

MONTANA'S

UNDER GROUND COMICS

SWET YOUR WHISTLE WITH GOOD, CLEAN WATER



FOR GROWN-UPS AND KIDS, TOO!

Under the Big Sky



SEPTIC & WELL CARE FOR CLEAN WATER

WE'RE HERE TO HELP RIDE HERD ON YOUR WELL AND SEPTIC



IT'S JUST GOOD HORSE SENSE!

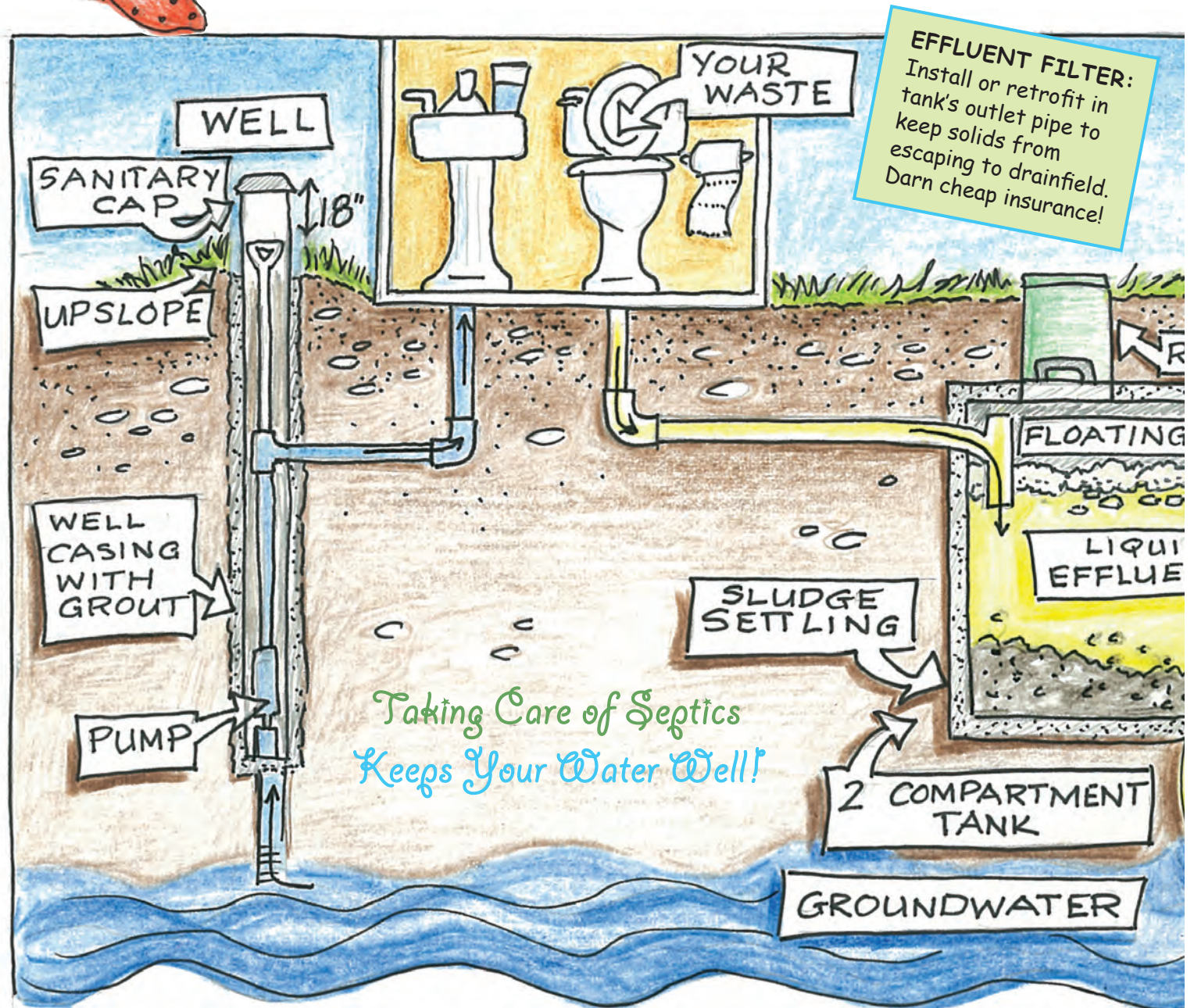


Candy Paul

SEPTICS ANATOMY:



HOWDY, PARDNER! IF YOU LIVE IN RURAL MONTANA YER PROB'LY THE PROUD OWNER/OPERATOR OF YOUR VERY OWN UNDERGROUND SEWAGE TREATMENT PLANT & WATER SUPPLY. IT'S YOUR SEPTIC SYSTEM & WELL!! BURIED OUT THERE IN THE BACKYARD.... SOMEWHERE.... AND, BY GOLLY, YOU ARE THE UTILITY COMPANY. SO TREAT YOUR SEPTIC RIGHT & YOUR WATER WELL, BECAUSE YER DRINKIN' IT!



After sludge settles down, liquid effluent (your wastewater) flows out to the drainfield and seeps through drainpipe holes into the soil "filter" where it's purified by microbial critters in soil pores. Percolating down to recharge groundwater, your treated wastewater feeds your well, your neighbors' wells—plus gardens, irrigation, and our lakes & streams! You want it to be good soil, and clean water.

Bacteria in the tank work to break down the sludge layer, but eventually ... ALL TANKS NEED TO BE PUMPED! All tanks. All.

DO YOU KNOW...

- WHERE YOUR TANK IS?
- HOW BIG IT IS?
- WHEN IT WAS LAST PUMPED?
- WHERE YOUR DRAINFIELD IS?

Once you find it, map it!

HEY—Community Systems & Townies! Even if you're on a community system or live in town, these guidelines make smart sense too. It all goes somewhere, and our water's all connected!

HOW THEY WORK & WHY THEY FAIL

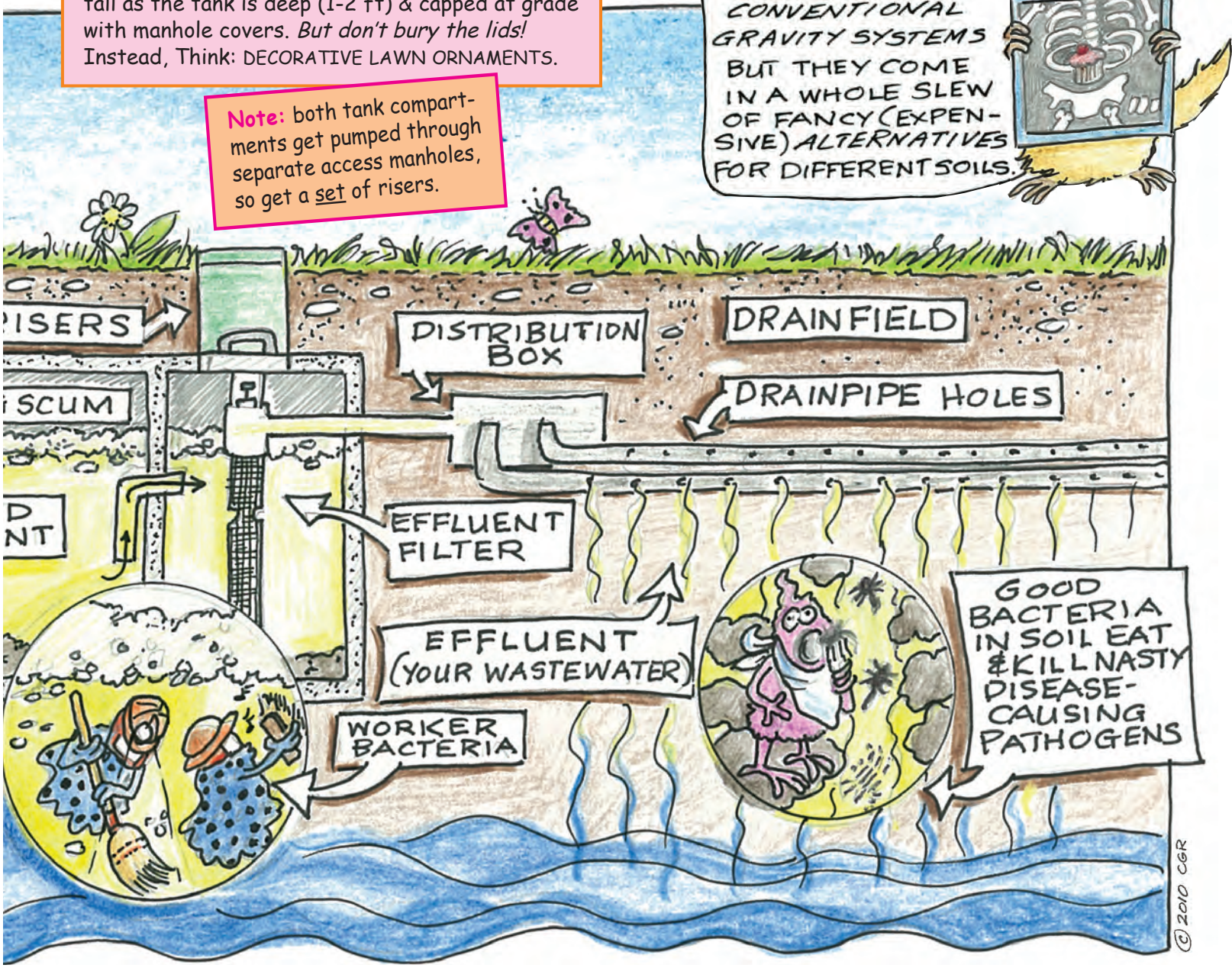
When Things Are GOOD,

IT'S A SMOOTH OPERATION!

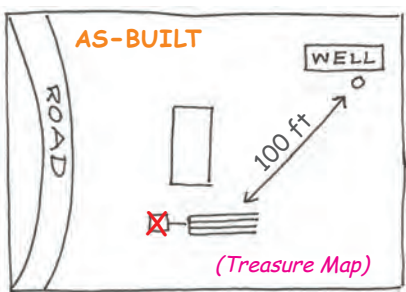
RISERS bring access up to ground level—like plastic culverts on end, *rising* to the surface as tall as the tank is deep (1-2 ft) & capped at grade with manhole covers. *But don't bury the lids!* Instead, Think: DECORATIVE LAWN ORNAMENTS.

Note: both tank compartments get pumped through separate access manholes, so get a set of risers.

GRAVITY RULES! WE'RE LOOKING AT THE INSIDES OF SOME SIMPLE, BASIC, CONVENTIONAL GRAVITY SYSTEMS BUT THEY COME IN A WHOLE SLEW OF FANCY (EXPENSIVE) ALTERNATIVES FOR DIFFERENT SOILS.



Most counties now keep records of new systems with an AS-BUILT, a drawing of the house footprint & property lines in relation to the septic and well—as it was built! Ask the county for yours, or draw one yourself!



What's buried out in your backyard?

Doesn't matter where you live, in what kind of house, how big it is—or if your granddaddy homesteaded the place or you're a shiny new city slicker. What'll make YOUR septic the GOOD, the BAD, or the Downright UGLY is all about:
 How you take care of it, &
 How you live with it.



Follow us in the Pore of Discovery to explore how to protect your well & septic—& how to discover signs of trouble!

© 2010 CGR

The GOOD...

THE ONLY BUTT IN HERE BETTER BE YOUR OWN! CIGARETTE BUTTS ARE A PERFECT FIT TO PLUG UP A DRAINPIPE HOLE

SPREAD OUT YOUR BIG WATER USERS - LAUNDRY, SHOWER & BATH, DISHWASHER - DON'T SHOCK & AWE THE SEPTIC!

ONLY FLUSH TP & WHAT GOES THROUGH YOU FIRST! THAT MEANS NOTHING ELSE IN THE UNIVERSE GOES IN THERE - YOUR TOILET'S NOT A TRASH CAN. (IT'S A POT, NOT A CAN.)

LOW-FLOW FIXTURES

SAVE WATER! SAVE SEPTICS! SCRAPE FOOD WASTE & GREASE INTO TRASH OR COMPOST. NEWSPAPER WIPES GREASE OFF POTS & PANS.

SANITARY CAP

TRASH

COMPOST

WELLHEAD UPSLOPE & AT LEAST 18" ABOVE GROUND

50' SETBACK FROM WELL TO TANK, 100' TO D

FENCING PROTECTS WELLHEAD FROM DAMAGE & ANIMALS. UPSLOPE KEEPS RUNOFF FROM GETTING IN THE WELL CASING & CONTAMINATING YOUR WATER!

INSPECT REGULARLY. PUMP WHEN NEEDED. THAT'S THE CODE OF THE WEST.

WANT TO INSPECT YOURSELF? REMEMBER IT'S NASTY DANGEROUS STUFF IN THERE. CALL YOUR COUNTY FIRST FOR INFO & INSTRUCTIONS. AND NEVER ENTER A TANK - EVER!! VERY BAD THINGS CAN HAPPEN IN THERE.

WELL CASING

GROUT KEEPS RUNOFF OUT

PUMP

GROUNDWATER



Here in the Heart of the West!

BECAUSE RIVERS RUN THROUGH IT!
SETBACKS & WELL-MAINTAINED SEPTICS KEEP OUR RIVERS, LAKES & STREAMS CLEAN. GROUNDWATER & SURFACE WATERS ARE ALL CONNECTED - SO GET YOUR SEPTIC INSPECTED!

I LOVE MONTANA'S WORLD CLASS FISHING!

O.K. RANCH

100' SETBACK DRAINFIELD TO SURFACE WATER

MOVING MY BIRDBATH SURE BEATS DIGGING

SHALLOW-ROOTED PLANTS OVER DRAINFIELD KEEP ROOTS FROM CLOGGING PIPES - TRY NATIVE GRASSES!

DECORATIVE LAWN ORNAMENT CAMOUFLAGE - BENCH, BIRDBATH

HOW YOU USE WATER & HOW YOU MAINTAIN YOUR SYSTEM ARE THE 2 MOST CRITICAL THINGS YOU CAN DO TO KEEP YOUR SEPTIC WORKING - & OUR WATER CLEAN. THAT'S HOW THE WEST WAS WON.

RAINFIELD

EFFLUENT FILTER

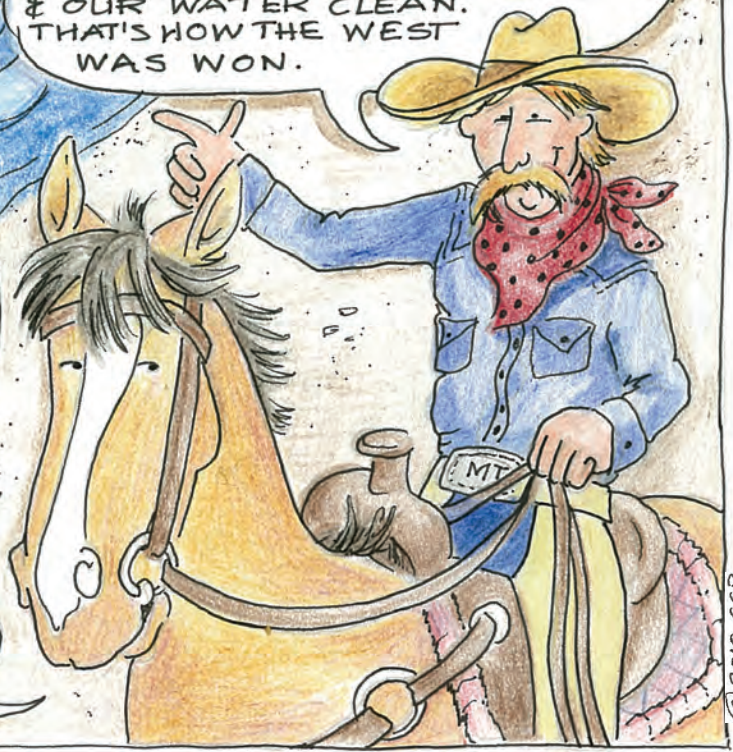
DRAINFIELD KEPT FREE FROM SOIL COMPACTION OR COVERING

RISERS

Inspect Regularly & Pump as Needed

GO NATIVE! NATIVE PLANTS ADAPTED TO CLIMATE NEED LITTLE ADDED WATER OR FERTILIZER. DRAINFIELD'S ALREADY WORKING HARD TO GET RID OF YOUR OWN WATER & "FERTILIZER!" AND I SURE KNOW HOW TO FERTILIZE!

LET'S RIDE OUT & SEE WHAT THE N-A-A-A-Y-BORS ARE DOING.



THE BAD ...

LIKE IT'S BEEN RODE HARD
& PUT AWAY WET

USING WATER ALL AT ONCE REALLY STRESSES THE SYSTEM. *SPREAD IT OUT!!*

WATER RUNNING RUNNING RUNNING

LEAKY FAUCET

GREASY PAN

DISHWASHER

SMELLS LIKE TROUBLE

GARBAGE DISPOSAL: SOLIDS FILL TANK FASTER SO THROW IT OUT!

FLUSHING GUNK OR MEDS

WASHING TOO MANY LOADS

BATHING

SHAVING (WATER LEFT RUNNING)

NO RISERS

FERTILIZED & WATERED

WAY TOO MUCH WATER RUNNING IN HERE!!

MIXING - NOT SETTLING!

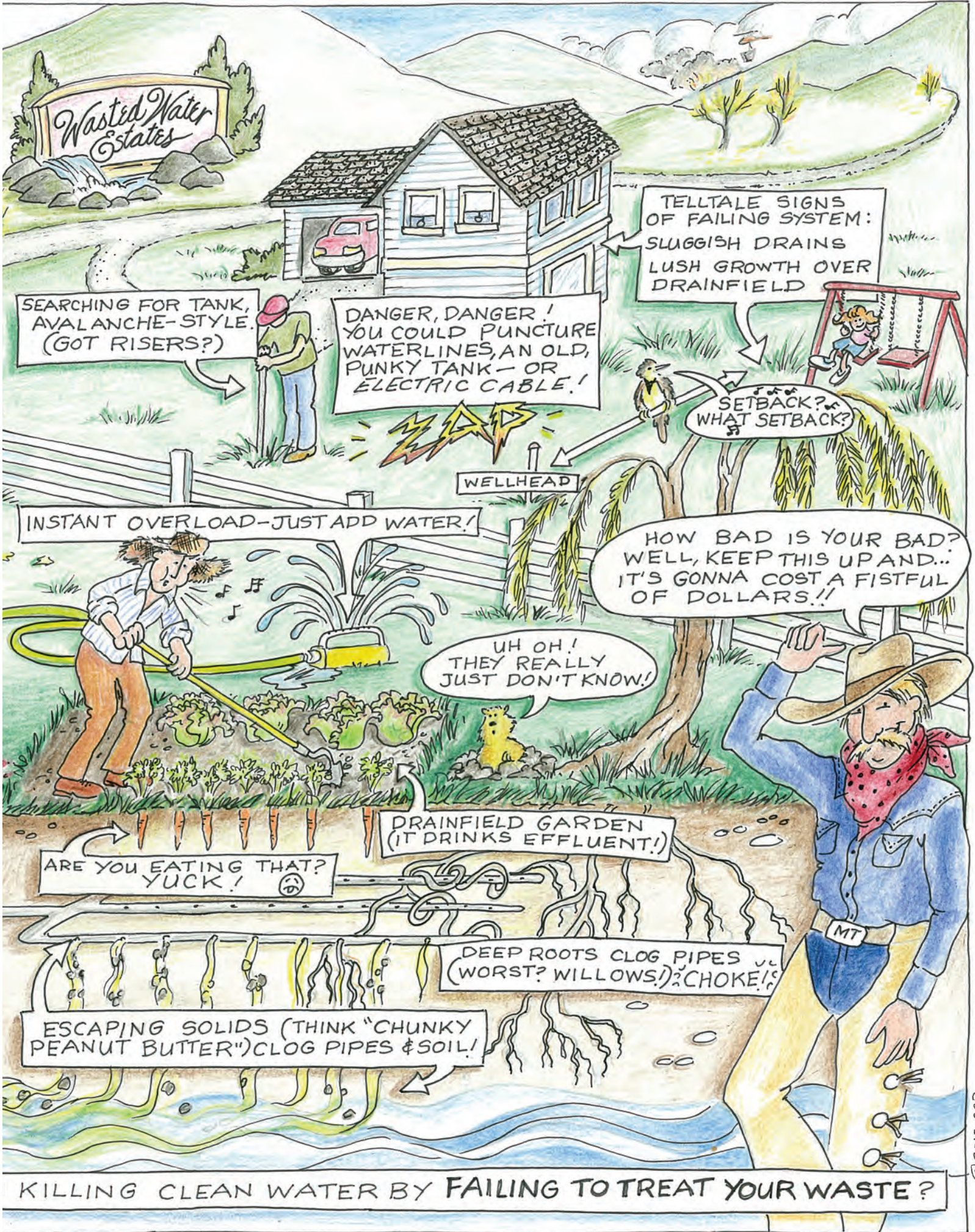
CONTAMINATED RUNOFF DOWN WELL CASING

NO EFFLUENT FILTER

GROUNDWATER

EFFLUENT ONLY PARTLY CLEANSSED

QUIETLY OVERLOOKED, TOO OFTEN IGNORED & NEGLECTED. ARE YOU



SEARCHING FOR TANK, AVALANCHE-STYLE. (GOT RISERS?)

DANGER, DANGER! YOU COULD PUNCTURE WATERLINES, AN OLD, PUNKY TANK—OR ELECTRIC CABLE!

TELLTALE SIGNS OF FAILING SYSTEM: SLUGGISH DRAINS LUSH GROWTH OVER DRAINFIELD

SETBACK? WHAT SETBACK?

INSTANT OVERLOAD—JUST ADD WATER!

HOW BAD IS YOUR BAD? WELL, KEEP THIS UP AND... IT'S GONNA COST A FISTFUL OF DOLLARS!!

UH OH! THEY REALLY JUST DON'T KNOW!

ARE YOU EATING THAT? YUCK!

DRAINFIELD GARDEN (IT DRINKS EFFLUENT!)

DEEP ROOTS CLOG PIPES (WORST? WILLOWS!) CHOKE!

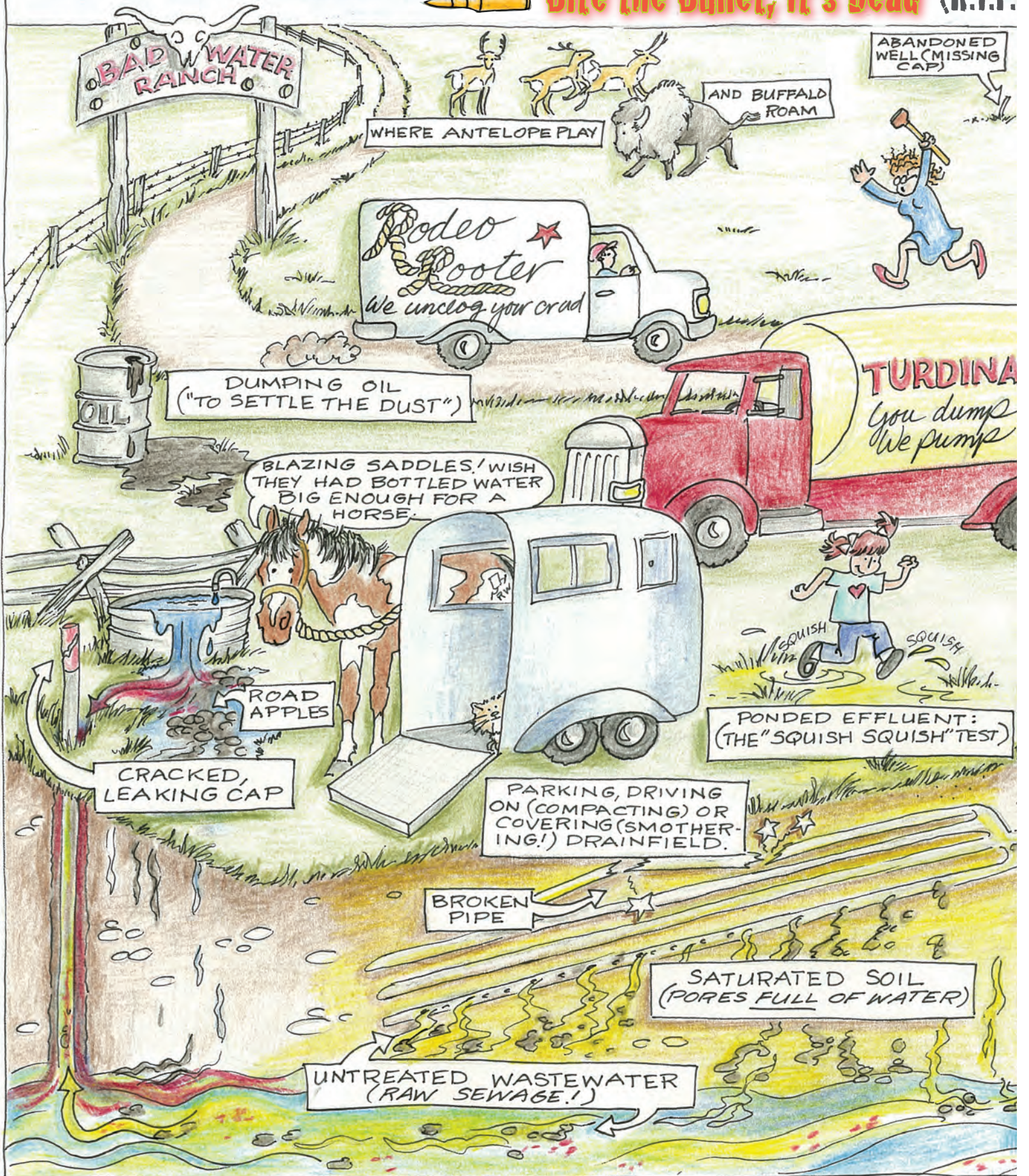
ESCAPING SOLIDS (THINK "CHUNKY PEANUT BUTTER") CLOG PIPES & SOIL!

KILLING CLEAN WATER BY FAILING TO TREAT YOUR WASTE?

© 2010 CGR

... and THE DOWNRIGHT UGLY!!

 Bite the Bullet, It's Dead (R.I.P.)



BAD WATER RANCH

WHERE ANTELOPE PLAY

AND BUFFALO ROAM

ABANDONED WELL (MISSING CAP)

Rodeo Rooter
We unclog your crad

DUMPING OIL ("TO SETTLE THE DUST")

TURDINA
You dump We pump

BLAZING SADDLES, WISH THEY HAD BOTTLED WATER BIG ENOUGH FOR A HORSE.

ROAD APPLES

PONDED EFFLUENT: (THE "SQUISH SQUISH" TEST)

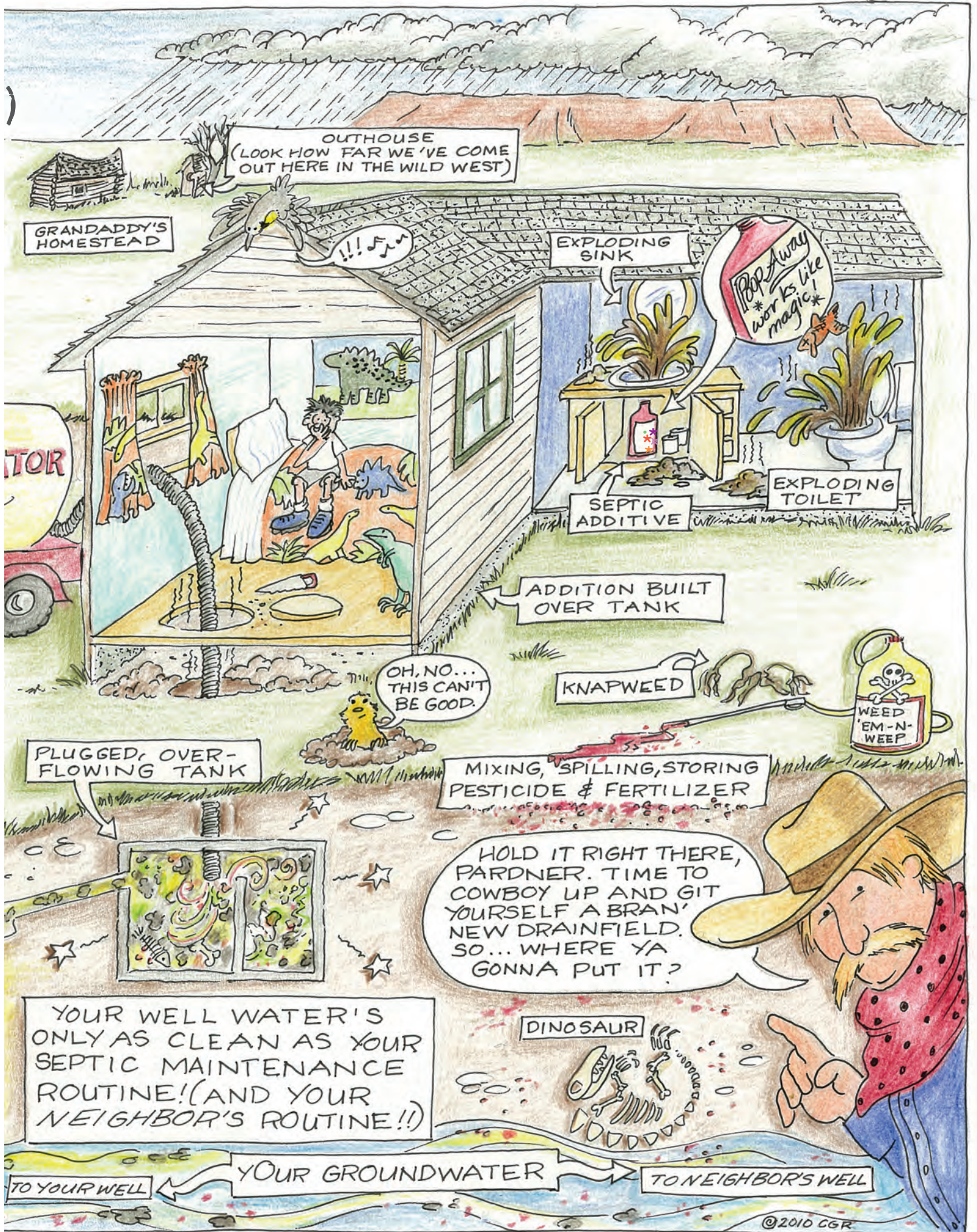
CRACKED, LEAKING CAP

PARKING, DRIVING ON (COMPACTING) OR COVERING (SMOTHERING!) DRAINFIELD.

BROKEN PIPE

SATURATED SOIL (PORES FULL OF WATER)

UNTREATED WASTEWATER (RAW SEWAGE!)



OUTHOUSE
(LOOK HOW FAR WE'VE COME
OUT HERE IN THE WILD WEST)

GRANDDADDY'S
HOMESTEAD

EXPLODING
SINK

Pop Away
*works like
magic*

EXPLODING
TOILET

SEPTIC
ADDITIVE

ADDITION BUILT
OVER TANK

OH, NO...
THIS CAN'T
BE GOOD.

KNAPWEED

WEED
'EM-N-
WEED

PLUGGED, OVER-
FLOWING TANK

MIXING, SPILLING, STORING
PESTICIDE & FERTILIZER

HOLD IT RIGHT THERE,
PARDNER. TIME TO
COWBOY UP AND GIT
YOURSELF A BRAN'
NEW DRAINFIELD.
SO... WHERE YA
GONNA PUT IT?

YOUR WELL WATER'S
ONLY AS CLEAN AS YOUR
SEPTIC MAINTENANCE
ROUTINE! (AND YOUR
NEIGHBOR'S ROUTINE!!)

DINOSAUR

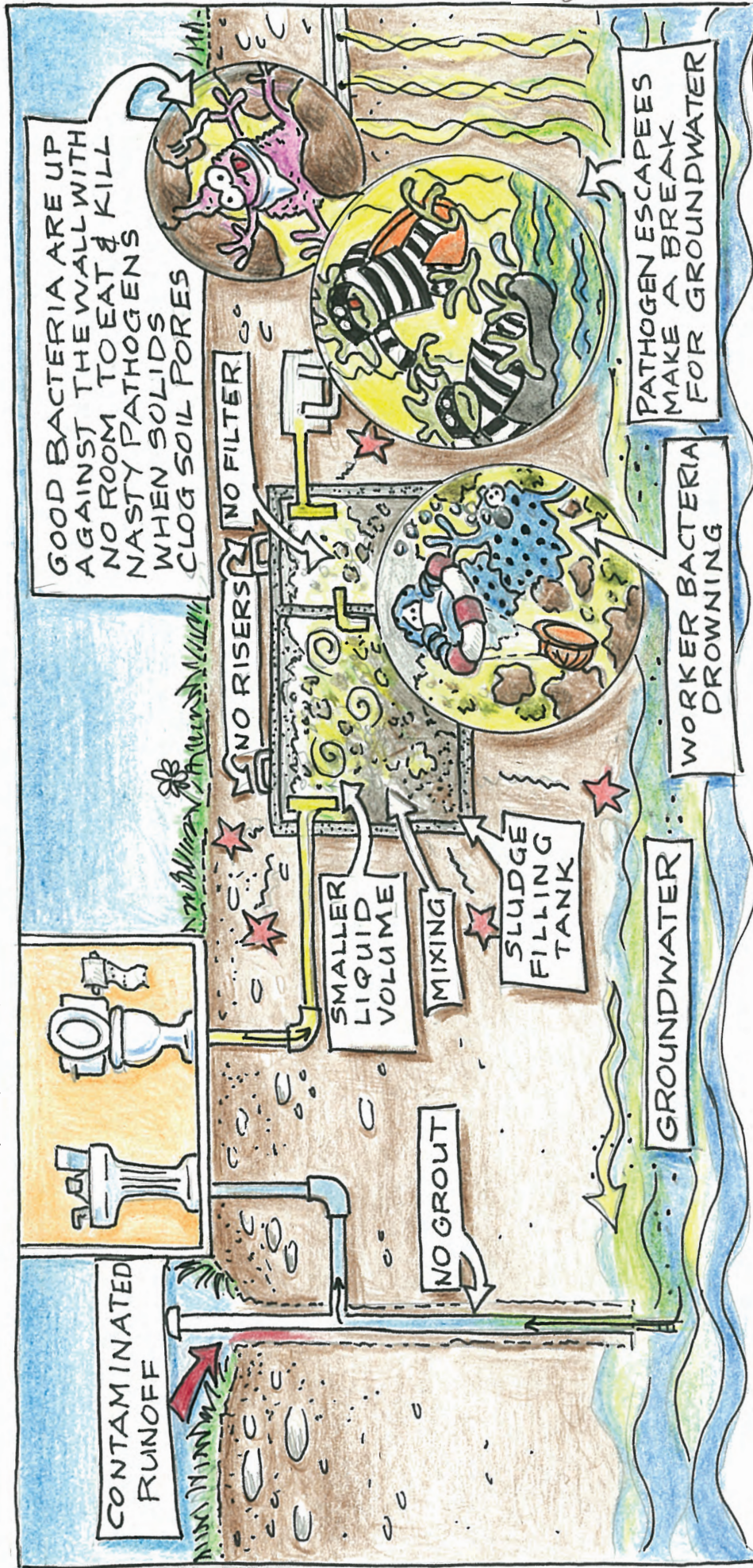
TO YOUR WELL

YOUR GROUNDWATER

TO NEIGHBOR'S WELL

When Good Systems Go BAD ... A FAILURE WAITING TO HAPPEN

A tank full of solids leaves less room for liquid so it shortens settling time, flowing out to drainfield with solids mixed in. Reduced wastewater-treatment capacity means your effluent's not always completely clean before reaching groundwater—and your well!



ALL YOU URBAN COWBOYS USING LOTS OF FANCY WATER JUST DOESN'T SIT WELL OUT HERE IN THE ARID WEST. EVERYBODY'S GOTTA SHARE!

YOU GOTTA RESPECT YOUR SEPTIC, COWBOY. CAN'T JUST RIDE THAT THING 'TIL IT DIES.



SEND IN THE RESERVES!

THERE'S NO FIXING A FAILED DRAINFIELD. With soil pores compacted or clogged with solids, no amount of air or water pumped in will flush 'em out or plump 'em up again. You'll have to put in a new drainfield, in a different area designated and protected for a replacement or "reserve." Find yours! Without suitable soils in reserve, folks might have to pump effluent off-site—or even buy more property!



WHOA, NELLIE!

©2010 Mark Winters/Mark Winters Art

... Or Turn Downright UGLY!

YUP, IT'S DEAD, ALRIGHT

Tank plugged full of solids overflows to clog pipes, soil pores—& plumbing! Clogged, sluggish, & backed-up, this is your sewage coming back to haunt you. You will be visited by seepage, leakage, & FAILURE—contaminating groundwater, well water—and your drinking water!



© 2010 C&R

Wells & septic systems may be too close in some of our older communities, where a well's 100' setback Safety Circle could overlap with neighboring septs.



Are YOU drinking from nearby septic failures? Gives a whole new meaning to your Neighborhood Circle.

You bet it is. Septic additives could harm—and pretty much don't help. Look at it this way: Caustic chemicals or biological agents designed to **BREAK DOWN SOLIDS** can **BREAK SOLIDS DOWN** to float out the tank & clog the drainfield. Be careful what you wish for!

ADDITIVES: TO ADD, OR NOT TO ADD, IS THAT THE QUESTION?

Ride Herd on Your Septic!

LOCATE (find it!)

INSPECT regularly

PUMP as needed

& PROTECT!

- ♦ Retrofit Risers & Effluent Filters
- ♦ Think Compost & Trash vs. Garbage Disposal
- ♦ Use Least Amount of Toxic Chemicals & Cleaners (USE RECOMMENDED DOSE, HANDLE & STORE CAREFULLY)
- ♦ Landscape Drainfield with Shallow-Rooted Plants, Not Deep
- ♦ Keep Sprinklers, Runoff, & Contaminants Away from Drainfield
- ♦ Protect Well—3 best ways: MONITOR WATER QUALITY (NITRATES, BACTERIA), SEPTIC MAINTENANCE, & CURB RUNOFF POLLUTION
- ♦ Watch Water Use & "Shock" Loads
- ♦ Keep Good Records—SEPTIC/WELL LOG (FIND IT, START IT, KEEP IT)
- ♦ Check Graywater Potential for Your County!
- ♦ And Remember, No Matter How Fancy or Expensive—ALL TANKS NEED TO BE PUMPED!

WANTED: SEPTIC KILLERS!

ALIAS

- TANK NEEDS PUMPING
- HIGH WATER USE
- FLUSHING TRASH
- LACK OF MAINTENANCE
- TOO MUCH GARBAGE DISPOSAL
- OVERLOADED WITH SOLIDS
- KITCHEN GREASE & TOXIC CHEMICALS (+ water-softener salts)
- DRIVING OVER DRAINFIELD
- TREE ROOTS: POOR DRAINAGE
- POOR INSTALLATION, DESIGN, SITING (unfit soils, steep slopes, small lot)
- DON'T KNOW WHERE SEPTIC IS
- DON'T KNOW THERE IS A SEPTIC!

ARMED & EXTREMELY DANGEROUS

REWARD: CLEAN WATER!
+ PROTECTED PROPERTY/INVESTMENT/HEALTH

Contacts

& Credits:

BE SURE TO CHECK WITH YOUR LOCAL HEALTH DEPT. FOR MORE SPECIFICS IN YOUR AREA.

GIDDYUP, ELLY-C'MON PRAIRIE DOG PETE, & BRING YOUR GAL. WE'RE BACK IN THE SADDLE AGAIN!

LET'S HIT THE TRAIL TOO, NELLIE. OUR WORK HERE IS DONE!

YEEHAW!!
RIDE 'EM COWBOY!

THANKS FOR ALL YOUR HELP BIG SKY SLIM. NOW, GIT ALONG LITTLE DOGIES, Y'HEAR?

HAPPY TRAILS TO YOU!



P.O. Box 200901
Helena, Montana 59620-0901
406.444.6697
www.deq.mt.gov/wqinfo/swp

The Wild Bunch

STARRING:
BIG SKY SLIM &
ELLY THE HORSE
PETE THE PRAIRIE DOG
& HIS LADY, NELLIE

Jana M. Suchy
Wrangler/Writer/Producer
WAY OUT WEST CREATIVE

Candy Garrison Raab
Ranch Hand &
Brilliant Illustrator
Artwork © 2011

Joe Meek
Crew Boss

DEQ SOURCE WATER PROTECTION