

**Comprehensive Acronym List
Former Wurtsmith Air Force Base**

°C	degrees Celsius
°F	Fahrenheit
%	percent
%R	percent recovery
%D	percent drift
>	greater than
≥	greater than or equal to
<	less than
≤	less than or equal to
±	plus/minus
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
1,2,4-TMB	1,2,4-trimethylbenzene
ng/kg	nanograms per kilogram
mg/kg	milligrams per kilogram
4:2 FTS	4:2 fluorotelomer sulfonate
6:2 FTS	6:2 fluorotelomer sulfonate
8:2 FTS	8:2 fluorotelomer sulfonate
2-D	two-dimensional
3-D	three-dimensional
AAA	Alert Aircraft Area
AF	Air Force
AFB	Air Force Base
AFFF	aqueous film forming foam
amu	atomic mass unit
ASL	Aerostar SES LLC
AFCEC	Air Force Civil Engineer Center
AMEC	AMEC Foster Wheeler
amsl	above mean sea level
ANSI	American National Standards Institute
APTIM	APTIM Federal Services
APTS	Arrow Street Pump and Treat System
AQ	aqueous
AR	Administrative Record
ARAR	applicable or relevant and appropriate requirements
AST	aboveground storage tank
ASTM	American Standards for Testing Materials
ATP	adenosine triphosphate
ATSDR	Agency for Toxic Substances & Disease Registry
B.A.	Bachelor of Arts
BCEE	Board Certified Environmental Engineer
BCT	BRAC Cleanup Team
BEC	BRAC Environmental Coordinator
BERA	baseline ecological risk assessment
BFB	4-bromofluorobenze
bgs	below ground surface
BHHRA	baseline human health risk assessment
BOA	Base Operations Apron

BPTS	Benzene Pump and Treat System
BRAC	Base Realignment and Closure
B.S.	Bachelor of Science
BTEX	benzene, toluene, ethylbenzene, and xylenes
BTOC	below top of casing
C	concentration
CA	corrective action
CaCO ₃	calcium carbonate
CADD	computer-aided design and drafting
CAS	Chemical Abstracts Service
CCB	continuing calibration blank
CCV	continuing calibration verification
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CFUs	colony forming units
CHMM	Certified Hazardous Materials Manager
CIH	Certified Industrial Hygienist
CLP	Contract Laboratory Program
CO	Contracting Officer
COC	contaminant of concern
COC	chain of custody
COPC	contaminants of potential concern
COR	Contracting Officers Representative
cpm	cells per milliliter
CPR	cardiopulmonary resuscitation
CQCP	Construction Quality Control Plan
CSM	conceptual site model
CSP	Certified Safety Professional
CTS	Central Treatment System
CVAA	cold vapor atomic absorption
DABT	Diplomate of the American Board of Toxicology
DCE	dichloroethene
DDT	dichlorodiphenyltrichloroethane
DE	diatomaceous earth
DFTPP	decafluorotriphenylphosphine
DL	detection limit
DNAPL	dense non-aqueous phase liquid
DO	dissolved oxygen
DoD	Department of Defense
DOT	Department of Transportation
DQI	data quality indicators
DQO	data quality objectives
DRMO	Defense Reutilization and Marketing Office
DWC	drinking water criteria
EB	equipment blank
ECD	electron capture detector
EDD	electronic data deliverable
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EIS	extracted internal standards
ELAP	Environmental Laboratory Accreditation Program

EPC	exposure point concentration
EQ	equalization
ERPIMS	Environmental Resources Program Information Management System
ESI	expanded site investigation
ESS	environmental sequence strategy
EST	Eastern Standard Time
ESTCP	Environmental Security Technology Certification Program
EW	extraction well
EWTS	engineered wetland treatment system
FB	field blank
FCSV	Fish Consumption Screening Value
FD	field duplicate
FPB	filter press building
FS	feasibility study
FTA	fire training area
ft	foot/feet
ft/d	feet per day
ft ²	square feet
ft ³	cubic feet
FT02	fire training area 02
g/cm ³	grams per cubic centimeter
g/mol	grams per mole
GAC	granular activated carbon
GC	gas chromatography
GC/MS	gas chromatography/mass spectrometry
GIS	geographic information system
gpm	gallons per minute
GPS	global positioning system
GSI	groundwater-surface water interface
GSL	grain size logs
HA	health advisory
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCl	hydrochloric acid
HDD	horizontal directional drilling
HDPE	high-density polyethylene
HDPP	high-density polypropylene
HFPO-DA	hexafluoropropylene oxide dimer acid
HHRA	human health risk assessment
HMI	human machine interface
HNV	human non-cancer value
hp	horsepower
HPT	hydraulic profiling tool
HQ	hazard quotient
HRSC	high-resolution site characterization
HSU	hydrostratigraphic units
HVAC	heating, ventilation, and air conditioning
i	hydraulic gradient
ID	inside diameter
I/O	input/output
ICAL	initial calibration
ICB	initial calibration blank

ICP-AES	inductively coupled plasma atomic emission spectroscopy
ICP-MS	inductively coupled plasma mass spectrometry
ICV	internal calibration verification
ICS	interference check standards
ID	identification
IDW	investigation-derived waste
IRA	interim remedial action
IROD	interim record of decision
IRP	Installation Restoration Program
ISC	instrument sensitivity check
ITRC	Interstate Technology Regulatory Council
IX	ion exchange
JP-4	jet propulsion fuel No. 4
K	hydraulic conductivity
K _a	kiloannum (1000 years)
K _{oc}	carbon-water partitioning coefficients
K _{sat}	saturated hydraulic conductivity
L	liter
lb(s)	pound(s)
lbs/ft ³	pounds per cubic foot
lbs/gal	pounds per gallon
LCS	laboratory control samples
LC/MS/MS	liquid chromatography/mass spectrometry/mass spectrometry
LDPE	low-density polyethylene
LEED	Leadership in Energy and Environmental Design
LF	landfill
LHA	lifetime health advisory
LNAPL	light non-aqueous phase liquid
LOD	limit of detection
LOQ	limit of quantitation
LTM	long-term management
LTM	long-term monitoring
MB	method blank
MCL	maximum contaminant level
MD	matrix duplicate
MDEQ	Michigan Department of Environmental Quality
MDHHS	Michigan Department of Human Health Services
MDL	method detection limit
MDNR	Michigan Department of Natural Resources
mg/L	milligrams per liter
MH-4	manhole 4
mL	milliliter
MMRP	Military Munitions Response Program
MNFI	Michigan Natural Features Inventory
MPTS	Mission Street Pump and Treat System
MPART	Michigan PFAS Action Response Team
MS	matrix spike
M.S.	Master of Science
MSD	matrix spike duplicate
MW	monitoring well
N/A	not applicable

NaOH	sodium hydroxide
NAPL	non-aqueous phase liquids
NCP	National Contingency Plan
ND	non-detect
NDAA	National Defense Authorization Act
NEtFOSAA	n-ethylperfluorooctane sulfonamidoacetic acid
NFG	National Functional Guidelines
ng/L	nanograms per liter
NL	not listed
NMeFOSAA	n-methylperfluorooctane sulfonamidoacetic acid
NTCRA	non time-critical removal action
NTU	nephelometric turbidity unit
O&M	operation and maintenance
OD	outside diameter
OMB	Office of Management and Budget
OPR	ongoing precision & recovery
ORP	oxidation reduction potential
OSHA	Occupational Safety & Health Administration
OWA	Oscoda-Wurtsmith Airport
OWAA	Oscoda-Wurtsmith Airport Authority
oz	ounce or ounces
PA	preliminary assessment
PCB	polychlorinated biphenyls
PCE	tetrachloroethene or tetrachloroethylene or perchloroethene or perchloroethylene
PEF	particulate emission factor
PAL	project action level
PE	Professional Engineer
pH	potential of hydrogen
PFAS	per- and polyfluoroalkyl substances
PFBS	perfluorobutane sulfonic acid
PFBA	perfluorobutanoic acid
PFHxS	perfluorohexane sultanate
PFHxA	perfluorohexanoic acid
PFNA	perfluorononanoic acid
PFOSA	perfluorooctane sulfonamide
PFOA	perfluorooctanoic acid
PFOS	perfluorooctane sulfonate
PFPeA	perfluoropentanoic acid
PG	Professional Geologist
PHA	provisional health advisory
Ph.D.	Doctorate of Philosophy
PID	photoionization detector
PLC	programmable logic controller
PM	project manager
PM	performance monitoring
POC	point of contact
PP	proposed plan
ppb	parts per billion
ppt	parts per trillion
PQCM	Project Quality Control Manager
PRA	probabilistic risk assessment

psi	pounds per square inch
psig	pounds per square inch gauge
PTS	pump and treat system
PVC	polyvinyl chloride
PZ	piezometer
QA	quality assurance
QAPP	quality assurance project plan
QC	quality control
QSM	Quality Systems Manual
r ²	coefficient of determination
RA	remedial action
RA-C	remedial action construction
RAB	Restoration Advisory Board
RA-O	remedial action operation
RAO	remedial action objective
RAWP	remedial action work plan
RCRA	Resource Conservation and Recovery Act
RD	remedial design
RF	response factor
RG	Registered Geologist
RI	remedial investigation
ROD	record of decision
RPD	relative percent difference
RRD	Remediation and Redevelopment Division
RSD	relative standard deviation
RSL	regional screening level
RT	retention time
SAP	sampling and analysis plan
SARA	Superfund Amendments and Reauthorization Act
SCADA	supervisory control and data acquisition
SDG	sample delivery group
SERDP	Strategic Environmental Research and Development Program
SHSP	site health and safety plan
SI	site inspection
SSHO	site safety and health officer
SO	solid
SOP	standard operating procedure
SPE	solid phase extraction
SPP	systematic project planning
SRD	Substantive Requirements Document
SS	stainless steel
SVOC	semi-volatile organic compound
TBD	to be determined
TCE	trichloroethylene or trichloroethene
TCLP	toxicity characteristic leaching procedure
TCRA	time-critical removal action
TOC	table of contents
TDS	total dissolved solids
T&E	threatened and endangered
TOC	total organic carbon
TSS	total suspended solids

UFP	Uniform Federal Policy
UFP-QAPP	Uniform Federal Policy-Quality Assurance Project Plan
UPLC/MS/MS	ultra-performance liquid chromatography-tandem mass spectrometry
UCL	upper confidence limit
USACE	United States Army Corps of Engineers
USAF	United States Air Force
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USFS	United States Forest Service
USGS	United States Geological Survey
UST	underground storage tank
UXO	unexploded ordnance
VAS	vertical aquifer sampling
VC	vinyl chloride
VFD	variable frequency drive
VOCs	volatile organic compounds
VSP	Visual Sample Plan
WAFB	Wurtsmith Air Force Base
WCB	well control building
WL	water level
WSOP	Wurtsmith Standard Operating Procedure
WWTP	wastewater treatment plant