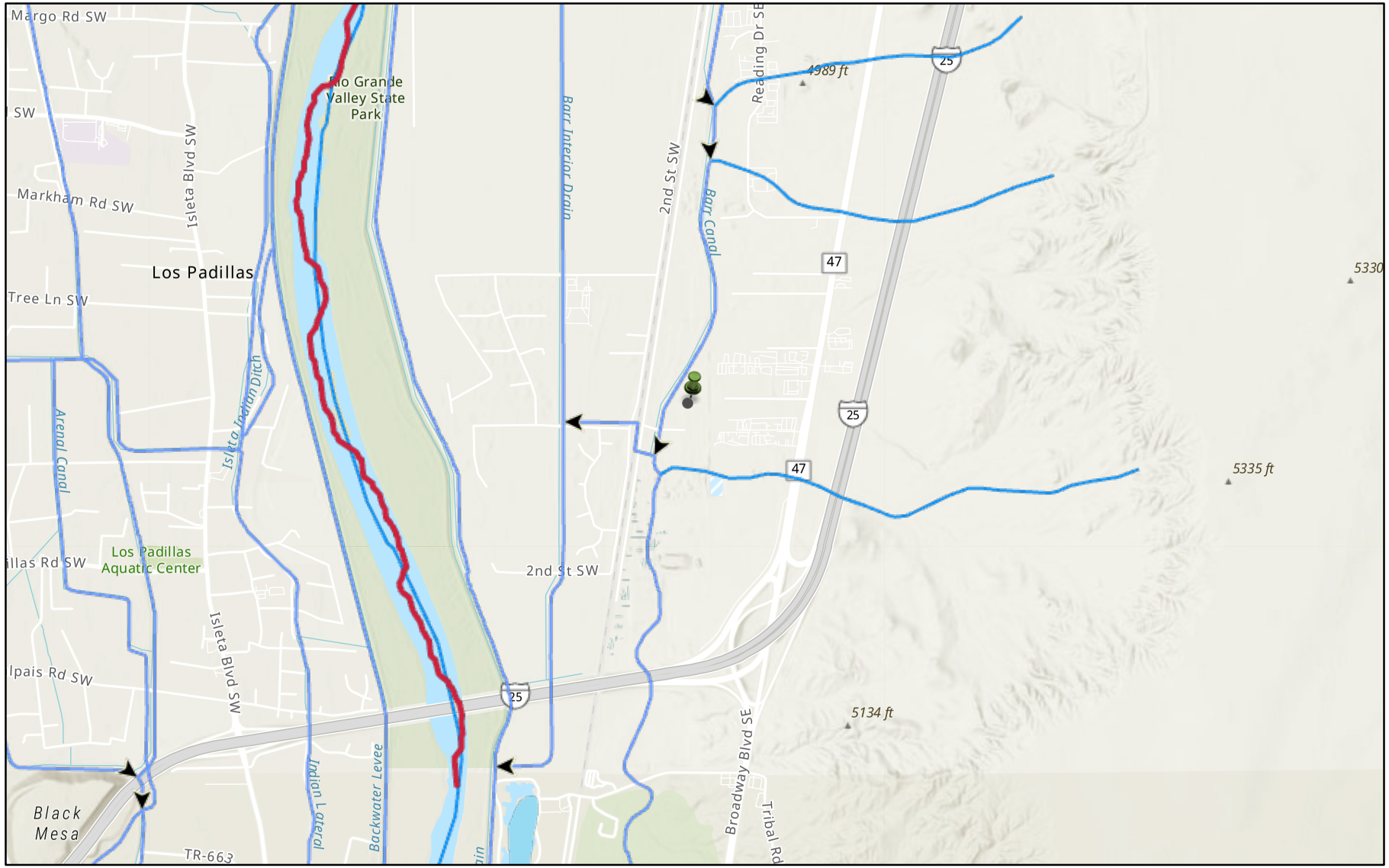
Receiving Waters &
TMDL Data

Receiving Waters - Soilutions



2/20/2023, 4:16:39 PM

ATTAINS Assessment Lines

Polluted

Waterbodies

Canals

Streams

Flow Direction

1:36,112

0 0.25 0.5 1 mi

0 0.4 0.8 1.6 km

US EPA, Esri, NASA, NGA, USGS, FEMA, New Mexico State University, City of Albuquerque, Bernalillo County, NM, Esri, HERE, Garmin, SafeGraph,

US Environment Protection Agency

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U.S. Fish and Wildlife Service

National Wetlands Inventory

Soilutions

February 20, 2023

Wetlands

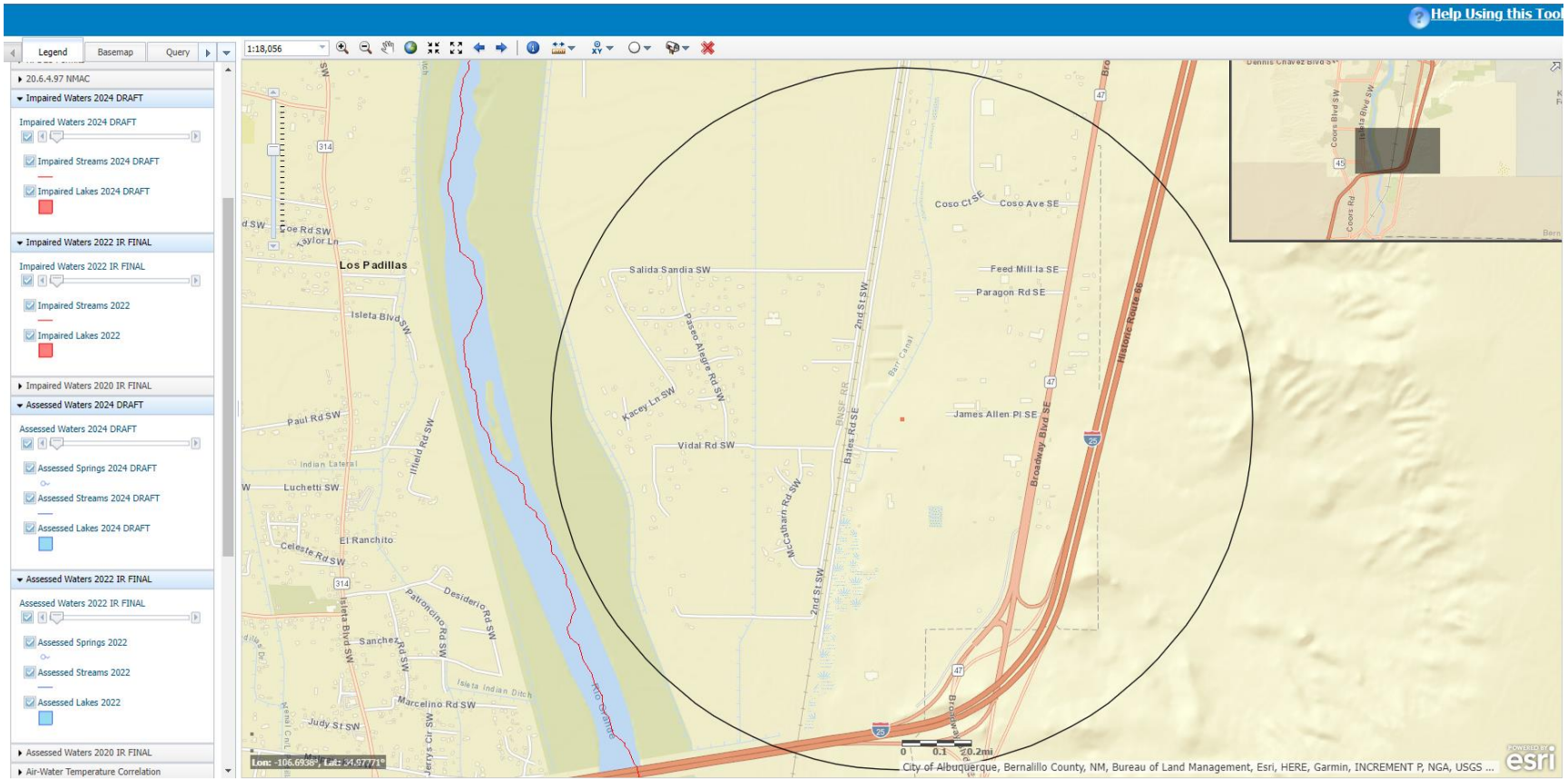
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

NMED Stormwater Quality Bureau

Facility: Soilutions, 9008 Bates Ln SE, Albuquerque, NM 87105

Radius: One – Mile



ALL TMDL DOCS							
HUC	TMDL document	AU_ID	Assessment Unit	TMDL parameter	WQCC approval	EPA approval	EPA approval
11040001	TMDL for the Dry Cimarron Watershed	NM-2701_00	Dry Cimarron River (perennial reaches OK bnd to Long Canyon)	sulfate, TDS	4/14/2009	6/2/2009	
11040001	TMDL for the Dry Cimarron Watershed	NM2701_02	Dry Cimarron River (Long Canyon to Oak Creek	E.coli, TDS	4/15/2009	6/2/2009	
11040001	TMDL for the Dry Cimarron Watershed	NM2701_20	Long Canyon (perennial reaches above Dry Cimarron)	E.coli, selenium	4/16/2009	6/2/2009	
11040001	TMDL for the Dry Cimarron Watershed	NM-2701_10	Oak Creek (Dry Cimarron to headwaters)	E.coli, plant nutrients	4/17/2009	6/2/2009	
11080001	TMDL for the Canadian Watershed - Part One	NM-2306.A_151	Caliente Canyon (Vermejo River to headwaters)	specific conductance	8/14/2007	9/21/2007	
11080004	TMDL for the Canadian Watershed - Part One	NM-2306.A_020	Coyote Creek (Mora River to Black Lake)	specific conductance, temperature	8/14/2007	9/21/2007	
11080004	TMDL for the Canadian Watershed - Part One	NM-2306.A_024	Little Coyote Creek (Black Lake to headwaters)	plant nutrients, pH	8/14/2007	9/21/2007	
11080004	TMDL for the Canadian Watershed - Part One	NM-2305.A_00	Mora River (USGS gage east of Shoemaker to Hwy 434)	plant nutrients	8/14/2007	9/21/2007	
11080004	TMDL for the Canadian Watershed - Part One	NM-2306.A_00	Mora River (Hwy 434 to headwaters)	specific conductance, sedimentation	8/14/2007	9/21/2007	
11080004	TMDL for the Canadian Watershed - Part One	NM-2305.3.A_20	Sapello River (Mora River to Manuelitas Creek)	sedimentation	8/14/2007	9/21/2007	
11080001	TMDL for the Canadian Watershed - Part One	NM-2305.A_220	Vermejo River (Rail Canyon to York Canyon)	specific conductance, temperature	8/14/2007	9/21/2007	
11080001	TMDL for the Canadian Watershed - Part One	NM-2305.A_230	Vermejo River (York Canyon to headwaters)	temperature	8/14/2007	9/21/2007	
11080001	TMDL for the Canadian Watershed - Part Two	NM-2305.A_200	Canadian River (Cimarron River to Colorado border)	plant nutrients	9/30/2011	11/21/2011	
11080003	TMDL for the Canadian Watershed - Part Two	NM-2305.A_000	Canadian River (Conchas River to Mora River)	E.coli	9/30/2011	11/21/2011	
11080006	TMDL for the Canadian Watershed - Part Two	NM-2303_00	Canadian River (Ute Reservoir to Conchas Reservoir)	E.coli	9/30/2011	11/21/2011	
11080006	TMDL for the Canadian Watershed - Part Two	NM-2303_10	Pajarito Creek (Canadian River to headwaters)	E.coli, plant nutrients	9/30/2011	11/21/2011	
11080008	TMDL for the Canadian Watershed - Part Two	NM-2301_10	Revuelto Creek (Canadian River to headwaters)	boron	9/30/2011	11/21/2011	
11080001	TMDL for the Canadian Watershed - Part Two	NM-2305.A_254	Una de Gato Creek (Chicorica Creek to Highway 64)	plant nutrients	9/30/2011	11/21/2011	
11080001	TMDL for the Canadian Watershed - Part Two	NM-2305.A_030	Una de Gato Creek (Highway 64 to headwaters)	plant nutrients	9/30/2011	11/21/2011	
11080002	TMDL for the Cimarron Watershed	NM-2306.A_065	Cieneguilla Creek (Eagle Nest Lake to headwaters)	E.coli, temperature, plant nutrients	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2305.1.A_10	Cimarron River (Canadian River to Cimarron Village)	plant nutrients	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2306.A_040	Cimarron River (Cimarron Village to Turkey Creek)	arsenic, temperature	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2306.A_130	Cimarron River (Turkey Creek to Eagle Nest Lake)	arsenic, plant nutrients	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2306.A_060	Moreno Creek (Eagle Nest Lake to headwaters)	temperature, plant nutrients	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2306.A_110	North Ponil Creek (South Ponil Creek to Seally Canyon)	E.coli	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2306.A_100	Ponil Creek (Cimarron River to US 64)	E.coli	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2306.A_101	Ponil Creek (US 64 to confluence of North & South Ponil)	E.coli, plant nutrients	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2305.3.A_80	Rayado Creek (Cimarron River to Miami Lake Diversion)	plant nutrients	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2306.A_051	Rayado Creek (Miami Lake Diversion to headwaters)	E.coli, temperature	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2306.A_064	Sixmile Creek (Eagle Nest Lake to headwaters)	E.coli, temperature, plant nutrients	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2306.A_120	South Ponil Creek (Ponil Creek to Middle Ponil)	temperature	8/10/2010	9/3/2010	
11080002	TMDL for the Cimarron Watershed	NM-2306.A_068	Ute Creek (Cimarron River to headwaters)	arsenic, E.coli, temperature	8/10/2010	9/3/2010	
11080002	TMDL for Metals in Cieneguilla Creek	NM-2306.A_065	Cieneguilla Creek (Eagle Nest Lake to headwaters)	aluminum	1/13/2004	5/19/2004	
11080002	TMDL for turbidity, SBD, and phosphorus in Cimarron watershed	NM-2306.A_066	Cieneguilla Creek (Eagle Nest Lake to headwaters)	turbidity, SBD, total phosphorus	1/13/2004	5/19/2004	
11080002	TMDL for turbidity, SBD, and phosphorus in Cimarron watershed	NM-2306.A_067	Cieneguilla Creek (Eagle Nest Lake to headwaters)	turbidity, SBD	8/10/1999	9/30/1999	
11080002	TMDL for SBD in Rayado Creek and metals in Cimarron River	NM-2306.A_040	Cimarron River (Canadian River to to Turkey Creek)	chronic aluminum	12/12/2000	2/16/2001	
11080002	TMDL for temperature on Middle Ponil Creek	NM-2306.A_121	Middle Ponil Creek (South Ponil Creek to headwaters)	temperature	7/10/2001	9/27/2001	
11080002	TMDL for turbidity in Middle Ponil and Ponil Creek	NM-2306.A_121	Middle Ponil Creek (South Ponil Creek to headwaters)	turbidity	7/10/2001	9/27/2001	
11080002	TMDLs for Waters of the Valle Vidal	NM-2306.A_124	Middle Ponil Creek (Greenwood Creek to headwaters)	nutrients	9/30/2011	11/8/2011	
11080002	TMDL for turbidity, SBD, and phosphorus in Cimarron watershed	NM-2306.A_060	Moreno Creek (Eagle Nest Lake to headwaters)	turbidity	1/13/2004	5/19/2004	
11080002	TMDL for turbidity, SBD, and phosphorus in Cimarron watershed	NM-2306.A_110	North Ponil Creek (South Ponil Creek to McCrystal Creek)	SBD, total phosphorus, turbidity	1/13/2004	5/19/2004	
11080002	TMDL for temperature on North Ponil Creek	NM-2306.A_110	North Ponil Creek (South Ponil Creek to McCrystal Creek)	temperature	11/9/1999	12/17/1999	
11080002	TMDLs for Waters of the Valle Vidal	NM-2306.A_162	North Ponil Creek (Seally Canyon to headwaters)	temperature	9/30/2011	11/8/2011	
11080002	TMDL for metals in Ponil Creek	NM-2306.A_100	Ponil Creek (Cimarron River to confluence of North and South Ponil Creeks)	chronic aluminum	7/10/2001	9/27/2001	
11080002	TMDL for temperature on Ponil Creek	NM-2306.A_100	Ponil Creek (Cimarron River to confluence of North and South Ponil Creeks)	temperature	7/10/2001	9/27/2001	
11080002	TMDL for turbidity in Middle Ponil and Ponil Creek	NM-2306.A_100	Ponil Creek (Cimarron River to confluence of North and South Ponil Creeks)	turbidity	7/10/2001	9/27/2001	
11080002	TMDL for SBD in Rayado Creek and metals in Cimarron River	NM-2305.A_80	Rayado Creek (Cimarron River to Miami Lake Diversion)	sedimentation	12/12/2000	2/16/2001	
11080002	TMDL for turbidity, SBD, and phosphorus in Cimarron watershed	NM-2306.A_064	Sixmile Creek (Eagle Nest Lake to headwaters)	turbidity	1/13/2004	5/19/2004	
11080004	Updated Mora River nutrient TMDL	NM-2305.A_00	Mora River (USGS gage east of Shoemaker to Hwy 434)	nutrients	6/10/2015	7/22/2015	
11080004	Updated Mora River sedimentation and conductance TMDL	NM-2306.A_00	Mora River (Hwy 434 to Luna Creek)	sedimentation, specific conductance	9/30/2011	11/28/2011	
13010005	TMDL for the Upper Rio Grande Watershed Part One	NM-2120.A_900	Rio de los Pinos (Colorado border to headwaters)	temperature	11/9/2004	12/17/2004	
13010005	TMDL for the Upper Rio Grande Watershed Part One	NM-2120.A_901	Rio San Antonio (Montoya Canyon to headwaters)	temperature	11/9/2004	12/17/2004	
13020101	TMDL for Upper Rio Grande Watershed	NM-98.A_002	Apache Canyon (Rio Fernando de Taos to headwaters)	E.coli	8/14/2012	9/13/2012	
13020101	TMDL for Red River Watershed	NM-2120.A_705	Bitter Creek (Red River to headwaters)	acute aluminum, SBD	1/10/2006	3/17/2006	
13020101	TMDL for the Upper Rio Grande Watershed Part One	NM-2120.A_827	Comanche Creek (Costilla Creek to Little Costilla Creek)	temperature	11/9/2004	12/17/2004	
13020101	TMDL for turbidity, SD and total phosphorus for Cordova Creek	NM-2120.A_823	Cordova Creek (Costilla Creek to headwaters)	SBD, phosphorus, turbidity	11/9/1999	12/17/1999	
13020101	TMDL for the Upper Rio Grande Watershed Part One	NM-2120.A_820	Costilla Creek (diversion above Costilla to Comanche Creek)	temperature	11/9/2004	12/17/2004	
13020101	TMDL for the Upper Rio Grande Watershed Part Two	NM-2111_41	Embudo Creek (Rio Grande to Canada de Ojo Sarco)	SBD, turbidity	4/12/2005	6/2/2005	
13020101	TMDL for Galisteo Creek	NM-2118.A_12	Galisteo Creek (perennial portions 2.2 mile above Lamy to headwaters)	temperature	7/11/2017	8/22/2017	
13020101	TMDL for Galisteo Creek	NM-2118.A_10	Galisteo Creek (perennial portions Kewa bnd to 2.2 miles above Lamy)	temperature	7/11/2017	8/22/2017	
13020101	TMDLs for Waters of the Valle Vidal	NM-2120.A_835	Gold Creek (Comanche Creek to headwaters)	temperature	9/30/2011	11/8/2011	

13020101	TMDLs for Waters of the Valle Vidal	NM-2120.A_837	Holman Creek (Comanche Creek to headwaters)	temperature	9/30/2011	11/8/2011	
13020101	TMDLs for Waters of the Valle Vidal	NM-2120.A_839	LaBelle Creek (Comanche Creek to headwaters)	temperature	9/30/2011	11/8/2011	
13020101	TMDL for the Upper Rio Grande Watershed Part Two	NM-2118.A_34	Little Tesuque Creek (Ro Tesuque to headwaters)	chronic aluminum	4/12/2005	6/2/2005	
13020101	TMDL for Red River Watershed	NM-2120.A_703	Pioneer Creek (Red River to headwaters)	turbidity	1/10/2006	3/17/2006	
13020101	TMDL for Red River Watershed	NM-2120.A_706	Placer Creek (Red River to headwaters)	acute aluminum	1/10/2006	3/17/2006	
13020101	TMDL for Red River Watershed	NM-2119_10	Red River (Rio Grande to Placer Creek)	acute aluminum	1/10/2006	3/17/2006	
13020101	TMDL for Red River Watershed withdrawal	NM-2119_10	Red River (Rio Grande to Placer Creek)	acute aluminum	12/11/2012	1/23/2013	
13020101	TMDL for Upper Rio Grande Watershed	NM-98.A_001	Rio Fernando de Taos (Tienditas Creek to headwaters)	E.coli	8/14/2012	9/13/2012	
13020101	TMDL for Upper Rio Grande Watershed	NM-2120.A_512	Rio Fernando de Taos (Rio Pueblo de Taos to USFS bnd at canyon)	E.coli	8/14/2012	9/13/2012	
13020101	TMDL for Upper Rio Grande Watershed	NM-2120.A_513	Rio Fernando de Taos (USFS bnd at canyon to Tienditas Creek)	E.coli	8/14/2012	9/13/2012	
13020101	TMDL for the Upper Rio Grande Watershed Part One	NM-2120.A_512	Rio Fernando de Taos (Rio Pueblo de Taos to headwaters)	specific conductance, temperature	11/9/2004	12/17/2004	
13020101	TMDL for the Upper Rio Grande Watershed Part One	NM-2119_05	Rio Grande (Red River to NM-CO border)	temperature	11/9/2004	12/17/2004	
13020101	TMDL for the Upper Rio Grande Watershed Part Two	NM-2111_12	Rio Grande (non-pueblo Santa Clara to Embudo Creek)	turbidity	4/12/2005	6/2/2005	
13020101	TMDL for the Upper Rio Grande Watershed Part One	NM-2120.A_501	Rio Grande del Rancho (Rio Pueblo de Taos to Hwy 518)	specific conductance	11/9/2004	12/17/2004	
13020101	TMDL for the Upper Rio Grande Watershed Part One	NM-2120.A_600	Rio Hondo (Rio Grande to USFS boundary)	temperature	11/9/2004	12/17/2004	
13020101	TMDL for Rio Hondo (South Form to Lake Fork Creek)	NM-2120.A_602	Rio Hondo (South Fork Rio Hondo to Lake Fork Creek)	plant nutrients	6/14/2005	9/14/2005	
13020101	TMDL for Upper Rio Grande Watershed	NM-2120.A_511	Rio Pueblo de Taos (Rio Grande del Rancho to Taos Pueblo bnd)	E.coli	8/14/2012	9/13/2012	
13020101	TMDL for the Upper Rio Grande Watershed Part One	NM-2119_30	Rio Pueblo de Taos (Arroyo del Alamo to Rio Grande del Rancho)	SBD, temperature	11/9/2004	12/17/2004	
13020101	TMDL for the Upper Rio Grande Watershed Part One	NM-2120.A_511	Rio Pueblo de Taos (Rio Grande del Rancho to Taos Pueblo bnd)	temperature	11/9/2004	12/17/2004	
13020101	TMDL for the Upper Rio Grande Watershed Part One	NM-2119_20	Rio Pueblo de Taos (Rio Grande to Arroyo del Alamo)	temperature	11/9/2004	12/17/2004	
13020101	TMDL for Upper Rio Grande Watershed	NM-2118.A_52	Rio Quemado (Santa Cruz River to Rio Arriba County bnd)	E.coli	8/14/2012	9/13/2012	
13020101	TMDL for Upper Rio Grande Watershed	NM-2120.A_901	Rio San Antonio (Montoya Canyon to headwaters)	E.coli	8/14/2012	9/13/2012	
13020101	TMDL for Upper Rio Grande Watershed	NM-2120.A_419	Rio Santa Barbara (non-pueblo Embudo Creek to USFS bnd)	E.coli	8/14/2012	9/13/2012	
13020101	TMDL for the Upper Rio Grande Watershed Part Two	NM-2120.A_419	Rio Santa Barbara (Picuris Pueblo bnd to USFS bnd)	turbidity	4/12/2005	6/2/2005	
13020101	TMDL for Upper Rio Grande Watershed	NM-2120.A_419	Santa Cruz River (Santa Clara Pueblo bnd to Santa Cruz Dam)	E.coli	8/14/2012	9/13/2012	
13020102	TMDL for Lower Chama	NM-2113_50	Abiquiu Creek (Rio Chama to headwaters)	dissolved oxygen	6/8/2004	9/3/2004	
13020102	TMDL for Rio Chama	NM-2116.A_030	Canjilon Creek (perennial portions Abiquiu Reservoir to headwaters)	specific conductance, temperature	7/12/2011	8/16/2011	
13020102	TMDL for Lower Chama	NM-2116.A_010	Canones Creek (Abiquiu Reservoir to headwaters)	chronic aluminum, fecal coliform, turbidity	6/8/2004	9/3/2004	
13020102	TMDL for Upper Chama	NM-2116.A_081	Chavez Creek (Rio Brazos to headwaters)	temperature	9/9/2003	3/4/2004	
13020102	TMDL for Lower Chama	NM-2116.A_023	Poleo Creek (Rio Puerco de Chama to headwaters)	turbidity	6/8/2004	9/3/2004	
13020102	TMDL for Lower Chama	NM-2116.A_011	Polvadera Creek (Canones Creek to headwaters)	temperature	6/8/2004	9/3/2004	
13020102	TMDL for Upper Chama	NM-2116.A_080	Rio Brazos (Rio Chama to Chavez Creek)	temperature	9/9/2003	3/4/2004	
13020102	TMDL for Rio Chama	NM-2116.A_041	Rio Capulin (Rio Gallina to headwaters)	E.coli	7/12/2011	8/16/2011	
13020102	TMDL for Upper Chama	NM-2116.A_001	Rio Chama (Rio Brazos to Little Willow Creek)	temperature	9/9/2003	3/4/2004	
13020102	TMDL for Rio Chama	NM-2116.A_001	Rio Chama (Rio Brazos to Little Willow Creek)	E.coli, nutrients, temperature	7/12/2011	8/16/2011	
13020102	TMDL for Rio Chama	NM-2116.A_000	Rio Chama (El Vado Reservoir to Rio Brazos)	E.coli, nutrients, temperature	7/12/2011	8/16/2011	
13020102	TMDL for Rio Chama	NM-2116.A_002	Rio Chama (Little Willow Creek to CO border)	E.coli, temperature	7/12/2011	8/16/2011	
13020102	TMDL for Rio Chama	NM-2116.A_110	Rio Chamita (Rio Chama to CO border)	E.coli, nutrients	7/12/2011	8/16/2011	
13020102	TMDL for Upper Chama	NM-2116.A_110	Rio Chamita (Rio Chama to CO border)	chronic aluminum	9/9/2003	3/4/2004	
13020102	Rio Chamita TMDL withdrawal	NM-2116.A_110	Rio Chamita (Rio Chama to CO border)	chronic aluminum	3/13/2018	4/24/2018	
13020102	TMDL for Rio Chamita	NM-2116.A_110	Rio Chamita (Rio Chama to CO border)	total ammonia, total phosphorus, fecal col	8/10/1999	9/30/1999	
13020102	TMDL for temperature for Rio Chamita	NM-2116.A_110	Rio Chamita (Rio Chama to CO border)	temperature	11/9/1999	12/17/1999	
13020102	TMDL for Lower Chama	NM-2116.A_060	Rio Nutrias (Rio Chama to headwaters)	turbidity	6/8/2004	9/3/2004	
13020102	TMDL for Rio Chama	NM-2115_20	Rio Puerco de Chama (Abiquiu Reservoir to Hwy 96)	E.coli, temperature	7/12/2011	8/16/2011	
13020102	TMDL for Rio Chama	NM-2113_30	Rio Tusas (Rio Vallecitos to headwaters)	nutrients	7/12/2011	8/16/2011	
13020102	TMDL for Lower Chama	NM-2112.A_00	Rio Vallecitos (Rio Tusas to headwaters)	chronic aluminum, temperature, turbidity	6/8/2004	9/3/2004	
13020102	TMDL for Upper Chama	NM-2116.A_070	Rito de Tierra Amarilla (Rio Chama to Hwy 64)	SBD, temperature, turbidity	9/9/2003	3/4/2004	
13020201	Sandia Canyon 4b	NM-9000.A_047	Sandia Canyon (Sigma Canyon to NPDES outfall 001)	acute dissolved copper	9/9/2014	11/18/2014	
13020201	Santa Fe River TMDL for chlorine and SBD	NM-2110_00	Santa Fe River (Cochiti Pueblo bnd to Santa Fe WWTP)	chlorine, SBD	1/11/2000	3/20/2000	
13020201	Santa Fe River TMDL for DO and pH	NM-2110_00	Santa Fe River (Cochiti Pueblo bnd to Santa Fe WWTP)	dissolved oxygen, pH	12/12/2000	1/11/2001	
13020201	Santa Fe River TMDL	NM-2110_00	Santa Fe River (Cienega Creek to Santa Fe WWTP)	E.coli	4/11/2017	5/3/2017	
13020201	Santa Fe River TMDL	NM-9000.A_061	Santa Fe River (Santa Fe WWTP to Guadalupe Stree)	E.coli	4/11/2017	5/3/2017	
13020201	Santa Fe River TMDL	NM-9000.A_062	Santa Fe River (Guadalupe Stree to Nichols Reservoir)	E.coli	4/11/2017	5/3/2017	
13020202	Jemez River Watershed TMDL - 2016	NM-2106.A_54	Clear Creek (Rio de las Vacas to San Gregorio Lake)	E.coli, plant nutrients	9/13/2016	9/23/2016	
13020202	Jemez River TMDL	NM-2106.A_54	Clear Creek (Rio de las Vacas to San Gregorio Lake)	TOC, turbidity	12/16/2002	6/3/2003	
13020202	Jemez River Watershed TMDL - 2016	NM-2106.A_55	Clear Creek (San Gregorio Lake to headwaters)	plant nutrients	9/13/2016	9/23/2016	
13020202	Jemez River TMDL	NM-2106.A_10	East Fork Jemez (East Fork Jemez to headwaters)	turbidity	12/16/2002	6/3/2003	
13020202	Valles Caldera TMDL	NM-2106.A_10	East Fork Jemez (East Fork Jemez to headwaters)	temperature	8/8/2006	10/11/2006	
13020202	Jemez River Watershed TMDL - 2009	NM-2106.A_13	East Fork Jemez (San Antonio Creek to VCNP bnd)	arsenic, temperature	8/11/2009	9/15/2009	
13020202	Jemez River Watershed TMDL - 2016	NM-2106.A_10	East Fork Jemez (VCNP to headwaters)	plant nutrients	9/13/2016	9/23/2016	
13020202	Valles Caldera TMDL	NM-2106.A_12	Jaramillo Creek (VCNP bnd to headwaters)	temperature, turbidity	8/8/2006	10/11/2006	
13020202	Jemez River Watershed TMDL - 2016	NM-2106.A_12	Jaramillo Creek (VCNP bnd to headwaters)	plant nutrients	9/13/2016	9/23/2016	
13020202	Jemez River and Rio Guadalupe turbidity and SBD TMDL	NM-2109.A_00	Jemez River (Hwy 4 near Jemez Springs to East Fork)	SBD, turbidity	4/13/2004	7/30/2004	12/2/1999
13020202	Jemez River TMDL	NM-2109.A_00	Jemez River (Hwy 4 near Jemez Springs to East Fork)	chronic aluminum	12/16/2002	6/3/2003	

last updated 12/01/2020

13020202	Jemez River and Rio Guadalupe turbidity and SBD TMDL	NM-2105.5_10	Jemez River (Rio Guadalupe to Hwy 4 near Jemez Springs)	SBD, turbidity	4/13/2004	7/30/2004	12/2/1999
13020202	Jemez River TMDL	NM-2105.5_10	Jemez River (Rio Guadalupe to Hwy 4 near Jemez Springs)	chronic aluminum	12/16/2002	6/3/2003	
13020202	Middle Rio Grande TMDL revisions	NM-2105.5_10	Jemez River (Rio Guadalupe to Hwy 4 near Jemez Springs)	chronic aluminum	3/13/2018	4/27/2018	
13020202	Jemez River Watershed TMDL - 2009	NM-2105_75	Jemez River (Zia Pueblo bnd to Jemez Pueblo bnd)	arsenic, boron	8/11/2009	9/15/2009	
13020202	Jemez River Watershed TMDL - 2016	NM-2105_75	Jemez River (Zia Pueblo bnd to Jemez Pueblo bnd)	E.coli	9/13/2016	9/23/2016	
13020202	Jemez River Watershed TMDL - 2009	NM-2105_71	Jemez River (Jemez Pueblo bnd to Rio Guadalupe)	arsenic, boron	8/11/2009	9/15/2009	
13020202	Jemez River Watershed TMDL - 2016	NM-2105_71	Jemez River (Jemez Pueblo bnd to Rio Guadalupe)	E.coli	9/13/2016	9/23/2016	
13020202	Jemez River Watershed TMDL - 2009	NM-2105.5_10	Jemez River (Rio Guadalupe to Hwy 4 near Jemez Springs)	arsenic, boron, temperature, nutrients	8/11/2009	9/15/2009	
13020202	Jemez River Watershed TMDL - 2016	NM-2105.5_10	Jemez River (Rio Guadalupe to Hwy 4 near Jemez Springs)	E.coli	9/13/2016	9/23/2016	
13020202	Jemez River Watershed TMDL - 2009	NM-2106.A_00	Jemez River (Soda Dam near Jemez Springs to East Fork)	arsenic	8/11/2009	9/15/2009	
13020202	Jemez River Watershed TMDL - 2016	NM-2106.A_00	Jemez River (Soda Dam near Jemez Springs to East Fork)	E.coli	9/13/2016	9/23/2016	
13020202	TMDL for total phosphorus for Redondo Creek	NM-2106.A_21	Redondo Creek (Sulphur Creek to headwaters)	total phosphorus	10/12/1999	12/2/1999	
13020202	Jemez River TMDL	NM-2106.A_21	Redondo Creek (Sulphur Creek to headwaters)	temperature, turbidity	12/16/2002	6/3/2003	
13020202	Jemez River TMDL	NM-2106.A_52	Rio Cebolla (Fenton Lake to headwaters)	SBD, temperature	12/16/2002	6/3/2003	
13020202	Jemez River TMDL	NM-2106.A_50	Rio Cebolla (Rio de las Vacas to Fenton Lake)	SBD	12/16/2002	6/3/2003	
13020202	Jemez River Watershed TMDL - 2009	NM-2106.A_40	Rio de las Vacas (Rio Cebolla to Clear Creek)	nutrients	8/11/2009	9/15/2009	
13020202	Jemez River TMDL	NM-2106.A_40	Rio de las Vacas (Rio Cebolla to Rito de las Palomas)	temperature, TOC	12/16/2002	6/3/2003	
13020202	Jemez River TMDL	NM-2106.A_30	Rio Guadalupe (Jemez River to the confluence with Rio Cebolla)	chronic aluminum	12/16/2002	6/3/2003	
13020202	Jemez River and Rio Guadalupe turbidity and SBD TMDL	NM-2106.A_30	Rio Guadalupe (Jemez River to the confluence with Rio Cebolla)	SBD, turbidity	4/13/2004	7/30/2004	12/2/1999
13020202	Jemez River Watershed TMDL - 2009	NM-2106.A_30	Rio Guadalupe (Jemez River to the confluence with Rio Cebolla)	temperature	8/11/2009	9/15/2009	
13020202	Jemez River Watershed TMDL - 2016	NM-2106.A_30	Rio Guadalupe (Jemez River to the confluence with Rio Cebolla)	plant nutrients	9/13/2016	9/23/2016	
13020202	Jemez River Watershed TMDL - 2009	NM-2106.A_43	Rito de las Palomas (Rio de las Vacas to headwaters)	temperature, sedimentation	8/11/2009	9/15/2009	
13020202	Jemez River TMDL	NM-2106.A_42	Rito Pena Negas (Rio de las Vacas to headwaters)	SBD, temperature, TOC	12/16/2002	6/3/2003	
13020202	Jemez River Watershed TMDL - 2009	NM-2106.A_42	Rito Pena Negas (Rio de las Vacas to headwaters)	nutrients	8/11/2009	9/15/2009	
13020202	Jemez River TMDL	NM-2106.A_20	San Antonio Creek (East Fork Jemez to headwaters)	temperature, turbidity	12/16/2002	6/3/2003	
13020202	Jemez River Watershed TMDL - 2009	NM-2106.A_20	San Antonio Creek (East For Jemez to VCNP bnd)	arsenic	8/11/2009	9/15/2009	
13020202	Jemez River TMDL	NM-2106.A_22	Sulphur Creek (Redondo Creek to headwaters)	specific conductance, pH	12/16/2002	6/3/2003	
13020203	Middle Rio Grande E.coli TMDL	NM-2105.1_00	Rio Grande (non-Pueblo Alameda to Angostura Diversion)	E.coli	4/13/2010	6/30/2010	
13020203	Middle Rio Grande fecal coliform TMDL	NM-2105.1_00	Rio Grande (Alameda Bridge to Santa Ana Pueblo bnd)	fecal coliform	11/13/2001	5/3/2002	
13020203	Middle Rio Grande E.coli TMDL	NM-2105_50	Rio Grande (Isleta Pueblo bnd to Alameda Bridge)	E.coli	4/13/2010	6/30/2010	
13020203	Middle Rio Grande fecal coliform TMDL	NM-2105_50	Rio Grande (Isleta Pueblo bnd to Alameda Bridge)	fecal coliform	11/13/2001	5/3/2002	
13020203	Middle Rio Grande E.coli TMDL	NM-2105_40	Rio Grande (Rio Puerco to Isleta Pueblo bnd)	E.coli	4/13/2010	6/30/2010	
13020203	Middle Rio Grande E.coli TMDL	NM-2105_10	Rio Grande (San Marcial at USGS gage to Rio Puerco)	E.coli, aluminum	4/13/2010	6/30/2010	
13020203	Middle Rio Grande TMDL revisions	NM-2105_10	Rio Grande (San Marcial at USGS gage to Rio Puerco)	aluminum	3/13/2018	4/27/2018	
13020203	Tijeras Arroyo TMDL	NM-9000.A_001	Tijeras Arroyo (Four Hills Bridge to headwaters)	plant nutrients	9/12/2017	10/12/2017	
13020204	Rio Puerco Part Two TMDL	NM-2107.A_46	La Jara Creek (perennial reaches above Arroyo San Jose)	chronic aluminum	8/14/2007	9/21/2007	
13020204	Upper Rio Puerco TMDL	NM-2107.A_46	La Jara Creek (perennial reaches above Arroyo San Jose)	acute aluminum, chronic aluminum	5/10/2016	6/16/2016	
13020204	Rio Puerco Part One TMDL	NM-2107.A_40	Rio Puerco (Arroyo Chijuilla to northern bnd Cuba)	sedimentation	11/14/2006	8/10/2007	
13020204	Rio Puerco Part Two TMDL	NM-2107.A_40	Rio Puerco (Arroyo Chijuilla to northern bnd Cuba)	chronic aluminum, nutrients	8/14/2007	9/21/2007	
13020204	Rio Puerco TMDL withdrawal	NM-2107.A_40	Rio Puerco (Arroyo Chijuilla to northern bnd Cuba)	aluminium	3/13/2018	4/24/2018	
13020204	Upper Rio Puerco TMDL	NM-2107.A_44	Rio Puerco (perennial portions northern bnd Cuba to headwaters)	sedimentation	5/10/2016	6/16/2016	
13020204	Upper Rio Puerco TMDL	NM-2107.A_42	Nacimiento Creek (perennial portions Hwy 126 to San Gregorio Reservoir)	acute aluminum, chronic aluminum	5/10/2016	6/16/2016	
13020207	Rio Puerco Part Two TMDL	NM-2107.A_01	Bluewater Creek (Bluewater Reservoir to headwaters)	temperature, nutrients	8/14/2007	9/21/2007	
13020207	Rio Puerco Part Two TMDL	NM-2107.A_00	Bluewater Creek (non-tribal Rio San Jose to Bluewater Reservoir)	temperature, nutrients	8/14/2007	9/21/2007	
13020207	Rio Puerco Part Two TMDL	NM-2107.A_10	Rio Moquino (Laguna Pueblo to Seboyettia Creek)	temperature, nutrients	8/14/2007	9/21/2007	
13030102	LRG TMDL	NM-2101_00	Rio Grande (International Mexico bnd to Leasburg Dam)	E.coli	5/8/2007	6/11/2007	
13030102	LRG TMDL	NM-2101_10	Rio Grande (Leasburg Dam to Percha Dam)	E.coli	5/8/2007	6/11/2007	
13030202	Upper Gila, Mimbres, and San Francisco TMDLs	NM-2803_11	Cold Springs Creek (Hot Springs to headwaters)	cadmium, lead	9/9/2014	9/11/2014	
13030202	Upper Gila, Mimbres, and San Francisco TMDLs	NM-2803_00	Mimbres River (perennial reaches downstream of Willow Springs)	E.coli	9/9/2014	9/11/2014	
15040001	Black Canyon Creek temperature TMDL	NM-2503_21	Black Canyon Creek (East Fork Gila to headwaters)	temperature	11/13/2001	4/5/2002	
15040001	Canyon Creek nutrients TMDL	NM-2503_43	Canyon Creek (Middle Fork Gila River to headwaters)	plant nutrients	12/11/2001	4/10/2002	
15040001	Canyon Creek turbidity TMDL	NM-2503_43	Canyon Creek (Middle Fork Gila River to headwaters)	turbidity	12/11/2001	4/10/2002	
15040001	Metals TMDL for Gila River and Taylor Creek	NM-2503_20	Gila River (East Fork)	chronic aluminum	11/13/2001	4/15/2002	
15040001	Metals TMDL for Mogollon Creek	NM-2503_02	Mogollon Creek (perennial reaches above USGS gage)	chronic aluminum	11/13/2001	4/5/2002	
15040001	TOC TMDL for Sapillo Creek	NM-2503_04	Sapillo Creek (Gila River to Lake Roberts)	TOC	12/11/2001	4/12/2002	
15040001	Turbidity TMDL for Sapillo Creek	NM-2503_04	Sapillo Creek (Gila River to Lake Roberts)	turbidity	12/11/2001	4/12/2002	
15040001	Metals TMDL for Gila River and Taylor Creek	NM-2503_23	Taylor Creek (Beaver Creek to Wall Lake)	chronic aluminum	11/13/2001	4/15/2002	
15040001	Temperature TMDL for Taylor Creek	NM-2503_23	Taylor Creek (Beaver Creek to Wall Lake)	temperature	11/13/2001	8/5/2002	
15040001	Upper Gila, Mimbres, and San Francisco TMDLs	NM-2503_47	Willow Creek (Gilita Creek to headwaters)	chronic aluminum	9/9/2014	9/11/2014	
15040003	Nutrient TMDL for Mangas Creek	NM-2502.A_21	Mangas Creek (Gila River to Mangas Springs)	plant nutrients	12/11/2001	4/16/2002	
15040004	Conductivity TMDL for Centerfire Creek	NM-2603.A_50	Centerfire Creek (San Francisco River to headwaters)	conductivity	11/13/2001	4/16/2002	
15040004	Nutrient TMDL for Centerfire Creek	NM-2603.A_50	Centerfire Creek (San Francisco River to headwaters)	plant nutrients	12/11/2001	4/16/2002	
15040004	Upper Gila, Mimbres, and San Francisco TMDLs	NM-2603.A_50	Centerfire Creek (San Francisco River to headwaters)	E.coli, turbidity	9/9/2014	9/11/2014	
15040004	Temperature TMDL for Negrito Creek	NM-2603.A_43	Negrito Creek (San Francisco River to headwaters)	temperature	11/13/2001	4/5/2002	

15040004	Upper Gila, Mimbres, and San Francisco TMDLs	NM-2603.A_43	Negrito Creek (San Francisco River to headwaters)	E.coli	9/9/2014	9/11/2014	
15040004	Upper Gila, Mimbres, and San Francisco TMDLs	NM-2602_10	San Francisco River (NM 12 at Reserve to Centerfire Creek)	E.coli, turbidity	9/9/2014	9/11/2014	
15040004	Temperature TMDL for San Francisco River	NM-2602_20	San Francisco River (Centerfire Creek to AZ border)	temperature	11/13/2001	4/12/2002	
15040004	Nutrient TMDL for San Francisco River	NM-2602_20	San Francisco River (Centerfire Creek to AZ border)	plant nutrients	12/11/2001	8/5/2002	
15040004	Upper Gila, Mimbres, and San Francisco TMDLs	NM-2503_22	San Francisco River (Willow Springs Canyon to NM 12 at Reserve)	E.coli	9/9/2014	9/11/2014	
15040004	Conductivity TMDL for Tularosa River	NM-2603.A_40	Tularosa River (San Francisco River to Apache Creek)	conductivity	11/13/2001	4/5/2002	
15040004	Upper Gila, Mimbres, and San Francisco TMDLs	NM-2603.A_40	Tularosa River (San Francisco River to Apache Creek)	E.coli, turbidity	9/9/2014	9/11/2014	
15040004	Turbidity TMDL for Whitewater Creek	NM-2603.A_10	Whitewater Creek (San Francisco River to Whitewater Campground)	turbidity	12/11/2001	4/12/2002	
15040004	Chronic aluminum TMDL for Whitewater Creek	NM-2603.A_10	Whitewater Creek (San Francisco River to Whitewater Campground)	chronic aluminum	12/11/2001	4/12/2002	
15040004	Whitewater Creek TMDL withdrawal	NM-2603.A_10	Whitewater Creek (San Francisco River to Whitewater Campground)	chronic aluminum	3/13/2018	4/24/2018	
13050003	Sacramento Mountains TMDL	NM-2801_10	Nogal Creek (Tularosa Creek to Mescalero Apache bnd)	E.coli	8/11/2015	9/21/2015	
13060008	Sacramento Mountains TMDL	NM-2209.A_22	Carrizo Creek (Rio Ruidoso to Mescalero Apache bnd)	E.coli	8/11/2015	9/21/2015	
13060008	Rio Hondo Watershed TMDL	NM-2209.A_22	Carrizo Creek (Rio Ruidoso to Mescalero Apache bnd)	fecal coliform	12/13/2005	2/10/2006	
13060008	Rio Hondo Watershed TMDL	NM-2209.A_10	Rio Bonito (Angus Canyon to headwaters)	fecal coliform	12/13/2005	2/10/2006	
13060008	Sacramento Mountains TMDL	NM-2209.A_10	Rio Bonito (NM 48 near Angus to headwaters)	E.coli	8/11/2015	9/21/2015	
13060008	Rio Hondo Watershed TMDL	NM-2208_30	Rio Hondo (perennial reaches Pecos River to headwaters)	fecal coliform	12/13/2005	2/10/2006	
13060008	Sacramento Mountains TMDL	NM-2209.A_21	Rio Ruidoso (US Hwy 70 bridge to Carrizo Creek)	E.coli	8/11/2015	9/21/2015	
13060008	Rio Ruidoso TMDL	NM-2209.A_21	Rio Ruidoso (US Hwy 70 bridge to Carrizo Creek)	plant nutrients	11/15/2016	12/13/2016	
13060008	Rio Hondo Watershed TMDL	NM-2208_20	Rio Ruidoso (Rio Bonito to US Hwy 70)	plant nutrients	12/13/2005	2/10/2006	
13060008	Sacramento Mountains TMDL	NM-2208_20	Rio Ruidoso (Eagle Creek to Hwy 70 bridge)	E.coli, turbidity	8/11/2015	9/21/2015	
13060008	Rio Ruidoso TMDL	NM-2208_20	Rio Ruidoso (Eagle Creek to Hwy 70 bridge)	plant nutrients	11/15/2016	12/13/2016	
13060008	Rio Hondo Watershed TMDL	NM-2209.A_20	Rio Ruidoso (US Hwy 70 to Mescalero Apache bnd)	temperature, turbidity	12/13/2005	2/10/2006	
13060008	Rio Ruidoso TMDL	NM-2209.A_20	Rio Ruidoso (Carrizo Creek to Mescalero Apache bnd)	total phosphorus	11/15/2016	12/13/2016	
13060010	Sacramento Mountains TMDL	NM-2208_01	Agua Chiquita (perennial portions McEwan Canyon to headwaters)	turbidity	8/11/2015	9/21/2015	
13060010	Sacramento Mountains TMDL	NM-2208_00	Rio Penasco (Hwy 24 to Cox Canyon)	turbidity	8/11/2015	9/21/2015	
13060001	Pecos Headwaters TMDL	NM-2214.A_091	Bull Creek (Cow Creek to headwaters)	temperature	6/14/2005	9/13/2005	
13060001	Pecos Headwaters TMDL	NM-2214.A_102	Cow Creek (Bull Creek to headwaters)	temperature, turbidity	6/14/2005	9/13/2005	
13060001	Pecos Headwaters TMDL	NM-2214.A_090	Cow Creek (Pecos River to Bull Creek)	temperature, turbidity	6/14/2005	9/13/2005	
13060001	Upper Pecos TMDL	NM-2214.A_070	Dalton Creek (Pecos River to headwaters)	specific conductance	9/10/2013	9/25/2013	
13060001	Upper Pecos TMDL	NM-9000.A_050	El Rito Creek (Pecos River to headwaters)	E.coli	9/10/2013	9/25/2013	
13060001	Upper Pecos TMDL	NM-2212_12	Falls Creek (Tecolote Creek to headwaters)	specific conductance	9/10/2013	9/25/2013	
13060001	Pecos Headwaters TMDL	NM-2212_00	Gallinas River (Las Vegas diversion to headwaters)	temperature	6/14/2005	9/13/2005	
13060001	Upper Pecos TMDL	NM-2214.A_071	Macho Canyon Creek (Pecos River to headwaters)	specific conductance	9/10/2013	9/25/2013	
13060001	Upper Pecos TMDL	NM-2213_22	Pecos Arroyo (Gallinas River to headwaters)	E.coli	9/10/2013	9/25/2013	
13060001	Pecos Headwaters TMDL	NM-2214.A_002	Pecos River (Alamitos Canyon to Willow Creek)	turbidity	6/14/2005	9/13/2005	
13060001	Pecos Headwaters TMDL	NM-2214.A_003	Pecos River (Canon de Manzanita to Alamitos Canyon)	temperature, turbidity	6/14/2005	9/13/2005	
13060001	Upper Pecos TMDL	NM-2211.A_10	Pecos River (Santa Rosa Reservoir to Tecolote Creek)	E.coli	9/10/2013	9/25/2013	
13060001	Upper Pecos TMDL	NM-2114.A_030	Willow Creek (Pecos River to headwaters)	specific conductance	9/10/2013	9/25/2013	
13060011	Lower Pecos TMDL	NM-2201_00	Pecos River (Texas border to Black River)	E.coli	9/13/2016	9/23/2016	
13060011	Lower Pecos TMDL	NM-2202.A_00	Pecos River (Black River to Six Mile Dam Lake)	E.coli	9/13/2016	9/23/2016	
13060001	Tecolote Creek TMDL	NM-2212_10	Tecolote Creek (I-25 to Blue Creek)	temperature	8/15/2018	9/13/2018	
14080101	San Juan Watershed Part One	NM-9000.A_060	Gallegos Canyon (San Juan to Navajo bnd)	selenium	6/14/2005	8/26/2005	
14080101	San Juan Watershed Part One	NM-2104_00	San Juan River (Animas River to Canon Largo)	sedimentation, E.coli	6/14/2005	8/26/2005	2/26/2010
14080104	Animas River TMDL	NM-2403.A_00	Animas River (San Juan River to Estes Arroyo)	temperature, E.coli	9/10/2013	9/30/2013	
14080104	San Juan Watershed Part Two	NM-2403.A_00	Animas River (San Juan River to Estes Arroyo)	total nitrogen, total phosphorus	12/13/2005	1/17/2006	
14080104	Animas River TMDL	NM-2404_00	Animas River (Estes Arroyo to Southern Ute bnd)	E.coli, total phosphorus	9/10/2013	9/30/2013	
14080105	San Juan Watershed Part One	NM-2402.A_01	La Plata River (McDermott Arroyo to CO border)	E.coli	6/14/2005	8/26/2005	2/26/2010
14080105	San Juan Watershed Part Two	NM-2402.A_01	La Plata River (McDermott Arroyo to CO border)	dissolved oxygen	12/13/2005	1/17/2006	
14080105	San Juan Watershed Part One	NM-2402.A_00	La Plata River (San Juan River to McDermott Arroyo)	sedimentation, E.coli	6/14/2005	8/26/2005	2/26/2010
14080105	San Juan Watershed Part One	NM-2401_10	San Juan River (Navajo bnd at Hogback to Animas River)	E.coli	6/14/2005	8/26/2005	2/26/2010
11080005	Canadian River Watershed TMDL	NM-2305.A_010	Conchas River (Conchas Reservoir to Salitre Creek)	chronic aluminum, E.coli, plant nutrients	8/13/2019	9/18/2019	
11080004	Canadian River Watershed TMDL	NM-2306.A_021	Coyote Creek (Black Lake to headwaters)	temperature, plant nutrients	8/13/2019	9/18/2019	
11080004	Canadian River Watershed TMDL	NM-2306.A_020	Coyote Creek (Mora River to Amola Ridge)	plant nutrients	8/13/2019	9/18/2019	
11080004	Canadian River Watershed TMDL	NM-2306.A_022	Coyote Creek (Williams Canyon to Black Lake)	plant nutrients	8/13/2019	9/18/2019	
11080004	Canadian River Watershed TMDL	NM-2306.A_023	Coyote Creek (Amola Ridge to Williams Canyon)	plant nutrients	8/13/2019	9/18/2019	
11080001	Canadian River Watershed TMDL	NM-2305.A_255	Doggett Creek (Raton Creek to headwaters)	E.coli, plant nutrients	8/13/2019	9/18/2019	
11040001	Canadian River Watershed TMDL	NM-2701_00	Dry Cimarron River (perennial reaches OK bnd to Long Canyon)	temperature, plant nutrients	8/13/2019	9/18/2019	
11040001	Canadian River Watershed TMDL	NM-2701_02	Dry Cimarron River (Long Canyon to Oak Creek	plant nutrients	8/13/2019	9/18/2019	
11040001	Canadian River Watershed TMDL	NM-2701_01	Dry Cimarron River (Oak Creek to headwaters)	plant nutrients	8/13/2019	9/18/2019	
11080001	Canadian River Watershed TMDL	NM-2305.A_252	East Fork Chicorica Creek (Chicorica Creek to headwaters)	E.coli	8/13/2019	9/18/2019	
11040001	Canadian River Watershed TMDL	NM-2701_20	Long Canyon (perennial reaches above Dry Cimarron)	temperature, plant nutrients	8/13/2019	9/18/2019	
11080004	Canadian River Watershed TMDL	NM-2305.3.A_00	Mora River (USGS gage east of Shoemaker to Hwy 434)	E.coli	8/13/2019	9/18/2019	
11080006	Canadian River Watershed TMDL	NM-2303_10	Pajarito Creek (perennial portions Canadian River to Vigil Canyon)	temperature	8/13/2019	9/18/2019	
11080001	Canadian River Watershed TMDL	NM-2305.A_253	Raton Creek (Chicorica Creek to headwaters)	E.coli, plant nutrients	8/13/2019	9/18/2019	

11080001	Canadian River Watershed TMDL	NM-9000.A_019	Tinaja Creek (West Fork Tinaja Creek to headwaters)	E.coli	8/13/2019	9/18/2019
13020102	Chama River Watershed TMDL	NM-2116.A_010	Cañones Creek (Abiquiu Reservoir to Chihuahueños Creek)	E.coli	10/13/2020	12/1/2020
13020102	Chama River Watershed TMDL	NM-2116.A_022	Coyote Creek (Rio Puerco de Chama to headwaters)	sedimentation	10/13/2020	12/1/2020
13020102	Chama River Watershed TMDL	NM-2112.A_03	Placer Creek (Hopewell Lake to headwaters)	temperature	10/13/2020	12/1/2020
13020102	Chama River Watershed TMDL	NM-2116.A_023	Poleo Creek (Rio Puerco de Chama to headwaters)	sedimentation	10/13/2020	12/1/2020
13020102	Chama River Watershed TMDL	NM-2116.A_060	Rio Nutrias (Perennial portions Rio Chama to headwaters)	E.coli	10/13/2020	12/1/2020
13020102	Chama River Watershed TMDL	NM-2113_30	Rio Tusas (Perennial portions Rio Vallecitos to headwaters)	temperature	10/13/2020	12/1/2020
13020102	Chama River Watershed TMDL	NM-2116.A_021	Rito Encino (Rio Puerco de Chama to headwaters)	sedimentation	10/13/2020	12/1/2020
13020102	Chama River Watershed TMDL	NM-2116.A_112	Sixto Creek (Rio Chamita to CO border)	temperature	10/13/2020	12/1/2020

Engineering:
Precipitation Data

Precipitation Event Log

Project:	Soilutions		
Date:	Time	Discharge Point ID	Quarterly Visual Assessment Performed?
Notes:			

Precipitation Event Log

Project:	Soilutions		
Date:	Time	Discharge Point ID	Quarterly Visual Assessment Performed?
Notes:			

NOAA Atlas 14, Volume 1, Version 5
Location name: New Mexico, USA*
Latitude: 34.965°, Longitude: -106.667°
Elevation: 4938.82 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.178** (0.154-0.206)	**0.231** (0.198-0.267)	**0.308** (0.265-0.358)	**0.369** (0.315-0.427)	**0.452** (0.384-0.522)	**0.516** (0.437-0.596)	**0.584** (0.490-0.673)	**0.654** (0.546-0.754)	**0.750** (0.620-0.865)	**0.826** (0.679-0.953)
10-min	**0.271** (0.234-0.314)	**0.351** (0.302-0.407)	**0.469** (0.403-0.545)	**0.561** (0.480-0.650)	**0.688** (0.585-0.794)	**0.785** (0.665-0.906)	**0.888** (0.746-1.02)	**0.996** (0.832-1.15)	**1.14** (0.943-1.32)	**1.26** (1.03-1.45)
15-min	**0.335** (0.290-0.389)	**0.435** (0.374-0.505)	**0.582** (0.499-0.676)	**0.696** (0.595-0.805)	**0.853** (0.725-0.984)	**0.973** (0.824-1.12)	**1.10** (0.925-1.27)	**1.24** (1.03-1.42)	**1.42** (1.17-1.63)	**1.56** (1.28-1.80)
30-min	**0.452** (0.390-0.524)	**0.586** (0.504-0.680)	**0.784** (0.672-0.910)	**0.937** (0.802-1.08)	**1.15** (0.977-1.33)	**1.31** (1.11-1.51)	**1.48** (1.25-1.71)	**1.66** (1.39-1.92)	**1.91** (1.58-2.20)	**2.10** (1.72-2.42)
60-min	**0.559** (0.483-0.649)	**0.725** (0.624-0.841)	**0.970** (0.832-1.13)	**1.16** (0.992-1.34)	**1.42** (1.21-1.64)	**1.62** (1.37-1.87)	**1.84** (1.54-2.12)	**2.06** (1.72-2.37)	**2.36** (1.95-2.72)	**2.60** (2.13-3.00)
2-hr	**0.639** (0.549-0.756)	**0.817** (0.701-0.969)	**1.08** (0.925-1.28)	**1.29** (1.10-1.52)	**1.58** (1.34-1.86)	**1.82** (1.53-2.13)	**2.07** (1.72-2.42)	**2.33** (1.92-2.72)	**2.69** (2.20-3.14)	**2.98** (2.42-3.49)
3-hr	**0.679** (0.588-0.799)	**0.862** (0.744-1.02)	**1.13** (0.975-1.33)	**1.34** (1.15-1.57)	**1.64** (1.39-1.91)	**1.87** (1.59-2.18)	**2.12** (1.79-2.47)	**2.39** (1.99-2.79)	**2.76** (2.28-3.21)	**3.06** (2.50-3.57)
6-hr	**0.786** (0.686-0.918)	**0.991** (0.865-1.16)	**1.27** (1.11-1.49)	**1.50** (1.30-1.74)	**1.81** (1.56-2.09)	**2.04** (1.76-2.37)	**2.30** (1.96-2.66)	**2.56** (2.17-2.96)	**2.92** (2.45-3.38)	**3.21** (2.67-3.73)
12-hr	**0.869** (0.766-0.994)	**1.10** (0.967-1.25)	**1.39** (1.22-1.58)	**1.62** (1.42-1.84)	**1.93** (1.68-2.19)	**2.16** (1.88-2.46)	**2.41** (2.08-2.74)	**2.67** (2.29-3.03)	**3.01** (2.56-3.43)	**3.29** (2.77-3.75)
24-hr	**0.977** (0.871-1.11)	**1.23** (1.09-1.39)	**1.53** (1.36-1.73)	**1.77** (1.57-2.00)	**2.10** (1.86-2.37)	**2.35** (2.07-2.65)	**2.61** (2.30-2.94)	**2.88** (2.51-3.23)	**3.23** (2.80-3.63)	**3.50** (3.03-3.94)
2-day	**1.03** (0.923-1.15)	**1.29** (1.16-1.44)	**1.61** (1.44-1.79)	**1.85** (1.66-2.07)	**2.19** (1.95-2.43)	**2.44** (2.17-2.71)	**2.70** (2.40-3.00)	**2.96** (2.62-3.30)	**3.31** (2.91-3.69)	**3.58** (3.13-3.99)
3-day	**1.12** (1.02-1.23)	**1.39** (1.27-1.53)	**1.71** (1.56-1.88)	**1.97** (1.79-2.16)	**2.31** (2.09-2.53)	**2.56** (2.32-2.81)	**2.82** (2.55-3.10)	**3.08** (2.78-3.38)	**3.43** (3.07-3.76)	**3.69** (3.29-4.05)
4-day	**1.21** (1.11-1.31)	**1.49** (1.38-1.62)	**1.82** (1.68-1.98)	**2.08** (1.92-2.25)	**2.43** (2.24-2.63)	**2.69** (2.47-2.91)	**2.95** (2.70-3.19)	**3.21** (2.93-3.46)	**3.54** (3.23-3.83)	**3.80** (3.45-4.11)
7-day	**1.39** (1.28-1.50)	**1.71** (1.58-1.86)	**2.08** (1.92-2.24)	**2.36** (2.18-2.54)	**2.72** (2.52-2.93)	**2.99** (2.77-3.22)	**3.26** (3.01-3.50)	**3.51** (3.24-3.77)	**3.83** (3.53-4.12)	**4.06** (3.73-4.37)
10-day	**1.52** (1.41-1.65)	**1.89** (1.74-2.04)	**2.30** (2.13-2.48)	**2.62** (2.42-2.82)	**3.04** (2.81-3.27)	**3.36** (3.09-3.60)	**3.67** (3.38-3.94)	**3.97** (3.65-4.26)	**4.36** (3.99-4.68)	**4.64** (4.24-4.99)
20-day	**1.92** (1.77-2.07)	**2.37** (2.19-2.57)	**2.87** (2.66-3.10)	**3.25** (3.01-3.50)	**3.73** (3.45-4.01)	**4.07** (3.75-4.37)	**4.39** (4.05-4.71)	**4.70** (4.33-5.04)	**5.07** (4.67-5.44)	**5.33** (4.91-5.72)
30-day	**2.28** (2.11-2.45)	**2.82** (2.61-3.04)	**3.39** (3.14-3.63)	**3.80** (3.52-4.07)	**4.31** (3.99-4.61)	**4.67** (4.32-4.99)	**5.01** (4.63-5.35)	**5.32** (4.92-5.68)	**5.69** (5.25-6.07)	**5.93** (5.48-6.34)
45-day	**2.77** (2.57-2.97)	**3.41** (3.18-3.66)	**4.05** (3.78-4.34)	**4.50** (4.20-4.81)	**5.04** (4.71-5.38)	**5.40** (5.05-5.76)	**5.72** (5.35-6.08)	**5.99** (5.61-6.36)	**6.27** (5.89-6.65)	**6.41** (6.06-6.79)
60-day	**3.20** (2.97-3.44)	**3.95** (3.67-4.24)	**4.69** (4.37-5.02)	**5.22** (4.86-5.58)	**5.85** (5.45-6.24)	**6.27** (5.85-6.69)	**6.65** (6.21-7.09)	**6.98** (6.53-7.44)	**7.34** (6.87-7.82)	**7.54** (7.09-8.03)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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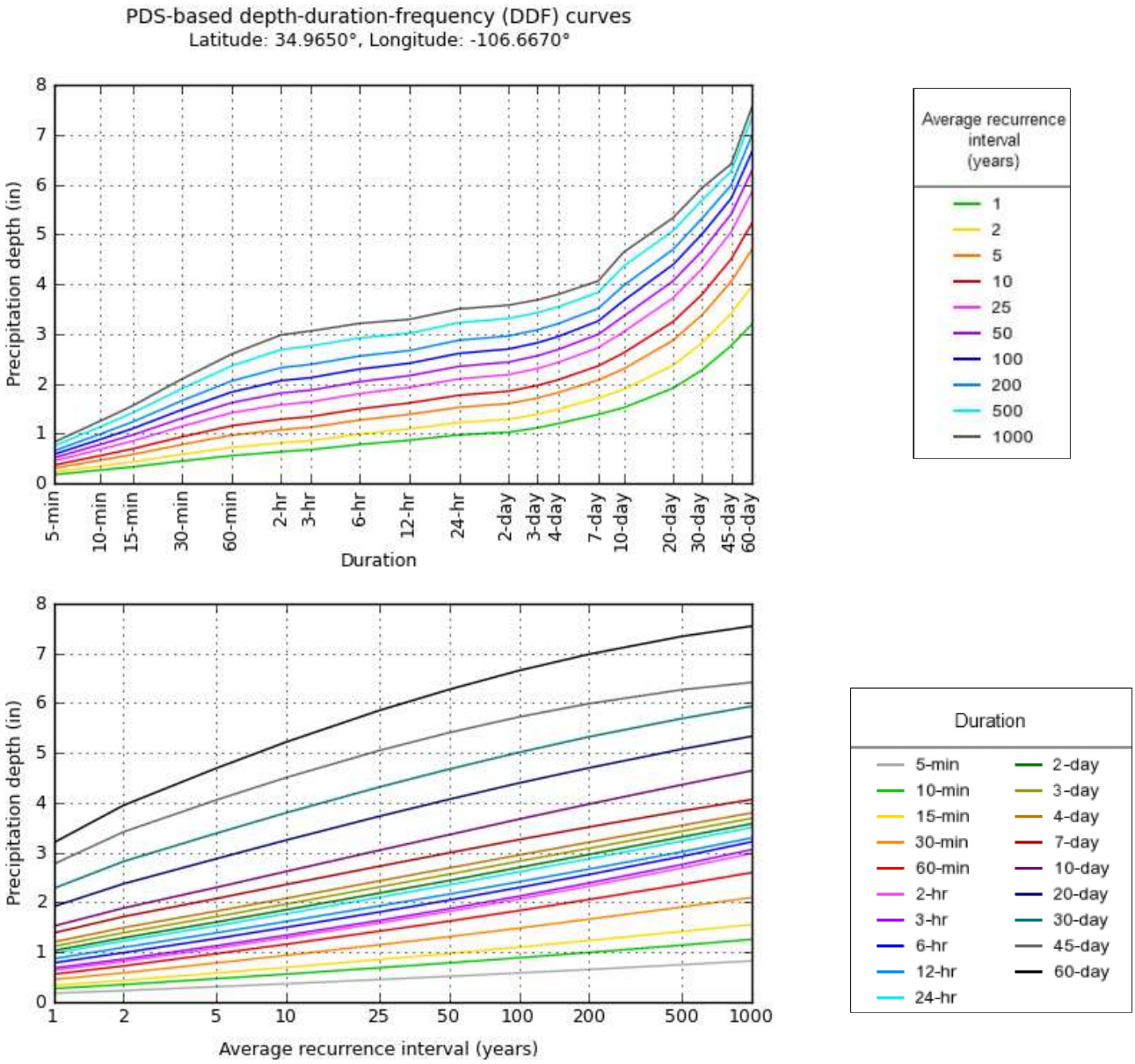
PF graphical



NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Mon Feb 20 23:23:03 2023

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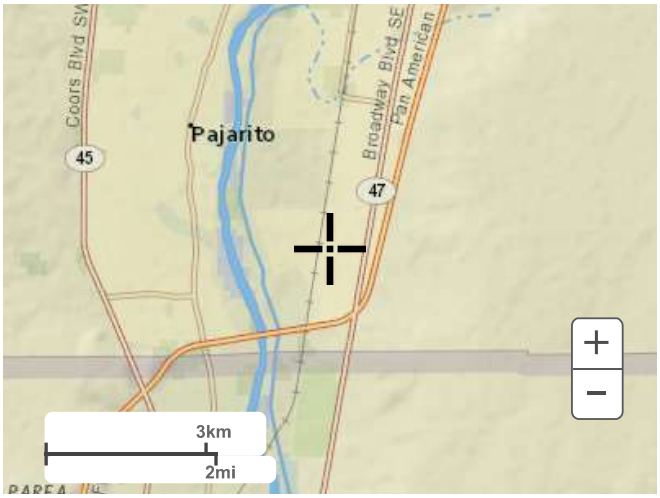
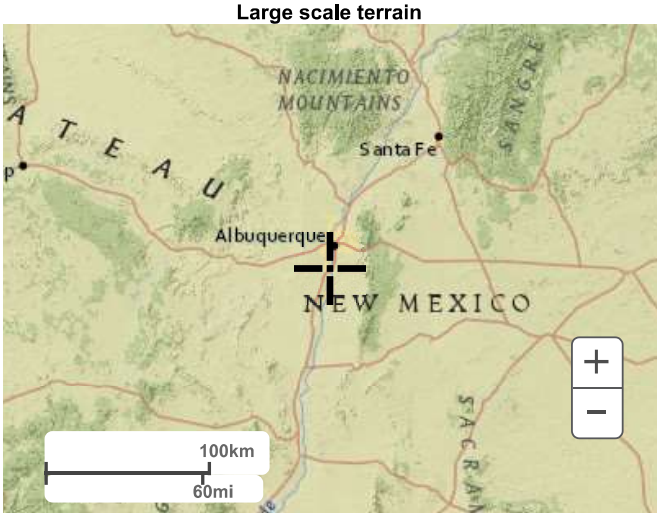
Maps & aerials

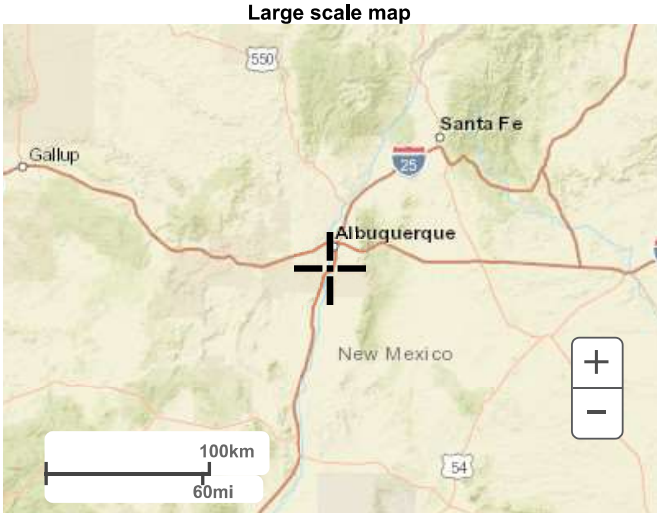
Small scale terrain



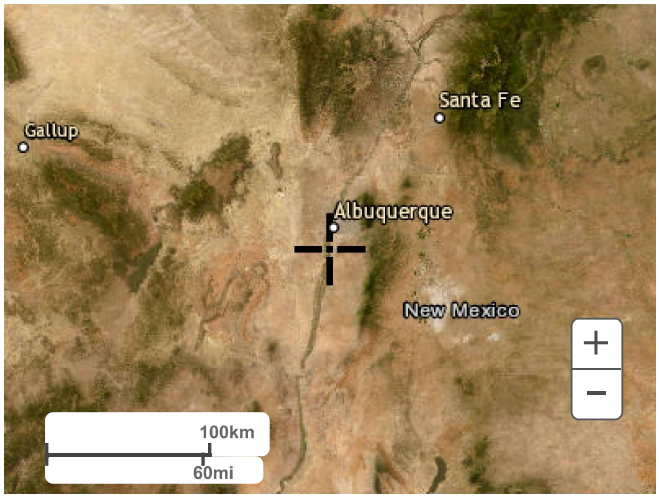
Large scale terrain



Large scale map



Large scale aerial



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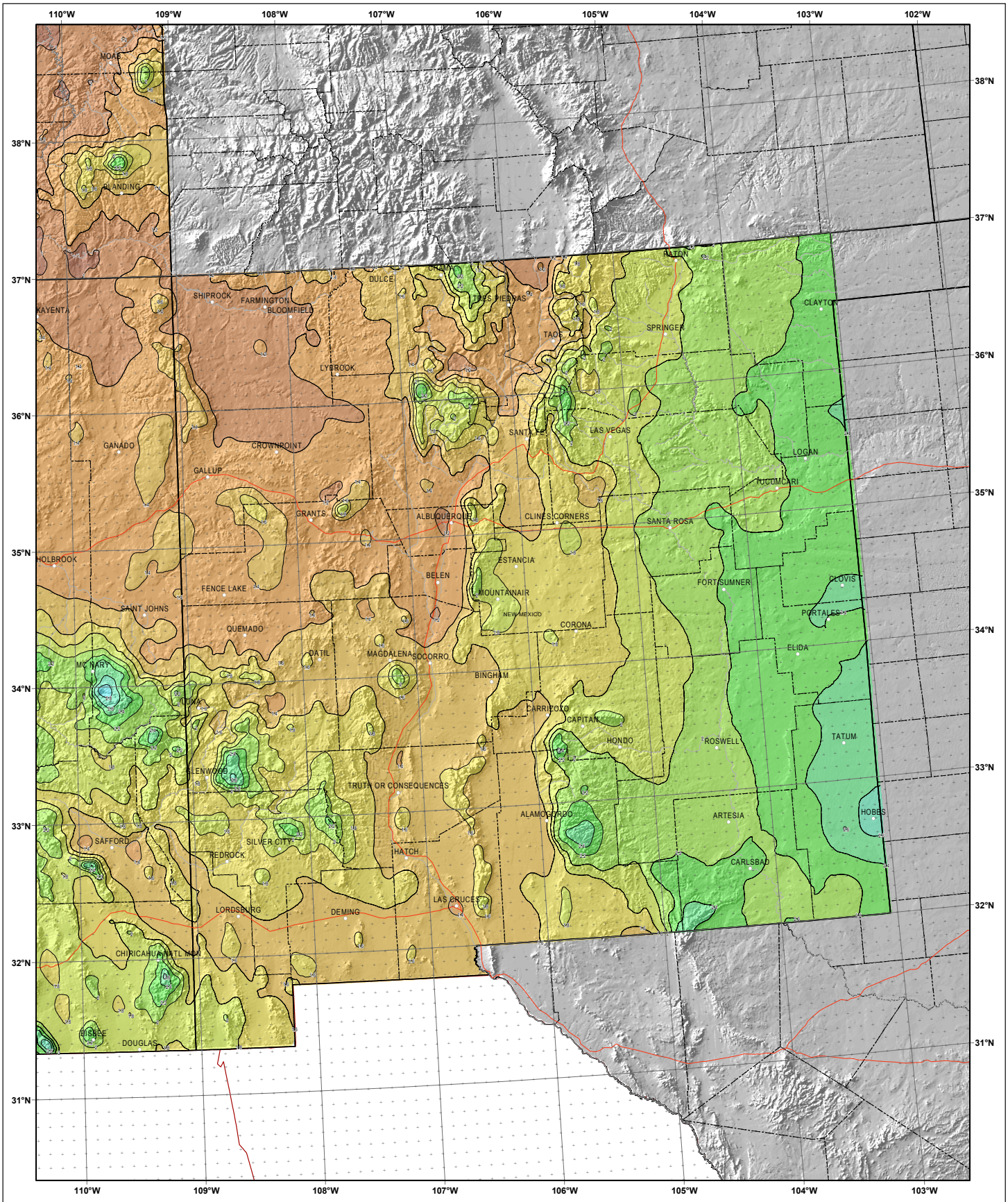
US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer



NEW MEXICO

NOAA Atlas 14, Volume 1, Version 5
Semiarid Southwestern United States

Prepared by U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE
OFFICE OF HYDROLOGIC DEVELOPMENT
HYDROMETEOROLOGICAL DESIGN STUDIES CENTER
June 2006

SCALE 1:2,000,000
(when printed/viewed at ANSI C size)
0 10 20 30 40 50 Miles
0 5 10 20 30 40 50 60 70 Kilometers

Isopluvials of 24 hour precipitation (inches) with Average Recurrence Interval of 2 years

See NOAA Atlas 14 documentation for factors to convert to Annual Exceedance Probabilities for all estimates below 25 years

N

Inches

0.64 - 0.80	1.41 - 1.60	2.21 - 2.40	3.01 - 3.50	5.01 - 5.50
0.81 - 1.00	1.61 - 1.80	2.41 - 2.60	3.51 - 4.00	5.51 - 6.00
1.01 - 1.20	1.81 - 2.00	2.61 - 2.80	4.01 - 4.50	6.01 - 6.50
1.21 - 1.40	2.01 - 2.20	2.81 - 3.00	4.51 - 5.00	6.51 - 7.00

Projection: Lambert Conformal Conic; Datum NAD83; Standard Parallels: 38° and 45°; Central Meridian 112°.

Engineering: RUSLE2
and NRCS Soil Report

USDA NRCS Natural Resources Conservation Service

RUSLE2 Worksheet Erosion Calculation Record

Inputs:
Operator: Dewey Solutions, LLC
Facility Name: Soilutions
Location: Albuquerque, NM

Outputs:

Hillslope	*Climate*	*Management*	*Soil*	*Soil loss erod. portion, t/ac/yr*	*Sediment delivery, t/ac/yr*
Highly disturbed land\Bernalillo Cty., NM	New Mexico\Bernalillo county average (Albuquerque)	smooth bare, no disturbance	Bernalillo County\nm600\BCC Bluepoint loamy fine sand, 1 to 9 percent slopes MLRA 42\Bluepoint Loamy fine sand 85%	0.54	0.54
Highly disturbed land\Bernalillo Cty., NM#6*	New Mexico\Bernalillo county average (Albuquerque)	rough bare, freshly disturbed	Bernalillo County\nm600\BCC Bluepoint loamy fine sand, 1 to 9 percent slopes MLRA 42\Bluepoint Loamy fine sand 85%	1.8	1.8
Highly disturbed land\Bernalillo Cty., NM#7*	New Mexico\Bernalillo county average (Albuquerque)	Highly disturbed land\Construction With No Practices\bare cut slope, smooth	Bernalillo County\nm600\BCC Bluepoint loamy fine sand, 1 to 9 percent slopes MLRA 42\Bluepoint Loamy fine sand 85%	1.8	1.8
Highly disturbed land\Bernalillo Cty., NM#8*	New Mexico\Bernalillo county average (Albuquerque)	Highly disturbed land\Construction With Temporary Practices\BMPs\Permeable barriers, moderate retardance	Bernalillo County\nm600\BCC Bluepoint loamy fine sand, 1 to 9 percent slopes MLRA 42\Bluepoint Loamy fine sand 85%	0.54	0.54
Highly disturbed land\Bernalillo Cty., NM#9*	New Mexico\Bernalillo county average (Albuquerque)	Highly disturbed land\Construction With Temporary Practices\BMPs\Silt Fence - Standard	Bernalillo County\nm600\BCC Bluepoint loamy fine sand, 1 to 9 percent slopes MLRA 42\Bluepoint Loamy fine sand 85%	0.54	0.54

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico

Dewey Solutions, LLC - Soilutions

April 4, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (Dewey Solutions, LLC - Soilutions)

Map Scale: 1:1,740 if printed on A portrait (8.5" x 11") sheet.

N

0 25 50 100 150 Meters

0 50 100 200 300 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico
Survey Area Data: Version 17, Sep 8, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 26, 2021—Dec 16, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Dewey Solutions, LLC - Soilutions)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	13.2	100.0%
Totals for Area of Interest		**13.2**	**100.0%**

Map Unit Descriptions (Dewey Solutions, LLC - Soilutions)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico

BCC—Bluepoint loamy fine sand, 1 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2sy14
Elevation: 4,460 to 6,000 feet
Mean annual precipitation: 6 to 12 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 170 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Bluepoint and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bluepoint

Setting

Landform: Stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium and/or eolian deposits

Typical profile

C1 - 0 to 5 inches: loamy fine sand
C2 - 5 to 28 inches: loamy fine sand
C3 - 28 to 53 inches: loamy fine sand
C4 - 53 to 60 inches: loamy sand

Properties and qualities

Slope: 1 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.04 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: R042BE054NM - Deep Sand, Cool Desert Grassland

Hydric soil rating: No

Minor Components

Bluepoint family

Percent of map unit: 6 percent
Hydric soil rating: No

Wink

Percent of map unit: 3 percent
Hydric soil rating: No

Pajarito

Percent of map unit: 2 percent
Hydric soil rating: No

Caliza

Percent of map unit: 2 percent
Hydric soil rating: No

Arizo

Percent of map unit: 1 percent
Hydric soil rating: No

Madurez

Percent of map unit: 1 percent
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Management

Land management interpretations are tools designed to guide the user in evaluating existing conditions in planning and predicting the soil response to various land management practices, for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture, and rangeland. Example interpretations include suitability for a variety of irrigation practices, log landings, haul roads and major skid trails, equipment operability, site preparation, suitability for hand and mechanical planting, potential erosion hazard associated with various practices, and ratings for fencing and waterline installation.

Fugitive Dust Resistance (Dewey Solutions, LLC - Soilutions)

This interpretation rates the vulnerability of a soil for eroded soil particles to go into suspension during a windstorm. Fugitive dust can create extreme visibility reductions during severe windstorms creating traffic hazards and closing airports. Power outages, expensive cleanup costs, damage to computers and communications equipment from dust, transport of potentially harmful chemicals adhering to the soil particles, and loss of soil nutrients are some of the potential effects of fugitive dust. A positive impact is that nutrient enrichment can occur where fugitive dust is deposited.

Fugitive dust is a source of PM10 which is one of the seven air pollutants the Environmental Protection Agency regulates under the National Ambient Air Quality Standards (NAAQS). To a lesser extent, fugitive dust is a source of PM2.5 which has proposed regulations pending under NAAQS. PM10 and PM2.5 are defined as particulate matter with a mean diameter less than 10 microns and 2.5 microns respectively. These soil particles are very small, can remain suspended in the air for

long periods of time, and are easily inhaled into the deep lungs. Increased risks of death and disease have been linked to periods of high outdoor PM10 and PM2.5 concentrations. These fine particles can potentially be lifted thousands of feet into the atmosphere and transported across continents and oceans creating global health, ecological, and climate change impacts.

The soil properties and qualities that affect fugitive dust are size of surface soil particles, rock fragment content, organic matter content, calcium carbonate equivalent, aggregate stability and presence of a stable soil crust. Clay particles have a strong propensity to form relatively large, durable soil aggregates and not contribute appreciably to fugitive dust unless these aggregates are broken down by intensive surface disturbance. Soil moisture and the presence of frozen soil also influence fugitive dust. Activities which break down soil aggregates and crusts increase wind erosion and production of fugitive dust.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which all of the soil features affect the formation of dust. "Low resistance" indicates that the soil has features that are very favorable for the formation of dust. "Moderate resistance" indicates that the soil has features that are favorable for dust formation. "High resistance" indicates that the soil has features that are unfavorable for dust formation.

Numerical ratings indicate the level of vulnerability of the soil for dust formation. The ratings are shown in decimal fractions ranging from 1.00 to 0.01. They indicate gradations between the point at which a soil feature resists dust formation (1.00) and the point at which the soil feature is favorable to the formation of dust (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Fugitive Dust Resistance (Dewey Solutions, LLC - Soilutions)

Map Scale: 1:1,740 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Low resistance to dust propagation
- Moderate resistance to dust propagation
- High resistance to dust propagation
- Not rated or not available

Soil Rating Lines

- Low resistance to dust propagation
- Moderate resistance to dust propagation
- High resistance to dust propagation
- Not rated or not available

Soil Rating Points

- Low resistance to dust propagation
- Moderate resistance to dust propagation
- High resistance to dust propagation
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico
Survey Area Data: Version 17, Sep 8, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 26, 2021—Dec 16, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Tables—Fugitive Dust Resistance (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	Low resistance to dust propagation	Bluepoint (85%)	Index value of surface texture (0.00)	13.2	100.0%
				Content of rock fragments (0.00)		
				Content of carbonates (1.00)		
Totals for Area of Interest					**13.2**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Low resistance to dust propagation	13.2	100.0%
Totals for Area of Interest	**13.2**	**100.0%**

Rating Options—Fugitive Dust Resistance (Dewey Solutions, LLC - Soilutions)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Rock Free (Dewey Solutions, LLC - Soilutions)

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kf (rock free)" indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Factor K does not apply to organic horizons and is not reported for those layers.

Custom Soil Resource Report
Map—K Factor, Rock Free (Dewey Solutions, LLC - Soilutions)

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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Survey Area Data: Version 17, Sep 8, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 26, 2021—Dec 16, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—K Factor, Rock Free (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	.20	13.2	100.0%
Totals for Area of Interest			**13.2**	**100.0%**

Rating Options—K Factor, Rock Free (Dewey Solutions, LLC - Soilutions)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

K Factor, Whole Soil (Dewey Solutions, LLC - Soilutions)

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Custom Soil Resource Report
Map—K Factor, Whole Soil (Dewey Solutions, LLC - Soilutions)

Map Scale: 1:1,740 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 17, Sep 8, 2022

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Date(s) aerial images were photographed: Nov 26, 2021—Dec 16, 2021

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MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—K Factor, Whole Soil (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	.20	13.2	100.0%
Totals for Area of Interest			**13.2**	**100.0%**

Rating Options—K Factor, Whole Soil (Dewey Solutions, LLC - Soilutions)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

T Factor (Dewey Solutions, LLC - Soilutions)

The T factor is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Custom Soil Resource Report
Map—T Factor (Dewey Solutions, LLC - Soilutions)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- 1
- 2
- 3
- 4
- 5
- Not rated or not available

Soil Rating Lines
- 1
- 2
- 3
- 4
- 5
- Not rated or not available

Soil Rating Points
- 1
- 2
- 3
- 4
- 5
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—T Factor (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	5	13.2	100.0%
Totals for Area of Interest			**13.2**	**100.0%**

Rating Options—T Factor (Dewey Solutions, LLC - Soilutions)

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Wind Erodibility Group (Dewey Solutions, LLC - Soilutions)

A wind erodibility group (WEG) consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible.

Custom Soil Resource Report
Map—Wind Erodibility Group (Dewey Solutions, LLC - Soilutions)

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

1
2
3
4
4L
5
6
7
8
Not rated or not available

Soil Rating Lines

1
2
3
4
4L
5
6
7
8
Not rated or not available

Soil Rating Points

1
2
3
4
4L
5
6
7
8
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 17, Sep 8, 2022

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Date(s) aerial images were photographed: Nov 26, 2021—Dec 16, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Wind Erodibility Group (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	2	13.2	100.0%
Totals for Area of Interest			**13.2**	**100.0%**

Rating Options—Wind Erodibility Group (Dewey Solutions, LLC - Soilutions)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Wind Erodibility Index (Dewey Solutions, LLC - Soilutions)

The wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Custom Soil Resource Report
Map—Wind Erodibility Index (Dewey Solutions, LLC - Soilutions)

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Lines

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Soil Rating Points

0
38
48
56
86
134
160
180
220
250
310
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico
Survey Area Data: Version 17, Sep 8, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 26, 2021—Dec 16, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Wind Erodibility Index (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Rating (tons per acre per year)	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	134	13.2	100.0%
Totals for Area of Interest			**13.2**	**100.0%**

Rating Options—Wind Erodibility Index (Dewey Solutions, LLC - Soilutions)

Units of Measure: tons per acre per year

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

AASHTO Group Classification (Surface) (Dewey Solutions, LLC - Soilutions)

AASHTO group classification is a system that classifies soils specifically for geotechnical engineering purposes that are related to highway and airfield construction. It is based on particle-size distribution and Atterberg limits, such as liquid limit and plasticity index. This classification system is covered in AASHTO Standard No. M 145-82. The classification is based on that portion of the soil that is smaller than 3 inches in diameter.

The AASHTO classification system has two general classifications: (i) granular materials having 35 percent or less, by weight, particles smaller than 0.074 mm in diameter and (ii) silt-clay materials having more than 35 percent, by weight, particles smaller than 0.074 mm in diameter. These two divisions are further subdivided into seven main group classifications, plus eight subgroups, for a total of fifteen for mineral soils. Another class for organic soils is used.

For each soil horizon in the database one or more AASHTO Group Classifications may be listed. One is marked as the representative or most commonly occurring. The representative classification is shown here for the surface layer of the soil.

Custom Soil Resource Report
Map—AASHTO Group Classification (Surface) (Dewey Solutions, LLC - Soilutions)

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A-1
- A-1-a
- A-1-b
- A-2
- A-2-4
- A-2-5
- A-2-6
- A-2-7
- A-3
- A-4
- A-5
- A-6
- A-7
- A-7-5
- A-7-6
- A-8
- Not rated or not available

Soil Rating Lines

- A-1
- A-1-a
- A-1-b
- A-2
- A-2-4
- A-2-5
- A-2-6
- A-2-7
- A-3
- A-4
- A-5
- A-6
- A-7
- A-7-5
- A-7-6
- A-8
- Not rated or not available

Soil Rating Points

- A-1
- A-1-a
- A-1-b
- A-2
- A-2-4
- A-2-5
- A-2-6
- A-2-7
- A-3
- A-4
- A-5
- A-6

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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Survey Area Data: Version 17, Sep 8, 2022

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Date(s) aerial images were photographed: Nov 26, 2021—Dec 16, 2021

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MAP LEGEND	MAP INFORMATION
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Table—AASHTO Group Classification (Surface) (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	A-2-4	13.2	100.0%
Totals for Area of Interest			**13.2**	**100.0%**

Rating Options—AASHTO Group Classification (Surface) (Dewey Solutions, LLC - Soilutions)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

AASHTO Group Index (Dewey Solutions, LLC - Soilutions)

The AASHTO Group Index is a refinement to the seven major groups of the AASHTO soil classification system. According to

this system, soil is classified into seven major groups: A -l through A-7. Soils classified into groups A-1, A-2. and A-3 are granular materials of which 35% or less of the particles pass through the No. 200 sieve. Soils of which more than 35% pass through the No. 200 sieve are classified into groups A-4, A-5, A-6, and A-7. These soils are mostly silt and clay-type materials.

The classifications system is based on the following criteria:

1. Grain size

a. Gravel ; fraction passing the 75-mm(3-in.) sieve and retained on the No. 10 (2-mm) U.S. sieve

b. sand: fraction passing the No. 10 (2-mm) U.S. sieve and retained on the No.200 (0.075-mm) U.S. sieve

c. Silt and clay: fraction passing the No. 200 U.S. sieve

2. Plasticity The term silty is applied when the fine fractions of the soil have a plasticity index of 10 or less. The term clayey is applied when the fine fractions have a plasticity index of 11 or more.

3. If cobbles and boulders (size larger than 75 mm) are encountered, they are excluded from the portion of the soil sample from which classification is made.

To evaluate the quality of a soil as a highway subgrade material, one must also incorporate a number called the group index (GI) with the groups and subgroups of the soil. This index is written in parentheses after the group or subgroup designation.

The group index is given by the equation:

GI = (F200-35)[0.2+ 0.005(LL- 40)] + 0.01(.F200-15)(PI- 10)

where:

F200 = percentage passing through the No. 200 sieve

LL — liquid limit

PI : plasticity index

The group index is used typically to refine an AASHTO class but in the soil survey database is often used as a standalone soil attribute.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—AASHTO Group Index (Dewey Solutions, LLC - Soilutions)

Map Scale: 1:1,740 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

= 0

Not rated or not available

Soil Rating Lines

= 0

Not rated or not available

Soil Rating Points

= 0

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 17, Sep 8, 2022

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Date(s) aerial images were photographed: Nov 26, 2021—Dec 16, 2021

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MAP LEGEND	MAP INFORMATION
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Table—AASHTO Group Index (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	0	13.2	100.0%
Totals for Area of Interest			**13.2**	**100.0%**

Rating Options—AASHTO Group Index (Dewey Solutions, LLC - Soilutions)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

Hydrologic Soil Group (Dewey Solutions, LLC - Soilutions)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

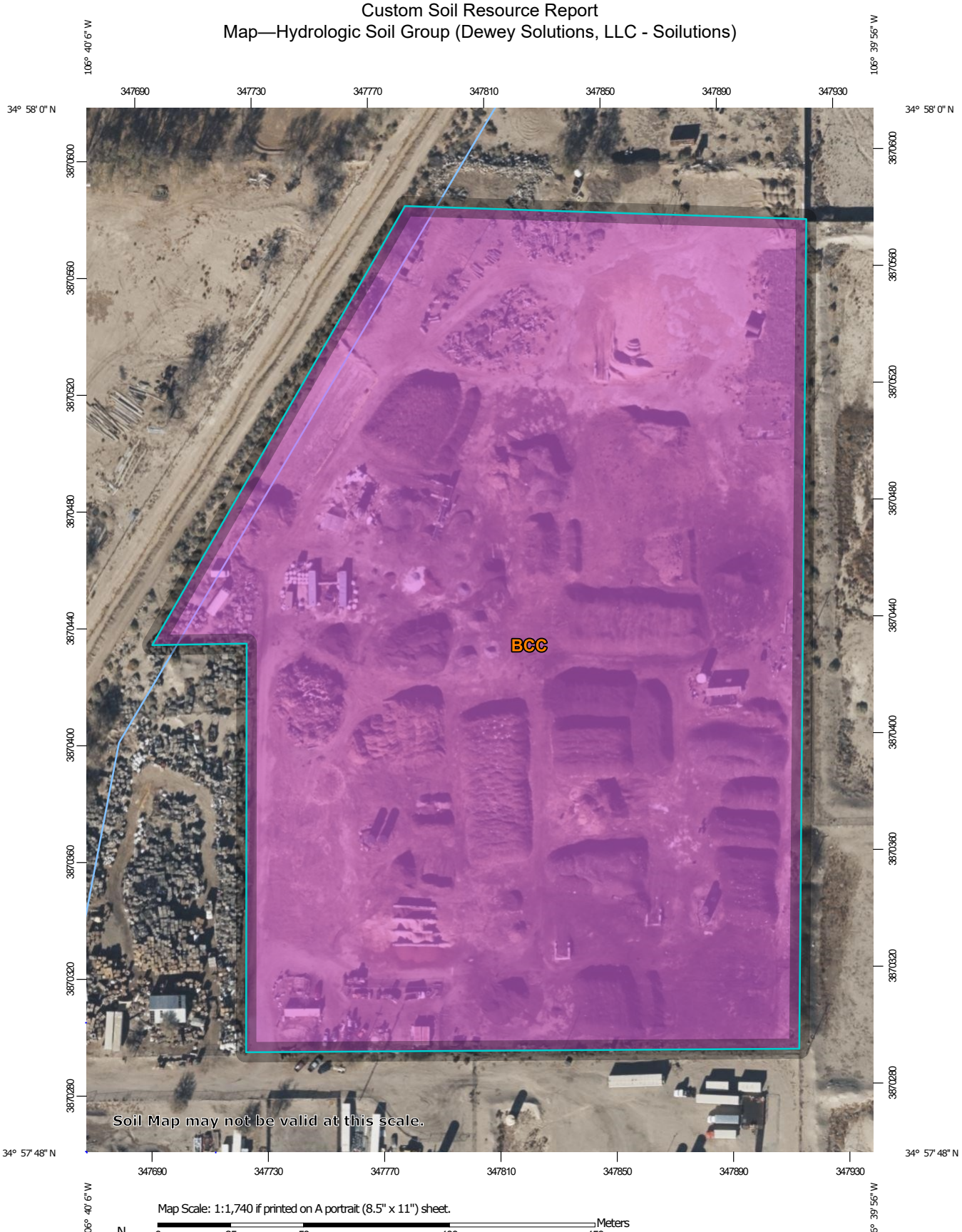
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group (Dewey Solutions, LLC - Soilutions)



Map Scale: 1:1,740 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Table—Hydrologic Soil Group (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	A	13.2	100.0%
Totals for Area of Interest			**13.2**	**100.0%**

Rating Options—Hydrologic Soil Group (Dewey Solutions, LLC - Soilutions)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Representative Slope (Dewey Solutions, LLC - Soilutions)

Slope gradient is the difference in elevation between two points, expressed as a percentage of the distance between those points.

The slope gradient is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Representative Slope (Dewey Solutions, LLC - Soilutions)

Map Scale: 1:1,740 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0 - 5

5 - 15

15 - 45

45 - 60

60 - 100

Not rated or not available

Soil Rating Lines

0 - 5

5 - 15

15 - 45

45 - 60

60 - 100

Not rated or not available

Soil Rating Points

0 - 5

5 - 15

15 - 45

45 - 60

60 - 100

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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MAP LEGEND	MAP INFORMATION
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Table—Representative Slope (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	5.0	13.2	100.0%
Totals for Area of Interest			**13.2**	**100.0%**

Rating Options—Representative Slope (Dewey Solutions, LLC - Soilutions)

Units of Measure: percent

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

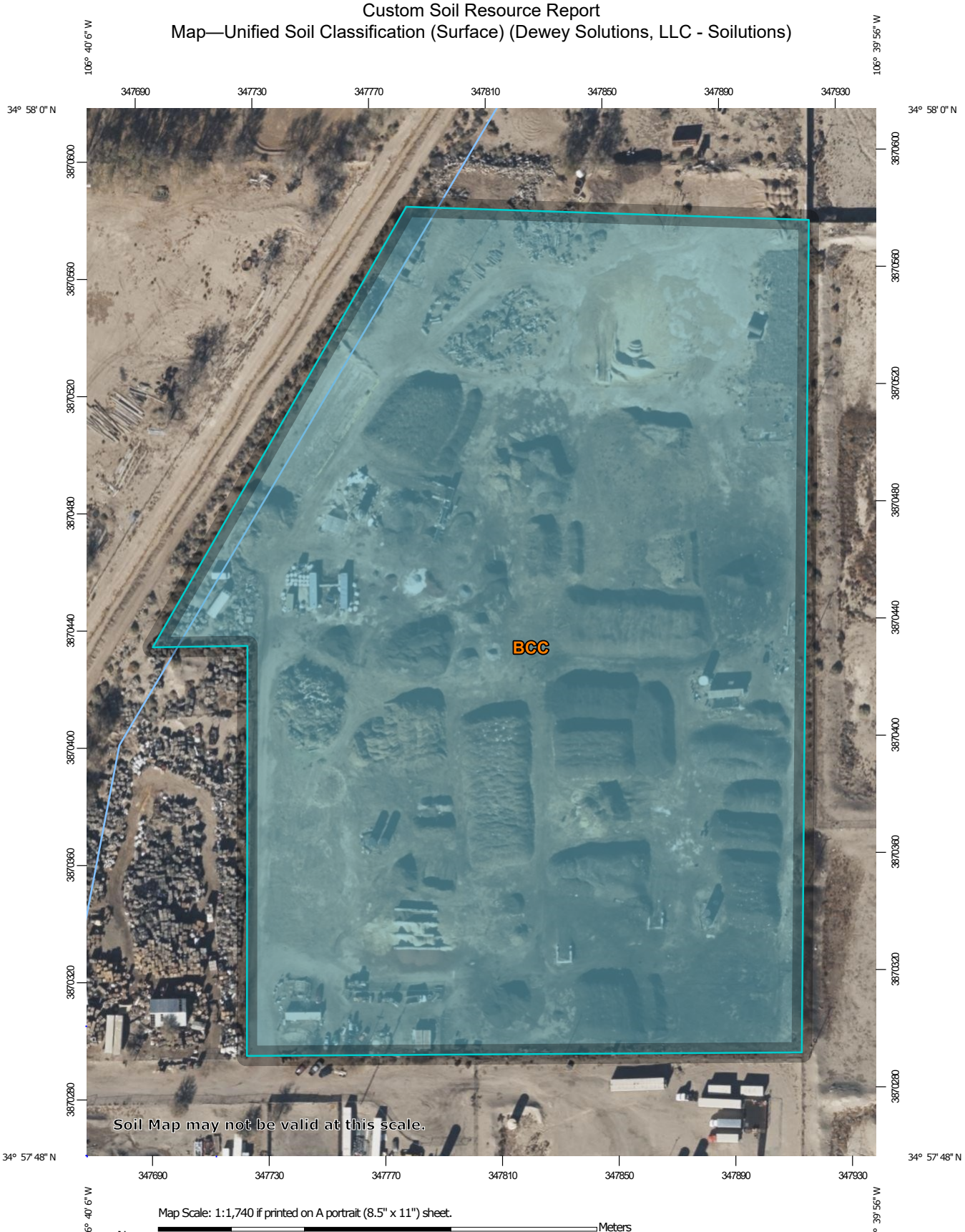
Unified Soil Classification (Surface) (Dewey Solutions, LLC - Soilutions)

The Unified soil classification system classifies mineral and organic mineral soils for engineering purposes on the basis of particle-size characteristics, liquid limit, and plasticity index. It identifies three major soil divisions: (i) coarse-grained soils having less than 50 percent, by weight, particles smaller than 0.074 mm in diameter; (ii) fine-grained soils having 50 percent or more, by weight, particles smaller than 0.074 mm in diameter; and (iii) highly organic soils that demonstrate certain organic characteristics. These divisions are further subdivided into a total of 15 basic soil groups. The major soil divisions and basic soil groups are determined on the basis of estimated or measured values for grain-size distribution and Atterberg limits. ASTM D 2487 shows the criteria chart used for classifying soil in the Unified system and the 15 basic soil groups of the system and the plasticity chart for the Unified system.

The various groupings of this classification correlate in a general way with the engineering behavior of soils. This correlation provides a useful first step in any field or laboratory investigation for engineering purposes. It can serve to make some general interpretations relating to probable performance of the soil for engineering uses.

For each soil horizon in the database one or more Unified soil classifications may be listed. One is marked as the representative or most commonly occurring. The representative classification is shown here for the surface layer of the soil.

Custom Soil Resource Report
Map—Unified Soil Classification (Surface) (Dewey Solutions, LLC - Soilutions)



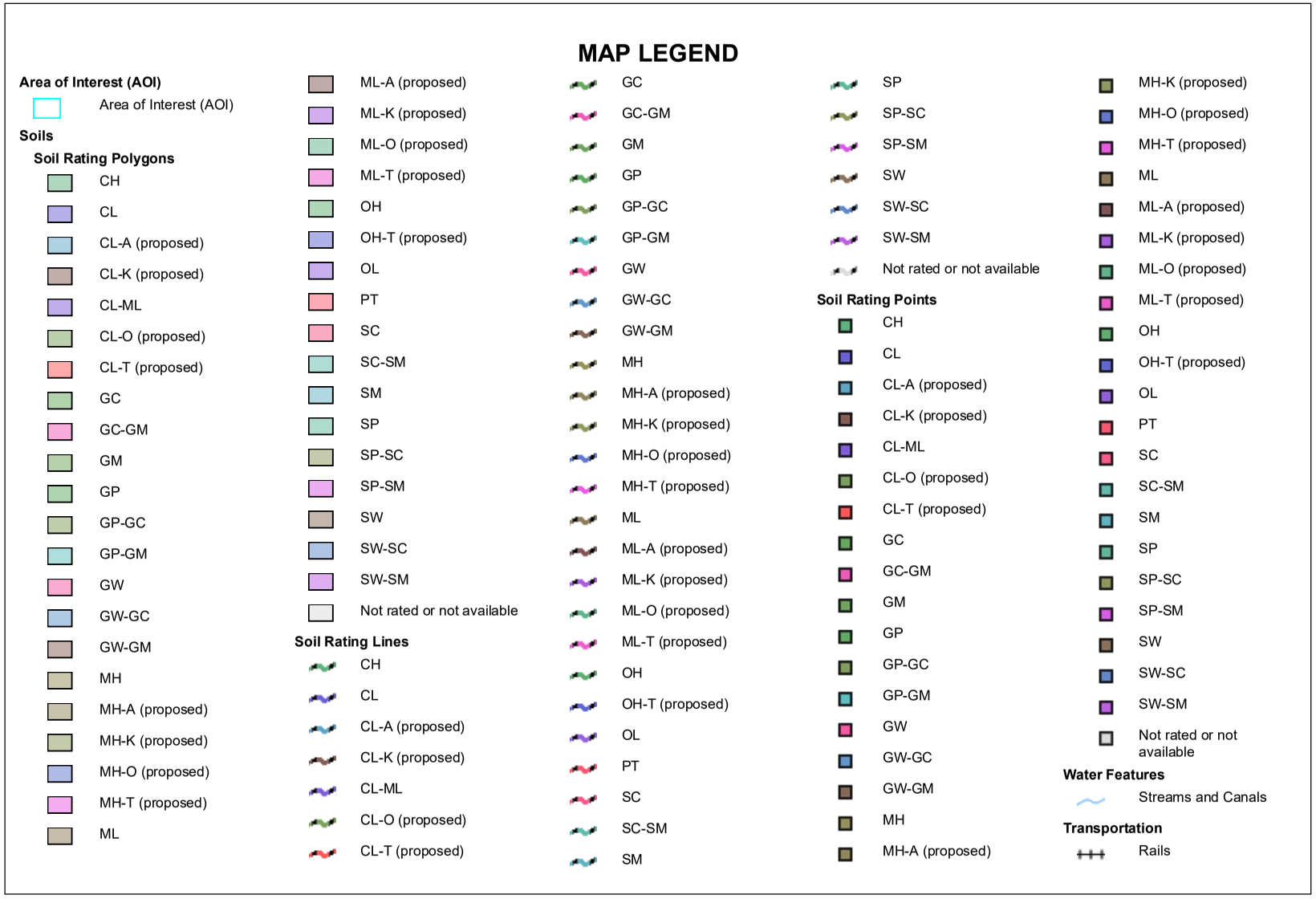
Map Scale: 1:1,740 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84


MAP LEGEND
Area of Interest (AOI)
Area of Interest (AOI)
Soils
Soil Rating Polygons
CH
CL
CL-A (proposed)
CL-K (proposed)
CL-ML
CL-O (proposed)
CL-T (proposed)
GC
GC-GM
GM
GP
GP-GC
GP-GM
GW
GW-GC
GW-GM
MH
MH-A (proposed)
MH-K (proposed)
MH-O (proposed)
MH-T (proposed)
ML
ML-A (proposed)
ML-K (proposed)
ML-O (proposed)
ML-T (proposed)
OH
OH-T (proposed)
OL
PT
SC
SC-SM
SM
SP
SP-SC
SP-SM
SW
SW-SC
SW-SM
Not rated or not available
Soil Rating Lines
CH
CL
CL-A (proposed)
CL-K (proposed)
CL-ML
CL-O (proposed)
CL-T (proposed)
GC
GC-GM
GM
GP
GP-GC
GP-GM
GW
GW-GC
GW-GM
MH
MH-A (proposed)
MH-K (proposed)
MH-O (proposed)
MH-T (proposed)
ML
ML-A (proposed)
ML-K (proposed)
ML-O (proposed)
ML-T (proposed)
OH
OH-T (proposed)
OL
PT
SC
SC-SM
SM
SP
SP-SC
SP-SM
SW
SW-SC
SW-SM
Not rated or not available
Soil Rating Points
CH
CL
CL-A (proposed)
CL-K (proposed)
CL-ML
CL-O (proposed)
CL-T (proposed)
GC
GC-GM
GM
GP
GP-GC
GP-GM
GW
GW-GC
GW-GM
MH
MH-A (proposed)
MH-K (proposed)
MH-O (proposed)
MH-T (proposed)
ML
ML-A (proposed)
ML-K (proposed)
ML-O (proposed)
ML-T (proposed)
OH
OH-T (proposed)
OL
PT
SC
SC-SM
SM
SP
SP-SC
SP-SM
SW
SW-SC
SW-SM
Not rated or not available
Water Features
Streams and Canals
Transportation
Rails

MAP INFORMATION


Interstate Highways


US Routes

Major Roads

Local Roads

Background


Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Unified Soil Classification (Surface) (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	SM	13.2	100.0%
Totals for Area of Interest			**13.2**	**100.0%**

Rating Options—Unified Soil Classification (Surface) (Dewey Solutions, LLC - Soilutions)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Ecological Sites

Individual soil map unit components can be correlated to a particular ecological site. The Ecological Site Assessment section includes ecological site descriptions, plant growth curves, state and transition models, and selected National Plants database information.

All Ecological Sites — (Dewey Solutions, LLC - Soilutions)

An "ecological site" is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. For example, the hydrology of the site is influenced by development of the soil and plant community. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production.

An ecological site name provides a general description of a particular ecological site. For example, "Loamy Upland" is the name of a rangeland ecological site. An "ecological site ID" is the symbol assigned to a particular ecological site.

The map identifies the dominant ecological site for each map unit, aggregated by dominant condition. Other ecological sites may occur within each map unit. Each map unit typically consists of one or more components (soils and/or miscellaneous areas). Each soil component is associated with an ecological site. Miscellaneous areas, such as rock outcrop, sand dunes, and badlands, have little or no soil material and support little or no vegetation and therefore are not linked to an ecological site. The table below the map lists all of the ecological sites for each map unit component in your area of interest.

Custom Soil Resource Report
Map—Dominant Ecological Site (Dewey Solutions, LLC - Soilutions)

Map Scale: 1:1,740 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

R042BE054NM

Not rated or not available

Soil Rating Lines

R042BE054NM

Not rated or not available

Soil Rating Points

R042BE054NM

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico
Survey Area Data: Version 17, Sep 8, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 26, 2021—Dec 16, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND	MAP INFORMATION
	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Ecological Sites by Map Unit Component (Dewey Solutions, LLC - Soilutions)

Map unit symbol	Map unit name	Component name (percent)	Ecological site	Acres in AOI	Percent of AOI
BCC	Bluepoint loamy fine sand, 1 to 9 percent slopes	Bluepoint (85%)	R042BE054NM — Deep Sand, Cool Desert Grassland	13.2	100.0%
		Bluepoint family (6%)			
		Wink (3%)			
		Caliza (2%)			
		Pajarito (2%)			
		Arizo (1%)			
		Madurez (1%)			
Totals for Area of Interest				**13.2**	**100.0%**

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Erosion

This folder contains a collection of tabular reports that present soil erosion factors and groupings. The reports (tables) include all selected map units and components for each map unit. Soil erosion factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

RUSLE2 Related Attributes (Dewey Solutions, LLC - Soilutions)

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factor Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic layer.

Report—RUSLE2 Related Attributes (Dewey Solutions, LLC - Soilutions)

Soil properties and interpretations for erosion runoff calculations. The surface mineral horizon properties are displayed or the first mineral horizon below an organic surface horizon. Organic horizons are not displayed.

RUSLE2 Related Attributes–Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico

Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
BCC—Bluepoint loamy fine sand, 1 to 9 percent slopes								
Bluepoint	85	499	A	.20	5	80.0	16.0	4.0

Soil Physical Properties

This folder contains a collection of tabular reports that present soil physical properties. The reports (tables) include all selected map units and components for each map unit. Soil physical properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Engineering Properties (Dewey Solutions, LLC - Soilutions)

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage of rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties–Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico														
Map unit symbol and soil name	**Pct. of map unit**	**Hydrologic group**	**Depth**	**USDA texture**	**Classification**		**Pct Fragments**		**Percentage passing sieve number—**				**Liquid limit**	**Plasticity index**
					Unified	**AASHTO**	**>10 inches**	**3-10 inches**	**4**	**10**	**40**	**200**		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
BCC—Bluepoint loamy fine sand, 1 to 9 percent slopes														
Bluepoint	85	A	0-5	Loamy fine sand	SM	A-2-4	0- 0- 0	0- 0- 0	84-92-100	84-91-100	78-87-97	27-31-36	0-17 -19	NP-1 -3
			5-28	Loamy fine sand, loamy sand, fine sand	SM	A-2-4	0- 0- 0	0- 0- 0	85-92-100	84-92-100	78-87-97	27-32-36	0-16 -18	NP-1 -3
			28-53	Loamy fine sand, loamy sand, fine sand	SM	A-2-4	0- 0- 0	0- 0- 0	85-92-100	84-92-100	78-87-97	27-32-36	0-16 -18	NP-1 -3
			53-60	Loamy fine sand, loamy sand, fine sand	SM	A-2-4	0- 0- 0	0- 0- 0	85-92-100	85-92-100	65-72-81	23-26-31	0-16 -18	NP-1 -3

Fragments on the Soil Surface (Dewey Solutions, LLC - Soilutions)

This table provides information about fragments on the soil surface. Surface fragments are unattached, cemented pieces of bedrock, bedrock-like material, durinodes, concretions, nodules, or pedogenic horizons (e.g., petrocalcic fragments) 2 mm or larger in diameter and woody material 20 mm or larger in diameter that are exposed at the surface of the soil. Surface fragments can be rock fragments, pararock fragments, or wood fragments. Vegetal material other than wood fragments, whether live or dead, is not included.

Pct. of map unit is the percent of the map unit comprised by the component.

Surface fragment cover percent is the percent of the soil surface covered by fragments 2 mm or larger in diameter (20 mm or larger in diameter for wood fragments).

Distance between fragments is the average distance between surface fragments, measured between edges.

Fragment size is the size based on the multiaxial dimensions of the surface fragment.

Flat fragment class	*Length of fragment (mm)*
Channers	2 - 150
Flagstones	150 - 380
Stones	380 - 600
Boulders	>= 600

Nonflat fragment class	*Diameter (mm)*
Gravel	2 - 75
Cobbles	75 - 250
Stones	250 - 600
Boulders	>= 600

Fragment kind is the lithology or composition of the surface fragments 2 mm or larger (20 mm or larger for wood fragments).

Fragment shape is a description of the overall shape of the surface fragment.

Fragment roundness is an expression of the sharpness of edges and corners of surface fragments.

Fragment hardness is the hardness of the fragment. It is equivalent to the rupture resistance cemented of a surface fragment that has been air-dried and then submerged in water.

Reference:
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (https://www.nrcs.usda.gov/wps/portal/nrcs/site/soils/home/)

Three values are provided to identify the expected Low (L), Representative Value (RV), and High (H).

Fragments on the Soil Surface–Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico								
Map symbol and soil name	**Pct. of map unit**	**Surface fragment cover percent**	**Distance between fragments**	**Fragment size**	**Fragment kind**	**Fragment shape**	**Fragment roundness**	**Fragment hardness**
		L-RV-H	*Meters (L-RV-H)*	*Millimeters (L-RV-H)*				
BCC—Bluepoint loamy fine sand, 1 to 9 percent slopes								
Bluepoint	85	0- 0- 1	—	2- 39- 75	Mixed rock	Nonflat	Subrounded	Indurated

Particle Size and Coarse Fragments (Dewey Solutions, LLC - Soilutions)

This table shows estimates of particle size distribution and coarse fragment content of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Total fragments is the content of fragments of rock and other materials larger than 2 millimeters in diameter on volumetric basis of the whole soil.

Fragments 2-74 mm refers to the content of coarse fragments in the 2 to 74 millimeter size fraction.

Fragments 75-249 mm refers to the content of coarse fragments in teh 75 to 249 millimeter size fraction.

Fragments 250-599 mm refers to the content of coarse fragments in the 250 to 599 millimeter size fraction.

Fragments >=600 mm refers to the content of coarse fragments in the greater than or equal to 600 millimeter size fraction.

Reference:
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (http://soils.usda.gov)

Particle Size and Coarse Fragments–Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico										
Map symbol and soil name	**Horizon**	**Depth**	**Sand**	**Silt**	**Clay**	**Total fragments**	**Fragments 2-74 mm**	**Fragments 75-249 mm**	**Fragments 250-599 mm**	**Fragments >=600 mm**
		In	*L-RV-H Pct*	*L-RV-H Pct*	*L-RV-H Pct*	*RV Pct*	*RV Pct*	*RV Pct*	*RV Pct*	*RV Pct*
BCC—Bluepoint loamy fine sand, 1 to 9 percent slopes										
Bluepoint	C1	0-5	75-80- 85	9-16- 23	2- 4- 6	5	5	—	—	—
	C2	5-28	75-80- 90	7-16- 23	2- 4- 6	5	5	—	—	—
	C3	28-53	75-80- 90	7-16- 23	2- 4- 6	5	5	—	—	—
	C4	53-60	75-80- 90	7-16- 23	2- 4- 6	5	5	—	—	—

Physical Soil Properties (Dewey Solutions, LLC - Soilutions)

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity

(Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1

are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:
United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (http://soils.usda.gov)

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties–Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico														
Map symbol and soil name	**Depth**	**Sand**	**Silt**	**Clay**	**Moist bulk density**	**Saturated hydraulic conductivity**	**Available water capacity**	**Linear extensibility**	**Organic matter**	**Erosion factors**			**Wind erodibility group**	**Wind erodibility index**
										Kw	**Kf**	**T**		
	In	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*In/In*	*Pct*	*Pct*					
BCC—Bluepoint loamy fine sand, 1 to 9 percent slopes														
Bluepoint	0-5	75-80- 85	9-16- 23	2- 4- 6	1.45-1.50-1.55	42.34-91.74-141.40	0.08-0.10-0.12	0.1- 0.3- 0.5	0.5- 0.7-1.0	.20	.20	5	2	134
	5-28	75-80- 90	7-16- 23	2- 4- 6	1.49-1.54-1.59	42.34-91.74-141.40	0.08-0.10-0.12	0.1- 0.3- 0.5	0.1- 0.3-0.5	.32	.32			
	28-53	75-80- 90	7-16- 23	2- 4- 6	1.49-1.54-1.59	42.34-91.74-141.40	0.08-0.10-0.12	0.1- 0.3- 0.5	0.1- 0.3-0.5	.32	.32			
	53-60	75-80- 90	7-16- 23	2- 4- 6	1.59-1.61-1.63	42.34-91.74-141.40	0.05-0.06-0.07	0.1- 0.3- 0.5	0.1- 0.3-0.5	.24	.24			

Soil Qualities and Features

This folder contains tabular reports that present various soil qualities and features. The reports (tables) include all selected map units and components for each map unit. Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Soil Features (Dewey Solutions, LLC - Soilutions)

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to

corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high.* It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Soil Features–Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico									
Map symbol and soil name	**Restrictive Layer**				**Subsidence**		**Potential for frost action**	**Risk of corrosion**	
	Kind	**Depth to top**	**Thickness**	**Hardness**	**Initial**	**Total**		**Uncoated steel**	**Concrete**
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
		In	*In*		*In*	*In*			
BCC—Bluepoint loamy fine sand, 1 to 9 percent slopes									
Bluepoint		—	—		0	0	None	Moderate	Moderate

Vegetative Productivity

This folder contains a collection of tabular reports that present vegetative productivity data. The reports (tables) include all selected map units and components for each map unit. Vegetative productivity includes estimates of potential vegetative production for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture and rangeland. In the underlying database, some states maintain crop yield data by individual map unit component. Other states maintain the data at the map unit level. Attributes are included for both, although only one or the other is likely to contain data for any given geographic area. For other land uses, productivity data is shown only at the map unit component level. Examples include potential crop yields under irrigated and nonirrigated conditions, forest productivity, forest site index, and total rangeland production under of normal, favorable and unfavorable conditions.

Environmental Plantings and Windbreaks (Dewey Solutions, LLC - Soilutions)

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

This table shows the height that locally grown trees and shrubs are expected to reach in 20 years on soils in the survey area. The estimates are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery.

Report—Environmental Plantings and Windbreaks (Dewey Solutions, LLC - Soilutions)

Environmental Plantings and Windbreaks–Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico					
Map symbol and soil name	Trees having predicted 20-year average height of—				
	8 feet or less	>8 to 15 feet	>15 to 25 feet	>25 to 35 feet	>35 feet
BCC—Bluepoint loamy fine sand, 1 to 9 percent slopes					
Bluepoint	—	—	—	—	—

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition (Dewey Solutions, LLC - Soilutions)

In areas that have similar climate and topography, differences in the kind and amount of rangeland or forest understory vegetation are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

This table shows, for each soil that supports vegetation, the ecological site, plant association, or habitat type; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. An explanation of the column headings in the table follows.

An *ecological site, plant association, or habitat type* is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of the site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site, plant association, or habitat type is typified by an association of species that differs from that of other ecological sites, plant associations, or habitat types in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service (NRCS). Descriptions of plant associations or habitat types are available from local U.S. Forest Service offices.

Total dry-weight production is the amount of vegetation that can be expected to grow annually in a well managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percent of air-dry moisture content.

Characteristic vegetation (the grasses, forbs, shrubs, and understory trees that make up most of the potential natural plant community on each soil) is listed by common name. Under *rangeland composition and forest understory*, the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The percentages are by dry weight for rangeland. Percentages for forest understory are by either dry weight or canopy cover. The amount that can be used as forage depends on the kinds of grazing animals and on the grazing season.

Range management requires knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range similarity index and rangeland trend. Range similarity index is determined by comparing the present plant community with the potential natural plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential community, the higher the range similarity index. Rangeland trend is defined as the direction of change in an existing plant community relative to the potential natural plant community. Further information about the range similarity index and rangeland trend is available in the "National Range and Pasture Handbook," which is available in local offices of NRCS or on the Internet.

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, an area with a range similarity index somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Reference:
United States Department of Agriculture, Natural Resources Conservation Service, National range and pasture handbook.

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition–Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico								
Map unit symbol and soil name	**Ecological Site, Plant Association, or Habitat Type**	**Total dry-weight production**			**Characteristic rangeland or forest understory vegetation**	**Composition**		
		Favorable year	**Normal year**	**Unfavorable year**			**Rangeland**	**Forest understory**
		Lb/ac	*Lb/ac*	*Lb/ac*		*Pct dry wt*	*Pct dry wt*	
BCC—Bluepoint loamy fine sand, 1 to 9 percent slopes								
Bluepoint	Deep Sand, Cool Desert Grassland (R042BE054NM)	900	500	175	broom dalea			
					broom snakeweed			
					honey mesquite			
					mesa dropseed			
					sand sagebrush			

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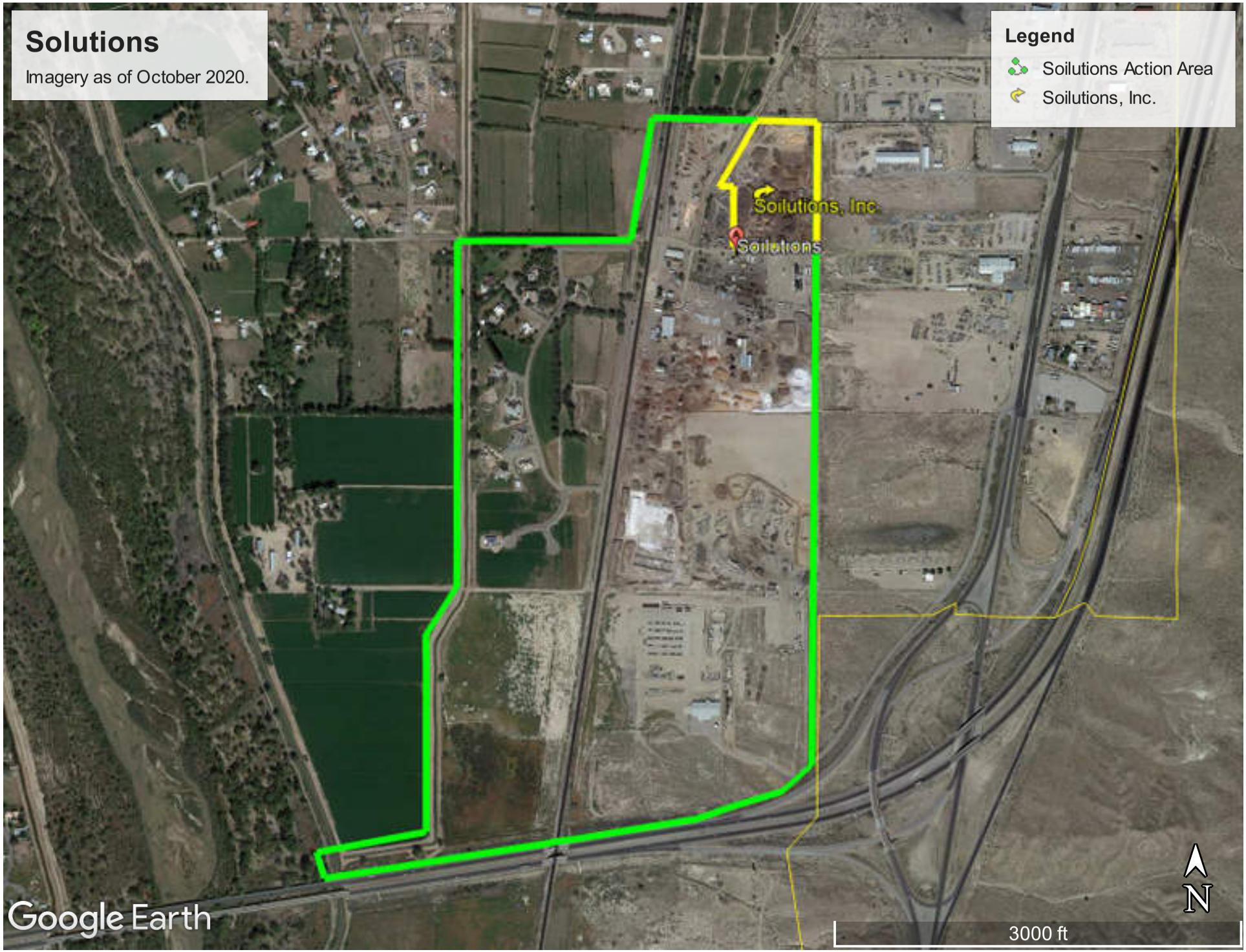
Endangered Species


Solutions
Imagery as of October 2020.
Legend
Soilutions Action Area
Soilutions, Inc.
Soilutions, Inc.
Soilutions
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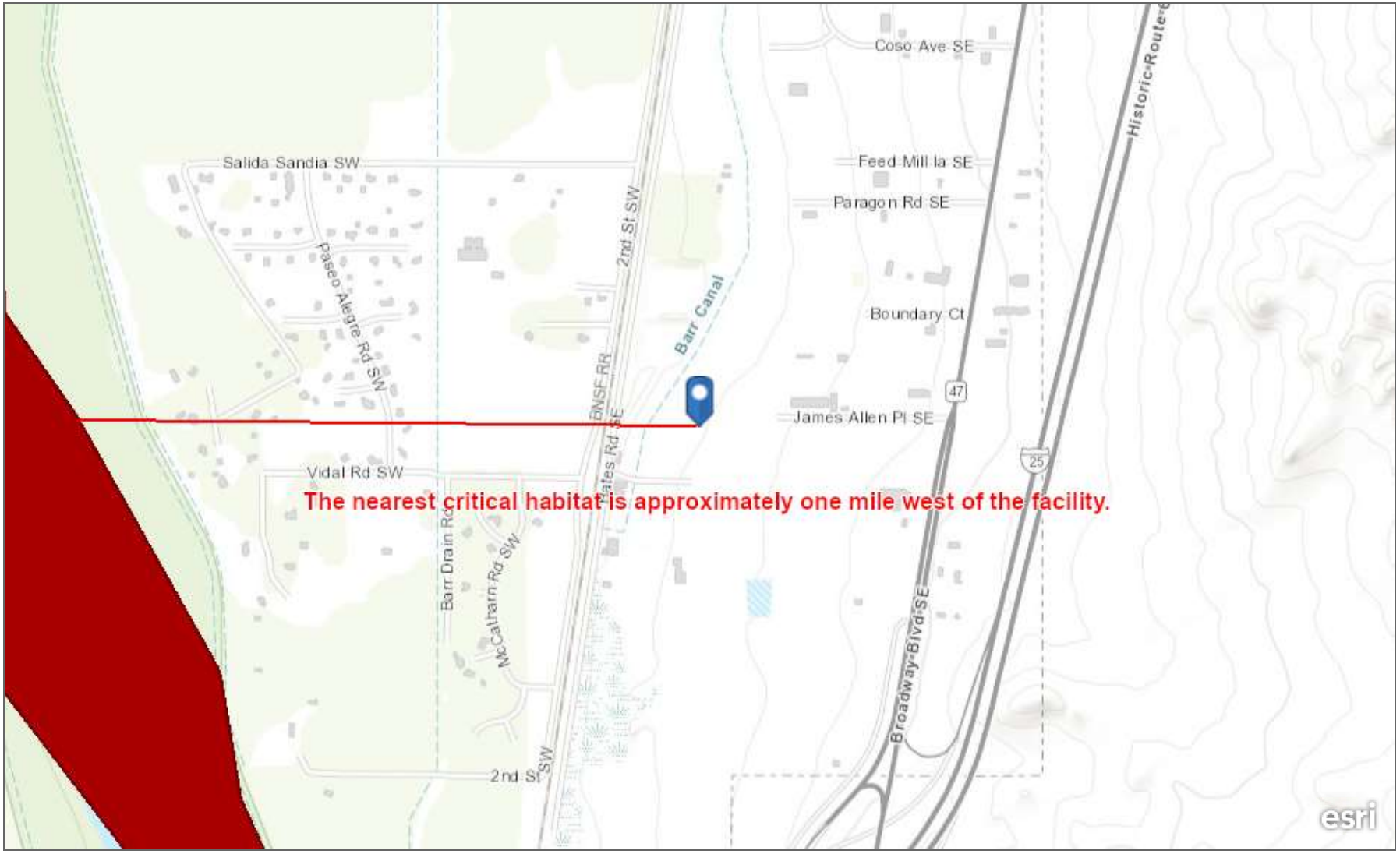
3000 ft
Google Earth

Critical Habitat for Threatened & Endangered Species [USFWS]



A specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

Bernalillo County, NM, City of Albuquerque, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
Phone: (505) 346-2525 Fax: (505) 346-2542

In Reply Refer To:
Project Code: 2023-0047329
Project Name: Soilutions

February 20, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Thank you for your recent request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of New Mexico wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act as amended (16 USC 701-715), and the Bald and Golden Eagle Protection Act as amended (16 USC 668-668(c)). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area, and to recommend some conservation measures that can be included in your project design.

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the ESA of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the ESA is to provide a means whereby threatened and endangered species and

the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (NEPA; 42 USC 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF.

Candidate Species and Other Sensitive Species

A list of candidate and other sensitive species in your area is also attached. Candidate species and other sensitive species are species that have no legal protection under the ESA, although we recommend that candidate and other sensitive species be included in your surveys and considered for planning purposes. The Service monitors the status of these species. If significant declines occur, these species could potentially be listed. Therefore, actions that may contribute to their decline should be avoided.

Lists of sensitive species including State-listed endangered and threatened species are compiled by New Mexico State agencies. These lists, along with species information, can be found at the following websites.

Biota Information System of New Mexico (BISON-M): www.bison-m.org

New Mexico State Forestry. The New Mexico Endangered Plant Program: https://www.emnrd.nm.gov/sfd/rare-plants/

New Mexico Rare Plant Technical Council, New Mexico Rare Plants: nmrareplants.unm.edu

Natural Heritage New Mexico, online species database: nhnm.unm.edu

WETLANDS AND FLOODPLAINS

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value.

We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's NWI program website, www.fws.gov/wetlands/Data/Mapper.html, integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

MIGRATORY BIRDS

In addition to responsibilities to protect threatened and endangered species under the ESA, there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the Service (50 CFR 10.12 and 16 USC 668(a)). For more information regarding these Acts see https://www.fenws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a Federal nexus) or a Bird/Eagle Conservation Plan (when there is no Federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php. We also recommend review of the Birds of Conservation Concern list (https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php) to fully evaluate the effects to the birds at your site. This list identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent top conservation priorities for the Service, and are potentially threatened by disturbance, habitat impacts, or other project development activities.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 thereby provides additional protection for both migratory birds and migratory bird habitat. Please visit https://www.fws.gov/migratorybirds/pdf/management/executiveordertoprotectmigratorybirds.pdf for information

regarding the implementation of Executive Order 13186.

We suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding State protected and at-risk species fish, wildlife, and plants.

For further consultation with the Service we recommend submitting inquiries or assessments electronically to our incoming email box at nmesfo@fws.gov, where it will be more promptly routed to the appropriate biologist for review.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
(505) 346-2525

PROJECT SUMMARY

Project Code: 2023-0047329
Project Name: Soilutions
Project Type: Stormwater Discharge with NPDES Permit
Project Description: The industrial facility is located in Albuquerque, NM and comprised of approximately 14 acres. The facility stores and sells compost, mulches and soils for commercial use.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@34.9604133,-106.67031337403334,14z

Counties: Bernalillo County, New Mexico

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Mexican Wolf *Canis lupus baileyi* Population: U.S.A. (portions of AZ and NM)see 17.84(k) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3916	Experimental Population, Non-Essential
New Mexico Meadow Jumping Mouse *Zapus hudsonius luteus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7965	Endangered

BIRDS

NAME	STATUS
Mexican Spotted Owl *Strix occidentalis lucida* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8196	Threatened
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

FISHES

NAME	STATUS
Rio Grande Silvery Minnow *Hybognathus amarus*	Endangered

Population: Wherever found, except where listed as an experimental population
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/1391

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPAC USER CONTACT INFORMATION

Agency: E2RC, LLC
Name: E2RC LLC
Address: 439 SOUTH HILL RD
City: BERNALILLO
State: NM
Zip: 87004
Email swppp@e2rc.com
Phone: 5058674040

Southeast Region

Threatened and Endangered Species and Critical Habitats Under NOAA Fisheries Jurisdiction

Species	Listing Status	Recovery Plan	Critical Habitat
Green sea turtle	Threatened - North and South Atlantic Distinct Population Segment (81 FR 20057; April 6, 2016)	October 1991	63 FR 46693; September 2, 1998
Kemp's ridley sea turtle	Endangered (35 FR 18319; December 2, 1970)	September 2011	None
Leatherback sea turtle	Endangered (35 FR 8491; June 2, 1970)	April 1992	44 FR 17710; March 23, 1979
Loggerhead sea turtle	Threatened - Northwest Atlantic Ocean Distinct Population Segment (76 FR 58868; September 22, 2011)	December 2008	79 FR 39856; July 10, 2014
Hawksbill sea turtle	Endangered (35 FR 8491; June 2, 1970)	December 1993	63 FR 46693; September 2, 1998
Smalltooth sawfish	U.S. Distinct Population Segment Endangered (68 FR 15674; April 1, 2003)	January 2009	72 FR 45353; October 2, 2009

Species	Listing Status	Recovery Plan	Critical Habitat
Shortnose sturgeon	Endangered (32 FR 4001; March 11, 1967)	December 1998	None
Atlantic sturgeon	Endangered - South Atlantic and Carolina Distinct Population Segment (77 FR 5914; February 6, 2012)	2018 Recovery Outline	82 FR 39160; August 10, 2017
Gulf sturgeon	Threatened (56 FR 49653; September 30, 1991)	September 1995	68 FR 13370; March 19, 2003
Nassau grouper	Threatened (81 FR 42268; June 29, 2016)	2018 Recovery Outline	None
Oceanic whitetip shark	Threatened (83 FR 4153; January 30, 2018)	2018 Recovery Outline	None
Giant manta ray	Threatened (83 FR 2916; January 22, 2018)	2019 Recovery Outline	None
Scalloped hammerhead shark	Central and Southwest Atlantic Distinct Population Segment - Threatened (79 FR 38213; July 3, 2014)	None	None
Elkhorn coral	Threatened (71 FR 26852; May 9, 2006)	March 2015	73 FR 72210; November 26, 2008
Staghorn coral	Threatened (71 FR 26852; May 9, 2006)	March 2015	73 FR 72210; November 26, 2008
Boulder star coral	Threatened (79 FR 53851; September 10, 2014)	None	None
Mountainous star coral	Threatened (79 FR 53851; September 10, 2014)	None	None
Lobed star coral	Threatened (79 FR 53851; September 10, 2014)	None	None
Rough cactus coral	Threatened (79 FR 53851; September 10, 2014)	None	None

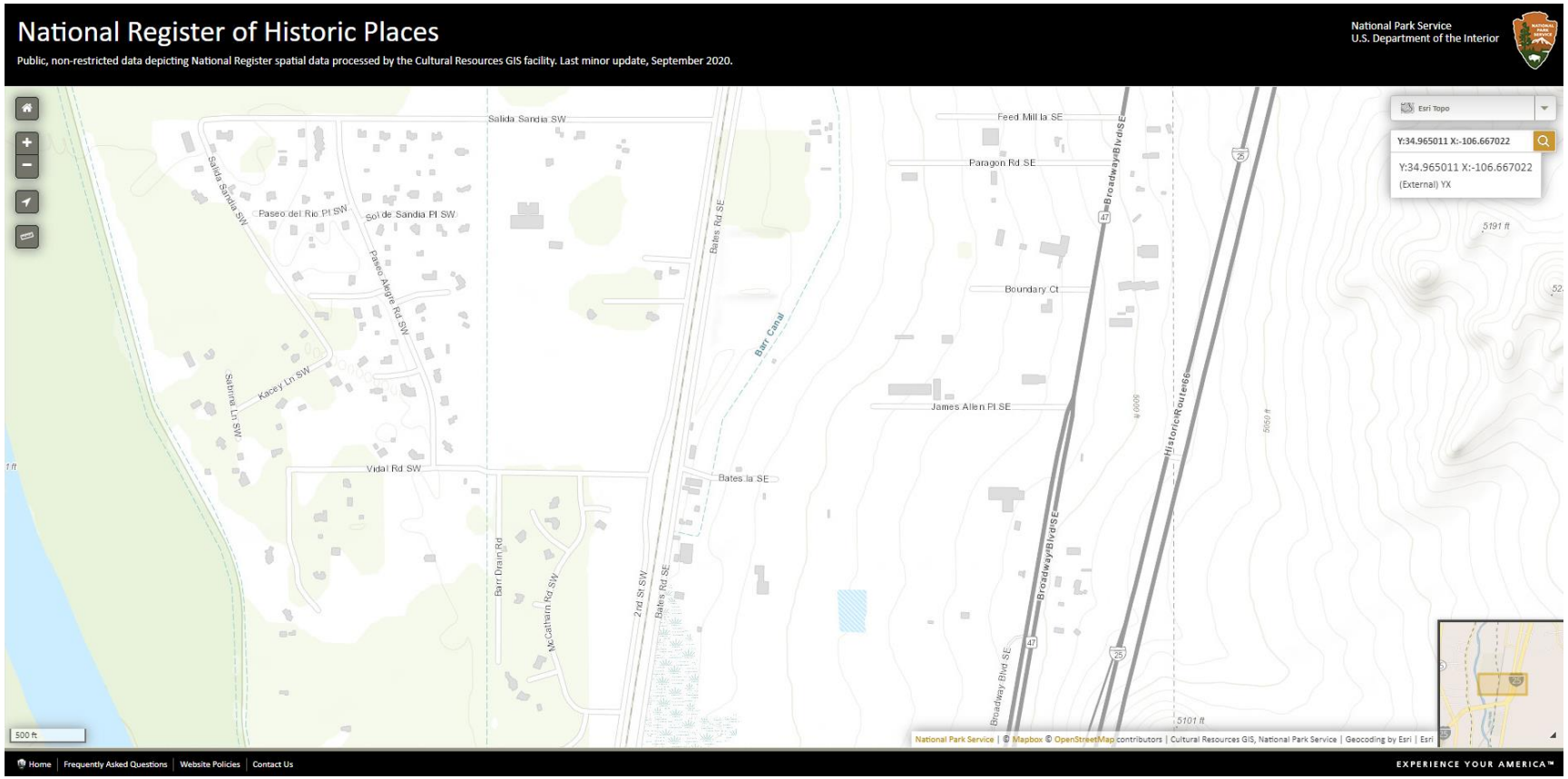
Species	Listing Status	Recovery Plan	Critical Habitat
Pillar coral	Threatened (79 FR 53851; September 10, 2014)	None	None
Johnson's seagrass	Threatened (58 FR 483226; September 14, 1998)	September 2002	65 FR 17786; May 5, 2000
Fin whale	Endangered (35 FR 18319/ December 2, 1970)	August 2010	None
Sperm whale	Endangered (35 FR 18319; December 2, 1970)	December 2010	None
Sei whale	Endangered (35 FR 12222/ December 2, 1970)	December 2011	None
Blue whale	Endangered (35 FR 18319/ December 2, 1970)	July 1998	None
North Atlantic right whale	Endangered (35 FR 18319; December 2, 1970)	June 2005	81 FR 4837; January 27, 2016
Rice's whale	Endangered (84 FR 15446, April 15, 2019); Name Change (86 FR 47022; August 23, 2021)	September 2020 Recovery Outline	None

Last updated by Southeast Regional Office on November 03, 2021

Historic and Cultural Properties

National Register of Historic Places

Facility: Soilutions, 9008 Bates Ln SE, Albuquerque, NM 87105



Ref#	Property Name	Status	Listed Date	NHL Designated Date	State	County	City	Street & Number	Level of Significance - Local	Level of Significance - State	Level of Significance - National	External Link
80002528	Tafoya, Domingo, House	Listed	11/17/1980		NEW MEXICO	Bernalillo	Alameda	10021 Edith Blvd., NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845852
87001121	Monte Vista Fire Station	Listed	3/19/1987		NEW MEXICO	Bernalillo	Albuqerque	3201 Centra Ave. NE	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847156
89000348	Albuquerque Municipal Airport Building, Old	Listed	5/5/1989		NEW MEXICO	Bernalillo	Albuquerque	2920 Yale Blvd. SE.	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847174
83001614	Albuquerque Veterans Administration Medical Cente	Listed	8/19/1983		NEW MEXICO	Bernalillo	Albuquerque	2100 Ridgecrest, SE	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847144
2001164	Aldo Leopold Neighborhood Historic District	Listed	10/16/2002		NEW MEXICO	Bernalillo	Albuquerque	105-135 Fourteenth St., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845859
84002840	Anaya, Gavino, House	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	2939 Duranes Rd., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845844
82003309	Armijo, Juan Cristobal, Homestead	Listed	9/30/1982		NEW MEXICO	Bernalillo	Albuquerque	207 Griegos Rd., NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845883
76001191	Armijo, Salvador, House	Listed	10/8/1976		NEW MEXICO	Bernalillo	Albuquerque	618 Rio Grande Blvd., NW	FALSE	FALSE	TRUE	https://catalog.archives.gov/id/77847050
88001540	Art Annex	Listed	9/22/1988		NEW MEXICO	Bernalillo	Albuquerque	NE corner of Central Ave. and	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845875
13000971	AT & SF Freight Office	Listed	12/24/2013		NEW MEXICO	Bernalillo	Albuquerque	314 1st St.	TRUE	FALSE	FALSE	
14000859	Atchison, Topeka and Santa Fe Railway Locomotive S	Listed	10/15/2014		NEW MEXICO	Bernalillo	Albuquerque	Roughly bounded by BNSF RF	TRUE	TRUE	FALSE	
7000388	ATSF Locomotive No. 2926	Listed	10/1/2007		NEW MEXICO	Bernalillo	Albuquerque	1600 Twelfth St. NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847166
93001217	Aztec Auto Court	Listed	11/22/1993		NEW MEXICO	Bernalillo	Albuquerque	3821 Central Ave. NE.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845901
84002843	Barela, Adrian, House	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	7618 Guadalupe Trail, NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845822
79001534	Barela-Bledsoe House	Listed	3/12/1979		NEW MEXICO	Bernalillo	Albuquerque	7017 Edith Blvd., NE	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845796
97000774	Barelas--South Fourth Street Historic District	Listed	7/24/1997		NEW MEXICO	Bernalillo	Albuquerque	4th St. from Stover Ave. to Br	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845929
83001615	Bottger, Charles A., House	Listed	3/7/1983		NEW MEXICO	Bernalillo	Albuquerque	110 San Felipe, NW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847065
85000375	Building at 701 Roma NW	Listed	2/28/1985		NEW MEXICO	Bernalillo	Albuquerque	701 Roma, NW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847095
88001541	Carlisle Gymnasium	Listed	9/22/1988		NEW MEXICO	Bernalillo	Albuquerque	UNM campus W of Yale Blvd.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845826
80002529	Carnes, Chester, House	Listed	12/1/1980		NEW MEXICO	Bernalillo	Albuquerque	701 13th St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845816
86000219	Castle Apartments	Listed	2/13/1986		NEW MEXICO	Bernalillo	Albuquerque	1410 Central SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847081
84002847	Chavez, Juan de Dios, House	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	205 Griegos Rd., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845840
84002849	Chavez, Juan, House	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	7809 4th St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845848
80002530	Chavez, Rumaldo, House	Listed	11/24/1980		NEW MEXICO	Bernalillo	Albuquerque	10023 Edith Blvd., NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845834
100003674	Congregation B'nai Israel	Listed	5/2/2019		NEW MEXICO	Bernalillo	Albuquerque	4401 Indian School Rd.	TRUE	FALSE	FALSE	
96001383	Coronado School	Listed	11/22/1996		NEW MEXICO	Bernalillo	Albuquerque	601 4th St., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845951
93001218	Cottage Bakery	Listed	11/22/1993		NEW MEXICO	Bernalillo	Albuquerque	2000 Central Ave. SE.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845921
80002531	Davis House	Listed	11/17/1980		NEW MEXICO	Bernalillo	Albuquerque	704 Parkland Circle, SE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847061
4000375	De Anza Motor Lodge	Listed	4/30/2004		NEW MEXICO	Bernalillo	Albuquerque	4301 Central Ave. NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845925
79001535	De Garcia, Tomasa Griego, House	Listed	6/19/1979		NEW MEXICO	Bernalillo	Albuquerque	6939 Edith Blvd., NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845798
84002852	Dietz, Robert, Farmhouse	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	4117 Rio Grande Blvd., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845850
80002532	Eighth Street-Forrester District	Listed	12/1/1980		NEW MEXICO	Bernalillo	Albuquerque	Roughly bounded by Mounta	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845861
93001465	El Campo Tourist Courts	Listed	1/13/1994		NEW MEXICO	Bernalillo	Albuquerque	5800 Central Ave. SW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845905
93001214	El Vado Auto Court	Listed	11/22/1993		NEW MEXICO	Bernalillo	Albuquerque	2500 Central Ave. SW.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845913
84002855	Eller Apartments	Listed	1/12/1984		NEW MEXICO	Bernalillo	Albuquerque	113-127 8th St., SW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847079
82003310	Employees' New Dormitory and Club	Listed	7/26/1982		NEW MEXICO	Bernalillo	Albuquerque	Albuquerque Indian School C	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847136
97001595	Enchanted Mesa Trading Post	Listed	1/9/1998		NEW MEXICO	Bernalillo	Albuquerque	9612 Central Ave. SE.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845917
88001542	Estufa	Listed	9/22/1988		NEW MEXICO	Bernalillo	Albuquerque	SE corner of University Blvd.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845830
80002533	Federal Building	Listed	11/22/1980		NEW MEXICO	Bernalillo	Albuquerque	421 Gold Ave., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847146
76001192	First Methodist Episcopal Church	Listed	11/7/1976		NEW MEXICO	Bernalillo	Albuquerque	3rd St. and Lead Ave.	FALSE	FALSE	TRUE	https://catalog.archives.gov/id/77847073
79003127	First National Bank Building	Listed	2/2/1979		NEW MEXICO	Bernalillo	Albuquerque	217-233 Central Ave., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847102
84002858	Foraker, C. M., Farmhouse	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	905 Menaul Blvd., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845879
80002534	Fourth Ward District	Listed	12/1/1980		NEW MEXICO	Bernalillo	Albuquerque	Roughly bounded by Central	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845865
82003311	Garcia, Juan Antonio, House	Listed	9/28/1982		NEW MEXICO	Bernalillo	Albuquerque	7442 Edith Blvd., NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845838
80002535	Gladding, James N., House	Listed	11/17/1980		NEW MEXICO	Bernalillo	Albuquerque	643 Cedar St., NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847118
84002864	Gomez, Refugio, House	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	7604 Guadalupe Trail, NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845842
84002866	Grande, Charles, House	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	4317 Grande St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845806
80002536	Gurule, Delfinia, House	Listed	12/1/1980		NEW MEXICO	Bernalillo	Albuquerque	306 16th St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845818
80002537	Harwood School	Listed	12/1/1980		NEW MEXICO	Bernalillo	Albuquerque	1114 7th St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845873
80002538	Hayden, A. W., House	Listed	12/1/1980		NEW MEXICO	Bernalillo	Albuquerque	609 Marble St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845804
99001678	Hendren Building	Listed	1/27/2000		NEW MEXICO	Bernalillo	Albuquerque	3001 Monte Vista Blvd. NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845927
97001597	Hilltop Lodge	Listed	1/9/1998		NEW MEXICO	Bernalillo	Albuquerque	5410 Central Ave. SW.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845909
100004492	Hoffmantown Baptist Church	Listed	10/25/2019		NEW MEXICO	Bernalillo	Albuquerque	2335 Wyoming Blvd. NE	TRUE	FALSE	FALSE	
80002539	Hope Building	Listed	8/29/1980		NEW MEXICO	Bernalillo	Albuquerque	220 Gold St., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847093
15000491	Hubbell, James Lawrence and Juliana Gutierrez y Cha	Listed	8/3/2015		NEW MEXICO	Bernalillo	Albuquerque	6029 Isleta Blvd. SW.	FALSE	TRUE	FALSE	
82003313	Hudson House	Listed	2/24/1982		NEW MEXICO	Bernalillo	Albuquerque	817 Gold Ave., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847089
6000633	Huning Highlands Conoco Service Station	Listed	7/19/2006		NEW MEXICO	Bernalillo	Albuquerque	601 Coal Ave. SE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845923
78001804	Huning Highlands Historic District	Listed	11/17/1978		NEW MEXICO	Bernalillo	Albuquerque	Bounded by Grand Ave., I-25,	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847116
11000032	Immanuel Presbyterian Church	Listed	2/22/2011		NEW MEXICO	Bernalillo	Albuquerque	114 Carlisle Boulevard SE	FALSE	FALSE	FALSE	https://catalog.archives.gov/id/77845933
93001219	Jones Motor Company	Listed	11/22/1993		NEW MEXICO	Bernalillo	Albuquerque	3226 Central Ave. SE.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845897
2000050	Jonson Gallery and House	Listed	2/22/2002		NEW MEXICO	Bernalillo	Albuquerque	1909 Las Lomas Rd. NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847158
77000920	Kimo Theater	Listed	5/2/1977		NEW MEXICO	Bernalillo	Albuquerque	421 Central Ave.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847083
84002871	Kress, S. H., Building	Listed	4/19/1984		NEW MEXICO	Bernalillo	Albuquerque	414--416 Central Ave., SW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847110
82001048	Kromer House	Listed	10/4/1982		NEW MEXICO	Bernalillo	Albuquerque	1024 El Pueblo Rd., NW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845881
83001616	La Glorieta House	Listed	8/19/1983		NEW MEXICO	Bernalillo	Albuquerque	1801 Central Ave., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845947
93001220	La Mesa Motel	Listed	11/22/1993		NEW MEXICO	Bernalillo	Albuquerque	7407 Central Ave. NE.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845915
97001596	La Puerta Lodge	Listed	1/9/1998		NEW MEXICO	Bernalillo	Albuquerque	9710 Central Ave. SE.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845907
86003142	Las Imagines Archeological District--Albuquerque We	Listed	11/19/1986		NEW MEXICO	Bernalillo	Albuquerque	Address Restricted	FALSE	FALSE	TRUE	

80002540	LeFeber, Charles, House	Listed	12/1/1980		NEW MEXICO	Bernalillo	Albuquerque	313 5th St.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845846
80002541	Lembke House	Listed	11/25/1980		NEW MEXICO	Bernalillo	Albuquerque	312 Laguna St., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847067
86000221	Leverett, William J., House	Listed	2/13/1986		NEW MEXICO	Bernalillo	Albuquerque	301 Dartmouth NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847120
79001533	Lewis, Charles W. Building	Listed	7/3/1979		NEW MEXICO	Bernalillo	Albuquerque	1405--1407 2nd St., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847075
80002542	Lopez, Hilario, House	Listed	12/1/1980		NEW MEXICO	Bernalillo	Albuquerque	208 16th St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845820
84002844	Los Candelarias Chapel-San Antonio Chapel	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	1934 Candelaria Rd., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845887
84002854	Los Duranes Chapel	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	2601 Indian School Rd., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845854
84002874	Los Griegos Historic District	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	Griegos Rd. and Rio Grande B	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845877
84002876	Los Tomases Chapel	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	3101 Los Tomases, NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845943
84002880	Lucero y Montoya, Francisco, House	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	9742 4th St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845810
98000600	Luna Lodge	Listed	6/11/1998		NEW MEXICO	Bernalillo	Albuquerque	9019 Central Ave. NE	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845911
100003217	Main Library	Listed	6/13/2019		NEW MEXICO	Bernalillo	Albuquerque	501 Copper Ave. NW	FALSE	TRUE	FALSE	
93001215	Maisel's Indian Trading Post	Listed	11/22/1993		NEW MEXICO	Bernalillo	Albuquerque	510 Central Ave. SW.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845893
80002543	Mann, Henry, House	Listed	12/1/1980		NEW MEXICO	Bernalillo	Albuquerque	723 14th St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845828
3001234	Manzano Court Addition Historic District	Listed	10/14/2004		NEW MEXICO	Bernalillo	Albuquerque	1000-1025 Manzano Court N	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845867
82003314	McCanna-Hubbell Building	Listed	5/13/1982		NEW MEXICO	Bernalillo	Albuquerque	418--424 Central, SW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847108
83001617	Menaul School Historic District	Listed	2/14/1983		NEW MEXICO	Bernalillo	Albuquerque	Roughly bounded by Broadw	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845937
86000223	Milne, John, House	Listed	2/13/1986		NEW MEXICO	Bernalillo	Albuquerque	804 Park Ave. SW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847160
93001221	Modern Auto Court	Listed	11/22/1993		NEW MEXICO	Bernalillo	Albuquerque	3712 Central Ave. SE.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845903
1000770	Monte Vista and College View Historic District	Listed	8/3/2001		NEW MEXICO	Bernalillo	Albuquerque	Roughly bounded by Girard a	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845863
81000399	Monte Vista School	Listed	8/12/1981		NEW MEXICO	Bernalillo	Albuquerque	3211 Monte Vista Blvd., NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847130
86003120	National Humane Alliance Animal Fountain	Listed	9/30/1986		NEW MEXICO	Bernalillo	Albuquerque	615 Virginia Ave. SE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847172
6000151	New Mexico Madonna of the Trail	Listed	3/21/2006		NEW MEXICO	Bernalillo	Albuquerque	Jct. of Marble Ave. and 4th S	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845939
81000400	New Mexico-Arizona Wool Warehouse	Listed	7/23/1981		NEW MEXICO	Bernalillo	Albuquerque	520 1st St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847106
99001677	Newlander Apartments	Listed	1/27/2000		NEW MEXICO	Bernalillo	Albuquerque	616 Coal Ave.	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845889
84004143	Nob Hill Business Center	Listed	3/18/1994		NEW MEXICO	Bernalillo	Albuquerque	3500 Central Ave. SE	FALSE	FALSE	FALSE	https://catalog.archives.gov/id/77847087
84002883	Nordhaus, Robert, House	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	6900 Rio Grande Blvd., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845836
78001805	Occidental Life Building	Listed	1/30/1978		NEW MEXICO	Bernalillo	Albuquerque	119 3rd Ave., SW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847100
82003315	Old Armijo School	Listed	9/16/1982		NEW MEXICO	Bernalillo	Albuquerque	1021 Isleta Blvd., SE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847134
84002868	Old Hilton Hotel	Listed	3/2/1984		NEW MEXICO	Bernalillo	Albuquerque	125 2nd St., NW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847152
80002544	Old Post Office	Listed	11/17/1980		NEW MEXICO	Bernalillo	Albuquerque	123 4th St.	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847148
79003442	O'Rielly, J. H., House	Listed	1/29/1979		NEW MEXICO	Bernalillo	Albuquerque	220 9th St., NW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847069
84002884	Our Lady of Mt. Carmel Church	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	7813 Edith Blvd., NE	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845941
84000426	Our Lady of the Angels School	Listed	11/29/1984		NEW MEXICO	Bernalillo	Albuquerque	320 Romero St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847128
80002545	Pacific Desk Building	Listed	9/30/1980		NEW MEXICO	Bernalillo	Albuquerque	213-215 Gold Ave., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847077
100004034	Parkland Hills Historic District	Listed	6/7/2019		NEW MEXICO	Bernalillo	Albuquerque	Roughly bounded by Zuni Rd.	TRUE	FALSE	FALSE	
80002546	Pearce, John, House	Listed	11/22/1980		NEW MEXICO	Bernalillo	Albuquerque	718 Central Ave., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847059
1000279	Petroglyph National Monument	Listed	6/27/1990		NEW MEXICO	Bernalillo	Albuquerque	6001 Unser Blvd. NW	FALSE	FALSE	FALSE	
90000160	Piedras Marcadas Pueblo (LA 290)	Listed	3/2/1990		NEW MEXICO	Bernalillo	Albuquerque	Address Restricted	FALSE	TRUE	FALSE	
93001222	Pig 'n Calf Lunch	Listed	2/15/1994		NEW MEXICO	Bernalillo	Albuquerque	2106 Central Ave. SE.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845899
88001543	President's House	Listed	9/22/1988		NEW MEXICO	Bernalillo	Albuquerque	NE corner of Roma Ave. and '	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845832
97001103	Pyle, Ernie, House	Listed	9/22/1997	9/20/2006	NEW MEXICO	Bernalillo	Albuquerque	900 Girard Blvd., SE	FALSE	FALSE	TRUE	https://catalog.archives.gov/id/77846976
77000921	Rancho de Carnue Site	Listed	5/4/1977		NEW MEXICO	Bernalillo	Albuquerque	Address Restricted	FALSE	FALSE	TRUE	
88001544	Raynolds, Sara, Hall	Listed	9/22/1988		NEW MEXICO	Bernalillo	Albuquerque	UNM campus on Terrace St. a	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845814
97000735	Rio Puerco Bridge	Listed	7/15/1997		NEW MEXICO	Bernalillo	Albuquerque	I-40 over the Rio Puerco	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845957
84002885	Romero, Felipe, House	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	7522 Edith Blvd., NE	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845800
96001384	Roosevelt Park	Listed	11/22/1996		NEW MEXICO	Bernalillo	Albuquerque	Jct. of Coal and Spruce Aves.,	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845953
78001806	Rosenwald Building	Listed	6/29/1978		NEW MEXICO	Bernalillo	Albuquerque	320 Central Ave., SW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847091
97001396	Route 66, State maintained from Albuquerque to Rio	Listed	11/19/1997		NEW MEXICO	Bernalillo	Albuquerque	Rte. 66. West Central exit at I	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845955
82003316	Saint Joseph 1930 Hospital	Listed	5/27/1982		NEW MEXICO	Bernalillo	Albuquerque	715 Grand, NE	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847154
69000140	San Felipe de Neri Church	Listed	10/1/1969		NEW MEXICO	Bernalillo	Albuquerque	Old Town Plaza, NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847170
79001536	San Ignacio Church	Listed	8/21/1979		NEW MEXICO	Bernalillo	Albuquerque	1300 Walter St., NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847126
89001590	Santa Barbara School	Listed	9/28/1989		NEW MEXICO	Bernalillo	Albuquerque	1420 Edith Blvd., NE.	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847162
88001545	Scholes Hall	Listed	9/22/1988		NEW MEXICO	Bernalillo	Albuquerque	UNM campus S of Roma Ave.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845824
84000563	Second United Presbyterian Church	Listed	12/6/1984		NEW MEXICO	Bernalillo	Albuquerque	812 Edith Blvd., NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847150
84002888	Shalit, Samuel, House	Listed	2/9/1984		NEW MEXICO	Bernalillo	Albuquerque	5209 4th St., NW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845808
83001618	Shoup Boardinghouse	Listed	2/17/1983		NEW MEXICO	Bernalillo	Albuquerque	707 1st St., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847097
86002414	Silver Hill Historic District	Listed	9/18/1986		NEW MEXICO	Bernalillo	Albuquerque	Roughly bounded by Central	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847142
97001653	Simms Building	Listed	2/2/1998		NEW MEXICO	Bernalillo	Albuquerque	400 Gold Ave. SW	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847063
80004485	Skinner Building	Listed	11/22/1980		NEW MEXICO	Bernalillo	Albuquerque	722--724 Central Ave. and 10	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847085
89001589	Solar Building	Listed	10/10/1989		NEW MEXICO	Bernalillo	Albuquerque	213 Truman St., NE.	FALSE	FALSE	TRUE	https://catalog.archives.gov/id/77847164
4000252	Southern Union Gas Company Building	Listed	3/31/2004		NEW MEXICO	Bernalillo	Albuquerque	723 Silver Ave. SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845812
78001807	Southwestern Brewery and Ice Company	Listed	3/30/1978		NEW MEXICO	Bernalillo	Albuquerque	601 Commercial St., NE	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847112
77000922	Spitz, Berthold, House	Listed	12/22/1977		NEW MEXICO	Bernalillo	Albuquerque	323 N. 10th St.	FALSE	FALSE	TRUE	https://catalog.archives.gov/id/77845857
80002547	Springer Building	Listed	11/18/1980		NEW MEXICO	Bernalillo	Albuquerque	121 Tijeras Ave., NE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847104
82003317	Spruce Park Historic District	Listed	7/6/1982		NEW MEXICO	Bernalillo	Albuquerque	Roughly bounded by Univers	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847122
100003029	St. John's Cathedral	Listed	10/19/2018		NEW MEXICO	Bernalillo	Albuquerque	318 Silver Ave.	TRUE	FALSE	FALSE	
78001808	Superintendent's House, Atlantic & Pacific Railroad	Listed	1/20/1978		NEW MEXICO	Bernalillo	Albuquerque	1023 S. 2nd St.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847140
98000599	Tewa Lodge	Listed	6/11/1998		NEW MEXICO	Bernalillo	Albuquerque	5715 Central Ave. NE	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845919
93001216	Tower Courts	Listed	11/22/1993		NEW MEXICO	Bernalillo	Albuquerque	2210 Central Ave. SW.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845895
78001809	Vigil, Antonio, House	Listed	5/5/1978		NEW MEXICO	Bernalillo	Albuquerque	413 Romero St.	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847114

82003319	Washington Apartments	Listed	2/19/1982	NEW MEXICO	Bernalillo	Albuquerque	1002--1008 Central Ave., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847071
82003320	Werner-Gilchrist House	Listed	8/2/1982	NEW MEXICO	Bernalillo	Albuquerque	202 Cornell, SE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77847138
96001385	West San Jose School	Listed	11/22/1996	NEW MEXICO	Bernalillo	Albuquerque	1701 4th St., SW	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845949
5000942	Willis, J.R., House and La Miradora Apartments	Listed	9/1/2005	NEW MEXICO	Bernalillo	Albuquerque	310 Rio Grande Blvd., SE	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845935
84002889	Zeiger, Charles, House	Listed	4/27/1984	NEW MEXICO	Bernalillo	Albuquerque	3200 Edith Blvd., NE	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77845802
16000549	Zimmerman Library	Listed	8/22/2016	NEW MEXICO	Bernalillo	Albuquerque	1900 Roma Ave., NE.	FALSE	TRUE	FALSE	
78001803	Hodgin Hall	Listed	1/30/1978	NEW MEXICO	Bernalillo	Albuquerque Mount	University of New Mexico ca	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847132
75001162	Isleta Pueblo	Listed	9/5/1975	NEW MEXICO	Bernalillo	Isleta	U.S. 85	FALSE	FALSE	TRUE	https://catalog.archives.gov/id/77847053
82003321	Los Poblanos Historic District	Listed	5/27/1982	NEW MEXICO	Bernalillo	Los Ranchos	NM 194	FALSE	FALSE	TRUE	https://catalog.archives.gov/id/77845794
96001607	San Antonito Church and Cemetery	Listed	1/16/1997	NEW MEXICO	Bernalillo	San Antonito	Jct. of NM 14 and NM 536, N	TRUE	FALSE	FALSE	https://catalog.archives.gov/id/77845945
78001810	Holy Child Church	Listed	3/8/1978	NEW MEXICO	Bernalillo	Tijeras	Off I-40	FALSE	TRUE	FALSE	https://catalog.archives.gov/id/77847124
5001294	Tijeras Pueblo Archeological Site	Listed	11/17/2005	NEW MEXICO	Bernalillo	Tijeras	Address Restricted	FALSE	FALSE	TRUE	
100004498	Whitcomb Springs	Listed	10/7/2019	NEW MEXICO	Bernalillo	Tijeras	82 Carlito Springs Rd.	TRUE	FALSE	FALSE	

Inspector Certifications

CERTIFIED INSPECTORS

Facility: Soilutions

Location: 9008 Bates Ln SE, Albuquerque, NM 87105

Inspector Contact Information: (505) 867-4040

List of certified Inspectors for the facility.

NAME	CERTIFICATION	EXPIRATION DATE
Kelley V. Fetter, P.E. **President**	CPSWQ #0682 NM P.E. #13450 CPMSM #356 CISEC #0721 NMDOT Seeding Certification No.: 0400	March 2, 2021 December 31, 2024 January 1, 2021 June 30, 2021 December 31, 2024
Sydney Fetter **VP of Compliance**	CISEC #1763	June 30, 2023
Ryan Higdon **Sr. NPDES Inspector**	CISEC #2531	October 31, 2023
Ray Welton, Jr. **NPDES Inspector**	StormwaterONE No.: a2aa31a9	March 20, 2024
Jessie Gilliam, Jr. **NPDES Inspector**	StormwaterONE No: 97d73b46	July 31, 2024
Carlos Flores **Construction Manager**	CISEC #2529	October 31, 2023

State of New Mexico

The New Mexico Board of Licensure for

Professional Engineers & Professional Surveyors

Santa Fe, New Mexico

This is to certify that

Kelley V. Fetter License No.: 13450

Having given evidence of the necessary qualification, as required by Sections 61-23-1 through 61-23-36 NMSA (1978), has been duly licensed and is hereby authorized to practice in the State of New Mexico as a

Professional Engineer

Issue Date:

Expiration Date: 12/31/2024

THIS CERTIFICATE IS FOR DISPLAY PURPOSES ONLY.

The CPSWQ® Application Review Committee
certifies that

Kelley Vincent Fetter

Subscribes to the Code of Conduct and Ethics and has met the requirements established by the CPSWQ Council as a

Certified Professional in Storm Water Quality™

An EnviroCert International, Inc. Program

Certification Number: 0682

Certification Date: March 2, 2011

Chair, CPSWQ Council

Executive Director, EnviroCert International, Inc.

The CPSWQ Program was established in 1995.

EnviroCert International, Inc.®

certifies that

Kelley Vincent Fetter

Subscribes to the Code of Ethics and Professional Conduct and has met the requirements established for the CPMSM™ Program as a

Certified Professional in Municipal Stormwater Management™

CPMSM™ Number: 356

Certificate Date: January 8, 2016

Alan Black, Director, Technical Committee Chair

Robert Anderson, EnviroCert Board President

The CPMSM™ Certification was established in 2010
(Previously CMS4S™)

CISEC, Inc.

Board of Directors

certifies that

Kelley V. Fetter

has demonstrated satisfactory evidence of sediment and erosion control inspection skills and successfully passed the certification examination and therefore, as required by CISEC, Inc., is authorized to use the title of

Certified Inspector of Sediment and Erosion Control

Given this 10th day of June 2011

CISEC, Inc. President

CISEC, Inc. Board of Director

0721

Certification Number

EnviroCert International, Inc.®

certifies that

Kelley Vincent Fetter

Subscribes to the Code of Conduct and Ethics and has met the requirements established for the CMS4S® Program as a

Certified Municipal Separate Storm Sewer System Specialist™

CMS4S Number: 356

Certificate Date: January 8, 2016

Alan Black, Director, Technical Committee Chair

Robert Anderson, EnviroCert Board President

The CMS4S Certification was established in 1995

CISEC, Inc.

Board of Directors

certifies that

Sydney Fetter

has demonstrated satisfactory evidence of sediment and erosion control inspection skills and successfully passed the certification examination and therefore, as required by CISEC, Inc., is authorized to use the title of

Certified Inspector of Sediment and Erosion Control

Given this 19th day of November, 2015

Tina K. Willis

CISEC, Inc. President

CISEC, Inc. Board of Director

1763

Certification Number

CISEC, Inc.

Board of Directors

certifies that

Ryan Higdon

has demonstrated satisfactory evidence of sediment and erosion control inspection skills and successfully passed the certification examination and therefore, as required by CISEC, Inc., is authorized to use the title of

Certified Inspector of Sediment and Erosion Control

Given this 4th day of October, 2018

Yolanda Teel

CISEC, Inc. President

CISEC, Inc. Vice President

CISEC 2531

Certification Number

StormwaterONE

Certifies that

Jessie Gilliam

has successfully completed the required courses of study and is recognized as a

Qualified Compliance Inspector of Stormwater (QCIS)

Completion Date 08/01/2022

Expiration Date 07/31/2024

Certification Number 97d73b46

PDHs: 16

Andrew Demers

Andrew Demers, President

StormwaterONE

Certifies that

Raymond Welton, Jr.

has successfully completed the required courses of study and is recognized as a

Qualified Compliance Inspector of Stormwater (QCIS) Recert (2022)

Completion Date 03/21/2022

Expiration Date 03/20/2024

Certification Number a2aa31a9

PDHs: 6

Andrew Demers

Andrew Demers, President

2021 Multi – Sector General Permit

In accordance with Part 6.5.3, a copy of the 2021 MSGP is available electronically on the USB device that was delivered with this hardcopy SWPPP. The document is excluded from the hardcopy due to its length.

The 2021 MSGP and appendices are also available on the EPA's website at:

https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp

Industrial Stormwater

Fact Sheet Series

Sector A: Timber Products Facilities

U.S. EPA Office of Water
EPA-833-F-06-016
February 2021

What is the NPDES stormwater permitting program for industrial activity?

Activities, such as material handling and storage, equipment maintenance and cleaning, industrial processing or other operations that occur at industrial facilities are often exposed to stormwater. The runoff from these areas may discharge pollutants directly into nearby waterbodies or indirectly via storm sewer systems, thereby degrading water quality.

In 1990, the U.S. Environmental Protection Agency (EPA) developed permitting regulations under the National Pollutant Discharge Elimination System (NPDES) to control stormwater discharges associated with eleven categories of industrial activity. As a result, NPDES permitting authorities, which may be either EPA or a state environmental agency, issue stormwater permits to control runoff from these industrial facilities.

What types of industrial facilities are required to obtain permit coverage?

This fact sheet specifically discusses stormwater discharges from timber products facilities as described by Standard Industrial Classification (SIC) Major Group 24 – identified in EPA's Multi-Sector General Permit as Sector A, Timber Products Facilities. This includes all facilities that produce lumber and wood products, except furniture. Facilities and products in this group fall under the following categories, all of which require coverage under an industrial stormwater permit:

- Log storage and handling (wet deck storage areas only authorized if no chemical additives are used in the spray water or applied to the logs) (SIC 2411)
- General sawmills and planing mills (SIC 2421)
- Hardwood dimension and flooring mills (SIC 2426)
- Special product sawmills not elsewhere classified (SIC 2429)
- Millwork, veneer, plywood, and structural wood (SIC 2431-2439
  - *Not included are wood kitchen cabinet manufacturers (SIC 2434) which are instead addressed in the Fact Sheet for wood and metal furniture and fixture manufacturing.*
- Wood containers (SIC 2441-2449)
- Wood buildings and mobile homes (SIC 2451 and 2452)
- Wood preserving (SIC 2491)
- Reconstituted wood products (SIC 2493)
- Wood products, not elsewhere classified (SIC 2499)

What does an industrial stormwater permit require?

Common requirements for coverage under an industrial stormwater permit include development of a written stormwater pollution prevention plan (SWPPP), implementation of control measures, and submittal of a request for permit coverage, usually referred to as the Notice of Intent or NOI.

The SWPPP is a written assessment of potential sources of pollutants in stormwater runoff and control measures that will be implemented at your facility to minimize the discharge of these pollutants in runoff from the site. These control measures include site-specific best management practices (BMPs), maintenance plans, inspections, employee training, and reporting. The procedures detailed in the SWPPP must be implemented by the facility and updated as necessary, with a copy of the SWPPP kept on-site. The industrial stormwater permit also requires collection of visual, analytical, and/or compliance monitoring data to determine the effectiveness of implemented BMPs. For more information on EPA's industrial stormwater permit and links to State stormwater permits, go to **www.epa.gov/npdes/stormwater** and click on "Industrial Activity."

What pollutants are associated with activities at my facility?

Pollutants conveyed in stormwater discharges from facilities involved with the manufacturing of timber products will vary. There are a number of factors that influence to what extent industrial activities and significant materials can affect water quality.

- Geographic location
- Topography
- Hydrogeology
- Extent of impervious surfaces (e.g., concrete or asphalt)
- Type of ground cover (e.g., vegetation, crushed stone, or dirt)
- Outdoor activities (e.g., material storage, loading/unloading, vehicle maintenance)
- Size of the operation
- Type, duration, and intensity of precipitation events

The activities, pollutant sources, and pollutants detailed in Table 1 are commonly found at timber products manufacturing facilities.

Table 1. Common Activities, Pollutants Sources, and Associated Pollutants at Timber Products Facilities

Activity	Pollutant Source	Pollutant
Log storage and handling	Exposure of lumber to precipitation	Bark and wood debris, total suspended solids (TSS), and leachates (which can contain high levels of TSS and biochemical oxygen demand (BOD))
Untreated lumber and residue generation activities and untreated wood materials storage	Exposure of lumber and residues to precipitation	Bark and wood debris, TSS, and leachates (which can contain high levels of TSS and BOD)
Wood surface protection activities and chemicals and surface protected materials storage	Spills from surface protection areas and storage and mixing tank areas; treated wood drippage, transport, and storage; and fugitive emissions from spraying	Chemicals (used for surface protection), BOD, chemical oxygen demand (COD), and TSS
Wood preservation activities and chemicals and preserved wood material storage	Drippage after pressurized treatment; washing after preservation: spills and leaks from process equipment and preservative tanks; fugitive emissions; and kick-back	Chemicals (specific toxics dependent on the preserving formulations used), BOD, TSS, oil, and grease

Table 1. Common Activities, Pollutants Sources, and Associated Pollutants at Timber Products Facilities (continued)

Activity	Pollutant Source	Pollutant
Wood assembly/fabrication activities and final fabricated wood product storage	Exposure of lumber, residues, and vehicles/equipment to precipitation	BOD, TSS, oil, and grease
Equipment/vehicle maintenance, repair, and storage	Parts cleaning	Solvents, oil, heavy metals, acid/alkaline wastes
	Waste disposal of oily rags, oil and gas filters, batteries, coolants, degreasers	Oil, heavy metals, solvents, acids
	Fluid replacement including hydraulic fluid, oil, transmission fluid, radiator fluids, and grease	Oil and grease, arsenic, lead, cadmium, chromium, COD, and benzene
Vehicle fueling	Diesel fuel	Diesel, gasoline, oil

Note: Activities may have additional pollutant sources that contain PFAS and can come into contact with stormwater discharges. Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that include PFOA, PFOS, GenX, and many other chemicals.

What BMPs can be used to minimize contact between stormwater and potential pollutants at my facility?

A variety of BMP options may be applicable to eliminate or minimize the presence of pollutants in stormwater discharges from timber products facilities. You will likely need to implement a combination or suite of BMPs to address stormwater runoff at your facility. Your first consideration should be for pollution prevention BMPs, which are designed to prevent or minimize pollutants from entering stormwater runoff and/or reduce the volume of stormwater requiring management. Prevention BMPs can include regular cleanup, collection and containment of debris in storage areas, and other housekeeping practices, spill control, and employee training. It may also be necessary to implement treatment BMPs, which are engineered structures, intended to treat stormwater runoff and/or mitigate the effects of increased stormwater runoff peak rate, volume, and velocity. Treatment BMPs are generally more expensive to install and maintain and include oil-water separators, wet ponds, and proprietary filter devices.

EPA requires that all timber products facilities implement BMPs in the following areas of the site:

- Log, lumber, and other wood product storage areas
- Residue storage areas
- Loading, and unloading areas
- Material handling areas
- Chemical and liquid fuel storage areas
- Equipment/vehicle maintenance, storage, and repair areas

Facilities that surface protect and/or preserve wood products are also required to address specific BMPs for wood surface protection and preserving activities.

BMPs must be selected and implemented to address the following:

Good Housekeeping Practices

Good housekeeping is the practical, cost-effective way to maintain a clean and orderly facility and keep contaminants out of stormwater discharges. It includes establishing protocols to reduce the possibility of mishandling materials or equipment and training employees in good housekeeping techniques. Common problem areas at a facility include areas around trash containers, storage areas, and loading docks. Good housekeeping measures must include a schedule for regular pickup and disposal of garbage and waste materials and routine inspections of drums, tanks, and containers for leaks and structural conditions. Practices also include containing and covering garbage, waste

materials, and debris. Involving employees in routine monitoring of housekeeping practices has proven to be an effective means of ensuring their continued implementation.

Additional good housekeeping practices for timber products facilities in storage, loading/unloading and material handling areas include:

- Limiting the discharge of wood debris by confining to restricted locations, and by keeping it cleaned up in non-designated areas
- Cleaning up air-borne dusts that have settled in other areas
- Chemical management

Industrial facilities can conduct activities that use, store, manufacture, transfer, and/or dispose of PFAS-containing materials. Successful good housekeeping practices to minimize PFAS exposure to stormwater could include inventorying the location, quantity, and method of storage; using properly designed storage and transfer techniques; providing secondary containment around chemical storage areas; and using proper techniques for cleaning or replacement of production systems or equipment.

Minimizing Exposure

Where feasible, minimizing exposure of potential pollutant sources to precipitation is an important control option. Minimizing exposure prevents pollutants, including debris, from coming into contact with precipitation and can reduce the need for BMPs to treat contaminated stormwater runoff. It can also prevent debris from being picked up by stormwater and carried into drains and surface waters. Examples of BMPs for exposure minimization include covering materials or activities with temporary structures (e.g., tarps) when wet weather is expected or moving materials or activities to existing or new permanent structures (e.g., buildings, silos, sheds). Even the simple practice of keeping a dumpster lid closed can be a very effective pollution prevention measure. Another example could include locating PFAS-containing materials and residues away from drainage pathways and surface waters.

Erosion and Sediment Control

BMPs must be selected and implemented to limit erosion on areas of your site that, due to topography, activities, soils, cover, materials, or other factors are likely to experience erosion. Erosion control BMPs such as seeding, mulching, and sodding prevent soil from becoming dislodged and should be considered first. Sediment control BMPs such as silt fences, sediment ponds, and stabilized entrances trap sediment after it has eroded. Sediment control BMPs should be used to back-up erosion control BMPs.

Management of Runoff

Your SWPPP must contain a narrative evaluation of the appropriateness of stormwater management practices that divert, infiltrate, reuse, or otherwise manage stormwater runoff so as to reduce the discharge of pollutants. Appropriate measures are highly site-specific, but may include, among others, vegetative swales, collection and reuse of stormwater, inlet controls, snow management, infiltration devices, and wet retention measures. Incorporating treatment like granular activated carbon may be helpful to remove certain pollutants like PFAS.

A combination of preventive and treatment BMPs will yield the most effective stormwater management for minimizing the offsite discharge of pollutants via stormwater runoff. Though not specifically outlined in this fact sheet, BMPs must also address preventive maintenance records or logbooks, regular facility inspections, spill prevention and response, and employee training.

All BMPs require regular maintenance to function as intended. Some management measures have simple maintenance requirements, others are quite involved. You must regularly inspect all BMPs to ensure they are operating properly, including during runoff events. As soon as a problem is found, action to resolve it should be initiated immediately.

Implement BMPs, such as those listed below in Table 2 for the control of pollutants at timber products manufacturing facilities, to minimize and prevent the discharge of pollutants in stormwater. Identifying weaknesses in current facility practices will aid the permittee in determining appropriate BMPs that will achieve a reduction in pollutant loadings. BMPs listed in Table 2 are broadly applicable to timber products manufacturing facilities; however, this is not a complete list and you are recommended to consult with regulatory agencies or a stormwater engineer/consultant to identify appropriate BMPs for your facility.

Table 2. BMPs for Potential Pollutant Sources at Timber Products Facilities

Pollutant Source	BMPs
Log, lumber and wood product storage areas	❑ Divert stormwater around storage areas with vegetated swales, and/or berms. A properly designed vegetated swale can also provide infiltration benefits. ❑ Locate storage areas on stable, well-drained soils with slopes of 2–5 percent to prevent ponding and to convey stormwater leachate to treatment. Sloping should be limited to prevent erosion. Slopes should be stabilized. ❑ Line storage areas with crushed rock or gravel or porous pavement to promote infiltration, minimize discharge, and provide sediment and erosion control. ❑ Practice good housekeeping measures such as frequent removal of debris, bark, and wood waste. Cleanup methods may include mobile sweepers, scrapers, brow logs, or scoops. ❑ Use properly designed basins for collection, containment, and recycling of log spraying materials. ❑ Use sedimentation measures such as silt fence to control sediment from leaving storage area. ❑ Cover piles to prevent contact with stormwater (use roofs, canopies, soils, sheds, etc.). ❑ For solid wastes use covered containers such as dumpsters or garbage cans that are durable, corrosion resistant, non-absorbent, and/or non-leaking.
Residual storage areas	❑ Locate stored residues away from drainage pathways and surface waters. ❑ Avoid contamination of residues with oil, solvents, chemically treated wood, trash, etc. ❑ Limit storage time of residues to prevent degradation and generation of leachates. ❑ Divert stormwater around residue storage areas with vegetated swales, and/or berms. ❑ Consolidate piles to minimize surface areas exposed to precipitation. ❑ Spray surfaces with water to reduce windblown dust and residue particles. ❑ Place materials on raised pads of compacted earth, clay, shale, or stone and collect and properly treat contaminated runoff and leachate. ❑ Cover and/or enclose stored residues to prevent contact with precipitation using silos, van trailers, shed, roofs, buildings, or tarps. ❑ Limit slopes of storage areas to minimize velocities of runoff which may transport residues. Keep slopes stabilized. ❑ Use check dams in drainage ways. ❑ Use steel or plastic drums that are rigid and durable, corrosion resistant, non-absorbent, watertight, and equipped with a close fitting cover. ❑ Train employees in proper residuals management.

Table 2. BMPs for Potential Pollutant Sources at Timber Products Facilities (continued)

Pollutant Source	BMPs
Loading and unloading areas; material handling areas	❑ Provide diversion berms, dikes or grassed swales around the perimeter of the area to limit run-on. ❑ Slope the impervious concrete floor or pad to collect spills and leaks and convey them to proper containment and treatment. ❑ Cover loading and unloading areas and perform these activities on an impervious pad at a dock with a door skirt. ❑ Enclose material handling systems for wood wastes. ❑ Cover materials entering and leaving areas. ❑ Provide good housekeeping measures to limit debris. ❑ Provide dust control. When controlling dust, sweep and/or apply water or materials which will not impact surface or ground water. ❑ Provide paving in spill-prone areas to enable easy collection of spilled materials. ❑ For rail transfer, use a drip pan installed within the rails to collect spillage from the tank. ❑ Train employees in spill prevention and control.
Chemical storage areas	❑ Provide secondary containment around chemical storage areas. If containment structures have drains, ensure that the drains have valves, and that valves are maintained in the closed position. Institute protocols for checking/testing stormwater in containment areas prior to discharge. ❑ Properly dispose of chemicals that are no longer in use. ❑ Provide fluid level indicators. ❑ Inventory fluids to identify leakage. ❑ Locate storage areas away from high traffic areas and surface waters. ❑ Develop and implement spill prevention, containment, and countermeasure (SPCC) plans. ❑ Cover and/or enclose chemical storage areas. ❑ Provide drip pads/pans to allow for recycling of spills and leaks. ❑ Provide transfer of PFAS containing materials and their proper collection and disposal methods in the event of a release from their container ❑ Store and handle reactive, ignitable, or flammable liquids in compliance with applicable local fire codes, local zoning codes, and the National Electric Code. ❑ Train employees in spill prevention and control.
Liquid fuel storage areas	❑ If area is uncovered, connect sump outlet to sanitary sewer (if possible) or an oil/water separator, catch basin filter, etc. If connecting to a sanitary sewer check with the system operator to ensure that the discharge is acceptable. If implementing separator or filter technologies ensure that regular inspections and maintenance procedures are in place. Above ground tanks ❑ Use secondary containment, such as dikes, with a height sufficient to contain a spill (the greater of 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank). If containment structures have drains, ensure that the drains have valves, and that valves are maintained in the closed position. Institute protocols for checking/testing stormwater in containment areas prior to discharge. ❑ Use double-walled tanks. ❑ Keep liquid transfer nozzles/hoses in secondary containment area.

Table 2. BMPs for Potential Pollutant Sources at Timber Products Facilities (continued)

Pollutant Source	BMPs
Liquid fuel storage areas (continued)	Above ground tanks (continued) ❑ Include overflow protection. ❑ Store drums indoors when possible. ❑ Store drums, including empty or used drums, in secondary containment with a roof or cover (including temporary cover such as a tarp that prevents contact with stormwater). ❑ Clearly label drum with its contents.
Wood surface protection and preserving activities	❑ Extend drip time in process areas before moving to storage areas. ❑ Pave and berm areas used by equipment that has come in contact with treatment chemicals. ❑ Dedicate equipment that is used for treatment activities to that specific purpose to prevent the tracking of treatment chemicals to other areas on the site. ❑ Locate treatment chemical loading and unloading areas away from high traffic areas where tracking of the chemical may occur. ❑ Provide drip pads under conveyance equipment from treatment process areas. ❑ Provide frequent visual inspections of treatment chemical loading and unloading areas during and after activities occur to identify any spills or leaks needing cleanup. ❑ Cover and/or enclose treatment areas or apply log treating chemicals on impervious containment pad. ❑ Provide containment in treated wood storage areas. ❑ Cover storage areas to prevent contact of treated wood products with precipitation. ❑ Elevate stored, treated wood products to prevent contact with run-on/runoff. ❑ Store freshly treated logs on impervious containment pad, in a building or under a roof. ❑ Do not vent volatile or mist-laden exhaust containing log treating chemicals to the outside without proper collection or filtration. ❑ Inspect processing areas, transport areas, and treated wood storage areas monthly to assess usefulness of practices to minimize the deposit of treatment chemicals on unprotected soils and in areas that will come in contact with stormwater discharges.
Vehicle and equipment maintenance, storage, and repair areas	Good Housekeeping ❑ Eliminate floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly. Collected wastes should be properly treated or disposed of by a licensed waste hauler. ❑ Prevent and contain spills and drips. ❑ Use drip pans, drain boards, and drying racks to direct drips back into a fluid holding tank for reuse. ❑ Drain all parts of fluids prior to disposal. Oil filters can be crushed and recycled. ❑ Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers. ❑ Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers properly. ❑ Store batteries and other significant materials inside. ❑ Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries). ❑ Maintain an organized inventory of materials.

Table 2. BMPs for Potential Pollutant Sources at Timber Products Facilities (continued)

Pollutant Source	BMPs
Vehicle and equipment maintenance, storage, and repair areas (continued)	Good Housekeeping (continued) ❑ Eliminate or reduce the number and amount of hazardous materials and waste by substituting non-hazardous or less hazardous materials. ❑ Clean up leaks, drips, and other spills without using large amounts of water. Use absorbents for dry cleanup whenever possible. ❑ Prohibit the practice of hosing down an area where the practice would result in the discharge of pollutants to a stormwater system. ❑ Clean without using liquid cleaners whenever possible. ❑ Conduct all cleaning at a centralized station so the solvents stay in one area. ❑ If parts are dipped in liquid, remove them slowly to avoid spills. ❑ Do not pour liquid waste into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections. Minimizing Exposure ❑ Perform all cleaning operations indoors or under covering when possible. Conduct the cleaning operations in an area with a concrete floor with no floor drainage other than to sanitary sewers or treatment facilities. ❑ If operations are uncovered, perform them on a concrete pad that is impervious and contained. Minimizing Exposure ❑ Park vehicles and equipment indoors or under a roof whenever possible and maintain proper control of oil leaks/spills. ❑ Check vehicles closely for leaks and use pans to collect fluid when leaks occur. Management of Runoff ❑ Use berms, curbs, or other diversion measures to ensure that stormwater runoff from other parts of the facility do not flow over the maintenance area. ❑ Collect the stormwater runoff from the cleaning area and provide treatment or recycling. Discharge vehicle wash or rinse water to the sanitary sewer (if allowed by sewer authority), wastewater treatment, a land application site, or recycle on-site. DO NOT discharge washwater to a storm drain or to surface water. Inspections and Training ❑ Inspect the maintenance area regularly for proper implementation of control measures. ❑ Train employees on proper waste control and disposal procedures.

What if activities and materials at my facility are not exposed to precipitation?

The industrial stormwater program requires permit coverage for a number of specified types of industrial activities. However, when a facility is able to prevent the exposure of ALL relevant activities and materials to precipitation, it may be eligible to claim no exposure and qualify for a waiver from permit coverage.

If you are regulated under the industrial permitting program, you must either obtain permit coverage or submit a no exposure certification form, if available. Check with your permitting authority for additional information as not every permitting authority program provides no exposure exemptions.

Where do I get more information?

For additional information on the industrial stormwater program see **www.epa.gov/npdes/stormwater/msgp**.

A list of names and telephone numbers for each EPA Region or state NPDES permitting authority can be found at **www.epa.gov/npdes/stormwatercontacts**.

References

Information contained in this Fact Sheet was compiled from EPA's past and present Multi-Sector General Permits and from the following sources:

- USEPA, Office of Wastewater Management. *NPDES Stormwater Multi-Sector General Permit for Industrial Activities (MSGP)*.
  www.epa.gov/npdes/stormwater/msgp
- USEPA, Office of Science and Technology. 1999. *Preliminary Data Summary of Urban Stormwater Best Management Practices*. EPA-821-R-99-012
  www.epa.gov/OST/stormwater
- USEPA, Office of Water. 1999. *Storm Water Management Fact Sheet—Dust Control*. EPA 832-F-99-003.
  www.epa.gov/owm/mtb/dustctr.pdf

Industrial Stormwater

Fact Sheet Series

Sector C: Chemical and Allied Products Manufacturing and Refining

U.S. EPA Office of Water
EPA-833-F-06-018
February 2021

What is the NPDES stormwater permitting program for industrial activity?

Activities, such as material handling and storage, equipment maintenance and cleaning, industrial processing or other operations that occur at industrial facilities are often exposed to stormwater. The runoff from these areas may discharge pollutants directly into nearby waterbodies or indirectly via storm sewer systems, thereby degrading water quality.

In 1990, the U.S. Environmental Protection Agency (EPA) developed permitting regulations under the National Pollutant Discharge Elimination System (NPDES) to control stormwater discharges associated with eleven categories of industrial activity. As a result, NPDES permitting authorities, which may be either EPA or a state environmental agency, issue stormwater permits to control runoff from these industrial facilities.

What types of industrial facilities are required to obtain permit coverage?

This fact sheet specifically discusses stormwater discharges from chemical and allied products manufacturing facilities as described by Standard Industrial Classification (SIC) Major Group 28. Facilities and products in this group fall under the following categories, all of which require coverage under an industrial stormwater permit:

- Industrial inorganic chemicals (SIC 2812-2819)
- Plastics, synthetics, and resins (SIC 2821-2824)
- Medicinal chemicals and botanical products; pharmaceutical preparations in virto and in vivo diagnostic substances; biological products, except diagnostic substances (SIC 2833-2836)
- Soaps, detergents, cosmetics, and perfumes (SIC 2841-2844)
- Paints, varnishes, lacquers, enamels, and allied products (SIC 2851)
- Industrial organic chemicals (SIC 2861-2869)
- Agricultural chemicals (SIC 2873-2879)
- Miscellaneous chemical products (SIC 2891-2899)
- Inks and paints, including china painting enamels, India ink, drawing ink, platinum paints for burnt wood or leather work, paints for china painting, artist's paints, and artist's watercolors (SIC 3952)
- Petroleum refining (SIC 2911)

What does an industrial stormwater permit require?

Common requirements for coverage under an industrial stormwater permit include development of a written stormwater pollution prevention plan (SWPPP), implementation of control measures, and submittal of a request for permit coverage, usually referred to as the Notice of Intent or NOI. The SWPPP is a written assessment of potential sources of pollutants in stormwater runoff and control measures that will be implemented at your facility to minimize the discharge of these pollutants in

runoff from the site. These control measures include site-specific best management practices (BMPs), maintenance plans, inspections, employee training, and reporting. The procedures detailed in the SWPPP must be implemented by the facility and updated as necessary, with a copy of the SWPPP kept on-site. The industrial stormwater permit also requires collection of visual, analytical, and/or compliance monitoring data to determine the effectiveness of implemented BMPs. For more information on EPA's industrial stormwater permit and links to State stormwater permits, go to **www.epa.gov/npdes/stormwater** and click on "Industrial Activity."

What pollutants are associated with my facilities activities?

Pollutants conveyed in stormwater discharges from facilities involved with the manufacturing of chemical and allied products will vary. There are a number of factors that influence to what extent industrial activities and significant materials can affect water quality.

- Geographic location
- Topography
- Hydrogeology
- Extent of impervious surfaces (e.g., concrete or asphalt)
- Type of ground cover (e.g., vegetation, crushed stone, or dirt)
- Outdoor activities (e.g., material storage, loading/unloading, vehicle maintenance)
- Size of the operation
- Type, duration, and intensity of precipitation events

The activities, pollutant sources, and pollutants detailed in Table 1 are commonly found at chemical and allied products manufacturing facilities.

Table 1. Common Activities, Pollutants Sources, and Associated Pollutants at Chemical and Allied Products Manufacturing and Refining Facilities

Activity	Pollutant Source	Pollutant
Material Handling and Storage	Equipment storage	Pollutant dependent upon those at particular facility
	Storage of materials in tanks, either below or above ground	
	Storage of cylinders used to contain industrial gases	
	Storage of empty or full drums	
	Material handling and warehousing	
	Loading/unloading	
	Bagging of materials/products	
	Blending and mixing of chemicals	
	Packaging of chemicals	
	Crushing, milling, shredding, granulation, and grinding of materials	
	Distribution of products	
Vehicle Fueling and Maintenance	Vehicle fueling	TSS, TDS, oil and grease, gasoline, diesel, acid, coolant
	Vehicle maintenance	
Waste Treatment, Disposal, and Cleanup	Washing of drums	Pollutant dependent upon those at particular facility
	Waste dumpster or compactor	
	Hazardous waste temporary storage or operation of RCRA treatment, storage, or disposal facility	
	Landfills or temporary refuse site	
	Wastewater treatment	

Table 1. Common Activities, Pollutants Sources, and Associated Pollutants at Chemical and Allied Products Manufacturing and Refining Facilities (continued)

Activity	Pollutant Source	Pollutant
Manufacturing Process Components	Thermal oxidation	Pollutant dependent upon those at particular facility
	Cooling towers	
	Steam boilers	
	Hot oil system for cooling/heat exchange	
	Use of machinery to process materials	
Miscellaneous Activities	Plant yard and areas of past industrial activity	TSS
	Access roads and rail tracks	

Note: Activities may have additional pollutant sources that contain PFAS and can come into contact with stormwater discharges. Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that include PFOA, PFOS, GenX, and many other chemicals.

What BMPs can be used to minimize contact between stormwater and potential pollutants at my facility?

A variety of BMP options may be applicable to eliminate or minimize the presence of pollutants in stormwater discharges from chemical and allied product manufacturing facilities. You will likely need to implement a combination or suite of BMPs to address stormwater runoff at your facility. Your first consideration should be for pollution prevention BMPs, which are designed to prevent or minimize pollutants from entering stormwater runoff and/or reduce the volume of stormwater requiring management. Prevention BMPs can include regular cleanup, collection and containment of debris in storage areas, and other housekeeping practices, spill control, and employee training. It may also be necessary to implement treatment BMPs, which are engineered structures intended to treat stormwater runoff and/or mitigate the effects of increased stormwater runoff peak rate, volume, and velocity. Treatment BMPs are generally more expensive to install and maintain and include oil-water separators, wet ponds, and proprietary filter devices.

BMPs must be selected and implemented to address the following:

Good Housekeeping Practices

Good housekeeping is a practical, cost-effective way to maintain a clean and orderly facility to prevent potential pollution sources from coming into contact with stormwater. It includes establishing protocols to reduce the possibility of mishandling materials or equipment and training employees in good housekeeping techniques. Common areas where good housekeeping practices should be followed include trash containers and adjacent areas, material storage areas, vehicle and equipment maintenance areas, and loading docks. Good housekeeping practices must include a schedule for regular pickup and disposal of garbage and waste materials and routine inspections of drums, tanks, and containers for leaks and structural conditions. Practices also include containing and covering garbage, waste materials, and debris. Involving employees in routine monitoring of housekeeping practices has proven to be an effective means of ensuring the continued implementation of these measures. Industrial facilities can conduct activities that use, store, manufacture, transfer, and/or dispose of PFAS-containing materials. Successful good housekeeping practices to minimize PFAS exposure to stormwater could include inventorying the location, quantity, and method of storage; using properly designed storage and transfer techniques; providing secondary containment around chemical storage areas; and using proper techniques for cleaning or replacement of production systems or equipment.

Minimizing Exposure

Where feasible, minimizing exposure of potential pollutant sources to precipitation is an important control option. Minimizing exposure prevents pollutants, including debris, from coming into contact with precipitation and can reduce the need for BMPs to treat contaminated stormwater runoff. It can also prevent debris from being picked up by stormwater and carried into drains and surface waters. Examples of BMPs for exposure minimization include covering materials or activities with temporary structures (e.g., tarps) when wet weather is expected or moving materials or activities to

existing or new permanent structures (e.g., buildings, silos, sheds). Even the simple practice of keeping a dumpster lid closed can be a very effective pollution prevention measure. Another example could include locating PFAS-containing materials and residues away from drainage pathways and surface waters.

Erosion and Sediment Control

BMPs must be selected and implemented to limit erosion on areas of your site that, due to topography, activities, soils, cover, materials, or other factors are likely to experience erosion. Erosion control BMPs such as seeding, mulching, and sodding prevent soil from becoming dislodged and should be considered first. Sediment control BMPs such as silt fences, sediment ponds, and stabilized entrances trap sediment after it has eroded. Sediment control BMPs should be used to back-up erosion control BMPs.

Management of Runoff

Your SWPPP must contain a narrative evaluation of the appropriateness of stormwater management practices that divert, infiltrate, reuse, or otherwise manage stormwater runoff so as to reduce the discharge of pollutants. Appropriate measures are highly site-specific, but may include, among others, vegetative swales, collection and reuse of stormwater, inlet controls, snow management, infiltration devices, and wet retention measures. Incorporating treatment like granular activated carbon may be helpful to remove certain pollutants like PFAS.

A combination of preventive and treatment BMPs will yield the most effective stormwater management for minimizing the offsite discharge of pollutants via stormwater runoff. Though not specifically outlined in this fact sheet, BMPs must also address preventive maintenance records or logbooks, regular facility inspections, spill prevention and response, and employee training.

All BMPs require regular maintenance to function as intended. Some management measures have simple maintenance requirements, others are quite involved. You must regularly inspect all BMPs to ensure they are operating properly, including during runoff events. As soon as a problem is found, action to resolve it should be initiated immediately.

Implement BMPs, such as those listed below in Table 2 for the control of pollutants at chemical and allied products manufacturing facilities, to minimize and prevent the discharge of pollutants in stormwater. Identifying weaknesses in current facility practices will aid the permittee in determining appropriate BMPs that will achieve a reduction in pollutant loadings. BMPs listed in Table 2 are broadly applicable to chemical and allied product manufacturing facilities; however, this is not a complete list and you are recommended to consult with regulatory agencies or a stormwater engineer/consultant to identify appropriate BMPs for your facility.

Table 2. BMPS for Potential Pollutant Sources at Chemical and Allied Products Manufacturing and Refining Facilities

Pollutant Source	BMPs
Material handling and storage	❑ Cover handling and storage areas with roofs, covers, or other appropriate forms of protection. ❑ Confine storage to designated and labeled areas outside of drainage pathways and away from surface waters. ❑ Divert stormwater around storage areas with vegetated swales, and/or berms. ❑ Store materials on concrete pads to allow for cleanup of spills or leaks. ❑ Provide secondary containment for storage tanks and drum storage. ❑ If containment structures have drains, ensure that the drains have valves, and that valves are maintained in the closed position. Institute protocols for checking/testing stormwater in containment areas prior to discharge.

Table 2. BMPS for Potential Pollutant Sources at Chemical and Allied Products Manufacturing and Refining Facilities (continued)

Pollutant Source	BMPs
Material handling and storage (continued)	❑ Use double-walled tanks. ❑ Locate storage areas away from high traffic areas and surface waters. ❑ Inspect storage tanks and piping systems (pipes, pumps, flanges, couplings, hoses, and valves) for failures or leaks and perform preventive maintenance. ❑ Maintain an inventory of fluids to identify leakage. ❑ Provide fluid level indicators. ❑ Properly dispose of chemicals that are no longer in use. ❑ Store and handle reactive, ignitable, or flammable liquids in compliance with applicable local fire codes, local zoning codes, and the National Electric Code. ❑ Provide drip pads/pans where chemicals are transferred from one container to another to allow for recycling of spills and leaks. ❑ Develop and implement spill plans or spill prevention, containment, and countermeasure (SPCC) plans, if required for your facility. Portable containers/drums ❑ Develop and implement spill plans or spill prevention, containment, and countermeasure (SPCC) plans, if required for your facility. ❑ Store drums indoors when possible. ❑ Store drums, including empty or used drums, in secondary containment with a roof or cover (including temporary cover such as a tarp that prevents contact with precipitation). ❑ Provide secondary containment, such as dikes or portable containers, with a height sufficient to contain a spill (the greater of 10 percent of the total enclosed tank volume or 110 percent of the volume contained in the largest tank). ❑ Clearly label drum with its contents. ❑ Provide transfer of PFAS containing materials and their proper collection and disposal methods in the event of a release from their container. ❑ Train employees in spill prevention and control and proper materials management. ❑ Empty containment units with manually operated pumps or ejectors. ❑ If facility drainage is not engineered as listed above, equip the final discharge point of all facility sewers to prevent discharge in the event of an uncontrolled spill.
Loading/unloading areas	❑ Confine loading/unloading activities to designated areas outside drainage pathways and away from surface waters. ❑ Inspect containers for leaks or damage prior to loading/unloading. ❑ Avoid loading/unloading materials in the rain or provide cover or other protection for loading docks. ❑ Provide diversion berms, dikes or grassed swales around the perimeter of the area to limit run-on. ❑ Cover loading and unloading areas and perform these activities on an impervious pad to enable easy collection of spilled materials. ❑ Slope the impervious concrete floor or pad to collect spills and leaks and convey them to proper containment and treatment. ❑ Provide overhangs or door skirts to enclose trailer ends at truck loading/unloading docks. ❑ For rail transfer, a drip pan shall be installed within the rails to collect spillage from the tank.

Table 2. BMPS for Potential Pollutant Sources at Chemical and Allied Products Manufacturing and Refining Facilities (continued)

Pollutant Source	BMPs
Loading/unloading areas (continued)	❑ Where liquid or powdered materials are transferred in bulk from truck or rail cars: - Hose connection points at storage containers to be inside containment areas. - Drip pans used in areas which are not in containment area where spillage may occur. ❑ Enclose material handling systems. ❑ Cover materials entering and leaving areas. ❑ Regularly sweep area to minimize debris on the ground. ❑ Provide dust control if necessary. When controlling dust, sweep and/or apply water or materials that will not impact surface or ground water. ❑ Develop and implement spill prevention, containment, and countermeasure (SPCC) plans. ❑ Train employees in spill prevention, control, cleanup and proper materials management techniques.
Manufacturing Process Components	❑ Use curbing, dikes and gutters to contain and collect spills. ❑ Keep spill cleanup materials readily available. ❑ Clean up spills and leaks immediately. ❑ Use dry cleanup methods where appropriate. Sweep up absorbents as soon as spilled substances have been absorbed. ❑ Develop and implement spill prevention, containment, and countermeasure (SPCC) plans. ❑ Train employees in spill prevention, control, and cleanup.
Vehicle maintenance	Good Housekeeping ❑ Eliminate floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly. Collected wastes should be properly treated or disposed of by a licensed waste hauler. ❑ Use drip pans, drain boards, and drying racks to direct drips back into a fluid holding tank for reuse. ❑ Drain all parts of fluids prior to disposal. Oil filters can be crushed and recycled. ❑ Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers. ❑ Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers in compliance with RCRA regulations. ❑ Store batteries and other significant materials inside. ❑ Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries). ❑ Maintain an organized inventory of materials. ❑ Eliminate or reduce the number and amount of hazardous materials and waste by substituting nonhazardous or less hazardous materials. ❑ Clean up leaks, drips, and other spills without using large amounts of water. Use absorbents for dry cleanup whenever possible. ❑ Prohibit the practice of hosing down an area where the practice would result in the discharge of pollutants to a stormwater system. ❑ Clean without using liquid cleaners whenever possible. ❑ Do all cleaning at a centralized station so the solvents stay in one area. ❑ If parts are dipped in liquid, remove them slowly to avoid spills. ❑ Do not pour liquid waste into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sewer connections.

Table 2. BMPS for Potential Pollutant Sources at Chemical and Allied Products Manufacturing and Refining Facilities (continued)

Pollutant Source	BMPs
Vehicle maintenance (continued)	Minimizing Exposure ❑ Perform all cleaning operations indoors or under covering when possible. Conduct the cleaning operations in an area with a concrete floor with no floor drainage other than to sanitary sewers or treatment facilities. ❑ If operations are uncovered, perform them on concrete pad that is impervious and contained. ❑ Park vehicles and equipment indoors or under a roof whenever possible and maintain proper control of oil leaks/spills. ❑ Check vehicles closely for leaks and use pans to collect fluid when leaks occur. Management of Runoff ❑ Use berms, curbs, grassed swales, or other diversion measures to ensure that stormwater runoff from other parts of the facility does not flow over the maintenance area. ❑ Collect the stormwater runoff from the cleaning area and provide treatment or recycling. Discharge vehicle wash or rinse water to the sanitary sewer (if allowed by sewer authority), wastewater treatment, a land application site, or recycle on-site. DO NOT discharge washwater to a storm drain or to surface water. Inspections and Training ❑ Inspect the maintenance area regularly to ensure BMPs are implemented and maintained. ❑ Train employees on waste control disposal procedures.
Vehicle and equipment fueling	❑ Conduct fueling operations (including the transfer of fuel from tank trucks) on an impervious or contained pad and under a roof or canopy where possible. Covering should extend beyond spill containment pad to prevent rain from entering. ❑ When fueling in an uncovered area, conduct fueling operations on a concrete pad (asphalt is not chemically resistant to the fuels being handled). ❑ Use drip pans where leaks or spills of fuel can occur and where making and breaking hose connections. ❑ Use fueling hoses with check valves to prevent hose drainage after filling. ❑ Keep spill cleanup materials readily available. ❑ Clean up spills and leaks immediately. ❑ Use dry cleanup methods for fuel area rather than hosing down the fuel area. Sweep up absorbents as soon as spilled substances have been absorbed. ❑ Do not "top off" fuel tanks. ❑ Minimize/eliminate run-on into fueling areas with diversion dikes, berms, curbing, surface grading or other equivalent measures. ❑ Collect stormwater runoff and provide treatment or recycling. ❑ Provide curbing or posts around fuel pumps to prevent collisions from vehicles. ❑ Regularly inspect and perform preventive maintenance on fuel storage tanks to detect potential leaks before they occur. ❑ Inspect the fueling area for leaks and spills. ❑ Train personnel on vehicle fueling BMPs.

What if activities and materials at my facility are not exposed to precipitation?

The industrial stormwater program requires permit coverage for a number of specified types of industrial activities. However, when a facility is able to prevent the exposure of ALL relevant activities and materials to precipitation, it may be eligible to claim no exposure and qualify for a waiver from permit coverage.

If you are regulated under the industrial permitting program, you must either obtain permit coverage or submit a no exposure certification form, if available. Check with your permitting authority for additional information as not every permitting authority program provides no exposure exemptions.

Where do I get more information?

For additional information on the industrial stormwater program see **www.epa.gov/npdes/stormwater/msgp**.

A list of names and telephone numbers for each EPA Region or state NPDES permitting authority can be found at **www.epa.gov/npdes/stormwatercontacts**.

References

Information contained in this Fact Sheet was compiled from EPA's past and current Multi-Sector General Permits and from the following sources:

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