

What Do You Mean, Significant Potential Source Of Contamination?

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When we talk about “Significant Potential Sources of Contamination” (SPSOC), we are talking about sites that contain substances or perform activities that can potentially impact a drinking water source. An SPSOC is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources.

Contaminants of concern include those raw water contaminants regulated under the Safe Drinking Water Act (SDWA) (those contaminants with a maximum contaminant level or “MCL”) and contaminants regulated under the Surface Water Treatment Rule (SWTR). DEQ has developed a list of significant potential sources of contamination for ground water and surface water and ranked them into a high, medium, and low risk category. This list can be found in your systems “Source Water Assessment”, which you should have on file.

“Significant potential sources of contamination were ranked as high, medium, or low risk according to the following considerations: 1) Sources of ground water contamination in the past, 2) Sources of ground water contamination in the past which have caused contamination of public water supply wells, 3) Review of ranking schemes in the literature from other states and the U.S. EPA, and 4) Experience of LDEQ staff. An important consideration is the proximity of significant potential sources to the well. Potential contamination sources located in closest proximity to the wells will pose the greatest threat. The greater the distance the less chance of contamination, because dilution, sorption, and degradation increase with distance. Most public water supply contamination incidents in the State of Louisiana have resulted from either leaking underground storage tanks or surface spills of gasoline in the vicinity of the wells. These plumes usually do not move beyond 1000 feet as natural bacteria in the soil usually break down the gasoline through natural degradation processes. The further away a significant potential source of contamination is located from the well the lower the risk to the well, even if the SPSOC is considered to be a high-risk activity or facility.”*

Many businesses or SPSOC’s are not aware they are in or near a drinking water source area, or, that their activities can potentially cause contamination to a community’s drinking water source. It is important to understand that a release may never occur from a SPSOC if they are using proper management practices. Many SPSOCs are regulated at the federal level, state level, or both to reduce the risk of a release. Keep in mind that these facilities are not contaminating your drinking water, hence the word potential.

So what are some SPSOC’s for ground water? Some high risk substances or activities are gasoline/service-repair stations, dry cleaners, animal feedlots, chemical plants, septic

systems, abandon wells. Medium risks include injection wells, oxidation ponds, sanitary landfills, sewer treatment plants, oil & gas well drilling activities. Low risks include car washes, cemeteries, and golf courses.

If you need help identifying SPSOC's around you drinking water sources, give us a call. LRWA has two, Source Water Protection Specialist to assist you.

*Source: Louisiana Source Water Assessment Program Plan, revised April 2001

*Original article published in LRWA magazine – Spring 2011

SPSOCs of Concern Affecting Groundwater

A significant potential source of contamination (SPSOC) is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The SPSOC locations were obtained by field surveys and from available databases. The list of significant potential sources and their rankings used to develop the assessment is shown below.

Higher Risk

Agriculture Chemical Formulation	Remediation Site – Hazardous Waste
Animal Feed Lots (CAFO)	Remediation Site – Solid Waste
Battery Shop/Recyclers	Remediation Site - UST
Body/Paint Shop	Storage Tank – Above Ground (w/o secondary containment)
Dry Cleaners	Storage Tank – Underground (Active)
Inactive/Abandoned Site – Confirmed	Storage Tank – Underground (Inactive)
Injection Well (Class V)	Truck terminal
Major Industrial Site Plume	Water Well – Abandoned
Military Facility	Water Well - Inactive
Petrochemical Plant	Wood Preserving/Treatment Plant
Petroleum Bulk Plant	
Remediation Site – Groundwater	

Medium Risk

Airport/Airstrip	Railroad Yard –(Loading/Switching/Maintenance)
Auto/Boat/Tractor/Small Engine Shop	Sand/Gravel Pit
Furniture Stripping	Landfill (Solid Waste/Municipal/C&D)
Inactive & Abandoned Site – Potential	Sewerage – Oxidation Pond
Injection Well (Class I, II, or III)	Sewerage – Treatment Plant
Oil/Gas Tank Battery	Storage Tank – Above Ground (w/Secondary Containment)
Promiscuous Dump	

Low Risk

Asphalt Plant	Plant Nursery
Car Wash	Port Facilities
Cemetery	Power Plant – Not Nuclear
Funeral Home	Power Plant - Nuclear
Golf Course	Print Shop
Hospital	Salvage Yard
Lumber Mill	Sewer – Lift Station
Metal Plating/Metal Working	Water Well - Irrigation
Paper Mill	
Pipeline Compressor Stations	

Line Potential Sources of Contamination: Line feature Potential Sources of Contamination (LPSOCs), such as Roads, Railroads, and Pipelines, are subject to spills and leaks. LPSOCs will be rated based on a pertinent number per square mile in the delineated area (protection area).

Oil & Gas Wells and Septic Tanks: Active oil & gas wells (as determined from LDNR's SONRIS database) will be rated based on a pertinent number per square mile in the delineated area. Septic tanks will be rated based on the number of septic tanks within the septic tank search radius. This radius is determined by applying the distance ground water would travel in two years based on the aquifer's average ground water velocity per year (two year time of travel).

It is important to note the contaminants of concern listed for each SPSOC are not intended to be comprehensive, but rather those most commonly associated with the SPSOC. In addition, any specific SPSOC may actually have none, some, or more types of contaminants associated with it than what is listed.

**Surface Water - Significant Potential Sources of Contamination of Concern
(To Be Ground Truthed)**

Higher Risk

Above Ground Storage Tank	Dry Cleaner/Laundromat
Agriculture Chemical- Formulation/Distribution (pesticide/insecticide)	Confirmed Remediation Site
Animal Feed Lots/Dairies (Concentrated)	Military Facility
Animal Feeding Operations - CAFOs	Oil/Gas Tank Battery
Battery Recyclers	Petroleum (includes bulk plants)
Body Shop/Paint Shop	TRI Site (Toxic Release Inventory)
Bridges and Bridge Abutments	Truck terminal
Chemical/Industrial Plant	Underground Storage Tank
	Wood Preserving Plant

Medium Risk

Airport/Airstrip	Railroad Yard - Switching
Auto/Boat/Tractor/Small Engine Shop	Railroad Yard- Loading and Offloading
Furniture Stripping	Railroad Yard- Maintenance
Mine	RCRA Facility (Resource Conservation & Recovery Act)
Plant Nursery	Sewer Treatment Plant
Promiscuous Dump	

Lower Risk

Asphalt Plant	Power Plant
Car Wash	Printing Shops
Cemetery	Salvage Yard
Funeral Home	Sand and Gravel Pit
Golf Course	Sanitary landfill/Solid Waste Disposal (active or inactive)
Hospital	Sewer Lift Station
Irrigation Well (all classes)	Ship Building Operations
Lumber Mill	Tailing Pond
Marina	
Metal Plating/Metal Working	
Nuclear Plant	
Oxidation Pond	*Septic systems will be counted within the critical area and will be reported as a density.
Paper Mill	
Pipeline Compressor Station	
Port Facilities	

**Surface Water - Significant Potential Sources of Contamination of Concern
(To Be Identified By Databases)**

Higher Risk

Louisiana Permitted Discharge Elimination System
Concentrated Animal Feeding Operations (CAFOs)
Military Facilities
Confirmed Remediation Site
TRI Sites (Toxic Release Inventory)

Medium Risk

Airports
Airstrips
Mines
RCRA Sites (Resource Conservation & Recovery Act)

Lower Risk

Cemeteries
Hospitals
Injection Wells (all classes)
Sand & Gravel Pits
Sewage Disposal Ponds (Oxidation Ponds)
Solid Waste Disposal Facilities (Landfills)
Tailing Ponds

Line Potential Sources of Contamination:

Railroads, Pipelines, Roads, and Hazardous Waste Transportation Routes are Line Potential Sources of Contamination subject to spills and leaks. They will be rated based on a pertinent number per square mile in the delineated area.

Oil & Gas Wells:

Oil & Gas Wells will be reported as the number of wells per square mile in BOTH the critical and non-critical areas.

*Other important but not quantifiable considerations at this time include natural occurrences, saltwater intrusion, silviculture, and recreational use.