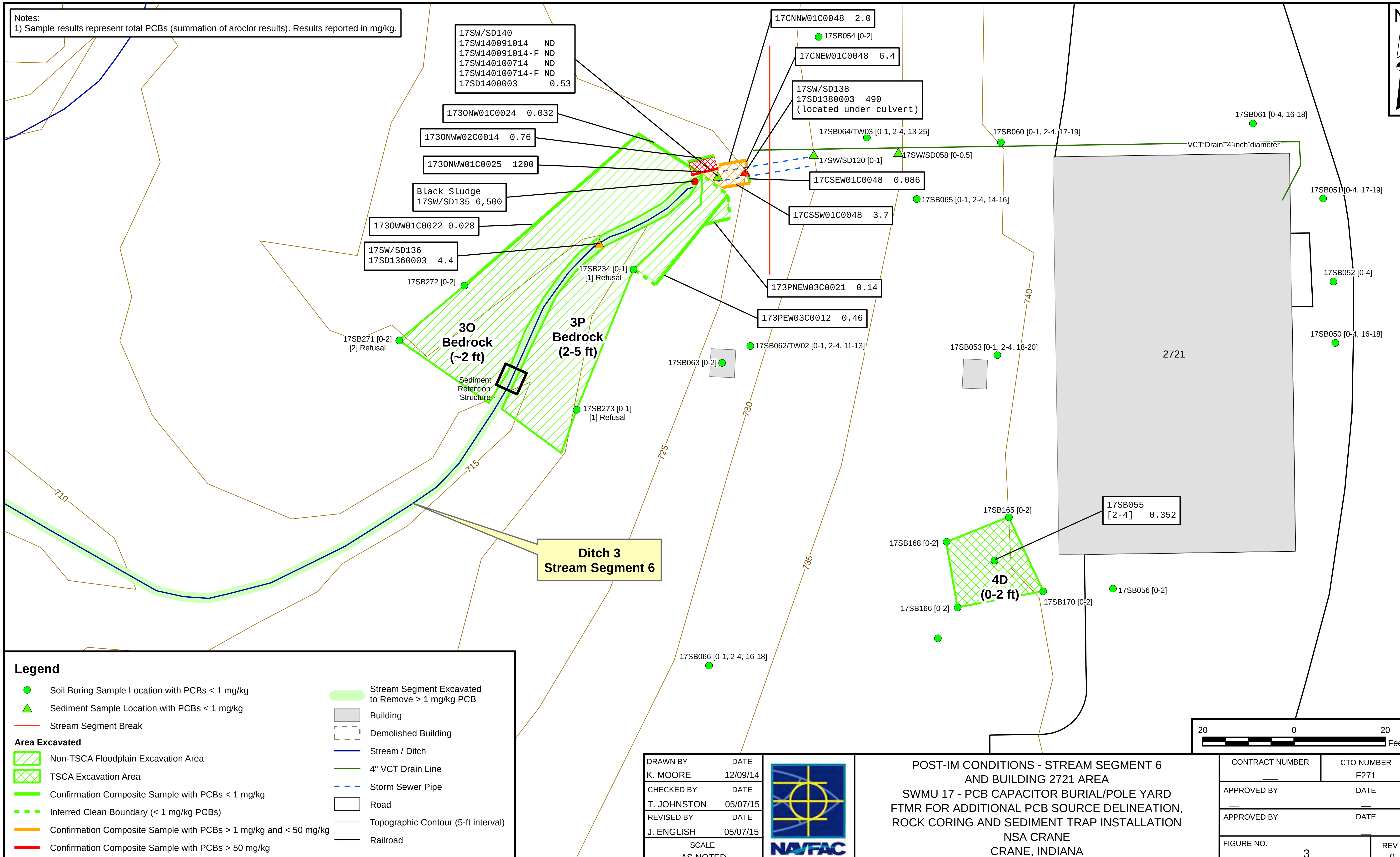
SITE LAYOUT MAP
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
FTMR FOR ADDITIONAL PCB SOURCE DELINEATION,
ROCK CORING AND SEDIMENT TRAP INSTALLATION
NSA CRANE
CRANE, INDIANA

DRAWN BY J. NOVAK	DATE 06/16/12
CHECKED BY T. JOHNSTON	DATE 05/07/15
REVISED BY J. ENGLISH	DATE 05/07/15
SCALE AS NOTED	

NAVFAC

CONTRACT NUMBER	CTO NUMBER F270
APPROVED BY —	DATE —
APPROVED BY —	DATE —
FIGURE NO. 2	REV 0

PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_SEGMENT6_POST_IM.MXD 05/07/15 JEE



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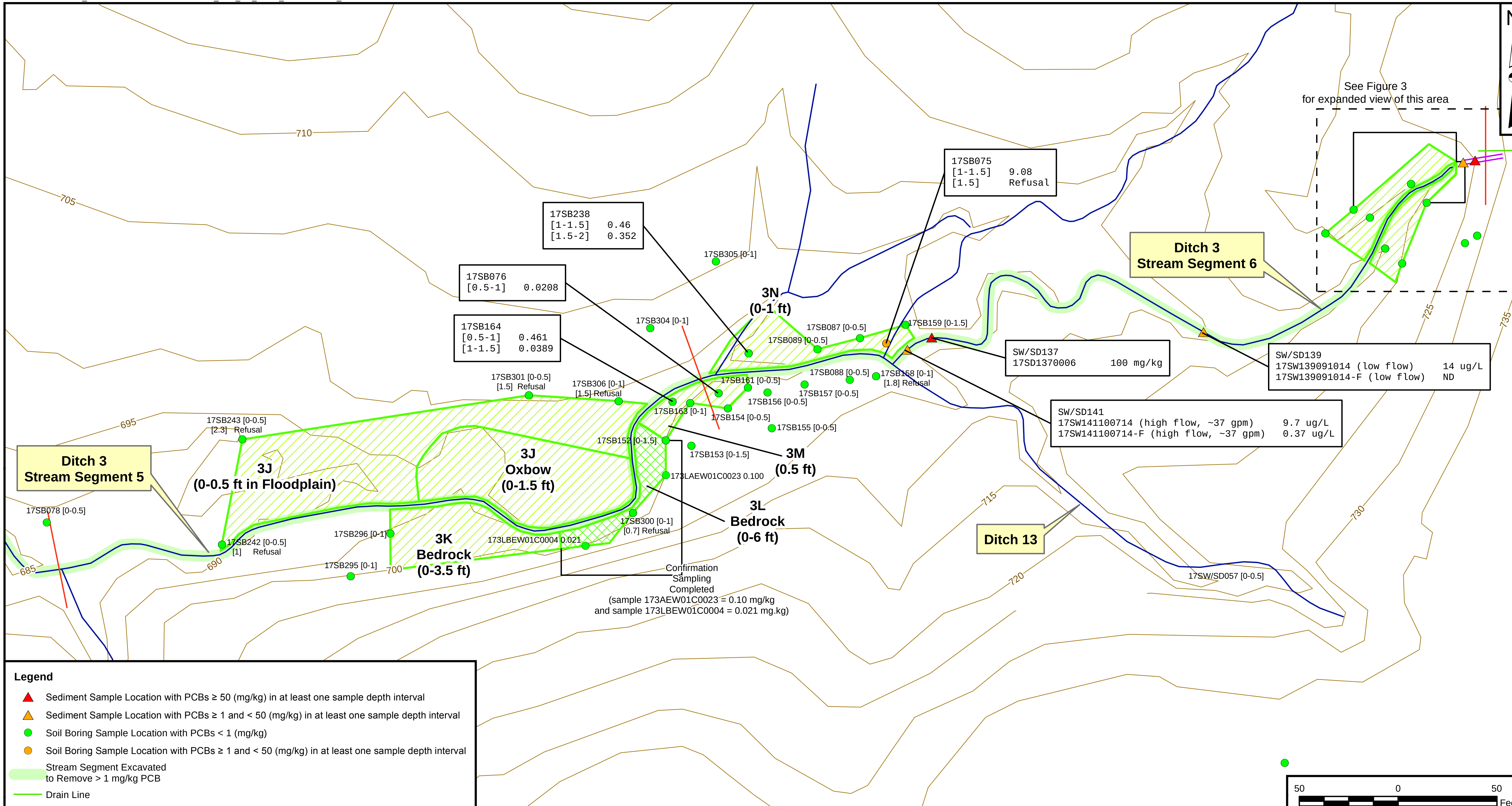


Legend

- Sediment Sample Location with PCBs ≥ 50 (mg/kg) in at least one sample depth interval
- Sediment Sample Location with PCBs ≥ 1 and < 50 (mg/kg) in at least one sample depth interval
- Soil Boring Sample Location with PCBs < 1 (mg/kg)
- Soil Boring Sample Location with PCBs ≥ 1 and < 50 (mg/kg) in at least one sample depth interval
- Stream Segment Excavated to Remove > 1 mg/kg PCB
- Drain Line
- 24" Concrete Pipe
- Stream Segment Break
- Stream / Ditch

Area Excavated

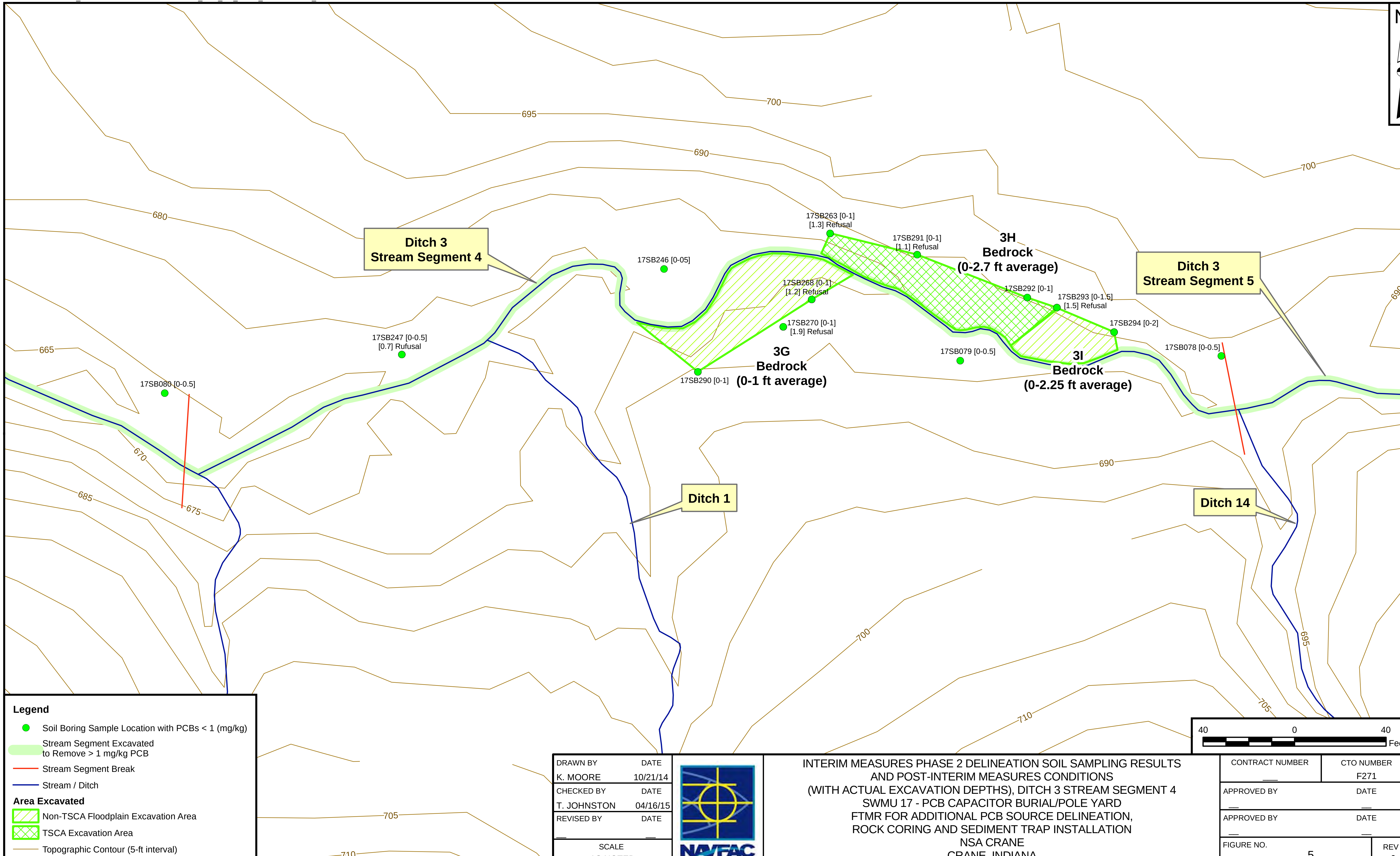
- Non-TSCA Floodplain Excavation Area
- TSCA Excavation Area
- Topographic Contour (5-ft interval)

DRAWN BY	DATE
K. MOORE	10/21/14
CHECKED BY	DATE
T. JOHNSTON	04/16/15
REVISED BY	DATE
_	_
SCALE	
AS NOTED	

NAVFAC

INTERIM MEASURES PHASE 2 DELINEATION SOIL SAMPLING RESULTS
AND POST-INTERIM MEASURES CONDITIONS
(WITH ACTUAL EXCAVATION DEPTHS), DITCH 3 STREAM SEGMENT 5
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
FTMR FOR ADDITIONAL PCB SOURCE DELINEATION,
ROCK CORING AND SEDIMENT TRAP INSTALLATION
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
_	F271
APPROVED BY	DATE
_	_
APPROVED BY	DATE
_	_
FIGURE NO. 4	REV 0

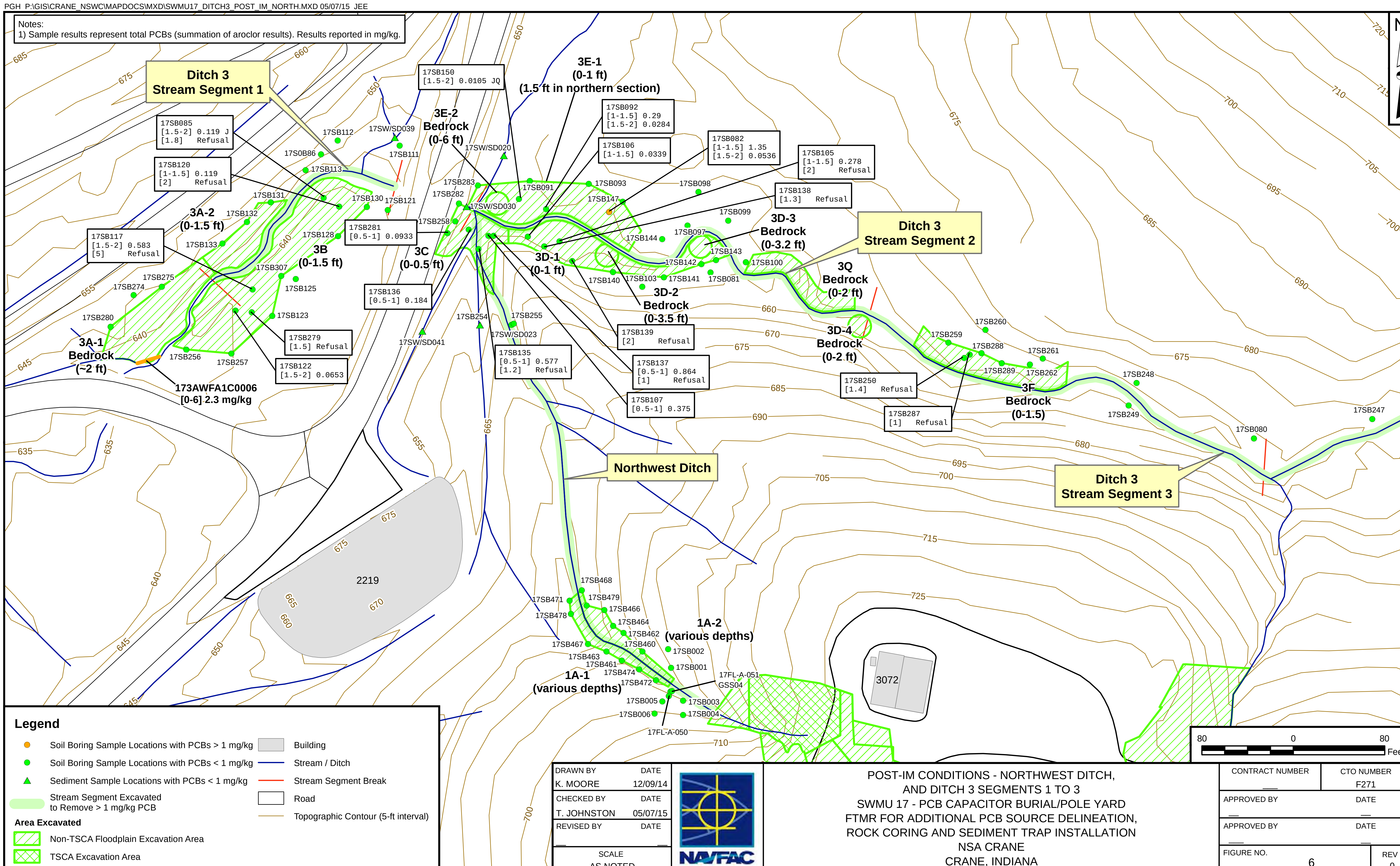


DRAWN BY	DATE
K. MOORE	10/21/14
CHECKED BY	DATE
T. JOHNSTON	04/16/15
REVISED BY	DATE
__	__
SCALE	
AS NOTED	

NAVFAC

INTERIM MEASURES PHASE 2 DELINEATION SOIL SAMPLING RESULTS
AND POST-INTERIM MEASURES CONDITIONS
(WITH ACTUAL EXCAVATION DEPTHS), DITCH 3 STREAM SEGMENT 4
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
FTMR FOR ADDITIONAL PCB SOURCE DELINEATION,
ROCK CORING AND SEDIMENT TRAP INSTALLATION
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	CTO NUMBER
__	F271
APPROVED BY	DATE
__	__
APPROVED BY	DATE
__	__
FIGURE NO. 5	REV 0



PGH P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU17_DITCH3_POST_IM_NORTH.MXD 05/07/15 JEE
Notes:
1) Sample results represent total PCBs (summation of aroclor results). Results reported in mg/kg.
Ditch 3 Stream Segment 1
Ditch 3 Stream Segment 2
Ditch 3 Stream Segment 3
Northwest Ditch
17SB150 [1.5-2] 0.0105 JQ
17SB085 [1.5-2] 0.119 J [1.8] Refusal
17SB120 [1-1.5] 0.119 [2] Refusal
17SB117 [1.5-2] 0.583 [5] Refusal
17SB281 [0.5-1] 0.0933
17SB136 [0.5-1] 0.184
17SB279 [1.5] Refusal
17SB122 [1.5-2] 0.0653
17SB092 [1-1.5] 0.29 [1.5-2] 0.0284
17SB106 [1-1.5] 0.0339
17SB082 [1-1.5] 1.35 [1.5-2] 0.0536
17SB105 [1-1.5] 0.278 [2] Refusal
17SB138 [1.3] Refusal
17SB139 [2] Refusal
17SB135 [0.5-1] 0.577 [1.2] Refusal
17SB137 [0.5-1] 0.864 [1] Refusal
17SB107 [0.5-1] 0.375
17SB250 [1.4] Refusal
17SB287 [1] Refusal
3E-1 (0-1 ft) (1.5 ft in northern section)
3E-2 Bedrock (0-6 ft)
3A-2 (0-1.5 ft)
3A-1 Bedrock (~2 ft)
3B (0-1.5 ft)
3C (0-0.5 ft)
3D-1 (0-1 ft)
3D-2 Bedrock (0-3.5 ft)
3D-3 Bedrock (0-3.2 ft)
3Q Bedrock (0-2 ft)
3D-4 Bedrock (0-2 ft)
3F Bedrock (0-1.5)
1A-1 (various depths)
1A-2 (various depths)
173AWFA1C0006 [0-6] 2.3 mg/kg
2219
3072
N
80 0 80 Feet
Legend
Soil Boring Sample Locations with PCBs > 1 mg/kg
Soil Boring Sample Locations with PCBs < 1 mg/kg
Sediment Sample Locations with PCBs < 1 mg/kg
Stream Segment Excavated to Remove > 1 mg/kg PCB
Area Excavated
Non-TSCA Floodplain Excavation Area
TSCA Excavation Area
Building
Stream / Ditch
Stream Segment Break
Road
Topographic Contour (5-ft interval)
DRAWN BY K. MOORE DATE 12/09/14
CHECKED BY T. JOHNSTON DATE 05/07/15
REVISED BY DATE
SCALE AS NOTED
NAVFAC
POST-IM CONDITIONS - NORTHWEST DITCH, AND DITCH 3 SEGMENTS 1 TO 3
SWMU 17 - PCB CAPACITOR BURIAL/POLE YARD
FTMR FOR ADDITIONAL PCB SOURCE DELINEATION, ROCK CORING AND SEDIMENT TRAP INSTALLATION
NSA CRANE
CRANE, INDIANA
CONTRACT NUMBER
CTO NUMBER F271
APPROVED BY DATE
APPROVED BY DATE
FIGURE NO. 6
REV 0

ATTACHMENT 1

CLOSED-CIRCUIT TELEVISION CAMERA SURVEY AND SMOKE TEST

NOTE: All tables and figures reference in this attachment are presented in the main body of the Field Task Modification Request

1.0 CLOSED-CIRCUIT TELEVISION STUDY OF STORM SEWER PIPE

The purpose of the closed-circuit television (CCTV) study within the storm sewer pipe at SWMU 17, which discharges at the eastern end of Segment 6 in Ditch 3, is to determine the condition of the storm sewer pipe as well as its path to Building 2721. In 2014, two contiguous 3-ft long sections of this storm sewer pipe were replaced with a new 6-ft long section of concrete pipe; the rest of the pipe is unchanged. Data obtained from this test will be used in conjunction with smoke test data (see Section 2) to plan soil sample collection around the storm sewer pipe to delineate PCB contamination in soil greater than 1 mg/kg.

The daylight end of the storm sewer pipe is approximately 80 feet west of Building 2721, as presented on Figure 3. Approximately 15 to 20 feet of the interior sewer pipe can be seen from the daylight end of the pipe. The initial 10 to 12 feet of the storm sewer pipe is a 24-inch cement pipe that then turns slightly to the southeast, and the remainder of the visible pipe is a similar-sized corrugated metal pipe. It is unknown what path the storm sewer pipe takes at that point.

A robotic camera will enter the daylight end of the 24-inch cement pipe and will proceed eastward up the pipe to a distance of approximately 100 feet, which is expected to be the distance to the footprint of Building 2721. The camera will be remotely operated and will be able to pan 360 degrees and tilt up and down to ensure a complete inspection of the surrounding pipe. The camera will be configured with an optical focus and variable intensity light to allow clear viewing of the interior of the pipe. The robotic camera will be capable of traversing over various conditions within the pipe, ranging from smooth concrete to corrugated metal to soil/sediment within the piping. The robotic camera will be stopped to view and analyze conditions that appear unusual or uncommon. In these locations, a complete view of the interior of the pipe will be recorded.

The inspection of the interior of the piping will continue until (1) the progress of the camera is obstructed due to a collapse in the piping or the progress is impeded by other debris that does not allow the camera to pass or (2) the camera reaches the footprint of Building 2721, which is expected to be approximately 100 feet.

During the remote inspection of the piping, the progress of the camera will be marked above ground by pin flags or similar devices to determine the pathway of the piping. Additional flagging may be used to show areas of interest within the piping (e.g., debris, breaches, collapse, etc.).

Upon completion of the CCTV study, a DVD will be provided to the Navy for further analysis of the inspection.

2.0 EQUIPMENT DEONTAMINATION

Upon completion of the camera survey, the robotic camera must be decontaminated to ensure that PCBs that may have adhered to it are removed before the camera leaves the site. Decontamination of equipment and investigation derived waste management are described in detail in FTMR Attachment 2 Section 4.0. Care will be taken to avoid excessive wetting of electrical or optical components of the robot so as to avoid damaging the equipment.

3.0 SMOKE TEST STUDY

Prior to initiating the smoke test, the NSA Crane Police, Fire Departments, Public Works Office and Explosives Ordnance Division will be notified of the test. The NSA Crane Environmental Restoration Site Manager will coordinate these notifications.

The purpose of the smoke test within the 24-inch storm sewer pipe will be to identify potential points of inflow and infiltration of the storm sewer pipe that discharges approximately 100 feet west of Building 2721.

The daylight end of the storm sewer pipe will be capped to support introduction of a harmless smoke, the smoke will be introduced into the pipe, and the area around the pipe and Building 2721will be monitored visually to identify where smoke escapes the system. The locations where smoke escapes the system will be marked on figures showing key site features, including the sewer line pathway.

ATTACHMENT 2

TRENCHING

NOTE: All tables and figures reference in this attachment are presented in the main body of the Field Task Modification Request

1.0 OVERVIEW

A former 4-inch vitrified clay tile (VCT) floor drain line (VCT pipe) exists at SWMU 17 that may be a continual source of PCB contamination at the site. Figure 3 identifies the presumed location of the VCT pipe, which was historically connected to multiple floor drains within Building 2721. This VCT pipe is believed to discharge on the hillside above the concrete culvert. Floor drains in Building 2721 are currently connected to the NSA Crane sanitary sewer and do not discharge to SWMU 17. However, PCB oil and rinse water may have been washed down the floor drains, and sections of the VCT pipe may have leaked over time before the floor drains were connected to the sanitary sewer. Pockets of PCB oil may exist in the vicinity of the VCT pipe resulting in a continuing source of PCB contamination that has been detected downgradient within the northeastern section of Ditch 3.

This attachment presents the details associated with trenching activities designed to determine the actual location of the Building 2721 VCT pipe at SWMU 17 and to allow collection of a limited number of soil samples along the drain line to determine whether PCBs have leaked from the pipe. Specifically, the intent is to identify the current location where the drain line discharges approximately 60 to 80 feet west of building 2721 to the point where the drain line goes under the asphalt at the northwest corner of Building 2721. No asphalt will be removed during the trenching study. In addition, up to 10 soil samples from five locations will be collected along and below the drain line. The information from this trench study will be used to determine the soil sampling locations necessary to delineate potential PCB contamination associated with the VCT pipe.

Temporary erosion and sediment control structures (e.g., fence, or straw wattle) will be installed on the downgradient limits of the trench area before earth moving begins. The Tetra Tech Construction Manager will inspect the erosion controls daily prior to excavation activities to ensure that the controls are effective. If gaps are found during the inspection, silt barriers will be repaired or replaced.

2.0 TRENCHING STUDY

The area of the planned trenching study is along the downhill side of the 4-inch VCT pipe shown on Figure 3. A small excavator with an approximately 20-inch-wide bucket will be used for the trenching work at SWMU 17. Because the exact location and depth of the VCT pipe line is unknown, a single north/south trench will initially be dug in the area west of the Building 2721 parking lot located north of the building. Soil will be removed in approximately 1-foot lifts to the top of the pipe. The soil will be segregated alongside the trench according to depth interval and then replaced into the trench in the opposite order that it was removed.

The depth of the trench is expected to be approximately 0 to 3 feet below ground surface (bgs) in the western portion of the site where the VCT pipe discharges to as much as 7 feet bgs as it goes under the asphalt next to Building 2721.

The width of the trench will be between one and two bucket widths to allow sampling alongside and below the VCT pipe. The initial bucket width will remove soil down to the top of the VCT pipe. This will allow a visual observation of the VCT pipe to determine any potential compromises in the line. The second bucket width will abut the first trench on the downhill (southern) side of the VCT pipe. This will allow a Tetra Tech representative to collect soil samples representing soil conditions alongside and below the pipe. To minimize the length of open trench at any one time, the trenching may be completed in 10- to 30-foot segments at the direction of the NSA Crane Environmental Restoration Site Manager. Trenching will continue along the path of the pipe until the former discharge end of the pipe is reached. Measurements of the pipe depth (ground surface to top of pipe) will be made during excavation at intervals of 10 feet along the pipe length and, if the pipe elevation changes suddenly, at the points immediately before and after the elevation change.

Visual observations of the VCT pipe condition will be recorded during trenching activities.

3.0 SOIL SAMPLING

As previously mentioned, up to 10 soil samples from five locations will be collected along the length of the exposed VCT pipe. Figure 3 presents the portion of the pipe from where the samples will be collected. The sample locations will be biased to areas along the VCT pipe that show signs of staining or having a strong organic odor. If no staining or odors are detected, the samples will be collected along each exposed section of trench on the downslope side of the VCT pipe from where it discharges to where it goes under the asphalt at Building 2721.

The soil samples will be collected from 12-inch depth intervals of excavated soil. Upon selecting a location for sampling, the first sample will be collected from the soil interval representing the bottom of the VCT pipe and extending upward 12 inches. The second soil sample will be collected from the interval representing the bottom of the VCT pipe and extending downward 12 inches. All samples will be placed in 4-ounce glass jars and shipped to the fixed-base laboratory for PCB analysis. A separate soil sample log (attached) will be completed for each soil sample collected during trenching activities. Sample numbers have been established in advance of sampling, but the locations where the samples will be collected will be established in the field and correlated with the sample number table (Table 2) upon conducting a land survey to establish coordinates for the sampling points.

4.0 EQUIPEMENT DECONTAMINATION AND MANAGEMENT OF INVESTIGATON-DERIVED WASTES

Removal of potentially contaminated soil is not the primary purpose of this fieldwork; however, if grossly contaminated soil or other debris is encountered during the trenching and sampling activities, it will not be placed back within the trench but will be placed within 55-gallon drums on site. Grossly contaminated soil refers to soil that is visibly stained with potential PCB oils, or has a strong organic odor, and this determination will be made by the Tetra Tech FOL and NSA Crane Environmental Restoration Site Manager. If necessary, decontamination of sampling and trenching equipment will be accomplished as follows:

1. Don non-latex and/or cotton gloves and decontaminate sampling equipment (in accordance with the following steps) prior to field sampling and between samples.

2. Rinse the equipment with potable water, and collect the potable water rinsate in a suitable container. Rinsing may be conducted by spraying with water from a pressurized water tank, spray bottle, or by dipping.

3. Wash the equipment with a solution of Liqui-Nox® or Alconox® detergent wash solution that has been prepared in accordance with the instructions on the detergent container, and collect the wash solution in a suitable container. Use brushes or sprays as appropriate for the equipment. If oily residue has accumulated on the sampling equipment, remove the residue with an isopropanol wash and repeat the detergent wash.

4. Rinse the equipment with potable water, and collect the potable water rinsate in a suitable container. Rinsing may be conducted by spraying with water from a pressurized water tank, spray bottle, or by dipping.

5. Rinse the equipment with deionized water and collect the deionized water rinsate in a suitable container. Rinsing may be conducted by spraying with water from a pressurized water tank, spray bottle, or by dipping.

6. Remove excess water by air drying and shaking or by wiping with paper towels as necessary.

7. Document decontamination by recording it in the field logbook.

Rinse water from equipment decontamination will be collected in a drum and a sample from the drummed waste will be analyzed for PCBs to determine appropriate disposal requirements. Discharges to the NSA Crane WWTP must contain less than 3 ug/L total PCBs and must be approved by the Environmental Restoration Site Manager. Waste water containing at least 3 ug/L total PCBs will be transferred to the NSA Crane Environmental Restoration Site Manager custody for proper disposal. Because of the anticipated small quantity of waste water to be generated, WWTP total toxic organic waste acceptance limits will not apply. Drums for containerizing waste water will be provided by NSA Crane and will be labeled indicating their contents. Waste sample numbering will be designed to uniquely identify each waste sample with the SWMU (17), sample matrix (SO = soil, SD = sediment, WW = waste water), and the date collected (e.g., 17WW05212015 for a waste water sample collected on 21 May 2015).

5.0 SITE RESTORATION

The disturbed area associated with this trenching operation will be relatively small, constituting a trench length of approximately 80 feet from the western edge of Building 2717 pavement to the discharge end of the VCT pipe above the concrete storm sewer culvert. The trench is not anticipated to exceed a width of 3.5 ft. Upon completion of trenching and sampling, the trench and all disturbed areas will be restored to original grade and as close to pre-excavation conditions as feasible. This will include regrading disturbed areas as necessary, seeding, and applying a layer of straw or biodegradable erosion control matting, at the NSA Crane Environmental Restoration Site Manager's discretion, to encourage seed germination. Regionally appropriate native species, supplied by a licensed nursery will be used for restoration.

The matrix below is a representative seed mix that will be used for restoration:

Scientific Name	Common Name	Percentage of See Mixture (approximate)
Avena sativa	Oats	50
Bouteloua curtipendula	Side-oats grama	6
Carex species prairie	Carex species prairie	1
Elymus canadensis	Canada wild rye	6
Elymus virgnicus	Virginia wild rye	6
Koeleria pyramidata (Koeleria Cristata)	June grass	1
Lolium multiflorum	Annual rye grass	24
Schyzasachrium scoparium	Little bluestem	6

6.0 RESPONSE PROCEDURES FOR SPILL MITIGATION

Good housekeeping procedures will be followed to minimize risks associated with spills of:

- wash water from equipment decontamination
- fuel spills
- equipment maintenance
- fertilizer

These procedures include, but are not limited to, keeping materials in their original containers whenever possible, maintaining original labels and Material Safety Data Sheets (MSDSs), and using proper disposal methods for surplus materials. Accidental spills that may occur will be contained or collected and containerized immediately after discovery of the spill. Containerized material will be analyzed (characterized) for off-site transportation and disposal. The following spill mitigation equipment should be available on site during construction activities:

- Drip pans
- Oil-dry or similar compound
- Shovels
- 55-gallon drums (for containerization)
- Labels for contents identification

Following spill cleanup, the cause of the spill will be investigated, and material storage and handling procedures will be reviewed and revised where appropriate. All spills will be reported to the NAVFAC Crane Environmental Department.

ATTACHMENT 3

SOIL AND SEDIMENT SAMPLING IN AND AROUND DITCH 3

NOTE: All tables and figures reference in this attachment are presented in the main body of the Field Task Modification Request

1.0 SOIL AND SEDIMENT SAMPLING

The results of post-IM soil and sediment sampling indicate that PCB contamination continues to exist in a few areas within and near the boundaries of SWMU 17; therefore, additional soil and sediment sampling is warranted. This attachment identifies additional intrusive activities that are designed to determine the potential source of PCB contamination at SWMU 17 as well as define the extent of PCB contamination remaining at the site. Specifically, soil sampling will be conducted within the following two areas at SWMU 17:

- The southwestern edge of Ditch 3 Segment 1 within Boggs Creek (Figure 6) near previously collected sample 173AWFA1C0006.
- The easternmost area of Ditch 3 Segment 6 near Building 2721 (Figure 2, green-colored rectangle at top of Ditch 3).

Sediment samples will be collected from various segments along portions of Ditch 3 (Figure 2) to determine whether PCB contamination continues to be transported downstream from a potential upstream source.

SOPs CTO467-01, CTO467-03, through CTO467-006, and CTO467-08 from the Tetra Tech August 2008 Quality Assurance Project Plan Addendum No. 4 for PCB Capacitor Burial/Pole Yard Building 2721 Investigation (Phase 5) SWMU 17, Naval Surface Warfare Center Crane, Crane, Indiana, will be used to govern sample collection and management. For convenience those SOPs will be provided separately to the FOL as a single package prior to start of field work.

2.0 SAMPLING AND ANALYSIS PROGRAM

Additional soil and sediment data need to be collected to supplement existing data to more precisely delineate the horizontal and vertical extent of PCB contamination that remains in soil and sediment at SWMU 17. These activities will be conducted in accordance with QAPP Addendum 4. However, where the procedures listed in this attachment differ from, or are not provided in QAPP Addendum 4, the procedures provided below supersede QAPP Addendum 4.

Soil Sampling

Vicinity of Building 2721

At the end of IM activities in 2014, a 6-foot section of a 24-inch concrete storm drain that discharges at the eastern end of Segment 6 in Ditch 3 was replaced due to cracking of the pipe. During replacement of the concrete pipe section, PCB-contaminated soil was observed under the pipe. The analytical results from a sample of this soil confirmed the presence of PCBs in excess of 1 mg/kg. The 24-inch storm drain pipe is located below a 4-inch VCT pipe that was connected to a floor drain within Building 2721 and may have been a source of PCB contamination released near the culvert. The PCBs may be adsorbed to soil under the storm drain and may be a persistent source of PCB contamination in Ditch 3.

Prior to soil sampling, the paths of the storm sewer and 4-inch VCT drain line will be mapped (see FTMR Attachments 1 and 2). Soil sampling locations west of Building 2721 will be selected within the areas around these pipes based on the determined pathways and depths of the pipes. Soil samples will be collected within the 1-foot depth interval directly above the VCT pipe and the bottom of the storm drain pipe as well as the 0- to 2- and 2- to 4-foot depth intervals directly below the VCT pipe and storm drain pipe. In areas where samples have not been collected previously, additional soil samples will be collected in directions away from the piping toward locations that are likely to be less contaminated or "clean." Samples also will be collected from shallow soil at select locations to verify that the shallow soil is clean near the pipes. This strategy will be applied to vertical as well as horizontal directions, but allowances must be made for adjusting this strategy because the elevations of the ground surface and buried pipes vary with location. These additional samples will be shipped to the laboratory and will be designated as "Hold" on the chain-of-custody form included with the samples. Samples marked "Hold" will be analyzed upon direction from the Tetra Tech Project Manager or designee if they are needed to complete the delineation of PCB contamination in the sampled area.

Figure 2 shows the area near Building 2721 in which sample collection is planned (green colored rectangle). Table 2 provides an initial list of predetermined sample numbers. This list will be expanded as additional samples are collected.

Boggs Creek Segment 1

Figure 6 shows the location of previously collected sample 173AWFA1C0006 (at the southwestern end of Ditch 3 Segment 1), which was collected at a depth approximately 4 feet below the current ground surface. The area around this location is the area in which soil sample collection is planned. Table 2 lists the first few planned samples and their associated sample depths.

The Segment 1 area of Boggs Creek was part of IM activities conducted at SWMU 17 in 2014. However, a post-IM composite sample (173AWFA1C0006) collected at the southwestern and of Ditch 3 Segment 1 indicated that PCB contamination still exists. The planned sample area currently has approximately 4 feet of clean fill on top of the former sample locations within the native soil. Soil samples are planned for collection at depths of 4 to 6 and 6 to 8 feet bgs. During sample collection using DPT, the FOL will determine the depths of clean fill and native soil based on characterization of the sample cores. The actual 2-foot depth sample intervals will be determined in the field and documented on the associated soil sample log.

<u>Sediment Sampling</u>

Ditch 3

Post-IM sediment samples indicate that PCB contamination persists within the sediment of Ditch 3, possibly as a result of unremoved contaminated soil and/or sediment but also possibly because of recontamination. To determine the extent of the sediment contamination, sediment samples collected at 0- to 12-inch depth intervals are planned in multiple locations along the length of Ditch 3.

Figure 2 shows the reach of Ditch 3 to be sampled, i.e., from the top of Ditch 3 to the western edge of Ditch 3 Segment 1. Spacing between sediment samples will be approximately 250 feet from the western edge of Ditch 3 Segment 1 to the eastern edge of Ditch 3 Segment 4. Spacing between sediment samples will be approximately 200 feet from the eastern edge of Ditch 3 Segment 4 to the top of Ditch 3. It may be necessary to relocate samples due to lack of sediment buildup in the planned locations, detection of oily sheens, or other field observations. If a sample is to be relocated, it will be collected in the nearest sediment deposit from the planned location or another location determined to contribute to an overall understanding of the extent of PCB contamination in Ditch 3 sediment. Actual sampling locations will be documented in a summary report at the conclusion of this work. Table 2, which will expand as samples area added, lists the first few planned samples. The last four digits of each sample number indicate the depth in inches. The nominal depth is 0 to 12 inches (last four digits are 0012); ***however, actual depths must be used in the sample numbers***.

The intent will be to collect representative samples as efficiently as permitted by field conditions at planned sampling locations and depths.

3.0 SAMPLE ANALYSES

All samples will be analyzed by Earth Toxics/TestAmerica for PCBs as Aroclors using SW-846 Method 8082A. This method was used for previous analyses, and its use will ensure comparability of data with previous sampling events. No chemical preservation of samples is required, but all samples must be shipped and stored within the temperature range of 0 to 6 degrees Celsius (°C).

Analysis of a select group of samples will be required before the Navy can determine which samples to analyze next to most efficiently delineate the PCB contamination. Chain-of-custody forms accompanying samples to the laboratory must be marked to indicate which samples are to be placed on hold pending a decision to analyze them. All other samples listed on the chain-of-custody form will be analyzed within the prescribed 3-day turnaround time unless the laboratory is otherwise notified by the Tetra Tech Project Manager.

Planned detection limits are tabulated in Table 3. Sample holding times are 1 year from the time of sample collection as long as the samples are stored under refrigeration (less than 6 ºC) and in the dark. Contact information for the laboratory is provided on Exhibit B of the accompanying FTMR, and laboratory accreditation information is provided in FTMR Attachment 6.

4.0 MANAGEMENT OF INVESTIGATON-DERIVED WASTES

Residual soils remaining after sample collection will be returned to their respective soil borings by pouring the soil into the boring using a mixing bowl, bucket, or comparable means. If the volume of material placed into the boring does not reach the ground surface, bentonite pellets will be used to supplement he returned soil so that the filled hole matches ground surrounding elevation. Personal protective equipment will be placed in black trash bags and discarded in NSA Crane trash containers as non-hazardous materials. If decontamination liquids satisfy waste acceptance criteria, they will be discharged to the NSA Crane NPDES-permitted WWTP sewer drain designated by the NSA Crane Environmental Restoration Site Manager; otherwise they will be drummed and transferred to the custody of NSA Crane for disposal (see FTMR Attachment 2, Section 4.0 for details).

5.0 QUALITY ASSURANCE

5.1 Field Quality Control

Collection of field duplicate and equipment rinsate blank samples is not planned because the resources commonly devoted to collection and analysis of these samples are believed to be better spent characterizing site conditions. NSA Crane soils are heterogeneous with respect to PCB concentrations; therefore, good agreement between original and duplicate sample PCB concentrations is not necessarily expected even in the absence of sampling or analysis deficiencies.

5.2 Laboratory Quality Control

All method-required laboratory quality control (QC) measures will be implemented as specified in the PCB analytical method, SW-846 Method 8082A.

6.0 LAND SURVEYING

Locations where samples will be collected are flexible to allow for field positioning based on findings from previous steps of this investigation. At the conclusion of field activities, the locations of collected samples, rock cores, and key site features will be established in the field and surveyed by a licensed land surveyor to correlate the collected samples with their spatial positions. Rock coring and soil and sediment sampling locations will be established to the nearest 0.1 foot horizontally. Depths will be measured in the field and estimated to the nearest whole inch. Horizontal and vertical coordinates will be reported to the same number of significant figures. Key site features include top elevations of sediment traps at three points (opposite ends and the middle), lateral position and ground surface elevations at various locations along the 4-inch VCT drain line and storm sewer, mouth of concrete culvert, corners of Building 2721, catch basin locations, and other features deemed by the FOL and Navy representatives to be useful as landmarks or points of reference. These points may be used for verifying locations of other points at SWMU 17. The horizontal survey datum is the North American Datum of 1983 (NAD 83), and the vertical datum is the North American Vertical Datum of 1988 (NAVD 88).

ATTACHMENT 4

SEDIMENT TRAP INSTALLATION

NOTE: All tables and figures reference in this attachment are presented in the main body of the Field Task Modification Request

1.0 BACKGROUND

After completion of IM Phase 2, which required removal of all contaminated sediment from Ditch 3, sediment collected from Ditch3 was shown to be contaminated. In addition, some high-level PCB contamination (exceeding 50 mg/kg) in soil and sediment was recently discovered at the top of Ditch 3, and this contamination has not been completely removed. These results are reported in the draft final IM Report, which is currently under review by EPA. The data suggest that Ditch 3 sediments are being recontaminated from this newly discovered PCB source at the top of Ditch 3.

2.0 SEDIMENT TRAP INSTALLATION

Because of potential downstream migration of contaminated sediment after completion of IM Phase 2, installation of sediments traps is planned to prevent continued downstream migration of PCB-contaminated sediment. One trap will actually be an expansion of an existing sediment retention structure (see Figure 3). The intent will be to raise the top elevation of this structure to 3 feet above the Ditch 3 bed elevation, an increase of approximately 2 feet to the structure height. The second sediment trap will be installed farther downstream of this current retention structure. The siting of this second trap will be designed to prevent migration of PCB-contaminated sediment farther downstream from the location of farthest known contaminated sediment migration. Construction details are provided in Figure 4A-1. This figure is not to scale.

An attempt will be made to minimize impacts to Ditch 3 before, during, and after sediment trap installation. Tree removal will be accomplished only with the approval of the NSA Crane Environmental Restoration Site Manager who will coordinate with the Natural Resources Manager. Removal of trees must be documented in the field log book with the tree location, approximate diameter at full breast height, and type of tree removed. Removal of groups of similar trees in a small area may be documented as a group. Prior to installation of the sediment traps, appropriate erosion control measures must be taken such as installation of filter socks or hay bales to prevent or minimize impacts to Ditch 3 from soil loosened by the installation activities. Sediment and erosion controls consistent with those described in FTMR Attachment 2, Section 1.0 will be followed. Restoration of disturbed areas will comply with requirements of FTMR Attachment 2, Section 5.0.

3.0 INVESTIGATION-DERIVED WASTE AMANGEMENT AND EQUIPENT DECONTAMANTION

Refer to Attachment 2, Section 4.0.

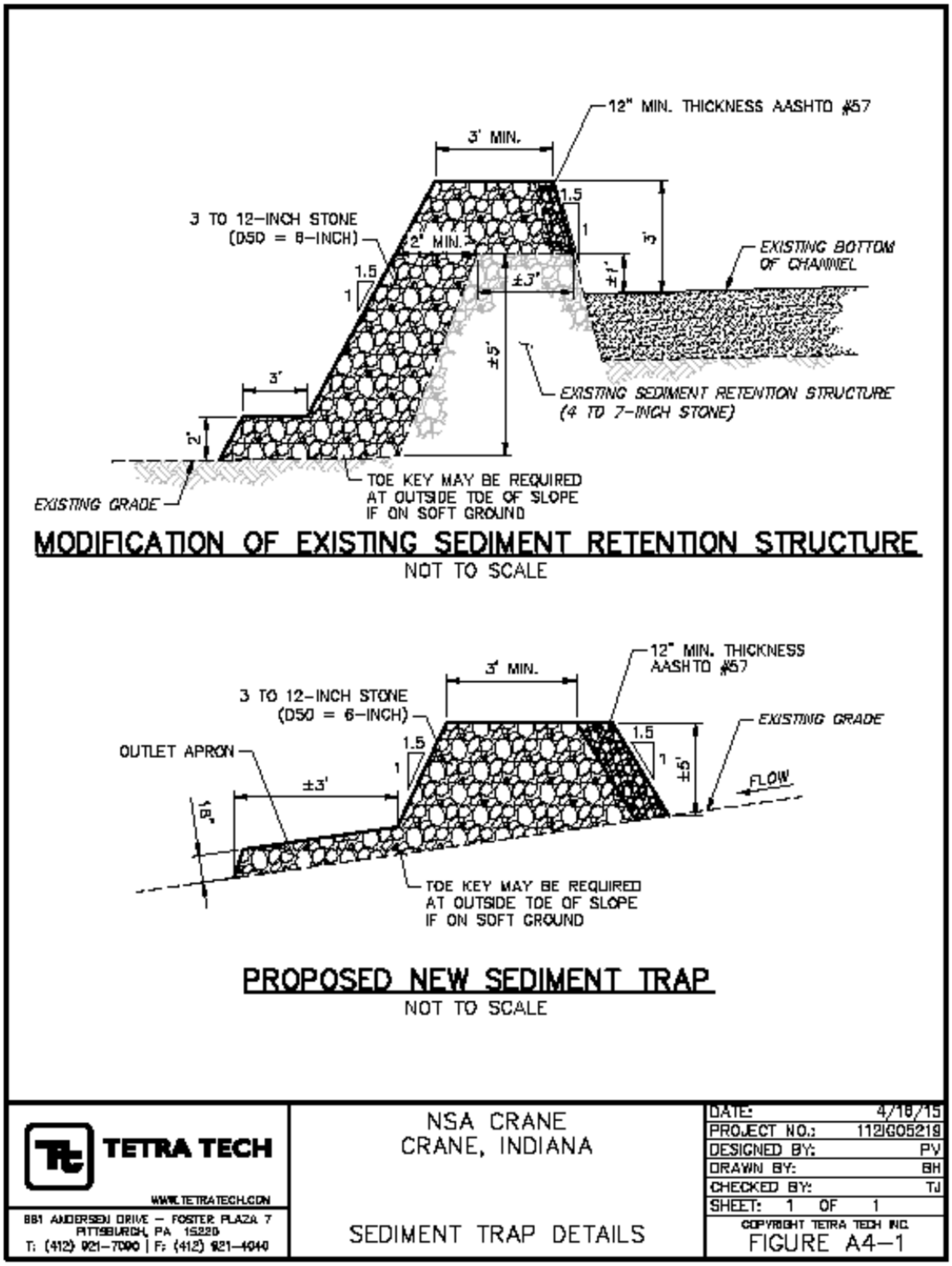
4.0 SITE RESTORATION

Upon completion of trenching and sampling, all disturbed areas will be restored to original grade and as close to pre-excavation conditions as feasible. This entails regrading disturbed areas as necessary, seeding, and applying a layer of straw or biodegradable erosion control matting, at the NSA Crane Environmental Restoration Site Manager's discretion, to encourage seed germination. Consult Attachment 2, Section 5.0 for details. It is anticipated that the downstream sediment trap will be removed after PCB contamination can be controlled and the upstream sediment trap will be restored to its original condition but not removed. Monitoring of the vegetative regrowth will be part of the existing monitoring being conducted after Interim Measures Phase 2 in compliance with IDEM WQC 2013-495-51-DDC-A.

5.0 RESPONSE PROCEDURES FOR SPILL MITIGATION

The sediment trap installation effort is anticipated to last only two days and limited heavy equipment will be used, therefore spills of hydraulic fluid, fuels, etc. are not expected. Nevertheless, the procedure in Attachment 2, Section 5.0 shall be followed in the event of a spill during sediment trap installation.

FIGURE A4-1 SEDIMENT TRAP INSTALLATION DESIGN DETAILS



ATTACHMENT 5

SHALLOW BEDROCK CORING WITH PORTABLE CORING DEVICE

NOTE: All tables and figures reference in this attachment are presented in the main body of the Field Task Modification Request

1.0 BACKGROUND

PCB oils originating from the area near Building 2721 at SWMU 17 may be migrating through fissures within the shallow bedrock. If this is occurring, PCBs may be released downstream of the point of release without flowing as surface flow within Ditch 3. To determine whether PCB oils are migrating through shallow bedrock, coring of the bedrock will occur at multiple locations within Ditch 3 or near Ditch 3. Each core will be observed for evidence of PCBs (e.g., staining, odor, presence of oily sediment), and a sediment sample from the core will be collected from the core, if possible, and shipped to the laboratory for PCB analysis. The intent will be to collect sediment from the core of a particular coring location that is likely to be most contaminated and therefore is most intensely stained, has a strong organic odor, or appears to be oily.

2.0 BEDROCK CORING PLAN

Figure 3 shows the location of Ditch 3. It is anticipated that coring will be confined to the upper reaches of Ditch 3, i.e., above the confluence of Ditch 3 and Ditch 14. The rock coring will be completed using a gasoline-powered Portable Core Drill with 1.5-inch-diameter bit. The portable drill can be easily transported to the coring location and uses a diamond core bit capable of drilling through bedrock. The drill should allow the cores to be drilled nearly intact, which will allow visual observation of the cores and tracking of core depth.

Coring locations will be biased toward areas of Ditch 3 where PCB contamination is detected in sediment samples collected in accordance with FTMR Attachment 3, where an oily sheen is observed on the water surface, or where knowledge of previously collected data and stream morphology suggest that the chance of finding PCBs is significant. Care should be taken not to confuse oil-based sheens with biological sheens. An oil sheen can be distinguished from a biological sheen because biological sheens tend to clump and have jagged edges whereas oil sheens do not; and oil sheens may be associated with an organic oily odor whereas biological sheens generally are not.

Multiple cores, each drilled to a maximum depth of 3 feet, will be installed at each of the selected coring locations. Each group of cores from a particular location within Ditch 3 will constitute a transect across the stream, perpendicular to the surface water flow path. Each core will be collected in a straight line approximately perpendicular to the stream bed surface. Some allowance may be made for collecting cores adjacent to Ditch 3 in areas such as west of Building 2721 where PCB contamination could be in bedrock outside the ditch. For cores collected within Ditch 3, one core will be drilled in the middle of the stream and additional cores will be evenly spaced three to four feet apart on each side of this central core, until the cores span the width of the ditch. Three to five cores are anticipated to fit within the stream transect at each coring location. Slight variations in spacing of the cores collected at each coring location may occur due to local morphological features. The intent is to obtain an understanding of shallow bedrock conditions across the entire streambed at each coring location while maximizing the chance of encountering PCB contamination in a core.

Unless field conditions dictate otherwise, coring locations should be in areas of the stream where flow is limited to minimize interference from stream water during coring. In addition, prior to initiating the coring within Ditch 3, stream water flow will be temporarily diverted by positioning a plastic liner and plastic sand bags immediately upstream of the planned coring location. Additional sandbags may be placed on top of the bottom sandbags to hold the plastic liner in place over the bottom sandbags. This will add downward force, will prevent any water from washing potential contaminants from the cores, and will also allow hydraulic cement to be placed down the boring upon completion of the coring (see the last paragraph of this section). During the coring process, each core will be visually inspected for unusual discoloration or odor, photographed, logged, and if it is not grossly contaminated, placed in a core box for storage. Care will be taken during the coring process and subsequent handling to keep the rock cores as intact as possible.

Assuming at least one of the cores is fractured and contains sediment, a sample of sediment will be collected from one of the cores at as many as four of the selected coring locations and shipped to the laboratory for PCB analysis. The intent will be to collect sediment that appears to be most contaminated with PCBs for the selected coring locations. Upon the completion of bedrock coring at a particular location, the holes will be filled with hydraulic cement and the cores will be turned over to the NSA Crane Environmental Site Manager for storage.

3.0 NOMENCLATURE FOR CORING LOCATIONS, CORE SAMPLES, AND CORE SEDMENT

3.1 Rock Coring Location Nomenclature

Rock coring locations will be labeled as follows:

17RC001, 17RC002, 17RC003, etc., where 001, 002, 003, etc. are sequential three-digit numbers assigned to each location so that each coring location is uniquely numbered.

Multiple cores will be collected along a transect at each coring location

3.2 Rock Core Nomenclature

Rock cores at a given coring location within Ditch 3 will be labeled as follows:

> 17RCxxxA, 17RCxxxB , 17RCxxxC , etc. where xxx is the location's sequential identifier and the last character of each core identifier (i.e., A, B, C, etc.) is unique. Designations A, B, C, etc. should be assigned so that "A" is assigned to the leftmost core in a series when facing upstream and alpha characters for the remaining cores of a transect are assigned sequentially from left to right.

If cores are collected outside of Ditch 3, a similar numbering system will be used with each core of a related group of cores receiving a different alpha character suffix.

3.3 Core Sample Sediment Nomenclature

Samples of sediment collected from the cores for PCB analysis will be labeled as follows (using core number 17RC001A, as an example):

> 17RC001Aqqyy, where qq and yy are the top and bottom depths, in inches, of the core segment over which the sediment was collected. In some cases the top and bottom designations may be the same, but in other cases it may be necessary to collect sediment over several inches of core because of the orientation of a rock fracture or to collect enough sample for analysis. If insufficient sediment is available from a single core, combine sediment from multiple cores. This may require installation of additional cores across this same bedding plane.

4.0 MANAGEMENT OF INVESTIGATON-DERIVED WASTES AND EQUIPMENT DECONTAMINATION

If grossly contaminated rock cores are encountered during coring and sampling activities, they will not be submitted to NSA Crane for storage. Instead, they will be placed in a 55-gallon drum pending results of PCB analysis. Grossly contaminated cores refers to cores that are visibly stained with potential PCB oils, or have a strong organic odor, and this determination will be made by the Tetra Tech FOL and NSA Crane Environmental Restoration Site Manager. Decontamination of sampling and trenching equipment will be accomplished in accordance with FTMR Attachment 2, Section 4.0.

ATTACHMENT 6

LABORATORY ACCREDITATION DOCUMENTS

American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

TESTAMERICA DENVER
4955 Yarrow Street
Arvada, CO 80002
Margaret S. Sleevi Phone: 303-736-0100
www.testamericainc.com

ENVIRONMENTAL

Valid To: October 31, 2015 Certificate Number: 2907.01

In recognition of the successful completion of the A2LA evaluation process, (including an assessment of the laboratory's compliance with ISO IEC 17025:2005, the 2003 NELAC Chapter 5 Standard, the requirements of the DoD Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in version 4.2 of the DoD Quality Systems Manual for Environmental Laboratories), and for the test methods applicable to the Wyoming Storage Tank Remediation Laboratory Accreditation Program, accreditation is granted to this laboratory to perform recognized EPA methods using the following testing technologies and in the analyte categories identified below:

Testing Technologies

Atomic Absorption/ICP-AES Spectrometry, ICP/MS, Gas Chromatography, Gas Chromatography/Mass Spectrometry, Gravimetry, High Performance Liquid Chromatography, Ion Chromatography, Misc.- Electronic Probes (pH, O_2), Oxygen Demand, Hazardous Waste Characteristics Tests, Spectrophotometry (Visible), Spectrophotometry (Automated), Titrimetry, Total Organic Carbon, Total Organic Halide

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Metals				
Aluminum	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Antimony	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Arsenic	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Barium	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Beryllium	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Boron	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Cadmium	EPA 6010C	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Calcium	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Chromium	EPA 6010C	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Cobalt	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Copper	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Iron	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Lead	EPA 6010C	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Lithium	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Magnesium	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Manganese	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Mercury	----------------------	----------------------	EPA 7470A	EPA 7471A / 7471B
Molybdenum	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Nickel	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Potassium	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Selenium	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Silica	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Silicon	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Silver	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Sodium	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Strontium	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Thallium	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Tin	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Titanium	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Vanadium	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Zinc	----------------------	----------------------	EPA 6010B / 6010C / 6020 / 6020A	EPA 6010B / 6010C / 6020 / 6020A
Nutrients				
Nitrate (as N)	----------------------	By calculation	By calculation / EPA 9056 / 9056A	By calculation / EPA 9056 / 9056A
Nitrate-nitrite (as N)	----------------------	EPA 353.2	EPA 353.2 / 9056 / 9056A	EPA 9056 / 9056A
Nitrite (as N)	----------------------	SM 4500-NO2 B	SM 4500-NO2 B; EPA 9056 / 9056A	EPA 9056 / 9056A
Orthophosphate (as P)	----------------------	----------------------	EPA 9056 / 9056A	EPA 9056 / 9056A
Total phosphorus	----------------------	----------------------	EPA 6010B / 6010C	EPA 6010B / 6010C
Demands				
Total Organic Carbon	----------------------	----------------------	EPA 9060 / 9060A	EPA 9060 / 9060A
Total Organic Halides	----------------------	----------------------	EPA 9020B	----------------------
Wet Chemistry				----------------------
Alkalinity (Total Bicarbonate, Carbonate, and Hydroxide Alkalinty)	----------------------	SM 2320 B_1997	SM 2320 B	SM 2320 B
Ammonia	----------------------	EPA 350.1	EPA 350.1	----------------------
Biological Oxygen Demand	----------------------	SM 5210B	SM 5210B	----------------------
Bromide	----------------------	----------------------	EPA 9056 / 9056A	EPA 9056 / 9056A
Chloride	----------------------	----------------------	EPA 9056 / 9056A	EPA 9056 / 9056A
Chemical Oxygen Demand	----------------------	EPA 410.4	EPA 410.4	
Conductivity	----------------------	----------------------	EPA 9050 / 9050A	EPA 9050 / 9050A
Cyanide	----------------------	----------------------	9012A / 9012B	9012A / 9012B
Ferrous Iron	----------------------	SM 3500 Fe B, D	SM 3500 Fe B, D	----------------------
Fluoride	----------------------	----------------------	EPA 9056 / 9056A	EPA 9056 / 9056A
Hexavalent Chromium	EPA 7196A	----------------------	EPA 7196A	----------------------
pH	----------------------	----------------------	EPA 9040B / 9045C	EPA 9040B / 9045C
Oil and Grease (HEM and SGT-HEM)	----------------------	----------------------	EPA 1664A/ 1664B	9071B
Percent Moisture	----------------------	----------------------	----------------------	ASTM D2216
Perchlorate	----------------------	----------------------	EPA 6860	EPA 6860
Phenols	----------------------	----------------------	EPA 9066	EPA 9066
Solids, Total	----------------------	SM 2540 B	SM 2540 B	SM 2540 B
Solids, Total Suspended	----------------------	SM 2540 D	SM 2540 D	SM 2540 D
Solids, Total Dissolved	----------------------	SM 2540 C	SM 2540 C	SM 2540 C
Sulfate	----------------------	----------------------	EPA 9056 / 9056A	EPA 9056 / 9056A
Sulfide, Total	----------------------	----------------------	EPA 9034	EPA 9034
Sulfide	----------------------	----------------------	EPA 9030B	EPA 9030B
Total Kjeldahl Nitrogen	----------------------	----------------------	EPA 351.2	----------------------

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Purgeable Organics (volatiles)				----------------------
Acetone	----------------------	----------------------	EPA 8260B	EPA 8260B
Acetonitrile	----------------------	----------------------	EPA 8260B	EPA 8260B
Acrolein	----------------------	----------------------	EPA 8260B	EPA 8260B
Acrylonitrile	----------------------	----------------------	EPA 8260B	EPA 8260B
Allyl Chloride	----------------------	----------------------	EPA 8260B	EPA 8260B
tert-Amyl Methyl Ether	EPA 8260B			
Benzene	EPA 8260B / 8021B	----------------------	EPA 8260B / 8021B / AK101/ OK DEQ GRO	EPA 8260B / 8021B / AK101/ OK DEQ GRO
Bromobenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
Bromochloromethane	----------------------	----------------------	EPA 8260B	EPA 8260B
Bromodichloromethane	----------------------	----------------------	EPA 8260B	EPA 8260B
Bromoform	----------------------	----------------------	EPA 8260B	EPA 8260B
Bromomethane	----------------------	----------------------	EPA 8260B	EPA 8260B
2-Butanone	----------------------	----------------------	EPA 8260B	EPA 8260B
n-Butyl alcohol	----------------------	----------------------	EPA 8260B / 8015B / 8015C	EPA 8260B / 8015B / 8015C
tert-Butyl alcohol	EPA 8260B			
n-Butylbenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
sec-Butylbenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
tert-Butylbenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
Carbon disulfide	----------------------	----------------------	EPA 8260B	EPA 8260B
Carbon tetrachloride	----------------------	----------------------	EPA 8260B	EPA 8260B
Chlorobenzene	----------------------	----------------------	EPA 8260B / 8021B	EPA 8260B / 8021B
2-Chloro-1,3-butadiene	----------------------	----------------------	EPA 8260B	EPA 8260B
Chloroethane	----------------------	----------------------	EPA 8260B	EPA 8260B
2-Chloroethyl vinyl ether	----------------------	----------------------	EPA 8260B	EPA 8260B
Chloroform	----------------------	----------------------	EPA 8260B	EPA 8260B
1-Chlorohexane	----------------------	----------------------	EPA 8260B	EPA 8260B
Chloromethane	----------------------	----------------------	EPA 8260B	EPA 8260B
Chloroprene	----------------------	----------------------	EPA 8260B	EPA 8260B
4-Chlorotoluene	----------------------	----------------------	EPA 8260B	EPA 8260B
2-Chlorotoluene	----------------------	----------------------	EPA 8260B	EPA 8260B
Cyclohexane	----------------------	----------------------	EPA 8260B	EPA 8260B
Cyclohexanone	----------------------	----------------------	EPA 8260B	EPA 8260B
Dibromochloromethane	----------------------	----------------------	EPA 8260B	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)	----------------------	EPA 504	EPA 504 / 8260B / 8011	EPA 8260B / 8011
Dibromochloromethane	----------------------	----------------------	EPA 8260B	EPA 8260B
Dichlorodifluoromethane	----------------------	----------------------	EPA 8260B	EPA 8260B
Dibromomethane	----------------------	----------------------	EPA 8260B	EPA 8260B
1,2 Dibromoethane (EDB)	EPA 8011	EPA 504	EPA 504 / 8260B / 8011	EPA 8260B / 8011
1,2-Dichlorobenzene	----------------------	----------------------	EPA 8260B / 8021B	EPA 8260B / 8021B
1,3-Dichlorobenzene	----------------------	----------------------	EPA 8260B / 8021B	EPA 8260B / 8021B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
1,4-Dichlorobenzene	----------------------	----------------------	EPA 8260B / 8021B	EPA 8260B / 8021B
cis-1,4-Dichloro-2-butene	----------------------	----------------------	EPA 8260B	EPA 8260B
trans-1,4-Dichloro-2-butene	----------------------	----------------------	EPA 8260B	EPA 8260B
1,1-Dichloroethane	----------------------	----------------------	EPA 8260B	EPA 8260B
1,2-Dichloroethane	EPA 8260B	----------------------	EPA 8260B	EPA 8260B
1,1-Dichloroethene	----------------------	----------------------	EPA 8260B	EPA 8260B
1,2-Dichloroethene	----------------------	----------------------	EPA 8260B	EPA 8260B
cis-1,2-Dichloroethene	----------------------	----------------------	EPA 8260B	EPA 8260B
trans-1,2-Dichloroethene	----------------------	----------------------	EPA 8260B	EPA 8260B
Dichlorofluoromethane	----------------------	----------------------	EPA 8260B	EPA 8260B
1,2-Dichloropropane	----------------------	----------------------	EPA 8260B	EPA 8260B
1,3-Dichloropropane	----------------------	----------------------	EPA 8260B	EPA 8260B
2,2-Dichloropropane	----------------------	----------------------	EPA 8260B	EPA 8260B
1,1-Dichloropropene	----------------------	----------------------	EPA 8260B	EPA 8260B
1,3-Dichloropropene	----------------------	----------------------	EPA 8260B	EPA 8260B
cis-1,3-Dichloropropene	----------------------	----------------------	EPA 8260B	EPA 8260B
trans-1,3-Dichloropropene	----------------------	----------------------	EPA 8260B	EPA 8260B
Diethyl ether	----------------------	----------------------	EPA 8260B	EPA 8260B
Di-isopropylether	EPA 8260B	----------------------	EPA 8260B	EPA 8260B
1,4-Dioxane	----------------------	----------------------	EPA 8260B / 8260B SIM	EPA 8260B / 8260B SIM
Ethanol	----------------------	----------------------	EPA 8260B / 8015B / 8015C	EPA 8260B / 8015B / 8015C
Ethyl Acetate	----------------------	----------------------	EPA 8260B	EPA 8260B
Ethyl Benzene	EPA 8260B/8021B	----------------------	EPA 8260B / 8021B / AK101/ OK DEQ GRO	EPA 8260B / 8021B/ AK101/ OK DEQ GRO
Ethyl Methacrylate	----------------------	----------------------	EPA 8260B	EPA 8260B
Ethyl tert-Butyl Ether	EPA 8260B			
Ethylene Glycol	----------------------	----------------------	EPA 8015C	EPA 8015C
Gas Range Organics (GRO)	EPA 8015C	----------------------	EPA 8015B / 8015C / AK101 / 8015D	EPA 8015B / 8015C / AK101 / 8015D
Hexane	----------------------	----------------------	EPA 8260B	EPA 8260B
2-Hexanone	----------------------	----------------------	EPA 8260B	EPA 8260B
Hexachlorobutadiene	----------------------	----------------------	EPA 8260B	EPA 8260B
Isobutyl Alcohol (2-Methyl-1-propanol)	----------------------	----------------------	EPA 8260B / 8015B / 8015C	EPA 8260B / 8015B / 8015C
Isopropyl Alcohol	----------------------	----------------------	EPA 8260B	EPA 8260B
Isopropylbenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
1,4-Isopropyltoluene	----------------------	----------------------	EPA 8260B	EPA 8260B
Iodomethane	----------------------	----------------------	EPA 8260B	EPA 8260B
Methacrylonitrile	----------------------	----------------------	EPA 8260B	EPA 8260B
Methanol	----------------------	----------------------	EPA 8015B / 8015C	EPA 8015B / 8015C
Methyl Acetate	----------------------	----------------------	EPA 8260B	EPA 8260B
Methyl Cyclohexane	----------------------	----------------------	EPA 8260B	EPA 8260B
Methylene Chloride	----------------------	----------------------	EPA 8260B	EPA 8260B
Methyl Ethyl Ketone (MEK)	----------------------	----------------------	EPA 8260B	EPA 8260B
Methyl Isobutyl Ketone	----------------------	----------------------	EPA 8260B	EPA 8260B
Methyl Methacrylate	----------------------	----------------------	EPA 8260B	EPA 8260B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Methyl tert-Butyl Ether (MtBE)	EPA 8260B / 8021B	----------------------	EPA 8260B / 8021B / OK DEQ GRO	EPA 8260B / 8021B/ OK DEQ GRO
4-Methyl-2-Pentanone	----------------------	----------------------	EPA 8260B	EPA 8260B
Naphthalene	EPA 8260B / 8021B	----------------------	EPA 8260B/ OK DEQ GRO	EPA 8260B / OK DEQ GRO
2-Nitropropane	----------------------	----------------------	EPA 8260B	EPA 8260B
2,2' Oxybisethanol	----------------------	----------------------	EPA 8015C	EPA 8015C
2-Pentanone	----------------------	----------------------	EPA 8260B	EPA 8260B
Propionitrile	----------------------	----------------------	EPA 8260B	EPA 8260B
n-Propylbenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
Propylene Glycol	----------------------	----------------------	EPA 8015C	EPA 8015C
Styrene	----------------------	----------------------	EPA 8260B	EPA 8260B
1,1,1,2-Tetrachloroethane	----------------------	----------------------	EPA 8260B	EPA 8260B
1,1,2,2-Tetrachloroethane	----------------------	----------------------	EPA 8260B	EPA 8260B
Tetrachloroethene	----------------------	----------------------	EPA 8260B	EPA 8260B
Tetrahydrofuran	----------------------	----------------------	EPA 8260B	EPA 8260B
Toluene	EPA 8260B / 8021B	----------------------	EPA 8260B / 8021B / AK101 / OK DEQ GRO	EPA 8260B / 8021B / AK101 / OK DEQ GRO
Total Petroleum Hydrocarbons (TPH)	----------------------	EPA 1664A EPA 1664B	EPA 1664A EPA 1664B	----------------------
1,2,3-Trichlorobenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
1,1,1-Trichloroethane	----------------------	----------------------	EPA 8260B	EPA 8260B
1,1,2-Trichloroethane	----------------------	----------------------	EPA 8260B	EPA 8260B
Trichloroethene	----------------------	----------------------	EPA 8260B	EPA 8260B
Trichlorofluoromethane	----------------------	----------------------	EPA 8260B	EPA 8260B
1,2,3-Trichlorobenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
1,2,4-Trichlorobenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
1,2,3-Trichloropropane	----------------------	EPA 504.1	EPA 504.1 / 8260B / 8011	EPA 8260B / 8011
1,1,2-Trichloro-1,2,2-trifluoroethane	----------------------	----------------------	EPA 8260B	EPA 8260B
Triethylene Glycol	----------------------	----------------------	EPA 8015C	EPA 8015C
1,2,3-Trimethylbenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
1,2,4-Trimethylbenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
1,3,5-Trimethylbenzene	----------------------	----------------------	EPA 8260B	EPA 8260B
Vinyl Acetate	----------------------	----------------------	EPA 8260B	EPA 8260B
Vinyl Chloride	----------------------	----------------------	EPA 8260B	EPA 8260B
Xylenes, total	EPA 8260B / 8021B	----------------------	EPA 8260B / 8021B / AK101 / OK DEQ GRO	EPA 8260B / 8021B / AK101 / OK DEQ GRO
1,2-Xylene	EPA 8260B / 8021B	----------------------	EPA 8260B / 8021B / AK101 / OK DEQ GRO	EPA 8260B / 8021B / AK101 / OK DEQ GRO
M+P-Xylene	EPA 8260B / 8021B	----------------------	EPA 8260B / 8021B / AK101 / OK DEQ GRO	EPA 8260B / 8021B / AK101 / OK DEQ GRO
Methane	----------------------	----------------------	RSK-175	----------------------
Ethane	----------------------	----------------------	RSK-175	----------------------
Ethylene (Ethene)	----------------------	----------------------	RSK-175	----------------------
Acetylene	----------------------	----------------------	RSK-175	----------------------

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Acetylene Ethane	----------------------	----------------------	RSK-175	----------------------
Extractable Organics (semivolatiles)				
Acenaphthene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Acenaphthylene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Acetophenone	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Acetylaminofluorene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Alachlor	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Aminobiphenyl	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Aniline	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Anthracene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Aramite	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Atrazine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Azobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Benzaldehyde	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Benzidine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Benzoic acid	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Benzo (a) Anthracene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Benzo (b) Fluoranthene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Benzo (k) Fluoranthene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Benzo (ghi) Perylene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Benzo (a) Pyrene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Benzyl Alcohol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Bis (2-chloroethoxy) methane	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Bis (2-chloroethyl) Ether	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Bis (2-chloroisopropyl) Ether (2,2'Oxybis(1-chloropropane)	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Bis (2-ethylhexyl) Phthalate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Bromophenyl Phenyl Ether	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Butyl Benzyl Phthalate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-sec-Butyl-4,6-Dinitrophenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Carbazole	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Chloroanilene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Chlorobenzilate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Chloro-3-Methylphenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1-Chloronaphthalene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Chloronaphthalene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Chlorophenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Chlorophenyl Phenyl Ether	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Chrysene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Cresols	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Diallate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Dibenzo (a,h) Anthracene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Dibenzofuran	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,2-Dichlorobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,3-Dichlorobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,4-Dichlorobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
3,3'-Dichlorobenzidine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4-Dichlorophenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,6-Dichlorophenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Diethyl phthalate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Dimethoate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
3,3-Dimethylbenzidine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
p-Dimethylaminoazobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
7,12-Dimethylbenz(a)anthracene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Alpha-,alpha-Dimethylphenethylamine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4-Dimethylphenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Dimethyl Phthalate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Di-n-Butyl Phthalate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Di-n-Octyl Phthalate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,3-Dinitrobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,4-Dinitrobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4-Dinitrophenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4-Dinitrotoluene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,6-Dinitrotoluene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,4-Dioxane	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Diphenylamine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,2-Diphenylhydrazine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Disulfoton	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Diesel Range Organics (DRO)	EPA 8015C	----------------------	EPA 8015B / 8015C, AK102, TX 1005 / 8015D / OK DEQ DRO	EPA 8015B / 8015C, AK102, TX 1005 / 8015D / OK DEQ DRO
Ethyl Methanesulfonate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Famphur	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Fluoroanthene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Fluorene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Gasoline Range Organics	----------------------	----------------------	TX 1005 / OK DEQ GRO	TX 1005 / OK DEQ GRO
Hexachlorobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Hexachlorobutadiene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Hexachlorocyclopentadiene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Hexachloroethane	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Hexachloropropene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Indeno (1,2,3-cd) Pyrene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Isodrin	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Isophorone	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Isosafrole	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Methapyrilene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
3-Methylcholanthrene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Methyl-4,6-Dinitrophenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Methyl Methane Sulfonate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Methylcholanthrene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1-Methylnaphthalene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
2-Methylnaphthalene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
2-Methylphenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
3+4-Methylphenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Naphthalene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
1,4-Naphthoquinone	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1-Naphthylamine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Naphthylamine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Nitroaniline	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
3-Nitroaniline	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Nitroaniline	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Nitrobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Nitrophenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
4-Nitrophenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Nitroquinoline-1-Oxide	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
N-Nitrosodiethylamine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosodimethylamine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosodi-n-Butylamine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosodi-n-Propylamine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosodiphenylamine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosomethylethylamine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosomorpholine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosopiperidine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
N-Nitrosopyrrolidine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
5-Nitro-o-Toluidine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,2-oxybis(1-chloropropane)	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Parathion, Methyl	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Parathion, Ethyl	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pentachlorobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pentachloroethane	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pentachloronitobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pentachlorophenol	----------------------	----------------------	EPA 8270C / 8270D / 8321A / 8321B	EPA 8270C / 8270D / 8321A / 8321B
Phenacetin	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Phenanthrene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Phenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Phorate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2-Picoline	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pronamide	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Pyrene	----------------------	----------------------	EPA 8270C / 8270D / 8270SIM	EPA 8270C / 8270D / 8270SIM
Pyridine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Safrole	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Sulfotepp	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,2,4,5-Tetrachlorobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,3,4,6-Tetrachlorophenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Thionazin	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
o-Toluidine	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,2,4-Trichlorobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4,5-Trichlorophenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
2,4,6-Trichlorophenol	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
o,o,o-Triethyl Phosphorothioate	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
1,3,5-Trinitrobenzene	----------------------	----------------------	EPA 8270C / 8270D	EPA 8270C / 8270D
Motor Oil (Residual Range Organics)	----------------------	----------------------	EPA 8015B / 8015C, AK103 / OK DEQ RRO	EPA 8015B / 8015C, AK103 / OK DEQ RRO
Pesticides/Herbicides/PCBs				
Aldrin	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Atrazine	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Azinophos ethyl	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Azinophos methyl	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
alpha-BHC	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
beta-BHC	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
delta-BHC	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
gamma-BHC	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Bolstar	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
alpha-Chlordane	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
gamma-Chlordane	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Chlordane (technical)	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Chloropyrifos	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Coumaphos	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
2,4-D	----------------------	----------------------	EPA 8151A / 8321A	EPA 8151A /8321A
Dalapon	----------------------	----------------------	EPA 8151A / 8321A	EPA 8151A / 8321A
2,4-DB	----------------------	----------------------	EPA 8151A / 8321A	EPA 8151A / 8321A
4,4'-DDD	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
4,4'-DDE	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
4,4'-DDT	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Demeton-O	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Demeton-S	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Demeton, total	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Diazinon	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Dicamba	----------------------	----------------------	EPA 8151A / 8321A	EPA 8151A / 8321A
Dichlorovos	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Dichloroprop	----------------------	----------------------	EPA 8151A / 8321A	EPA 8151A / 8321A
Dieldrin	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Dimethoate	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Dinoseb	----------------------	----------------------	EPA 8151A / 8321A	EPA 8321A
Disulfoton	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Endosulfan I	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Endosulfan II	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Endonsulfan sulfate	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Endrin	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Endrin aldehyde	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Endrin ketone	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
EPN	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Ethoprop	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Ethyl Parathion	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Famphur	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Fensulfothion	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Fenthion	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Heptachlor	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Heptachlor Epoxide	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Hexachlorobenzene	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Malathion	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
MCPA	----------------------	----------------------	EPA 8151A / 8321A	EPA 8151A / 8321A
MCPP	----------------------	----------------------	EPA 8151A / 8321A	EPA 8151A / 8321A
Merphos	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Methoxychlor	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Methyl parathion	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Mevinphos	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Naled	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
PCB-1016 (Arochlor)	----------------------	----------------------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1221	----------------------	----------------------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1232	----------------------	----------------------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1242	----------------------	----------------------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1248	----------------------	----------------------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1254	----------------------	----------------------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1260	----------------------	----------------------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1262	----------------------	----------------------	EPA 8082 / 8082A	EPA 8082 / 8082A
PCB-1268	----------------------	----------------------	EPA 8082 / 8082A	EPA 8082 / 8082A
Phorate	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Phosmet	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Propazine	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Ronnel	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Simazine	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Stirophos	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Sulfotepp	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
2,4,5-T	----------------------	----------------------	EPA 8151A / 8321A	EPA 8151A / 8321A
Thionazin	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Tokuthion	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
2,4,5-TP	----------------------	----------------------	EPA 8151A / 8321A	EPA 8151A / 8321A
Toxaphene	----------------------	----------------------	EPA 8081A / 8081B	EPA 8081A / 8081B
Trichloronate	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
o,o,o-Triethylphos Phorothioate	----------------------	----------------------	EPA 8141A / 8141B	EPA 8141A / 8141B
Explosives				
1,3,5-Trinitrobenzene	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
1,3-Dinitrobenzene	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
2,4,6-Trinitrotoluene	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
3,5-Dinitroaniline	----------------------	----------------------	EPA 8330B	EPA 8330B
2,4-Dinitrotoluene	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
2,6-Dinitroltoluene	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
2-Amino-4,6-Dinitrotoluene	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
2-Nitrotoluene	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
3-Nitrotoluene	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
4-Amino-2,6-Dinitrotoluene	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
4-Nitrotoluene	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Nitrobenzene	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Nitroglycerin	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Octahydro-1,3,5,7-Tetrabitro-1,3,5,7-Tetrazocine (HMX)	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Pentaerythritoltetranitrate (PETN)	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Picric acid	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
RDX (Hexahydro-1,3,5-Trinitro-1,3,5-Triazine)	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Tetryl (Methyl 2,4,6-Trinitrophenylnitramine	----------------------	----------------------	EPA 8330A / 8330B / 8321A / 8321B	EPA 8330A / 8330B / 8321A / 8321B
Perfluorinated Hydrocarbons (PFCs) and Perfluorinated Sulfonates (PFSs)				
Perfluorobutanoic Acid	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluoropentanoic Acid	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorohexanoic Acid	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluoroheptanoic Acid	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorooctanoic Acid	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorononanoic Acid	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorodecanoic Acid	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluoroundecanoic Acid	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorododecanoic Acid	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorotridecanoic Acid	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorotetradecanoic Acid	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorobutane Sulfonate	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorohexane Sulfonate	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorooctane Sulfonate	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorodecane Sulfonate	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Perfluorooctane Sulfonamide	----------------------	SOP DV-LC-0012	SOP DV-LC-0012	SOP DV-LC-0012
Hazardous Waste Characteristics				
Conductivity	----------------------	----------------------	EPA 9050A	EPA 9050A
Corrosivity	----------------------	----------------------	EPA 9040B	9045C
Ignitibility	----------------------	EPA 1010/EPA 1010A	EPA 1010 / 1010A	EPA 1010 / 1010A
Paint Filter Liquids Test	----------------------	----------------------	EPA 9095A	EPA 9095A
Synthetic Precipitation Leaching Procedure (SPLP)	----------------------	----------------------	EPA 1312	EPA 1312

Parameter/Analyte	WY Storage Tank Program	Non-Potable Water	Solid Hazardous Waste (Water)	Solid Hazardous Waste (Solid)
Toxicity Characteristic Leaching Procedure	----------------------	----------------------	EPA 1311	EPA 1311
Organic Prep Methods				
Separatory Funnel Liquid-Liquid Extraction	----------------------	----------------------	EPA 3510C	-----------------------
Continuous Liquid-Liquid Extraction	----------------------	----------------------	EPA 3520C	-----------------------
Soxhlet Extraction	----------------------	----------------------	-----------------------	EPA 3540C
Microwave Extraction	----------------------	----------------------	-----------------------	EPA 3546
Ultrasonic Extraction	----------------------	----------------------	-----------------------	EPA 3550B
Ultrasonic Extraction	----------------------	----------------------	-----------------------	EPA 3550C
Waste Dilution	----------------------	----------------------	EPA 3580A	EPA 3580A
Solid Phase Extraction Volatiles Purge and trap Volatiles Purge and Trap for Soils	----------------------	----------------------	EPA 3535A EPA 5030B	EPA 5030B EPA 5035
Organic Cleanup Procedures				
Florisil Cleanup	----------------------	----------------------	EPA 3620B	EPA 3620B
Florisil Cleanup	----------------------	----------------------	EPA 3620C	EPA 3620C
Sulfur Cleanup	----------------------	----------------------	EPA 3660B	EPA 3660B
Sulfuric Acid/Permanganate Cleanup	----------------------	----------------------	EPA 3665A	EPA 3665A
Metals Digestion				
Acid Digestion Total Recoverable or Dissolved Metals	----------------------	----------------------	EPA 3005A	----------------------
Acid Digestion for Total Metals	----------------------	----------------------	EPA 3010A	----------------------
Acid Digestion for Total Metals	----------------------	----------------------	EPA 3020A	----------------------
Acid Digestion of Sediments, Sludges and Soils	----------------------	----------------------	----------------------	EPA 3050B

American Association for Laboratory Accreditation

Accredited DoD ELAP Laboratory

A2LA has accredited

TESTAMERICA DENVER

Arvada, CO

for technical competence in the field of

Environmental Testing

In recognition of the successful completion of the A2LA evaluation process that includes an assessment of the laboratory's compliance with ISO/IEC 17025:2005, the 2003 NELAC Chapter 5 Standard, and the requirements of the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in version 4.2 of the DoD Quality System Manual for Environmental Laboratories (QSM); accreditation is granted to this laboratory to perform recognized EPA methods as defined on the associated A2LA Environmental Scope of Accreditation. This accreditation demonstrates technical competence for this defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).

Presented this 5th day of November 2013.

President & CEO
For the Accreditation Council
Certificate Number 2907.01
Valid to October 31, 2015

For the tests to which this accreditation applies, please refer to the laboratory's Environmental Scope of Accreditation.