

AERIAL PHOTOGRAPHY OF OILFIELD SITES IMPACTED BY BRINE SPILLS AND OILFIELD WASTES

-- SALTED LANDS COUNCIL --

On August 9th, the North Dakota Health Council decided to maintain their previously made (2015) decisions to increase radioactive waste limits for disposal in North Dakota, and to ratify the new rules on radioactive waste. This will result in companies applying for the disposal of radioactive waste at their facilities, and it already has since the Health Council's ratification of the new rules technically occurred last year.

The Salted Lands Council is concerned about the Health Council's approval of these rules because the Department of Health will be responsible for ensuring that companies handling the radioactive waste will handle and dispose of the waste properly such that public health is not adversely affected. We do not have trust in the department's capability to do this because of the department's precedent of negligence with hazardous oilfield waste. We present the following photographs to show examples of how hazardous oilfield wastes are currently mishandled in North Dakota, all on the watch of the Department of Health.

It is inevitable that radioactive wastes will be mishandled by waste haulers or waste facility operators at some point. Leadership within the Environmental Section of the Department of Health have shown a disregard for the land and landowner's livelihoods by not requiring full and proper remediation of their land after produced water (brine) spills for many years. Therefore, the Salted Lands Council does not trust that the Department of Health will do the work necessary to prevent mishandling of radioactive waste, nor enforce clean-up and require that remediation is done properly.

UNAUTHORIZED HAZARDOUS WASTE SITE

LOCATION: NWSE SECTION 14 TOWNSHIP 161, RANGE 84

Figure 1 – Murex Petroleum *Unauthorized* Waste Storage Site Near Mohall.



POINTS OF NOTE:

1. Department of Health (Environmental Section) staff inspected this site on June 9th, 2015.
2. They found hazardous oilfield wastes improperly stored at this site – which is not an authorized oilfield waste facility.
3. Bill Jansky - the Environmental Health and Safety Coordinator of Murex Petroleum - was also present.

FOLLOWING UP ON THE DEPT. OF HEALTH:

The Dept. of Health inspectors reported the following in 2015:

- a. The barrels at the site contain *“oil, rags, diapers, and other waste from well sites.”*
- b. The barrels...*“are collected and contained in a **containment basin.**”*
- c. *“The **basin walls** are approximately **3 feet** in height.”*
- d. *“The basin is **lined with plastic liner.**”*

FACT CHECK #1

ND DoH inspector statement in 2015: *“The basin walls are approximately 3 feet in height.”*

Figure 2 - ND DoH inspector’s 2015 photograph of the “Containment Basin”



The barrels in this pit are among those the inspector reported as containing “oil, rags, diapers, and other waste from well sites” in June 2015. The inspector referred to this pit as a “containment basin” despite its structural deficiencies. As shown in the aerial photograph taken in July of 2016 shown below (Figure 3), the dike’s walls are not 3 ft. around the entirety of this so-called “containment basin.” A dike is only as effective as its wall’s lowest point. There appears to be no wall around portions of this basin, even a year after the Dept. of Health’s meeting with Murex Petroleum.

Figure 3 – “Containment Basin” with defective dike - 2016



This photo was taken more than a year after the 2015 inspection. Note that the “dike” does not extend all the way around this unauthorized hazardous waste storage pit. The dike appears to have collapsed in the upper right corner, and there is no wall where the basin connects to the rest of the unlined storage site. As stated above, the inspector found “oil, rags, diapers, and other waste from wells,” in these barrels; so it is possible that such hazardous oilfield wastes are still being improperly and illegally stored at this Murex Petroleum storage site.

Since the Department of Health knowingly allows hazardous oilfield wastes to be moved from production sites to be stored at this unauthorized waste storage site, the Salted Lands Council is concerned that the department will also allow oil companies and radioactive waste haulers to simply move radioactive waste from oil production sites to waste sites not authorized to handle radioactive waste safely.

FACT CHECK #2:

ND DoH inspector statement in 2015: *“The basin is lined with plastic liner.”*

Figure 4 - DoH inspector’s 2015 photographs of basin’s plastic “lining” -2015 photo



A plastic liner is only effective if it is installed and maintained properly. An effective plastic lining would be tightly secured throughout the entire area in which hazardous wastes are stored. The lining should also cover the basin walls completely – to both prevent erosion of the dike’s dirt walls and to prevent contamination of that soil by the materials stored within the dike in the event of a leak or spill.

CHECKING IN ON THEIR PROMISES – 1 YEAR LATER:

It has been over a year since the hazardous oilfield wastes (*“oil, rags, diapers, and other waste from well sites.”*), liquid in the *“containment basin,”* and other oilfield junk was to be cleaned up by Murex Petroleum...

“Murex...will suck out all of the liquid from the basin.”

~Dept. of Health Inspector - June 9th, 2015

Figure 5 – Basin containing liquid and tanks of oilfield waste materials - 2016



As shown above, there is liquid and barrels in this basin as of July 18, 2016 - more than a year after Murex Petroleum was told to remove liquid from this basin containing hazardous oilfield wastes. It is unknown whether Murex did *“suck out all of the liquid from the basin”* and take it to Clean Harbors, as promised. Regardless, more liquid has accumulated, and barrels are still there. It appears that not all of the barrels were *“mixed on site with fly ash in a roll off”* and taken to Clean Harbors, as promised in the inspector’s June 2015 memo.

All waste generated from oil exploration and production is to be disposed of immediately at an **authorized facility**, as required by **Administrative Code rule 43-02-03-19.2**, and storage of wastes can only be stored in earthen pits or receptacles like this one in an **emergency**.

RULE 43-02-03-19.2. DISPOSAL OF WASTE MATERIAL.

“All waste material associated with exploration or production of oil and gas must be properly disposed of in an **authorized facility** in accord with all applicable local, state, and federal laws and regulations. All waste material recovered from spills, leaks, and other such events shall **immediately be disposed of in an authorized facility**, although the remediation of such material may be allowed onsite if approved by the director.”

RULE 43-02-03-19.3. EARTHEN PITS AND OPEN RECEPTACLES.

“Except as otherwise provided in sections 43-02-03-19.4 and 43-02-03-19.5, **no saltwater, drilling mud, crude oil, waste oil, or other waste** shall be stored in **earthen pits or open receptacles** except in an emergency and upon approval by the director.”



This site is in violation of the above rules since this is not an authorized waste disposal facility, and wastes are being stored there in an open receptacle in a non-emergency.

Salted Lands Council asks, is this how we can expect the Department of Health to manage radioactive waste disposal sites?

Figure 6 – Murex Petroleum Storage Site near Mohall – 2016 photographs



Note that there is no perimeter berm around this storage site, which is doubling as a hazardous waste site as previously shown. Thus, there is nothing preventing contaminated runoff from spreading off-site, as the standing water shows.





Note the numerous tanks and barrels, whose contents have been hazardous - according to the Dept. of Health inspector. Note the close proximity to naturally-occurring fresh water (the wetland to the lower right and the creek in the upper left). These bodies of water are at risk of contamination via runoff from this storage-turned-waste disposal site.

The lack of a perimeter berm around this site or any effective containment infrastructure within the site allows for hazardous waste fluids and consequentially contaminated runoff to spread offsite, which could potentially contaminate the surrounding soil and water.

FOLLOWING UP ON THE DEPT. OF HEALTH

The Director of the Environmental Section of the ND Department of Health visited this well site in 2014. He said then that the department would follow-up and require the operator of the site to clean it up. These photos, taken July 18th 2016, show that this site has still not been cleaned up more than a year later and remains out of compliance with administrative code rules.

Figure 7 - Tanks at Well #15106 site -2016 photo



This site is out of compliance for the following rules:

43-02-03-49. OIL PRODUCTION EQUIPMENT, DIKES, AND SEALS.

*"Surface **oil tanks** and **production equipment** must be **devoid of leaks** and **in good condition** constructed of materials resistant to the effects of produced fluids or chemicals that may be contained therein. **Unused tanks** and production equipment **must be removed** from the site or placed into service, within a reasonable time period, not to exceed **one year**."*

VIOLATION #1: TANKS IN POOR CONDITION

The tanks at this site appear to be in poor condition (note the rust) and may not be “**resistant to the effects of produced fluids or chemicals that may be contained therein**” – as required by rule 43-02-03-49.

VIOLATION #2: UNUSED TANKS AND PRODUCTION EQUIPMENT

As rule 43-02-03-49 states, “**unused tanks and production equipment**” are not allowed to be **stored for more than one year**.

If these tanks are being used and do contain waste, then this site is in violation of rule 43-02-03-19.2, which requires that all waste material recovered from spills, leaks, and other such events must immediately be disposed of in an authorized facility:

43-02-03-19.2. DISPOSAL OF WASTE MATERIAL.

*“All **waste material** associated with exploration or production of oil and gas must be properly disposed of in an **authorized facility** in accord with all applicable local, state, and federal laws and regulations. **All waste material** recovered from **spills, leaks, and other such events** shall **immediately be disposed of in an authorized facility**, although the remediation of such material may be allowed onsite if approved by the director.”*

This is not an authorized waste disposal facility. Therefore storage of the tanks and any waste contents at this site is not legal.

These are just two examples of the Dept. of Health’s failure to enforce existing rules aimed to protect people, soil, and water from hazardous waste at sites where officials are aware of such mismanaged waste. Based on sites like these, we do not trust the Dept. of Heath to ensure that radioactive waste is handled properly and disposed of safely.

SALTED LANDS

In addition to illegal storage of hazardous waste at unauthorized facilities, the Department of Health also knowingly allows inadequate clean-up from oilfield brine spills – as indicated by the visible barren soil at numerous sites in the oilfields of North Dakota – some of which are shown in the following aerial photographs.

BOTTINEAU COUNTY, SITE #1

LOCATION: NESW SECTION 29, TOWNSHIP 161 RANGE 81 – WILEY FIELD



Figure 8 - Well #15106 within NESW Section 29, Township 161 Range 81 – Wiley Field



REPORTED BRINE SPILLS FOR WELL #15106

SPILL DATE: **7/6/2010**

VOLUME: **200 barrels (8,400 gallons)**

TYPE OF SPILL: **Pipeline leak**

CONTAINED TO WELL SITE: **No**

SPILL AREAL EXTENT REPORTED: **40 X 200 yards**

The report for this spill states that **all 200 barrels** of brine spilled were “vacuumed up,” yet the barren land around the well site is indicative of salt contamination.

BOTTINEAU COUNTY, SITE #2

Location: Township 161 Range 81 & 82 - Wiley Field

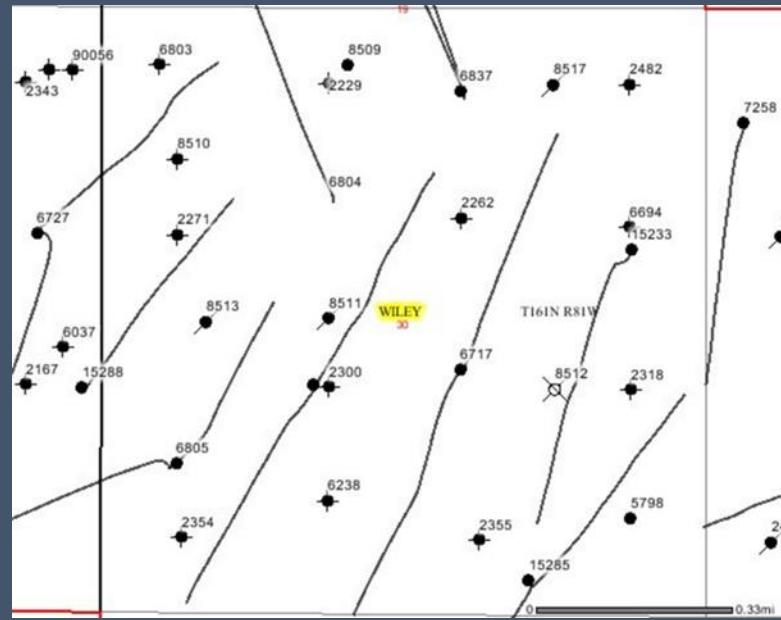


Figure 9 - Oil wells #8513 (lower left) #15288 (center) and Denbury company headquarters (lower right)



Note the barren soil emanating from well sites, in contrast to the farmland at a distance from the sites, which support robust vegetation.

Figure 10 – Well #15288



Oil industry leaders claim that spills are cleaned up in North Dakota:

“Every spill – 100 percent of them – are cleaned up.”

~ Ron Ness, President of the Petroleum Council

Jan. 8th, 2016

This is what 100% spill clean-up looks like?



With regard to the Dept. of Health's enforcement, according to the *New York Times* (2014):

"...we use a carrot and stick approach. The carrot is if you get into it and clean it quickly, the stick won't be as severe."

~David Glatt, Director of the Environmental Section, Dept. of Health

Quickly? Sites like the one pictured above have had damage from brine spills for years. There are legacy spills at this location that Department of Mineral Resources and the Department of Health are well aware of, but are unwilling to address.

If our state agencies with jurisdiction over oilfield spills won't deal with it, who will?

Ron Ness's response to criticisms of insufficient spill clean-up:

*"According to the agency, in 2015, there were **497 reported uncontained spills** (spills that take place off of a protected well site). Of these, a majority are small, and **more than half were cleaned up in 180 days or less.**"*

-Ron Ness, President of the Petroleum Council

July 2nd, 2016

WHAT ABOUT THE OTHER HALF?



Well #15288 - Note the barren soil emanating from the well site. Duke University took water samples from standing water in the road ditch (far left hand side).

The Department of Mineral Resources' stance on fines, according to the New York Times:

*"Penalizing companies for every violation is imprudent and can be counterproductive, leaving the **citizens of North Dakota with enormous liabilities** on their hands when bankrupt operators walk away."*

~Lynn Helms, Director of Department of Mineral Resources

What about the liability of unproductive land caused by produced water spills? It seems as though Lynn Helms is willing to let oil companies off the hook at the expense of North Dakota's land and livelihoods.

Figure 11 – Well # 15288



Note the barren soil encroaching on the edge of the adjacent farmland. Note the standing water on location in the open pits. It is unknown whether those pits contain hazardous waste.

BOTTINEAU COUNTY, SITE #3

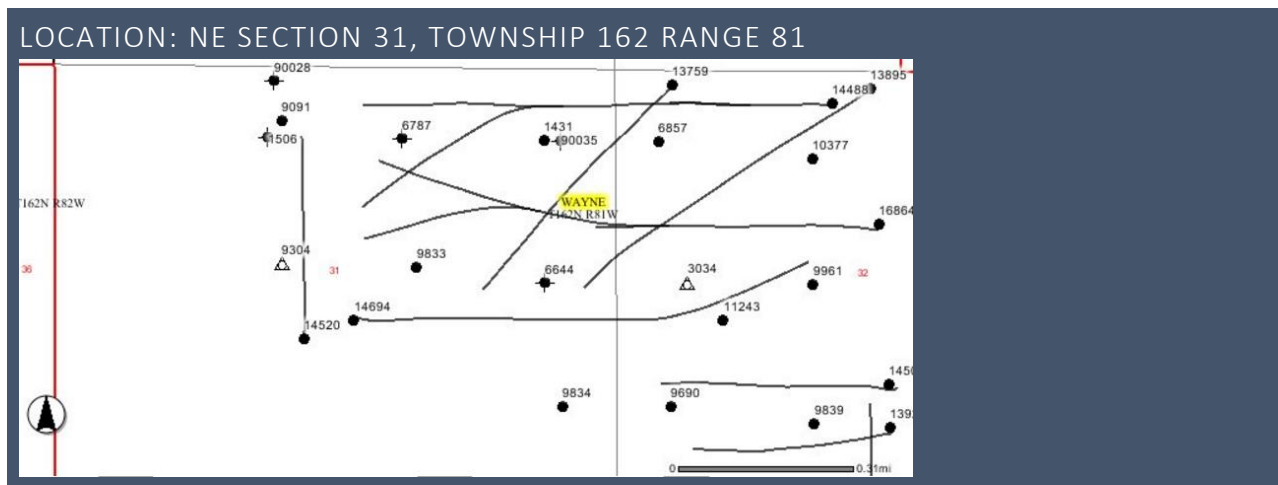


Figure 12 – Oil Well #1431 and plugged SWD Well #90035 - 2015 Photograph



Barrels at this location contain oil and other contaminated oilfield waste (soil, gravel).

Figure 13 – Oil Well #1431 and SWD Well #90035 – 2016 photograph



Note the barren soil and white crust, both signs of high concentrations of salt in the soil, emanating from the well site.



Note this site's lack of infrastructure to prevent runoff from contaminating surrounding soil and water, despite the site's close proximity to a pothole wetland.

As these examples show (and there are many others), the Department of Health's past and continuing failure to enforce rules regarding oilfield hazardous waste disposal and to require sufficient brine spill clean-up from oil companies indicates that leadership within the Environmental Section of the ND Dept. of Health will likely not ensure public safety and environmental health with regard to radioactive waste.

-SALTED LANDS COUNCIL

