MANAGEMENT PLAN FOR INVESTIGATION DERIVED WASTES

BELTSVILLE AGRICULTURAL RESEARCH CENTER
BELTSVILLE, MARYLAND

FINAL

Prepared for:

U.S. Department of Agriculture
Agricultural Research Service
Beltsville, Maryland

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LIST OF ACRONYMS

AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
ARS	Agricultural Research Service
BARC	Beltsville Agricultural Research Center
BMT	BMT Designers & Planners, Inc.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COMAR	Code of Maryland Regulations
COC	Contaminant of Concern
COPC	Contaminant of Potential Concern
CWA	Clean Water Act
EPA	Environmental Protection Agency
IDW	investigation-derived wastes
LDR	land disposal restriction
MDE	Maryland Department of the Environment
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
OC	Organochlorine
PCB	Polychlorinated biphenyls
PFAS	Per and polyfluoroalkyl substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctane Sulfonate
PPE	personal protective equipment
PSNS	Pretreatment Standards for New Sources
RPM	Remedial Project Manager
RCRA	Resource Conservation and Recovery Act
SM	Site Manager
SDWA	Safe Drinking Water Act
SSWP	Site Specific Work Plan
TCLP	Toxic Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
TSD	treatment, storage, and disposal
TTO	Total Toxic Organics
TSCA	Toxic Substances Control Act
USDA	United States Department of Agriculture
VOC	volatile organic compound
WWTP	wastewater treatment plant

1. INTRODUCTION AND PURPOSE

This plan has been prepared for the management of investigation-derived wastes (IDW) generated during environmental investigations at the Beltsville Agricultural Research Center (BARC) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The purpose of the IDW Management Plan is to provide clear guidance pertaining to the identification, characterization, screening, management and disposal of IDW produced during environmental site work at BARC. The plan specifies requirements and provides general guidance for managing IDW generated during site work at BARC.

Specific instructions, including testing and screening criteria for media specific IDW, will be specified in site specific work plans (SSWPs) based on this guidance to achieve the following goals:

- *Leave a site in equal or better condition than existed prior to the investigation.* Any negative impact on the appearance of a site due to an investigation should not be permanent. Also, an investigation should never make a permanent environmental impact on a site.

- *Promptly remove wastes that pose an immediate threat to human health or the environment.* Any investigation derived wastes, such as contaminated soil cuttings or development water that are characterized as RCRA hazardous must be removed promptly from the site.

- *Leave on site wastes that do not require offsite disposal or lengthy above ground containerization.* These include most soil cuttings and aqueous IDW that can be presumed RCRA non-hazardous. Exceptions are all IDW characterized as RCRA hazardous through laboratory analysis.

- *Avoid unnecessary land disposal restrictions (LDRs).* In general, if wastes are not moved from an Area of Concern (AOC) or consolidated with wastes from other AOCs, LDRs do not apply (EPA, 1992).

1.1. Applicable or Relevant and Appropriate Requirements (ARARs)

Environmental investigations, removal and remedial actions produce a variety of IDW, including soil, aqueous solutions, and used personal protective equipment (PPE). The National Contingency Plan (NCP) requires compliance with applicable or relevant and appropriate requirements (ARARs) when practicable. IDW includes:

- Soil IDW produced during drilling operations, test pit advancement and other soil characterization activities.

- Aqueous IDW produced during equipment and PPE decontamination; and monitoring well installation, sampling, purging and development.

- Personal Protective Equipment (PPE) and other disposable items such as: plastic bags, sample tubing, and plastic sheeting.

This IDW Management Plan complies with the following ARARs and guidance documents:

- Federal ARARs related to the generation, identification, characterization and management of IDW include regulations under CERCLA (42 U.S.C. §9601 et seq. (1980)) which lists investigation methods and risk screening levels for contaminants in media.

- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. §6901 et seq. (1976)), which pertains to the characterization, management and off-site transportation of non-hazardous and hazardous wastes.

- The Clean Water Act (CWA) (33 U.S.C. §1251 et seq. (1972)), which pertains to the discharge of pollutants to the waters of the United States.

- The Toxic Substances Control Act (TSCA) (15 U.S.C. §69012601 et seq. (1976)), which regulates the production, transportation and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon and lead paint. Although the Environmental Protection Agency (EPA) has prepared some guidance regarding the 'emerging contaminants' per- and polyfluoroalkyl substances (PFAS) (https://www.epa.gov/water-research/pfas-methods-and-guidance-sampling-and-analyzing-water-and-other-environmental-media), as of this writing, new regulations have not be promulgated. According to EPA, regulations and more detailed guidance regarding PFAS and related substances are being pursued and will be in effect by 2023. This Plan will be updated further when such information becomes available.

State specific ARARs related to the generation, identification, characterization, and management of IDW include:

- Maryland Department of the Environment (MDE) Investigation Derived Waste Policy: This policy has never been published as an official regulation or guidance document but has been made

available by MDE as a comment on planning documents reviewed by the MDE. The MDE IDW policy pertains, primarily to soil IDW and specifies criteria for defining soil IDW as 'inherently waste like'. The MDE IDW policy is included as Appendix A.

- MDE Cleanup Standards for Soil and Groundwater: This document, last updated in 2018, lists residential and non-residential cleanup standards for soil and groundwater and includes guidance on the identification and management of IDW.

- COMAR 26.13.02: This regulation pertains to the identification and listing of hazardous waste.

- Annotated Code of Maryland - Environmental Article Title 7, Subtitle 2, Controlled Hazardous Substances: This document defines roles, facilities and regulations pertaining to the management of hazardous substances.

The following sections of this plan present the purpose of this plan and the general IDW handling procedures for the media typically encountered during environmental investigations.

2. HANDLING OF IDW BY MEDIUM

In general, IDW generated at BARC must be characterized based on known information, such as related analytical data or based on historical information from the site where it was generated. According to federal guidelines (EPA, 1991), and the MDE IDW Policy, unless analytical data, historical records or field observations suggest IDW generated from project sites within the BARC facility should be suspected RCRA hazardous waste, it should be treated as non-hazardous and disposed of on-site. The following sections describe the procedures for management of soil, aqueous solutions and used PPE generated as IDW at BARC.

2.1. Management of Soil IDW

The processes associated with sampling soils may produce soil IDW. In particular, drilling operations produce soil cuttings requiring appropriate management. At BARC, soil cuttings generated during environmental investigations may be disposed of onsite at the AOC of their origin, in accordance with EPA guidance (EPA, 1991). Cuttings may be used to backfill the borings from which they were removed. Cuttings may, alternatively, be spread onsite in the general area from which they were removed if such activity will not result in the soils eroding onto uncontaminated areas. However, to meet the intent of the MDE IDW Policy (2006), cuttings and excess soil from sampling will not be returned to the ground surface of the AOC if they are potentially hazardous based on analytical results, site historical data or field observations.

According to the EPA guidance, all soil IDW (cuttings and excess sample soil) may be returned to the boreholes from which it was generated or spread across the ground surface in the area where the borehole was advanced. Land disposal restrictions (LDRs) do not apply as long as soil IDW remains within the boundaries of the AOC where it was generated. This means it is unnecessary to establish whether the IDW constitutes RCRA hazardous waste if it will be reapplied within the same AOC. This AOC exception to LDRs applies only to soils and may only be used if returning the material to the AOC ground surface will not result in increased AOC risks.

If soil IDW generated during an investigation is “inherently waste-like” according to Maryland’s Investigatory Derived Media (IDM) Comment (Appendix A), the Site Manager (SM) will be notified and may choose to further evaluate it before returning it to a borehole or applying it to the surface at the AOC. In the case of activities conducted at BARC, the SM is the BARC Remedial Project Manager (RPM) or a person designated by the SM. The following general guidance may be used to determine if IDW might be considered hazardous waste in Maryland:

- It is visually or grossly contaminated;

- It has activated any field monitoring device, such as a photo-ionization detector (PID), indicating the presence of volatile organic compounds (VOC) or metals;

- During previous monitoring/ sampling activity, it has exhibited levels of contamination above accepted screening levels for the site or environmental quality standards; or

- Based on historical information, the BARC SM believes it warrants caution or additional testing.

To comply with both EPA and MDE IDW policies, all soil IDW generated during environmental investigations conducted at the BARC (soil cuttings and excess sample soil) will be containerized when generated and stored within the AOC boundaries. Using the guidance provided above, all AOC-specific soil IDW that is not “inherently waste like” will be containerized together. That is, if multiple soil borings are advanced within an AOC, the soil cuttings generated from those borings, and the excess sample soil from those borings will be containerized together unless it is determined that the soil is inherently waste like. Soil IDW that is determined to be “inherently waste like” during generation will be containerized separately according to the borehole from which it was removed.

Sampling requirements for soil IDW analysis that is determined to be ‘inherently waste like’, and criteria for on-site or off-site disposal will be specified in the ARS approved site-specific work plans (SSWPs) for the site. Sampling requirements and screening criteria will be based on information from previous groundwater and/or soil sampling investigations, if available, that have been conducted at the specific work site. Soil IDW samples will be analyzed for contaminants of potential concern (COPCs) that have historically been associated with that specific AOC. For example, soil IDW samples collected during investigations at an AOC with where volatile organic compounds (VOCs) and organochlorine (OC) pesticides have historically been detected will be submitted for laboratory analysis for those contaminants only as specified in the SSWP.

Following the analysis of soil samples collected from the AOC, a determination will be made as to whether the soil IDW will be returned to the AOC ground surface or disposed off-site. Soil IDW will be disposed off-site if the analytical data indicate that contamination exists within the sampled soils at concentrations that would result in an increase in short-term human health or ecological risks if soil is returned to the ground surface of the AOC. In accordance with the EPA Guide to Management of Investigation-derived Wastes (EPA, 1992), the determination of increased risk will be based on the following:

- The volume of soil IDW generated
- The potential to spread contamination based on contaminants present
- The security of the site and locations of the nearest populations
- The potential exposure to site workers and the environment
- The perceived final remedy for the AOC
- State and Federal screening levels for contaminants in soils.
- If the soil IDW contains concentrations of COPCs are significantly greater than background concentrations at the site.

If the waste meets any of the above criteria for being potentially hazardous, it may still be re-applied to the ground within the AOC if doing so will not increase the environmental risks within the AOC. However, the BARC SM may choose to drum soil IDW meeting the criteria for being potentially hazardous, and sample it directly to determine if it might be considered hazardous. In such a case, composite or grab samples should be collected, and evaluated for TCLP toxicity. The TCLP regulatory levels found in Appendix B of this guidance should be used for comparison.

If soil cuttings are retained onsite for TCLP analysis, they will be containerized and stored in a secure area identified by the BARC SM. Soil IDW containers will be labeled with the Site ID (AOC number), sampling location (boring number), name of the contractor, contents (cuttings) and date of generation. Drums will not be removed from an AOC during evaluation. If the waste is found to be below TCLP values, the drums will be emptied and spread onsite at the AOC. If TCLP values are exceeded, the BARC SM will be notified and will assist with coordinating disposal.

It is important to remember that, according to the EPA guidance (EPA, 1991), the SM (Site Manager) should *not* [emphasis added] test IDW, particularly if the soil has known RCRA characteristics, the AOC concept [LDR exception] is applicable, and the wastes will be disposed on-site." However, the BARC SM always has the discretion to further evaluate IDW if such evaluation appears reasonable and prudent.

2.2. Managing Aqueous IDW

Several processes associated with sampling of environmental media produce aqueous IDW including well development, well purging and decontamination of sampling and construction equipment. In general, it is necessary to establish if aqueous IDW is RCRA hazardous waste before disposal onsite or offsite. The exceptions are development water collected from background monitoring wells, and the small amount of purge water generated from low-flow well sampling activities. In these cases, the water can be assumed to be RCRA-nonhazardous and may be applied directly to the ground in the area of the wellhead.

However, if such surface application would create any nuisance situations, or if field conditions suggest the IDW may be hazardous, the water should be containerized in appropriate containers (sealed buckets or 55-gallon drums designed for liquids, with vent caps if long term storage is anticipated). A sample of potentially hazardous aqueous IDW should be collected and submitted for laboratory analysis for the same contaminants as the associated investigation and/or remedial project. If analytical results of the potentially hazardous aqueous IDW are below the RCRA TTO limits (Appendix C) and Pretreatment standards for new sources into publicly owned treatment works (POTWs) (Appendix D), the water may be disposed of at the at the BARC wastewater treatment plant (WWTP).

Development water collected from non-background wells, and decontamination water must be evaluated for hazardous characteristics. Analytical data collected during groundwater sampling may be used to evaluate the contents of drums of development water as long as drums are segregated by well. Drums of decontamination water should be segregated by boring/well location, although water associated with multiple boring/well locations may be placed in the same drum. If analytical data suggests water from a particular location is hazardous, then any drum that contains decontamination water associated with that location must be considered hazardous or sampled directly.

Water collected for evaluation will be containerized in 55-gallon drums in a secure area identified by the BARC SM. Drums will be labeled with the Site ID (AOC number), sampling location (boring number), name of the contractor, contents (development water, decon water etc.) and date of generation.

Analytical data must be evaluated using the following effluent standards:

- The Total Toxic Organics (TTO) rule (40 CFR 433.11). By this rule, all levels of listed the organic contaminants (included in Appendix C) detected at concentrations greater than 0.01 mg/L (10 µg/L) in a sample associated with a particular drum are added together. If this summation results in a TTO value of 2.13 mg/L or less, the water may be disposed of at the BARC WWTP. If the TTO is greater than 2.13 mg/L, the drum's contents must be disposed of offsite, at a licensed

treatment, storage and disposal (TSD) facility. All results showing TTO comparisons should be summarized and submitted to the BARC SM, who will coordinate disposal.

- If containerized aqueous IDW is the result of water sampling for PFAS, IDW will be tested for PFAS using EPA Method 537.1 or an equivalent method to quantify the concentration of PFAS compounds. Aqueous IDW that exceeds a combined concentration for perluorooctane sulfonic acid (PFOS) and perfluorooctanaoic acid (PFOA) of 1,000 nanograms per liter (ng/L) or 1 part per billion (ppb) will require off-site disposal at an appropriate treatment or disposal facility. It is assumed that small volumes of aqueous IDW (less than 100 gallons) would be produced by any project investigation activities. Larger volumes of aqueous IDW with PFAS concentrations greater than the HAL will require specific instructions for containerizing and disposal. The current EPA Health Advisory Limit (HAL) for groundwater is 70 nanograms per liter (ng/L) (https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos). Volumes of water greater than 100 gallons that contain concentrations of PFOS and PFOA will require off-site disposal at an appropriate treatment facility.

  Requirements for the characterization of large quantities (greater than 100 gallons) of aqueous IDW suspected to contain concentrations of PFAS greater than HALs will be addressed in project SSWPs. Currently, hazardous waste incineration is the most effective method for treating of PFAS in contaminated media (EPA, 2020).

- Pretreatment Standards for New Sources (PSNS) (40 CFR 433.17). By this rule, new sources that introduce pollutants into a POTW must achieve pretreatment standards for key pollutants and water quality criteria. Maximum contaminant concentrations of for a one (1) day discharge will be used to screen aqueous IDW before disposal at the BARC WWTP. Maximum concentrations of listed pollutants are included in Appendix D.

The TTO and PSNS standards pertain to specific contaminants of concern (COCs). The TTO contaminant list includes volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), organochlorine (OC) pesticides, polychlorinated biphenyls (PCBs) and other organic compounds. The PSNS standards pertain, primarily, to metals.

The TTO rule includes organic contaminants that are on the SW-486 target contaminant list (TCL) for organic compounds. Analysis for these contaminants will not be conducted unless there is prior reason to suspect their presence within the sampling media at specific site. If additional testing is required to characterize aqueous IDW, analysis will be conducted for contaminants of concern (COCs) identified during previous site investigations. For example, a site where VOCs, metals, and OC pesticides have

been identified as COCs, aqueous IDW will be tested, if necessary, for VOCs and OC Pesticides, will not be required for SVOCs or PCBs to comply with TTO rule and the PSNS standards. Specific sampling and screening criteria for aqueous IDW will be specified in SSWPs prior to the commencement of fieldwork.

RCRA TCLP and TTO rules do not address emergent contaminants such as PFAS or 1,4-dioxane. A complete list of emerging contaminants from the EPA is provided at the following file link: https://www.epa.gov/fedfac/emerging-contaminants-and-federal-facility-contaminants-concern

Sampling, handling and disposal of IDW that potentially contains emergent contaminants that are not as listed as wastes under RCRA such as: PFAS, 1,4-dioxane will be addressed in SSWPs. With the exception of PFAS compounds and 1,4-dioxane and select AOCs, no emergent contaminants are presumed to be present at BARC and testing for the presence of these compounds in IDW will not be required.

2.3. Disposal of Used Personal Protective Equipment (PPE)

In accordance with the EPA guidance (EPA, 1991), all PPE and disposable equipment will be double bagged and deposited in a BARC waste dumpster designated by the BARC SM.

3. REFERENCES

EPA, 1991. *Management of Investigation-derived Wastes During Site Inspections* (OERR Directive 9345.3-02), Office of Emergency and Remedial Response (OERR). May.

EPA, 1992. *Guide to Management of Investigation-derived Wastes* (OSWER 9345.3-03FS), Office of Solid Waste and Emergency Response (OSWER), January.

EPA, 2020. Technical Brief: Per- and Polyfluoroalkyl Substances (PFAS): Incineration to Manage PFAS Waste Streams https://www.epa.gov/sites/production/files/2019-09/documents/technical_brief_pfas_incineration_ioaa_approved_final_july_2019.pdf

Maryland Department of the Environment, 2018. Cleanup Standards for Soil and Groundwater. October. *Investigatory derived media (IDM) comment*.

26 COMAR 13.02. *Identification and Listing of Hazardous Waste.*

Maryland Environment Article 7-201. *Annotated Code of Maryland - Environmental Article Title 7, Subtitle 2, Controlled Hazardous Substances.*

APPENDIX A

MDE Investigation Derived Waste Policy

MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE)
INVESTIGATION DERIVED WASTE POLICY
October 19, 2006

Investigatory derived media (IDM) describes the groundwater, surface water, soils and sediments that are collected during field activities to support the remedial investigation / feasibility study (RI/FS). Specifically, IDM may include development and purge water from monitoring wells, drill cuttings, and extra soils removed during sample collections. To evaluate whether the IDM must be managed as hazardous waste, the preliminary inquiry is whether the IDM is a solid waste, as defined in Maryland's Environment Article, § 7-201(t) and COMAR 26.13.02.02. Basically, uncontaminated IDM need not be considered a solid waste, as long as that IDM: 1) will not be abandoned in an environmentally unsound manner; and 2) is not inherently waste-like.

Because the IDM originates from a site being investigated under CERCLA authority, there must be some initial evaluation as to whether the IDM is contaminated or inherently waste-like. As guidance, IDM must be handled as a solid waste when:

1) It is visually or grossly contaminated;

2) It has activated any field monitoring device indicating the presence of volatile organic compounds (VOC) or metals;

3) On previous monitoring/sampling activity, it has exhibited levels of contamination above accepted environmental quality standards;

4) Based on historical information, the responsible party or the regulatory agency believes it warrants caution or additional testing.

IDM with contamination should be viewed as inherently waste-like unless or until the media is no longer contaminated, or is treated or recycled. As with any solid waste, the generator must perform a hazardous waste determination. If the waste is a hazardous waste, then it must be disposed of through an appropriate hazardous waste disposal facility. If the waste is not a hazardous waste, then that IDM may be disposed of through any permitted or authorized waste management facility willing to accept the waste, or recycled or reused in a manner permissible under the law.

Naturally occurring media, which does not exhibit any of the characteristics or concerns described above need not be managed as a waste, particularly if the material will be returned to a suitable location on the facility. Unless otherwise specified, the handling or disposition of this material must be performed in such a manner, so that potential impacts to the environment are avoided. The facility must comply with all pertinent sediment and erosion control regulations. Also, seeding and the judicious discharge of non-contaminated water to ensure infiltration will be considered the minimum steps necessary to ensure non-degradation of the environment.

Decontamination fluids, disposable sampling equipment, personal protective equipment and expended drilling muds that contain additives (thickening or weighting compounds) are wastes and must be managed as waste. It is not appropriate to include these items in a discussion of IDM. These types of items are clearly Investigatory Derived Waste.

[NOTE TO THE READER: The above Investigation Derived Material (IDM) policy was provided to the authors by the Maryland Department of the Environment (MDE) in connection with other work performed by the authors within the State of Maryland. Personal communications with MDE personnel on October 18, 2006, indicates that the that the MDE IDM policy has never been published as an official regulation or guidance, but has been made available by MDE since the early 1990s in a less formal manner (e.g., comments on planning documents reviewed by MDE) using essentially the same language as shown above. The above text is the most current version of the policy as of October 19, 2006.]

APPENDIX B

TOXICITY CHARACTERISTIC LEACHING PROCEDURE LEVELS
[USEPA RCRA Orientation Manual Page III-23]

http://www2.epa.gov/sites/production/files/2015-07/documents/rom.pdf

Contaminant	EPA Hazardous Waste Code	CAS Number	Concentration (mg/L)
Arsenic	D004	7440-38-2	5.0
Barium	D005	7440-39-3	100.0
Benzene	D018	71-43-2	0.5
Cadmium	D006	7440-43-9	1.0
Carbon tetrachloride	D019	56-23-5	0.5
Chlordane	D020	57-74-9	0.03
Chlorobenzene	D021	108-90-7	100.0
Chloroform	D022	67-66-3	6.0
Chromium	D007	7440-47-3	5.0
o-Cresol*	D023	95-48-7	200.0
m-Cresol*	D024	108-39-4	200.0
p-Cresol*	D025	106-44-5	200.0
Cresol*	D026		200.0
2,4-D	D016	94-75-7	10.0
1,4-Dichlorobenzene	D027	106-46-7	7.5
1,2-Dichloroethane	D028	107-06-2	0.5
1,1-Dichloroethylene	D029	75-35-4	0.7
2,4-Dinitrotolune	D030	121-14-2	0.13
Endrin	D012	72-20-8	0.02
Heptachlor (and epoxide	D031	76-44-8	0.008
Hexachlorobenzene	D032	118-74-1	0.1
Hexachloro-1,3-butadiene	D033	87-68-3	0.5
Hexachloroethane	D034	67-72-1	3.0
Lead	D008	7439-92-1	5.0
Lindane	D013	58-89-9	0.4
Mercury	D009	7439-97-6	0.2
Methoxychlor	D014	72-43-5	10.0
Methyl ethyl ketone	D035	78-93-3	200.0
Nitrobenzene	D036	98-95-3	2.0
Pentrachlorophenol	D037	87-86-5	100.0
Pyridine	D038	110-86-1	5.0
Selenium	D010	7782-49-2	1.0
Silver	D011	7440-22-4	5.0
Tetrachloroethylene	D039	127-18-4	0.7
Toxaphene	D015	8001-35-2	0.5
Trichloroethylene	D040	79-01-6	0.5
2,4,5-Trichlorophenol	D041	95-95-4	400.0
2,4,6-Trichlorophenol	D042	88-06-2	2.0
2,4,5-TP (Silvex)	D017	93-72-1	1.0
Vinyl chloride	D043	75-01-4	0.2

* If 0-, m-, and p-cresols cannot be individually measured, the regulatory level for total cresols is used.

APPENDIX C

TOTAL TOXIC ORGANICS

[40 CFR 433.11]

http://www.gpo.gov/fdsys/pkg/CFR-2012-title40-vol31/xml/CFR-2012-title40-vol31-sec433-11.xml

Total Toxic Organics (TTO): The term “TTO” shall mean total toxic organics, which is the summation of all quantifiable values greater than .01 milligrams per liter (10 micrograms per liter) for the following toxic organics:

Volatile Organic Compounds (VOCs) via Target Contaminant List (TCL) SW8260B

- 1,1,1-Trichloroethane
- 1,1,2,2-Tetrachloroethane
- 1,1,2-Trichloroethane
- 1,1-Dichloroethane
- 1,1-Dichloroethylene
- 1,2,4-Trichlorobenzene
- 1,2,-Dichloroethane
- 1,2-Dichlorobenzene
- 1,2-Trans-dichloroethylene
- 1,3-Dichlorobenzene
- 1,3-Dichloropropylene (1,3-dichloropropene)
- 1,4-Dichlorobenzene
- 2-Chloroethyl vinyl ether (mixed)
- Benzene
- Bromoform (tribromomethane)
- Carbon tetrachloride (tetrachloromethane)
- Chlorobenzene
- Chlorodibromomethane (dibromochloromethane)
- Chloroethane
- Chloroform (trichloromethane)
- Dichlorobromomethane
- Ethylbenzene
- Methyl bromide (bromomethane)
- Methyl chloride (chloromethane)
- Methylene chloride (dichloromethane)
- Tetrachloroethylene
- Toluene
- Trichloroethylene
- Vinyl chloride (chloroethylene)

Semi-Volatile Organic Compounds via TCL SW8270D

- (benzo(a)anthracene)
- (benzo(k)fluoranthene)
- (dibenzo(a,h)anthracene)
- 1,12-Benzoperylene (benzo(ghi)perylene)
- 1,2,5,6-Dibenzanthracene
- 1,2-Benzanthracene
- 1,2-Diphenylhydrazine (SW8270D)
- 11,12-Benzofluoranthene
- 2,4,6-Trichlorophenol
- 2,4-Dichlorophenol
- 2,4-Dimethylphenol
- 2,4-Dinitrophenol
- 2,4-Dinitrotoluene
- 2,6-Dinitrotoluene
- 2-Chloronaphthalene
- 2-Chlorophenol
- 2-Nitrophenol
- 3,3-Dichlorobenzidine
- 3,4-Benzofluoranthene (benzo(b)fluoranthene)
- 4,6-Dinitro-o-cresol
- 4-Bromophenyl phenyl ether
- 4-Chlorophenyl phenyl ether
- 4-Nitrophenol
- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)pyrene (3,4-benzopyrene)
- Benzidine
- Bis (2-chloroethoxy) methane
- Bis (2-chloroisopropyl) ether
- Bis (2-ethylhexyl) phthalate
- Butyl benzyl phthalate
- Chrysene
- Diethyl phthalate
- Dimethyl phthalate
- Di-n-butyl phthalate
- Di-n-octyl phthalate
- Fluoranthene
- Fluorene
- Hexachlrobenzene
- Hexachlorobutadiene
- Hexachlorocyclopentadiene
- Hexachloroethane
- Indeno(1,2,3-cd) pyrene (2,3-o-phenlene pyrene)
- Isophorone
- Naphthalene
- Nitrobenzene
- N-nitrosodimethylamine
- N-nitrosodi-n-propylamine
- N-nitrosodiphenylamine
- Parachlorometa cresol
- Pentachlorophenol
- Phenanthrene
- Phenol

Organochlorine (OC) Pesticides via TCL SW8081A

- 4,4-DDD (p,p-TDE)
- 4,4-DDE (p,p-DDX)
- 4,4-DDT
- Aldrin
- Alpha-BHC
- Alpha-endosulfan
- Beta-BHC
- Beta-endosulfan
- BHC (hexachlorocyclohexane)
- Chlordane (technical mixture and metabolites)
- Delta-BHC
- Dieldrin
- Endosulfan sulfate
- Endrin
- Endrin aldehyde
- Gamma-BHC
- Heptachlor
- Heptachlor epoxide
- Toxaphene

Polychlorinated biphenyls (PCBs) via SW8082

- PCB-1242 (Arochlor 1242)
- PCB-1254 (Arochlor 1254)
- PCB-1221 (Arochlor 1221)
- PCB-1232 (Arochlor 1232)
- PCB-1248 (Arochlor 1248)
- PCB-1260 (Arochlor 1260)
- PCB-1016 (Arochlor 1016)

Additional Organic Contaminants on TTO list

- Acrolein (SW8316)
- Acrylonitrile (SW8316)
- 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (SW8280B)

APPENDIX D

PRETREATEMENT STANDARDS FOR NEW SOURCES INTO POTWS

[40 CFR 433.17]

http://www.gpo.gov/fdsys/pkg/CFR-2012-title40-vol31/xml/CFR-2012-title40-vol31-sec433-17.xml

Pretreatment standards for new sources (PSNS).

(a) Except as provided in 40 CFR 403.7, any new source subject to this subpart that introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for new sources (PSNS):

PSNS Standards

Pollutant or pollutant property	Maximum for any 1 day	Monthly average shall not exceed
	Milligrams per liter (mg/l)	Milligrams per liter (mg/l)
Cadmium (T)	0.11	0.07
Chromium (T)	2.77	1.71
Copper (T)	3.38	2.07
Lead (T)	0.69	0.43
Nickel (T)	3.98	2.38
Silver (T)	0.43	0.24
Zinc (T)	2.61	1.48
Cyanide (T)	1.20	0.65
TTO (See Appendix C)	2.13	

(b) Alternatively, for industrial facilities with cyanide treatment, and upon agreement between a source subject to these limits and the pollution control authority, the following amenable cyanide limit may apply in place of the total cyanide limit specified in paragraph (a) of this section:

Pollutant or pollutant property	Maximum for any 1 day	Monthly average shall not exceed
	Milligrams per liter (mg/l)	Milligrams per liter (mg/l)
Cyanide (A)	0.86	0.32

(c) No user subject to the provisions of this subpart shall augment the use of process wastewater or otherwise dilute the wastewater as a partial or total substitute for adequate treatment to achieve compliance with this limitation (d) An existing source submitting a certification in lieu of monitoring pursuant to § 433.12 (a) and (b) of this regulation must implement the toxic organic management plan approved by the control authority.

Notes:

(A) = Amenable cyanide

(T) = Total contaminant concentration