

Potential Health Effects of Residues in 6 New Mexico Oil and Gas Drilling Reserve Pits Based on Compounds Detected in at Least One Sample

Revised November 15, 2007

List of Substances Detected

The following substances were detected in six drilling reserve pits in the San Juan Basin of northwestern New Mexico and the Permian Basin of southeast New Mexico. An industry committee comprised of 19 oil and gas companies that operate in New Mexico sponsored a sampling and analysis program (SAP) of pit solids. The SAP was completed by a third party consultant and analytical laboratory. The SAP focused on drilling/reserve pits prior to closure.

This list was amended on November 15, 2007 after discovering that the laboratory doing the analysis admitted it purposefully added nine chemicals (listed below) to the samples prior to testing. This amended document is a reanalysis of the chemicals in the reserve pits excluding those added by industry.

1,2,4-Trimethylbenzene	Iron	Uranium
1,3,5-Trimethylbenzene	Isopropylbenzene	Zinc
1-Methylnaphthalene	Lead	Oil and Grease
2-Butanone	m+p-Xylene	Radium 226
2-Methylnaphthalene	Manganese	Radium 228
3+4 Methylphenol	Mercury	Chloride
Acetone	Methylene chloride	Sulfate
Arsenic	Naphthalene	
Barium	N-Butylbenzene	
Benzene	N-Propylbenzene	
Benzo(a)pyrene	O-xylene	Substances eliminated
Cadmium	Pentachlorophenol	<i>Dibromofluoromethane</i>
Carbon disulfide	Phenol	<i>2-Fluorophenol</i>
Chromium	P-Isopropyltoluene	<i>2,3,4-Trifluorotoluene</i>
Copper	Sec-butylbenzene	<i>2,4,6-Tribromophenol</i>
Cyanide, total	Selenium	<i>2-Fluorobiphenyl</i>
Diesel range organics	Silver	<i>4-Bromofluorobenzene</i>
Ethylbenzene	Tert-butylbenzene	<i>Decachlorobiphenyl</i>
Fluoride	Tetrachloroethene	<i>O-Terphenyl</i>
Gasoline range organics	Toluene	<i>Tetrachloro-m-xylene</i>

Possible health effects associated with the 42 substances detected in 6 New Mexico drilling reserve pits

Percentage	Number	Effect
100%	42	gastrointestinal and liver toxicants
95%	40	respiratory toxicants
90%	38	neurotoxicants
88%	37	skin and sensory organ toxicants
79%	33	cardiovascular and blood toxicants
79%	33	kidney toxicants
69%	29	developmental toxicants
69%	29	reproductive toxicants
60%	25	result in other disorders
57%	24	immunotoxicants
57%	24	wildlife toxicants
50%	21	endocrine disruptors
48%	20	carcinogens
31%	13	mutagens

Possible health effects associated with 24 (57%) volatile substances in 6 drilling reserve pits in New Mexico:

Percentage	Number	Effect
100%	24	gastrointestinal and liver toxicants
96%	23	respiratory toxicants
96%	23	skin and sensory organ toxicants
92%	22	neurotoxicants
83%	20	kidney toxicants
79%	19	cardiovascular and blood toxicants
79%	19	developmental toxicants
75%	18	wildlife toxicants
75%	18	result in other disorders
67%	16	reproductive toxicants
63%	15	immunotoxicants
54%	13	carcinogens
54%	13	endocrine disruptors
42%	10	mutagens

Possible health effects associated with 4 (10%) soluble substances in 6 New Mexico drilling reserve pits

Percentage	Number	Effect
100%	4	cardiovascular and blood toxicants
100%	4	gastrointestinal and liver toxicants
100%	4	kidney toxicants
100%	4	neurotoxicants
100%	4	reproductive toxicants
100%	4	respiratory toxicants
100%	4	skin and sensory organ toxicants
75%	3	developmental toxicants
75%	3	endocrine disruptors
75%	3	wildlife toxicants
75%	3	result in other disorders
50%	2	carcinogens
50%	2	mutagens
50%	2	immunotoxicants

