

APPENDIX

ABBREVIATIONS AND ACRONYMS COMMONLY USED IN BUREAU OF RECLAMATION ENGINEERING GEOLOGY AND RELATED TO HAZARDOUS WASTE

(Many are modified from A.A.P.G. Committee
on Stratigraphic Correlations)

Acronyms and Abbreviations Commonly Used in Bureau of Reclamation Engineering Geology

| | |
|------------|--|
| A | Apparent trace |
| acre-ft | Acre-feet |
| acre-ft/d | Acre-feet per day |
| acre-ft/yr | Acre-feet per year |
| AGI | American Geological Institute |
| AP | Analysis Plan |
| APSRs | Aerial Photography Summary Record System |
| ARAR | Applicable or Relevant and Appropriate Requirement |
| ASCS | Agricultural Stabilization and Conservation Service |
| ASTM | American Society for Testing Materials |

FIELD MANUAL

| | |
|-----------------|---|
| ASTM/USCS | American Society for Testing Materials/ Unified Soil Classification System |
| b | As a suffix, with boulders |
| BJ | Bedding joint |
| c | As a suffix, with cobbles |
| CADD | Computer assisted design and drafting |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CH | Fat clay |
| CL | Lean clay |
| CL | Cleavage |
| CL-ML | Silty clay |
| cm | Centimeter |
| cm ² | Square centimeter |
| cm/s | Centimeter per second |
| COC | Contaminant of concern |
| D | Dip trace |
| DI | Durability Index |
| DLS | Detail line survey |
| DNAPL | Dense, nonaqueous phase liquid |
| DQOs | Data Quality Objective |

ABBREVIATIONS

| | |
|--------------------|--|
| EPA | Environmental Protection Agency |
| ft | Foot |
| ft ² | Square foot |
| ft ³ | Cubic foot |
| ft ³ /s | Cubic foot per second |
| ft/yr | Feet per year |
| FJ | Foliation joint |
| FSP | Field Sampling Plan |
| FZ | Fracture zone |
| g | As a prefix, gravelly; as a suffix, with gravel |
| gal | Gallon |
| gal/min | Gallon per minute |
| GC | Clayey gravel |
| GC-GM | Silty, clayey gravel |
| GC/MS | Gas chromatograph/mass spectrometer |
| GC | Gas chromatograph |
| GM | Silty gravel |
| GP | Poorly graded gravel |
| GP-GC | Poorly graded gravel with clay |
| GP-GM | Poorly graded gravel with silt |

FIELD MANUAL

| | |
|-----------------|------------------------------|
| GPS | Global Positioning System |
| GW | Well graded gravel |
| GW-GC | Well graded gravel with clay |
| GW-GM | Well graded gravel with silt |
| H1 | Extremely hard |
| H2 | Very hard |
| H3 | Hard |
| H4 | Moderately hard |
| H5 | Moderately soft |
| H6 | Soft |
| H7 | Very soft |
| HASP | Health and Safety Plan |
| HCl | Hydrochloric acid |
| ID | Inside diameter |
| IF | Incipient fracture |
| IJ | Incipient joint |
| in | Inch |
| in ² | Square inch |
| in ³ | Cubic inch |
| JT | Joint |

ABBREVIATIONS

| | |
|--------------------|--------------------------------|
| k | Hydraulic conductivity |
| kPa | Kilopascal |
| kg/cm ² | Kilogram per square centimeter |
| km | Kilometer |
| kN | Kilonewton |
| kN/m ³ | Kilonewton per cubic meter |
| L | Liter |
| lb/in ² | Pound-force per square inch |
| lb/in ² | Pounds per square inch |
| lb/ft ³ | Pounds per cubic foot |
| LCS | Laboratory control standard |
| LL/PI | Liquid limit/plasticity index |
| LNAPL | Light nonaqueous phase liquid |
| L/sec | Liter per second |
| m | Meter |
| m ² | Square meter |
| m ³ | Cubic meter |
| m ³ /s | Cubic meter per second |
| m ³ /yr | Cubic meter per year |
| MB | Mechanical break |

FIELD MANUAL

| | |
|-------|--|
| MCL | Maximum contaminant level |
| mg/Kg | milligram per kilogram |
| MH | Elastic silt |
| mi | Mile |
| ML | Silt |
| mm | Millimeter |
| NAD | North American Datum |
| NASC | North American Stratigraphic Code |
| NCC | National Cartographic Information Center |
| NGI | Norwegian Geotechnical Institute |
| NPDES | National Pollutant Discharge Elimination System |
| NTIS | National Technical Information Service |
| NTU | Nephelometric turbidity unit |
| OD | Outside diameter |
| OERR | Office of Emergency and Remedial Response |
| OH | Organic clay |
| OL | Organic silt |
| OSHA | Occupational Safety and Health Administration |

ABBREVIATIONS

| | |
|-------------|---|
| Pa | Pascals |
| PRP | Possible responsible party |
| PCB | Pentachlorobenzene |
| ppb | Part per billion |
| ppm | Part per million |
| PSI | Pound-force per square inch |
| PT | Peat |
| PVC | Polyvinyl chloride |
| QAPP | Quality Assurance Project Plan |
| QC | Quality control |
| RCRA | Resource Conservation Recovery Act |
| Reclamation | U.S. Bureau of Reclamation |
| RF | Random fracture |
| RMR | Rock Mass Rating System Geomechanics Classification |
| RQD | Rock Quality Designation |
| RSR | Rock Structure Rating |
| S | Strike trace |
| s | As a prefix, sandy; as a suffix, with sand |
| SAP | Sampling and Analysis Plan |
| SC | Clayey sand |

FIELD MANUAL

| | |
|-------|---|
| SC-SM | Silty, clayey sand |
| SDWA | Safe Drinking Water Act |
| SM | Silty sand |
| SOP | Standard operating procedures |
| SP | Poorly graded sand |
| SP-SC | Poorly graded sand with clay |
| SPT | Standard Penetration Test |
| SP-SM | Poorly graded sand with silt |
| SW | Well graded sand |
| SW-SC | Well graded sand with clay |
| SW-SM | Well graded sand with silt |
| TBM | Tunnel boring machine |
| TCE | Trichloroethylene |
| TCLP | Toxicity characteristic leaching procedure |
| TRPH | Total recoverable petroleum hydrocarbons |
| URCS | Unified Rock Classification System |
| USCS | Unified Soil Classification System |
| USDA | United States Department of Agriculture |
| USGS | United States Geological Survey |

ABBREVIATIONS

| | |
|-----------------|---------------------------|
| VOC | Volatile organic compound |
| WP | Work plan |
| yd ³ | Cubic yard |
| µg/L | microgram per liter |
| µm | Micrometer |
| EC | degrees Centigrade |
| EF | degrees Fahrenheit |

Commonly Used Acronyms and Abbreviations Related to Hazardous Waste

| | |
|--------|---|
| ARAR | Applicable or relevant and appropriate requirement |
| AST | Above ground storage tank |
| AP | Analysis plan |
| BADT | Best available demonstrated technology |
| BAT | Best available technology or best available treatment |
| CAA | Clean Air Act |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) |

FIELD MANUAL

| | |
|---------|--|
| CERCLIS | Comprehensive Environmental Response, Compensation, and Liability Information System |
| COD | Chemical oxygen demand |
| CRP | Community Relations Plan |
| CRZ | Contaminant reduction zone |
| CWA | Clean Water Act (aka FWPCA) |
| DQO | Data quality objectives |
| EPA | Environmental Protection Agency |
| FS | Feasibility study |
| FSP | Field sampling plan |
| HASP | Health and safety plan |
| HRS | Hazard ranking system |
| HS | Head space (analysis) |
| IDL | Instrument detection limit |
| IDLH | Immediately dangerous of life and health |
| LEL | Lower explosive limit |
| LFL | Lower flamability limit |
| LUST | Leaking underground storage tank |
| MCL | Maximum contaminant level (SDWA) |
| MDL | Method detection limit |

ABBREVIATIONS

| | |
|------------------|---|
| MSDS | Material safety data sheet |
| NCR | Nonconformance report |
| ND | Nondetect |
| NFRAP | No further remedial action planned |
| NPDES | National Pollutant Discharge Elimination System |
| NPL | National Priority List |
| NTIS | National Technical Information Service |
| OSWER | Office of Solid Waste and Emergency Response |
| PA | Preliminary assessment |
| PCB | Polychlorinated biphenyl |
| PEL | Permissible exposure limit or personal exposure limit |
| PPB | Parts per billion |
| PPM | Parts per million |
| PPT | Parts per trillion |
| PPT _h | Parts per thousand |
| PRP | Potentially responsible party |
| PS | Point source |
| PVC | Polyvinyl chloride |

FIELD MANUAL

| | |
|------|--|
| PWS | Public water supply or public water system |
| QA | Quality assurance |
| QAPP | Quality assurance project plan |
| QC | Quality control |
| QL | Quantitation limit |
| RA | Remedial action or removal action or risk assessment |
| RCRA | Resource Conservation Recovery Act |
| RD | Remedial design |
| RfD | Reference dose |
| RI | Remedial investigation |
| RMCL | Recommended maximum contaminant levels |
| RME | Reasonable maximum exposure |
| ROD | Record of decision |
| RP | Responsible party |
| RPM | Remedial project manager |
| RQ | Reportable quantity |
| SAP | Sampling and analysis plan |
| SAR | Start action request |

ABBREVIATIONS

| | |
|------|--|
| SARA | Superfund Amendments and Reauthorization Act of 1986 |
| SAS | Special analytical services |
| SDWA | Safe Drinking Water Act |
| SF | Slope factor |
| SI | Site inspection |
| SOP | Standard operating procedures |
| SQG | Small quantity generator |
| STEL | Short-term exposure limit |
| STP | Sewage treatment plant |
| SVOC | Semivolatile organic chemical (Compound) |
| SWDA | Solid Waste Disposal Act |
| TCE | Trichloroethylene |
| TCL | Target compound list |
| TCLP | Toxicity characteristic leaching procedure |
| TD | Toxic dose |
| TDS | Total dissolved solids |
| THC | Total hydrocarbons |
| TIC | Tentatively identified compound |
| TLV | Threshold limit value |

FIELD MANUAL

| | |
|------|--|
| TOA | Trace organic analysis |
| TOC | Total organic carbon or total organic compound |
| TOX | Total organic halogens |
| TPY | Tons per year |
| TRPH | Total recoverable petroleum hydrocarbons |
| TSCA | Toxic Substances Control Act |
| TSDF | Treatment, storage, and disposal facility |
| TSS | Total suspended solids |
| UEL | Upper explosive limit |
| UFL | Upper flamability limit |
| UST | Underground storage tank |
| VOC | Volatile organic chemical (compound) |
| WP | Work plan |
| WSRA | Wild and Scenic Rivers Act |
| WWTP | Wastewater treatment plan |