FINDINGS REPORT: ABANDONED FUEL SITES IN ONTARIO

PURPOSE

The purpose of this report is to share and validate findings with those who participated in the stakeholder engagement interviews on abandoned fuel sites in Ontario. These findings represent information communicated by stakeholders to the Ministry of the Environment, Conservation and Parks (MECP), the Ministry of Government and Consumer Services (MGCS) and the Technical Standards and Safety Authority (TSSA).

CONTEXT

THE AUDITOR GENERAL'S REPORT

In December 2018, the Auditor General of Ontario released a Value-for-Money audit of TSSA and MGCS's oversight, which included various findings and recommendations for improvement.

One of the findings was related to the management of abandoned fuel sites.

The Auditor General identified that there is a need to reduce the risk of contamination spreading on and beyond abandoned fuel sites and recommended that:

> … the TSSA …work together with the Ministry of Government and Consumer Services [MGCS] and the Ministry of the Environment, Conservation and Parks [MECP] to develop a long-term funding strategy to remediate abandoned fuel sites.

BACKGROUND

There are about 3,800 licensed fuel sites operating in Ontario[1].

When a fuel site is no longer operating, there are requirements enforced by TSSA in the Liquid Fuels Handling Code (referenced in Ontario Regulation 217/01: Liquid Fuels and adopted under Ontario Regulation 223/01: Codes and Standards Adopted by Reference, under the Technical Standards and Safety Act, 2000) on how to properly decommission the site; there are also environmental requirements enforced by MECP (see box below).

[1] This number includes gas stations, marinas and bulk plants licensed under Ontario Regulation 217/01: Liquid Fuels where gasoline or an associated product is handled and stored.

✓What should happen when a liquid fuel handling site stops operating?

Under the Liquid Fuels Handling Code (referenced in Ontario Regulation 217/01: Liquid Fuels and adopted under Ontario Regulation 223/01: Codes and Standards Adopted by Reference under the Technical Standards and Safety Act, 2000), where a liquid fuels handling facility is to be permanently closed, the owner of the equipment or the property must ensure that:

- All fuel product and sludge are removed within six months of closing.
- All fuel handling equipment (such as underground and aboveground fuel tanks, piping, dispensers, etc.) is removed within one to two years, depending on type of equipment.
- Provide written notification to the director within 90 days of the removal of the equipment.
- A site closure report is submitted which identifies the extent of any contamination on and beyond the property related to the fuel handling operations.
- MECP is notified, as required by the Environmental Protection Act and/or Ontario Water Resources Act.

Under MECP's requirements:

- Contamination, if any, must be addressed so it does not go off-site or impact drinking water sources.

An abandoned fuel site is generally understood to be one that is inactive, has not been properly decommissioned after two years and for which there is no reasonable prospect of a responsible party decommissioning the site.

There are approximately 160 liquid fuel sites that are currently abandoned in Ontario, typically former gas stations. Sites that are abandoned may not necessarily have off-site contamination.

Contamination may migrate off-site and may have serious environmental impacts, including as it relates to drinking water sources and human health.

RESEARCH

STAKEHOLDER ENGAGEMENT

MECP, MGCS and TSSA have engaged with stakeholders as we work together on responding to the Auditor General's findings.

The purpose of this engagement was to seek stakeholder input to:

- Ensure we have a comprehensive understanding of the issue,
- Better understand any additional stakeholder concerns regarding abandoned fuel sites and
- Seek stakeholder insight on possible solutions.

From June to August 2021, we conducted over 30 individual interviews with individuals and associations who have knowledge about the issue. These included fuels industry representatives, municipalities, environmental organizations, remediation professionals and environmental insurers (see Appendix for the interview questions and participant list).

We asked open-ended questions and sought to understand what interventions might be possible throughout the lifecycle of a fuel site to address the situation the Auditor General identified. We also shared a draft version of this findings report with all of the stakeholders to provide them an opportunity to validate the findings.

Industry trends we heard about:

- Large oil companies are increasingly selling their retail gas stations to focus on other aspects of the fuels industry (though some have specialized in retail).
- Stakeholders also pointed to an ongoing transition to low- or no-carbon energy sources (e.g. hydrogen, electric), which may lead to additional pressure on low-volume stations and/or fewer gas stations in future.
- There have been improvements in recent years to fuel equipment and leak detection systems, which stakeholders indicated may lead to less contamination in the future if managed properly.

Stakeholder input will be considered by MECP, MGCS and TSSA in our work on abandoned fuel sites.

INTERVIEW FINDINGS

All stakeholders responded to the same set of questions. A summary of stakeholder responses to our four key questions are below. Some other notes about the interviews:

- The issue is clearly multi-faceted and some solutions suggested by interviewees would likely involve other ministries and/or levels of government.
- We did not hear that abandoned marinas are a widespread problem. We heard that marinas are less likely to be abandoned because: they typically have aboveground tanks so it's easier for operators to discover leaks earlier, before there is significant contamination; and because marina sites are typically on desirable real estate, near water, developers are more willing to absorb costs associated with decommissioning and/or clean-up if needed. However, one stakeholder noted that if a marina is abandoned, it could be problematic from a pollution standpoint. In their experience, the tanks tend to be older, handled by unspecialized labourers and likely to be in pristine locations and very close to water, which could mean any contamination could be much more complex and costly to clean up (as opposed to a contamination situation where water bodies are not affected).

A note on the definition of an "abandoned site":

As noted earlier, an abandoned site is one that is inactive (i.e., contains fuel handling equipment but fuel dispensing activities have ceased), has not been properly decommissioned after two years and for which there is no reasonable prospect of a responsible party decommissioning the site, even after follow-up by TSSA.

Some of the information provided to us by stakeholders may not relate to an abandoned site, as we've defined it. Multiple stakeholders we spoke to indicated that, in the course of their work, they are not privy to site ownership information and decommissioning history, so they could not be sure of the status of sites they had experience with and spoke to us about.

For example, sites may be owned and could even be compliant with existing MECP and TSSA requirements (i.e., equipment removed, contamination is contained so it is not travelling off-site) but still appear to stakeholders to be abandoned in that they are vacant, possibly have on-site contamination, and have not been redeveloped into another use.

1) What are your primary concerns with abandoned fuel sites?
We heard about several different concerns interviewees have, namely:

A note on amount of fuel remaining in an abandoned tank:

Many stakeholders indicated that they wouldn't expect significant amounts of fuel (either fuel product or waste/sludge) to be left in an abandoned tank as, at least in the case of fuel product, it could be sold. However, others estimated there could be several inches of fuel left even if the pipes were run out (i.e., run until no more fuel came out), as a vacuum truck would be needed to fully empty a tank. Some noted the amount of fuel left would depend on how a site was abandoned and would vary between sites.

- **Environment and human health:** The primary concern was the impacts that off-site contamination from abandoned fuel sites can have to the environment and to human health. Contamination leaking off-site can contaminate nearby surface water or groundwater and impact drinking water quality. It is unknown how many abandoned fuel sites may pose a risk of off-site contamination. Risk factors that can allow contamination to spread or that can result in the contamination causing significant adverse effects for people or the environment include: the type of soil at the site, proximity to sensitive receptors (e.g., residential properties, schools) and drinking water sources, time, the type of equipment (including age and construction of fuel tanks) and the amount of fuel remaining.

- **Other safety risks:** There were concerns with other safety risks the sites could pose. These included the risk of an explosion or fire and the risks posed by possible collapse of old, corroded steel tanks (e.g. sinkholes).
- **Socioeconomic concerns:** There were also socioeconomic concerns specific to abandoned fuel sites, especially when the building remains in place, as gas stations are often located on prominent street corners in a community. We heard that this may have negative effects on the streetscape and potentially the values of surrounding properties. Additionally, one stakeholder observed that, in their experience, environmental considerations, including those arising from abandoned fuel sites/fuel tanks, are increasingly being factored into real estate negotiations (e.g., whether contamination existed on a site, whether it crossed property boundaries, whether the source has been identified and eliminated, etc.).

Several stakeholder groups had more specific concerns about the impact of abandoned fuel sites on their business or work, namely:

- Insurers told us that their profitability is affected when there are third-party impacts on one of their insured parties' properties due to contamination from an abandoned fuel site that has gone off-site; in these cases, they cover the clean-up but are then unable to recoup their costs by pursuing a claim against the original polluter. This can in turn raise premiums for insured parties.

- Municipalities had multiple concerns about spreading of contamination from an abandoned fuel site onto a municipal property[2]; specifically, they were concerned about:

[2] An insurance stakeholder noted that municipalities are taking an increasingly active role with regards to protecting themselves from negative environmental and other consequences associated with contamination, for example in some cases mandating environmental insurance conditions on remediation or redevelopment projects to ensure compliance; in some cases they are also requesting to be named on the insurance as additional insured. One of the municipal stakeholders we spoke to noted that, while in their existing practice they generally have not required being named on the insurance, a notice of the brownfield agreement is registered on the land title and they do request being named on the insurance when a lien is in place.

A note about redevelopment:

Former fuel sites are not required to be redeveloped into another use. However, redevelopment of abandoned fuel sites can allow the sites to be decommissioned properly, if the redevelopment is to a more sensitive use (i.e., fuel site to residential).

  - the possibility of being held liable for cleaning up contamination from fuel sites where the contamination has travelled through municipal property onto another property, if the owner of the property from which the pollution originated is not able to be held responsible.
  - lack of information they receive about the status of former fuel sites, including whether the site is actually abandoned or whether it as an active owner, as well as (if known) the extent to which it's been remediated. This information would be valuable in addressing the concern raised above about municipal liability and could allow municipalities to determine a site's eligibility for existing municipal programs. Municipalities also indicated that this information would also be helpful to them when working with prospective developers for the site.
  - loss of tax income for a site when it is no longer operating but hasn't been redeveloped to a productive use.
  - the negative effects abandoned fuel sites can have on neighbourhood economic development, including making prospective developers of a neighbouring site hesitant.

- Large fuel companies also indicated their concern that abandoned fuel sites can hurt the reputation of the whole industry, including those who decommission and deal with their environmental liabilities responsibly. They noted their view that the large majority of fuel suppliers/sellers in Ontario are environmentally responsible operators who follow the Liquid Fuels Handling Code and other applicable laws and regulations. They also told us that they believe that any proposed measures to fund and deal with abandoned sites in Ontario should not unfairly penalize or financially burden responsible operators of fuel supply services in Ontario.

2) What do you think are the main causes for fuel sites to be abandoned without being properly decommissioned and cleaned up?

When asked why they thought fuel sites were abandoned without being properly decommissioned, interviewees agreed that the reasons were financial (i.e., people abandoning a site do not have the financial means to properly decommission it). They spoke about costs associated with required decommissioning (e.g. equipment removal, etc.) and contamination management (i.e., to ensure contamination does not migrate

off-site), as well as full remediation (i.e., clean-up), which may be required in certain circumstances by MECP.

Decommissioning a site vs. site remediation:

A site is required to be properly decommissioned once it is no longer operating, according to the Liquid Fuels Handling Code. The requirements for decommissioning are outlined in the box on p. 2 and are enforced by TSSA.

MECP enforces remediation (i.e., clean-up) requirements and will require work to be done on a site if there are (or is potential for) adverse off-site impacts.

However, there were a number of different paths that interviewees thought led to owners not having adequate financial resources for decommissioning and/or managing contamination:

- **Marginal businesses:** Interviewees told us that sites most at risk of abandonment are usually "mom and pop shops" (i.e., owned by an operator that does not own any other sites) that are low-volume fuel sites. Unlike owners or operators of multiple fuel sites, owners or operators of these sites are unable to subsidize a poorly-performing gas station with income from others. "Mom and pop shops" may represent approximately 10-15% of the Ontario retail gasoline market, according to one stakeholder estimate. Additionally, the sale of gasoline itself is not lucrative and many profitable gas stations make most of their profits from convenience or food offerings (e.g. partnerships with a coffee chain on-site). These ancillary revenues may not be available to smaller and/or rural sites, due to lower and/or seasonal demand; additionally, these sites may directly lose business to large "mega stations." They may also lose profitability if there are changes around them that affect the volume of fuel they can sell (e.g. rerouting of a major road). All of this can result in a lack of capital. When operations cease, there are not enough financial resources available to do the required decommissioning.
- **Expensive contamination clean-up costs:** While there may be other options for contamination management besides remediation (see "Options for decommissioning" bullet below), interviewees told us that expensive contamination clean-up costs can leave owners/operators unable to afford to clean up their site once it is no longer in operation. Several said that clean-up costs in Canada are significantly higher than in the United States, particularly dump tipping fees, which may represent a large portion of the overall clean-up cost. Additionally, stakeholders told us that, while equipment removal costs are generally predictable (although they can go up if the equipment is under a structure), the "wild card" or variable cost may be for remediation. They identified several factors that can contribute to contamination at these sites and which, in turn, can make clean-up costs more expensive:

  - **Old equipment:** While underground tanks installed today must be double-walled and have leak detection systems in place, sites with pre-existing single-walled tanks that have been operating continuously are allowed. Interviewees told us that single-walled tanks are more susceptible to leaks. Tanks still in operation are required to have in-service testing and monitoring as well as certain safeguards (e.g. cathodic protection, a technique used to control corrosion). Some stakeholders noted that going forward, in their opinion, newly-built gas stations are unlikely to end up as contaminated abandoned sites, due to stricter current requirements around equipment and monitoring, as well as the significant start-up cost of a gas station (by one stakeholder estimate, close to $2 million for equipment and installation, paving, landscaping, engineering services, development fees, etc. and approximately $1 million for convenience store-related costs, for sites with stores).
  - **Historical contamination:** There may have been existing contamination on the site before the previous owner/operator was there, that may only be discovered when the site is being shut down. Many gas stations have changes in ownership numerous times throughout the time the gas station is operational. Pre-existing contamination can make it difficult for the owner/operator even to get a loan if they don't have enough financial resources available to remediate the site otherwise.

- **Lack of economic drivers:** Interviewees also indicated that a common reason not to properly decommission a site or clean it up is the lack of an economic driver and that for many of these sites the cost to clean them up is more than the value of the site itself. Sites in areas with high property values are more likely to be cleaned up, even if clean-up is done by a subsequent owner (e.g. a developer). However, municipalities told us that even in "hot" real estate markets, inherent characteristics of former fuel sites can make them less desirable for development. For example, gas stations are often at intersections and tend to be smaller sites with access issues that make them unfriendly to (especially residential) development[3]. The needed density to make the development worthwhile may not be available due to zoning or traffic problems.
- **Lack of understanding:** Multiple interviewees pointed to a lack of understanding on the part of the owner or operator as a possible contributor to abandonment. This included lack of understanding of both the costs to operate a fuel business as well as of the range of options available to operate or decommission the site.
  - **Costs:** We heard that the business of operating a retail gas station has a lot of hidden costs, both ongoing costs and significant capital costs, that may not be apparent to new owners/operators. Owners may also be unaware of the liabilities they are taking on and their environmental

[3] However, relatively small sizes mean the sites may be able to accommodate a small business, such as a bank, restaurant or pharmacy, as noted in a report by the US Environmental Protection Agency (p. 5): Petroleum Brownfields: Selecting A Reuse Option (epa.gov) The small lots could also be a lot addition for the neighbouring business, for an addition or parking area, according to a municipal stakeholder.

obligations. A site that is not being managed properly may become contaminated and require higher costs to deal with that contamination once it closes.

- **Options for decommissioning:** Some interviewees said that owners or operators may abandon a site when they're quoted a high clean-up cost, but that contamination management could in some cases have been done differently for a lower cost (e.g. installation of a barrier to prevent contamination from spreading, as opposed to full soil remediation).

3) Do you have any suggestions on how to improve this situation in Ontario?

We asked interviewees for their suggestions on how to improve the abandoned fuel site situation in Ontario. We heard a wide variety of ideas to tackle different aspects of this problem, and Figure 1 (below) organizes the suggestions by the different challenges or factors within the existing system that interviewees identified as leading to, or worsening, contamination from abandoned fuel sites.

As both the Auditor General and stakeholders identified contaminated abandoned sites as a problem, potential solutions include those that would either prevent abandonment, prevent or mitigate contamination or a combination of the above. Therefore, some of the potential solutions listed here apply to sites that have already been abandoned, while others apply to sites that are currently operating or to sites that will be built in the future.

It should be noted that some of the suggestions may fall outside the authority of MECP, MGCS and/or TSSA to implement and would require the involvement of other ministries or levels of government.

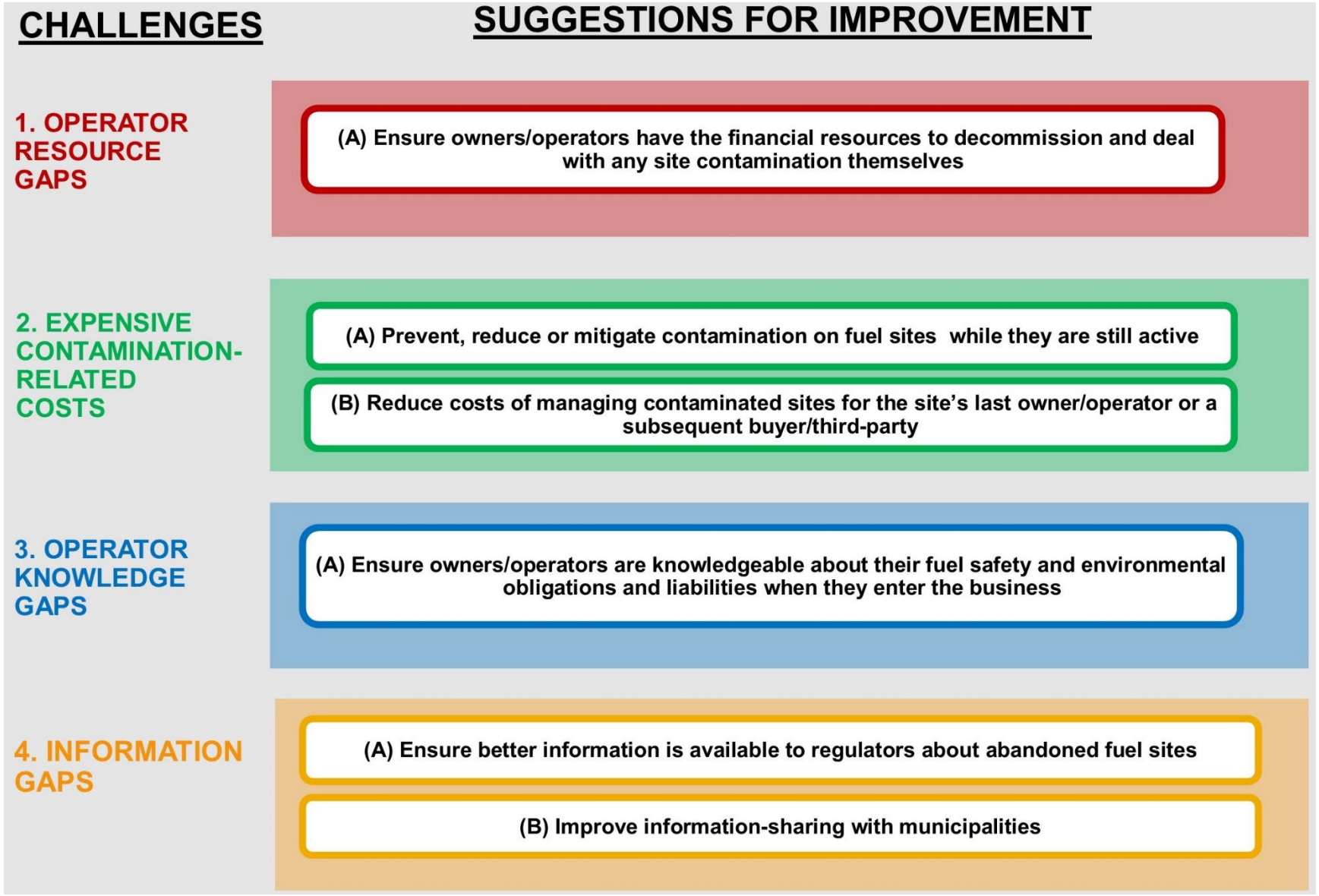

Figure 1. Existing challenges and suggestions for improvement identified by interviewees.

Specific ideas from stakeholders on each of the suggestions can be found below.

- **1. A) To ensure owners/operators have the financial resources to decommission and deal with any site contamination themselves, consider introducing:**
    - A financial assurance requirement, which MECP currently has for some other sectors in Ontario (e.g. waste disposal)[4]. This could involve some proof of having the financial means to eventually decommission the site, before a business begins operating. One stakeholder mentioned that financial assurance would not work equally for all owners/operators – in particular, it might work well for larger retail owners/operators, but having to set aside a large amount of money could be difficult or impossible for smaller owners/operators. For example, we heard that in Northern Ontario, small gas stations exist more to provide a service, where availability of gas is limited, than to generate revenue. There was some concern that if the threshold for financial assurance was set too high, it could be a deterrent or an impediment to investment in much-needed infrastructure in rural and remote areas in Northern Ontario. Additionally, we heard that for any financial assurance requirement, government should consider how it would calculate the potential cost of remediation to set financial assurance amounts (e.g., soil volume, soil type, etc.). We also heard that a key component of any assurance requirement should be to provide incentive to the owner/operator to operate responsibly (e.g., routinely checking tank conditions, soil and groundwater), by providing some of the money back to them, either annually or at decommissioning time.

Financial assurance:
Financial assurance is required by MECP in some other sectors (e.g. waste disposal). Financial assurance is financial security (cash and non-cash) to guarantee a proponent can cover the cost of complying with environmental objectives. Amounts are calculated by the proponent according to guidelines and are reviewed by MECP. It can be provided in several different ways: cash; certified cheque, bank draft or money order; or irrevocable letter of credit; or surety bond. Financial assurance is held onto by MECP as long as there's a potential need for it in the future.

[4] Financial assurance for environmental protection | Ontario.ca

- A requirement for owners/operators to put aside a certain amount of funds while they are operating, based on their throughput of fuel (i.e., a certain amount per L of fuel sold).
- A requirement for oil companies to set aside a certain amount when they set up a new site, as part of the approval process.
- An environmental insurance requirement. Interviewees told us that many suppliers as well as owners/operators of well-managed sites have environmental pollution insurance already and that suppliers may require proof of insurance from a site owner before they will install tanks. We heard that Canadian lenders are increasingly asking for environmental insurance before loans are approved. One insurance industry stakeholder suggested higher insurance limits be considered as well as a mandate to carry more comprehensive, full-site coverage (versus tank-only coverage) than is typically carried, even by those who currently have environmental insurance, as contamination risks would be better managed. We also heard that insurance may be expensive to purchase and that insurers may be hesitant to underwrite gas stations, especially those with old equipment. Premiums for full-site insurance are also much more expensive than tank coverage. Additionally, coverage can vary but typically will not cover pre-existing conditions. One stakeholder suggested monthly insurance premiums should aggregate into a fund across Canada. We also heard that there could be some consideration given to insurance-related subsidies or funding.

- **2. A) To prevent, reduce or mitigate contamination on fuel sites while they are still active, consider:**
  - Encouraging municipalities to use existing planning tools (zoning) to influence where a site gets situated as this can influence how difficult it will be to manage the site.
  - Requiring phased-in replacement of single-walled steel tanks at active sites, based on age. We heard that those with insurance may already be doing this proactively, due to insurer liability concerns.[5] In particular, an insurance industry stakeholder told us that, from a risk perspective, insurers prefer to see tanks that are under twenty years old, preferably double-walled fibreglass and with some sort of containment and controls in place, as these tanks will tend to pose fewer concerns than older tanks with less sophisticated monitoring. One interviewee suggested monitoring

[5] Additionally, the Liquid Fuels Handling Code requires that when an underground steel storage tank leaks, the owner or operator must immediately remove all product and take the tank out of service. Within 12 months of the discovery of the leak, the owner or operator must remove all single-wall tanks from the site's tank nest.

whether applicable federal funding will be available in the future to help with equipment upgrades related to federal clean fuel initiatives.

- Capping tank age at around twenty years, to lower the risk of leaking tanks.
- Requiring best practice monitoring (e.g., mandatory network of leak detection for underground storage tanks and dispensers and routinely checking groundwater monitors).[6] We heard that monitoring should be risk-based, according to factors such as water table, soil type and placement of the number of monitoring wells scaled to the size of the operation; owners/operators could be evaluated and rewarded regularly for engaging in preventative measures, for example via a tax break. We also heard that there could be a standardized minimum of observation points (e.g., a minimum number of wells downgradient per underground tank nest, or a number of leak tests per year, or required analysis of fuel received versus sold to detect losses early).[7]
- Amending regulatory requirements under the Environmental Protection Act to require clean-up of former fuel sites. One municipal stakeholder mentioned that they thought the current regulatory requirements for ensuring contamination is contained and not migrating off-site, and restrictions on the polluter selling the property, should be more stringent. For example, they believed additional enforcement mechanisms and authorities (e.g., taxation, penalties) should be granted to governing bodies such as MECP. They felt it should be mandatory that the site be remediated (if needed) and placed for sale, rather than being allowed to sit vacant. In their view, this would ensure that companies with former (but not abandoned) fuel sites would not be able to hold them indefinitely, without remediating or selling them; this situation currently means municipalities don't receive as much property tax revenue as they potentially could from these sites.

- **2. B) To reduce costs of managing contaminated sites for the site's last owner/operator or a subsequent buyer/third-party, consider:**
  - Requiring all fuel product and sludge to be removed from tanks immediately after the fuel facility closes, or shortening the timeframe for

[6] Note mandatory leak detection for underground storage tanks is already a requirement under the Liquid Fuels Handling Code. Double-walled tanks require commissioning tests – precision leak detection or secondary containment testing – and all tanks require in-service testing, both continuous and periodic. When a leak is suspected, a precision leak detection test is required (or a secondary containment test in the case of a double-walled tank). See Liquid Fuels Handling Code 2017 Table 3.

[7] Note periodic leak tests are currently required for every two or five years and monthly inventory reconciliation is already required in Ontario for single-walled tanks. Periodic leak tests are not required for single-walled tanks and double-walled tanks that have in-service monitoring via electronic in-tank leak detection and secondary containment monitoring respectively. See Liquid Fuels Handling Code 2017 Table 3.

removal from the current six months (see box on p. 2 for current requirements). We heard that this could enable the operator to discover a gradual leak faster and/or to prevent such a leak from occurring during the first six months after closure.

- Requiring fuel tanks to be removed sooner from an inactive site. Currently, all fuel handling equipment must be removed within one to two years of the site closing, depending on the equipment type (see box on p. 2).
- Establishing a targeted funding program to help with the development of "upside-down" sites (where the cost to remediate is more than the value of the site).
- Providing government grants, subsidies, or loans. There was some interest in using funds from fines, similar to the Impact Sites fund in Saskatchewan. There was agreement that any such funding should be used as a last resort. A loan could be paid back when the person sells the property. Interviewees also told us that if public money is used to clean up sites, there should be a benefit back to the public, either from the sale of the site or from a public use of the site (e.g. a park). Some stakeholders were not in favour of any public money going to what they felt were irresponsible owners/operators. There was also concern that a funding precedent that may create incentives for owners/operators to assume more environmental risk knowing a government program will backstop their responsibilities. Others felt that, while business owners should be held responsible, if they are genuinely unable to afford the costs associated with site clean-up and would otherwise walk away from the site, a fund that could assist with some of the costs could be in the public interest (i.e., environmental protection).
- Offering some sort of incentive to stakeholders who voluntarily clean up historical contamination.
- Incentivizing use of sites for less sensitive land uses (e.g., another commercial operation), meaning they would not have to be fully cleaned up and therefore keep clean-up costs lower.
- Providing funding for innovative or emerging technologies to be tested at the site (e.g., remediation-related innovations such as new microbe regimes or new remedial equipment). One way to do this could be partnering with technology providers or schools in need of testing their new applications.
- Encouraging the adoption of sites for another use until it is economically or technologically more feasible to clean it up (e.g., use as a rental property for a business or as a small solar power-generating site).
- Establishing a fund that could be drawn on to deal with contaminated abandoned fuel sites, either industry-funded or government-funded. Suggestions for sources of income for such a fund included: a percentage of fees from a new tank registration charge, a share of gas prices or an

annual fee paid by site owners. Some stakeholders believe that industry should not receive any funds to decontaminate their sites as that is a cost of doing business that responsible marketers provision for from their operations and pay for themselves. One stakeholder suggested that some of the province's income from the carbon tax could be put towards government funding for abandoned fuel sites, however that would require a change to the current system where the federal government delivers all proceeds from Ontario to individuals, families, and businesses rather than directly to the province[8]. Other stakeholders were concerned about this suggestion in principle, because in their view it does not align with the mission-related mandate of the tax.

- Finding a way to mitigate the variable, "wild card" aspect of contamination remediation costs, if that is the contamination management option being pursued. For example, limit the amount of clean-up an individual pays, find funding to do assessments before the site is purchased so it can be sold to a developer with known contamination costs or even at a fixed cost, or try to reduce the costs of soil disposal. One remediation professional suggested that clean-up costs are so unpredictable that reducing the costs could be the target of an industry fund or insurance fund aggregate strategy that acts like disaster insurance. A municipal stakeholder noted that an existing tool available to municipalities – brownfield community improvement plans (CIPs) – can help with finding a way to mitigate the costs, but also noted that assessments of costs before remediation begins are not always accurate.
- Consider ways to make owners/operators aware of other options for managing contamination, including low-cost options (e.g. contamination barriers) that may be available to them. Contamination barriers/liners are applicable only to sites that have not been abandoned, as they could be installed to meet Environmental Protection Act requirements to ensure there are no off-site impacts where the site owner is engaged in active contamination management including monitoring over time and bearing the cost of disposal of contaminated material beyond the liner.

- **3. A) To ensure owners/operators are knowledgeable about their fuel safety and environmental obligations and liabilities when they enter the business, consider:**
  - Providing mandatory training to operators.
  - Providing outreach to owners/operators with simplified information to break down the decommissioning process for those with sites that may become inactive. One stakeholder recommended that sector organization be considered as a vehicle to conduct outreach, as many of these organizations have regular communication newsletters, information-rich

[8] Carbon pollution pricing systems across Canada - Canada.ca

websites and annual conferences and/or meetings that could be helpful to reach specific sectors.

- **4. A) To ensure better information is available to regulators about abandoned fuel sites, consider:**
    - Ways to better promote existing channels for the public to share information with regulators. For example, we heard that people may not be aware that they can reach out to their local MECP district office directly with information about potential contamination or even suspected abandoned facilities, or to MECP's Spills Action Centre.
    - Ensuring that TSSA's and MECP's records of all abandoned fuel site locations and their current owners are consistent, that information is transferred in a timely manner and that there is active oversight.[9]
    - Establishing some sort of fund that government could use to conduct drilling and environmental assessments on sites, to determine the extent of contamination where the owner or operator did not.
    - Whether changes involving other ministries (i.e., besides MECP and MGCS) may be helpful to improve information gaps about abandoned fuel sites.
- **4. B) To improve information-sharing with municipalities, consider:**
    - Further discussing, with relevant municipalities, the idea of municipalities sharing information (e.g. tax records) to help fill in gaps in knowledge about sites for MECP and/or TSSA. This could allow better enforcement of current requirements. Some stakeholders also suggested this information could be shared with the public, which could increase community pressure to remediate sites, particularly in areas where there is not significant economic pressure. One interviewee suggested attaching registered tank information to land titles to provide needed site history to future owners.
    - Requiring that municipalities be notified about the potential for off-site contamination. Municipalities told us that while this is sometimes done in practice, they would like to see it required by law (e.g. in a future version of the Environmental Protection Act).
    - Other notifications that could be sent to municipalities, such as: that a license to operate a liquid fuel retail outlet has expired (TSSA) or that a relevant order has been issued to a site owner (MECP and TSSA)[10]. This would allow municipalities to monitor the site for any indication of on-site or off-site impacts, any applications for future redevelopment of the site or,

[9] This work has been done as part of another recommended action by the Auditor General, for TSSA and MECP to update their memorandum of understanding and work together to develop and implement a centralized database inventory of all abandoned fuel sites and a risk prioritization model to identify high-risk sites. That action was found to be fully implemented in the Auditor General's 2020 follow-up report.
[10] TSSA currently sends a letter to the local municipality and MECP when TSSA has deemed a site to be abandoned.

if the site remains vacant for an extended period, to consider reaching out to the owner to determine if they might be eligible for municipal programs to assist in remediation and redevelopment. Sharing of information could help prevent adverse community impacts in cases where the community's inability to access information about a site's operational status creates a barrier for managing the site appropriately.

4) Are you aware of any industry best practices or common practices in other jurisdictions on this issue?

We asked stakeholders if they were aware of best practices in other jurisdictions or sectors. Many interviewees were unable to name any other jurisdictions they thought engaged in "best practices" related to the prevention or management of abandoned fuel sites.

Some initiatives that were shared by stakeholders included upfront third-party liability insurance requirements (New Brunswick), financial assurance (the United States) and environmental licensing (South Australia). We also heard about various municipal programs in Canada which encourage the redevelopment of sites (e.g. the Federation of Canadian Municipalities Green Municipal Fund; and programs by the cities of Edmonton, Brantford, Cornwall, Hamilton and others).

Some jurisdictions have funds for the clean-up of sites. The United States Environmental Protection Agency also has a Leaking Underground Storage Tank (LUST) fund, financed by a 0.1 cent tax on each gallon of motor fuel sold nationwide, with funds provided directly to states for activities including abandoned site clean-up. Several American states have financial assurance funds[11] of their own to assist site owners/operators in complying with federal financial responsibility regulations. Saskatchewan has an Impacted Sites fund, funded by fines collected by the Ministry of Environment for infractions under The Environmental Management and Protection Act, 2010; municipalities can apply for funding to clean up abandoned, environmentally impacted sites, including but not limited to abandoned gas stations.

Finally, several stakeholders mentioned the oil and gas industry in western Canada as an example of a best practice in another sector – both Alberta and British Columbia have funds for the clean-up of abandoned oil wells. Both are funded by industry through an annual levy, although Alberta's fund recently received loans from the provincial and

[11] These take different forms. For example, Montana allows proponents to demonstrate financial responsibility by means of a financial test (for firms with a tangible net worth of at least $10 million), a corporate guarantee from another eligible firm, insurance coverage, surety bond, letter of credit, trust fund, etc. The proponent can also use the state Petroleum Tank Release Clean-up Fund to satisfy part of the requirement for financial assurance and must prove compliance with all necessary prerequisites for the fund.

federal governments. Neither province has a similar fund for abandoned gas stations; in Alberta, some municipalities have by-laws that allow them to recoup any costs they spend on remediation (e.g. in response to a complaint) of nuisance properties (including abandoned fuel sites). This can be done by placing a lien on the property that allows the municipality to recoup the funds when the property is sold. In British Columbia, the government can undertake remediation of "high-risk orphan sites" as part of its contaminated sites program, and can recoup costs as set out in the Environmental Management Act (e.g. from any responsible person, by action in the B.C. Supreme Court; by the Minister registering a lien on the property, etc.).

APPENDIX

INTERVIEW QUESTIONS

These are the questions we asked interviewees:

1) Please describe your business/work (e.g. membership of your association, type of business you own).

2) Are you aware of the abandoned fuel site issue?

- If yes, what do you know about it and/or how does it affect you or your organization? Do you have any direct experience dealing with an abandoned fuel site and/or the impacts associated with it (e.g. financial, environmental)?
- If no, do you have any questions for us to aid your understanding?

3) What are your primary concerns about abandoned fuel sites?

4) What do you think are the main causes for fuel sites to be abandoned without being properly decommissioned and cleaned up?

5) Are you aware of any industry best practices or common practices in other jurisdictions on this issue?

6) Do you have any suggestions on how to improve this situation in Ontario? If so, how burdensome are they? How would they affect you or your organization?

DEFINITIONS

Active fuel site has a current license with TSSA and is operational (e.g. dispensing fuel).

Inactive fuel site has an expired license and is no longer operating. Under the Liquid Fuels Handling Code, sites must be properly decommissioned after two years of inactivity.

Properly decommissioned site has been decommissioned according to the requirements of the Liquid Fuels Handling Code and is no longer a fuel site.

Abandoned fuel site is one that is inactive but has not been properly decommissioned after two years and for which there is no reasonable prospect of a responsible party decommissioning the site.

REGULATORY BACKGROUND INFORMATION

ROLES

MECP, MGCS and TSSA all have different roles with respect to abandoned fuel sites.

MECP – environmental protection

MECP has jurisdiction over addressing environmental matters generally and has primary jurisdiction regarding migration of petroleum hydrocarbon contamination from a fuel handling site that is or may be causing an adverse environmental effect.

MECP also has the ability to undertake compliance and enforcement activities at fuel handling sites under its legislation, including the Environmental Protection Act, the Ontario Water Resources Act, the Clean Water Act and the Safe Drinking Water Act, 2002.

MGCS – oversight of TSSA

MGCS has an oversight role over TSSA and the Minister of MGCS retains overall accountability and responsibility for TSSA's fulfillment of its mandate and for the Technical Standards and Safety Act, 2000 and its accompanying regulations.

TSSA – fuel sites and equipment

TSSA has primary jurisdiction over fuel handling equipment and activities at fuel handling sites, including dealing with petroleum hydrocarbon contamination resulting

from a spill or leak or discovery of a release from fuel handling equipment at fuel handling sites, except where MECP has jurisdiction.

When a TSSA inspector discovers a site is no longer active and/or dismantled, the inspector issues orders to remove product and subsequently remove tanks, piping and dispensers and delineate the extent of any petroleum hydrocarbon contamination, to the last known owner/operator, as applicable. TSSA then conducts follow-up inspections to ensure regulatory compliance is achieved. When TSSA has exhausted all options at its disposal, including follow-up inspections and other enforcement activities, and is unable to compel compliance, TSSA categorizes the site as being abandoned and transfers regulatory responsibility to MECP.

LIST OF PARTICIPANTS

Organization or Sector	Contact Name(s) and Role(s)
Associations	
BoatingOntario	Jeff Wilcox, Advisor
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Canadian Environmental Law Association	Ramani Nadarajah, Counsel
Canadian Fuels Association	Marc Gagnon, Director, Government & Stakeholder Relations (now retired) Lisa Hanke, Director, Government & Stakeholder Relations Rob Hoffman, Director, Government and Stakeholder Relations (Ontario)
Canadian Energy Marketers Association (formerly Canadian Independent Petroleum Marketers Association)	Jennifer Stewart, President and CEO
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TSSA Liquid Fuels Advisory Council	Brent Francis, Chair
TSSA Propane Advisory Council	Dave Karn, Chair
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Retailer	Terry Keogh, Pioneer Energy/Parkland
Subject matter expert – equipment	Tiina McCombie, Market Director, Petroleum, National Energy Equipment Inc.

RESOURCES

- Auditor General's report
- Technical Standards and Safety Act, 2000
- O. Reg. 217/01 Liquid Fuels
- TSSA Environmental Management Protocol for Fuel Handling Sites in Ontario
- Environmental Protection Act
- Ontario Water Resources Act
- Clean Water Act
- Safe Drinking Water Act