

Pollutant Testing Guidance Table ¹

| Category | Construction Site Material | Visually Observable? | Pollutant Indicators ² | Suggested Analyses Field ³ | Laboratory |
|--|---|---|--|---|---|
| Asphalt Products (Sections 37, 39, 92, 93, 94, and Special Provisions) | Hot Asphalt | Yes - Rainbow Surface or Brown Suspension | Visually Observable - No Testing Required | | |
| | Asphalt Emulsion | | | | |
| | Liquid Asphalt (tack coat) | | | | |
| | Cold Mix | Yes, Black Solid Material | Visually Observable - No Testing Required | | |
| | Crumb Rubber | | | | |
| Asphalt Concrete (Any Type) | Yes - Rainbow Surface or Brown Suspension | Visually Observable - No Testing Required | | | |
| Cleaning Products | Acids | No | pH Acidity Anions (acetic acid, phosphoric acid, sulfuric acid, nitric acid, hydrogen chloride) | HACH pH Test Kit or pH Meter HACH Acidity Test Kit | EPA 150.1 (pH) SM 2310B (Acidity) EPA 300.0 (Anion) |
| | Bleaches | No | Residual Chlorine | HACH Chlorine Test Kit | SM 4500-CL G (Res. Chlorine) |
| | Detergents | Yes - Foam | Visually Observable - No Testing Required | | |
| | TSP | No | Phosphate | HACH Phosphate Test Kit | EPA 365.3 (Phosphate) |
| | Solvents | No | VOC | None | EPA 601/602 or EPA 624 (VOC) |
| | | | SVOC | None | EPA 625 (SVOC) |

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| <p>Portland Concrete Cement & Masonry Products (Section 27, 28, 29, 40, 41, 42, 49, 50, 51, 53, 63, 65, 72, 73, 80, 81, 83, 90, and Special Provisions)</p> | Portland Cement (PCC) | Yes - Milky Liquid | Visually Observable - No Testing Required | | |
| | Masonry products | No | pH | HACH pH Test Kit or pH Meter HACH Alkalinity Test Kit | EPA 150.1 (pH) |
| | | | Alkalinity | | SM 2320 (Alkalinity) |
| | Sealant (Methyl Methacrylate - MMA) | No | Methyl Methacrylate | None | EPA 625 (SVOC) |
| | | | Cobalt | | EPA 200.8 (Metal) |
| | | | Zinc | | |
| | Incinerator Bottom Ash Bottom Ash Steel Slag Foundry Sand Fly Ash Municipal Solid Waste Ash | No | Aluminum Calcium Vanadium Zinc | HACH Calcium Test Kit | EPA 200.8 (Metal) EPA 200.7 (Calcium) |
| | Mortar | Yes - Milky Liquid | Visually Observable - No Testing Required | | |
| | Concrete Rinse Water | Yes - Milky Liquid | Visually Observable - No Testing Required | | |
| | Non-Pigmented Curing Compounds | No | Acidity | HACH Acidity Test Kit or pH Meter HACH Alkalinity Test Kit | SM 2310B (Acidity) |
| Alkalinity | | | SM 2320 (Alkalinity) | | |
| pH | | | EPA 150.1 (pH) | | |
| VOC | | | EPA 601/602 or EPA 624 (VOC) | | |
| SVOC | | | EPA 625 | | |

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| Landscaping and Other Products (Section 20, 24, and Special Provisions) | Aluminum Sulfate | No | Aluminum | TDS Meter HACH Sulfate Test Kit | EPA 200.8 (Metal) | |
| | | | TDS | | EPA 160.1 (TDS) | |
| | | | Sulfate | | EPA 300.0 (Sulfate) | |
| | Sulfur-Elemental | No | Sulfate | HACH Sulfate Test Kit | EPA 300.0 (Sulfate) | |
| | Fertilizers-Inorganic ⁴ | No | Nitrate | HACH Nitrate Test Kit | EPA 300.0 (Nitrate) | |
| | | | Phosphate | HACH Phosphate Test Kit | EPA 365.3 (Phosphate) | |
| | | | Organic Nitrogen | None | EPA 351.3 (TKN) | |
| | | | Potassium | None | EPA 200.8 (Metal) | |
| | Fertilizers-Organic | No | TOC | HACH Nitrate Test Kit | EPA 415.1 (TOC) | |
| | | | Nitrate | | EPA 300.0 (Nitrate) | |
| | | | Organic Nitrogen | | EPA 351.3 (TKN) | |
| | | | COD | | EPA 410.4 (COD) | |
| | Natural Earth (Sand, Gravel, and Topsoil) | Yes - Cloudiness and turbidity | Visually Observable - No Testing Required | | | |
| | Herbicide | No | Herbicide | None | Check lab for specific herbicide | |
| | Pesticide | | Pesticide | | Check lab for specific pesticide | |
| | Lime | | Alkalinity | HACH pH Test Kit or pH Meter | SM 2320 (Alkalinity) | |
| | | pH | HACH Alkalinity Test Kit | EPA 150.1 (pH) | | |

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|---|--------------------------------------|--------------------------------------|---|------------------------|------------------------------|
| Contaminated Soil ⁵ | Aerially Deposited Lead ³ | No | Lead | None | EPA 200.8 (Metal) |
| | Petroleum | Yes - Rainbow Surface Sheen and Odor | Visually Observable - No Testing Required | | |
| | Other | No | Contaminant Specific | Contaminant Specific | Contaminant Specific |
| Line Flushing Products | Chlorinated Water | No | Total Chlorine | HACH Chlorine Test Kit | SM 4500-CL G (Res. Chlorine) |
| Adhesives | Adhesives | No | COD | None | EPA 410.4 (COD) |
| | | | Phenols | HACH Phenol Test Kit | EPA 420.1 (Phenol) |
| | | | SVOC | None | EPA 625 (SVOC) |
| Painting Products (Section 12-3.08, 20-2.32, 50-1.05, 59, 91, and Special Provisions) | Paint | Yes | Visually Observable - No Testing Required | | |
| | Paint Strippers | No | VOC | None | EPA 601/602 or EPA 624 (VOC) |
| | | | SVOC | | EPA 625 (SVOC) |
| | Resins | No | COD | None | EPA 410.4 (COD) |
| | | | SVOC | | EPA 625 (SVOC) |
| | Sealants | No | COD | None | EPA 410.4 (COD) |
| | Solvents | No | COD | None | EPA 410.4 (COD) |
| | | | VOC | | EPA 601/602 or EPA 624 (VOC) |
| | | | SVOC | | EPA 625 (SVOC) |

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|--|--|--------------|---|--------------------------|------------------------------|
| | Lacquers, Varnish, Enamels, & Turpentine | No | COD | None | EPA 410.4 (COD) |
| | | | VOC | | EPA 601/602 or EPA 624 (VOC) |
| | | | SVOC | | EPA 625 (SVOC) |
| | Thinners | No | VOC | None | EPA 601/602 or EPA 624 (VOC) |
| | | | COD | | EPA 410.4 (COD) |
| Portable Toilet Waste Products | Portable Toilet Waste | Yes | Visually Observable - No Testing Required | | |
| Soil Amendment/Stabilization Products | Polymer/Copolymer ^{6,7} | No | Organic Nitrogen | None | EPA 351.3 (TKN) |
| | | | BOD | None | EPA 405.1 (BOD) |
| | | | COD | None | EPA 410.4 (COD) |
| | | | DOC | None | EPA 415.1 (DOC) |
| | | | Nitrate | HACH Nitrate Test Kit | EPA 300.0 (Nitrate) |
| | | | Sulfate | HACH Sulfate Test Kit | EPA 300.0 (Sulfate) |
| | | | Nickel | None | EPA 200.8 (Metal) |
| | Straw/Mulch | Yes - Solids | Visually Observable - No Testing Required | | |
| | Lignin Sulfonate | No | Alkalinity | HACH Alkalinity Test Kit | SM 2320 (Alkalinity) |
| | | | TDS | TDS Meter | EPA 160.1 (TDS) |
| Psyllium | No | COD | None | EPA 410.4 (COD) | |
| | | TOC | TDS Meter | EPA 415.1 (TOC) | |

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|---|--|---|---|--|---|
| | Guar/Plant Gums | No | COD | None | EPA 410.4 (COD) |
| | | | TOC | | EPA 415.1 (TOC) |
| | | | Nickel | | EPA 200.8 (Metal) |
| | Gypsum | No | pH | HACH SW-1 Test Kit or pH Meter | EPA 150.1 (pH) |
| | | | Calcium | HACH Calcium Test Kit HACH Sulfate Test Kit | EPA 200.8 (Metal) EPA 200.7 (Calcium) EPA 300.0 (Sulfate) |
| | | | Sulfate | | |
| | | | Aluminum | | |
| | | | Barium | | |
| | | | Manganese | | |
| | | | Vanadium | | |
| Dust Palliative Products (Section 18) | Salts (Magnesium Chloride, Calcium Chloride, and Natural Brines) | No | Chloride | HACH Chloride Test Kit | EPA 300.0 (Chloride) |
| | | | TDS | TDS Meter | EPA 160.1 (TDS) |
| | | | Cations (sodium, magnesium, calcium) | None | EPA 200.7 (Cations) |
| Treated Wood Products (Section 57, 58, 80-3.01B(2), and Special Provisions) | Ammoniacal-Copper-Zinc-Arsenate (ACZA) | No | Arsenic | HACH Total Chromium Test Kit | EPA 200.8 (Metal) |
| | Copper-Chromium-Arsenic (CCA) | | Total Chromium | | |
| | Ammoniacal-Copper-Arsenate (ACA) | | Copper | | |
| | Copper Naphthenate | | Zinc | | |
| | Creosote | Yes - Rainbow Surface or Brown Suspension | Visually Observable - No Testing Required | | |

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|-------------------------|--------------------------------------|---|---|------------------------------|---------------------|
| Vehicle | Antifreeze and Other Vehicle Fluids | Yes - Colored Liquid | Visually Observable - No Testing Required | | |
| | Batteries | No | Sulfate | HACH Sulfate Test Kit | EPA 300.0 (Sulfate) |
| | | | Lead | None | EPA 200.8 (Metal) |
| | | | pH | HACH pH Test Kit or pH Meter | EPA 150.1 (pH) |
| Fuels, Oils, Lubricants | Yes - Rainbow Surface Sheen and Odor | Visually Observable - No Testing Required | | | |

Notes:

- 1 If specific pollutant is known, analyze only for that specific pollutant. See MSDS to verify.
- 2 For each construction material, test for one of the pollutant indicators. **Bolded** pollutant indicates lowest analysis cost or best indicator. However, the composition of the specific construction material, if known, is the first criterion for selecting which analysis to use.
- 3 See www.hach.com for some of the test kits.
- 4 If the type of inorganic fertilizer is unknown, analyze for all pollutant indicators listed.
- 5 Only if special handling requirements are required in the Standard Special Provisions for aerial deposited lead.
- 6 If used with a dye or fiber matrix, it is considered visually observable and no testing is required.
- 7 Based upon research conducted by Caltrans, the following copolymers/polymers do not discharge pollutants and water quality sampling and analysis is **not** required: Super Tak™, M-Binder™, Fisch Stik™, Pro40dc™, Fisch-Bond™, and Soil Master WR™.

Acronyms:

BOD - Biochemical Oxygen Demand

COD - Chemical Oxygen Demand

DOC – Dissolved Organic Carbon

EPA - Environmental Protection Agency

HACH - Worldwide company that provides advanced analytical systems and technical support for water quality testing

SM - Standard Method

SVOC - Semi-Volatile Organic Compounds

TDS - Total Dissolved Solids

TKN - Total Kjeldahl Nitrogen

TOC - Total Organic Carbon

TSP - Tri-Sodium Phosphate

VOC - Volatile Organic Compounds

References:

Construction Storm Water Sampling and Analysis Guidance Document, California Stormwater Quality Task Force, October 2001.

Environmental Impact of Construction and Repair Materials on Surface and Ground Waters, Report 448, National Cooperative Highway Research Program, 2001

Soil Stabilization for Temporary Slopes, Environmental Programs, California Department of Transportation, October 1, 1999.

Statewide Storm Water Management Plan, Division of Environmental Analysis, California Department of Transportation, April 2002.

Statewide Storm Water Quality Practice Guidelines, Environmental Program, California Department of Transportation, August 2000.

Soil Stabilization for Temporary Slopes and District 7 Erosion Control Pilot Study, June 2000.

Stormwater Monitoring Protocols, Guidance Manual, California Department of Transportation, May 2000.