

# MONTANA DEQ - PTRCB 2020 BIENNIAL REPORT



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## 2019-2020

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## Trends in Fund Revenue and Expenditure Activities

### Revenue

A fitted line indicates that revenue from fuels sold in the state increased by approximately \$70,000 each year over the last 26 years; 1995-2020. This average increase, estimated from a linear regression of the fuel revenues from 1995 through 2020, is down by \$2,000/year from the last biennium's estimate of \$72,000, and the coefficient of determination remains at nearly 90%.

The fuel revenue comes from fees levied on gasoline, diesel, and aviation fuels, each of which exhibits a different trend. The data indicates that when comparing the three fuels, diesel fuel revenue still has the steepest incline over the period 1995 through 2020. This incline is evident in the least-squares analysis used to calculate a straight line that best fits the revenue data for the twenty-six-year period, for each of the fuel categories. The slopes of the lines predicted from a linear regression are \$19,460; \$47,369; and \$2,568 per year for gasoline, diesel, and aviation fuels, respectively. The slope provides an estimate of the annual increase in revenue for each category. Even though the slopes of the three trend lines are all positive, gasoline and aviation fuel revenues do not exhibit as significant a trend as diesel fuel. The addition of the numbers from the recent biennium to the linear regression line, resulted in an increase in the slope for gas and aviation fuel with a decrease in slope for diesel fuel.

The linear trends for fuel revenues indicate that the Petroleum Tank Release Cleanup Fund (Fund) could expect combined fuel revenues to increase by approximately \$70,000 each year, with diesel contributing \$48,000 to the expected annual revenue increase, gasoline accounting for \$19,500, and aviation fuel accounting for nearly \$2,500. The revenue estimate predicts that fuel use will increase by about 1% per year. Although this indicates an increase in revenue, it probably is not significant enough to consider in a future estimate.

The slope of the linear regression line appears to still be the best predictor of future revenues. The slope of a Least-squares regression would predict revenues at \$7.4, \$7.4, \$7.5, and \$7.6 million for 2021, 2022, 2023, and 2024 respectively. If revenues for the four years were predicted to remain nearly the same as they have for this biennium, the revenue predictions for 2021 through 2024 would be \$7.5 million annually. The difference in the two prediction methods for the coming biennium averages less than 1%.

The U.S. Energy Information Administration's Annual Energy Outlook provides projections of domestic energy markets through 2050 and includes transportation energy consumption. Their predictions indicate that transportation energy consumption will peak in 2020, because rising fuel efficiency outweighs increases in total travel and freight movements throughout the projection period. The trend is expected to reverse toward the end of the projection period because continued growth of on-road travel will outpace fuel economy improvements that result from regulatory requirements. Fuel efficiency regulations require no additional efficiency increases for new light-duty vehicles after 2025 and new heavy-duty vehicles after 2027. There is a projected 22% increase in light-duty vehicles use, from 2019 through 2050 due to rising incomes and growing population. Increased fuel efficiency standards slow the growth of heavy-duty vehicle energy consumption and related diesel use, although the overall energy consumption for heavy-duty vehicles is projected to increase 4% through 2050 from rising economic activity that increase demand for freight truck travel. Jet fuel consumption is projected to increase through the end of the projection period by 31% because increases in air transportation will outpace increases in aircraft fuel efficiency. Motor gasoline and distillate fuel oil's combined share of total transportation energy consumption is projected to decrease from 84% in 2019 to 74% in 2050. Using all this information, revenues for the next several years would be predicted to remain nearly the same as they have for this biennium.

## Expenditures

The administrative expenses incurred by the Fund consist of expenses by the Petroleum Tank Release Compensation Board (Board) for fund administration and expenses by the Department of Environmental Quality (Department) for regulatory activities. The slope of a linear regression analysis of the total combined expenses for both the Board and the Department from 1995 to 2020 indicates that the slope of the trend for total expenses has increased by 28%, which is up from the trend seen in the 2018 Biennial Report. The expenses associated with personnel continues an increasing trend of 3.92% per year.

A linear regression equation for the combined total expenses for fiscal years 1995 through 2020 estimates that the total costs will increase approximately \$8,300 per year. This indicates that the total program expenditures for FY2021 and FY2022 can be estimated at approximately \$2.7 million.

## Claim Expenditures

The annual claim expenditures for FY1995 through FY2020 reflect a decreasing trend. In FY1997, a \$2 million litigation settlement was paid as a claim. This has impacted the data by showing a great range of variation in claim expenditure from FY1995 through FY2020 from about \$3 million to \$8 million. The claim expenditure data was analyzed using regression techniques on FY1995 through FY 2020. Performing a least-squares linear regression analysis to calculate a straight line that best fits the claim expenditure data for FY1995 through FY2020, yields a decreasing regression line with a \$54,000 per year rate of decline. The regression estimates over the years continue to be erratic. Regression analysis for this data exhibits a low coefficient of determination, 0.1044, and is therefore not likely the most reliable predictor of future claim expenditures.

## Future Claim Projections

Using the average of claim expenditures for the past 26 years would project the expenditures for the next few years to be at approximately \$5 million. The average annual claim expenditure is probably the best available predictor to provide an estimate for future claim expenditure projections. This analysis focused on the data and did not take into consideration any impacts from potential influential outside actions, such as regulatory changes, or any long-term strategic plans. The biennial report for 2018 projected claim expenditures to be at approximately \$5 million based on the average calculated from the prior 24 years. The average claim expenditures for FY2019 through FY2020 was \$4.82 million. The claim expenditures are predominantly a function of available revenue, site condition factors and costs of goods and services, and therefore, the best predictor would be an average of the more recent years. Using the average of claim expenditures for the past 10 years would project the expenditures for the next few years to be at approximately \$4.5 million.

## Legislative Transfers and Allocations

Projecting expenditures becomes problematic due to transfers and allocations made by the Legislature to other budget areas. The combination of leveraging funding sources, transfers from the Fund, and allocations from the Fund to other programs, complicates the expected expenditures.

Due to lower than anticipated revenues and an expensive fire season the Governor called the Sixty-Fifth Montana Legislature into a special session in November of 2017 to balance the budget and the Legislature enacted House Bill 6, resulting in a transfer of \$1 million from the Fund. During the Sixty-Sixth Montana Session the Legislature amended House Bill 2 to allow a one-time-only restricted allocation of \$500,000 per fiscal year from the Fund. The legislature approved a \$1.0 million appropriation of state special revenue

from the Fund to the Waste Management & Remediation Division for tank cleanup. The allocation began in FY20 and to date, \$500,000 has been obligated by the Department, but has not been spent. The obligation of this funding does affect the FY20 expenditures, however it will be accrued in the Fund's budget. The additional allocation of money to the Department for FY21, for \$500,000, will likely be obligated by the Department and may not be expended until a future date when remediation work is completed. This continues to create a problem in accurate projections of expenditures.

The Sixty-Fifth Montana Legislature approved an expanded use of the Orphan Share account to allow the Department of Environmental Quality (DEQ) to evaluate and take remedial actions to respond to a release or threatened release at petroleum or hazardous substance sites. DEQ used the funding to address 82 leaking petroleum tank sites. Approximately 27 petroleum release sites were resolved at costs below the Fund required co-payment, which means the Fund did not have to reimburse any costs to achieve site closure.

The use of both Orphan Share and Brownfields funding impacts the accuracy of expenditure projections for the Fund. The use of this funding can reduce or delay the expenditures from the Fund. The Board has entered into Guarantee of Reimbursements for several Brownfields sites. This means that cost recovery for cleanup expenditures at those sites will be postponed beyond the current fiscal years. While Brownfields loans are not income to the Fund, the agreements allow the delay of reimbursement until a future date, allowing today's funding to go further.

### Exposure to Long-Term Liabilities

Liabilities for the Fund consist of cleanup costs for current eligible releases, future eligible releases and possibly releases where ineligibility has been contested. The liabilities associated with the current eligible releases is the total cleanup for each current active release reduced by the amount of current cleanup accomplished; the amount of insurance coverage for the release; and the facility's compliance. The liabilities associated with future releases are affected by the aspects mentioned, as well as the rate at which new releases are being discovered, and eligibility applications filed. In calendar year 2019, approximately Twenty-Five (25) confirmed releases were reported from both aboveground storage tanks (ASTs) and underground storage tanks (USTs). It is estimated that 40% of those releases applied for eligibility to the Fund.

The number of releases discovered in any particular year can be viewed in four distinct epochs, 1979-1989; 1990-1999, 2000-2008; and 2008-2019. There were 219 confirmed releases and 25 closed from 1979 to 1989, with a remainder of 194 total active releases. During the time period of 1990 to 1999 there were 3,534 confirmed releases with 2,207 closed, leaving 1,521 total active releases. During the time period of 2000-2008 there were 621 confirmed releases, 528 closed, leaving 1,614 total active releases. During the time period of 2009-2019 there were 351 confirmed releases, 1002 closed, leaving 963 total active releases.

The four distinct epochs have very different release discovery and closure averages. The largest number of confirmed releases happened from 1990 to 1999 resulting from owners upgrading tanks. This period of time also had the largest average number of closures of about 245 per year. Within the last ten (10) years of the program, just 300 releases have been confirmed, however, 100 releases, on average per year, were closed in this same time period. The average annual release discoveries show a definite decline in recent epochs and each epoch exhibits a decline in the number of discoveries per year, with the largest rate of decline in 1990-1999 and the smallest rate of decline in 2008-2019. We believe this is due to new UST regulations that have helped prevent new releases through better detection and prevention.

The Fund was created in April of 1989, and there are 50 releases that are still open that pre-date the Fund. There were 637 of the active releases that were discovered within the first ten years of the Fund, of which 503 are either Fund eligible or potentially eligible. Of the active releases from 1999-2009, there are a total of 166 that are Fund eligible or potentially eligible. Of the active releases from 2009-2019, there are a total of 100 active releases that are Fund eligible or potentially eligible. According to these numbers, there are 769 of the 963 total active releases in the State of Montana that are potentially Fund eligible or have already been determined eligible.

The number of releases applying for eligibility is most certainly affected by the number of confirmed releases, but also by when cleanup is requested. An evaluation of the releases that have applied for assistance from the Fund for the same epochs indicates a declining trend.

The Board remains concerned that the number of AST releases may become the majority of the long-term liabilities. Many ASTs do not comply with current storage tank standards. The current AST Fund eligibility requirements can be found on the Board's web site at:

<http://deq.mt.gov/Portals/112/DEQAdmin/PET/Documents/Forms/StorageTankChecklist.pdf>

Over the long term, compliance by AST owners with current Board standards namely, the AST check list, will help to reduce the number of releases from ASTs.

### **Release Activity Status**

The average reimbursement for an eligible release, including closed and open releases, is currently \$73,000, and a least squares analysis indicates that for every year a release remains open, the cost of closing that release increases by \$6,000/year. There are many releases that have been open for many years, and if those releases have had remediation efforts during those years, the costs associated with release closure will greatly impact the previously estimated reimbursement averages. If there are releases that are many years old with no activity, bringing those to closure may or may not impact the average. The trend of the average costs to close a release, by the years to close the release, is upward and appears to be driven by the costs of materials, mobilization and the amount of activity at the site. The costs to close an open release will not decrease and the longer a release remains open, one can expect that the costs associated with closure will be significantly more than they would have been if closed within 5 years of release discovery.

Analysis of data associated with Fund eligible releases shows that there are still many of the releases discovered in the first 10 years of the program that remain open. There are 29 releases closed that are 25 to 30 years old. The average cost to bring these 29 releases to closure is 2.5 times the average reimbursement per release. As older releases close the increased cost to close a release may exceed estimates.

### **Impacts of changes, in State and Federal Regulations, on Underground and Aboveground Storage Tanks**

In the July 15, 2015 Federal Register EPA published 40 CFR Parts 280 and 281 "Revising Underground Storage Tank Regulations—Revisions to Existing Requirements and New Requirements for Secondary Containment and Operator Training" Final Rule. The revisions strengthen the 1988 federal UST regulations by increasing emphasis on properly operating and maintaining UST equipment. The revisions will help prevent and detect UST releases. The 2015 UST revised regulations changed certain portions of the 1988 UST technical regulations. The changes established federal requirements that are like key portions of the Energy Policy Act of 2005. In addition, EPA added new operation and maintenance requirements and addressed

UST systems deferred in the 1988 UST regulation. The changes include adding secondary containment requirements for new and replaced tanks and piping; operator training requirements; periodic operation and maintenance requirements for UST systems; and requirements to ensure UST system compatibility before storing certain biofuel blends. The changes also include removal of past deferrals for emergency generator tanks, field constructed tanks, and airport hydrant systems. This is the first major revision to the federal UST regulations since 1988.

The 2015 state program approval (SPA) regulation also updated SPA requirements and incorporated the changes to the UST technical regulations. States, like Montana, that currently have SPA have three years to reapply showing their state has updated their UST regulations to incorporate the revised 2015 federal UST requirements in order to retain their SPA status. In October of 2018, the Department changed their rules to reflect the requirements by EPA. The major provisions of these changes include; monthly walk-through inspections, UST system fuel compatibility, release detection requirements, annual testing requirements for release detection equipment, 3-year testing requirements for overfill devices and spill buckets and suspected release reporting.

The deadline for the implementation of walk-through inspections, annual testing and 3-year testing inspections is to be completed no later than October 13, 2021. Groundwater monitoring and Vapor monitoring are no longer allowed as a leak detection method after October 13, 2023. All other rule changes are effective immediately and thus in effect now. Because many of these changes are not fully implemented, the impact to the Fund is not yet determined. The board is concerned that implementing these new requirements may result in the increased identification of petroleum releases at a facility.

### Availability of Petroleum Storage Tank insurance and Trends

Insurance coverage is available for some Montana releases. Insurance has been used to fund cleanup at two (2) release sites in FY2019 and FY2020. The availability of insurance in these cases will assist with the release cleanup from after the deductible of \$250,000 is reached for these two sites.

EPA publishes a list of known insurance agents and brokers to help provide information for financial responsibility coverage. In the last published list, "List of Known Insurance Providers for Underground Storage Tank Owners and Operators," (EPA 510-B-16-001) dated July 2020; there are a total of 149 insurance agents and brokers listed, with 64 that offer coverage for UST owners and operators within the whole United States. One agency specifically indicated Montana was an area of coverage. This list is periodically updated and can be accessed at <https://www.epa.gov/ust/list-known-insurance-providers-underground-storage-tank-owners-and-operators>. Having only one company specifically list Montana, indicates that environmental insurance policies within the state of Montana are difficult to obtain and the Fund is a valuable source for both continued protection of public safety, and as an ongoing mechanism for financial responsibility.

As indicated in the 2017-2018 Biennial Report, In August of 2018 (FY2019), Tony Raia, Director of the Release Prevention Division, of the EPA's Office of USTs, issued a memorandum to all state fund program contacts and UST industry stakeholders. The memo was written to provide important information about UST insurance policies, specifically whether voluntary exclusions and self-insured retentions meet the financial responsibility (FR) requirements of 40 CFR 280. EPA felt it was important that folks understand and be attentive to the underlying language, terms, and conditions of their UST insurance policies to ensure owners are buying and retaining appropriate coverage for their UST systems. EPA indicated that there must be no voluntary exclusions in the insurance policy language that limits or disqualifies the coverage for tank

replacements, investigations or remediation for releases nor any Self-Insurance Retention (SIR) requirement in order for the insurance policy to be compliant with the federal UST regulations.

### Continuing Collection of Petroleum Tank Release Cleanup Fees

The Fund continues to protect public health and safety and the environment and allow UST owners to demonstrate financial responsibility as required by the EPA. The Fund continues to provide financial resources for partial reimbursement of costs, expenses and other obligations incurred because of releases of petroleum products from active, inactive and historical petroleum storage tank systems. The Board and the Department continue to find ways to encourage owners to improve tank facilities in an effort to minimize the likelihood of accidental releases.

The Fund continues to play a significant role in the cleanup of releases from underground and aboveground petroleum storage tanks. Since financial responsibility is only required for certain active USTs, many of the discovered releases would not likely be remediated without the Fund. Many of the owners are unaware of historical subsurface contamination and most environmental insurance policies are focused on coverage for active UST systems and don't cover historical contamination. Insurance is available, however, not many facilities have insurance and the exclusions limit their coverage. Without the Fund, remediation of releases from historical contamination, releases from most ASTs, and some USTs would be stalled, resulting in delayed cleanup and less protection of public health and safety and the environment.

The Fund is a significant part of property transfers for petroleum contaminated sites. Petroleum impacted sites that have been granted eligibility to the Fund pose less risk to the buyer in a property transaction. Because eligibility can easily be transferred to the new owner, and the bulk of the environmental liability is born by the Fund, property sales are more likely to occur. This results in more Montana properties being a business that can continue to serve its community and contribute to the tax base.

The Board feels the fee should remain imposed and collected to help owners and operators comply with UST obligations under federal requirements, to fund reimbursement of corrective action related to historical releases and assist certain petroleum storage tank owners with cleanup of petroleum releases in order to protect public health and safety and improve the condition of the environment. Given the cleanup activity associated with the discovered releases, the fund balance has not approached the ceiling established by law (§75-11-314 MCA). The fund continues to collect \$0.0075 on each gallon of fuel sold.

### Definitions

**Actuarial Central Estimate** – this is an estimate that is based on the actuary's judgement and understanding of changes to the Fund.

**Claim** – In an actuarial context, a "claim" is typically used to refer to a single event triggering coverage by an insurer. For the Fund, a claim is a request for reimbursement for a single work plan related to the remediation of a site. For the purposes of this report, the term "claim" will have the latter meaning, while "release" will be used to signify individual triggering events, per the terminology used by the Fund.

**Coefficient of Determination** - Compares the fitted (estimated) curve and actual data, and ranges in value from 0 to 1. If it is 1, there is a perfect correlation between the fitted curve and the data. — At the other extreme, if the coefficient of determination is 0, the fitted equation is not helpful in predicting values.

**Correlation** - Refers to relationship between two variables during a period of time which indicates whether and how strongly pairs of variables are related.

**Fiscal Year** - The State of Montana Fiscal Year begins on July 1 of each year and ends on June 30 of the following year.

**Frequency** – Technically speaking, frequency is the average number of release per insured exposure. For the Fund, an insured exposure is one tank insured for one year. For example, if 250 releases are reported in a year with 10,000 insured tanks, the frequency (average number of releases per insured exposure) is  $250/10,000$  insured tanks = 0.025 releases per tank. In spite of this, the term “frequency” is often used to describe simply the number of releases (rather than releases per exposure), such as in the “Frequency Times Severity Method”. The term is clarified is the meaning is unclear from context, and the distinction is important.

**LDF** – A Loss Development Factor (“LDF”) is calculated by an actuary from historical payment data and applied to current paid losses values to estimate ultimate claim costs for an insurer. LDFs are determined by analyzing cohorts of releases at similar points in time to determine the anticipated amount by which those releases developed over time.

As an example, consider only the cohort of releases that were reported in the fiscal year ending June 30, 2010. As of fiscal year-end 2010, \$17,680 had been paid in remediation expenses for those releases. By the same time a year later (at fiscal year- end 2011), \$149,486 had been paid on the same cohort of claims. This yields an LDF of 8.455 ( $= \$149,486 / \$17,680$ ).

Looking at similar LDFs for different cohorts at the same point in time provides indication as to how future cohorts might change over time. For instance, as of the date of this report, the cohort of claims that were reported in 2016 is at the same age as the cohort from 2010 was at year-end 2010. Therefore, we might expect that the 2016 cohort will develop by a similar amount between the fiscal year ending 2016 and fiscal year-end 2017. (Note: this was not the final selected LDF, just an example).

By looking at LDFs for each cohort at each year-end, and by using some actuarial judgment and statistical assumptions, we can determine the anticipated amount by which less “mature” cohorts of releases will grow in the future, including the rate at which those remediations will take place and the ultimate liability arising from those releases.

**Least-squares** - The method of least-squares analysis assumes that the best-fit curve of a given type is the curve that has the minimal sum of the deviations squared (least square error) from a given set of data. The least-squares line method uses a straight line ( $y=mX+b$ ) to approximate the given set of data  $(x_1,y_1), (x_2,y_2), \dots,(x_n,y_n)$ .

**Linear Regression Formula** - attempts to model the relationship between two variables by fitting a **linear equation** to observed data. ... A **linear regression** line has an **equation** of the form  $Y = a + bX$ , where X is the explanatory variable and Y is the dependent variable.

**Severity** – Severity is the average cleanup cost of a release for a given collection of release. For instance, if the total cost for three releases is \$45,000, the severity (average size of a release) is  $\$45,000 / 3$  releases = \$15,000 severity.



**Ultimate Loss** – Ultimate Losses equal the total paid losses for all currently open and closed claims plus the total unpaid losses for all currently open claims. The ultimate losses represent the total cost final of remediation for all reported releases.