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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 30, 2004

**CERTIFIED MAIL #4397
RETURN RECEIPT REQUESTED**

Mr. Jerry S. Johnson
Assistant Area Manager
Department of Energy
Albuquerque Field Office
P.O. Box 30030
Amarillo, Texas 79120

Re: U.S. Department of Energy (DOE), Pantex Plant
TCEQ Solid Waste Registration No. 30459
TCEQ Hazardous Waste Permit No. HW-50284
EPA ID No. TX4890110527
Release characterization in soils - Final RCRA Facility Investigation Report (Soil Final Report) for Zone 12 at DOE Pantex Plant, Dated September 18, 2003 Located in Waste Management Groupings (WMGs) No. 5, 6/7, 8, 9, 10, Miscellaneous

Dear Mr. Johnson:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the Soil Final Report for Zone 12 Area entitled, "*Final RCRA Facility Investigation Report for Zone 12 at DOE Pantex Plant, Dated September 2003*". The soil investigation outlines the conclusions that have been established from the numerous phases of investigations that have been conducted for the above referenced Waste Management Groupings (WMGs) located within the Zone 12 industrialized area. The Soil Final Report summarizes soil investigations conducted at ten (10) Areas of Concern (AOCs), fifty-one (51) Solid Waste Management Units (SWMUs) and five (5) unassigned waste management units. These units/areas and their associated WMGs are identified in Enclosure 1 to this letter.

The TCEQ conditionally approves the release characterization of soils associated with the WMGs based on the conditions identified in Enclosure 2 to this letter. Also, as part of Enclosure 2, the TCEQ clarifies several key issues that were instrumental in approving the Soil Final Report.

The Environmental Protection Agency (EPA) is currently evaluating the Soil Final Report in accordance with the December 21, 1994 Memorandum of Agreement (MOA) between the Environmental Protection Agency

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ENCLOSURE 1

WASTE MANAGEMENT UNITS LOCATED IN ZONE 12

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WASTE MANAGEMENT UNITS

Enclosure 1 - Waste Management Units Located in Zone 12

Description	SWMU No.	Location
BUILDING 12-64 SULFURIC ACID SPILL	AOC 7c	WMG 5
DRAINAGE DITCHES 12-44 AND 12-81	SWMU 5/6	WMG 5
LANDFILL 5 (GROUP III)	SWMU 56	WMG 5
LANDFILL 6 (GROUP III)	SWMU 57	WMG 5
ORIGINAL SANITARY LANDFILL (GROUP II)	SWMU 68a	WMG 5
BUILDING 12-42 MISCELLANEOUS WASTE ACCUMULATION AREA	SWMU 100 *	WMG 5
BUILDING 12-81 BATTERY STORAGE AREA	SWMU 103	WMG 5
BUILDING 12-82 ASSEMBLY BAYS	SWMU 104 *	WMG 5
BUILDING 12-84 ASSEMBLY BAYS	SWMU 105 *	WMG 5
SUBSURFACE LEACH BEDS, BUILDING 12-44	SWMU 135	WMG 5
BUILDING 12-92	UST NO. 38 *	WMG 5
BUILDING 12-84a	UST NO. 39 *	WMG 5
PESTICIDE RINSE AREA, BUILDING 12-43	AOC 10a	WMG 6/7
FORMER COOLING TOWER IN ZONE 12	AOC 13	WMG 6/7
BUILDING 12-17 DRAINAGE DITCH	SWMU 1	WMG 6/7
BUILDING 12-43 DRAINAGE DITCH	SWMU 2	WMG 6/7
BUILDING 12-19 AND 12-73 DRAINAGE DITCH	SWMU 5/4	WMG 6/7
BUILDING 12-21 AND 12-24 DRAINAGE DITCH	SWMU 5/5	WMG 6/7
BUILDING 12-41 DRAINAGE DITCH	SWMU 5/7	WMG 6/7
ZONE 12 MAIN DRAINAGE DITCH	SWMU 5/12	WMG 6/7
LANDFILL 3 (GROUP III)	SWMU 54	WMG 6/7

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Description	SWMU No.	Location
LANDFILL NO. 4	SWMU 55	WMG 6/7
WASTE ACCUMULATION AREA, BUILDING 12-21	SWMU 96 *	WMG 6/7
WASTE ACCUMULATION AREA, BUILDING 12-34, SHED EAST OF 12-19	SWMU 97 *	WMG 6/7
WASTE ACCUMULATION AREA, BUILDING 12-41 SPRAY PAINT AREA	SWMU 99 *	WMG 6/7
HE PARTICULATE FILTERS, BUILDING 12-43 WASTEWATER TREATMENT UNIT	SWMU 119b*	WMG 6/7
BUILDING 12-43 ACTIVATED CARBON FILTERS	SWMU 120b*	WMG 6/7
BUILDING 12-43 CONE SETTLING TANK	SWMU 121*	WMG 6/7
EQUALIZATION BASIN, BLG 12-43 WASTEWATER TREATMENT UNIT	SWMU 122a*	WMG 6/7
BUILDING 12-24N / 12-43 VICINITY SOILS	SWMU 122b	WMG 6/7
BLG 12-43 CONCRETE SUMP WASTEWATER TREATMENT UNIT	SWMU 123	WMG 6/7
HE-CONTAMINATED CHARCOAL BOXES	SWMU 125 *	WMG 6/7
HE WASTE DUMPSTERS	SWMU 126 *	WMG 6/7
BUILDING 12-43 RED HE SLUDGE CONTAINERS	SWMU 129b*	WMG 6/7
BUILDING 12-41 PAINT SHOP	SWMU 137*	WMG 6/7
DRAINAGE DITCHES FROM BUILDINGS 12-68, 12-18, 12-9, AND 12-10	SWMU 5/3	WMG 8
MOCA WASTE ACCUMULATION AREA, BUILDING 12-16	SWMU 85*	WMG 8
WASTE ACCUMULATION AREA, BUILDING 12-9	SWMU 90 *	WMG 8
WASTE ACCUMULATION AREA, BUILDING 12-9 SOLVENT STORAGE SHED	SWMU 91 *	WMG 8
WASTE ACCUMULATION AREA, BUILDING 12-9 (OUTSIDE)	SWMU 92 *	WMG 8

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Description	SWMU No.	Location
WASTE ACCUMULATION AREA, RAMP 12-R-13 (OUTSIDE)	SWMU 94 *	WMG 8
WASTE ACCUMULATION AREA, BUILDING 12-18 (OUTSIDE)	SWMU 95 *	WMG 8
BUILDING 12-68 BATCH MASTER, NORTHEAST CORNER	SWMU 102 *	WMG 8
BUILDING 12-68 ANNEX, BATCH MASTER UNIT	SWMU 108*	WMG 8
OUTSIDE CONCRETE SUMP RELEASES FROM BUILDING 12-68	SWMU 109	WMG 8
BUILDING 12-68 ELECTROPLATING WASTE RETENTION BASIN	SWMU 110	WMG 8
CLASSIFIED WASTE INCINERATOR	SWMU 141*	WMG 8
ELECTRICAL EQUIPMENT BONE YARD, BUILDING 12-5	AOC 5	WMG 9
PESTICIDE RINSE AREAS BUILDING 12-51	AOC 10b	WMG 9
SOLVENT DISPOSAL PIT (BUILDING 12-5d PAINT SHOP AREA/SOLVENT PIT)	AOC 12	WMG 9
DRAINAGE DITCHES 12-51, 12-67, AND 12-110	SWMU 5/2	WMG 9
BUILDING 12-110 PAINT SHOP AREA	SWMU 93 *	WMG 9
BUILDING 12-111, PAINT SHOP SANDBLASTING	SWMU 138*	WMG 9
CAPACITOR BANK RUPTURE, ZONE 12	UNASSIGNED	WMG 9
BUILDING 12-35 (OLD GARAGE) GASOLINE LEAKS	AOC 6a *	WMG 10
DDT RELEASE AT BUILDING 12-35	AOC 15	WMG 10
BUILDINGS 12-5 AND 12-5b DRAINAGE DITCHES	SWMU 5/1	WMG 10
BUILDING 12-2 NORTH HALL (MEDICAL BUILDING)	SWMU 89 *	WMG 10

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Description	SWMU No.	Location
BUILDING 12-35 PORTABLE WASTE OIL STORAGE TANKS	SWMU 131*	WMG 10
UST EAST OF BUILDING 12-5b	UST No. 7 *	WMG 10
12-5b CONCRETE SUMP	UNASSIGNED	WMG 10
IGLOO-4-28, ELECTRICAL SUBSTATION	AOC 2*	MISCELLANEOUS
BUILDING 12-4 SULFURIC ACID SPILLS	AOC 7b	MISCELLANEOUS
BUILDING 12-38 SOLVENT STORAGE FOR BUILDING 12-59 INACTIVE SUBSURFACE LEACHING BED	SWMU 98 *	MISCELLANEOUS
WASTE ACCUMULATION AREA, BUILDING 12-59	SWMU 101 *	MISCELLANEOUS
SUBSURFACE LEACHING BEDS (BUILDING 12-59)	SWMU 136	MISCELLANEOUS
12-17E UNDERGROUND STORAGE TANK	UST No. 9 *	MISCELLANEOUS
12-1LAUNDRY SUMP	UNASSIGNED	MISCELLANEOUS

* This waste management unit is being addressed in a different investigation report submitted to the TCEQ and is not part of the Zone 12 Soil RFI Report. Therefore the soil release determination and closure decision for this unit is not addressed by this letter. The SWMU is identified in this table because it is located within the meets and bounds of the WMG designated.

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ENCLOSURE 2
CONDITIONS OF APPROVAL AND CLARIFICATION

Enclosure 2 - Conditions of Approval and Clarification

I. Conditions of Approval

- A. The TCEQ agrees with the recommendations in the Soils Final Report that the investigation data for Waste Management Groupings (WMGs) 6/7, 10 and SWMU 136 should seek closure in accordance with the Risk Reduction Standard (RRS) No. 3 criteria. A RRS No. 3 closure approval will be issued to Pantex once a completed groundwater investigation and ecological evaluation is submitted which addresses the closure criteria established by rule.
- B. The TCEQ does not concur with the recommendation in the Soils Final Report that WMGs 5 and 9 meet the RRS No. 2 closure criteria. Based on the release characterization and the information presented in the "Clarification" portion of this attachment, the TCEQ concurs that the extent of environmental impacts have been determined to establish constituents of potential concern (COPCs) and any remedy necessary to abate the contamination in soils. Therefore, the TCEQ approves WMGs 5 and 9 for a RRS No. 3 for soils. A RRS No. 3 closure approval will be issued to Pantex for WMGs 5 and 9 once a completed groundwater investigation and ecological evaluation (if applicable) is submitted which addresses the closure criteria established by rule.
- C. The TCEQ approves the following Waste Management Groupings or Miscellaneous SWMUs for a RRS No. 2 Closure: Waste Management Grouping 8; Miscellaneous-AOC 7b; and Miscellaneous - 12-1 Laundry Sump. Refer to the "Clarification" portion of the attachment below for discussion regarding these WMGs / SWMUs.
- D. The "release characterization" is limited to the WMGs and associated miscellaneous units as presented in the Soil Final Report and further defined in Enclosure 1 to this letter. Conditional approvals for WMGs do not extend to the SWMUs listed in Enclosure 1 to this letter that are identified with a single asterisk in the table. The release characterization and closure decision is to be addressed in a different closure document submitted to the TCEQ.
- E. The investigation data as represented in the Soil Final Report suggest that the impacts to soils are from the ground surface to the fine grained zone (FGZ) at approximately 270 feet below ground surface. However there remains a degree of uncertainty associated with the soils below the FGZ (below approximately 290 feet bgs) due to the limited data collected during the investigations. The TCEQ concurs that the sources and extent of major environmental impacts have been identified in the soils associated with the Zone 12 Industrialized Area. However, the TCEQ does not concur with the Soil Final Report that an investigation has been conducted below the FGZ which fulfills the RFI responsibilities as required by the Permit/Compliance Plan. The Soil Final Report identifies only four soil borings within the Zone 12 Industrialized Area that have evaluated the lower portion of the FGZ (290 to 300 feet bgs) for environmental impacts; and only one Ogallala Aquifer monitor well (PTX06-1016) located west of WMG 8 to evaluate any cross-media

contamination to the Ogallala. Therefore, the Soil Final Report's conclusions that no environmental impacts exists below the FGZ are inconclusive based upon the limited data provided in the Soil Final Report. As a condition of approval to manage the high level of uncertainty associated with any environmental impacts below the FGZ, Pantex must initiate long-term monitoring (LTM) for the Ogallala Aquifer in the vicinity of Zone 12 to supplement the RFI data. The LTM will be part of the final Corrective Action Program authorized by the Permit/Compliance Plan and must be adequate to detect releases to the Ogallala Aquifer that originate from the WMGs in the Zone 12 Industrialized Area.

- F. Source areas (*SWMUs and impacted environmental media*) established by the Soil RFI Report will be carried forward for further evaluation in the Groundwater RFI to better understand the exposure pathways associated with the Zone 12 Industrialized Area. As per discussions between TCEQ, Pantex and EPA on July 17, 2003, Pantex will develop soil source maps that will be included in the Groundwater RFI Report to allow map overlays that will expedite the technical reviews and identify those areas of cross-media contamination.

II. Clarification

- A. Zone 12 Industrialized Area - In general, soils located within the Zone 12 Industrialized Area are impacted from releases associated with all six Waste Management Groupings (WMGs 5, 6/7, 8, 9, 10, Miscellaneous). Based on the Soil Final Report, the primary exposure pathways/mechanism are runoff, leaching and gaseous diffusion (*for Volatile Organic Compounds*). Data suggests that all WMGs have run-off and leaching as a primary exposure pathway, but only WMGs 6/7, 10 and Miscellaneous-SWMU 136 have gaseous diffusion as a primary transport mechanism for releases to soils. The Final Soil RFI data suggests that environmental impacts from all six WMGs (5, 6/7, 8, 9, 10 and Miscellaneous-SWMU 136) in the Zone 12 Industrialized Area have COPCs that exceed RRS No. 2 action levels. The Soil Final Report's investigation data indicates a general decrease in COPC concentrations from the shallow to the intermediate soils (from 70 to approximately 260 feet bgs), but impacts observed in the Perched Zone associated with Zone 12 Industrialized Area establish that RRS No. 2 action levels are exceeded for several Volatile Organic Compounds (VOCs), metals and High Explosives (HEs).
- B. Waste Management Grouping (WMG) 5 - Investigation data to determine releases from WMG 5 is primarily located in the shallow soils (to 75 feet bgs). The Soil Final Report identifies two soil borings drilled below 75 feet to evaluate releases to intermediate soils (approximately 75 feet to 300 feet). In general, impacts to soil in the WMG is limited to the top 30 feet. The Soil Final Report data indicates that approximately 400 exceedances of RRS No. 1 action levels were detected. The highest frequencies of detections include metals and Semi-Volatile Organic Compounds (SVOCs) in the data set. The TCEQ does not support a RRS No. 2 closure for WMG 5 because:
- 1) Data did not verify that wastes managed in SWMUs (primarily landfills) have been removed or decontaminated to RRS No. 2 action levels as required by the RRS rule;

- 2) Pantex failed to demonstrate that impacts to soils are protective of groundwater (Media Specific Concentration, MSC-GWP) by comparing each COPC's highest measured value in the closure data set to the Synthetic Precipitation Leaching Procedure (SPLP);
 - 3) The soil closure data set for WMG 5 establishes that "hot spots" of COPCs were detected in the top 30 feet of soil. Pantex failed to demonstrate that the elevated concentrations of COPCs are protective of the soil to air and soil to groundwater pathways; and,
 - 4) Limited investigation data associated with SWMU 103 and SWMU 135 does not establish proper characterization to obtain a RRS No. 2 closure.
- C. Waste Management Grouping (WMG) 6/7 - In general, soils are contaminated from the surface to a depths of approximately 275 feet bgs. The soils are impacted by High Explosives (HE), metals, pesticides, SVOCs, VOCs (primarily soil gas). Within the WMG, SWMU 122b is the primary contributor of soil and Perched Zone contamination associated with WMG 6/7. The TCEQ supports the RRS No. 3 closure decision as proposed in the Soil Final Report for WMG 6/7.
- D. Waste Management Grouping (WMG) 8 - Investigation data to determine releases from WMG 8 is primarily located in the shallow soils (to approximately 75 feet bgs). The Soils Final Report identifies three soil borings drilled below 75 feet to evaluate releases to intermediate soils (drilled between 75 feet to 300 feet). In general, the Soil Final Report establishes impacts to soil in the WMG to a depth of 50 feet bgs. The highest frequencies of detections include metals in the data set. The TCEQ supports a RRS No. 2 closure for WMG 8 because Pantex demonstrated that impacts to soils/sediment beneath the primary ditch within WMG 8 (i.e., SWMU 5/3) is protective of groundwater (Media Specific Concentration, MSC-GWP) by comparing each COPC's highest measured value in the closure data set to the Synthetic Precipitation Leaching Procedure (SPLP).
- E. Waste Management Grouping (WMG) 9 - Investigation data to determine releases from WMG 9 is primarily located in soils above 75 feet bgs. The Soils Final Report identifies no soil borings drilled below 75 feet to evaluate releases to intermediate soils (approximately 75 feet to 300 feet). In general, the Soil Final Report establishes impacts to soil in the WMG from the surface to approximately 75 feet that exceed RRS No. 2 action levels for herbicides, metals, PCBs, Pesticides and SVOCs. The TCEQ does not support a RRS No. 2 closure for WMG 9 because:
- 1) Pantex failed to demonstrate that impacts to soils are protective of groundwater (Media Specific Concentration, MSC-GWP) by comparing each COPC's highest measured value in the closure data set to the Synthetic Precipitation Leaching Procedure (SPLP) to verify the environmental impact is protective of groundwater;
 - 2) The soil closure data set for WMG 9 establishes that "hot spots" of COPCs were detected in the shallow soils. Pantex failed to demonstrate that the elevated

concentrations are protective of the soil to air and soil to groundwater pathways; and,

- 3) The investigation data associated with AOC 10b (pesticide data); AOC 12 (below 50 feet), and SWMU 5/2 (vertical extent) does not properly characterization the extent of the releases to obtain a RRS No. 2 closure.

F. Waste Management Grouping (WMG) 10 - In general, the soils are impacted from surface to the Perched Zone (approximately 260 feet bgs). Soils from 0 to 70 feet are impacted by metals, PCBs, Pesticides, and SVOCs. Soils below 70 feet bgs are impacted by metal concentrations (primarily mercury) below the RRS No. 2 action levels. Soil gas is the primary transport mechanism of VOCs to depths of 300 feet bgs and has impacted the Perched Zone. Investigation data establishes that impacts to the Perched Zone include metals, SVOCs, VOCs that exceed the RRS No. 2 action levels.

G. Miscellaneous WMGs - Individual Solid Waste Management Units -

1. SWMU 136 - In general, the soils are impacted from surface to the Perched Zone (approximately 260 feet bgs). Soils to a depth of 70 feet are impacted by metals, High Explosives and VOCs. Intermediate soils (below 70 feet) are impacted by VOCs (Soil Gas) at concentrations that exceed RRS No. 2 action levels. Soil gas is the primary transport mechanism of VOCs in soils below 70 feet bgs. The Perched Zone is impacted by High Explosives, metals, SVOCs and VOCs.
2. AOC 7b - Sulfuric acid spill. No identified COPCs associated with release.
3. 12-1 Laundry Sump - Environmental impacts of High Explosive contamination detected to approximately 15 feet bgs. Investigation data indicates establishes that concentrations of High Explosives do not exceed RRS No. 2 action levels.

H. An Ecological Risk Assessment was submitted as Appendix A to the Soils Final Report, it was not reviewed as part of this extent determination. The ecological risk associated with the Zone 12 Area will be addressed by Pantex in a separate report and will be reviewed by the TCEQ at that time.

I. Releases from Zone 12 Area that "run-off" to plays are not addressed in this Soils Final Report. These releases from the Zone 12 Area SWMUs will be addressed with the investigations and risk assessments associated with the Playas and Ditches Report.

J. The Soil Final Report does not address the extent of radionuclide releases associated with the Zone 12 Industrialized Area. Any radionuclide releases associated with the WMGs will be addressed by Pantex in a separate investigation report

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ENCLOSURE 3

**CONSTITUENTS OF POTENTIAL CONCERN (COPCs) IDENTIFIED IN SOILS
FOR WMGs LOCATED IN ZONE 12**

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ENCLOSURE 3

CONSTITUENTS OF POTENTIAL CONCERN (COPCs) IDENTIFIED IN SOILS FOR WMGs LOCATED IN ZONE 12*

1. **VOLATILE ORGANIC COMPOUNDS (VOC)**

Soils: ACE, BZ, BZME, DCBE14T, DCE11, EBZ, ISOPROH, MEK, MTLNCL, NN, STY, TCE, XYLENES

Soil Gas: ACE, BZ, BZME, CDS, CTCL, DCA12, DCBZ14, DCE11, DCE12C, EBZ, FC11, FC113, FC12, MEK, MTLNCL, PCE, STY, TCA111, TCE, TCLME, TMB124, XYLMP, XYLO

Surface water/Sediment: ACRN

Surface Soils in Ditches: ACE, XYLENES

2. **SEMI-VOLATILE ORGANIC COMPOUNDS (SVOC)**

Soils: ACNP, ACNPY, ANTH, BBZP, BIS2EHP, BZAA, BZAP, BZBF, BZGHIP, BZKF, CARBAZOLE, CHRYSENE, CYHEKET, DBAHA, DBF, DNBP, DPHY12, FL, FLA, INP123, MTNPH2, NAPH, PHAN, PHENOL, PYR

Surface water/Sediment: BIS2EHP

Surface Soils in Ditches: ACNP, ANTH, BIS2EHP, BZAA, BZAP, BZBF, BZGHIP, BZKF, CHRYSENE, CYHEKET, DBAHA, DNBP, FL, FLA, INP123, NAPH, PHAN, PYR

3. **METALS**

Soils: AG, AL, AS, B, BA, BE, CD, CN, CR, CR-6, CU, HG, MN, MO, NI, PB, SB, SE, SN, SR, U, V, ZN

Surface water/Sediment: AL, CR, CR-6, CU, MN, NI, SE, ZN

Surface Soils in Ditches: AG, BA, CD, CR, CU, HG, PB, SB, SN, SR, U, V, ZN

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4. **HIGH EXPLOSIVES (HE)**

Soils: DNT24, DNT2A, DNT4A, HMX, HMX, NT3, RDX, TATB, TETRYL, TNB135, TNT

Surface water/Sediment: RDX

Surface Soils in Ditches: HMX, RD, TNT

5. **HERBICIDES / PESTICIDES**

Soils: 24D, DINOSEB, SILVEX, ALDRIN, BHCGAMMA, CHLORDANE, DDD, DDE, DDT, DIELDRIN, ENDOSULFANS, ENDRIN, ENDRINALD, HEPTACHLOR, HEPT-EPOX

Surface Soils in Ditches: ALDRIN, BHCGAMMA, DDD, DDE, DDT, DIELDRIN, ENDOSULFANS, ENDRIN, ENDRINALD, HEPT-EPOX

6. **PCBs**

Soils: PCB1254, PCB1260

Surface Soils in Ditches: PCB1254

7. **RADIONUCLIDE ****

Soils: ALPHA

Surface water/Sediment: ALPHADISS, ALPHASUSP, BETASUSP, BETADISS, PU-239/240, RA-226, RA-228

* The key to COPC abbreviations are found in the Soil Final Report and included as an addendum to this enclosure. The COPCs identified above are the constituents that were detected in environmental media associated with releases from SWMUs in Zone 12. At a minimum, the investigation(s) of exposure pathway (e.g., groundwater) must evaluate all identified COPCs to establish the extent of a release and the risk associated with the contamination.

** Final list of radionuclide COPCs for the Zone 12 Area will be determined from the Radionuclide portion of the environmental investigation.

List of Acronyms and Abbreviations

3-D	three-dimensional
AEC	Atomic Energy Commission
AL	action level
AMSL	above mean sea level
ANL	Argonne National Laboratory
ANOVA	Analysis of Variance
AOC	Area of Concern
AR	Addendum Report
ASC	accelerated soil cleanup
bgs	below ground surface
BMI	Battelle Memorial Institute
BPX	Battelle-Pantex
BRA	Baseline Risk Assessment
BWXT	BWXT Pantex, LLC
CD	compact disk
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
CMS	Corrective Measures Study
cm/s	centimeters per second
COPC	contaminant of potential concern
CST	Cone Settling Tank
DOC	U.S. Department of Commerce
DQO	Data Quality Objective
E2M	Engineering-Environmental Management, Inc.
ECC	Environmental Chemical Corporation
E&E	Ecology & Environment
EID	Environmental Information Document
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
ET	Equalization Tank
EVS	Environmental Visualization Software
FCT	Former Cooling Tower
FDSSP	Final Drilling, Sampling, and Survey Plan
FGZ	fine-grained zone
FID	flame ionization detector
FLUTe	Flexible Liner Underground Technologies ®
FM	Farm-to-Market
FTA	Fire Training Area
FY	fiscal year
GAT	Gross Alpha Total
GBT	Gross Beta Total
GFOP	Generic Field Operations Plan
GIS	Geographical Information System
GPS	Global Positioning System

List of Acronyms and Abbreviations

GW-Ind	Groundwater-Industrial
GWP	Groundwater Protection
HE	high explosives
HE/Rad	High Explosive/Radiation Release Sites
HPPRS	High Priority Potential Release Site
ICM	Interim Corrective Measure
IRPIMS	Installation Restoration Programs Information Management System
IT	International Technology Corporation
ITS	Intertek Testing Services, Inc.
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MCL	maximum contaminant levels
MCS/R	Miscellaneous Chemical Spills/Releases
MDL	method detection limit
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MHC	Mason & Hanger Corporation
MK	Morrison Knudsen
mph	miles per hour
MS	matrix spike
MSC	media-specific concentration
MSD	matrix spike duplicate
MSGP	Multi-Sector General Permit
NA	not applicable
ND	non-detect
NEPA	National Environmental Policy Act
NFA	No Further Action
NNSA	National Nuclear Security Administration
OSTP	Old Sewage Treatment Plant
PAH	polyaromatic hydrocarbons
PARCC	precision, accuracy, representativeness, comparability, and completeness
PBX	plastic-bonded explosive
PCB	polychlorinated biphenyl
pCi/g	picoCuries per gram
pCi/L	picoCuries per liter
ppbv	parts per billion per unit volume
ppm	parts per million
ppmv	parts per million per unit volume
PQL	practical quantitation limit
PRG	Preliminary Remediation Goals
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment (RFA)

List of Acronyms and Abbreviations

RFI	RCRA Facility Investigation
RFIR	RCRA Facility Investigation Report
RPD	relative percent difference
RRRG	Risk Reduction Rule Guidance
RRRGD	Risk Reduction Rule Guidance Document
RRS	Risk Reduction Standard
SAI	soil-to-air ingestion
SPLP	synthetic precipitate leaching procedure
STL	Severn Trent Laboratory
Stoller	The S.M. Stoller Corporation
SVOC	semi-volatile organic compound
SWMU	solid waste management unit
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TCLP	toxicity characteristic leaching procedure
TNRCC	Texas Natural Resource Conservation Commission
UCL	upper confidence limit
ug/kg	micrograms per kilogram
ug/L	micrograms per liter
USACE	U.S. Army Corps of Engineers
USCS	Unified Soil Classification System
USDOE	U.S. Department of Energy
UST	underground storage tank
UTL	Upper Tolerance Limit
VOC	Volatile organic compound
VSI	Visual Site Inspection
WMA	Waste Management Area
WMG	Waste Management Group
WRS	Wilcoxon Rank Sum

Installation Restoration Program Information Management System (IRPIMS) Codes

IRPIMS**CLASSIFICATION****IUPAC NAME**

245T	2,4,5-T (TRICHLOROPHENOXYACETIC ACID)
24D	2,4-D (DICHLOROPHENOXYACETIC ACID)
24DB	2,4 DB
24DCPHYAA	2,4-DICHLOROPHENYLACETIC ACID
2A4NT	2-AMINO-4-NITROTOLUENE
4A2NT	4-AMINO-2-NITROTOLUENE
4NQO	4-NITROQUINOLINE-n-OXIDE
AC	ACETIC ACID
ACAMFL2	2-ACETYLAMINOFLUORENE
ACCN	ACETONITRILE
ACE	ACETONE
ACETHYDE	ACETALDEHYDE
ACNP	ACENAPHTHENE
ACNPY	ACENAPHTHYLENE
ACPHN	ACETOPHENONE
ACRAMD	ACRYLAMIDE
ACRL	ACROLEIN
ACRN	ACRYLONITRILE
ACTINOLITE	ACTINOLITE
AFF	ACIFLUORFEN
AG	SILVER
AL	ALUMINUM
ALACL	ALACHLOR
ALDICARB	ALDICARB (SULFIDE, SULFOXIDE, AND SULFONE)
ALDRIN	ALDRIN
ALDSULF	ALDICARB SULFONE
ALDSULFOX	ALDICARB SULFOXIDE
ALLYLCH	ALLYL CHLORIDE
ALPHA	GROSS ALPHA (as measured in the field)
ALPHADISS	GROSS ALPHA DISSOLVED
ALPHASUSP	GROSS ALPHA SUSPENDED
AM-241	AMERICIUM-241
AMETRYN	AMETRYN
AMINOBPH4	4-AMINOBIIPHENYL (4-BIPHENYLAMINE)
AMINONAPH1	1-NAPHTHYLAMINE
AMINONAPH2	NAPHTHYLAMINE

IRPIMS

<u>CLASSIFICATION</u>	<u>IUPAC NAME</u>
AMMONIA	AMMONIA
AMPER	AMMONIUM PERCHLORATE
AN-910	9,10-ANTHRACENEDIONE
ANILINE	ANILINE (PHENYLAMINE, AMINO BENZENE)
ANLNAM2	o-PHENYLENEDIAMINE
ANLNAM3	m-PHENYLENEDIAMINE
ANLNAM4	p-PHENYLENEDIAMINE
ANTH	ANTHRACENE
ANTHOPHYL	ANTHOPHYLLITE
ARAMITE	ARAMITE
AS	ARSENIC
ASPON	o,o,o-TETRA-n-PROPYL DITHIOPYROPHOSPHATE
ASTMD3266	ASTMD3266 (HYDROGEN FLUORIDE)
ATRATON	ATRATON
ATRAZINE	ATRAZINE
AU	GOLD
AZIPM	AZINPHOS, METHYL (GUTHION)
AZOBENZENE	AZOBENZENE
B	BORON
BA	BARIUM
BARBAN	4-CHLORO-2-BUTYNYL m-CHLOROCARBANILATE
BBZP	BUTYLBENZYLPHTHALATE
BC	bis-CYCLOHEXENE
BDCME	BROMODICHLOROMETHANE
BE	BERYLLIUM
BE2	2-BUTOXY ETHANOL
BECEM	bis(2-CHLOROETHOXY) METHANE
BENT	BENTAZON
BETA	BETA, GROSS
BETACS	BETA, GROSS (AS CS-137)
BETADISS	GROSS BETA DISSOLVED
BETASR	BETA, GROSS (AS SR-90)
BETASUSP	GROSS BETA SUSPENDED
BFB	BROMOFLOUROBENZENE
BFU23	2,3-BENZOFURAN
BHCALPHA	ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)
BHCBETA	BETA BHC (BETA HEXACHLOROCYCLOHEXANE)
BHCDELTA	DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)
BHCGAMMA	GAMMA BHC (LINDANE)
BI	BISMUTH
BIPHENYL	BIPHENYL (DIPHENYL)
BIS2CEE	bis(2-CHLOROETHYL) ETHER (2-CHLOROETHYL ETHER)
BIS2CIE	bis(2-CHLOROISOPROPYL) ETHER
BIS2EHP	bis(2-ETHYLHEXYL) PHTHALATE

IRPIMS**CLASSIFICATION****IUPAC NAME**

BMCHX	BROMOCYCLOHEXANE
BPPE4	4-BROMOPHENYL PHENYL ETHER
BR	BROMIDE
BR1CL2EA	1-BROMO-2-CHLOROETHANE
BR4FBZ	1-BROMO-4-FLUOROBENZENE (4-BROMOFLUOROBENZENE)
BRBZ	BROMOBENZENE
BRCLME	BROMOCHLOROMETHANE
BRME	BROMOMETHANE
BTACET	n-BUTYL ACETATE
BTACR	n-BUTYL ACRYLATE
BTBZN	n-BUTYLBENZENE
BTBZS	sec-BUTYLBENZENE
BTBZT	tert-BUTYLBENZENE
BTCL	n-BUTYL CHLORIDE
BDI13	1,3-BUTADIENE
BTE	n-BUTYL ETHER
BTEX	BENZENE, TOLUENE, ETHENE, XYLENES
BTHYDE	n-BUTYRALDEHYDE
BTOH	n-BUTANOL
BTOXETACET	2-(2-BUTOXY)ETHOXYETHYL ACETATE
BU2OH	sec-BUTYL ALCOHOL
BUTACHLOR	BUTACHLOR
BZ	BENZENE
BZAA	BENZO(a)ANTHRACENE
BZACID	BENZOIC ACID
BZAP	BENZO(a)PYRENE
BZBF	BENZO(b)FLUORANTHENE
BZBKF	BENZO (b,k) FLUORANTHENE
BZD	BENZIDINE
BZEP	BENZO[e]PYRENE
BZGHIP	BENZO(g,h,i)PERYLENE
BZKF	BENZO(k)FLUORANTHENE
BZLAL	BENZYL ALCOHOL
BZLCL	BENZYL CHLORIDE
BZLD	BENZALDEHYDE
BZLDCL	BENZAL CHLORIDE
BZME	TOLUENE
BZMEDI	TOLUENE DIISOCYANATE
BZOTCL	BENZOTRICHLORIDE
BZQL	BENZOQUINOLINE
C10N	n-DECANE
C11N	n-UNDECANE
C12N	n-DODECANE
C2M5PH	2-CHLORO-5-METHYLPHENOL

IRPIMS**CLASSIFICATION****IUPAC NAME**

C4BZ1234	1,2,3,4-TETRACHLOROBENZENE
C4BZ1235	1,2,3,5-TETRACHLOROBENZENE
C4BZ1245	1,2,4,5-TETRACHLOROBENZENE
C4M2PH	4-CHLORO-2-METHYLPHENOL
C4M3PH	4-CHLORO-3-METHYLPHENOL
C5N	n-PENTANE
C6N	n-HEXANE
C7N	n-HEPTANE
C8N	n-OCTANE
C9N	n-NONANE
CA	CALCIUM
CAPTAN	CAPTAN
CARBAZOLE	CARBAZOLE
CARBOPHENOT	CARBOPHENOTHION (TRITHION)
CCH	CHLOROCYCLOHEXANE
CCHL	CHLOROCYCLOHEXANOL
CD	CADMIUM
CDS	CARBON DISULFIDE
CE	CERIUM
CE-141	CERIUM-141
CEVETH	2-CHLOROETHYL VINYL ETHER
CH4	METHANE
CHD12	1,2-CYCLOHEXANEDIOL
CHEXANEME	METHYLCYCLOHEXANE
CHLAM	CHLORAMBEN
CHLORDANE	TECHNICAL CHLORDANE
CHLORDANEA	ALPHA-CHLORDANE
CHLORDANEB	BETA-CHLORDANE
CHLORDANEG	GAMMA-CHLORDANE
CHLORDANET	TOTAL CHLORDANE
CHLOROBIPH	2-CHLOROBIPHENYL
CHLOROPRENE	2-CHLORO-1,3-BUTADIENE
CHLOROXYBIS	1-CHLOROPROPANE 2,2'-OXYBIS-
CHLORPROPHA	ISOPROPYL m-CHLOROCARBANILATE
CHLRL	CHLORAL
CHRYSENE	CHRYSENE
CHRYSO	CHRYSOTILE
CL	CHLORIDE (AS CL)
CL10BZ2	DECACHLOROBIPHENYL
CL2ETOH	ETHYLENE CHLOROXYDRIN
CL3NATE	TRICHLORONATE
CLACTH	CHLOROACETALDEHYDE
CLAE	CHLOROALKYL ETHERS
CLANIL2	2-CHLOROANILINE

IRPIMS**CLASSIFICATION****IUPAC NAME**

CLANIL4	4-CHLOROANILINE
CLBZ	CHLOROBENZENE
CLBZD5	CHLOROBENZENE-d5
CLBZLATE	CHLOROBENZILATE
CLBZME	CHLOROTOLUENE
CLBZME2	2-CHLOROTOLUENE
CLBZME3	3-CHLOROTOLUENE
CLBZME4	4-CHLOROTOLUENE
CLBZS	CHLORINATED BENZENES
CLE	CHLOROETHYLENE
CLEA	CHLOROETHANE
CLHX1	1-CHLOROHEXANE
CLME	CHLOROMETHANE
CLMME	CHLOROMETHYL METHYL ETHER
CLNAPHS	CHLORINATED NAPHTHALENES
CLNPH1	1-CHLORONAPHTHALENE
CLPE3	ALLYL CHLORIDE (3-CHLOROPROPENE)
CLPH2	2-CHLOROPHENOL
CLPH2D4	2-CHLOROPHENOL-d4
CLPH3	3-CHLOROPHENOL
CLPH4	4-CHLOROPHENOL
CLPYRIFOS	CHLORPYRIFOS
CMETHB	bis-CHLOROMETHYLETHER
CN	CYANIDE
CNA	CYANIDE, AMENABLE TO CHLORINATION
CNPH2	2-CHLORONAPHTHALENE
CO	COBALT
CO-57	COBALT-57
CO-58	COBALT-58
CO-60	COBALT-60
CPENTANEME	METHYLCYCLOPENTANE
CPHOSPH	CYCLOPHOSPHAMIDE
CPPE4	4-CHLOROPHENYL PHENYL ETHER
CPTAN	CYCLOPENTAPHENANTHRENE
CR	CHROMIUM, TOTAL
CR-3	CHROMIUM III
CR-51	CHROMIUM-51
CR-6	CHROMIUM, HEXAVALENT
CRBFN	CARBOFURAN
CRESOL	o-CRESOL
CROCID	CROCIDOLITE
CROTHYDE	CROTONALDEHYDE
CS	CESIUM
CS-134G	CESIUM-134 BY GAMMA

IRPIMS**CLASSIFICATION****IUPAC NAME**

CS-137	CESIUM-137
CS-137G	CESIUM-137 BY GAMMA
CTCL	CARBON TETRACHLORIDE
CU	COPPER
CYHEKET	CYCLOHEXANONE
CYHEOH	CYCLOHEXANOL
CYHEX2DNP46	2-CYCLOHEXYL-4,6-DINITROPHENOL
CYHEXANE	CYCLOHEXANE
CYHEXENE	CYCLOHEXENE
CYMP	p-CYMENE (4-ISOPROPYLTOLUENE)
D11M3N	n-(1,1-DIMETHYLETHYL)-3-METHYLBENZAMIDE
DALAPON	DALAPON
DBAHA	DIBENZ(a,h)ANTHRACENE
DBAJACR	DIBENZ(a,j)ACRIDINE
DBCME	DIBROMOCHLOROMETHANE
DBCP	1,2-DIBROMO-3-CHLOROPROPANE
DBF	DIBENZOFURAN
DBFM	DIBROMOFLUOROMETHANE
DBMA	DIBROMOMETHANE
DBT	DIBENZOTHIOPHENE (SYNFUEL
DBUTYLC	DIBUTYLCHLORENDATE
DBZD33	3,3'-DICHLOROBENZIDINE
DCA	DICHLOROETHANES
DCA11	1,1-DICHLOROETHANE
DCA12	1,2-DICHLOROETHANE
DCA12TOT	TOTAL 1,2-DICHLOROETHANE
DCAA	DICHLOROACETIC ACID
DCBE14C	cis-1,4-DICHLORO-2-BUTENE
DCBE14T	trans-1,4-DICHLORO-2-BUTENE
DCBETOT	TOTAL 1,4-DICHLORO-2-BUTENE
DCBTA14	1,4-DICHLOROBUTANE
DCBZ12	1,2-DICHLOROBENZENE
DCBZ12D4	1,2-DICHLOROBENZENE-d4
DCBZ13	1,3-DICHLOROBENZENE
DCBZ14	1,4-DICHLOROBENZENE
DCBZ14D4	1,4-DICHLOROBENZENE-d4
DCBZA35	3,5-DICHLOROBENZOIC ACID
DCE11	1,1-DICHLOROETHENE
DCE11T	trans-1,1-DICHLOROETHENE
DCE12	1,2-DICHLOROETHENE
DCE12C	cis-1,2-DICHLOROETHENE
DCE12T	trans-1,2-DICHLOROETHENE
DCE12TOT	TOTAL 1,2-DICHLOROETHENE
DCP	DICHLOROPROPYLENES

IRPIMS**CLASSIFICATION****IUPAC NAME**

DCP11	1,1-DICHLOROPROPENE
DCP12	1,2-DICHLOROPROPENE
DCP13	1,3-DICHLOROPROPYLENE (1,3-DICHLOROPROPENE)
DCP13C	cis-1,3-DICHLOROPROPENE
DCP13T	trans-1,3-DICHLOROPROPENE
DCP23	2,3-DICHLOROPHENOL
DCP24	2,4-DICHLOROPHENOL
DCP25	2,5-DICHLOROPHENOL
DCP26	2,6-DICHLOROPHENOL
DCP34	3,4-DICHLOROPHENOL
DCPA	DICHLOROPROPANES
DCPA12	1,2-DICHLOROPROPANE
DCPA13	1,3-DICHLOROPROPANE
DCPA22	2,2-DICHLOROPROPANE
DCPROP	DICHLOROPROP
DCTC	DIMETHYL-2,3,5,6-TETRACHLORO-TEREPHTHALATE
DD1234678C13	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN-C13
DD123678C13	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN-C13
DD12378C13	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN-C13
DDD	4,4-DDD (1,1-bis(CHLOROPHENYL)-2,2-DICHLOROETHANE)
DDD24	o,p'-DDD
DDE	4,4-DDE (1,1-bis(CHLOROPHENYL)-2,2-DICHLOROETHENE)
DDE24	o,p'-DDE
DDT	4,4-DDT (1,1-bis(CHLOROPHENYL)-2,2,2-TRICHLOROETHANE)
DDT24	o,p'-DDT
DDTS	DDT TOTAL
DEC	DECANAL
DECB	B-DECANAL
DECOH	n-DECYL ALCOHOL
DEMETON	DEMETON
DEMETONO	DEMETON-O
DEMETONS	DEMETON-S
DEN	DENSITY
DEPH	DIETHYL PHTHALATE
DEUTERIUM	DEUTERIUM
DFBZ14	1,4-DIFLUOROBENZENE
DIACOH	DIACETONE ALCOHOL
DIALATE	DIALATE
DIAZ	DIAZINON
DICAMBA	DICAMBA
DICHBIPHEN	2,3-DICHLOROBIPHENYL
DICHLORAN	DICHLORAN
DICHLORVOS	DICHLORVOS
DICOFOL	DICOFOL

IRPIMS**CLASSIFICATION****IUPAC NAME**

DIELDRIN	DIELDRIN
DIETBZ	DIETHYL BENZENE (MIXED ISOMERS)
DIISOBTKET	DIISOBUTYL KETONE
DIISOBTOL	DIISOBUTYL CARBINOL
DIMETHAT	DIMETHOATE
DINOSEB	DINOSEB
DIOXANE14	1,4-DIOXANE (p-DIOXANE)
DIOXOLANE	DIOXOLANE
DIQUAT	DIQUAT
DISUL	DISULFOTON
DIURON	3-(3,4-DICHLOROPHENYL)-1,1-DIMETHYLUREA
DM13NBZ2	1,3-DIMETHYL-2-NITROBENZENE (SURROGATE)
DMBZA712	7,12-DIMETHYLBENZ(a)ANTHRACENE
DMBZD33	3,3'-DIMETHYLBENZIDINE
DMF	N,N-DIMETHYLFORMAMIDE
DMOBZD33	3,3'-DIMETHOXYBENZIDINE
DMP24	2,4-DIMETHYLPHENOL
DMPH	DIMETHYL PHTHALATE
DMSO	DIMETHYL SULFOXIDE
DN46M	4,6-DINITRO-2-METHYLPHENOL
DNA35	3,5-DINITROANILINE
DNB13	1,3-DINITROBENZENE
DNBP	DI-n-BUTYL PHTHALATE
DNBZ	DINITROBENZENE
DNBZ12	1,2-DINITROBENZENE
DNBZ14	1,4-DINITROBENZENE
DNOP	DI-n-OCTYL PHTHALATE
DNP24	2,4-DINITROPHENOL
DNRB	THIOCYANIC ACID 2,4-DINITROPHENYLESTER
DNT	DINITROTOLUENES
DNT24	2,4-DINITROTOLUENE
DNT26	2,6-DINITROTOLUENE
DNT2A	2-AMINO-4,6-DINITROTOLUENE
DNT34	3,4-DINITROTOLUENE
DNT4A	4-AMINO-2,6-DINITROTOLUENE
DPA	DIPHENYLAMINE
DPHE	DIPHENYL ETHER (PHENYLEETHER)
DPHY12	1,2-DIPHENYLHYDRAZINE
DPHY24	2,4-DIPHENYLHYDRAZINE
DXYA12	DXYA12
EBZ	ETHYLBENZENE
EDB	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)
EE	DIETHYL ETHER (ETHYL ETHER)
EMETHACRY	ETHYL METHACRYLATE

IRPIMS**CLASSIFICATION****IUPAC NAME**

EMSULFN	ETHYL METHANESULFONATE
ENDO	ENDOSULFAN
ENDO-ALPHA	ALPHA ENDOSULFAN
ENDO-BETA	BETA ENDOSULFAN
ENDOSULFANA	ALPHA ENDOSULFAN
ENDOSULFANS	ENDOSULFAN SULFATE
ENDOTHALL	ENDOTHALL
ENDRIN	ENDRIN
ENDRINALD	ENDRIN ALDEHYDE
ENDRINKET	ENDRIN KETONE
EOE2	2-ETHOXYETHANOL
EPICLHDRN	EPICHLOROXYDRIN
EPN	EPN (ENT)
ESI	ENDOSULFAN I
ESII	ENDOSULFAN II
ET2BTHYDE	2-ETHYLBUTYRALDEHYDE
ET2BTOH	2-ETHYL-1-BUTANOL
ET2HEACET	2-ETHYLHEXYL ACETATE
ET2HEACR	2-ETHYLHEXYL ACRYLATE
ET2HEHYDE	2-ETHYLHEXYL ALDEHYDE
ET2HEOH	2-ETHYL-1-HEXANOL
ET2MAL	DIETHYL MALEATE
ET2SUC	DIETHYL SUCCINATE
ETACACET	ETHYL ACETOACETATE
ETACET	ETHYL ACETATE
ETACR	ETHYL ACRYLATE
ETDM	ETHYLENE DIAMINE
ETEGLY	ETHYLENE GLYCOL
ETHION	ETHION
ETHOPROP	ETHOPROP
ETHYLBIS	bis (2-ETHYLHEXYL) ADIPATE
ETIKET	ETHYLIDENE ACETONE
ETMORP	n-ETHYLMORPHOLINE
ETOX	ETHYLENE OXIDE
ETOX113BT	1,1,3-TRIETHOXYBUTANE
F	FLUORIDE
F10BPH	DECAFLUOROBIPHENYL
F2ANIL	o-FLUOROANILINE
FC11	TRICHLOROFLUOROMETHANE
FC113	FREON-113 (1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE)
FC114	TRICHLOROETHANE
FC12	DICHLORODIFLUOROMETHANE
FC21	DICHLOROFLUOROMETHANE
FCXH2	2-FURANCARBOXALDEHYDE

IRPIMS**CLASSIFICATION****IUPAC NAME**

FE	IRON
FE-59	IRON-59
FENSTHION	FENSULFOTHION
FENTHION	FENTHION
FENURON	3-PHENYL-1,1-DIMETHYLUREA
FENURONTCA	1,1-DIMETHYL-3-PHENYLUREA TRICHLOROACETATE
FL	FLUORENE
FLA	FLUORANTHENE
FLUOMETURON	1,1-DIMETHYL-3-(a,a,a-TRIFLUORO-m-TOLYL)UREA
FORMALD	FORMALDEHYDE
FURAL	FURFURYL ALCOHOL
FURFURAL	FURFURAL
GAMMA	GAMMA, GROSS
GAT	GROSS ALPHA, TOTAL
GBT	GROSS BETA, TOTAL
H2SO4	SULFURIC ACID
H3PO4	PHOSPHORIC ACID
HBD	HYDROXYBENZALDEHYDE
HBR	HYDROBROMIC ACID
HCBU	HEXACHLOROBUTADIENE
HCCP	HEXACHLOROCYCLOPENTADIENE
HCL	HYDROCHLORIC ACID
HCLBZ	HEXACHLOROBENZENE
HCLEA	HEXACHLOROETHANE
HCO3	BICARBONATE (AS CAC03)
HCPR	HEXACHLOROPROPENE
HEOH	1-HEXANOL
HEPTACHLBIPH	2,2',3,3',4,4',6-HEPTACHLOROBIPHENYL
HEPTACHLOR	HEPTACHLOR
HEPTANE3ME	3-METHYLHEPTANE
HEPT-EPOX	HEPTACHLOR EPOXIDE
HEX	HEXANAL or HEXALDEHYDE
HEXACHBIPH	2,2',4,4',5,6'-HEXACHLOROBIPHENYL
HEXANE3ME	3-METHYLHEXANE
HF	HYDROFLUORIC ACID
HG	MERCURY
HMP	HYDROXY METHYL PENTANONE
HMX	CYCLOTETRAMETHYLENE-TETRANITRATE
HNO3	NITRIC ACID
HNS	2,2,4,4,6,6-HEXANITROSTILBENE
HPCDD	HEPTACHLORINATED DIBENZO-p-DIOXINS, (TOTAL)
HPCDD1234678	1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN
HPCDD-C13	HEPTACHLORINATED DIBENZO-p-DIOXINS, (C-13)
HPCDF	HEPTACHLORINATED DIBENZOFURANS, (TOTAL)

IRPIMS**CLASSIFICATION****IUPAC NAME**

HPCDF1234678	1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN
HPCDF1234789	1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN
HPCDF-C13	HEPTACHLORINATED DIBENZOFURANS, (C-13)
HSD	HYDROGEN SULFIDE DETECTOR
HXCDD	HEXACHLORINATED DIBENZO-p-DIOXINS, (TOTAL)
HXCDD123478	1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN
HXCDD123678	1,2,3,6,7,8-HEXACHLORODIBENZO-p-DIOXIN
HXCDD123789	1,2,3,7,8,9-HEXACHLORODIBENZO-p-DIOXIN
HXCDD-C13	HEXACHLORINATED DIBENZO-p-DIOXINS, (C-13)
HXCDF	HEXACHLORINATED DIBENZOFURANS, (TOTAL)
HXCDF123478	1,2,3,4,7,8-HEXACHLORODIBENZOFURAN
HXCDF123678	1,2,3,6,7,8-HEXACHLORODIBENZOFURAN
HXCDF123789	1,2,3,7,8,9-HEXACHLORODIBENZOFURAN
HXCDF234678	2,3,4,6,7,8-HEXACHLORODIBENZOFURAN
HXCDF-C13	HEXACHLORINATED DIBENZO-p-DIOXINS,(C-13)
HXCP	HEXACHLOROPHENE
HXO2	2-HEXANONE
HYCBF3	3-HYDROXYCARBOFURAN
HYDFGR	HYDROCARBON FINGERPRINT
HYDRAZINE	HYDRAZINE
I	IODIDE (As I)
I-131	IODINE-131
IME	IODOMETHANE (METHYL IODIDE)
IN	INDIUM
INP123	INDENO(1,2,3-c,d)PYRENE
IPBZ	ISOPROPYLBENZENE (CUMENE)
ISOBTACET	ISOBUTYL ACETATE
ISOBTOH	ISOBUTANOL
ISODRIN	ISODRIN
ISOOCTOH	ISOOCTANOL (ISOMERS)
ISOP	ISOPHORONE
ISOPRACET	ISOPROPYL ACETATE
ISOPRE	ISOPROPYL ETHER
ISOPROH	ISOPROPANOL
ISOPRYACET	ISOPROPENYL ACETATE
ISOSAFR	ISOSAFROLE
K	POTASSIUM
K-40	POTASSIUM-40
KEP	KEPONE
KR-85	KRYPTON-85
LA	LANTHANUM
LA-140	LANTHANUM-140
LI	LITHIUM
LIM	LIMONENE

IRPIMS**CLASSIFICATION****IUPAC NAME**

LINURON	3-(3,4-DICHLOROPHENYL)-1-METHOXY-1-METHYLUREA
MALA	MALATHION
MB2CAN44	4,4'-METHYLENE-bis(2-CHLOROANILINE)
MBAS	METHYLENE BLUE ACTIVE SUBSTANCES
MBSC2	2-METHYLBENZENESULFONYLCHLORIDE
MBSC4	4-METHYLBENZENESULFONYLCHLORIDE
MBSN2	2-METHYLBENZENESULFONAMIDE
MBT213	2-METHYL-1,3-BUTADIENE (ISOPRENE)
MCPA	MCPA
MCPP	MCPP
ME2ET5PYR	2-METHYL-5-ETHYL PYRIDINE
ME2PEHYDE	2-METHYLPENTALDEHYDE
ME4PE2OH	METHYL AMYL ALCOHOL
MEACACET	METHYL ACETOACETATE
MEACET	METHYL ACETATE
MEBZOH	METHYLBENZYL ALCOHOL
MECHLAN3	3-METHYLCHOLANTHRENE
MEISOPEKET	METHYL ISOAMYL KETONE
MEK	METHYL ETHYL KETONE (2-BUTANONE)
MEMORP	n-METHYLMORPHOLINE
MEOH	METHANOL
MEPH1314	CRESOLS, m & p
MEPH2	2-METHYLPHENOL (o-CRESOL)
MEPH3	3-METHYLPHENOL (m-CRESOL)
MEPH4	4-METHYLPHENOL (p-CRESOL)
MEPHS	CRESOLS, TOTAL
MEPRKET	METHYL n-PROPYL KETONE
MERPHOS	MERPHOS
MESOX	MESITYL OXIDE
METHACRN	METHYLACRYLONITRILE
METHIDATHIO	o,o-DIMETHYL PHOSPHORODITHIOATE
METHIOCARB	3,5-DIMETHYL-4-(METHYLTHIO) PHENYL
METHOMYL	s-METHYL-n-((METHYLCARBAMOYL)-oxy)- THIOACETIMIDATE
METOCHLOR	METOLACHLOR
METRIBUZ	METRIBUZIN
MEVACET	METHYL VINYL ACETATE
MEVINPHOS	MEVINPHOS
MEXACARBATE	4-DIMETHYLAMINO-3,5-xyllyl n-METHYLCARBAMATE
MG	MAGNESIUM
MGD	MAGNESIUM, DISSOLVED
MIBK	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)
MIREX	MIREX
MMETHACRY	METHYL METHACRYLATE

IRPIMS**CLASSIFICATION****IUPAC NAME**

MMSULFN	METHYL METHANESULFONATE
MN	MANGANESE
MN-54	MANGANESE-54
MO	MOLYBDENUM
MO-99	MOLYBDENUM-99
MONOCROPHOS	DIMETHYL-(e)-1-METHYL-2-METHYLCARBAMOYL VINYL
MONURON	3-(p-CHLOROPHENYL)-1,1-DIMETHYLUREA
MPEA11	ALPHA, ALPHA DIMETHYLPHENETHYLAMINE
MS	MOLECULAR SULFUR
MTLNCL	METHYLENE CHLORIDE
MTNPH1	1-METHYLNAPHTHALENE
MTNPH2	2-METHYLNAPHTHALENE
MTPYRLN	METHAPYRILENE
MTXYCL	METHOXYCHLOR
N2O	NITROUS OXIDE
NA	SODIUM
NALED	NALED
NAPH	NAPHTHALENE
NAPH2	NAPHTHYLAMINE
NAPHD8	NAPHTHALENE-d8
NAPHQ14	1,4-NAPHTHOQUINONE
NB	NIOBIUM
NB-94	NIOBIUM-94
NB-95	NIOBIUM-95
NCC	cis-NONACHLOR
NDOC	NONDISSOLVED ORGANIC CARBON
NEBURON	1-n-BUTYL-3-(3,4-DICHLOROPHENYL)-1-METHYLUREA
NG	NITROGLYCERIN
NH3N	NITROGEN, AMMONIA (AS N)
NI	NICKEL
NITRANITRIN	NITRATE/NITRITE AS N
NITRATE	NITRATE AS N
NITRITEASN	NITRITE AS N
NN	NONANAL
NNSBU	n-NITROSODI-BUTYLAMINE
NNSE	n-NITROSODIETHYLAMINE
NNSM	n-NITROSODIMETHYLAMINE
NNSME	NITROSOMETHYLETHYLAMINE
NNSMRPH	n-NITROSOMORPHOLINE
NNSPH	n-NITROSODIPHENYLAMINE
NNSPPRD	n-NITROSOPIPERIDINE
NNSPR	n-NITROSODI-n-PROPYLAMINE
NNSPYRL	n-NITROSOPYRROLIDINE
NO2ANIL2	2-NITROANILINE

IRPIMS**CLASSIFICATION****IUPAC NAME**

NO2ANIL3	3-NITROANILINE
NO2ANIL4	4-NITROANILINE
NO2BZ	NITROBENZENE
NO2BZD5	NITROBENZENE-d5
NO2N	NITROGEN, NITRITE
NON2	2-NONENAL
NONACHLORT	NONACHLOR TRANS-
NP-237	NEPTUNIUM-237
NT2	2-NITROTOLUENE
NT3	3-NITROTOLUENE
NT4	4-NITROTOLUENE
NTG	NITROGLYCERIN
NTPH	NITROPHENOLS
NTPH2	2-NITROPHENOL
NTPH4	4-NITROPHENOL
NTPRO2	2-NITROPROPANE
O18	OXYGEN 18
O2	OXYGEN
OA	OCTADECANOIC ACID
OC	OCTANAL
OCDD	OCTACHLORODIBENZO-p-DIOXIN
OCDD12346789	1,2,3,4,6,7,8,9-OCTACHLORODIBENZO-p-DIOXIN
OCDD-C13	OCTACHLORODIBENZO-p-DIOXIN-C13
OCDF	OCTACHLORODIBENZOFURAN
OCDF12346789	1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN
OCDF-C13	OCTACHLORODIBENZOFURAN (C13)
OCTACHBIPH	2,2',3,3',4,5',6,6'-OCTACHLOROBIPHENYL
OCTENE1	OCTENE-1
OCTOH	n-OCTANOL
OS	OSMIUM
OX22CLP	2,2-OXYBIS(1-CHLORO)PROPANE
OXAMYL	METHYL n,n-DIMETHYL-n-{(METHYLCARBAMOYL)oxy}-1-
P	PHOSPHORUS, TOTAL (AS P)
PA-234	PROTACTINIUM 234
PACN	PROPANE NITRILE (PROPIONITRILE)
PARAE	PARATHION, ETHYL
PARALD	PARALDEHYDE
PARAM	PARATHION, METHYL
PARAQUAT	PARAQUAT
PB	LEAD
PB-212	LEAD 212
PB-214	LEAD 214
PBTE	LEAD, TETRAETHYL
PBZN	n-PROPYLBENZENE

IRPIMS**CLASSIFICATION****IUPAC NAME**

PCA	1,1,2,2-TETRACHLOROETHANE
PCB	PCB, TOTAL
PCB1016	PCB-1016 (AROCLOR-1016)
PCB1221	PCB-1221 (AROCLOR-1221)
PCB1224	PCB-1224 (AROCLOR-1224)
PCB1232	PCB-1232 (AROCLOR-1232)
PCB1242	PCB-1242 (AROCLOR-1242)
PCB1248	PCB-1248 (AROCLOR-1248)
PCB1254	PCB-1254 (AROCLOR-1254)
PCB1260	PCB-1260 (AROCLOR-1260)
PCB1262	PCB-1262 (AROCLOR-1262)
PCE	TETRACHLOROETHYLENE(PCE)
PCL	PICLORAM
PCLEA	PENTACHLOROETHANE
PCMC	4-CHLORORESORCINOL
PCP	PENTACHLOROPHENOL
PD	PHOSPHORUS, DISSOLVED
PDMAABZ	p-DIMETHYLAMINOAZOBENZENE
PDORG	PHOSPHORUS, DISSOLVED ORGANIC
PDORTHO	PHOSPHORUS, DISSOLVED ORTHOPHOSPHATE
PE23	2,3-PENTANEDIONE
PEACET	AMYL ACETATE (MIXED ISOMERS)
PECDD	PENTACHLORINATED DIBENZO-p-DIOXINS, (TOTAL)
PECDD12347	1,2,3,4,7-PENTACHLORODIBENZO-p-DIOXIN
PECDD12378	1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN
PECDF	PENTACHLORINATED DIBENZOFURANS, (TOTAL)
PECDF12378	1,2,3,7,8-PENTACHLORODIBENZOFURAN
PECDF23478	2,3,4,7,8-PENTACHLORODIBENZOFURAN
PECLBZ	PENTACHLOROBENZENE
PECLNO2BZ	PENTACHLORONITROBENZENE
PENTACHBIPH	2,2',3',4,6-PENTACHLOROBIPHENYL
PENTANE3ME	3-METHYLPENTANE
PEOH	AMYL ALCOHOL
PEOH2	2-PENTANOL
PERC	NON-SPECIATED PERCHLORATE
PERTHANE	PERTHANE
PERYD12	PERYLENE-d12
PETN	PETN (PENTAERYTHRITOL TETRANITRATE)
PFP	PENTAFLUOROPHENOL
PH246BR	2,4,6-TRIBROMOPHENOL
PH2F	2-FLUOROPHENOL
PHAN	PHENANTHRENE
PHAND10	PHENANTHRENE-d10
PHC	PETROLEUM HYDROCARBONS

IRPIMS**CLASSIFICATION****IUPAC NAME**

PHD5	PHENOL-d5
PHD6	PHENOL-d6
PHEN2BR246	2,4,6-TRIBROMOBIPHENYL
PHEN2F	2-FLUOROBIPHENYL
PHEND14	TERPHENYL-d14
PHENOL	PHENOL, TOTAL
PHENOLD6	PHENOL-d5
PHNACTN	PHENACETIN
PHORATE	PHORATE
PHOSPHATEO	PHOSPHATE (ORTHO)
PHYDRO	PHOSPHORUS, TOTAL HYDROLYZABLE (AS P)
PICOLINE2	2-PICOLINE (ALPHA-PICOLINE)
PICOLINE3	3-PICOLINE
PICOLINE4	4-PICOLINE
PIN	PINENE
PLN	PHENYLNAPHTHALENE
PO-210	POLONIUM-210
PO4	PHOSPHORUS, TOTAL ORTHOPHOSPHATE (AS PO4)
PORG	PHOSPHORUS, TOTAL ORGANIC (AS P)
PORTHO	PHOSPHORUS, TOTAL ORTHOPHOSPHATE)
PR2BRCL	2-BROMO-1-CHLOROPROPANE
PRACET	PROPYL ACETATE
PROH	n-PROPANOL
PROMETON	PROMETON
PROMETRYN	PROMETRYN
PRONAMD	PRONAMIDE
PROP2	2-PROPANOL
PROPACHLOR	PROPACHLOR
PROPAZINE	PROPAZINE
PROPHAM	ISOPROPYL CARBANILATE
PROPOX	PROPYLENE OXIDE
PROPOXUR	2-(1-METHYLETHOXY) PHENOL METHYLCARBAMATE
PTHZ	PTHALAZINONE
PU-238	PLUTONIUM-238
PU-239	PLUTONIUM-239
PU-239/240	PLUTONIUM-239/240
PU-244	PLUTONIUM-244
PYR	PYRENE
PYRDN	PYRIDINE
PYRENED10	PYRENE-d10
QUINO	QUINOLINE
RA	RADIUM
RA-223	RADIUM-223
RA-224	RADIUM-224

IRPIMS**CLASSIFICATION****IUPAC NAME**

RA-226	RADIUM-226
RA-226/228	RADIUM 226, RADIUM 228
RA-228	RADIUM-228
RAD	RADIATION
RADIO TOTAL	RADIOCESIUM, TOTAL
RB	RUBIDIUM
RCN	REACTIVE CYANIDE
RDX	CYCLOTRIMETHYLENE-TRINITRAMINE
RE	RHENIUM
RN	RADON
RONNEL	RONNEL
RS	REACTIVE SULFIDE
RU/RH-106	RUTHENIUM/RHODIUM-106
RU-103	RUTHENIUM-103
RU-106	RUTHENIUM-106
S	SULFIDE
SAFROLE	SAFROLE
SAR	SODIUM ABSORPTION RATIO
SB	ANTIMONY
SB-124	ANTIMONY-124
SB-125	ANTIMONY-125
SC	SCANDIUM
SE	SELENIUM
SECBUMETON	SECBUMETON
SEVIN	SEVIN (CARBARYL)
SI	SILICON
SIDURON	1-(2-METHYLCYCLOHEXYL)-3-PHENYLUREA
SILVEX	SILVEX (2,4,5-TP)
SIMAZINE	SIMAZINE
SIMETRYN	SIMETRYN
SN	TIN
SO4	SULFATE (AS SO4)
SR	STRONTIUM
SR-89	STRONTIUM-89
SR-89/90	STRONTIUM-89/90
SR-90	STRONTIUM-90
STIROFOS	STIROFOS (TETRACHLORVINPHOS)
STROBANE	STROBANE
STY	STYRENE
STYOX	STYRENE OXIDE
SUL	SULFATE
SULFOTEP	TETRAETHYLDITHIOPYROPHOSPHATE
SULPROFOS	BOLSTAR
SULT	SULFITE (TITRIMETRIC)

IRPIMS**CLASSIFICATION****IUPAC NAME**

SURFACT	SURFACTANTS
SWEP	METHYL-n-(3,4-DI-CHLOROPHENYL) CARBAMATE
TA	TANTALUM
TATB	1,3,5-TRIAMINO-2,4,6-TRINITROBENZENE
TBME	BROMOFORM
TBUTMEE	tert-BUTYL METHYL ETHER
TC1112	1,1,1,2-TETRACHLOROETHANE
TCA111	1,1,1-TRICHLOROETHANE
TCA112	1,1,2-TRICHLOROETHANE
TCB123	1,2,3-TRICHLOROBENZENE
TCB124	1,2,4-TRICHLOROBENZENE
TCB135	1,3,5-TRICHLOROBENZENE
TCDD	TETRACHLORINATED DIBENZO-p-DIOXINS, (TOTAL)
TCDD1234	1,2,3,4-TETRACHLORODIBENZO-p-DIOXIN
TCDD1278	1,2,7,8-TETRACHLORODIBENZO-p-DIOXIN
TCDD1289	1,2,8,9-TETRACHLORODIBENZO-p-DIOXIN
TCDD1368	1,3,6,8-TETRACHLORODIBENZO-p-DIOXIN
TCDD1378	1,3,7,8-TETRACHLORODIBENZO-p-DIOXIN
TCDD1379	1,3,7,9-TETRACHLORODIBENZO-p-DIOXIN
TCDD2378	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN
TCDD2378C13	2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN-C13
TCDF	TETRACHLORINATED DIBENZOFURANS, (TOTAL)
TCDF1278	1,2,7,8-TETRACHLORODIBENZOFURAN
TCDF2378	2,3,7,8-TETRACHLORODIBENZOFURAN
TCDF2378C13	2,3,7,8-TETRACHLORODIBENZOFURAN-C13
TCE	TRICHLOROETHENE
TCEHP	TRICHLOROETHANOL PHOSPHATE
TCLME	CHLOROFORM
TCMX2456	2,4,5,6-TETRACHLORO-MXYLENE
TCP123	1,2,3-TRICHLOROPHENOL
TCP2346	2,3,4,6-TETRACHLOROPHENOL
TCP2356	2,3,5,6-TETRACHLOROPHENOL
TCP236	2,3,6-TRICHLOROPHENOL
TCP245	2,4,5-TRICHLOROPHENOL
TCP246	2,4,6-TRICHLOROPHENOL
TCPR	TRICHLOROPROPANE
TCPR123	1,2,3-TRICHLOROPROPANE
TCPRE	TRICHLOROPROPENE
TDS	TOTAL DISSOLVED SOLIDS (RESIDUE, FILTERABLE)
TE	TELLURIUM
TECBPH2244	2,2,4,4-TETRACHLOROBIPHENYL
TECLPHS	TETRACHLOROPHENOLS, TOTAL
TEPP	TETRAETHYL DIPHOSPHATE
TERBUTHLAZ	TERBUTHYLAZINE

IRPIMS**CLASSIFICATION****IUPAC NAME**

TERBUTRYN	TERBUTRYN
TERPINEOL	ALPHA-TERPINEOL
TETCLA	TETRACHLOROETHANES
TETRALIN	TETRALIN
TETRYL	TETRYL
TFBZME	a,a,a-TRIFLUOROTOLUENE
TFE1122	FREON-114 (1,2-DICHLORO-1,1,2,2-TETRAFLUOROETHANE)
TH-228	THORIUM-228
TH-230	THORIUM-230
TH-232	THORIUM-232
TH-234	THORIUM-234
THF	TETRAHYDROFURAN
THM	TOTAL TRIHALOMETHANES
TI	TITANIUM
TL	THALLIUM
TL-208	THALLIUM 208
TLDNO	o-TOLUIDINE
TLDNOHCL	o-TOLUIDINE HYDROCHLORIDE
TLDNONT5	5-NITRO-o-TOLUIDINE
TMB124	1,2,4-TRIMETHYLBENZENE
TMB135	1,3,5-TRIMETHYLBENZENE (MESITYLENE)
TNB135	1,3,5-TRINITROBENZENE
TNP246	PICRIC ACID
TNT	TNT (2,4,6-TRINITROTOLUENE)
TOC	TOTAL ORGANIC CARBON
TOKUTHION	TOKUTHION (PROTHIOFOS)
TOTPHEN	PHENOL, TOTAL
TOXAP	TOXAPHENE
TPH	TOTAL PETROLEUM HYDROCARBONS
TPHENA	PHENOL (ACID FRACTION)
TREMO	TREMOLITE
TRICHBIPH	2,4,5-TRICHLOROBIPHENYL
TRICLPHS	TRICHLOROPHENOLS, TOTAL
TRIFLURALIN	TRIFLURALIN
TRIPHOTH	TRIETHYLPHOSPHOROTHIOATE O,O,O-
TRITIUM	TRITIUM
U	URANIUM, TOTAL
U-233/234	URANIUM-233/234
U-234	URANIUM-234
U-235	URANIUM-235
U-235/236	URANIUM-235/236
U-238	URANIUM-238
UDMH	1,1-DIMETHYLHYDRAZINE
V	VANADIUM

IRPIMS**CLASSIFICATION****IUPAC NAME**

VA	VINYL ACETATE
VALD	VALERALDEHYDE
VBTE	VINYL n-BUTYL ETHER
VC	VINYL CHLORIDE
VETE	VINYL ETHYL ETHER
VISOBTE	VINYL ISOBUTYL ETHER
W	TUNGSTEN
XLS	XYLENES
XYL2456CLM	2,4,5,6-TETRACHLORO-MXYLENE
XYLENES	XYLENES, TOTAL
XYLENES1213	XYLENES, o & m
XYLENES1214	XYLENES, o & p
XYLM	m-XYLENE (1,3-DIMETHYLBENZENE)
XYLMP	m,p-XYLENE (SUM OF ISOMERS)
XYLO	o-XYLENE (1,2-DIMETHYLBENZENE)
XYLP	p-XYLENE (1,4-DIMETHYLBENZENE)
ZINOPHOS	DIETHYL o-2-PYRAZINYL PHOSPOROTHIOATE o,o (THIONAZIN
ZN	ZINC
ZN-65	ZINC-65
ZR	ZIRCONIUM
ZR-95	ZIRCONIUM-95