VARIATIONS IN SALINITY STRUCTURE IN SASKATCHEWAN'S DEVONIAN CARBONATES

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ABSTRACT

Industry provided and public domain geochemical and isotopic data from 1950 to present day were collected for this research. The intent of this study is to better understand the groundwater flow patterns and hydrochemistry in Devonian carbonates within the Saskatchewan and Williston basins. The Birdbear, Duperow, Souris River, and Dawson Bay formations are of interest owing to their proximity to the mining units of the Prairie Evaporite Formation. Due to the undesirable outcomes of groundwater interacting with the soluble minerals of the mining unit, the understanding of the nature of the water contained in the overlying units is of great importance. The creation of a comprehensive database has allowed for graphical as well as spatial analysis of water chemistry data within the basin. In addition, it is now possible to assess for patterns of variation and to attempt to track chemical evolution at a regional scale through the manipulation of this data.

By combining data on water chemistry, interpreting the salinity characteristics and expressing the results in a spatial context, information on mineral precipitation, dissolution, and fluid migration were obtained. Patterns found were then utilized to assess regional scale hydrogeology, recharge and discharge. Through a graphical and regional assessment of the stratigraphic hydrochemistry it has been shown that the four units differ. The Birdbear, Duperow, Souris River, and Dawson Bay formations were shown to comprise of an end member type system ranging from meteoric water dominated to original syndepositional evaporated sea water dominated chemistries.

Ratios of Na to Cl and Br to Cl, TDS concentrations, as well as δD and $\delta^{18}O$ isotope values of water samples have demonstrated Birdbear and Duperow formations have seen the greatest influence from meteoric water input and halite dissolution while the Dawson Bay Formation shows a signature indicative of syndepositional evaporated sea water. The Souris River Formation consists of a mixture of these two end-member hydrochemistries. At a regional scale, the four formations follow known trends in hydrogeology, with recharge indicated in in the south and south west sides of the

basins, and discharge in the north and north east along the Manitoba escarpment. Concentrations of TDS also support the location of previously mapped large-scale evaporite dissolution features. It has been shown using TDS, Na/Cl, and $\delta H^2/\delta O^{18}$ that the signature of a water sample from a stratigraphic unit in the center of the basin can look identical to that of the signature of a different stratigraphy at the basin edge. Resultant variation in salinities, indicating the different sources of ground water as well as the evolution through various degrees of water rock interaction, has raised questions on the validity of attempting to use chemistry to stratigraphically fingerprint water samples. It has been shown groundwater salinity characteristics have a great degree of variability depending on the location in the basin. Therefore, when attempting to use chemistry to determine which stratigraphic horizon a water sample comes from it is essential that both a thorough regional and local scale hydrochemical analysis are done.

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This research would not have been possible without the support and guidance of my supervisor Dr. Grant Ferguson, as well as committee members Dr. Matt Lindsay and Dr. Bruce Eglington. I wish to also thank fellow graduate student Aidan Mowat for her support and access to her research on the adjoining project.

DEDICATION

I wish to dedicate this thesis to my husband Travis for supporting me in the many ways that allowed me to complete this project.

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Chapter 1 Introduction

The process of interpreting groundwater chemistry and deciphering its genetic history is difficult because in addition to fluid convection and hydrodynamic dispersion (Hanor, 1994 (b)), original fluid chemistry, ambient conditions and host rock mineralogy all affect the result. The process of translating hydrochemical patterns through spatial analysis into broader hydrogeological interpretations is also complicated due to large-scale factors that affect basin scale fluid flow. Other than topography (Toth, 1963), large scale fluid movement within sedimentary basins is largely controlled by tectonic events causing regional compression and thrusting (Ge and Garven, 1992) as well as the processes of lithification and compaction of sediments (Bethke, 1985).

Previous studies have used geochemistry and isotopic signatures of water samples to interpret groundwater flow patterns. Such studies focused on using major ions in solution (Na, Br, Cl) and isotopes (δ^2H vs. $\delta^{18}O$) to determine the nature of brines in sedimentary basins (Carpenter, 1978), expected evolution of brines and the brine signatures (Connolly et at., 1990a and b); major ions and isotopes to fingerprinting stratigraphic provenance of water samples at potash mines (Wittrup and Keyser, 1990; Jensen and Holmden, 2006); as well as basin scale fluid migration and the role of glaciation (Grasby et al., 2000; Grasby and Chen, 2005; Ferguson et al., 2007; Palombi, 2009; McIntosh et al., 2011; Warner et al., 2012).

Regional hydrogeology within the Devonian strata of Saskatchewan is relatively well understood (Melnik, 2012; Palombi, 2009; Grasby and Chen, 2005; Grasby, 2000; Bachu and Hitchon, 1996). Within the greater Western Canada Sedimentary Basin (WCSB) basin waters are topographically driven (Hitchon, 1969). Palombi (2009) noted that in some aquifers within the Williston Basin dense brines are expected to be stagnant due to negative buoyance. Work by Bachu in the 90's on negative buoyancy and density driven flow has been expanded on recently by Ferguson et al. (2018) who demonstrated an association between basins dimensions, topographic drop and the presence of dense connate waters in the Williston Basin and several other basins across North America.

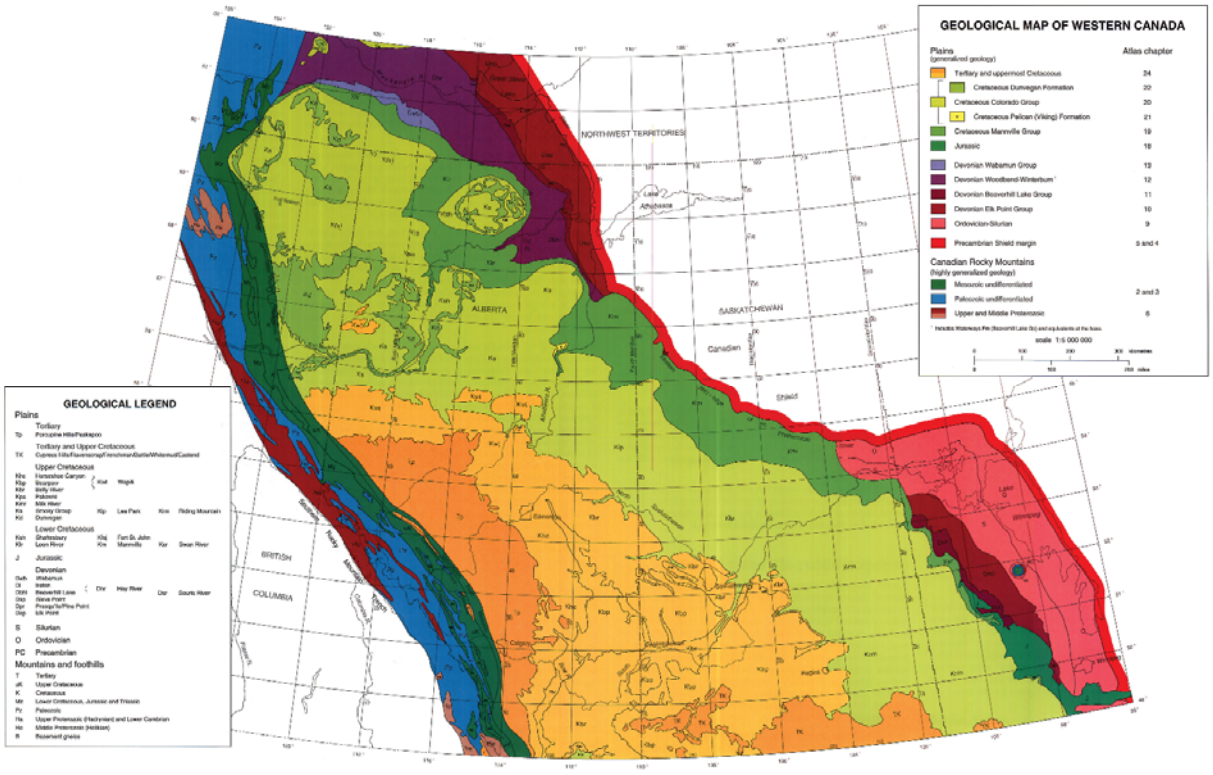

Figure 1.1. Geological map of the Western Canada Sedimentary Basin.
The Devonian stratigraphies have been predominantly masked by overlying units.
Figure taken from Mossop and Shetsen, 1994.

The WCSB contains extensive Phanerozoic stratigraphy and covers significant areas of Alberta, Saskatchewan, and the northern United States (although this is not shown) (Figure 1.1). The focus of this study was Devonian aged stratigraphies located in central and southern Saskatchewan and the northern parts of Montana and the Dakotas. These sediments were deposited within the greater Elk Point Basin, more specifically within the corresponding Saskatchewan and Williston sub-basins (shown in greater detail in Figure 2.1). Devonian age stratigraphies were chosen as they overly the mining units of the Prairie Evaporite. The units of investigation for this research include the Birdbear, Duperow, Souris River and Dawson Bay formations (Figure 1.2). These formations were chosen based on their proximity to the mining units of the Prairie Evaporite. As the mining units are highly soluble, it is imperative that there is a good understanding of the overlying hydrogeology to prevent any incidents of

water entering the mining areas.

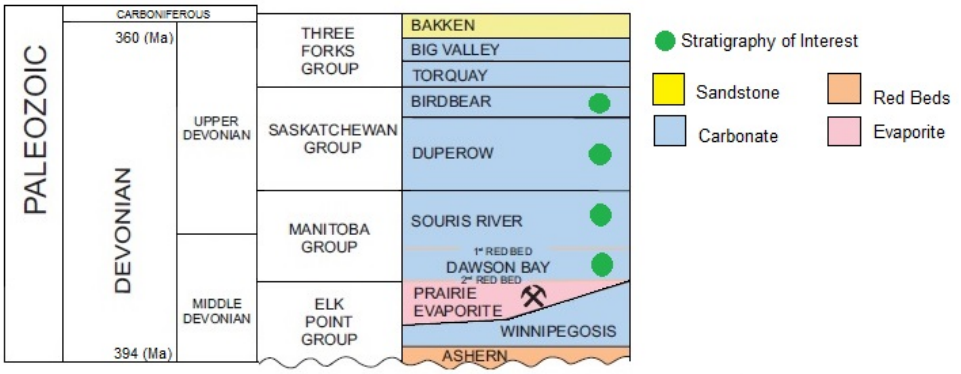

Figure 1.2. Stratigraphy of the Upper and Middle Devonian Rocks in Saskatchewan. Modified from Frank et al. 2015.

In the Saskatchewan Basin, recharge is focused on the highlands of Montana and the Dakotas, with fluid flow proceeding north and north east to discharge areas in western Manitoba and North and South Dakota (Bachu and Hitchon, 1996). A temporary reversal of recharge has been identified based on isotopic signatures of what was an incursion of glacial melt water during the Pleistocene along the Manitoba border (Grasby et al, 2000; Grasby and Chen, 2005). The Elk Point Basin, like other sedimentary basins, contains different types of formation fluids that indicate different genetic, and evolutionary histories. This composition of fluids, and the location of the fluids within the basin allows for interpretations on the hydrogeologic history, including flow directions, residence times, and cross formational mixing. Work by Connolly (1990a) classified fluids from the Alberta basin according to dominant ions in solution and have provided a framework for this Saskatchewan Basin interpretation. In addition, Iampen and Rostron (2000) interpreted three distinct water chemistries within the Williston Basin consisting of highly concentrated Na-Ca-Cl brine found in the deepest parts of the basin, a low concentration $CaSO_4$ dominated fluid representing meteoric recharge, and an intermediate fluid dominated by of Na-Cl that represents a mixing of the two previously mentioned chemistries.

Due to interest in understanding the behavior of groundwater near mining infrastructure and soluble mining units, as well as understanding groundwater movement relative to hydrocarbon and ore mineral migration, much research has been on the hydrogeology of Saskatchewan. However, the understanding of groundwater hydrogeochemistry at the regional scale is poor. Attempts have been made to utilize groundwater chemistry to fingerprint the source formation for water collected within potash mines and from oil and gas operations. Wittrup and Keyser (1988) was the first attempt to use aqueous chemistry to try and identify the stratigraphic unit that these water samples were coming from.

An understanding of the source formation is important, as the water sourced from directly above the mining units are typically highly concentrated brines and pose less of a concern than more dilute waters from higher up in the section. A better understanding of the science of water source fingerprinting is the basis for this study. Advancements in attributing water samples to host lithologies have been made, however, there is little known about regional chemical changes within formation. Hydrochemical characteristics as well as inherent regional variability must be considered when attempting to fingerprint water samples at a local scale.

In the Devonian carbonates that overly the mining units, the hydrostratigraphy is typically related to lithology and for the most part coincides with the defined formations. Work by Palombi in 2009 has defined a series of three aquifers of interest to this study and a series of aquitards that separate them (Figure 1.3). Of note, is the fact that the Dawson Bay and Souris River formations are part of a singulars aquifer unit, whereas the Duperow and Birdbear formations are independent aquifers

separated by aquitards. It is therefore reasonable to assume that the Dawson Bay and Souris River formations would have very similar, if not identical fluid chemistries.

Hydrostratigraphic Unit	Lithology	Formation	Thickness (m)
Bakken Aquifer	Clean sand	Middle Bakken	30
Three Forks Aquitard	Low permeability carbonates and shales	Lower Bakken, Torquay and Big Valley Fm	45
Birdbear Aquifer	Limestone, dolostone, dolomites, evaporites	Lower and Upper Birdbear Fm	45
Seward Aquitard	Micro/crypto crystalline carbonates, evaporites, anhydrite	Upper Duperow Fm	50
Duperow Aquifer	Limestones and dolostones	Duperow Fm	140
Souris River Aquitard	Calcareous shales and carbonates	Hatfield and Wymark members of Souris River Fm	180
Manitoba Aquifer	Limestones, less dolomite and anhydrite	Souris River and Dawson Bay Fm	150
Prairie Aquitard	Halite dominated, evaporites	Prairie Evaporite	150

Figure 1.3. Hydrostratigraphy of the Devonian rocks of the Saskatchewan Basin.
Modified from Palombi, 2009.

Patterns detected in a regional evaluation of the hydrostratigraphic units defined above may provide clues to the regional hydrogeology. This may include lateral migration history, indications of cross formational mixing and structural complexity between units (

Figure 1.4). This information is critical when assessing fluid migration for exploration possibilities relative to ore deposits and oil and gas plays, as well as defining areas of structural concern, which may prevent issues with future development or infrastructure. By creating a series of graphical representations of the formation specific hydrochemistry, displaying the results on a regional map, and contouring the results, patterns within the Devonian units in Saskatchewan will give details as to the hydrogeologic system.

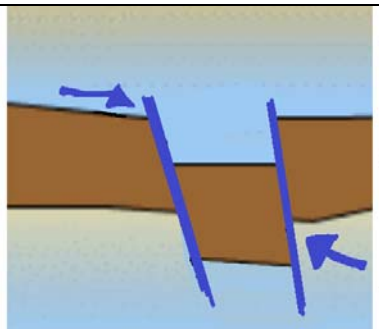	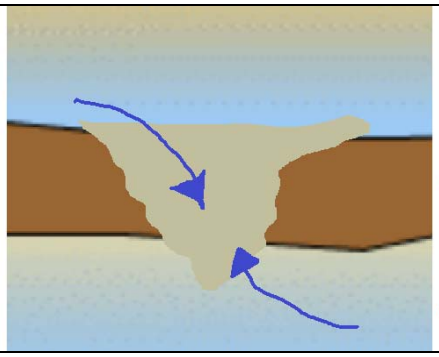
Structural conduit (faulting) allowing for the breaching of an active aquitard and the interplay of aquifers.	Solution collapse of a soluble aquitard. The aquitard is dissolved and the aquifers above and below are connected.

Figure 1.4. Two examples of situations where a breach of a confining aquitard has allowed for the interaction of ground water from two aquifers.

To complete this research project a database of groundwater chemistry data was compiled, as well as a series of maps and corresponding graphs for each formation of interest. These items were used to determine if there are any indication of geochemical signatures that can be definitively used to identify the host formation, as well as determine if there is regional variation within the units. The objectives of determining these factors are to:

- attribute regional variation in hydrochemistry to lithological variations such as host rock mineralogy;
- use anomalies in expected regional hydrochemical patterns to infer structural features that may allow cross-formational water movement;
- use regional hydrochemical patterns to support or refute known hydrogeological assumptions within the Saskatchewan Basin, including recharge and discharge locations, as well as groundwater movement;
- assess if regional variation in hydrochemistry produces overlap in sample signatures between different formations.

Chapter 2 Previous Research

2.1 Geological Overview

2.1.1 Regional Geology

Saskatchewan can be subdivided into two major geological areas — the crystalline Precambrian shield, and the Phanerozoic basin. The potash deposits of Saskatchewan are all located within the Saskatchewan Basin, which is contained within the larger Phanerozoic WCSB. The WCSB is a north-easterly tapering wedge of sedimentary rocks extending southwest from the Canadian Shield into the Cordilleran Foreland Thrust Belt (Porter et al, 1982). The Elk Point Basin (shown in pink on Figure 2.1) was deposited during the Late Devonian uplift of the Transcontinental Arch. This basin extended from northwestern North Dakota to the northern part of Alberta with a connection to the marine waters of the Arctic Ocean (Anna et al., 2010).

The Elk Point Basin was bounded to the north by the Canadian Shield, the west by the Western Alberta Arch, and the South by the Central Montana Uplift, while at the same point containing the Tathlina High (Holter, 1969), Peace River Athabasca Arch and Meadow Lake Escarpment, which subdivided it into three sub-basins (Utha-aroon, 1990). These sub-basins occurred along the length of the basin with the barriers separating them from the open sea to the northwest. From northwest to southeast they are; the Northern Alberta, Central Alberta, and Saskatchewan Sub-basins (Holter, 1969). Extending from central Saskatchewan into the United States (as seen in Figure 2.1) the Williston Basin forms the most southern part of the Elk Point Group.

In Figure 2.1 the full extent of the Elk Point Group has not been projected into the United States due to a lack of available data. However, the extents of the Williston Basin into the United States have been included. (Digital data has been sourced from The Western Canada Basin Atlas- Online Data Files, as well as the EIA online shape file data source (https://www.eia.gov/maps/maps.htm).

Within the Elk Point Basin, five major evaporite cycles were deposited. However, only the Saskatchewan Sub-basin accumulated economic deposits of potash as the Prairie Evaporite during the middle Devonian (Holter, 1969). The potash mining district in Saskatchewan is located within the Saskatchewan Sub-basin of the greater Elk Point Basin. For the purposes of this study, stratigraphic nomenclature has been taken from the Stratigraphic Correlation Chart of Saskatchewan (Figure 1.2) - Saskatchewan Ministry of the Economy (Revised August 11, 2014).

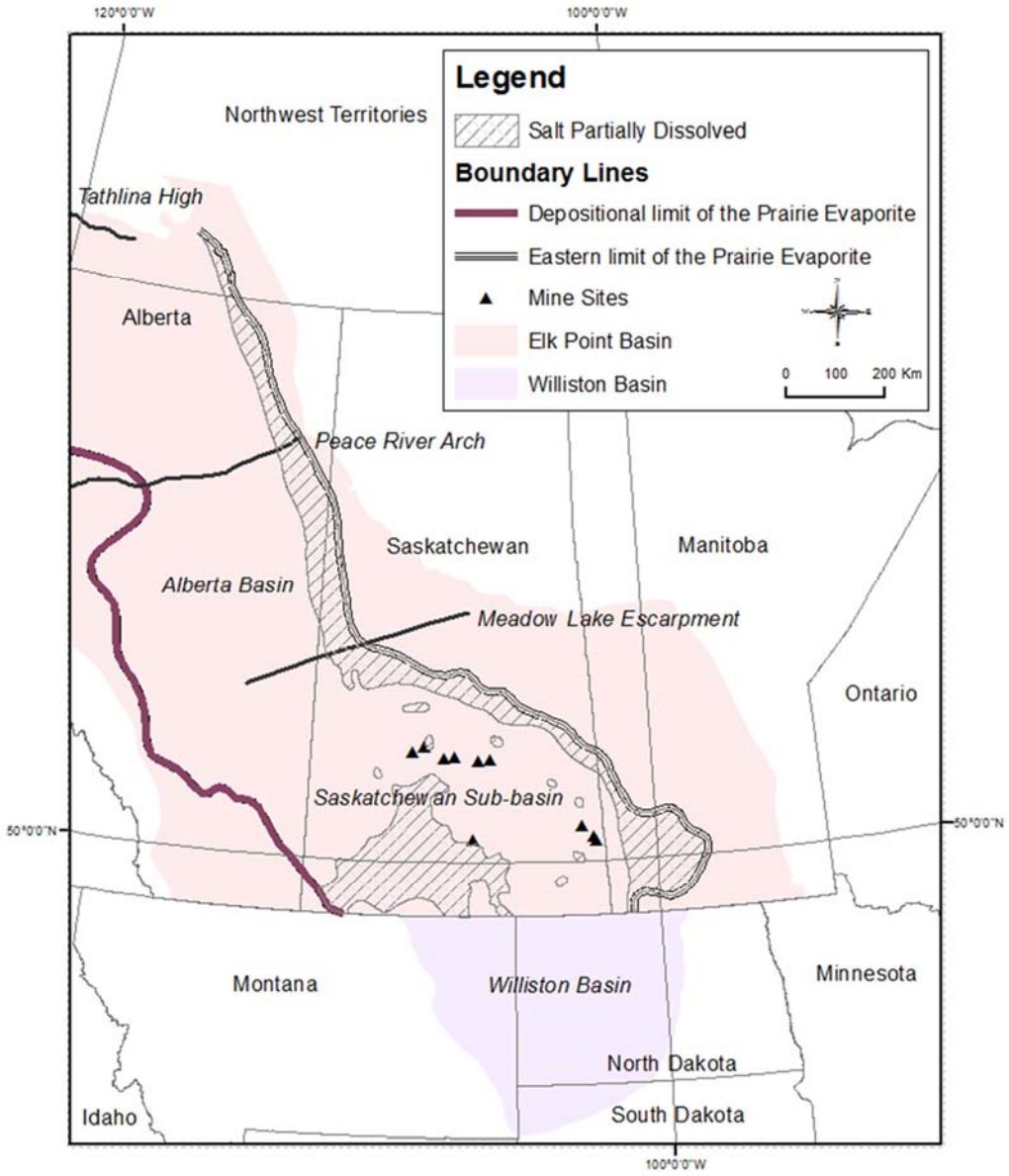

Figure 2.1. Elk Point Group and associated sub-basin location map.
Digital information sourced from Mossop and Shetsen, 1994 and the EIA – Independent Statistics & Analysis – U.S. Energy Information Administration. 2018.

2.1.2 Stratigraphy of Focus

Cyclic marine conditions and episodes of normal circulation deposited a variety of lithologies within the Elk Point Basin. These include limestone evaporites (Anna et al, 2010) which subsequently underwent varying degrees of dolomitization. As expressed previously, this study focuses on deciphering the regional hydrogeochemical signatures of the Birdbear, Duperow, Souris River, and Dawson Bay formations as they are the stratigraphies which immediately overlie the potash mining units.

During late Middle Devonian transgression, a topographic high developed at the entrance of the Elk Point Embayment and formed what is known as the Presqu'ile Barrier (Meijer Drees, 1994). This effectively restricted the flow of seawater into the Elk Point Basin, producing a shift in depositional environment which led to the precipitation of the evaporite horizons of the Prairie Evaporite Formation. The Prairie Evaporite is composed of halite, sylvite (potash), sylvinite (a mix of halite and sylvite), carnallite, anhydrite, dolomite, and clays. There are three main potash members recognized in the upper part of the Prairie Evaporite in Saskatchewan and are named in ascending order: the Esterhazy, Belle Plaine, and Patience Lake Members.

The formations of the Upper Devonian Manitoba Group include the 2nd Red Bed, Dawson Bay, 1st Red Bed, and the Souris River (Figure 1.2). These were deposited during the subsequent transgression and regression of the Devonian seaway (Peterson and MacCary, 1987). The Dawson Bay Formation is bounded by two red bed units, at its base is the 2nd Red Bed and it is capped by the 1st Red Bed. The Red Beds are both described as shales and dolomitic shales and consequently are of low porosity. The Souris River Formation is dominated by carbonates and local minor evaporites. Minor lithologies of lime muds, argillaceous and fossiliferous dolomite or limestone and anhydritic dolomite and anhydrite reflect cyclic water depth contrasts and changing depositional regimes (Sandberg and Hammond, 1958; Wilson, 1967). The Souris River Formation is described as having variable porosity, which is consistent with its very heterogeneous suite of lithologies.

The Upper Devonian formations of interest include the Birdbear and Duperow formations. Duperow sediments are composed of cyclic carbonate units with evaporitic and clay rich horizons and contain abundant marine fossils (Peterson and MacCary, 1987; Kent, 1963). It was deposited in a tidal environment and grades from basal carbonates up, recording a brining upward change, into evaporites (Yang, 2015). The Birdbear Formation is characterized by interbedded carbonates and evaporite units deposited in a shallow inland sea environment. Lithologies include limestone, dolomite, anhydrite, and combinations of such (Halabura, 1982).

2.2 Geochemistry

2.2.1 Origin of Salinity

The presence of meteoric waters in the groundwater can be determined using the evolutionary progression of water that was developed by Chebotarev (1955). Chebotarev detailed the progressive change in major anion composition, from surficial waters dominated by carbonate and sulfate, to older more stagnant waters dominated by chloride (

Equation 1). The chemical evolution of groundwater is dictated by the mineralogy of the host stratigraphy and is dependent on source water chemistry, dissolution, diffusion, mineral solubility, and residence time (Hanor, 1994a). Chebotarev (1955) described an expected evolutionary path within sedimentary basins from initial recharge signatures to old basinal brines.

Equation 1: The evolution of major ions in groundwater (Chebotarev, 1955)

$$HCO_3^- \rightarrow HCO_3^- + SO_4^{2-} \rightarrow SO_4^{2-} + HCO_3^- \rightarrow SO_4^{2-} + Cl^- \rightarrow Cl^- + SO_4^{2-} \rightarrow Cl^-$$

Hanor (1994b) analyzed the source of high salinities in sedimentary basins as well as the source of the high chloride composition of the brines. He used chemical ratios of Br, Cl, So^4, Mg, K, and Ca to decipher the expected evolution through seawater evaporation. Further investigations by Hanor (1994a) used rationing of the various components to Total Dissolved Solids (TDS) in solution allowing for the interpretation of the behavior of the ions at greater salinities. Br concentrations in water samples are used to assess the role of original seawater in the current brine signature due to its preference to remain in solution as opposed to being incorporated into any precipitating salts. He concluded that three types of subsurface saline waters exist; 1) non-Cl dominant (typically low salinity, and with a carbonate or acetate component, 2) Cl dominant/halite undersaturated waters including Na-Cl and Na-Ca-Cl waters, and 3.) Cl dominated halite saturated brines with increasing Ca and K and decreasing Na. Carpenter (1978) studied the chemical composition of formation brines with respect to understanding their movement and evolution. He attempted to produce a model that could predict what changes would appear in the chemical composition of the host brines as they migrated and interacted with host rock mineralogy.

This understanding of chemical evolution may give clues as to the brine migration paths and therefore indications to the location of possible ore or hydrocarbon deposits. Carpenter (1978) attributed the presence of bromine in brines to the existence of an original seawater component. By

calculating the expected evolution as the brine interacts with various mineralogies, it was found that reactions such as the conversion of calcite to dolomite, the precipitation of anhydrite and gypsum, and the production of authigenic illite, potassium feldspar and albite can create brines that are now devoid of their original sea water magnesium, sulfate, and potassium (Carpenter, 1978).

In a study of the formation waters within the Alberta Basin by Connolly et al (1990), it was noted that there are three types of waters within the Cretaceous to Devonian rocks. This has been summarized in Table 2.1. Although this basin is not the same as the Saskatchewan section of the basin, the similarities in the two allow for a comparison of hydrology and chemical alteration likely occurring in both locations.

Table 2.1. Definitions of the 3 groupings of aquifer waters in the Alberta Basin (Summarized from Connolly et al 1990)

Group Number	Source	Chemistry	Chemical Alterations
Group I	Carbonate Reservoirs	brine end member, formed by evaporation of sea water diluted 50-80% by meteoric water	Clay mineral transformation, ankeritization, decarboxylation, and ion exchange
Group II	Clastic Reservoirs	brine end member, formed by evaporation of sea water diluted 50-80% by meteoric water	Feldspar and clay leaching, and ion exchange
Group III	Clastic Reservoirs	dilute, meteoric waters, higher in stratigraphy than Group I and II Dominated by Na and HCO3-, show complete flushing of residual waters	

Connolly (1990a) noted that two groups are from either carbonate or clastic host lithologies and include a brine end member of sea water origin that has been diluted by meteoric water, and the third,

was water sourced from clastic reservoirs that is typified by waters that were diluted by meteoric water. The dominant processes that caused the differentiation of the formation waters were interactions with host rock mineralogies, additional alteration due to the incursion of meteoric waters, and conversely isolation from recharge which changed the flow dynamics from lateral to cross formational. Quantification of this cross-formational mixing was completed using isotopic analysis (Connolly, 1990b) using strontium, oxygen and deuterium. Oxygen and deuterium isotopes have been used to infer the presence of both glacial and meteoric water in the Elk Point Basin (Grasby and Chen, 2005).

2.2.2 Ions in Solution: Total Dissolved Solids

The spatial distribution of the concentration of total dissolved solids can indicate basin topography, flow directions, and the interplay of fluid mixing. The increased density of the brines with greater TDS concentration typically means they will be located at greater depths with gravity confining them to the deepest parts of the basin. In these areas, the regional hydrodynamic regime is unable to mobilize and flush them due to their increased weight. By spatially assessing the concentration and determining patterns of decreased TDS an indication of the location of recharge can be given. Areas of TDS dilution may indicate the location of a structural conduit allowing cross-formational mixing to occur.

Graphically comparing the TDS to different ions for assessing correlation is also important in understanding the groundwater signature. Total dissolved solids can typically be contributed to the presence of Na, Mg, Ca, Cl, HCO_3, and SO_4 in variable proportions. Investigating the relationship between the dominant ion to the TDS concentration can help determine which minerals have been dissolved and contributed the ions in solution. In the basinal brines, TDS is dominated by Na, Ca and Cl. The comparison of their ratios at variable salinities provides an indication as to their evolutionary progression.

2.2.3 Ions in Solution: Na/Cl

Chloride in groundwater can be sourced from the dissolution of chloride bearing minerals, primarily sodium chloride and potassium chloride which are both found commonly in carbonate and evaporite rocks. In addition, Cl may be a remnant from the initial seawater preserved from initial deposition. Sodium by comparison is a much more common component of groundwater as it is found in most rock forming minerals. According to its stoichiometry, the dissolution of halite will result in a 1:1 molar ratio of Na to Cl in aqueous solution, making Na/Cl ratio a good indicator of the presence of salt dissolution.

By plotting the ratio of Na to Cl, the influence of halite dissolution within the stratigraphies can be assessed. The spatial distribution of the Na/Cl ratio of the samples shows the interplay between formation waters of variable chemistry. Areas with a Na/Cl ratio nearing 1 show the signature of halite dissolution. Water chemistry dominated by chloride, and yielding Na/Cl values between 0 and 0.85 represent the older basinal connate waters. Waters with ratios greater than 1 represent clear dissolution, often involving other minerals, as the sample is Na dominated. Samples that fall between 0.85 and 1 are indicative of a mixing water facies with influences of both connate and dissolution source.

2.2.4 Ions in Solution: Cl/Br

Because of the conservative nature of bromine in natural waters, as well as know concentrations found in seawater versus freshwater, ratios of chloride and bromide can be used to infer the origin of groundwater samples (Freeman, 2007). With respect to interpreting waters within the potash mining areas, it is of interest to determine which salinity signatures represent syndepositional evaporated seawater and which are derived from the dissolution of Devonian halite deposits. As halite saturation is reached in seawater, and halite begins to precipitate, bromine preferentially remains in solution. Therefore, seawater contains much higher concentrations of bromine relative to halite. Therefore, waters derived from sea water would have higher Br/Cl ratios whereas halite sourced brines have much higher Cl and therefore lower ratios (Freeman, 2007). Due to this behavior in seawater, plotting the distribution of samples along the correlation line of Cl/Br ratio with Na/Br ratio the influence of halite vs seawater on the fluid chemistry can be seen. Carpenter (1978) found the seawater Cl/Br ratio to be 292.2. Work by Heinrich (1993) demonstrated that this ratio changes over geological time, said change is basically negligible to this application. As such, data points falling below this value represent sea water dominated chemistry, whereas samples above represent an increasing influence of halite dissolution.

2.2.5 Ions in Solution: SO_4

Other than through biological processes, the availability and solubility of gypsum, anhydrite and barite in the host stratigraphy dictates the amount of sulfate found in formation waters. As the Devonian stratigraphy is low in organic matter, sulfate availability in dominated by evaporite mineralogy. The solubility of gypsum and anhydrite are affected by grain size, temperature, and aqueous chemistry, more specifically the presence of salt ions in solution such as Na and Cl (Klimchouk, 2000). Processes that remove sulphate from solution, such as bacterial or thermal sulfate reduction as well as

dedolomitization increase solubility (Klimchouk, 2000). The relationship between aqueous sulfate and calcium is evident, as the concentration of free calcium in solution controls the solubility of these evaporite minerals. This relationship would be seen as an inverse correlation of calcium to sulfate due to the control of gypsum and anhydrite solubility.

Spatial distribution of the concentration of sulfate in formation water may give indications as to regions that have undergone the precipitation of calcium and barium sulfate minerals and other areas where they may have been dissolved. The relationship between dolomite, gypsum and calcite is important in the Elk Point Basin. The dissolution of gypsum produces additional calcite, provoking dedolomitization and the precipitation of calcite (Appelo and Postma, 2004).

2.2.6 Isotopes

Oxygen and hydrogen isotopes have been used to interpret groundwater source, residence time, and mobility. The Global Meteoric Water Line (GMWL) expresses the relationship globally between oxygen and hydrogen isotopes in natural waters and has been defined by Craig (1961) as $\delta^2H = 8 \times \delta^{18}O$ – 10‰ (Craig, 1961). McMonagle (1987) has shown that in Saskatchewan, δ^2H averages -152 +/- 10 per mil and $\delta^{18}O$ averages -18.9 +/- 1.4 per mil. By plotting the measured $\delta^{18}O$ and δ^2H values of the groundwater samples from the Saskatchewan potash mines against the GMWL the isotopes may indicate glacial recharge when values less than current precipitation are detected (reflecting colder climate temperatures), or original evaporated sea water, if the values coincide with much warmer climate conditions. As stated by Lemay (2002), when compared to the GMWL samples above the line may indicate less humid conditions, below the line indicating more humid conditions, points with negative values indicating colder climates, and vice versa with positive values. As with major ion chemistry, it is imperative to also consider the effects that water mixing, water rock interaction, and sampling errors have on the data before interpretation.

The discharging side of the Saskatchewan sub basin should reflect isotopic signatures of deep formation fluids as they are carried and discharged into Manitoba. Mapping of oxygen and deuterium over the Williston Basin in the Yeoman and Duperow aquifers by Rostron and Holmden (2003) showed the presence of isotopically light groundwater along the discharging side of the basin. This supports the work conducted by Grasby et al (2000) who has attributed these low isotopic values, as well as salt dissolution, collapse structures, and biodegradation of hydrocarbon deposits to a temporary recharge event along the Manitoba side of the Saskatchewan sub basin during glacial times. This temporary incursion of glacial waters accounts for both the marked change isotopes from what would be expects,

as well as lower concentrations of TDS. Grasby and Betcher (2002) used stable isotopes of $\delta^{2}H$ and $\delta^{18}O$ to determine that water along the discharging side of the basin contains signatures of original evaporated sea water, dissolution of evaporite minerals from Devonian units in the basin, as well as meteoric water. Unlike shallower stratigraphic units that demonstrate an increase in isotopic $\delta^{2}H$ and $\delta^{18}O$ with depth, Rostron and Holmden (2000) demonstrated that water samples collected from the Devonian stratigraphies showed a deviation from this pattern, suggesting the significant role fluid movement and mixing have on resultant isotopic signature.

The spatial distribution of isotope data in the Elk Point Basin is very limited. Samples in the database are restricted to mine sites. Previous research on the isotopic composition of basinal waters stated that a lack of major changes in elevation or climate has likely resulted in only minimal changes to the isotopic signature of meteoric water in Saskatchewan (Wittrup and Kyser, 1990). The isotopic values for meteoric recharge are altered once they interact with formational waters and the host stratigraphy. This can reflect the initial seawater isotopic signature or any influx of meteoric water under different climate conditions. It has been noted that the degree of isotopic exchange is greater in $\delta^{2}H$ in comparison to $\delta^{18}O$ due the difference in atomic structures of the reacting minerals (Hitchon and Friedman, 1969).

Work by Wittrup and Keyser (1990) noted variation of isotopic signatures of $\delta^{2}H$ and $\delta^{18}O$ from the groundwater sampled from mine workings in Saskatchewan when comparing values from different Devonian formations between various potash mining sites. In addition to this, vertical variability or vertical similarity between formations may indicate differing degrees of cross formational groundwater mixing. In addition to a noted increase in heavy isotope composition with increasing depth, they also touched on regional differences between the mine sites. These findings have been demonstrated by Jensen et al (2006) at other potash mine sites in Saskatchewan.

Research by Grasby et al (2000) found $\delta^{18}O$ values of sampled groundwater from Devonian aged rocks along the eastern discharging side of the basin of -22‰. These values are attributed to the presence of Pleistocene melt water mixing with formation fluids. The $\delta^{18}O$ value for this groundwater is consistent with what is thought to be ambient temperatures during that time period (Ferguson and Jasechko, 2015). Therefore, within the Elk Point Basin, isotopic signature is controlled by the presence of meteoric influx, original evaporated seawater, Pleistocene incursion, and modification by host rock stratigraphy.

2.3 Regional Hydrogeology

2.3.1 Overview

Work by Hitchon (1969) demonstrated that recharge, regional flow, and discharge into the Elk Point Basin are controlled primarily by topography. Devonian sequences deposited within the basin were laid down as cyclic marine sediments and therefore contain lithologies of variable permeability controlled by depositional setting. Closed marine settings, and periods of restricted inflow and outflow were responsible for the creation of variable amounts of evaporite minerals within most Devonian rocks, including the extensive potash deposits of the Prairie Evaporite. Lateral continuity in stratigraphic homogeneity is implied for this regional scale assessment of hydrogeology.

2.3.2 Hydrostratigraphy

Phanerozoic sediments deposited within the WCSB can be grouped hydrogeologically according to information on formation porosity and permeability as well as how this permeability relates to the stratigraphy above and below. Following Bachu and Hitchon (1996), this study defines the term hydrostratigraphic system as a group composed of hydrostratigraphic units that have common overall characteristics and behave similarly at a regional scale. These systems are classified as aquifers, aquitards, or aquicludes and reflect decreasing permeability respectively.

Permeability is dictated primarily by the lithology of the unit. Table 2.2 details the one aquifer unit identified in the Devonian of Saskatchewan that has been named the Devonian Aquifer System by Bachu and Hitchon (1996). It is bounded by the shales of the Bakken Formation on the top and the evaporites of the Prairie Evaporite at the base. Mine water issues require an understanding of regional hydrogeology as intersecting an aquifer involves handling formation water that is released. Aquitards and aquicludes are also often relied on as being able to hold back aquifer water. Understanding the nature and location of aquitards and aquicludes is important as they may become breached and created unexpected water issues as well.

Table 2.2. Regional Devonian Hydrostratigraphy in Saskatchewan (Bachu and Hitchon, 1996)

Hydrostratigraphic Unit	Dominant Lithology	Stratigraphic Units
Bakken Aquitard	Argillaceous Shales	Bakken Formation
Devonian Aquifer System	Carbonates	Big Valley to 2nd Red Bed formations
Prairie Aquiclude	Anhydrite, halite and clays	Prairie Evaporite

This system groups eight formations into a single aquifer unit. Homogeneity across all formations is implied and therefore this classification may not be useful when interpreting the hydrogeology or hydrochemistry at finer scales. At the basin scale, the Devonian Aquifer System may be a useful construct but this would not be true at the scale of mine site. A more detailed division of Devonian Hydrostratigraphy was published by Palombi (2009). Table 2.3 summarizes his system.

Table 2.3. Comparative table between the hydrostratigraphic units used in this thesis (from Palombi, 2009) and a more homogenized system from Bachu and Hitchon, 1996.

Hydrostratigraphic Unit	Lithological Description	Formation	Approximate Thickness (m)	Previous Grouping
Bakken Aquifer	Clean sand	Middle Bakken	30	Devonian Aquifer System
Three Forks Aquitard	Low permeability carbonates and shales	Lower Bakken, Torquay and Big Valley Fm	45	
Birdbear Aquifer	Limestone, dolostone, dolomites, evaporites	Lower and Upper Birdbear Fm	45	
Seward Aquitard	Micro/crypto crystalline carbonates, evaporites, anhydrite	Upper Duperow Fm	50	
Duperow Aquifer	Limestones and dolostones	Duperow Fm	140	
Souris River Aquitard	Calcareous shales and carbonates	Hatfield and Wymark members of Souris River Fm	180	
Manitoba Aquifer	Limestones, less dolomite and anhydrite	Souris River and Dawson Bay Fm	150	
Prairie Aquitard	Halite dominated, evaporites	Prairie Evaporite	150	Prairie Aquiclude

2.3.3 Regional Flow in Devonian Carbonates

Most Devonian strata are open with surficial outcrop in both recharge and discharge areas (Bachu and Hitchon, 1996). Fluid flow within the WCSB is known to be from the south to the north into the Alberta sub basin and from southwest to northeast in the Williston and Saskatchewan sub basins (Hitchon, 1969). Bachu and Hitchon (1996) have attributed the presence of brines in Paleozoic aquifers and fresh meteoric water in the shallow and western parts of the basin as evidence that the basin has not been flushed completely.

Geochemical and isotopic results have showed that along the eastern edge of the Williston Basin (where brines should have been continuously discharging) water samples showed isotopic values of measured $\delta^{18}O$ and $\delta^{2}H$ consistent with Pleistocene meteoric water, as well as evidence for the incorporation of deep basin brines with sea water evaporation signatures (Grasby et al 2000; Grasby and Chen, 2005; Ferguson et al, 2007). Evidence for seawater component included the presence of elevated Br/Cl and Na/Cl values below the 1:1 halite dissolution line. The presence of meteoric waters mixed with deeper evolved basinal brines was evidence for the reversal of recharge and the incursion of the meteoric water into deep Devonian sediments before the hydrologic system re-equilibrated post glaciation.

Historical work by Wittrup (1988) and Wittrup and Keyser (1990) attributed water sampled from mine shafts and working to stratigraphic horizons using chemical and isotopic fingerprinting. Their work with isotopes in groundwater allowed them to discern between waters originating from different horizons using the general trend of increasing values of δ D and $\delta^{18}O$ with depth. This, in combination with general knowledge on the geochemical ratios within the samples (using Na, K, Ca, Mg, and Cl) allowed for correlation with stratigraphic units. Work by Wittrup and Keyser (1990) utilized the same assessment tools that were later used by Jensen (2006), but focused on local scale vertical trends as opposed to regional scale lateral variation. The work by Jensen et al (2006) studied the bromine and isotopes from mine shafts to create vertical profiles, however, samples were not compared according to specific formation based units. Results of this study were consistent with the previous conclusions of Wittrup and Keyser (1990).

Chapter 3 Methodology

3.1 Data Collection

A total of over 27,000 water samples were collected from a range of sources and entered into a comprehensive database (Appendix). This included published journals, published theses, relevant regional data from Accumap (IHS, 2017), the National Produced Waters Geochemical Database (Blondes et al., 2016) and data supplied from participating mine sites (Nutrien, formerly PCS and Agrium). In addition to the historic data, data from the IMII new sampling program has been integrated and compared. Data points are not coded according to source of the data used when they are displayed in corresponding graphs or spatial analyses. Data source information for each sample is recorded as a column in the Appendix.

The purpose of this data aggregation was to perform a hydrochemical analysis on the regional samples in an attempt to map regional variation between stratigraphic horizons for the Devonian units that are located above the Prairie Evaporite. As data varies considerably from collection methods and no information was available on analytical techniques, culling was required in order to provide the most accurate and reliable results. Initial assessment of the data focused on obtaining all samples within the Saskatchewan Basin in a regional extent such as to encompass the entirety of the formations of interest and their lateral variation.

Devonian stratigraphy was of greatest interest therefore a total of over 10,000 samples remained that were collected from those units. Formations selected were defined as belonging to the Bakken, Torquay, Birdbear, Duperow, Souris River, and Dawson Bay formations. Other stratigraphic units from the Devonian (The Big Valley, 1st and 2nd Red Bed formations) have been culled from this analysis based on a general lack of regional data that would make the results of spatial patterning spurious and of little value to subsequent interpretations. During an investigation to see the suitability of the data based on the regional spread, the decision was made to remove both the Torquay and Bakken formations from the regional hydrogeochemical analysis. A lack of evenly spread regional coverage over the Elk Point Basin was the deciding factor in why the Torquay and Bakken formations have been excluded from detailed analysis. In addition to this, the nature of the Bakken Formation being a tight aquitard also supported the decision to remove it from the hydrochemical analysis. Based on this, any data interpretations would be inaccurate and involve significant extrapolation that the resultant interpretations may be of no value.

3.2 Data Processing

In addition to an initial cull to include only relevant Devonian age samples, samples collected during the process of oil and gas exploration left many questions about their reliability, as for most samples there was no information on methods used for sampling or analysis. In addition to this any sample that indicated possible contamination (recorded in the comment field within Accumap) was removed from the dataset. Only data that had positive comments on the analytical results or were absent of comments were included in the final database. Further quality control was conducted to evaluate the charge balance using the Charge Balance Equation (CBE) for each water sample (Equation 2).

Equation 2 - Charge balance equation for determining electro-neutrality in solution.

$$CBE = \frac{\Sigma\, cations - \Sigma\, anions}{\Sigma\, cations + \Sigma\, anions} \times 100$$

Chemistry information had to include data representative of the major ions in solution with a CBE of +/- 10. Samples were then labelled as a pass (as a 1) or a fail (as a 0) for CBE to preserve them in the database, but clearly show they are spurious in nature. In addition to this, the samples each were scored for confidence in data quality. This was assessed using text fields that were included in Accumap and recorded the sampler's comments on the sample and analysis quality. Numerical coding was chosen so that querying the database is possible and all data can be used at the discretion of the interpreter (Table 3.1). Due to the culling, a total of 2025 data points makes up the Appendix: The Database of Devonian Water Chemistry.

Table 3.1. Confidence scoring system for water chemistry data

Confidence Score	Interpretation
0	Clearly suggests contamination, or labelled as filtrate
1	Possible contamination, and/or a CBE Fail
2	No comments on the data quality are available
3	Good data

All samples from the Database of Devonian Water Chemistry contain data for the four major cations (Na, K, Mg, Ca) as well as those of the major anion Cl. Additional data from more exotic ions such as transition metals, or oxygen and deuterium isotopes are also included even though they may not have been analyzed in all samples. The dataset can be grouped according to the stratigraphic unit they were sampled from and contain a great variability in their numbers (

Table 3.2).

Table 3.2. Distribution of geochemistry samples according to stratigraphy

Stratigraphy	Count
Bakken Fm	530
Torquay Fm	51
Birdbear Fm	570
Duperow Fm	536
Souris River Fm	202
Dawson Bay Fm	136
Total -	2025

Regional variability is evident when looking at Figure 3.1. It is easy to see that some units are underrepresented spatially and in fact are in clusters (Bakken and Torquay formations). The Birdbear, Duperow, Souris River, and Dawson Bay Formations are reasonably well spread over the area of inspection.

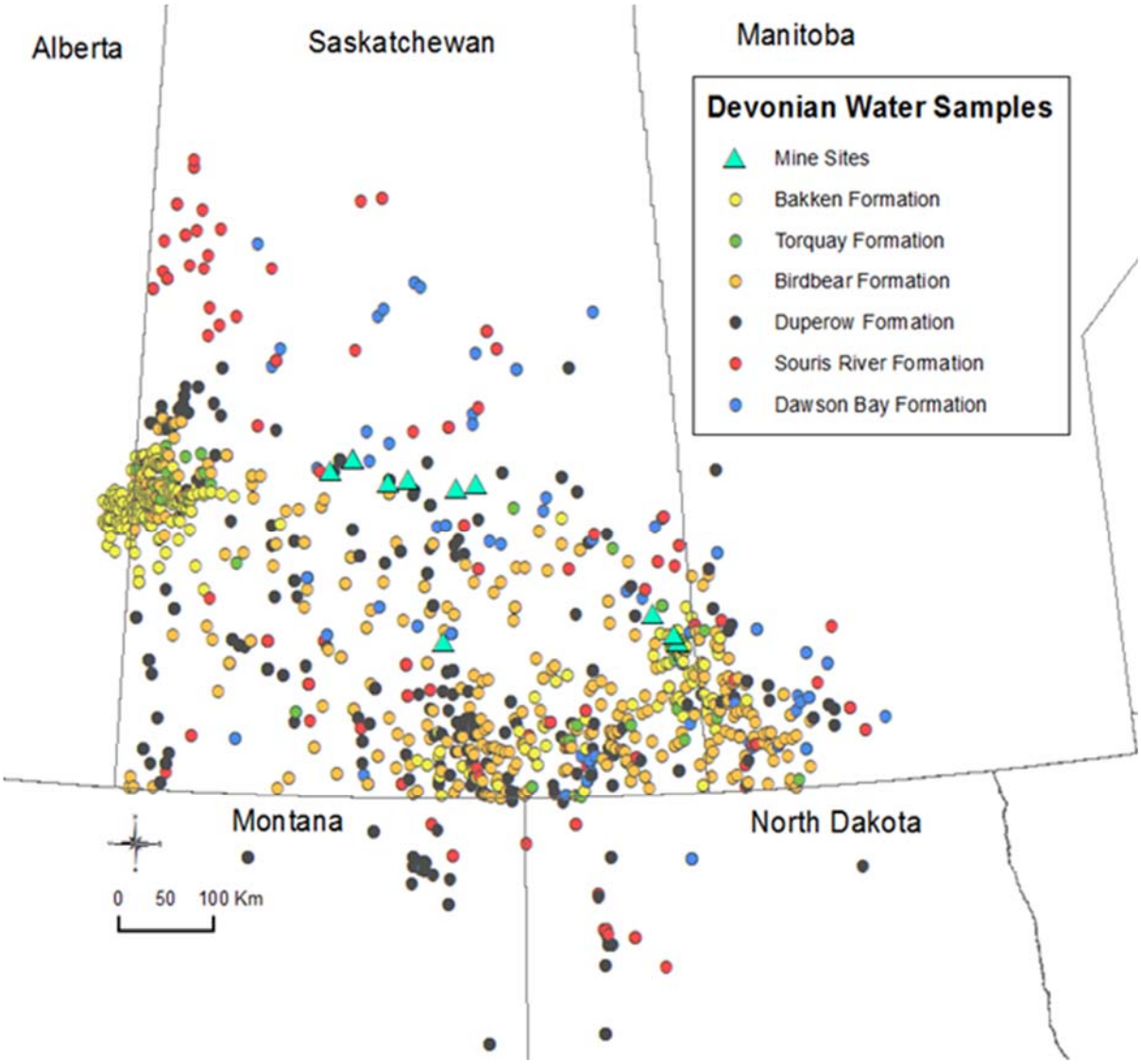

Figure 3.1. Regional spread of Devonian water samples.
Due to the noticeable clustering on the outskirts of the basin, the Bakken and Torquay formations have not been included in this regional study.

Chapter 4 Results

4.1 Sample Distribution

The reliability of the regional interpretation of the hydrochemistry is dependent on the density and spread of the available data (Figure 4.1). In addition to the variable samples from each stratigraphic unit, there is also variable spatial coverage depending on where drilling has taken place. Overall, the spatial distribution of the data allows for reasonable extrapolation between data points.

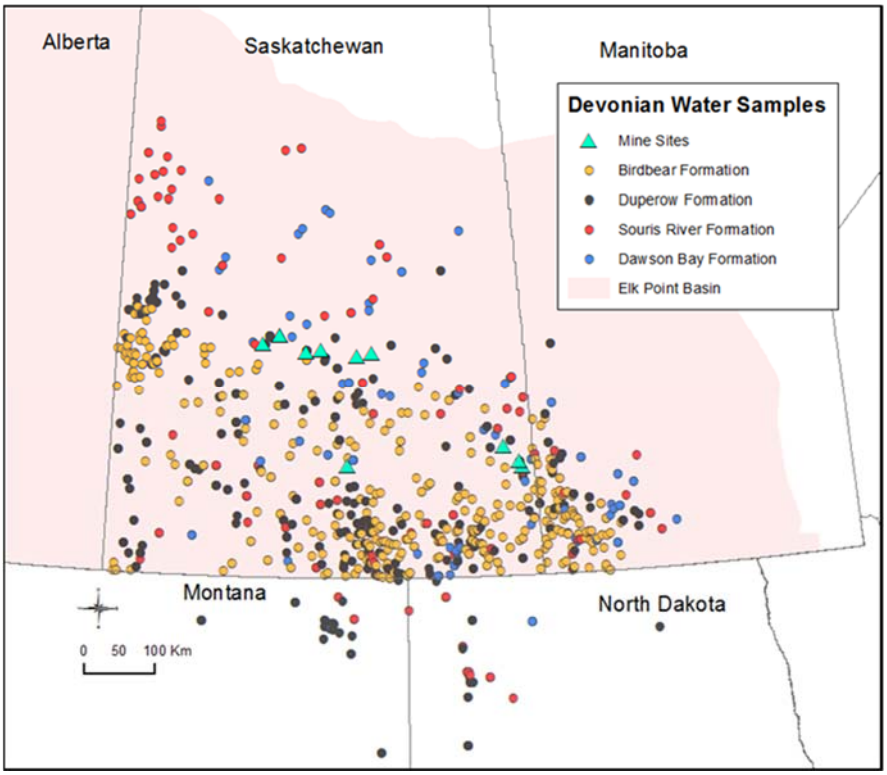

Figure 4.1. Regional spread of water samples from Devonian stratigraphies of interest.

An initial assessment of the water chemistry of the four units was undertaken to see if there was any noticeable patterns or groupings according to stratigraphy (Figure 4.2). There is considerable overlap between the major ion chemistries of the four formations considered.

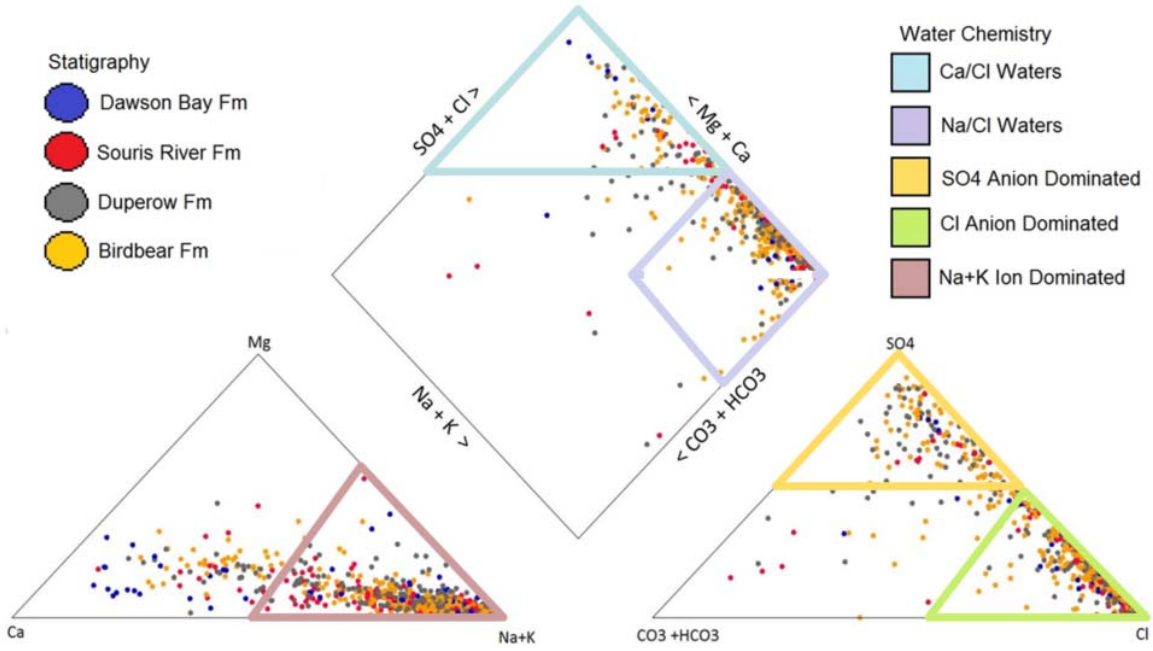

Figure 4.2. Piper Diagram showing the various water chemistries according to stratigraphic unit.

4.2 Total Dissolved Solids (TDS)

Total dissolved solids were analyzed to determine the factors contributing to their concentrations. Figure 4.3 shows the relationship between Na and TDS, whereas Figure 4.4 shows the relationship between Cl and TDS. A line defining the location of TDS concentration for brines at a value of >100,000 mg/l has been plotted on the graphs (Hem, 1985). When looking at how Na relates to TDS, all four formations show greater scatter from the linear correlation at the higher values of TDS suggesting that a different ion is responsible for the make-up of the TDS at greater concentrations. The Duperow and Birdbear formations are tighter to the correlation line at lower salinities, demonstrating a higher component of Na at lower TDS. This may indicate that the lower salinity Duperow and Birdbear fluids have a greater component of dissolved halite.

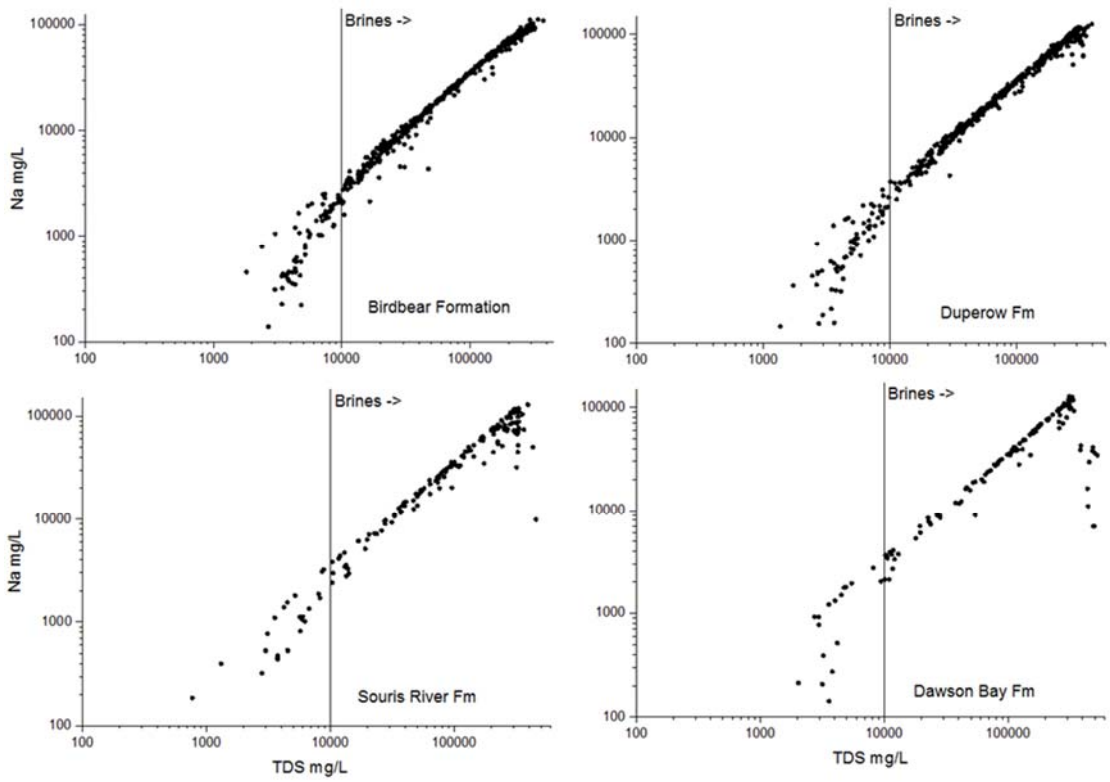

Figure 4.3. TDS relationships with Na.

Graphical comparison of the relationship between Na and TDS for the Birdbear, Duperow, Souris River and Dawson Bay formations.

Souris River and Dawson Bay formations show a heavier scatter with respect to the Na values at moderate and increasing TDS. At these levels the TDS is more dominated by the Cl in solution. These graphs demonstrate that there is less of an influence of dissolved halite in the signatures of the Souris River and Dawson Bay formation fluids. The dominance of chloride ions in solution is to be expected in a very mature basinal fluid.

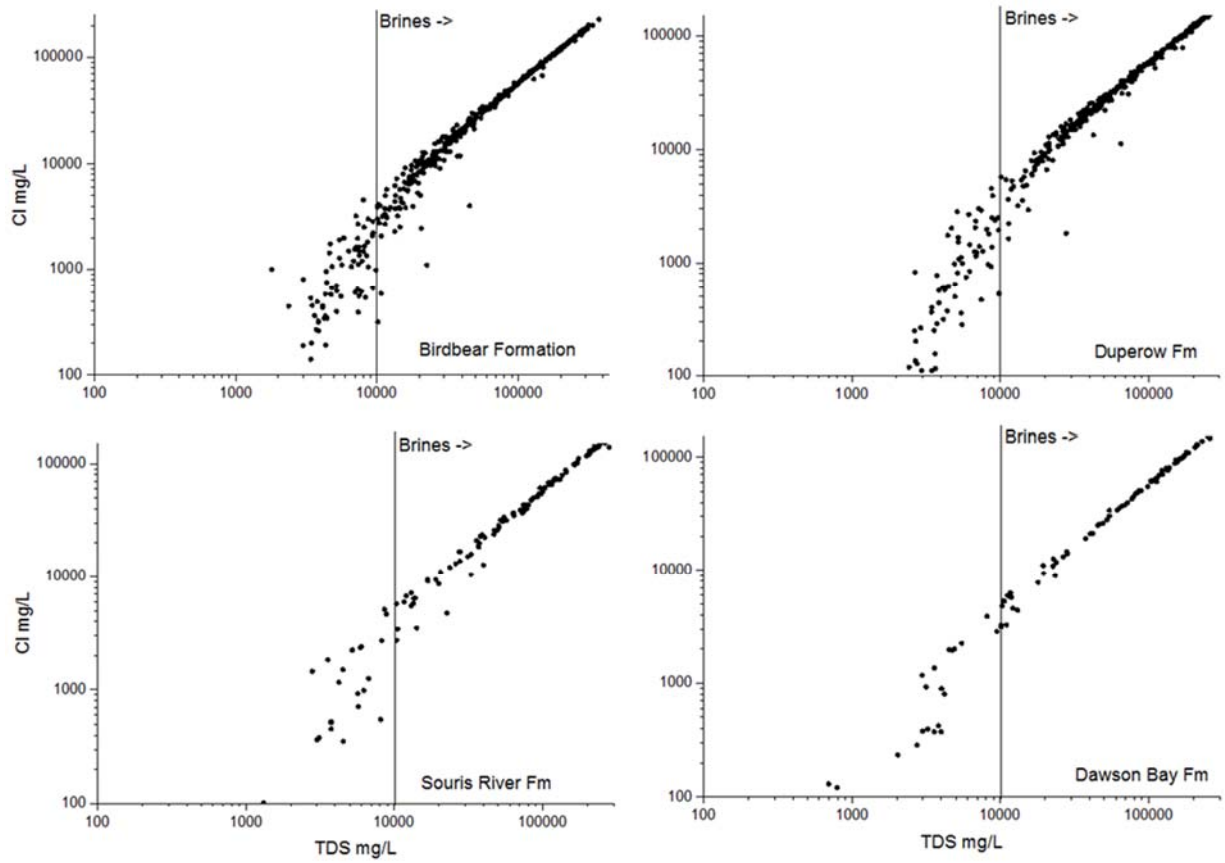

Figure 4.4. TDS relationships with Cl.
Graphical comparison of the relationships of Na to TDS for the Birdbear, Duperow, Souris River, and Dawson Bay formations

All four formations show a linear correlation with Cl and TDS (Figure 4.4). Both the Birdbear and Duperow Formations show a lower Cl component at the lower TDS concentrations. At the same TDS value there is a greater correlation with the Na ions in solution (Figure 4.3). Lower salinity water within the Birdbear and Duperow Formations show evidence for halite dissolution whereas the higher salinities represent the older evolved basinal brines with less of a component coming from halite dissolution. This may be attributable to a syndepositional evaporated seawater signature.

Spatial distributions for TDS concentrations have been presented for each of the formations (Figure 4.5, Figure 4.6, Figure 4.7, and Figure 4.8). The Duperow Formation and to a lesser extent, the Souris River Formation show the greatest amount of dilution, particularly in the southwest and eastern sections of the maps.

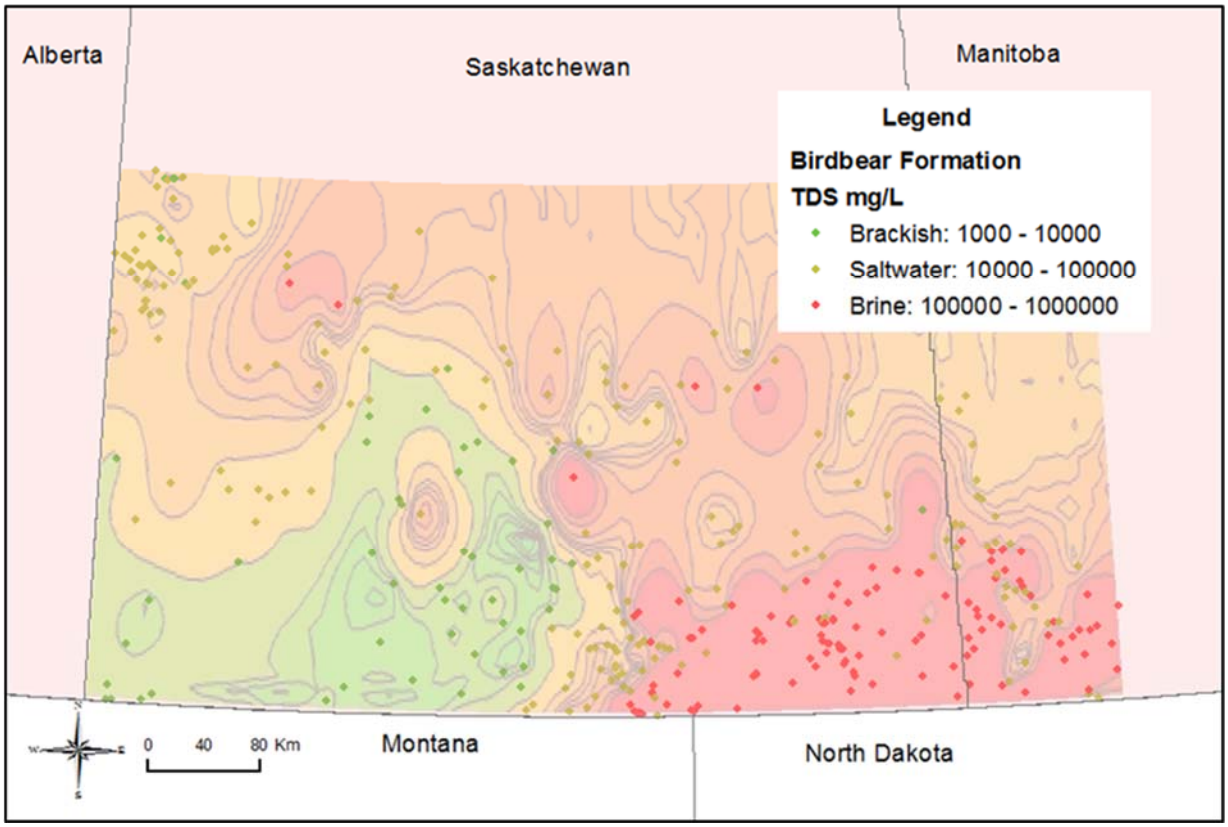

Figure 4.5. Birdbear Fm Regional Concentration of TDS.
Contours are color filled to show the areas of highest concentration (red) brines, and the lowest concentration (green) brackish waters.

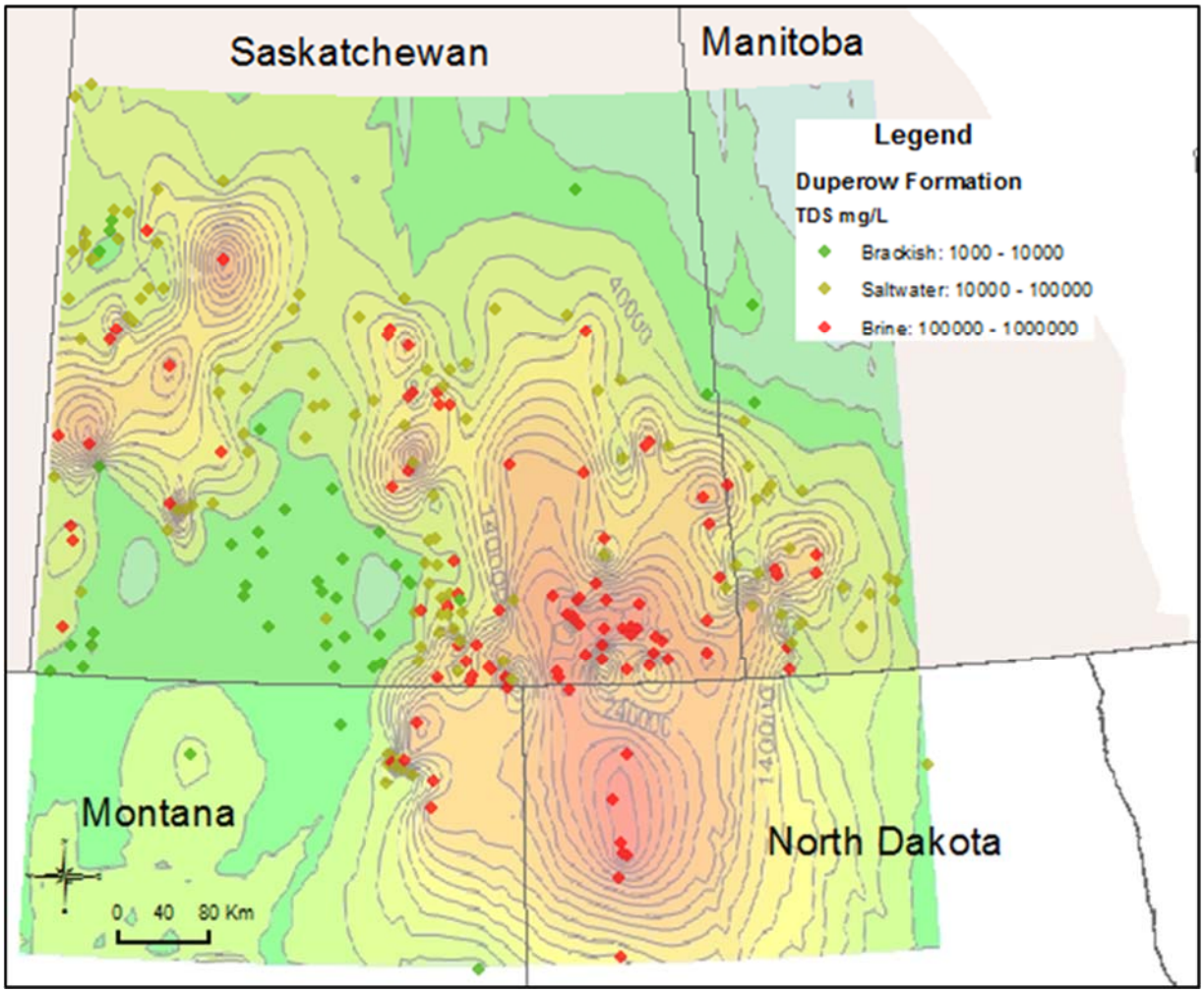

Figure 4.6. Duperow Fm Regional Concentration of TDS.
Contours are color filled to show the areas of highest concentration (red) brines, and the lowest concentration (green) brackish waters.

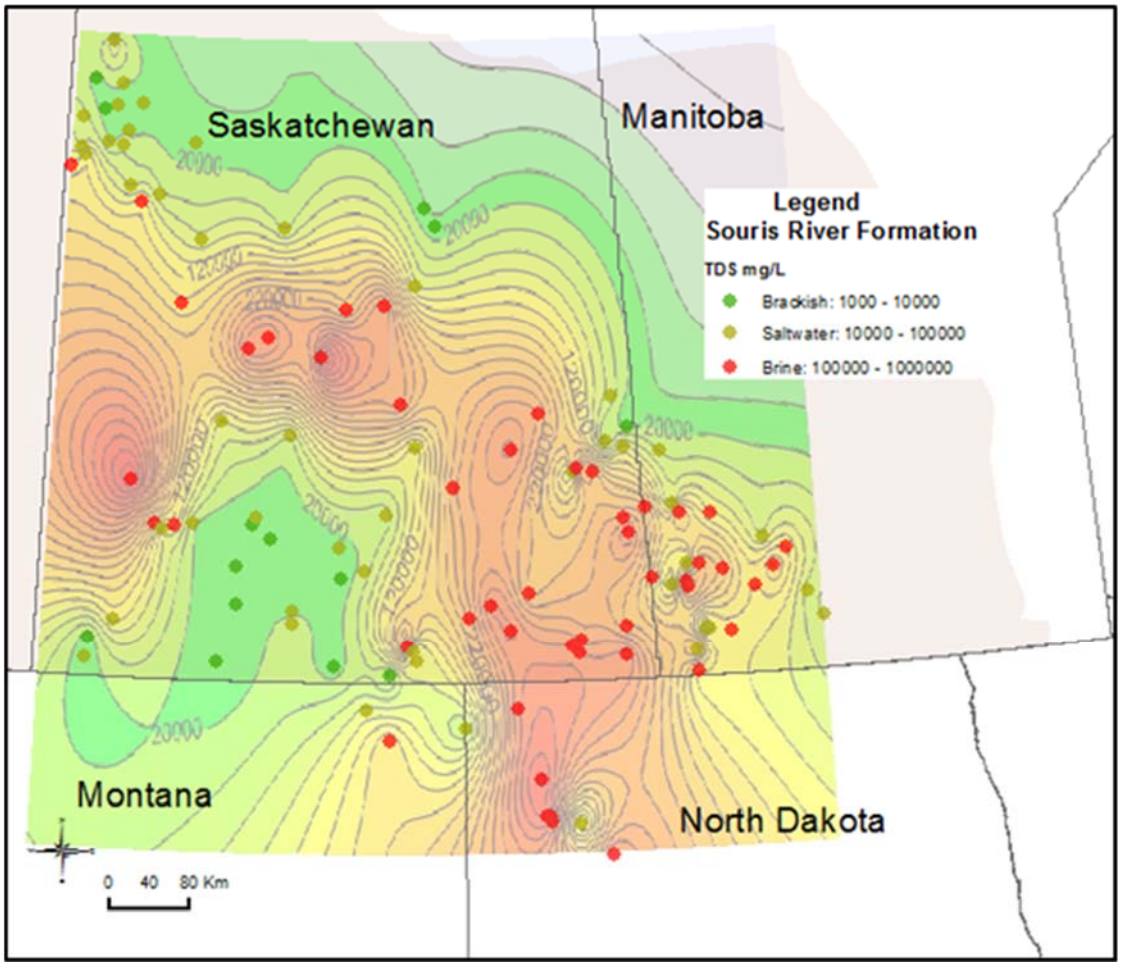

Figure 4.7. Souris River Fm Regional Concentration of TDS.
Contours are color filled to show the areas of highest concentration (red) brines, and the lowest concentration (green) brackish waters.

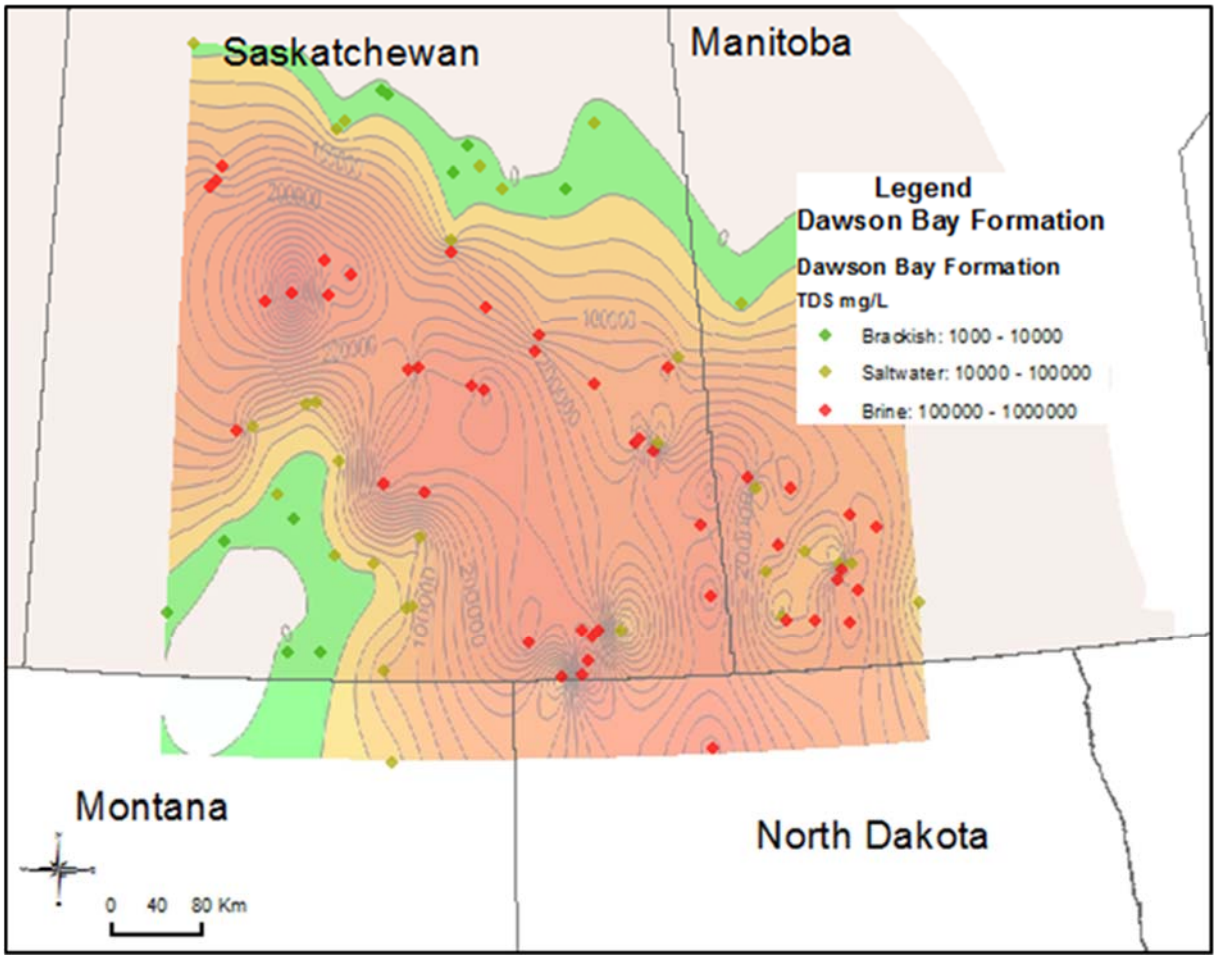

Figure 4.8. Dawson Bay Fm Regional Concentration of TDS.
Contours are color filled to show the areas of highest concentration (red) brines, and the lowest concentration (green) brackish waters.

4.3 Halite Dissolution vs Syndepositional Evaporated Seawater Signatures

The Birdbear and Duperow formations have gained most of their ions in solution from the dissolution of halite (Figure 4.9). Unlike the Souris River and Dawson Bay formations, they form a very tight line following the 1:1 ratio with Na and Cl, especially with increasing concentration. Samples from the Dawson Bay Formation have Na:Cl < 1, especially at the higher Cl concentrations, showing the lack of influence of halite dissolution on their chemistry. Their high chloride and low sodium values representing an older solution signature where chloride was likely derived from initial seawater.

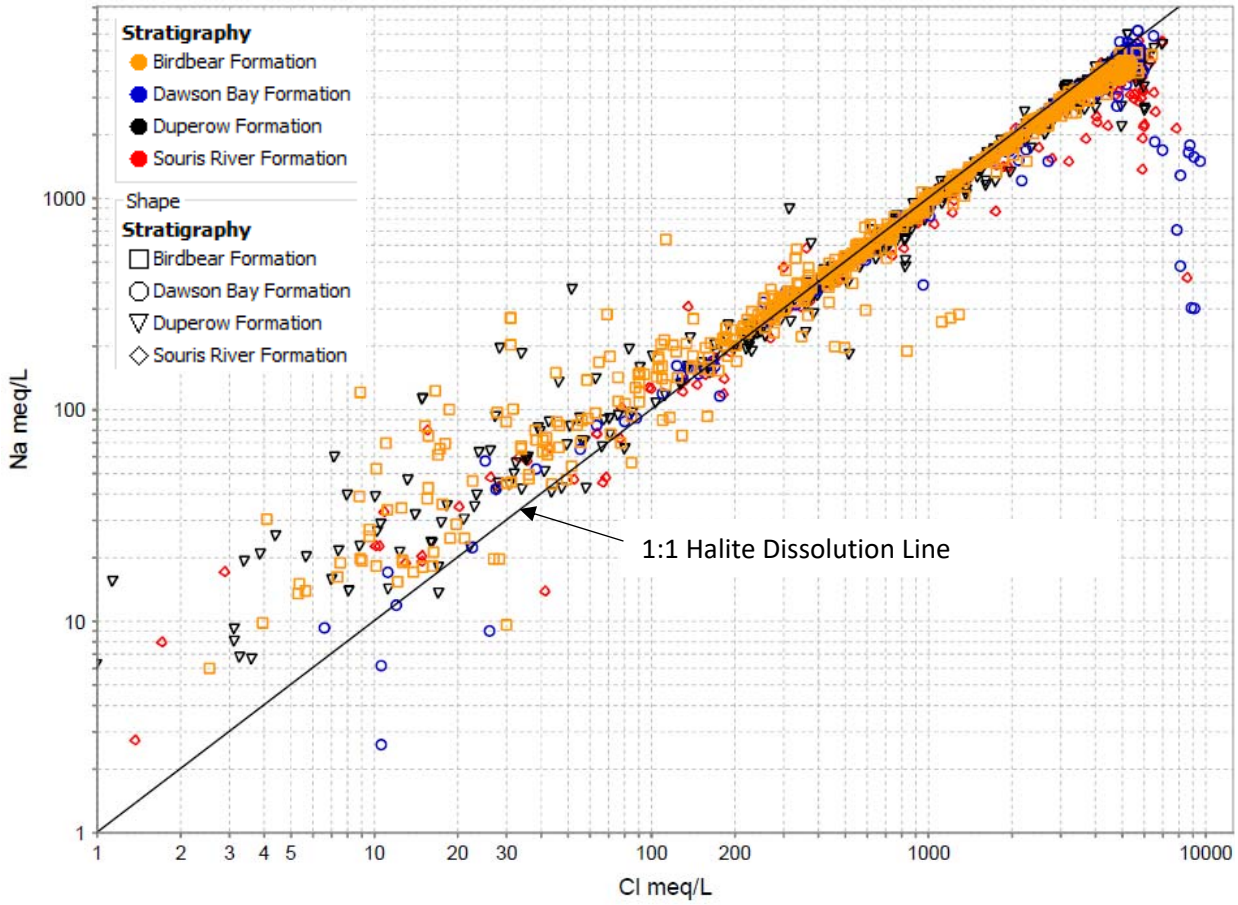

Figure 4.9. Assessment of the role of halite dissolution on the chemistry.
Samples falling on the 1:1 trend line show sodium and chloride ions in solution were derived from halite dissolution.

Regional variation in the Na/Cl ratio has been mapped for each stratigraphic unit (Figure 4.10, Figure 4.11, Figure 4.12, and Figure 4.13). In addition to the contoured data points, the location of a

previously interpreted region of halite dissolution was added to the map (Mossop and Shetsen, 1994). This allows for a spatial comparison of the expected chemical influences on the water. Spatially, the Dawson Bay Formation shows large regions of dissolution water signature. This is for the most part seen along the north-eastern discharging side of the basin and likely represents the waters that entered the deeper parts of the basin in the east during the reversal of recharge in the Pleistocene.

The area of syndepositional evaporated seawater (here in labelled on maps as connate water) is much smaller in the spatial representation, with its signature extending through most of the western and southern regions. However, as is seen in the data distribution, this may be an artifact due to the sparsity of data in these regions. Both the Duperow and Souris River formations show a NW/SE corridor through the area of interest of signatures indicative of syndepositional evaporated seawater. The green areas in the map show the presence of meteoric water and halite dissolution and are representative of the regional recharge in the southwest and of Pleistocene meltwater influx in the east from Manitoba. The Birdbear Formation is dominated by waters showing a signature of halite dissolution.

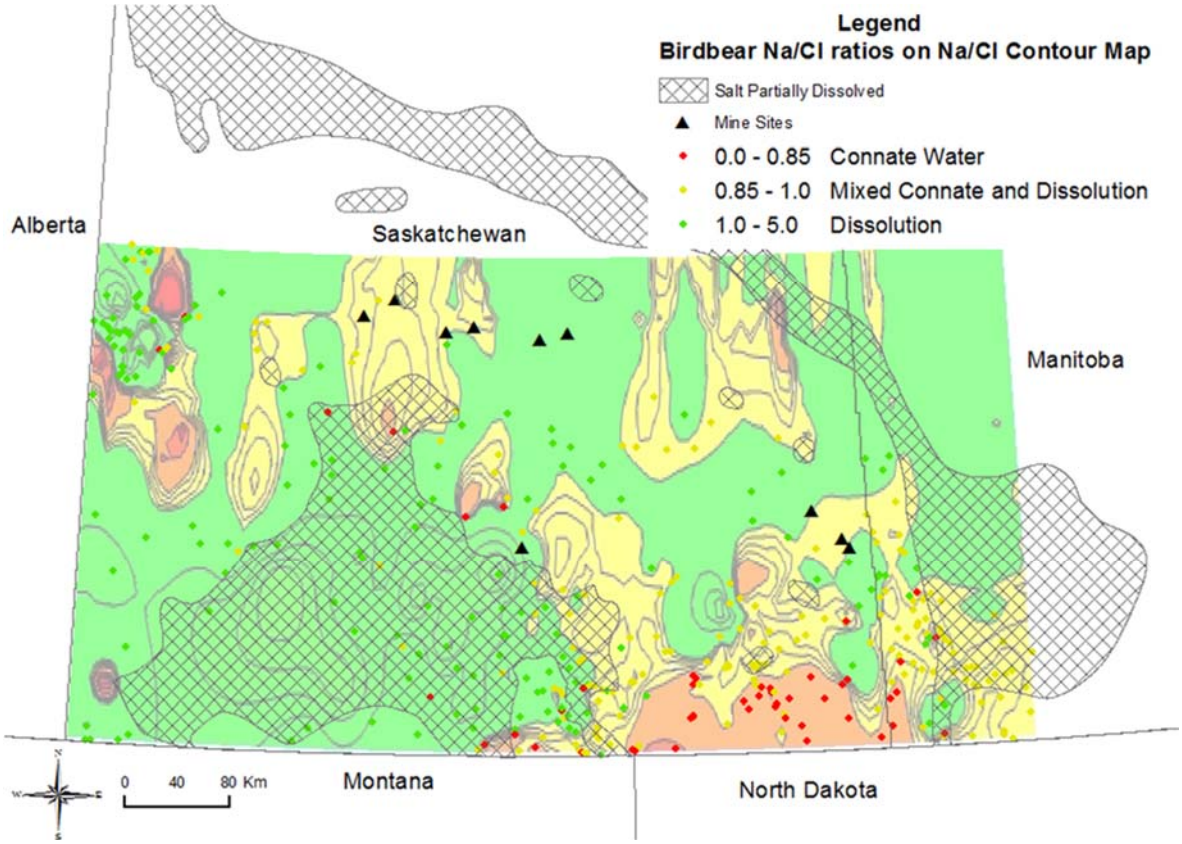

Figure 4.10. Regional distribution of Birdbear Fm Naci molar ratios.

Samples showing the location of connate water (Na/Cl ratios <0.85, and halite dissolution signatures (Na/Cl ratios >1). The extent of the previously interpreted halite dissolution regions is seen in hatching and for the most part matches with the contoured areas of halite dissolution.

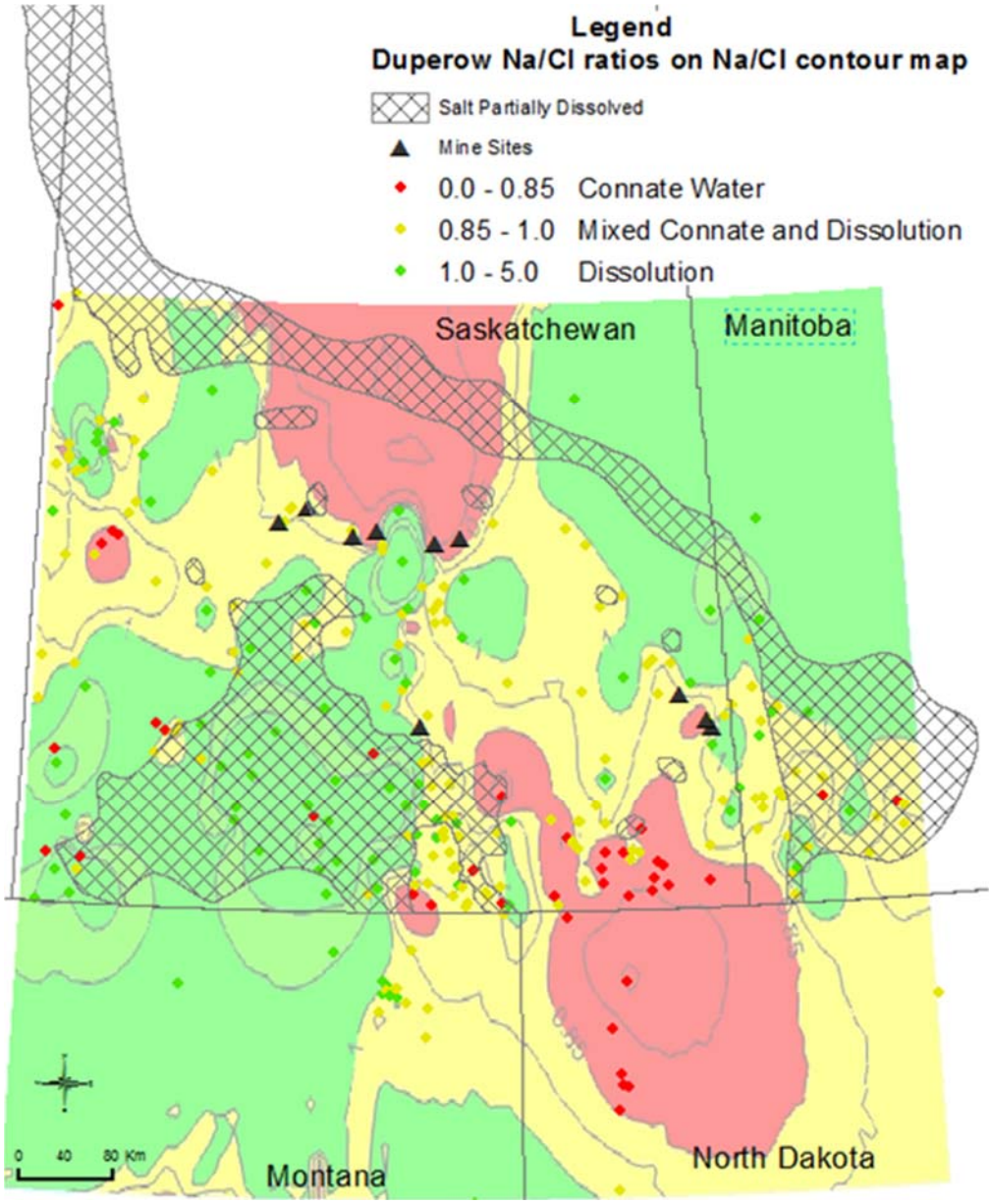

Figure 4.11. Regional distribution of Duperow Fm Na:Cl molar ratios.

Samples showing the location of connate water (Na/Cl ratios <0.85, and halite dissolution signatures (Na/Cl ratios >1). The extent of the previously interpreted halite dissolution regions is seen in hatching and for the most part matches with the contoured areas of halite dissolution.

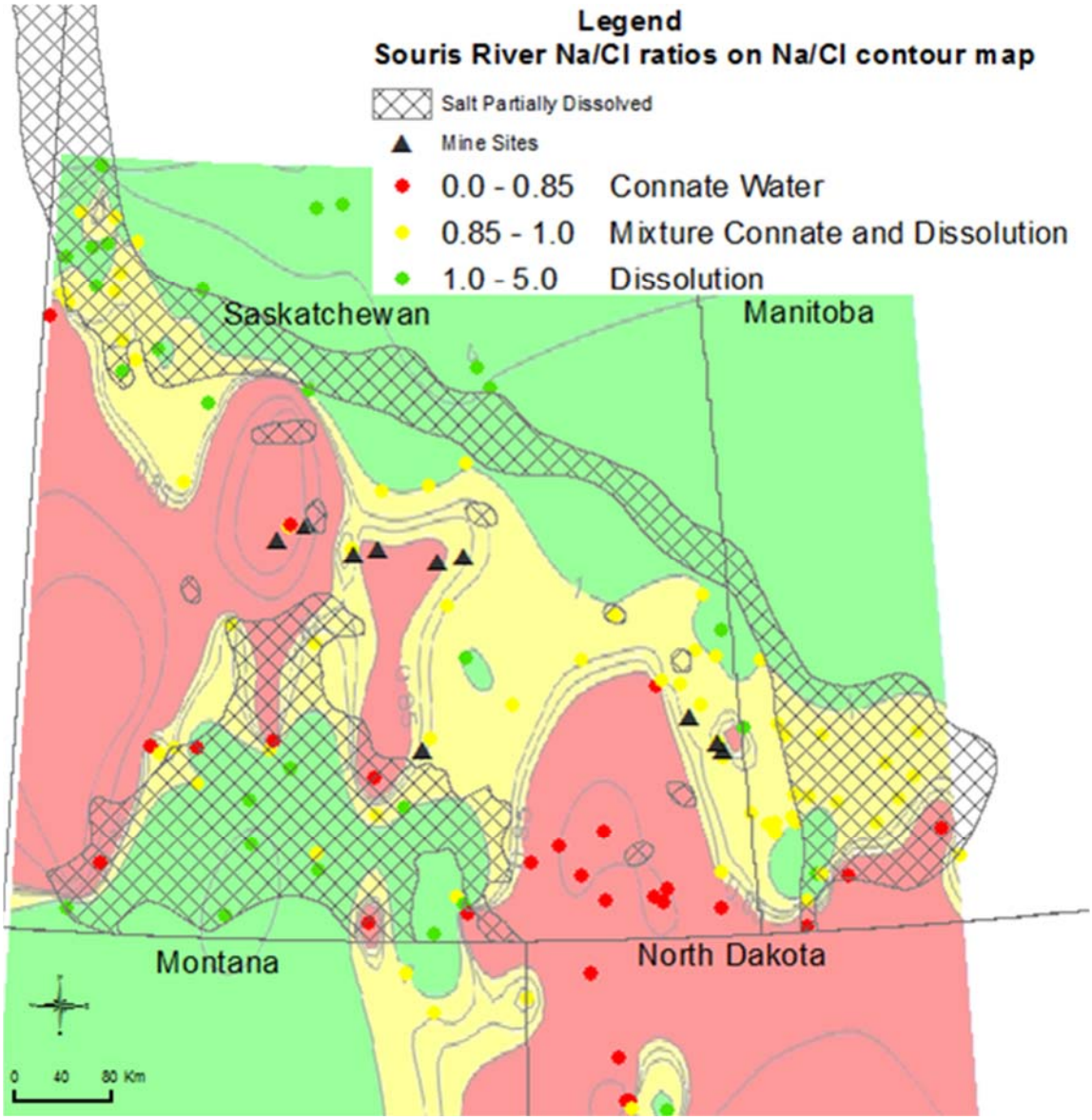

Figure 4.12. Regional distribution of Souris River Fm Na:Cl molar ratios.

Samples showing the location of connate water (Na/Cl ratios <0.85, and halite dissolution signatures (Na/Cl ratios >1). The extent of the previously interpreted halite dissolution regions is seen in hatching and for the most part matches with the contoured areas of halite dissolution.

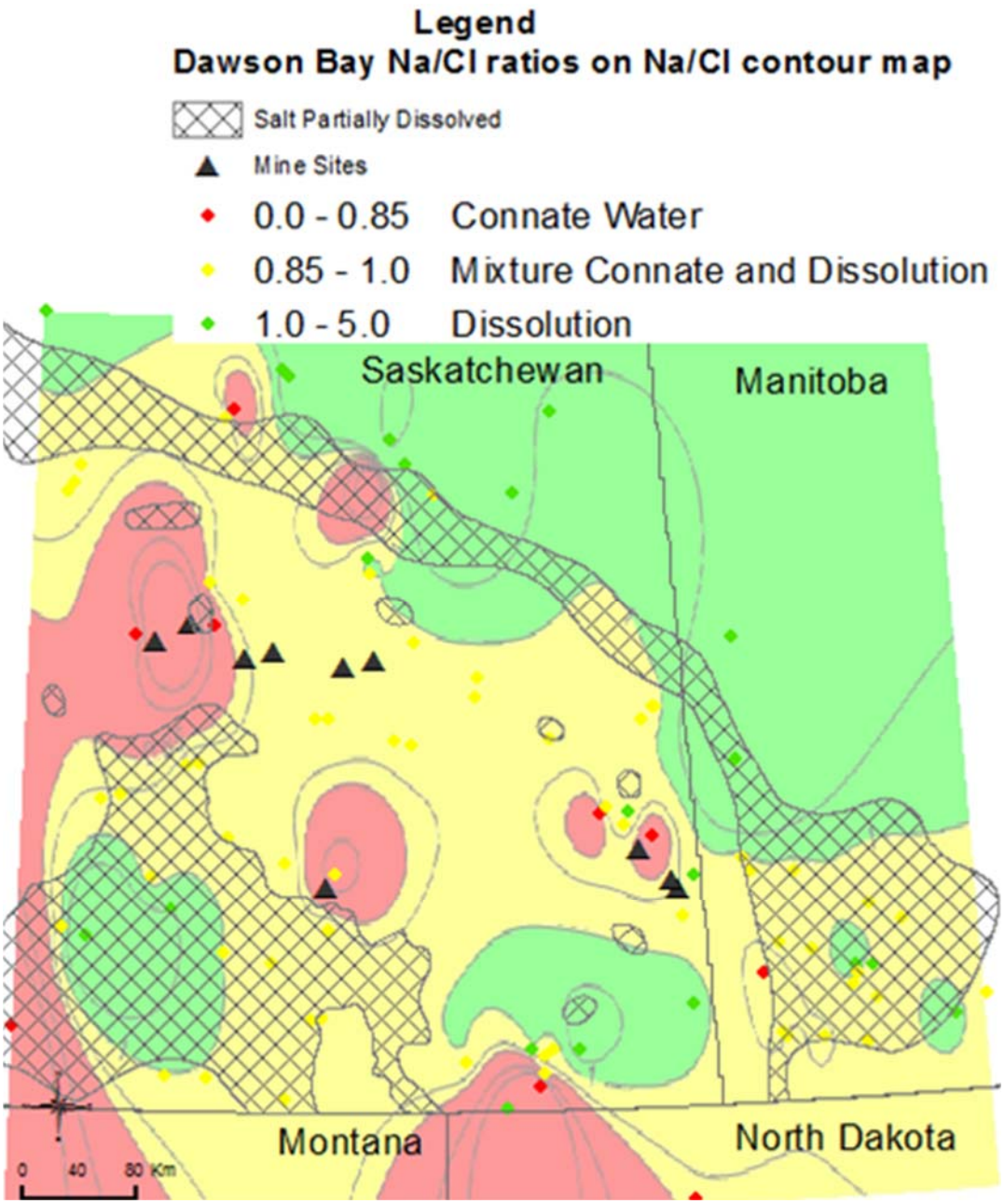

Figure 4.13. Regional distribution of Dawson Bay Fm Na:Cl molar ratios.

Samples showing the location of connate water (Na/Cl ratios <0.85, and halite dissolution signatures (Na/Cl ratios >1). The extent of the previously interpreted halite dissolution regions is seen in hatching and for the most part matches with the contoured areas of halite dissolution.

Analysis of the Cl/Br ratios in the samples indicate the presence of seawater where the data points occur proximal or under the seawater evaporation trajectory (Figure 4.14). The Birdbear and Duperow formations have a significant amount of scatter in their data, with a lot of the samples plotting with extremely high Cl/Br ratios, especially at the lower values of Cl mg/L indicative of the influence of halite dissolution. Dawson Bay and Souris River have more of an indication of seawater chemistries as they fall on or below the seawater evaporation trajectory, especially with increasing Cl content.

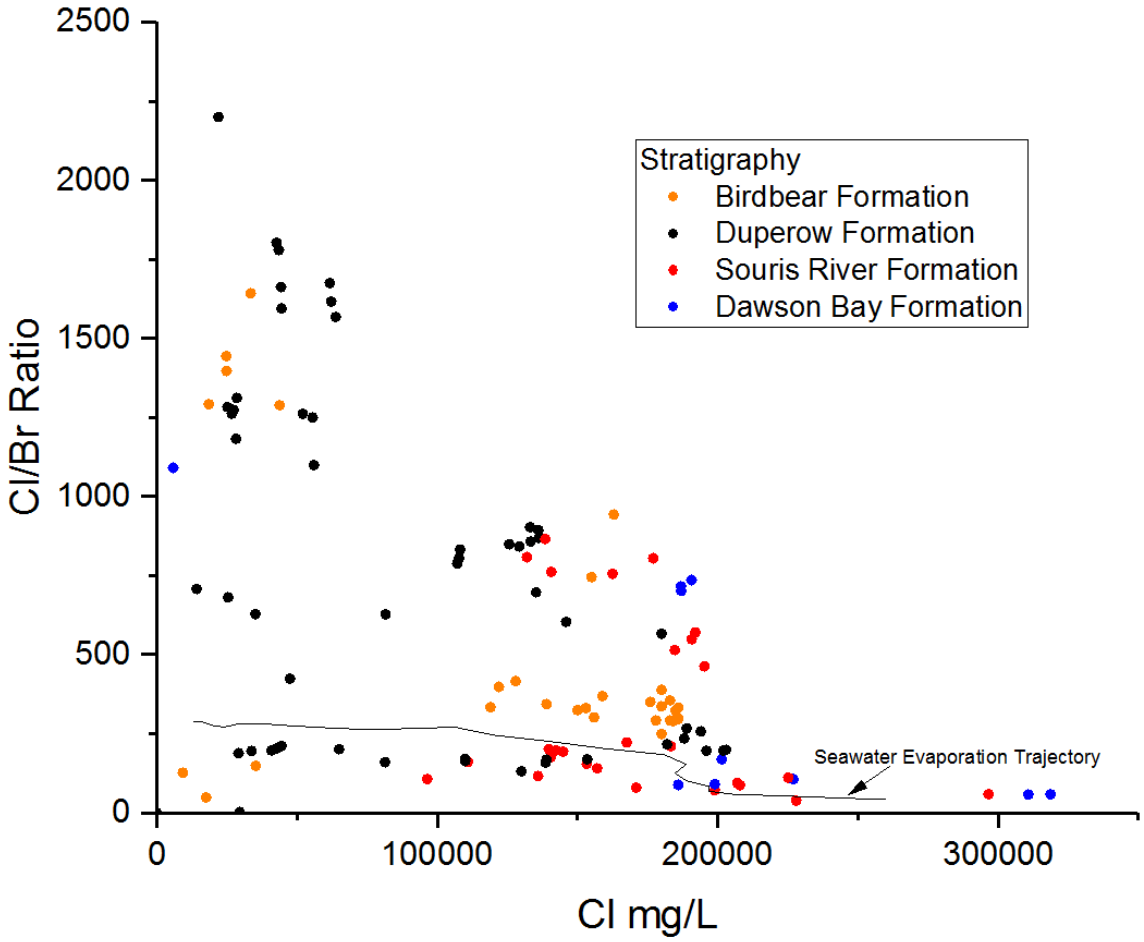

Figure 4.14. Graph of Cl/Br vs. Cl for the four formations.

Assessment of the influence of seawater on the formation fluid signature in the various stratigraphic units. (Seawater evaporation trajectory from Freeman, 2007.)

Considering Cl/Br and Na/Br, the Birdbear and Duperow formations show a large spread above the seawater signature indicating a greater influence of halite dissolution (Figure 4.15). There is also a greater component of total Na and Cl in the Birdbear and Duperow formations, as their values extend significantly along the correlation line in comparison to the Souris River, which stops at Na/Br value of <500. As an additional assessment, samples were color coded to assess their chemical signatures relative to the mine site they were sampled from. In comparison to Jensen et al. (2006) their samples were not differentiated according to the sampled formation. Another interesting change is that although previously shown as only having a halite dissolution signature, the Rocanville Duperow samples show the influence of both the seawater component and halite dissolution on formation waters.

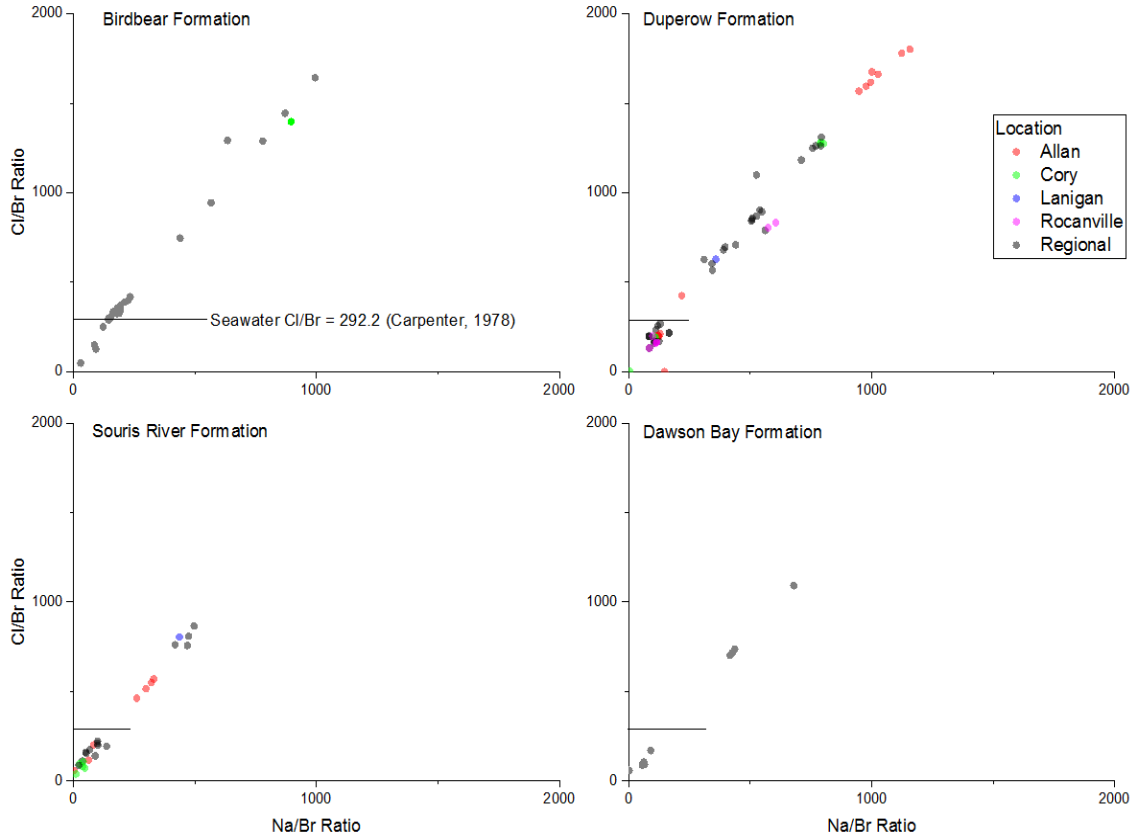

Figure 4.15. Comparison of Cl/Br molar ratios to Na/Br molar ratios for the four units. Samples are divided into their host stratigraphies, and color coded to reflect regional spread implied by the mine site locations. The location of the seawater cutoff (Cl/Br) is shown as the horizontal line (taken from Carpenter, 1978)

4.4 Sulfate

Groundwater has been classified into older evolved brines with a Na-Ca-Cl signature, meteoric dominated waters with a Ca-SO_4 signature, and Na-Cl signature by Rostron and Holmden (2000) in the Williston Basin. A regional analysis of SO_4 was conducted in an attempt to define these waters due to the relationship of Ca and SO_4 in relation to gypsum and anhydrite solubility. The amount of SO_4 within formation water has been plotted according to stratigraphy (Figure 4.16, Figure 4.17, Figure 4.18, and

Figure 4.19). Areas where SO_4 is low may define the Na-Ca-Cl brines and areas of high SO_4 may represent areas where there is dissolution of gypsum and anhydrite. The Dawson Bay and Souris River formations show a pattern similar to the connate water corridor seen in earlier figures. In comparison to these older units, the Duperow Formation shows an overall lower amount of SO_4 in solution.

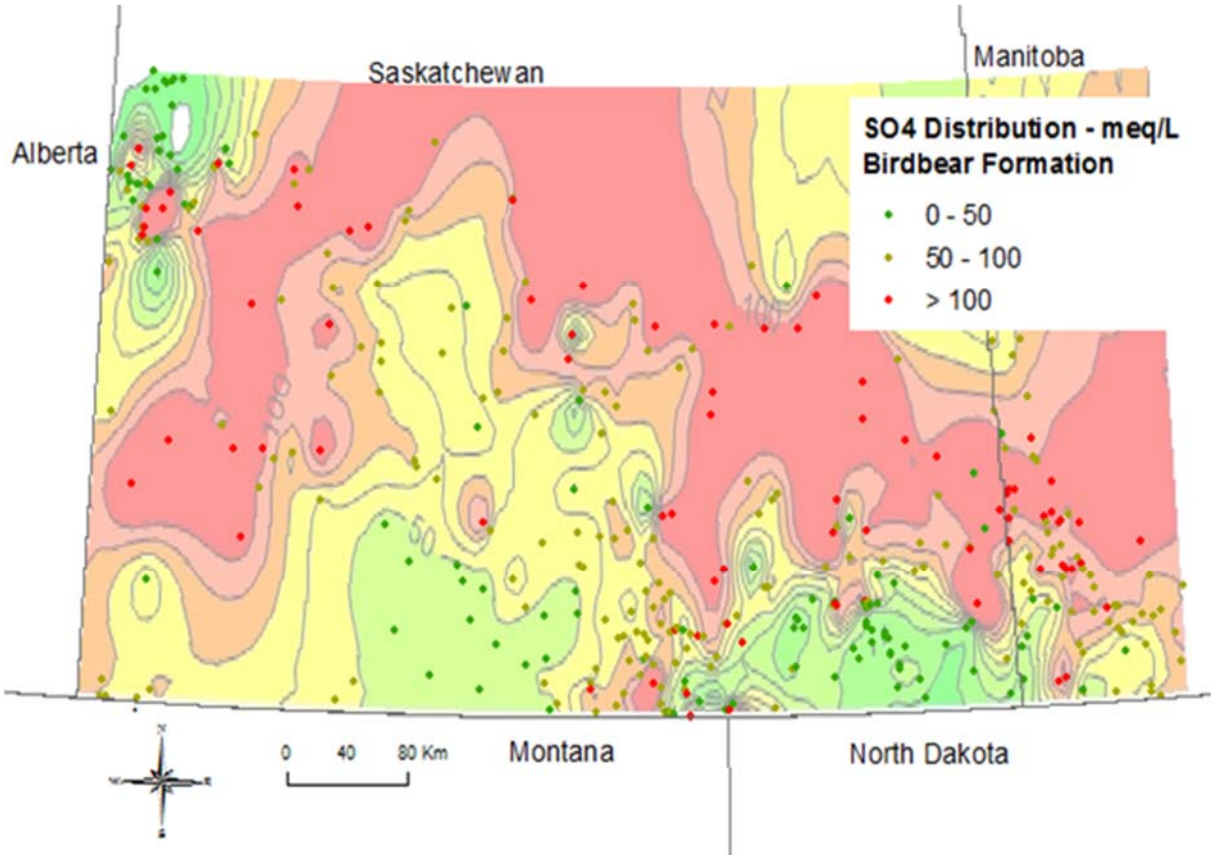

Figure 4.16. Regional distribution of sulfate in water samples for the Birdbear Formation.

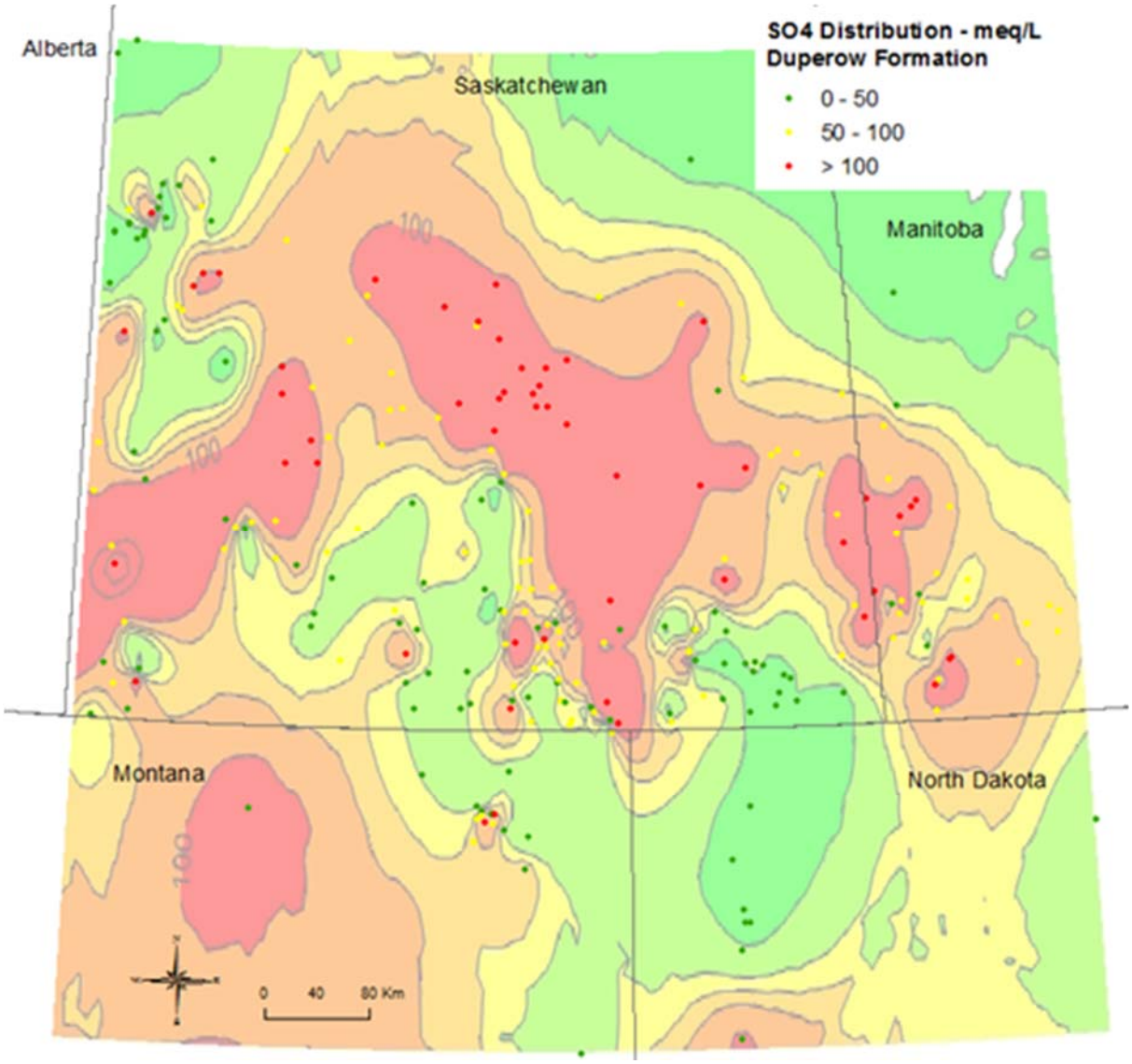

Figure 4.17. Regional distribution of sulfate in water samples for the Duperow Formation.

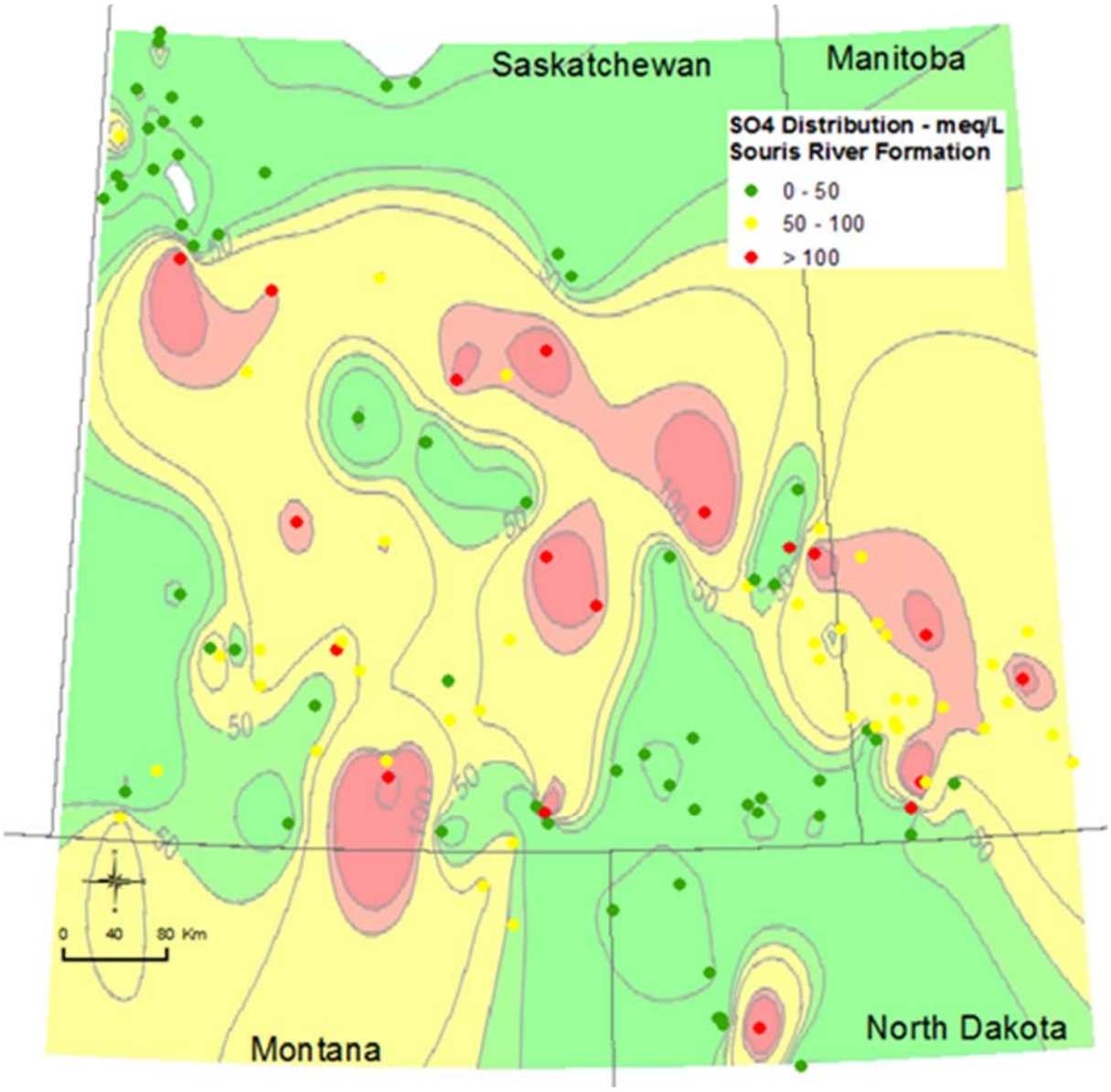

Figure 4.18 Regional distribution of sulfate in water samples for the Souris River Formation.

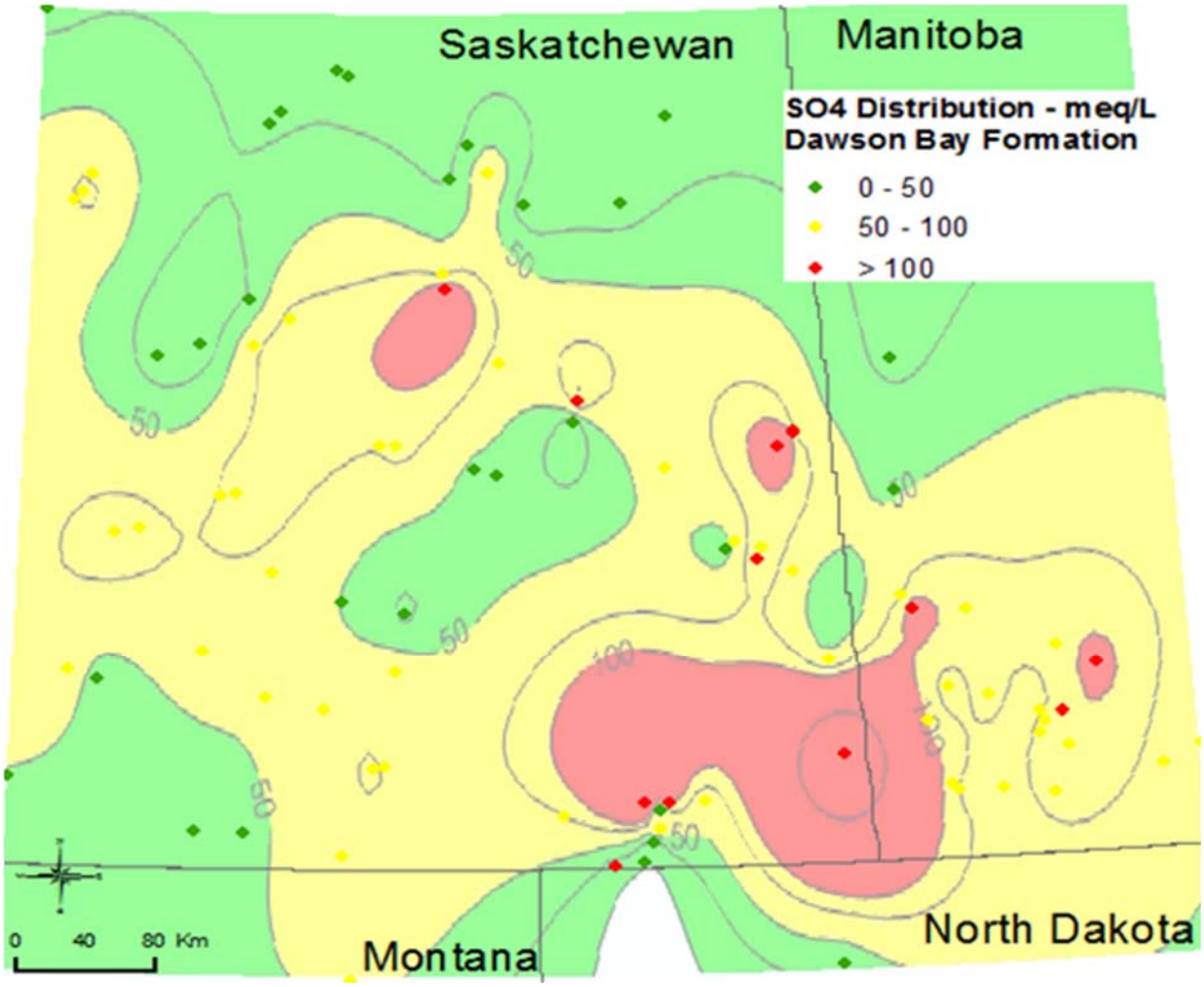

Figure 4.19. Regional distribution of sulfate in water samples for the Dawson Bay Formation.

Graphically, the relationship between SO_4 and Cl or Ca concentration show an expected relationship (Figure 4.20). This is noteworthy because as the amount of both Ca and Cl increase SO_4 decreases. With Ca this is especially noticeable, this represents the Ca and SO4 relationship to the solubility of gypsum and anhydrite. The role of the Na-Ca-Cl water chemistry is also reflected in this graph. Samples with high Ca would be found in the Na-Ca-Cl waters, which also have low SO_4 but should also contain high Cl. Therefore, it is expected both high Ca and high Cl samples would have low SO_4 in solution.

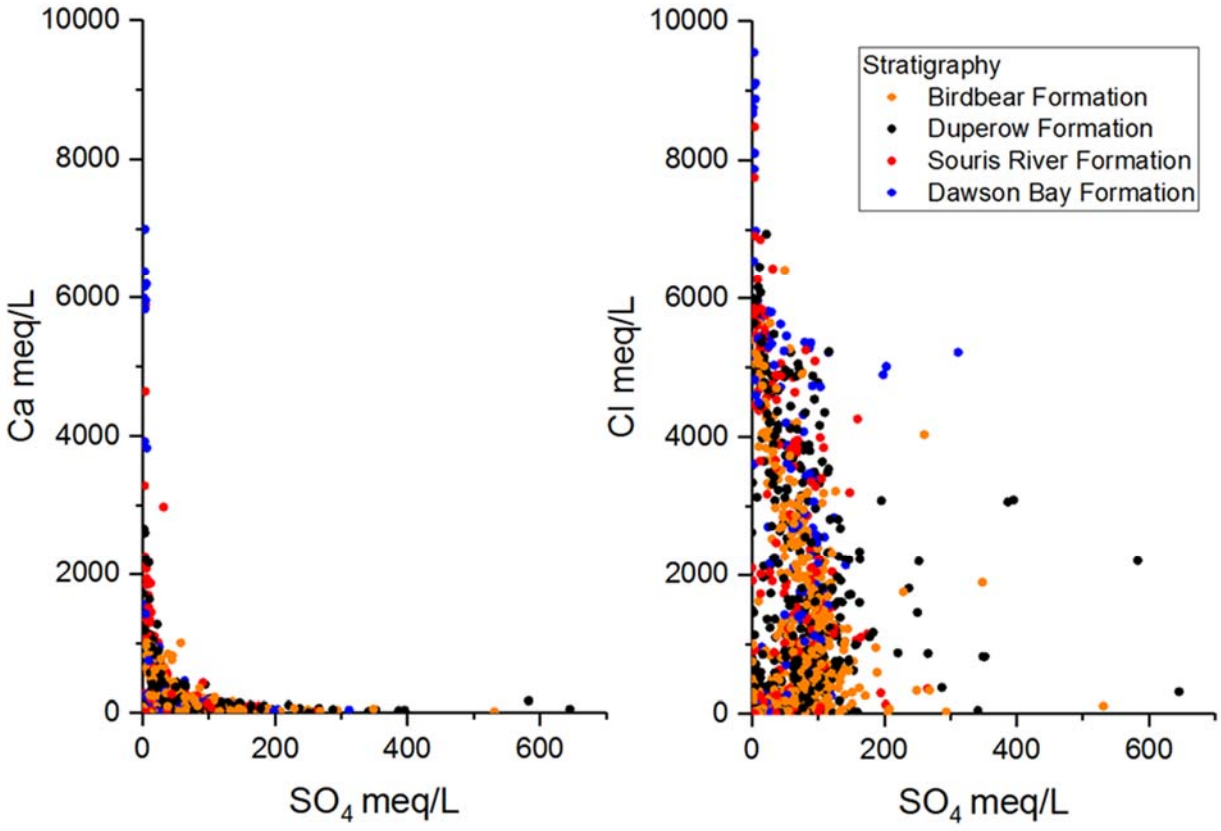

Figure 4.20 Graphical comparison for Ca and Cl to SO4 for the four units

4.5 Isotopes

Plotting the various samples on a δ^2H vs. $\delta^{18}O$ graph illustrates the spread of Elk Point Basin water isotopic signatures. The distribution of samples relative to the Global Meteoric Water Line (GMWL) (Equation 3) gives an indication of the influence of glacial, meteoric, and syndepositional evaporated seawater on the resultant groundwater signature. Samples with low values of $\delta^{18}O$ as opposed to high $\delta^{18}O$ showing the influence of a colder climate of precipitation as opposed to that of a warm climate respecitvely.

Equation 3 - Global Meteoric Water Line equation as defined by Craig (1961).

$$\delta D = 8.0 \times \delta^{18}O + 10 \text{ ‰}$$

Previous salinity interpretations are consistent with the isotopic observations seen in Figure 4.21. The location of the Dawson Bay Formation samples relative to the GMWL shows a predominantly warm climate signature (indicative of evaporative Devonian conditions), whereas the Duperow Formation has values consistent with cold climates (suggesting the influence of Pleistocene climates on isotope values). The Souris River Formation, as well as several samples from the Duperow Formation, fall between both extremes, with both the warm and cold climate signatures seen. Due to there only being one Birbear Formation water sample available there is a lack of evidence to isotopically attribute the water signature source.

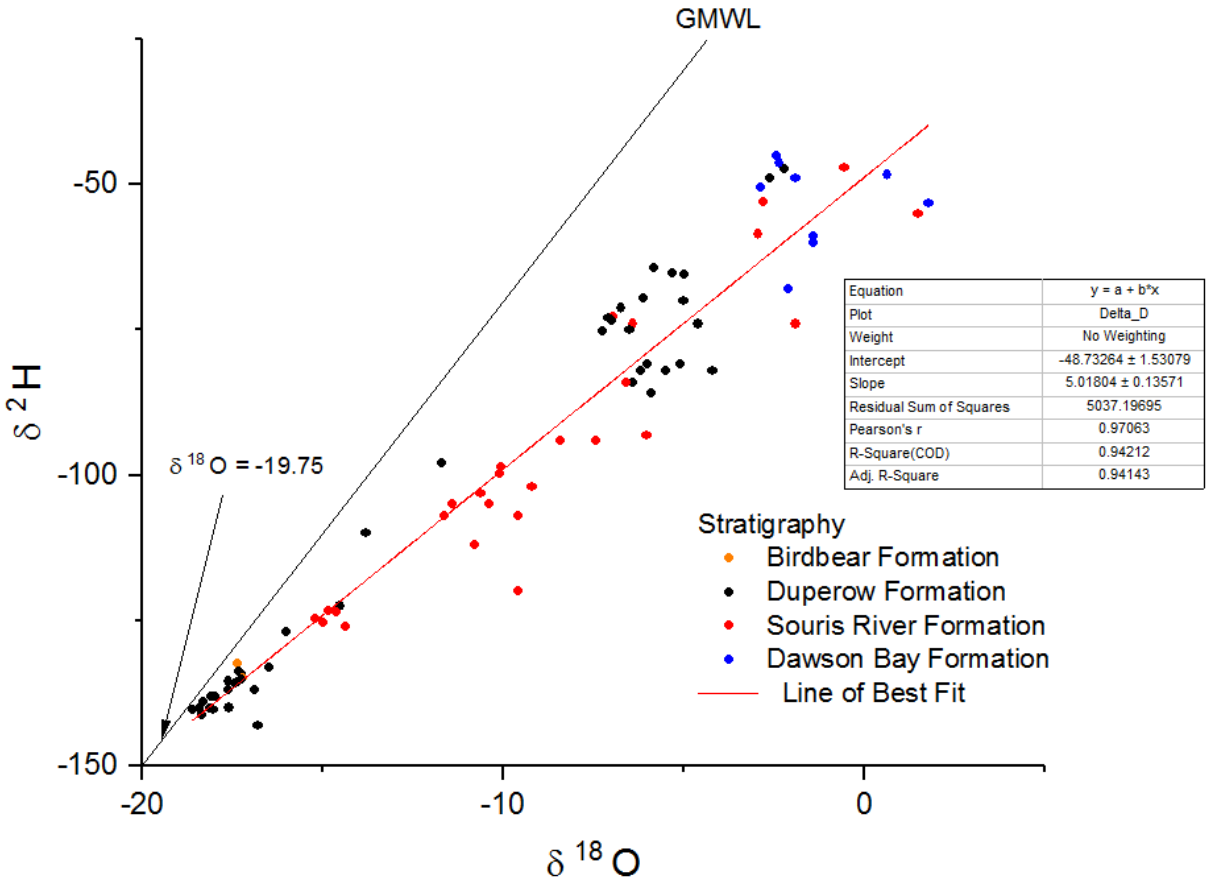

Figure 4.21 Comparison of the isotopic signatures from the Birdbear, Duperow, Souris River, and Dawson Bay formations.

The samples points are relative to the Global Meteoric Water Line (GMWL). The intercept of the line best fit is interpreted as -19.75‰

Due to the lack of regional spread of the data throughout the study area, regional context has been shown for the Duperow Formation samples by color coding them according to mine site (Figure 4.22). The samples from the eastern side of the basin (Rocanville and Scissors area) have a distinct signature from the samples from further west at the Allan and Cory mines. Eastern samples show more of a connate water signature, where as the western samples have a more meteoric/glacial component.

$\delta\ ^{2}H$

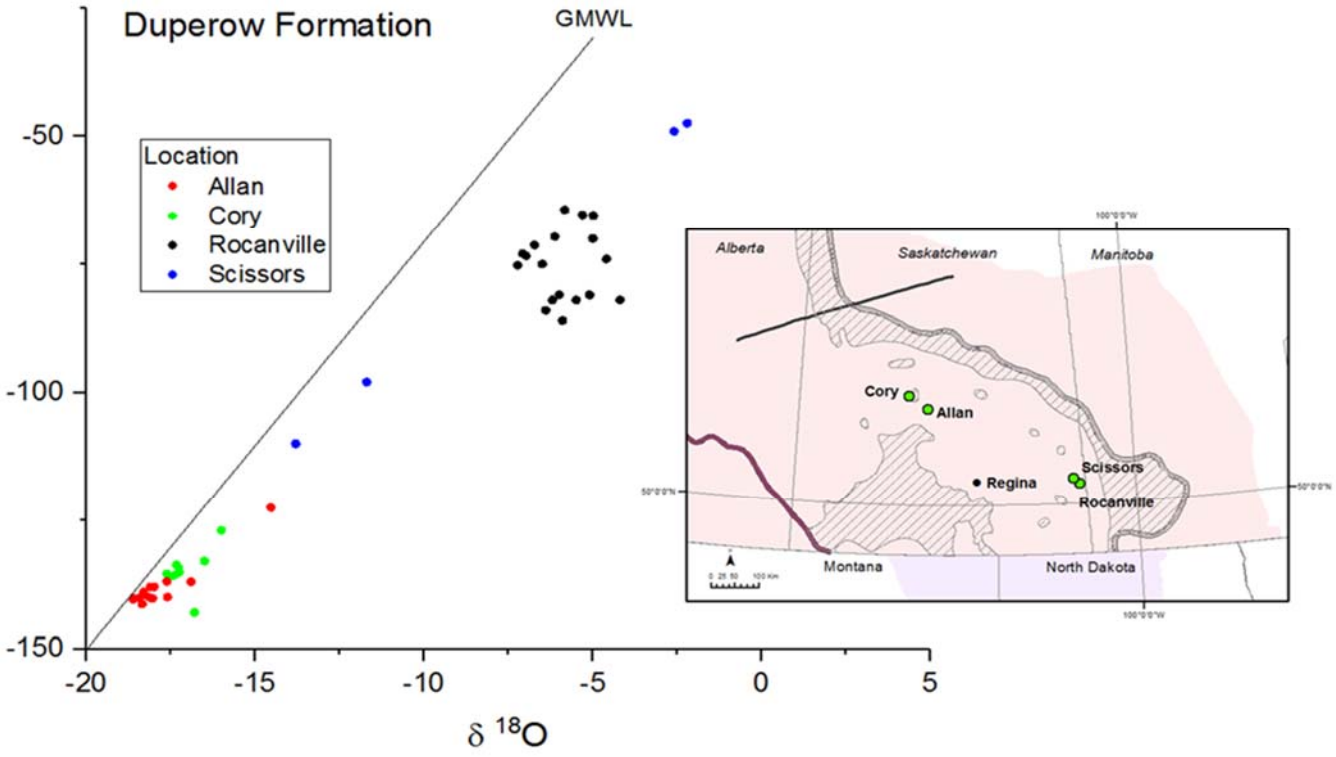

Figure 4.22 Regional variation in isotopic signature according to mine site.

The Duperow Formation shows a shift from dissolution waters in the western part of the Elk Point basin (relatively) to those samples from closer to the Manitoba border.

Changes in deuterium excess according to chemical variation have been plotted for the formations (Figure 4.23). Notable points are that deuterium excess decreases with increase in overall salinity, has highly variable values for seawater when compared with Cl/Br, and has slightly higher values in connate and mixed halite solutions as compared to the halite disolution (more meteoric) formation fluids. The highest values for the deuterium excess appear in the low TDS waters of the Duperow Formation.

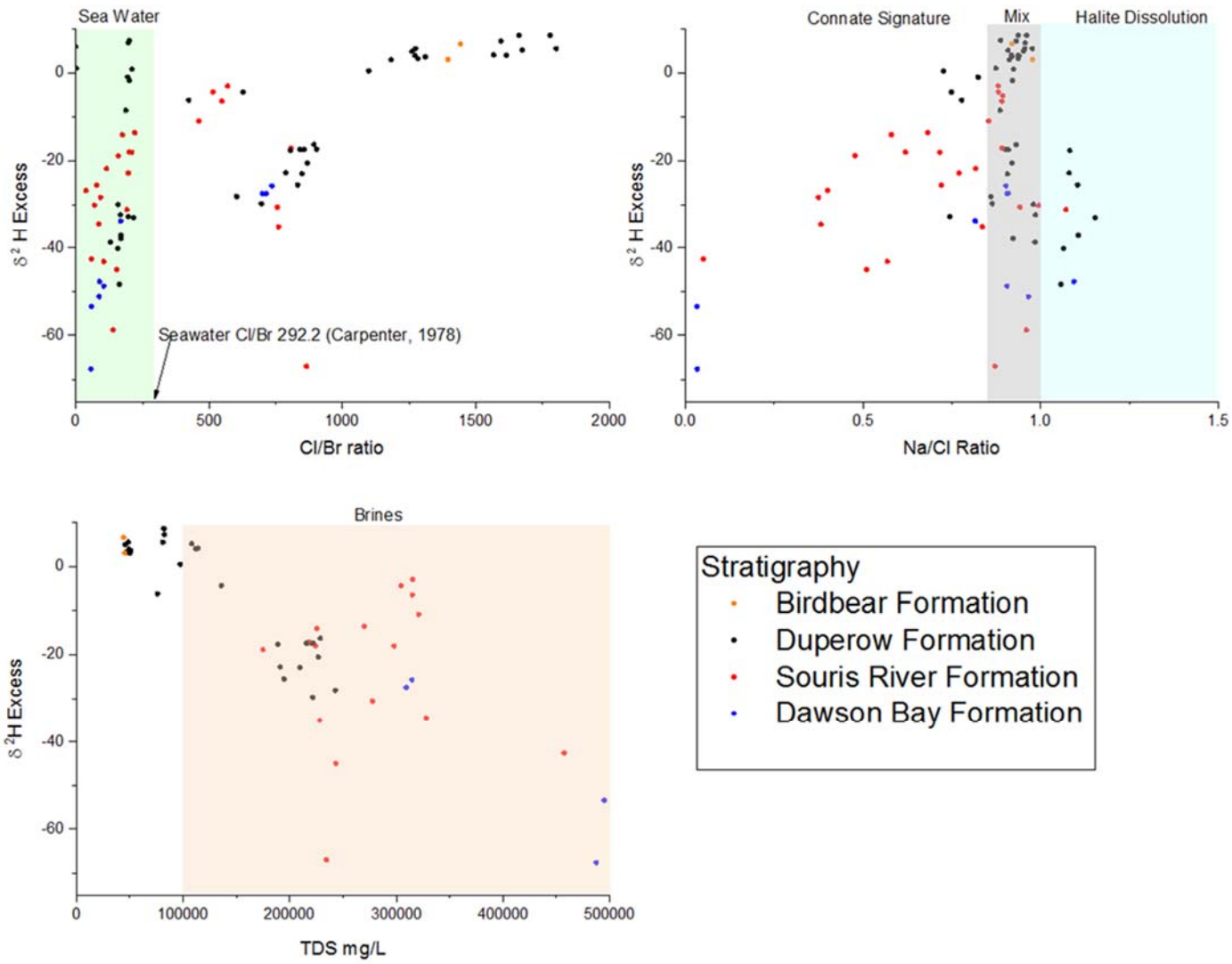

Figure 4.23. Graphical investigation of the changing water properties with isotopic signature for the Duperow, Souris River, and Dawson Bay Formation.

Chapter 5 Discussion

Regional trends in the concentration of the total dissolved solids (TDS) as well as patterns in salinity characteristics analyzed from formation water have provided information on flow direction, recharge, and discharge. It has been noted in all formations, that water samples show evidence of being composed of a combination of original evaporated sea water and meteoric recharge. Regional variation is noted in all studied formations. This variation can be attributed to differences in residence time, water rock interaction, distance from recharge, and cross-formational mixing. It is a reasonable conclusion that the chemical signature of water from one stratigraphic unit varies considerably over the length of the basin, as well that water from one stratigraphic unit in one area of the basin may be identical to a sample from a different unit in another area. These variations complicate any attempts at interpreting and trying to pinpoint the source of water detected in mining units to the appropriate stratigraphic horizon.

Through this study, it has been shown that the TDS is controlled by the presence of initial evaporated seawater, the dissolution of evaporite horizons, and the dissolution of rock forming minerals. In sag basins, heavy connate brines are quite immobile and are generally controlled by gravity and thus restricted to basin lows (Ferguson et al., 2018). This regional assessment of the Devonian water samples has duplicated these results and has shown that the oldest and heaviest brines are in the deepest parts of the basin. More specifically, the Dawson Bay Formation contains the oldest and densest Ca-Cl brines at depth. These brines have not been mobilized and flushed from the basin under past or current hydrologic regimes. Notable dilution of the TDS in this unit is an indication of the influx of low salinity meteoric recharge or the incursion of less concentrated fluids from a different stratigraphic horizon.

Through a graphical and regional assessment of the stratigraphic hydrochemistry this research shown that the four units differ in chemical and isotopic signature. The Dawson Bay, Souris River, Duperow and Birdbear formations show an end member type system. More specifically, the Dawson Bay Formation, immediately above the Prairie Evaporite, has salinity closely associated with a connate water end member, with less influence from meteoric recharge and halite dissolution. The Birdbear and Duperow formations are similar. They are the furthest units from the Prairie Evaporite, and have shown the greatest influence of meteoric water as well as halite dissolution. The Souris River Formation falls between these two in both stratigraphy and chemistry. It contains the signatures from both the connate and halite dissolution end members.

Regionally, the formations follow known trends in hydrogeology, matching convincingly with the previously interpreted recharge and discharge directions and supporting the theory of recharge incursion to the east during the Pleistocene Epoch. The Birdbear Formation showed no evidence of dilution associated with recharge reversal along the eastern side of the basin. However, this cannot be substantiated using $\delta^{18}O$ of $\delta^{2}H$ isotopic signatures due to the lack of available data. If it is in fact the case that they are devoid of meltwaters, the isopach map of the Birdbear formation (TGI Williston Basin Working Group, 2008) in Manitoba suggests that the Birdbear may not have had a surficial expression along the Manitoba escarpment, and may have been limited subglacial recharge.

The expected hydrochemical evolution shows a progressive movement from bicarbonate and sulfate dominated surficial recharge, to older and more evolved chloride dominated brines. The expectation in the deepest parts of the Elk Point Basin is there will be a chloride dominated geochemical signature. It has been shown that in all formations, the deepest parts of the basin (which are in Southern Saskatchewan and into the United States) are the locus for the older and most highly saline brines. This hydrochemical analysis supports the results of Palombi (2009) and Ferguson et al. (2018) that have also determined this through interpretation of structural and hydraulic gradients for the Williston Basin.

When looking at isotopes, there is an overall trend of the water samples when plotted against the GWML. The line of best fit suggests a water source and a $\delta^{18}O$ value of ~ -20 ‰, indicative of the presence of glacial meltwater. The regional persistence of this low isotopic signature is indicative of how deep and how far these fluids could migrate. This $\delta^{18}O$ values of ~ -20 ‰ is consistent with other studies (Grasby 2000, Grasby and Chen 2005, Hendry et al. 2013) implying that the glacial melt water consisted of a single isotopic value and not a variable isotopic range. Work by Ferguson and Jasechko (2015) used fossil groundwater isotopic signatures paired with general circulation models to determine that Pleistocene meltwater sourced from the Laurentide Ice Sheet has spatial variation of $\delta^{18}O$. However, within the Williston Basin is there seemingly no variation in the $\delta^{18}O$ of the Pleistocene meltwater end member. This may reflect the entrance of subglacial recharge over a relatively restricted area of Paleozoic carbonate outcrop along the northeastern edge of the basin. Multiple recharge events during different ice sheet advances may have also resulted in enhanced hydrodynamic dispersion, effectively wiping out isotopic signals of individual events.

A summary schematic of the hydrochemistry of the Elk Point basin is shown as Figure 5.1. From the regional and graphical data spread, The Elk Point Basin shows the influence of meteoric recharge in the S/SW, evaporite dissolution as these waters interact with the host formation mineralogy, and the

presence of an older, connate brine in the basin depths. This evaporated seawater consists of a Ca-Cl signature, and remains stuck in the lowermost Dawson Bay Formation and to a minor extent the Souris River Formation due to down-dip density driven flow. Topography-driven recharge waters have been unable to flush these brines from the system entirely. The resultant system therefore produces a pool of dense connate water in the lowermost formations that deflects the lighter, meteorically diluted brines over, where they continue to be flushed. These waters can bypass the older waters and continue to travel under topographically-driven pressure through the basin and continue to the discharge area.

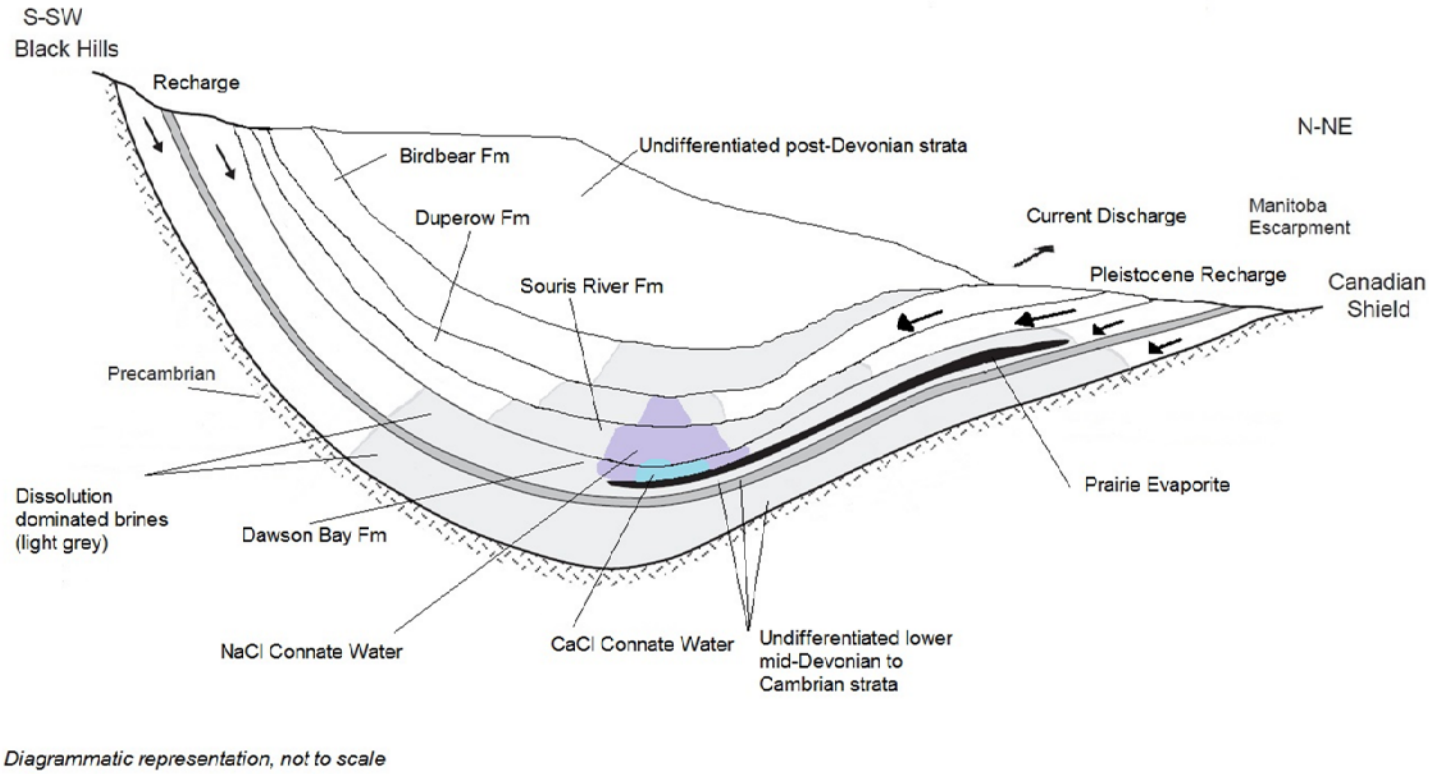

Figure 5.1 Schematic diagram of the hydrodynamic characteristics within the Elk Point Basin

Examination of cross- formational mixing in the Elk Point Basin is important, as it could suggest the presence of dissolution features or the presence of a structural conduit. The location of these features is valuable information. Hydrological conduits can cause breaches in otherwise tight aquitards and allow for the passage of water into underground workings. When analyzing the results of the regional spread of data, there are instances where the schematic figure does not conform. In these instances, there is water that does not belong appear to belong in the conceptual model presented in Figure 5.1. For instance, samples from the deepest part of the Saskatchewan sub basin contain Dawson Bay formation sampled water that has very diluted and meteoric signatures, surrounded by more typical highly saline old waters. This may be an indication of cross formational mixing, perhaps a dissolution feature or structural conduit that has allowed for the percolation of dilute waters from the above formations into the deeper basin (Figure 1.4).

The regional hydrochemistry contains a significant amount of regional variability that can be explained through lithological, structural and hydrological variation within the units. The utilization of hydrochemistry to assess and fingerprint individual water samples from mining operations must take this into consideration. It is imperative that a local scale hydrochemical analysis be undertaken in advance of any such study.

Chapter 6 Conclusions and Future Work

The creation of a comprehensive formation water chemistry database has allowed for the manipulation of data and analysis of both geochemical signatures and regional trends. Graphical comparisons of common aqueous ions have shown that different stratigraphies show different evolutionary histories based on the influence of halite dissolution, meteoric (including Pleistocene) dilution and the preservation of a highly evolved connate sea water end member. In addition to stratigraphic differences, the regional distribution assessed through GIS has allowed for indications of hydrogeology and fluid movements. The spacing of samples however, has made the interpretation of smaller scale structural conduits indicating leakage through aquitards and cross-formational mixing difficult.

In addition to understanding regional trends and local scale hydrochemical variation in stratigraphic units, details on the specific signatures of formation water chemistry require the incorporation of statistical analysis. Such analysis is essential in determining more definitive associations between ions. The use of geostatistics, neural network, factor, and cluster analysis may be useful in determining the relationships between the ions in solutions, which may define a specific lithological unit. A statistical analysis of this level may be crucial to the process of fingerprinting water samples to their source lithologies.

Contemporaneous research is being undertaken on vertical chemical variability using multi-variate statistical methods, numerical modeling and more exotic chemical analysis. This includes strontium isotopes ($^{87}Sr/^{86}Sr$) to assess water/rock interaction, and chlorine ($\delta^{37}Cl$) and bromine ($\delta^{81}Br$) isotopes to better understand the nature of the fluids as they act in a conservative manner and may provide better resolution for tracing and fingerprinting water source stratigraphy. Unfortunately, this sampling program is restricted to a vertical assessment local to the mine sites, and therefore regional variability cannot be assessed now. However, consistent with the regional analysis, the vertical assessment has shown an indication of the mixing of fluids across units as well as the detection of the influence of meteoric recharge.

As the four formations above the Prairie Evaporite, the chemistry of the water held within the Birdbear, Duperow, Souris River, and Dawson Bay formations is of great importance. This regional hydrochemical analysis is important as it has shown that most water sampled from the units above the highly soluble Prairie Evaporite have a meteoric component, and that the Birdbear, Duperow and Souris River

formations have a high content of meteoric and Pleistocene recharge. Connate water is more prominent in the deep parts of the basin, therefore most common in the Dawson Bay formation.

In addition to the vertical variability, the regional variability has raised questions on the validity of interpreting water chemistry and attempting to determine the source lithology. A Duperow Formation water sample from mid-basin (with a meteoric and glacial input) can look identical to a Dawson Bay Formation sample from the Eastern side of the Elk Point Basin.

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Appendix

Stratigraphy	Latitude	Longitude	Sample_Depth_m	Sample_ID	Sortable_UWI	Data_Source	Date	Mine_Site	General_Comments	Sample_Description	TDS_mg_L	Ca_mg_L	Ca_meq_L	Mg_mg_L	Mg_meq_L	K_mg_L	K_meq_L	Na_mg_L	Na_meq_L	Total_Cations	HCO3_mg_L	HCO3_meq_L	Cl_mg_L	Cl_meq_L	SO4_mg_L	SO4_meq_L	Br_mg_L	Br_meq_L	Delta_D	Delta_O18
											mg/l	mg/l	meq/l	mg/l	meq/l	mg/l	meq/l	mg/l	meq/l		mg/l	meq/l	mg/l	meq/l	mg/l	meq/l	mg/l	meq/l	‰	‰
Birdbear Formation	52.05058336	-109.5414594	794.00	ACC-23297	1W30352532110100	Accumap	11/23/1979	Regional	CLEAR COLORLESS FILTRATE RECOVERED FROM A SAMPLE		17665.00	80.00	3.99	73.00	6.01	6.00	0.15	6295.00	273.82	283.97	1513.00	24.80	9675.00	272.90	23.00	0.48				
Birdbear Formation	52.41591345	-109.6265245	744.00	ACC-05807	1W30402602094100	Accumap	9/17/1994	Regional	CO30.5 OH0.5.NO SAMPLE DATE.INSUFFICIENT OIL FOR		21279.00	80.90	4.04	147.00	12.10	320.00	8.21	7520.00	327.10	351.69	367.00	6.01	12600.00	355.40	421.00	8.77				
Birdbear Formation	49.72956452	-100.8922871	772.75	ACC-06281	1W10092612050000	Accumap	N/A	Regional				1361.00	67.92	461.00	37.94	169.00	4.33	15908.00	691.96	802.14	281.00	4.61	26200.00	739.01	4975.00	103.58				
Birdbear Formation	49.26173812	-103.4243671	2104.90	ACC-23500	1W20041104012100	Accumap	3/25/1998	Regional	ANALYSIS PERFORMED ON AN ORANGE FILTRATE RECOVERE		225437.00	10170.00	507.51	2234.00	183.84	10264.00	263.18	66700.00	2901.29	3855.15	120.00	1.97	134400.00	3790.93	1550.00	32.27				
Birdbear Formation	52.11253296	-108.5947051	762.00	ACC-06106	1W30361924130100	Accumap	N/A	Regional	SAMPLE CONSISTED OF WATERY MUD		17735.00	374.00	18.66	225.00	18.52	0.05	0.00	5621.00	244.50	281.71	1500.00	24.58	6590.00	185.88	3424.00	71.29				
Birdbear Formation	49.35013536	-102.0317063	1557.50	ACC-23489	1W20050102010100	Accumap	11/19/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=76.32,SEC		280085.00	17944.00	895.45	3178.00	261.52	0.05	0.00	85659.00	3725.96	4882.93	256.00	4.20	172500.00	4865.60	678.00	14.12				
Birdbear Formation	49.99187007	-100.9457304	692.50	ACC-04817	1W10122610010000	Accumap	N/A	Regional			127045.00	2638.00	131.64	872.00	71.76	0.05	0.00	45502.00	1979.23	2182.63	238.00	3.90	72792.00	2053.20	5003.00	104.16				
Birdbear Formation	49.97719832	-101.6331877	551.70	ACC-02933	1W10123103010100	Accumap	3/27/1956	Regional	PRIMARY SALINITY: 95.70, SECONDARY SALINITY: 2.68		21226.00	169.00	8.43	89.00	7.32	0.05	0.00	8040.00	349.72	365.48	360.00	5.90	12750.00	359.63	1.00	0.02				
Birdbear Formation	49.07432554	-100.172826	1121.35	ACC-09959	1W10012136040000	Accumap	5/5/1953	Regional	W6153-BOTTOM OF FLUID COLUMN.W6053-TOP OF FLUID C		201270.00	2360.00	117.77	860.00	70.77	0.05	0.00	74960.00	3260.58	3449.12	170.00	2.79	120200.00	3390.40	2720.00	56.63				
Birdbear Formation	52.31264495	-109.6838012	772.40	ACC-06268	1W30382632110100	Accumap	N/A	Regional				24.00	1.20	5.00	0.41	0.05	0.00	1084.00	47.15	48.76	650.00	10.65	1280.00	36.10	91.00	1.89				
Birdbear Formation	51.52755563	-109.645667	989.10	ACC-23314	1W30292631100100	Accumap	7/9/1969	Regional	SAMPLE AS RECEIVED CONSISTED OF APPROXIMATELY 10%		27698.00	1073.00	53.55	355.00	29.21	0.05	0.00	8374.00	364.25	447.01	1888.00	30.94	11045.00	311.54	4857.00	101.12				
Birdbear Formation	49.0318471	-104.040626	2402.50	ACC-16701	1W20011614020100	Accumap	6/4/1985	Regional	TOTAL HARDNESS AS CACO3=3330 G/M3.TOTAL ALKALINIT		129937.00	1270.00	63.38	23.10	1.90	24300.00	623.08	30500.00	1326.68	2014.73	532.00	8.72	62200.00	1754.44	11000.00	229.02				
Birdbear Formation	49.25106635	-103.4508171	2069.00	ACC-23511	1W20031132072100	Accumap	8/12/1997	Regional			296889.00	20958.00	1045.86	412.00	33.90	5854.00	150.10	88625.00	3854.97	5084.46	286.00	4.69	180370.00	5087.58	384.00	7.99				
Birdbear Formation	50.23858336	-105.4751867	1419.80	ACC-23359	1W20152611020100	Accumap	11/25/1958	Regional	CACL2=1485,MG(HCO3)2=1402,MGCL2,NACL=ABSENT,NA2SO		8341.00	536.00	26.75	102.00	8.39	0.05	0.00	1927.00	83.82	118.96	1171.00	19.19	540.00	15.23	4065.00	84.63				
Birdbear Formation	49.66390451	-109.4297097	1799.20	ACC-15921	1W30082623110100	Accumap	8/26/1954	Regional	NA+K IS COMBINED IN NA		4151.00	629.00	31.39	155.00	12.76	0.05	0.00	449.00	19.53	63.67	102.00	1.67	446.00	12.58	2370.00	49.34				
Birdbear Formation	49.44097402	-101.836132	1422.20	ACC-14029	1W10053335140100	Accumap	N/A	Regional			272258.00	12787.00	638.11	3510.00	288.84	0.05	0.00	87660.00	3813.00	4739.94	87.00	1.43	167500.00	4724.56	714.00	14.87				
Birdbear Formation	49.14723066	-104.4462756	2334.20	ACC-23521	1W20021926030100	Accumap	12/23/1966	Regional	NA+K IS COMBINED IN NA. FE, BA, CO3, OH: ABSENT.		224903.00	6574.00	328.06	547.00	45.01	0.05	0.00	80249.00	3490.63	3863.71	312.00	5.11	136181.00	3841.17	1040.00	21.65				
Birdbear Formation	49.51202311	-100.5309152	771.20	ACC-06248	1W10062328120000	Accumap	9/10/1954	Regional	VO 15 MINS. SHUT IN 15 MINS.		58127.00	1880.00	93.82	616.00	50.69	0.05	0.00	19314.00	840.11	984.62	262.00	4.29	31114.00	877.61	4941.00	102.87				
Birdbear Formation	49.81653079	-106.5430882	2219.60	ACC-16564	1W30100418040100	Accumap	N/A	Regional			3494.00	524.00	26.15	102.00	8.39	0.05	0.00	437.00	19.01	53.55	85.00	1.39	450.00	12.69	1896.00	39.47				
Birdbear Formation	49.00439934	-104.3971876	2418.25	ACC-16718	1W20011806072100	Accumap	N/A	Regional			136290.00	3350.00	167.17	509.00	41.89	0.05	0.00	48800.00	2122.68	2331.78	390.00	6.39	79600.00	2245.23	3640.00	75.78				
Birdbear Formation	50.02494711	-101.398418	846.60	ACC-07265	1W10122921050000	Accumap	N/A	Regional			82767.00	2060.00	102.80	627.00	51.60	0.05	0.00	28802.00	1252.82	1407.21	256.00	4.20	46162.00	1302.06	4860.00	101.18				
Birdbear Formation	49.26875982	-100.3952952	929.65	ACC-07975	1W10042204040000	Accumap	10/18/1954	Regional	TOOL OPEN 1 HR SHUT IN 30 MINS GOOD AIR BLOW THRO		170933.00	5746.00	286.74	1547.00	127.30	0.05	0.00	58318.00	2536.69	2950.74	207.00	3.39	102819.00	2900.15	2296.00	47.80				
Birdbear Formation	51.92350135	-108.9779152	789.40	ACC-06565	1W30342118130100	Accumap	12/26/1958	Regional	BA,FE,CO3,OH:ABSENT.CACL2=2726,MG(HCO3)2=1676,MGC		26168.00	984.00	49.10	398.00	32.75	0.05	0.00	7889.00	343.15	425.01	1400.00	22.94	10863.00	306.41	4634.00	96.48				
Birdbear Formation	49.01259441	-100.0880672	1087.25	ACC-09610	1W10012004160000	Accumap	3/9/1956	Regional	V.O.60MMS REC 150'MUDDY S.W. TOTAL CONCENTRATION			1731.00	86.38	357.00	29.38	0.05	0.00	12067.00	524.88	640.64	170.00	2.79	20016.00	564.58	3487.00	72.60				
Birdbear Formation	49.37630588	-109.6294431	1621.20	ACC-15553	1W30052707140100	Accumap	N/A	Regional			4844.00	763.00	38.08	282.00	23.21	0.05	0.00	221.00	9.61	70.89	2516.00	41.23	1062.00	29.96						
Birdbear Formation	49.17355885	-102.2831328	1863.10	ACC-16081	1W20020336150100	Accumap	12/31/1954	Regional	PRIMARY SALINITY=76.10,SECONDARY SALINITY=23.78,S		191423.00	12800.00	638.75	1910.00	157.18	0.05	0.00	58276.00	2534.86	3330.79	232.00	3.80	117000.00	3300.14	1323.00	27.54				
Birdbear Formation	49.29828515	-100.1920173	834.40	ACC-07136	1W10042113040000	Accumap	9/30/1954	Regional			165349.00	5342.00	266.58	1659.00	136.52	0.05	0.00	56317.00	2449.65	2852.75	286.00	4.69	98876.00	2788.93	2869.00	59.73				
Birdbear Formation	49.28071245	-105.9035464	2033.60	ACC-16430	1W20042907050100	Accumap	10/20/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=14.78,SEC		2686.00	509.00	25.40	113.00	9.30	0.05	0.00	138.00	6.00	40.70	166.00	2.72	90.00	2.54	1704.00	35.48				
Birdbear Formation	51.32717905	-107.360042	1052.50	ACC-23318	1W30271021130100	Accumap	7/5/1954	Regional	NA+K IS COMBINED IN NA.		19864.00	1276.00	63.68	522.00	42.96	0.05	0.00	5330.00	231.84	338.47	106.00	1.74	9825.00	277.13	2805.00	58.40				
Birdbear Formation	49.51961588	-100.4242676	741.90	ACC-05760	1W10062231010000	Accumap	N/A	Regional			61018.00	2047.00	102.15	578.00	47.56	0.05	0.00	20393.00	887.05	1036.76	287.00	4.70	33515.00	945.34	4198.00	87.40				
Birdbear Formation	49.21680666	-106.7883683	1991.00	ACC-16389	1W30030617130100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=32.16,SEC		3640.00	522.00	26.05	152.00	12.51	0.05	0.00	420.00	18.27	56.83	195.00	3.20	360.00	10.15	2090.00	43.51				
Birdbear Formation	49.35336646	-99.9209611	702.25	ACC-04974	1W10041936130000	Accumap	9/12/1956	Regional			121488.00	2886.00	144.02	1040.00	85.58	0.05	0.00	42546.00	1850.65	2080.25	201.00	3.29	70366.00	1984.77	4449.00	92.63				
Birdbear Formation	49.7341317	-100.8356145	765.50	ACC-06157	1W10092508100000	Accumap	12/23/1986	Regional	CLEAR; COLORLESS FILTRATE RECOVERED FROM A SAMPLE		75573.00	1802.00	89.92	2503.00	205.97	222.00	5.69	21670.00	942.59	1244.17	329.00	5.39	43500.00	1226.98	5547.00	115.49				
Birdbear Formation	49.41147201	-104.7831832	2054.40	ACC-23471	1W20052128050100	Accumap	9/28/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=81.42,SEC		30319.00	1441.00	71.91	273.00	22.47	0.05	0.00	9505.00	413.44	507.82	545.00	8.93	15250.00	430.15	3305.00	68.81				
Birdbear Formation	49.35013536	-102.0317063	1551.40	ACC-23488	1W20050102010100	Accumap	11/19/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=72.3,SECO		81112.00	4746.00	236.84	1904.00	156.68	0.05	0.00	23606.00	1026.80	1420.32	1465.00	24.01	47750.00	1346.85	2385.00	49.66				
Birdbear Formation	50.41371118	-107.8637723	1383.80	ACC-13424	1W30171409010100	Accumap	N/A	Regional	APPEARS TO BE DILUTED FORMATION WATER		16048.00	604.00	30.14	125.00	10.29	0.05	0.00	4699.00	204.39	244.82	1033.00	16.93	3837.00	108.23	5750.00	119.71				
Birdbear Formation	50.68083665	-101.1864248	532.30	ACC-02758	1W10192732160000	Accumap	N/A	Regional			35837.00	1232.00	61.48	538.00	44.27	0.05	0.00	11396.00	495.70	601.45	427.00	7.00	17761.00	500.97	4465.00	92.96				
Birdbear Formation	50.40291232	-108.1215649	1394.50	ACC-13604	1W30171603070100	Accumap	N/A	Regional			11403.00	312.00	15.57	98.00	8.06	0.05	0.00	3607.00	156.90	180.53	280.00	4.59	3760.00	106.06	3322.00	69.16				
Birdbear Formation	49.75609636	-100.7557623	744.05	ACC-05812	1W10092524040000	Accumap	N/A	Regional			121257.00	2431.00	121.31	794.00	65.34	0.05	0.00	43256.00	1881.53	2068.18	299.00	4.90	69456.00	1959.10	5021.00	104.54				
Birdbear Formation	49.49709467	-100.8699072	912.55	ACC-07817	1W10062624120000	Accumap	N/A	Regional			84950.00	1996.00	99.61	830.00	68.30	0.05	0.00	29336.00	1276.04	1443.95	482.00	7.90	47012.00	1326.04	5294.00	110.22				
Birdbear Formation	50.7196085	-106.3307168	1259.40	ACC-23327	1W30200327010200	Accumap	11/28/1969	Regional	NA+K IS COMBINED IN NA.TOTAL IRON=199.8MG/L.		7514.00	722.00	36.03	183.00	15.06	0.05	0.00	1484.00	64.55	115.64	488.00	8.00	1491.00	42.06	3146.00	65.50				
Birdbear Formation	49.80838193	-103.7875369	1557.50	ACC-23376	1W20101412120100	Accumap	3/16/1962	Regional	CACL2=4553,MG(HCO3)2=540,MAGCL2=1045,NACL=50134,N		56381.00	1640.00	81.84	357.00	29.38	0.05	0.00	19757.00	859.38	970.60	451.00	7.39	34080.00	961.27	96.00	2.00				
Birdbear Formation	51.73402511	-108.1628015	876.60	ACC-07554	1W30321611150100	Accumap	N/A	Regional			106058.00	2229.00	111.23	716.00	58.92	0.05	0.00	37570.00	1634.20	1804.36	275.00	4.51	59750.00	1685.33	5506.00	114.63				
Birdbear Formation	49.02689948	-104.5960492	2301.50	ACC-16609	1W20012010150100	Accumap	5/31/1985	Regional	SAMPLE POINT:BOTTOM.		176000.00	5550.00	276.96	1120.00	92.17	3250.00	83.33	56400.00	2453.26	2905.54	436.00	7.15	107000.00	3018.08	2340.00	48.72				
Birdbear Formation	49.49709467	-100.8699072	912.55	ACC-07818	1W10062624120000	Accumap	N/A	Regional			75809.00	2033.00	101.45	789.00	64.93	0.05	0.00	25741.00	1119.67	1286.05	775.00	12.70	41431.00	1168.62	5040.00	104.93				
Birdbear Formation	50.008496	-105.432347	1645.90	ACC-23369	1W20122624061100	Accumap	3/24/1970	Regional	SAMPLE POINT FROM 18.29M ABOVE TOOL.NA+K IS COMBI		7334.00	650.00	32.44	147.00	12.10	0.05	0.00	1612.00	70.12	114.65	547.00	8.96	1969.00	55.54	2409.00	50.16				
Birdbear Formation	49.06368778	-109.33752	1625.20	ACC-15563	1W30012530060100	Accumap	N/A	Regional			8073.00	779.00	38.87	128.00	10.53	0.05	0.00	1703.00	74.08	123.48	250.00	4.10	1480.00	41.75	3733.00	77.72				
Birdbear Formation	49.20947384	-101.7904321	1569.70	ACC-15345	1W10033218030100	Accumap	N/A	Regional			212541.00	11655.00	581.62	1822.00	149.93	0.05	0.00	67935.00	2955.01	3686.56	255.00	4.18	129750.00	3659.77	1124.00	23.40				
Birdbear Formation	49.75609636	-100.7557623	744.05	ACC-05814	1W10092524040000	Accumap	N/A	Regional			122210.00	2411.00	120.32	796.00	65.50	0.05	0.00	43645.00	1898.45	2084.27	409.00	6.70	70062.00	1976.19	4887.00	101.75				
Birdbear Formation	49.16110088	-104.6518542	2197.60	ACC-16548	1W20022032040100	Accumap	N/A	Regional	SAMPLE CONSISTED OF MUDDY WATER		68607.00	1364.00	68.07	226.00	18.60	0.05	0.00	24698.00	1074.30	1161.15	73.00	1.20	38000.00	1071.84	4241.00	88.30				
Birdbear Formation	51.92706984	-108.1981095	875.10	ACC-23303	1W30341622040100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		50977.00	1236.00	61.68	542.00	44.60	0.05	0.00	17341.00	754.29	860.57	765.00	12.54	27091.00	764.14	4002.00	83.32				
Birdbear Formation	51.2217415	-106.5130882	1065.30	ACC-23319	1W30260416120100	Accumap	6/16/1954	Regional	NA+K IS COMBINED IN NA.		15760.00	945.00	47.16	422.00	34.73	0.05	0.00	4130.00	179.64	261.53	333.00	5.46	6680.00	188.42	3250.00	67.66				
Birdbear Formation	49.59657644	-102.6534916	1572.50	ACC-23436	1W20070532032100	Accumap	3/1/1984	Regional	NACL EQUIV. 226273; FE: TRACE.		226167.00	5000.00	249.51	703.00	57.85	2400.00	61.54	80600.00	3505.90	3874.65	132.00	2.16	136831.00	3859.50	501.00	10.43				
Birdbear Formation	49.57962761	-102.7364345	1625.00	ACC-23427	1W20070622154102	Accumap	1/22/2010	Regional			40265.00	1230.00	61.38	150.00	12.34	600.00	15.38	12800.00	556.77	655.15	205.00	3.36	21200.00	597.97	3820.00	79.53				
Birdbear Formation	49.54992668	-103.9513524	1784.90	ACC-23396	1W20071510160100	Accumap	12/9/1966	Regional	WATER CONTAINED BLACK COLOURED SEDIMENT.THE FILTE		110458.00	1538.00	76.75	399.00	32.83	0.05	0.00	40668.00	1768.96	1878.54	470.00	7.70	63800.00	1799.57	3583.00	74.60				
Birdbear Formation	49.57962761	-102.7364345	1625.20	ACC-23428	1W20070622154100	Accumap	8/19/1977	Regional	DST #2.447 FT.LIGHT OIL-90 FT.LIGHT OIL,272 FT FR		40200.00	1230.00	61.38	150.00	12.34	600.00	15.38	12800.00	556.77	655.15	205.00	3.36	21200.00	597.97	3820.00	79.53				
Birdbear Formation	50.05094448	-101.0086579	709.45	ACC-05128	1W10122632040000	Accumap	N/A	Regional			16578.00	2278.00	113.68	854.00	70.28	0.05	0.00	2141.00	93.13	277.08	409.00	6.70	5641.00	159.11	5255.00	109.41				

Birdbear Formation	51.70531124	-109.24916	905.90	ACC-07775	1W30312331150100	Accumap	N/A	Regional			28629.00	4174.00	208.29	1187.00	97.68	0.05	0.00	4578.00	199.13	505.11	910.00	14.91	16250.00	458.35	1530.00	31.85				
Birdbear Formation	50.01727691	-104.9733968	1574.00	ACC-15361	1W20122220153100	Accumap	N/A	Regional			24098.00	1180.00	58.89	229.00	18.84	0.05	0.00	7169.00	311.83	389.56	1590.00	26.06	9950.00	280.65	3980.00	82.86				
Birdbear Formation	49.28799996	-104.5312122	2254.90	ACC-23496	1W20041908140100	Accumap	11/19/1968	Regional	NA+K IS COMBINED IN NA.		34815.00	769.00	38.38	139.00	11.44	0.05	0.00	12202.00	530.76	580.57	356.00	5.83	17636.00	497.45	3713.00	77.30				
Birdbear Formation	49.58986147	-102.7431703	1620.30	ACC-23423	1W20070627110100	Accumap	1/28/1969	Regional	NA+K IS COMBINED IN NA.		24204.00	776.00	38.72	82.00	6.75	0.05	0.00	7944.00	345.54	391.02	234.00	3.83	9668.00	272.70	5500.00	114.51				
Birdbear Formation	50.01322704	-106.2352357	1578.90	ACC-15391	1W30120220090100	Accumap	N/A	Regional	SODIUM OBTAINED BY IONIC BALANCE.SAMPLED FROM BOT		4250.00	530.00	26.45	145.00	11.93	0.05	0.00	580.00	25.23	63.61	295.00	4.83	340.00	9.59	2360.00	49.13				
Birdbear Formation	49.18629052	-104.7273365	2181.50	ACC-16522	1W20032102150102	Accumap	N/A	Regional				400.00	19.96	243.00	20.00	6998.00	179.44	90120.00	3920.00	4138.94	61.00	1.00	143000.00	4033.51	12520.00	260.66				
Birdbear Formation	49.18629052	-104.7273365	2181.50	ACC-16523	1W20032102150100	Accumap	N/A	Regional	YELLOW FILTRATE RECOVERED FROM A SAMPLE CONTAININ		253510.00	400.00	19.96	243.00	20.00	6998.00	179.44	90120.00	3920.00	4138.94	61.00	1.00	143000.00	4033.51	12520.00	260.66				
Birdbear Formation	49.40446452	-103.9098762	1942.00	ACC-16254	1W20051524130100	Accumap	N/A	Regional			37161.00	914.00	45.61	110.00	9.05	230.00	5.90	12000.00	521.97	582.52	196.00	3.21	11741.00	331.17	11970.00	249.21				
Birdbear Formation	51.92350135	-108.9779152	789.40	ACC-06567	1W30342118130100	Accumap	12/26/1958	Regional	BA,FE,CO3,OH:ABSENT.CACL2 =2726,MG(HCO3)2=1641,MG C		25589.00	984.00	49.10	393.00	32.34	0.05	0.00	7682.00	334.15	415.59	1371.00	22.47	10579.00	298.40	4580.00	95.36				
Birdbear Formation	49.81653079	-106.5430882	2017.80	ACC-16417	1W30100418040100	Accumap	N/A	Regional			3401.00	460.00	22.96	148.00	12.18	0.05	0.00	415.00	18.05	53.19	130.00	2.13	530.00	14.95	1688.00	35.14				
Birdbear Formation	50.18586974	-101.3929564	721.00	ACC-05367	1W10142916060000	Accumap	10/30/1987	Regional	YELLOW COLORED FILTRATE RECOVERED FROM A SAMPLE C		48871.00	1522.00	75.95	219.00	18.02	167.00	4.28	16300.00	709.01	807.25	207.00	3.39	23600.00	665.67	6856.00	142.74				
Birdbear Formation	52.41591345	-109.6265245	744.00	ACC-05806	1W30402602094100	Accumap	9/17/1994	Regional	INSUFFICIENT OIL FOR ANALYSIS.NO SAMPLE DATE.CO30		37086.00	304.00	15.17	297.00	24.44	310.00	7.95	13000.00	565.47	613.96	506.00	8.29	22800.00	643.10	89.00	1.85				
Birdbear Formation	49.52326817	-100.9998277	960.30	ACC-08304	1W10062736060000	Accumap	4/21/1954	Regional			167998.00	6092.00	304.01	1073.00	88.30	0.05	0.00	57492.00	2500.76	2893.07	366.00	6.00	100695.00	2840.24	2280.00	47.47				
Birdbear Formation	49.38708267	-106.1841297	1956.50	ACC-16291	1W30050214122100	Accumap	4/28/1955	Regional	457.20M ABOVE PACKER.NA+K IS COMBINED IN NA.PRIMA		4388.00	699.00	34.88	184.00	15.14	0.05	0.00	454.00	19.75	69.77	180.00	2.95	955.00	26.94	1916.00	39.89				
Birdbear Formation	49.05269826	-100.4971537	1241.10	ACC-11580	1W10012321100000	Accumap	1/27/1956	Regional	REC. - 1440' SLIGHTLY MUD CUT SALT WATER, TOP SAM			5153.00	257.15	1197.00	98.50	0.05	0.00	40061.00	1742.56	2098.21	1061.00	17.39	71882.00	2027.53	2582.00	53.76				
Birdbear Formation	51.33834701	-109.4817942	1064.10	ACC-09305	1W30272529100100	Accumap	N/A	Regional			25866.00	824.00	41.12	97.00	7.98	0.05	0.00	9039.00	393.17	442.28	473.00	7.75	15301.00	431.59	132.00	2.75				
Birdbear Formation	52.36261908	-109.4920978	748.00	ACC-05882	1W30392523039100	Accumap	N/A	Regional			15923.00	145.00	7.24	106.00	8.72	76.00	1.95	5620.00	244.46	262.36	644.00	10.55	9120.00	257.24	210.00	4.37				
Birdbear Formation	49.27228498	-100.7793253	1007.70	ACC-08834	1W10042503050000	Accumap	N/A	Regional	MILLIGRAM EQUIVALENTS MULTIPLIED BY 10 ON THE PAT		11767.00	841.00	41.97	146.00	12.01	0.05	0.00	2931.00	127.49	181.47	1070.00	17.54	3100.00	87.44	3679.00	76.60				
Birdbear Formation	49.15	-104.44	2310.40	U of A 01 - 401 A & B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	A-408X Emulsifier, 63X Corgard		229283.00	6260.00	313.00	917.00	76.42	3340.00	85.64	78300.00	3404.35	3894.08	183.00	3.00	139000.00	3971.43			405.00	5.07		
Birdbear Formation	50.23858336	-105.4751867	1419.80	ACC-23356	1W20152611020100	Accumap	11/25/1958	Regional	CACL2=1418,MG(HCO3)2=120 0,MGCL2,NACL=ABSENT,NA2S O		7391.00	512.00	25.55	122.00	10.04	0.05	0.00	1600.00	69.60	105.19	1000.00	16.39	390.00	11.00	3767.00	78.43				
Birdbear Formation	49.44482464	-102.7039487	1746.00	ACC-23469	1W20060602090100	Accumap	2/6/1998	Regional			290499.00	12347.00	616.15	1485.00	122.20	3056.00	78.36	95681.00	4161.89	4978.40	239.00	3.92	176889.00	4989.39	802.00	16.70				
Birdbear Formation	51.21319975	-108.2708432	942.70	ACC-08109	1W30261714022100	Accumap	N/A	Regional			42681.00	1458.00	72.76	458.00	37.69	0.05	0.00	14030.00	610.27	720.72	255.00	4.18	22380.00	631.26	4100.00	85.36				
Birdbear Formation	49.98333161	-105.2283034	1804.40	ACC-23370	1W20122409110100	Accumap	11/22/1954	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=59.20,SEC		8123.00	710.00	35.43	216.00	17.77	0.05	0.00	1774.00	77.16	130.37	244.00	4.00	2520.00	71.08	2659.00	55.36				
Birdbear Formation	49.7402667	-106.0235805	1719.10	ACC-15781	1W30090113130100	Accumap	7/26/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=64.20,SEC		7472.00	677.00	33.78	99.00	8.15	0.05	0.00	1729.00	75.21	117.14	1610.00	26.39	555.00	15.65	3607.00	75.10				
Birdbear Formation	49.37515728	-101.2771556	1173.60	ACC-10564	1W10052912050000	Accumap	4/11/1956	Regional	NA+K IS COMBINED IN NA.SAMPLE INSUFFICIENT FOR RE		237158.00	11273.00	562.55	1815.00	149.36	0.05	0.00	78077.00	3396.16	4108.07	40.00	0.66	144750.00	4082.87	1223.00	25.46				
Birdbear Formation	49.47	-103.42	1837.50	U of A 98 - 018-5B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	labelled S98-05658-5, trace solids in container		293887.00	12700.00	635.00	1590.00	132.50	3850.00	98.72	93900.00	4082.61	4968.58	208.00	3.41	180000.00	5142.86			535.00	6.70		
Birdbear Formation	50.5595004	-109.8349887	1228.30	ACC-11472	1W30182831010100	Accumap	N/A	Regional			7875.00	758.00	37.83	176.00	14.48	0.05	0.00	1506.00	65.51	117.82	935.00	15.32	1200.00	33.85	3300.00	68.71				
Birdbear Formation	49.85876867	-100.1946294	483.50	ACC-02341	1W10102125010000	Accumap	9/16/1994	Regional	COLORLESS FILTRATE RECOVERED FROM A SAMPLE CONTAI		29480.00	1205.00	60.13	262.00	21.56	63.00	1.62	8824.00	383.82	467.13	37.00	0.61	13300.00	375.14	5753.00	119.78				
Birdbear Formation	51.06848812	-105.4875499	821.40	ACC-23344	1W20242530030100	Accumap	N/A	Regional			93551.00	66.00	3.29	1573.00	129.44	0.05	0.00	34159.00	1485.83	1618.57	62.00	1.02	57200.00	1613.40	491.00	10.22				
Birdbear Formation	49.37515728	-101.2771556	1173.60	ACC-10563	1W10052912050000	Accumap	5/11/1956	Regional	VO 60 SI 75 HP 2370 FP 1360 SIP 1690.TOP SAMPLE.C		157369.00	7541.00	376.32	1897.00	156.11	0.05	0.00	50597.00	2200.85	2733.27	378.00	6.19	95236.00	2686.26	1990.00	41.43				
Birdbear Formation	49.85203257	-102.9052597	1458.20	ACC-14453	1W20100728120100	Accumap	N/A	Regional	NA&K IS COMBINED IN NA.		121137.00	2764.00	137.93	616.00	50.69	0.05	0.00	43292.00	1883.10	2071.72	255.00	4.18	70750.00	1995.60	3423.00	71.27				
Birdbear Formation	49.18239715	-105.2991144	2226.60	ACC-23507	1W20032503120100	Accumap	9/28/1966	Regional	SAMPLED FROM MIDDLE.		16981.00	668.00	33.33	137.00	11.27	0.05	0.00	5334.00	232.02	276.62	630.00	10.32	7560.00	213.24	2652.00	55.21				
Birdbear Formation	49.01235141	-109.7934555	1515.80	ACC-14997	1W30012903160100	Accumap	N/A	Regional			8194.00	482.00	24.05	214.00	17.61	0.05	0.00	1941.00	84.43	126.09	415.00	6.80	1651.00	46.57	3491.00	72.68				
Birdbear Formation	49.44097402	-101.836132	1422.20	ACC-14028	1W10053335140102	Accumap	N/A	Regional				12787.00	638.11	3510.00	288.84	0.05	0.00	87660.00	3813.00	4739.94	87.00	1.43	167500.00	4724.56	714.00	14.87				
Birdbear Formation	52.38858837	-109.3336692	732.00	ACC-05556	1W30392425131100	Accumap	N/A	Regional			27409.00	256.00	12.78	135.00	11.11	140.00	3.59	9770.00	424.97	453.44	1080.00	17.70	15900.00	448.48	100.00	2.08				
Birdbear Formation	49.44940708	-100.1188665	717.35	ACC-05318	1W10062004060000	Accumap	9/1/1954	Regional			149255.00	3949.00	197.07	1371.00	112.82	0.05	0.00	51896.00	2257.35	2567.24	104.00	1.70	88260.00	2489.49	3675.00	76.51				
Birdbear Formation	51.68011675	-109.4579738	900.00	ACC-07718	1W30312527013103	Accumap	N/A	Regional				736.00	36.73	1.00	0.08	56.00	1.44	6250.00	271.86	310.10	268.00	4.39	1100.00	31.03	14100.00	293.56				
Birdbear Formation	49.80244452	-104.0735591	1607.00	ACC-23375	1W20101611034100	Accumap	2/22/2001	Regional	N.D.=NOT DETECTED PRES.=PRESENT.		63650.00	1635.00	81.59	456.00	37.52	555.00	14.23	21647.00	941.59	1074.90	542.00	8.88	33983.00	958.54	4832.00	100.60				
Birdbear Formation	49.49557043	-104.0382991	1862.90	ACC-16077	1W20061625030100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING TRACE S		148014.00	2162.00	107.89	389.00	32.01	1376.00	35.28	54790.00	2383.23	2558.36	226.00	3.70	86000.00	2425.75	3070.00	63.92				
Birdbear Formation	50.51942393	-108.7860667	1280.50	ACC-11951	1W30182114070100	Accumap	N/A	Regional			18635.00	872.00	43.52	208.00	17.12	0.05	0.00	5487.00	238.67	299.30	610.00	10.00	6890.00	194.34	4568.00	95.11				
Birdbear Formation	49.4750962	-100.0452875	673.65	ACC-04470	1W10062013020000	Accumap	N/A	Regional	SAMPLE FROM BOTTOM.		131864.00	3751.00	187.18	1120.00	92.17	0.05	0.00	45656.00	1985.92	2265.28	79.00	1.29	77523.00	2186.64	3735.00	77.76				
Birdbear Formation	49.59376783	-105.9053484	1833.40	ACC-23395	1W20072929140100	Accumap	11/22/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=35.10,SEC		5192.00	924.00	46.11	88.00	7.24	0.05	0.00	663.00	28.84	82.19	624.00	10.23	700.00	19.74	2510.00	52.26				
Birdbear Formation	49.79275483	-100.7783841	736.10	ACC-05656	1W10092535120000	Accumap	N/A	Regional			118777.00	2962.00	147.81	859.00	70.69	0.05	0.00	41642.00	1811.33	2029.82	598.00	9.80	68546.00	1933.43	4158.00	86.57				
Birdbear Formation	49.47	-103.42	1837.50	U of A 98 - 018-4B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	labelled S98-05658-4, trace solids in container		295189.00	11600.00	580.00	1430.00	119.17	3610.00	92.56	93700.00	4073.91	4882.54	325.00	5.33	183000.00	5228.57			515.00	6.45		
Birdbear Formation	49.68921731	-106.3121398	1741.90	ACC-15818	1W30080335060100	Accumap	N/A	Regional			3798.00	484.00	24.15	210.00	17.28	0.05	0.00	393.00	17.09	58.53	340.00	5.57	490.00	13.82	1881.00	39.16				
Birdbear Formation	51.70531124	-109.24916	916.20	ACC-07857	1W30312331150100	Accumap	N/A	Regional			31023.00	4849.00	241.98	1324.00	108.95	0.05	0.00	4526.00	196.87	547.80	1250.00	20.49	17625.00	497.14	1449.00	30.17				
Birdbear Formation	49.07376953	-104.6572905	2248.05	ACC-16574	1W20012031010100	Accumap	N/A	Regional			125797.00	2075.00	103.55	1476.00	121.46	0.05	0.00	44536.00	1937.21	2162.22	405.00	6.64	74000.00	2087.27	3305.00	68.81				
Birdbear Formation	49.5128056	-103.3866382	1791.00	ACC-23454	1W20061135061102	Accumap	4/11/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		281295.00	10010.00	499.53	1772.00	145.82	3812.00	97.74	92000.00	4001.77	4744.62	239.00	3.92	172900.00	4876.88	562.00	11.70				
Birdbear Formation	51.70531124	-109.24916	916.20	ACC-07858	1W30312331150100	Accumap	N/A	Regional			47487.00	10239.00	510.95	1966.00	161.78	0.05	0.00	4363.00	189.78	862.55			29625.00	835.61	1293.00	26.92				
Birdbear Formation	49.69307693	-100.937255	826.00	ACC-07054	1W10082627130000	Accumap	2/12/1955	Regional	SAMPLE FROM TOP.		28479.00	1301.00	64.92	369.00	30.37	0.05	0.00	8688.00	377.91	473.20	622.00	10.19	13369.00	377.09	4130.00	85.99				
Birdbear Formation	50.17716879	-109.6086582	1275.60	ACC-11907	1W30142715150100	Accumap	N/A	Regional			14611.00	667.00	33.29	75.00	6.17	0.05	0.00	4112.00	178.86	218.32	747.00	12.24	2510.00	70.80	6500.00	135.33				
Birdbear Formation	51.90174417	-109.7830771	876.00	ACC-07551	1W30342709053100	Accumap	N/A	Regional			21340.00	491.00	24.50	5.00	0.41	105.00	2.69	7000.00	304.48	332.08	2267.00	37.15	8965.00	252.87	2507.00	52.20				
Birdbear Formation	50.41015283	-108.3964718	1368.30	ACC-13142	1W30171803150100	Accumap	1/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=69.9,SECO		14427.00	1153.00	57.54	143.00	11.77	0.05	0.00	3698.00	160.85	230.16	855.00	14.01	3875.00	109.30	5137.00	106.95				
Birdbear Formation	49.47	-103.42	1837.50	U of A 98 - 018-3B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	labelled S98-05658-3, trace solids in container		283239.00	10900.00	545.00	1320.00	110.00	3390.00	86.92	89900.00	3908.70	4664.88	313.00	5.13	176000.00	5028.57			502.00	6.28		
Birdbear Formation	49.5195546	-100.4691848	753.45	ACC-05949	1W10062335010000	Accumap	8/25/1955	Regional			109736.00	2765.00	137.98	817.00	67.23	0.05	0.00	38371.00	1669.04	1874.26	323.00	5.29	62904.00	1774.29	4544.00	94.61				
Birdbear Formation	49.0753487	-100.7937053	1196.50	ACC-11014	1W10012532030000	Accumap	N/A	Regional			220700.00	9860.00	492.04	1432.00	117.84	0.05	0.00	73676.00	3204.73	3814.61	146.00	2.39	134059.00	3781.32	1527.00	31.79				
Birdbear Formation	49.44426014	-104.8114319	2022.30	ACC-16420	1W20062106090100	Accumap	N/A	Regional			25813.00	1200.00	59.88	172.00	14.15	0.05	0.00	8190.00	356.24	430.32	700.00	11.47	12900.00	363.86	2650.00	55.17				
Birdbear Formation	50.23858336	-105.4751867	1420.40	ACC-23357	1W20152611020100	Accumap	11/25/1958	Regional	MAGNESIUM CHLORIDE,SODIUM CHLORIDE=ABSENT.CALCIUM		7786.00	712.00	35.53	156.00	12.84	0.05	0.00	1502.00	65.33	113.70	795.00	13.03	611.00	17.23	4010.00	83.49				
Birdbear Formation	51.76320127	-109.8114787	908.30	ACC-07786	1W30322719160100	Accumap	N/A	Regional			20121.00	421.00	21.01	182.00	14.98	0.05	0.00	6880.00	299.26	335.28	647.00	10.60	10640.00	300.12	1350.00	28.11				
Birdbear Formation	49.47138519	-101.7798032	1377.25	ACC-13310	1W10063207160100	Accumap	12/22/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=83.1,SECO		248476.00	11634.00	580.57	1782.00	146.64	0.05	0.00	82207.00	3575.80	4303.01	123.00	2.02	151750.00	4280.31	1042.00	21.69				
Birdbear Formation	51.64337573	-107.4596923	777.20	ACC-23311	1W30311111110100	Accumap	6/4/1956	Regional	NA+K IS COMBINED IN NA.INSUFFICIENT DATA FOR CORR		36432.00	1028.00	51.30	443.00	36.45	0.05	0.00	11794.00	513.01	600.76	461.00	7.56	16306.00	459.93	6400.00	133.25				

Birdbear Formation	52.31921778	-109.5995278	1055.00	ACC-23292	1W30392601089100	Accumap	10/6/2011	Regional	THIS ANALYSIS AND CALCULATIONS ARE BASED ON PH=SM		29449.00	399.00	19.91	317.00	26.09	80.80	2.07	10900.00	474.12	522.71	313.10	5.13	17597.00	496.35	1.60	0.03	366.00	4.58					
Birdbear Formation	50.08040246	-101.4902185	844.30	ACC-07245	1W10133011040100	Accumap	10/8/1968	Regional	SAMPLE CONSISTED OF APPROXIMATELY 50% FREE WATER,		13378.00	526.00	26.25	40.00	3.29	0.05	0.00	3861.00	167.94	197.48	84.00	1.38	2290.00	64.59	6577.00	136.93							
Birdbear Formation	50.21298825	-100.992098	605.95	ACC-03466	1W10142629010000	Accumap	3/13/1968	Regional			42448.00	1314.00	65.57	576.00	47.40	0.05	0.00	13699.00	595.87	708.84	517.00	8.47	20545.00	579.50	5797.00	120.69							
Birdbear Formation	49.68991169	-100.6817349	710.20	ACC-05159	1W10082428110000	Accumap	5/11/1956	Regional			116530.00	2192.00	109.39	809.00	66.57	0.05	0.00	41682.00	1813.06	1989.03	244.00	4.00	67029.00	1890.64	4574.00	95.23							
Birdbear Formation	49.97256481	-104.7165622	1583.40	ACC-15412	1W20122006160100	Accumap	N/A	Regional			40201.00	1437.00	71.71	246.00	20.24	0.05	0.00	13388.00	582.35	674.33	366.00	6.00	20721.00	584.46	4042.00	84.15							
Birdbear Formation	49.12155162	-104.4239712	2387.20	ACC-16687	1W20021913060100	Accumap	N/A	Regional			33251.00	2115.00	105.54	884.00	72.75	0.05	0.00	8766.00	381.30	559.59	475.00	7.78	15500.00	437.20	5511.00	114.74							
Birdbear Formation	49.41647652	-100.2993937	787.30	ACC-06530	1W10052130030000	Accumap	9/28/1955	Regional			117833.00	3622.00	180.75	1059.00	87.15	0.05	0.00	40392.00	1756.95	2024.85	95.00	1.56	69152.00	1950.53	3513.00	73.14							
Birdbear Formation	50.9059756	-101.3025545	501.10	ACC-02529	1W10222821010000	Accumap	9/3/1958	Regional			25631.00	933.00	46.56	383.00	31.52	0.05	0.00	7976.00	346.94	425.01	1000.00	16.39	12071.00	340.48	3268.00	68.04							
Birdbear Formation	49.49875951	-104.0445465	1848.90	ACC-16043	1W20061625050100	Accumap	N/A	Regional			118966.00	1886.00	94.12	297.00	24.44	822.00	21.08	43300.00	1883.44	2023.02	223.00	3.65	69124.00	1949.74	3314.00	69.00							
Birdbear Formation	50.73777652	-107.3175205	1316.70	ACC-23326	1W30201034050100	Accumap	7/10/1956	Regional	NA+K IS COMBINED IN NA.INSUFFICIENT DATA FOR CORR		9339.00	621.00	30.99	279.00	22.96	0.05	0.00	2095.00	91.13	145.08	554.00	9.08	2090.00	58.95	3700.00	77.03							
Birdbear Formation	49.14912783	-100.9450944	1176.70	ACC-10602	1W10022630020000	Accumap	9/13/1971	Regional	18743. 670?.?		21510.00	936.00	46.71	99.00	8.15	0.05	0.00	6709.00	291.83	346.68	49.00	0.80	8151.00	229.91	5566.00	115.88							
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23421	1W20071103092100	Accumap	7/2/1997	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		274618.00	9409.00	469.53	2064.00	169.85	2737.00	70.18	85486.00	3718.43	4427.82	366.00	6.00	174000.00	4907.91	556.00	11.58							
Birdbear Formation	49.07428348	-104.3018227	2427.60	ACC-16740	1W20011835010100	Accumap	N/A	Regional	SAMPLE CONTAINED TRACE SEDIMENT		297719.00	10613.00	529.62	1334.00	109.78	0.05	0.00	103381.00	4496.82	5136.25	280.00	4.59	181600.00	5122.27	510.00	10.62							
Birdbear Formation	49.54622216	-105.7359518	1908.10	ACC-16179	1W20072809090100	Accumap	11/23/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=18.58,SEC		3416.00	586.00	29.24	168.00	13.82	0.05	0.00	226.00	9.83	52.90	191.00	3.13	140.00	3.95	2202.00	45.85							
Birdbear Formation	49.32756128	-101.3441096	1230.65	ACC-11484	1W10042928040000	Accumap	4/13/1956	Regional			234285.00	13252.00	661.31	1078.00	88.71	0.05	0.00	75839.00	3298.81	4048.83	315.00	5.16	142250.00	4012.35	1551.00	32.29							
Birdbear Formation	49.47013268	-103.3439574	1828.80	ACC-16004	1W20061018060100	Accumap	N/A	Regional			261977.00	11220.00	559.91	1318.00	108.46	0.05	0.00	88684.00	3857.54	4525.90	226.00	3.70	159606.00	4501.90	923.00	19.22							
Birdbear Formation	49.05934339	-100.8031789	1182.00	ACC-10665	1W10012530010002	Accumap	N/A	Regional				6630.00	330.85	1201.00	98.83	0.05	0.00	57224.00	2489.10	2918.79	248.00	4.06	101500.00	2862.95	2521.00	52.49							
Birdbear Formation	49.46648302	-102.7604214	1736.80	ACC-23464	1W20060616030100	Accumap	N/A	Regional	CONCENTRATION APPEARS TO BE THAT OF NISKU,BUT HAV		288548.00	11534.00	575.58	1484.00	122.12	0.05	0.00	98577.00	4287.86	4985.56	183.00	3.00	176200.00	4969.96	663.00	13.80							
Birdbear Formation	51.57101937	-109.6458848	960.10	ACC-08302	1W30302618100100	Accumap	N/A	Regional			26569.00	947.00	47.26	262.00	21.56	0.05	0.00	8340.00	362.77	431.59	1430.00	23.44	11300.00	318.73	4290.00	89.32							
Birdbear Formation	50.34831612	-106.9412894	1534.70	ACC-15158	1W30160717120100	Accumap	8/25/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=54.62,SEC		7036.00	805.00	40.17	130.00	10.70	0.05	0.00	1409.00	61.29	112.16	1627.00	26.66	601.00	16.95	3290.00	68.50							
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23397	1W20071103092104	Accumap	7/2/1997	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		274618.00	9409.00	469.53	2064.00	169.85	2737.00	70.18	85486.00	3718.43	4427.82	366.00	6.00	174000.00	4907.91	556.00	11.58							
Birdbear Formation	49.32801091	-104.1499688	2075.10	ACC-23498	1W20041630110100	Accumap	4/10/1967	Regional	NA+K IS COMBINED IN NA.		80553.00	1668.00	83.24	4.00	0.33	0.05	0.00	29143.00	1267.65	1351.22	1967.00	32.24	43899.00	1238.23	3872.00	80.61							
Birdbear Formation	49.73565203	-104.1658918	1728.20	ACC-15803	1W20091618110100	Accumap	N/A	Regional			54844.00	1131.00	56.44	462.00	38.02	0.05	0.00	18803.00	817.88	912.38	425.00	6.97	26652.00	751.76	7370.00	153.44							
Birdbear Formation	49.68991169	-100.6817349	710.20	ACC-05158	1W10082428110000	Accumap	7/5/1957	Regional			185881.00	3788.00	189.03	1610.00	132.49	0.05	0.00	66124.00	2876.23	3197.75	105.00	1.72	110750.00	3123.85	3504.00	72.95							
Birdbear Formation	50.98516879	-106.1408816	937.60	ACC-23323	1W30230130050100	Accumap	9/3/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=72.80,SEC		12222.00	689.00	34.38	234.00	19.26	0.05	0.00	3299.00	143.50	197.14	555.00	9.10	3700.00	104.36	4023.00	83.76							
Birdbear Formation	49.81578205	-105.3852532	1784.60	ACC-15896	1W20102518030100	Accumap	N/A	Regional			5672.00	597.00	29.79	151.00	12.43	0.05	0.00	1047.00	45.54	87.76	245.00	4.02	1105.00	31.17	2527.00	52.61							
Birdbear Formation	51.33006593	-103.4419433	692.50	ACC-04815	1W20271113040100	Accumap	10/29/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=90,SECOND		17538.00	459.00	22.91	78.00	6.42	0.05	0.00	6057.00	263.46	292.79	120.00	1.97	8710.00	245.68	2174.00	45.26							
Birdbear Formation	49.49930477	-102.7661952	1707.80	ACC-23463	1W20060628050100	Accumap	12/4/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=84.88,SEC		258881.00	11413.00	569.54	1293.00	106.40	0.05	0.00	87269.00	3795.99	4471.93	135.00	2.21	157750.00	4449.55	1021.00	21.26							
Birdbear Formation	49.82666801	-105.4131138	1770.60	ACC-23373	1W20102613130100	Accumap	6/21/1954	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=43.64,SEC		5186.00	637.00	31.79	142.00	11.69	0.05	0.00	774.00	33.67	77.14	310.00	5.08	395.00	11.14	2928.00	60.96							
Birdbear Formation	49.12155162	-104.4239712	2393.30	ACC-16695	1W20021913060100	Accumap	N/A	Regional			233373.00	7505.00	374.52	1334.00	109.78	0.05	0.00	81402.00	3540.79	4025.08	215.00	3.52	141750.00	3998.25	1167.00	24.30							
Birdbear Formation	49.20058408	-103.0685994	2069.60	ACC-16451	1W20030807150100	Accumap	N/A	Regional			236892.00	9200.00	459.10	996.00	81.96	0.05	0.00	81450.00	3542.88	4083.94	195.00	3.20	143750.00	4054.66	1301.00	27.09							
Birdbear Formation	49.60783461	-103.0418154	1661.20	ACC-15631	1W20070833130100	Accumap	N/A	Regional			199676.00	5802.00	289.54	516.00	42.46	0.05	0.00	71217.00	3097.77	3429.80	181.00	2.97	120067.00	3386.65	1892.00	39.39							
Birdbear Formation	49.58986147	-102.7431703	1620.30	ACC-23425	1W20070627110100	Accumap	1/28/1969	Regional	NA+K IS COMBINED IN NA.		7408.00	153.00	7.64	15.00	1.23	0.05	0.00	2321.00	100.96	109.83	200.00	3.28	1122.00	31.65	3597.00	74.89							
Birdbear Formation	49.61917877	-100.6477185	741.70	ACC-05756	1W10072434160000	Accumap	5/11/1956	Regional			55541.00	1692.00	84.44	455.00	37.44	0.05	0.00	18816.00	818.45	940.33	329.00	5.39	30027.00	846.95	4204.00	87.53							
Birdbear Formation	50.68631932	-105.0638058	978.40	ACC-08543	1W20202312150100	Accumap	N/A	Regional			23623.00	1249.00	62.33	363.00	29.87	0.05	0.00	6911.00	300.61	392.81	185.00	3.03	10750.00	303.22	4165.00	86.71							
Birdbear Formation	51.15319764	-102.4245103	474.60	ACC-23342	1W20250318040100	Accumap	N/A	Regional	NO ANALYSIS ON FILE FROM THIS AREA WITH WHICH TO		45510.00	749.00	37.38	393.00	32.34	0.05	0.00	16209.00	705.05	774.77	369.00	6.05	25240.00	711.93	2737.00	56.98							
Birdbear Formation	49.60805902	-102.7317622	1659.30	ACC-15630	1W20070634160100	Accumap	4/5/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=85.74,SEC		82161.00	3159.00	157.64	526.00	43.29	0.05	0.00	27757.00	1207.36	1408.29	295.00	4.83	47500.00	1339.80	3074.00	64.00							
Birdbear Formation	49.90688805	-101.4097102	892.45	ACC-07661	1W10112908070000	Accumap	N/A	Regional			39370.00	1243.00	62.03	552.00	45.42	0.05	0.00	12611.00	548.55	656.00	360.00	5.90	19720.00	556.23	4884.00	101.68							
Birdbear Formation	51.70531124	-109.24916	916.20	ACC-07859	1W30312331150100	Accumap	N/A	Regional			1807.00	186.00	9.28	26.00	2.14	0.05	0.00	453.00	19.70	31.16			1000.00	28.21	141.00	2.94							
Birdbear Formation	50.6390691	-105.837644	1149.70	ACC-10286	1W20192828120100	Accumap	N/A	Regional			8684.00	1041.00	51.95	441.00	36.29	0.05	0.00	1294.00	56.29	144.52	136.00	2.23	3000.00	84.62	2772.00	57.71							
Birdbear Formation	51.80666262	-109.7256621	932.50	ACC-07997	1W30327021401100	Accumap	N/A	Regional			21093.00	183.00	9.13	191.00	15.72	120.00	3.08	7540.00	327.97	355.89	2820.00	46.22	10200.00	287.70	28.00	0.58							
Birdbear Formation	49.48050188	-104.5195951	1990.30	ACC-16388	1W20061920010100	Accumap	8/14/1968	Regional	NA+K IS COMBINED IN NA.		30549.00	908.00	45.31	154.00	12.67	0.05	0.00	10325.00	449.11	507.10	278.00	4.56	14802.00	417.51	4081.00	84.97							
Birdbear Formation	49.47	-103.42	1837.50	U of A 98 - 018-2B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	labelled S98-05658-2, trace solids in container		259551.00	10100.00	505.00	1180.00	98.33	3380.00	86.67	84000.00	3652.17	4354.42	504.00	8.26	159000.00	4542.86			431.00	5.39					
Birdbear Formation	49.60482741	-102.7770343	1617.00	ACC-15542	1W20070632090100	Accumap	N/A	Regional			195076.00	4395.00	219.32	454.00	37.36	1938.00	49.69	70000.00	3044.83	3351.08	129.00	2.11	112951.00	3185.94	5209.00	108.45							
Birdbear Formation	49.44482464	-102.7039487	1746.00	ACC-23467	1W20060602090100	Accumap	2/6/1998	Regional			293942.00	1251.00	62.43	49.00	4.03	1882.00	48.26	111998.00	4871.64	4986.23	123.00	2.02	174931.00	4934.17	3672.00	76.45							
Birdbear Formation	49.58986147	-102.7431703	1620.30	ACC-23424	1W20070627110100	Accumap	1/28/1969	Regional			54025.00	1845.00	92.07	386.00	31.76	0.05	0.00	18520.00	805.57	929.41	171.00	2.80	32113.00	905.79	990.00	20.61							
Birdbear Formation	49.87812879	-101.7848613	1083.50	ACC-09566	1W10103232084100	Accumap	2/25/1985	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		189573.00	3403.00	169.82	2770.00	227.95	1315.00	33.72	63940.00	2781.23	3212.63	592.00	9.70	113500.00	3201.42	4053.00	84.38							
Birdbear Formation	51.67606348	-107.1172881	701.00	ACC-04954	1W30310819160100	Accumap	N/A	Regional			35203.00	1371.00	68.42	454.00	37.36	0.05	0.00	11242.00	489.00	594.78	298.00	4.88	18290.00	515.89	3548.00	73.87							
Birdbear Formation	49.70127591	-102.4979473	1589.00	ACC-23384	1W20090404069100	Accumap	11/19/1993	Regional	SAMPLE POINT:TEST VALVE@1575 M.COLORLESS FILTRATE		213378.00	4004.00	199.81	971.00	79.90	2190.00	56.15	74225.00	3228.61	3564.33	275.00	4.51	130000.00	3666.83	1713.00	35.66							
Birdbear Formation	50.54026832	-105.2164662	1173.50	ACC-23350	1W20182422160100	Accumap	8/7/1972	Regional	SAMPLE POINT FROM BOTTOM.NA+K IS COMBINED IN NA.		248521.00	1758.00	87.73	397.00	32.67	0.05	0.00	94960.00	4130.53	4250.93	93.00	1.52	148673.00	4193.52	2640.00	54.96							
Birdbear Formation	49.06712268	-107.6397157	1495.00	ACC-23337	1W30011326100100	Accumap	8/11/1955	Regional	PRIMARY SALINITY-32.58, SECONDARY SALINITY=62.24,		4804.00	682.00	34.03	209.00	17.20	0.05	0.00	569.00	24.75	75.98	240.00	3.93	665.00	18.76	2561.00	53.32							
Birdbear Formation	49.19349879	-104.4361624	2326.20	ACC-23510	1W20031912070100	Accumap	11/2/1967	Regional	NA+K IS COMBINED IN NA.		251752.00	7412.00	369.88	559.00	46.00	0.05	0.00	89907.00	3910.73	4326.61	234.00	3.83	152090.00	4289.90	1550.00	32.27							
Birdbear Formation	49.57531584	-102.7485124	1634.90	ACC-23429	1W20070622120100	Accumap	9/7/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=89.70,SEC		207904.00	6153.00	307.05	743.00	61.14	0.05	0.00	73710.00	3206.20	3574.40	280.00	4.59	125000.00	3525.79	2158.00	44.93							
Birdbear Formation	49.5858116	-102.7476712	1621.50	ACC-23426	1W20070627051100	Accumap	7/12/1971	Regional	NA+K IS COMBINED IN NA.		238578.00	5415.00	270.22	375.00	30.86	0.05	0.00	87246.00	3794.99	4096.07	210.00	3.44	144314.00	4070.57	1018.00	21.19							
Birdbear Formation	51.68421178	-109.212857	903.10	ACC-07746	1W30312328054100	Accumap	N/A	Regional			32216.00	1169.00	58.34	374.00	30.78	0.05	0.00	10171.00	442.41	531.53	1622.00	26.58	15160.00	427.61	3720.00	77.45							
Birdbear Formation	49.00439934	-104.3971876	2418.25	ACC-16721	1W20011806072100	Accumap	N/A	Regional			90590.00	2180.00	108.79	237.00	19.50	0.05	0.00	32200.00	1400.62	1528.91	683.00	11.19	49600.00	1399.04	5690.00	118.47							
Birdbear Formation	49.43358762	-104.2679212	1940.70	ACC-16250	1W20051732130100	Accumap	N/A	Regional			94808.00	2240.00	111.78	413.00	33.99	0.05	0.00	33718.00	1466.65	1612.42	190.00	3.11	53605.00	1512.00	4604.00	95.85							
Birdbear Formation	51.87245981	-109.9828031	919.00	ACC-07894	1W30332936070100	Accumap	N/A	Regional	YELLOW COLORED FILTRATE RECOVERED FROM A SAMPLE C		19605.00	172.00	8.58	97.00	7.98	82.00	2.10	6687.00	290.87	309.53	2654.00	43.50	9900.00	279.24	7.00	0.15							
Birdbear Formation	49.47	-103.42	1837.50	U of A 98 - 018-6B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	labelled S98-05658-6, trace solids in container,		302387.00	13100.00	655.00	1630.00	135.83	3950.00	101.28	95800.00	4165.22	5078.20	210.00	3.44	186000.00	5314.29			561.00	7.02					
Birdbear Formation	49.35290697	-102.8879784	1870.00	ACC-23477	1W20050704071200	Accumap	1/17/2002	Regional			290312.00	11315.00	564.65	1181.00	97.19	4433.00	113.67	95799.00	4167.02	4942.24	254.00	4.16	176931.00	4990.58	399.00	8.31							
Birdbear Formation	50.75228555	-106.197923	1196.30	ACC-11010	1W30210203070100	Accumap	4/11/1955	Regional	NA&K IS COMBINED IN NA.PRIMARY SALINITY=65.78,SEC		9422.00	682.00	34.03	197.00	16.21	0.05	0.00	2220.00	96.56	146.81	270.00	4.42	2225.00	62.76	3827.00	79.68							
Birdbear Formation	49.86462119	-100.9289383	735.35	ACC-05647	1W10102627070200	Accumap	4/18/1955	Regional	PROPERTIES OF REACTION IN PERCENT;PRIMARY SALINIT		158307.00	2879.00	143.67	1262.00	103.85	0.05	0.00	56734.00	2467.79	2715.31	88.00	1.44	93000.00	2623.19	4389.00	91.38							

Birdbear Formation	49.67434851	-100.1180442	569.40	ACC-03104	1W10082022120000	Accumap	8/20/1957	Regional	HYPOTHETICAL COMBINATIONS: CALCIUM CHLORIDE - 952		159017.00	3440.00	171.67	1337.00	110.02	0.05	0.00	56304.00	2449.09	2730.77	205.00	3.36	93720.00	2643.50	4011.00	83.51				
Birdbear Formation	49.35732125	-102.4072763	1702.30	ACC-15749	1W20050306120100	Accumap	N/A	Regional			281979.00	18717.00	934.03	2566.00	211.16	0.05	0.00	86484.00	3761.84	4907.03	128.00	2.10	173500.00	4893.80	584.00	12.16				
Birdbear Formation	49.8267099	-102.5898446	1516.90	ACC-15013	1W20100514130100	Accumap	N/A	Regional			167465.00	3300.00	164.68	474.00	39.01	0.05	0.00	61136.00	2659.27	2862.95	183.00	3.00	98579.00	2780.55	3793.00	78.97				
Birdbear Formation	49.8267099	-102.5898446	1516.90	ACC-23378	1W20100514130100	Accumap	3/14/1967	Regional	NA+K IS COMBINED IN NA.MFE CHAMBER		167465.00	3300.00	164.68	474.00	39.01	0.05	0.00	61136.00	2659.27	2862.95	183.00	3.00	98579.00	2780.55	3793.00	78.97				
Birdbear Formation	49.67744206	-104.7868145	1886.70	ACC-16121	1W20082128090100	Accumap	5/16/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=82.90,SEC		17754.00	800.00	39.92	124.00	10.20	0.05	0.00	5588.00	243.06	293.19	450.00	7.37	7627.00	215.13	3393.00	70.64				
Birdbear Formation	50.94441784	-105.5226924	847.00	ACC-07272	1W20232611090100	Accumap	N/A	Regional				1701.00	84.88	485.00	39.91	0.05	0.00	15818.00	688.04	812.84	175.00	2.87	24500.00	691.06	5725.00	119.19				
Birdbear Formation	50.27546421	-103.8359521	1271.00	ACC-11865	1W20151423124100	Accumap	N/A	Regional			31375.00	1136.00	56.69	334.00	27.49	0.05	0.00	10072.00	438.11	522.32	327.00	5.36	14995.00	422.95	4510.00	93.90				
Birdbear Formation	50.45981821	-101.156966	587.20	ACC-03225	1W10172717160000	Accumap	9/24/1957	Regional			37903.00	1458.00	72.76	1109.00	91.26	0.05	0.00	11040.00	480.21	644.23	410.00	6.72	19000.00	535.92	4886.00	101.73				
Birdbear Formation	50.63192529	-104.1806498	1083.60	ACC-09568	1W20191629010100	Accumap	12/29/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=86.08,SEC		73781.00	1806.00	90.12	1030.00	84.76	0.05	0.00	24857.00	1081.22	1256.10	233.00	3.82	40000.00	1128.25	5973.00	124.36				
Birdbear Formation	49.3243694	-104.8000984	2056.80	ACC-16446	1W20042129060100	Accumap	8/30/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=76.14,SEC		19753.00	1143.00	57.04	173.00	14.24	0.05	0.00	5857.00	254.77	326.04	490.00	8.03	8300.00	234.11	4035.00	84.01				
Birdbear Formation	50.48188771	-101.4452323	541.05	ACC-02856	1W10172929060000	Accumap	N/A	Regional				1392.00	69.46	522.00	42.96	0.05	0.00	11908.00	517.97	630.39	470.00	7.70	18500.00	521.82	4855.00	101.08				
Birdbear Formation	52.37747774	-109.4157345	742.00	ACC-05762	1W30392429021100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUD		2382.00	10.00	0.50	4.00	0.33	13.00	0.33	790.00	34.36	35.56	514.00	8.42	444.00	12.52	592.00	12.33				
Birdbear Formation	49.99795725	-102.7421459	1382.60	ACC-13390	1W20120615100200	Accumap	N/A	Regional	PALE GREEN FILTRATE FROM SAMPLE WITH TRACE SEDIME		79041.00	1922.00	95.91	656.00	53.98	0.05	0.00	27337.00	1189.09	1339.02	647.00	10.60	43250.00	1219.92	5228.00	108.85				
Birdbear Formation	49.96883338	-105.0806092	1655.10	ACC-15625	1W20122304090100	Accumap	6/11/1954	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=82.88,SEC		32304.00	1365.00	68.12	297.00	24.44	0.05	0.00	10295.00	447.81	540.36	285.00	4.67	16000.00	451.30	4062.00	84.57				
Birdbear Formation	50.40296515	-108.682747	1344.80	ACC-12755	1W30172003050100	Accumap	N/A	Regional			15385.00	552.00	27.55	120.00	9.87	0.05	0.00	4657.00	202.57	239.99	160.00	2.62	4237.00	119.51	5659.00	117.82				
Birdbear Formation	50.18021486	-103.6185852	1307.30	ACC-12256	1W20141220040100	Accumap	N/A	Regional			34189.00	1295.00	64.62	226.00	18.60	0.05	0.00	11277.00	490.52	573.78	659.00	10.80	17772.00	501.28	2959.00	61.61				
Birdbear Formation	51.06848812	-105.4875499	821.40	ACC-23343	1W20242530030100	Accumap	8/21/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=84.24,SEC		70264.00	2894.00	144.42	518.00	42.63	0.05	0.00	22978.00	999.49	1186.53	1050.00	17.21	37575.00	1059.85	5249.00	109.28				
Birdbear Formation	51.3415564	-105.384923	717.80	ACC-23339	1W20272525160100	Accumap	2/26/1969	Regional	NA+K IS COMBINED IN NA.SAMPLE POINT FROM TOP OF T		62929.00	1611.00	80.39	604.00	49.70	0.05	0.00	21344.00	928.41	1058.51	246.00	4.03	32458.00	915.52	6666.00	138.79				
Birdbear Formation	49.01259441	-100.0880672	1087.25	ACC-09608	1W10012004160000	Accumap	2/10/1956	Regional	PRIMARY SALINITY 81.96. SECONDARY SALINITY 17.64.		36448.00	1756.00	87.63	286.00	23.54	0.05	0.00	11602.00	504.66	615.82	148.00	2.43	19000.00	535.92	3731.00	77.68				
Birdbear Formation	49.11052886	-109.78257	1533.10	ACC-15150	1W30022911110100	Accumap	N/A	Regional			8492.00	704.00	35.13	163.00	13.41	0.05	0.00	1840.00	80.04	128.58	386.00	6.33	1349.00	38.05	4050.00	84.32				
Birdbear Formation	49.59374504	-104.7193771	1919.60	ACC-16209	1W20072125160100	Accumap	N/A	Regional			13535.00	468.00	23.35	102.00	8.39	0.05	0.00	4103.00	178.47	210.25	430.00	7.05	3756.00	105.94	4675.00	97.33				
Birdbear Formation	49.47311639	-103.4207095	1832.00	ACC-23456	1W20061116089200	Accumap	6/3/1998	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		297718.00	13170.00	657.22	2258.00	185.81	3715.00	95.26	94875.00	4126.83	5064.88	342.00	5.60	183000.00	5161.76	358.00	7.45				
Birdbear Formation	49.12691247	-101.0068993	1209.15	ACC-11217	1W10022715090000	Accumap	7/9/1970	Regional			185223.00	2268.00	113.18	284.00	23.37	0.05	0.00	69404.00	3018.90	3155.45	183.00	3.00	107974.00	3045.55	5110.00	106.39				
Birdbear Formation	51.11569035	-104.7023858	789.40	ACC-06568	1W20252011050100	Accumap	N/A	Regional			83008.00	1408.00	70.26	424.00	34.89	0.05	0.00	29819.00	1297.05	1402.21	185.00	3.03	45250.00	1276.34	5922.00	123.30				
Birdbear Formation	49.57908951	-102.7258422	1625.20	ACC-15564	1W20070623130100	Accumap	N/A	Regional			175114.00	7039.00	351.27	682.00	56.12	0.05	0.00	59960.00	2608.11	3015.54	224.00	3.67	105492.00	2975.55	1716.00	35.73				
Birdbear Formation	49.84437163	-101.0116608	790.95	ACC-06583	1W10102724010000	Accumap	N/A	Regional			55047.00	1263.00	63.03	960.00	79.00	0.05	0.00	18198.00	791.57	933.59	1196.00	19.60	29529.00	832.91	3901.00	81.22				
Birdbear Formation	49.43	-102.6	1744.50	U of A 01 - 023B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST-1, chamber #263, 2001-06-22		297051.00	15100.00	755.00	2020.00	168.33	4250.00	108.97	90800.00	3947.83	5002.82	72.00	1.18	183000.00	5228.57			628.00	7.86		
Birdbear Formation	49.01596502	-109.7323296	1516.40	ACC-15011	1W30012807020100	Accumap	N/A	Regional	INSUFFICIENT SAMPLE FOR RESISTIVITY		7479.00	690.00	34.43	182.00	14.98	0.05	0.00	1529.00	66.51	115.92	445.00	7.29	1644.00	46.37	2989.00	62.23				
Birdbear Formation	51.70531124	-109.24916	897.30	ACC-07694	1W30312331150100	Accumap	N/A	Regional			30866.00	2419.00	120.71	1010.00	83.11	0.05	0.00	7416.00	322.58	526.41	1093.00	17.91	15500.00	437.20	3428.00	71.37				
Birdbear Formation	49.48579565	-100.6612419	837.75	ACC-07178	1W10062416140000	Accumap	N/A	Regional				1641.00	81.89	493.00	40.57	0.05	0.00	19195.00	834.94	957.40	488.00	8.00	30239.00	852.93	4640.00	96.60				
Birdbear Formation	49.0304406	-105.2587369	2258.55	ACC-16578	1W20012515010100	Accumap	3/5/1955	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=89.70,SEC		50087.00	1343.00	67.02	242.00	19.91	0.05	0.00	17395.00	756.64	843.57	522.00	8.55	26875.00	758.05	3710.00	77.24				
Birdbear Formation	51.2217415	-106.5130882	1051.30	ACC-23320	1W30260416120100	Accumap	6/16/1954	Regional	NA+K IS COMBINED IN NA.		8596.00	887.00	44.26	382.00	31.44	0.05	0.00	1245.00	54.15	129.85	2370.00	38.84	1824.00	51.45	1888.00	39.31				
Birdbear Formation	50.60739489	-101.5055946	529.75	ACC-02752	1W10192906130000	Accumap	N/A	Regional				1524.00	76.05	508.00	41.80	0.05	0.00	11408.00	496.22	614.08	420.00	6.88	18125.00	511.24	4618.00	96.15				
Birdbear Formation	51.92706984	-108.1981095	870.50	ACC-23304	1W30341622040100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		61701.00	1613.00	80.49	780.00	64.19	0.05	0.00	20022.00	870.91	1015.59	133.00	2.18	34022.00	959.64	5131.00	106.83				
Birdbear Formation	50.35283731	-101.156711	555.85	ACC-02975	1W10162708090000	Accumap	9/12/1961	Regional	SAMPLE FROM DRILL PIPE IMMEDIATELY ABOVE TOOL. DU		41050.00	1347.00	67.22	552.00	45.42	0.05	0.00	13251.00	576.39	689.03	560.00	9.18	20645.00	582.32	4695.00	97.75				
Birdbear Formation	50.01322704	-106.2352357	1592.00	ACC-15438	1W30120220090100	Accumap	N/A	Regional	NA&K IS COMBINED IN NA.SAMPLED FROM MIDDLE		3870.00	515.00	25.70	155.00	12.76	0.05	0.00	455.00	19.79	58.25	280.00	4.59	315.00	8.89	2150.00	44.76				
Birdbear Formation	50.77366798	-105.3816876	972.30	ACC-23347	1W20212510160100	Accumap	4/25/1962	Regional	NA=12950 PPM,K=735 PPM,BR2=5 PPM.SAMPLE TAKEN 51.		41299.00	1695.00	84.59	254.00	20.90	0.05	0.00	13526.00	588.35	693.83	44.00	0.72	21155.00	596.71	4625.00	96.29				
Birdbear Formation	49.81462628	-101.0277891	791.75	ACC-06593	1W10102712040000	Accumap	6/16/1955	Regional			155094.00	4796.00	239.33	1176.00	96.77	0.05	0.00	53560.00	2329.73	2665.84	159.00	2.61	91718.00	2587.03	3685.00	76.72				
Birdbear Formation	49.30996097	-102.5531828	1822.70	ACC-15980	1W20040524070102	Accumap	N/A	Regional				19150.00	955.64	2700.00	222.19	0.05	0.00	83710.00	3641.18	4819.00	185.00	3.03	170210.00	4801.00	680.00	14.16				
Birdbear Formation	51.73421682	-107.0700846	716.30	ACC-23310	1W30320809160100	Accumap	6/7/1955	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=86.48,SEC		55639.00	1840.00	91.82	434.00	35.71	0.05	0.00	18730.00	814.71	942.24	275.00	4.51	29750.00	839.14	4750.00	98.89				
Birdbear Formation	49.23036112	-102.4578549	1853.20	ACC-16048	1W20030422163100	Accumap	N/A	Regional	W-323-69: R=0.086 AT 23 DEGREES CELCIUS 350' ABOV		159315.00	8755.00	436.90	1255.00	103.28	0.05	0.00	50950.00	2216.20	2756.37	160.00	2.62	95970.00	2706.96	2225.00	46.32				
Birdbear Formation	49.62336491	-101.2270354	969.40	ACC-08441	1W10082804030000	Accumap	12/28/1965	Regional			157780.00	4197.00	209.44	1262.00	103.85	0.05	0.00	55163.00	2399.46	2712.75	122.00	2.00	93416.00	2634.93	3620.00	75.37				
Birdbear Formation	49.46999082	-104.4585816	2020.80	ACC-23446	1W20061914070100	Accumap	3/12/1973	Regional	NA+K IS COMBINED IN NA.DST#1 TOP OF TOOL.		135873.00	1594.00	79.54	310.00	25.51	0.05	0.00	50959.00	2216.59	2321.65	215.00	3.52	80407.00	2267.99	2387.00	49.70				
Birdbear Formation	50.38358465	-102.0605573	853.10	ACC-07323	1W20160134022000	Accumap	N/A	Regional			59154.00	1772.00	88.43	402.00	33.08	0.05	0.00	20186.00	878.04	999.55	160.00	2.62	31750.00	895.55	4884.00	101.68				
Birdbear Formation	49.41647652	-100.2993937	787.30	ACC-06529	1W10052130030000	Accumap	9/28/1955	Regional			104476.00	3405.00	169.92	952.00	78.34	0.05	0.00	35364.00	1538.25	1786.51	1110.00	18.19	60053.00	1693.88	3592.00	74.79				
Birdbear Formation	49.05906476	-105.0753198	2269.85	ACC-16585	1W20012330040100	Accumap	N/A	Regional			46954.00	4314.00	215.28	766.00	63.03	0.05	0.00	12004.00	522.14	800.46	1340.00	21.96	25000.00	705.16	3530.00	73.49				
Birdbear Formation	49.41647652	-100.2993937	787.30	ACC-06531	1W10052130030000	Accumap	9/28/1955	Regional			147963.00	3991.00	199.16	1249.00	102.78	0.05	0.00	51501.00	2240.17	2542.11	415.00	6.80	87350.00	2463.83	3457.00	71.97				
Birdbear Formation	50.41371118	-107.8637723	1383.80	ACC-13425	1W30171409010100	Accumap	N/A	Regional			18036.00	967.00	48.26	154.00	12.67	0.05	0.00	4918.00	213.92	274.85	904.00	14.82	3943.00	111.22	7150.00	148.86				
Birdbear Formation	52.24291959	-109.420329	742.50	ACC-23294	1W30382406141100	Accumap	5/28/1998	Regional			45629.00	1742.00	86.93	703.00	57.85	148.00	3.79	15733.00	684.35	832.91	810.00	13.27	26467.00	746.54	26.00	0.54				
Birdbear Formation	49.07432554	-100.172826	1121.35	ACC-09960	1W10012136040000	Accumap	6/12/1953	Regional			190280.00	4580.00	228.55	1520.00	125.08	0.05	0.00	67070.00	2917.38	3271.02	180.00	2.95	112930.00	3185.34	4000.00	83.28				
Birdbear Formation	49.78661942	-102.2065042	1435.00	ACC-14202	1W20100203040100	Accumap	N/A	Regional			249839.00	3144.00	156.89	727.00	59.83	0.05	0.00	93369.00	4061.32	4278.04	71.00	1.16	149250.00	4209.80	3278.00	68.25				
Birdbear Formation	49.57901323	-101.2219814	984.20	ACC-08595	1W10072821020000	Accumap	5/16/1952	Regional	INSUFFICIENT WATER FOR RESISTIVITY.		141323.00	5496.00	274.27	1734.00	142.69	0.05	0.00	46663.00	2029.73	2446.68	225.00	3.69	84882.00	2394.21	2323.00	48.36				
Birdbear Formation	49.35336646	-99.9209611	702.25	ACC-04973	1W10041936130000	Accumap	9/12/1956	Regional			126945.00	2919.00	145.67	1108.00	91.18	0.05	0.00	44555.00	1938.03	2174.88	146.00	2.39	73701.00	2078.84	4516.00	94.02				
Birdbear Formation	49.45675538	-100.2208098	736.70	ACC-05662	1W10062103160000	Accumap	N/A	Regional			106611.00	2965.00	147.96	1117.00	91.92	0.05	0.00	36518.00	1588.44	1828.32	110.00	1.80	61570.00	1736.67	4331.00	90.17				
Birdbear Formation	51.35616263	-105.946994	1013.50	ACC-08889	1W20272936160100	Accumap	7/22/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=84.58,SEC		41477.00	1329.00	66.32	509.00	41.89	0.05	0.00	13643.00	593.44	701.64	300.00	4.92	21500.00	606.44	4346.00	90.48				
Birdbear Formation	50.47501661	-102.3529773	846.10	ACC-23355	1W20170333080100	Accumap	4/21/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=86.06,SEC		42674.00	1464.00	73.06	328.00	26.99	0.05	0.00	14203.00	617.80	717.84	445.00	7.29	21598.00	609.20	4862.00	101.23				
Birdbear Formation	51.09445962	-103.6474632	812.30	ACC-23345	1W20241229010100	Accumap	9/7/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=87.32,SEC		68213.00	1901.00	94.87	631.00	51.93	0.05	0.00	23218.00	1009.93	1156.72	255.00	4.18	36750.00	1036.58	5586.00	116.30				
Birdbear Formation	49.64102426	-104.6176242	1897.70	ACC-16155	1W20082014030100	Accumap	4/24/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=93.66,SEC		120880.00	2007.00	100.15	370.00	30.45	0.05	0.00	44390.00	1930.86	2061.46	325.00	5.33	70000.00	1974.45	3953.00	82.30				
Birdbear Formation	49.04146	-100.1786959	1140.25	ACC-10161	1W10012114160000	Accumap	12/22/1952	Regional	FILE NO.535.15.		62170.00	2470.00	123.26	600.00	49.37	0.05	0.00	20270.00	881.70	1054.33	1030.00	16.88	33950.00	957.61	3850.00	80.16				
Birdbear Formation	49.55742024	-105.4306119	1917.20	ACC-16205	1W20072614060100	Accumap	4/18/1955	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=68.00,SEC		13483.00	1000.00	49.90	271.00	22.30	0.05	0.00	3527.00	153.42	225.62	210.00	3.44	6200.00	174.88	2275.00	47.37				

Birdbear Formation	49.26	-104.78	2153.00	U of A 00 - 055 A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#1, feb 11/00, rec 292m (20m M+ 272m brackish		73272.00	993.00	49.65	220.00	18.33	733.00	18.79	26500.00	1152.17	1240.40	411.00	6.74	43800.00	1251.43			34.00	0.43			
Birdbear Formation	49.40446452	-103.9098762	1942.00	ACC-23475	1W20051524130100	Accumap	7/6/1994	Regional	MUD FILTRATE ANALYSIS		37161.00	914.00	45.61	110.00	9.05	230.00	5.90	12000.00	521.97	582.52	196.00	3.21	11741.00	331.17	11970.00	249.21					
Birdbear Formation	49.67012211	-104.5668194	1853.20	ACC-23393	1W20081930020100	Accumap	10/23/1970	Regional	NA+K IS COMBINED IN NA.		150614.00	2490.00	124.26	381.00	31.35	0.05	0.00	55559.00	2416.68	2572.29	283.00	4.64	88518.00	2496.77	3383.00	70.43					
Birdbear Formation	50.15160932	-107.8390145	1571.20	ACC-15349	1W30141410030100	Accumap	N/A	Regional				602.00	30.04	139.00	11.44	0.05	0.00	700.00	30.45	71.93	445.00	7.29	145.00	4.09	2909.00	60.57					
Birdbear Formation	49.79275483	-100.7783841	736.10	ACC-05655	1W10092535120000	Accumap	N/A	Regional			159503.00	3348.00	167.07	1117.00	91.92	0.05	0.00	56940.00	2476.75	2735.74	244.00	4.00	94085.00	2653.80	3769.00	78.47					
Birdbear Formation	49.02987246	-104.6243686	2315.25	ACC-16644	1W20012016030100	Accumap	2/14/1968	Regional	NA+K IS COMBINED IN NA.		119111.00	2695.00	134.49	516.00	42.46	0.05	0.00	42759.00	1859.91	2036.86	278.00	4.56	69718.00	1966.49	3144.00	65.46					
Birdbear Formation	50.0999464	-103.7403919	1336.00	ACC-23367	1W20131320093100	Accumap	1/6/1999	Regional	TRACE IN FIELD FE. YELLOW COLOURED FILTRATE RECOV		43784.00	1101.00	54.94	255.00	20.98	470.00	12.05	14615.00	635.72	723.66	763.00	12.50	23000.00	648.75	3580.00	74.54					
Birdbear Formation	49.44543414	-101.3217999	1164.20	ACC-10454	1W10062903040000	Accumap	4/21/1954	Regional	PRIMARY SALINITY=86.12,SECONDARY SALINITY=13.8,SE		146344.00	4410.00	220.07	1586.00	130.51	0.05	0.00	50015.00	2175.53	2526.11	120.00	1.97	87384.00	2464.78	2829.00	58.90					
Birdbear Formation	50.07317198	-101.3469258	773.75	ACC-06300	1W10132902110000	Accumap	N/A	Regional			123102.00	3304.00	164.88	841.00	69.21	0.05	0.00	42998.00	1870.31	2104.39	207.00	3.39	70972.00	2001.86	4780.00	99.52					
Birdbear Formation	50.33085481	-101.1219919	560.55	ACC-03033	1W10162703030000	Accumap	7/8/1958	Regional			27203.00	1021.00	50.95	472.00	38.84	0.05	0.00	8416.00	366.08	455.87	366.00	6.00	13042.00	367.87	3796.00	79.03					
Birdbear Formation	50.28632646	-106.7523893	2286.60	ACC-23330	1W30150627060100	Accumap	10/9/1959	Regional	NA+K IS COMBINED IN NA.CALCUALTED RESISTIVITY:0.0		75598.00	2540.00	126.75	1040.00	85.58	0.05	0.00	25025.00	1088.53	1300.86	323.00	5.29	43820.00	1236.00	2850.00	59.34					
Birdbear Formation	49.75745977	-102.3028358	1494.10	ACC-14796	1W20090326010100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=92.26,SEC		180244.00	3745.00	186.89	629.00	51.76	0.05	0.00	65464.00	2847.52	3086.17	285.00	4.67	106713.00	3009.99	3408.00	70.95					
Birdbear Formation	49.00439934	-104.3971876	2418.25	ACC-16719	1W20011806072100	Accumap	N/A	Regional			99132.00	2790.00	139.23	102.00	8.39	0.05	0.00	35100.00	1526.76	1674.39	720.00	11.80	55100.00	1554.17	5320.00	110.76					
Birdbear Formation	49.99166043	-101.054465	705.55	ACC-05044	1W10122712040000	Accumap	N/A	Regional			108091.00	2607.00	130.10	777.00	63.94	0.05	0.00	37964.00	1651.34	1845.38	201.00	3.29	61873.00	1745.21	4669.00	97.21					
Birdbear Formation	49.0235978	-109.4490602	1564.00	ACC-15327	1W30012608113100	Accumap	N/A	Regional			6865.00	490.00	24.45	108.00	8.89	71.00	1.82	1550.00	67.42	103.19	129.00	2.11	1200.00	33.85	3300.00	68.71					
Birdbear Formation	49.52211068	-106.4195467	1773.00	ACC-23336	1W30060436150100	Accumap	8/13/1958	Regional	NO RECOVERY DATA.SAMPLED 944.88M BELOW TOP OF FLU		6348.00	622.00	31.04	67.00	5.51	0.05	0.00	1410.00	61.33	97.88	357.00	5.85	1492.00	42.08	2400.00	49.97					
Birdbear Formation	51.81086443	-106.0719867	636.40	ACC-23307	1W30330110040100	Accumap	3/7/1955	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=86.08,SEC		38933.00	1132.00	56.49	430.00	35.39	0.05	0.00	13049.00	567.60	659.47	304.00	4.98	20500.00	578.23	3672.00	76.45					
Birdbear Formation	51.93069466	-108.0624484	869.60	ACC-07504	1W30341521080100	Accumap	N/A	Regional				1937.00	96.66	590.00	48.55	0.05	0.00	31109.00	1353.17	1498.38	285.00	4.67	49500.00	1396.21	4703.00	97.92					
Birdbear Formation	50.28203621	-101.7219328	784.60	ACC-06489	1W10153117140100	Accumap	10/4/1972	Regional	NA+K IS COMBINED IN NA.ANALYSIS DETERMINED ON A C		196219.00	1922.00	95.91	778.00	64.02	0.05	0.00	73218.00	3184.80	3344.74	230.00	3.77	114000.00	3215.52	6071.00	126.40					
Birdbear Formation	51.81086443	-106.0719867	639.50	ACC-23306	1W30330110040100	Accumap	3/7/1955	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=85.62,SEC		37019.00	1132.00	56.49	409.00	33.66	0.05	0.00	12326.00	536.15	626.30	310.00	5.08	19300.00	544.38	3699.00	77.01					
Birdbear Formation	51.71590984	-109.1668969	905.00	ACC-07764	1W30322302120102	Accumap	N/A	Regional				16370.00	816.91	1790.00	147.30	390.00	10.00	6250.00	271.86	1246.52			42570.00	1200.74	2140.00	44.55					
Birdbear Formation	49.31659693	-100.8078256	1008.10	ACC-08838	1W10042520080000	Accumap	N/A	Regional	TOTAL CONCENTRATION : 155484			2866.00	143.02	854.00	70.28	0.05	0.00	56276.00	2447.87	2661.17	165.00	2.70	91293.00	2575.04	4030.00	83.90					
Birdbear Formation	49.43615995	-104.3204051	1950.50	ACC-23449	1W20061802012100	Accumap	11/9/2009	Regional			49296.00	726.00	36.23	392.00	32.26	425.00	10.90	17400.00	756.86	836.21	238.70	3.91	25170.00	709.95	5040.00	104.93					
Birdbear Formation	49.18750604	-99.88143307	778.75	ACC-06393	1W10031806090000	Accumap	N/A	Regional			116318.00	2930.00	146.21	990.00	81.47	0.05	0.00	40606.00	1766.26	1993.94	159.00	2.61	67636.00	1907.77	3997.00	83.22					
Birdbear Formation	49.47	-103.42	1837.50	U of A 98 - 018-1B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	labelled S98-05658-1, 50% solids in container		252300.00	2100.00	105.00	105.00	8.75	1810.00	46.41	91300.00	3969.57	4131.34	152.00	2.49	155000.00	4428.57			208.00	2.60			
Birdbear Formation	51.0111255	-107.3042771	1213.10	ACC-23322	1W30241002040100	Accumap	9/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=56.60,SEC		10155.00	926.00	46.21	307.00	25.26	0.05	0.00	2142.00	93.17	164.64	230.00	3.77	3000.00	84.62	3667.00	76.35					
Birdbear Formation	51.93606149	-108.9801062	794.50	ACC-23300	1W30342119123100	Accumap	2/26/2010	Regional			25325.00	1140.00	56.89	823.00	67.73	286.00	7.33	6430.00	279.69	411.62	1220.00	19.99	12996.00	366.57	3050.00	63.50					
Birdbear Formation	50.48188771	-101.4452323	541.05	ACC-02855	1W10172929060000	Accumap	N/A	Regional				1892.00	94.42	880.00	72.42	0.05	0.00	11793.00	512.97	679.80	480.00	7.87	18375.00	518.29	1806.00	37.60					
Birdbear Formation	50.08896886	-104.6425432	1479.80	ACC-14672	1W20132014130100	Accumap	N/A	Regional			41247.00	1245.00	62.13	285.00	23.45	0.05	0.00	13724.00	596.96	682.58	356.00	5.83	19344.00	545.62	6292.00	131.00					
Birdbear Formation	49.47	-103.42	1837.50	U of A 98 - 018 dupe		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	collected by Berkley, BHS, rec 1552m water, (tool		281077.00	13100.00	655.00	1660.00	138.33	3800.00	97.44	98000.00	4260.87	5171.37	210.00	3.44	163000.00	4657.14			173.00	2.17			
Birdbear Formation	49.01596502	-109.7323296	1516.40	ACC-15010	1W30012807020100	Accumap	N/A	Regional			7110.00	486.00	24.25	153.00	12.59	0.05	0.00	2022.00	87.95	124.80	176.00	2.88	1615.00	45.55	2658.00	55.34					
Birdbear Formation	49.4566739	-107.1246945	1767.80	ACC-15852	1W30606911050100	Accumap	N/A	Regional			4343.00	105.00	5.24	61.00	5.02	0.05	0.00	1211.00	52.68	62.94	325.00	5.33	360.00	10.15	2281.00	47.49					
Birdbear Formation	51.24301588	-104.9116313	816.90	ACC-06952	1W20262129040100	Accumap	N/A	Regional			15603.00	831.00	41.47	16.00	1.32	0.05	0.00	4766.00	207.31	250.10	134.00	2.20	5800.00	163.60	4056.00	84.45					
Birdbear Formation	49.31317732	-104.8052171	2063.50	ACC-23495	1W20042120120100	Accumap	7/29/1976	Regional	NACL EQUIV 13041.		13878.00	1147.00	57.24	80.00	6.58	0.05	0.00	3905.00	169.86	233.68	351.00	5.75	7189.00	202.78	1206.00	25.11					
Birdbear Formation	49.49914647	-104.654632	2036.10	ACC-16434	1W20062029080100	Accumap	N/A	Regional			10759.00	436.00	21.76	23.00	1.89	0.05	0.00	3181.00	138.37	162.02	317.00	5.20	2072.00	58.44	4730.00	98.48					
Birdbear Formation	50.16960152	-102.0609531	981.50	ACC-23365	1W20140115073100	Accumap	1/23/1997	Regional			38684.00	1190.00	59.38	371.00	30.53	354.00	9.08	12634.00	549.55	648.52	640.00	10.49	18755.00	529.01	4740.00	98.69					
Birdbear Formation	52.05430431	-109.8685162	853.00	ACC-07322	1W30352836150100	Accumap	N/A	Regional				20.00	1.00	12.00	0.99	1.00	0.03	895.00	38.93	40.94	830.00	13.60	313.00	8.83	572.00	11.91					
Birdbear Formation	49.94321682	-105.7562997	1610.30	ACC-15516	1W20112827130100	Accumap	N/A	Regional			4349.00	710.00	35.43	175.00	14.40	0.05	0.00	346.00	15.05	64.88	315.00	5.16	190.00	5.36	2613.00	54.40					
Birdbear Formation	51.15622286	-106.1176029	906.50	ACC-07779	1W30250129040100	Accumap	1/31/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=70.84,SEC		16952.00	977.00	48.75	414.00	34.07	0.05	0.00	4621.00	201.00	283.83	542.00	8.88	7150.00	201.68	3523.00	73.35					
Birdbear Formation	51.09716792	-107.8136906	950.10	ACC-23321	1W30251306041100	Accumap	N/A	Regional			65435.00	1508.00	75.25	483.00	39.75	0.05	0.00	22742.00	989.22	1104.22	270.00	4.42	34902.00	984.46	5530.00	115.13					
Birdbear Formation	49.41044914	-102.5861803	1754.00	ACC-23485	1W20050526051100	Accumap	3/5/1999	Regional	TRACE IN FIELD FE. PALE YELLOW COLOURED FILTRATE		319971.00	20020.00	999.05	0.05	0.00	4070.00	104.36	94680.00	4118.35	5221.50	0.00	0.00	200000.00	5641.27	564.00	11.74					
Birdbear Formation	49.43015639	-105.0524447	1935.50	ACC-23470	1W20052333120100	Accumap	9/14/1965	Regional	SAMPLE POINT FROM TOP OF TOOL.		37398.00	962.00	48.01	228.00	18.76	0.05	0.00	12887.00	560.55	627.68	706.00	11.57	19680.00	555.10	2925.00	60.90					
Birdbear Formation	51.11608445	-103.98674	848.90	ACC-07290	1W20251511080100	Accumap	N/A	Regional			100275.00	1945.00	97.06	720.00	59.25	0.05	0.00	35694.00	1552.60	1708.91	201.00	3.29	56915.00	1605.36	4800.00	99.94					
Birdbear Formation	49.43615995	-104.3204051	1950.50	ACC-23447	1W20061802012100	Accumap	11/9/2009	Regional			50851.00	989.00	49.35	225.00	18.52	0.05	0.00	17300.00	752.51	820.38	173.30	2.84	28693.00	809.33	3540.00	73.70					
Birdbear Formation	49.73565203	-104.1658918	1728.20	ACC-15802	1W20091618110100	Accumap	N/A	Regional			145510.00	1817.00	90.67	376.00	30.94	0.05	0.00	54055.00	2351.26	2472.91	288.00	4.72	83308.00	2349.82	5665.00	117.94					
Birdbear Formation	49.69930673	-103.7030572	1643.50	ACC-23379	1W20091304010100	Accumap	5/21/1969	Regional	NA+K IS COMBINED IN NA.		64091.00	1442.00	71.96	270.00	22.22	0.05	0.00	22834.00	993.22	1087.40	620.00	10.16	36098.00	1018.19	2827.00	58.86					
Birdbear Formation	49.31349055	-105.7077476	2119.90	ACC-23490	1W20042821090100	Accumap	2/18/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=29.12,SEC		3013.00	473.00	23.60	114.00	9.38	0.05	0.00	311.00	13.53	46.51	184.00	3.02	188.00	5.30	1836.00	38.23					
Birdbear Formation	51.44814691	-103.7719026	717.20	ACC-23338	1W20281327040100	Accumap	10/29/1954	Regional	NA&K IS COMBINED IN NA.PRIMARY SALIITY=85.04,SECO		54614.00	1736.00	86.63	636.00	52.34	0.05	0.00	18142.00	789.13	928.10	250.00	4.10	29718.00	838.24	4132.00	86.03					
Birdbear Formation	49.80915982	-101.2303251	883.30	ACC-07598	1W10102804120202	Accumap	N/A	Regional				2189.00	109.24	773.00	63.61	0.05	0.00	57011.00	2479.84	2652.69	100.00	1.64	91853.00	2590.84	2868.00	59.71					
Birdbear Formation	49.80915982	-101.2303251	883.30	ACC-07599	1W10102804120200	Accumap	N/A	Regional				2189.00	109.24	773.00	63.61	0.05	0.00	57011.00	2479.84	2652.69	100.00	1.64	91853.00	2590.84	2868.00	59.71					
Birdbear Formation	50.56658898	-106.3795639	1399.30	ACC-23328	1W30180332100100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.ANALYSIS NO.28		5188.00	629.00	31.39	201.00	16.54	0.05	0.00	823.00	35.80	83.75	281.00	4.61	623.00	17.57	2354.00	49.01					
Birdbear Formation	49.14723066	-104.4462756	2316.50	ACC-23522	1W20021926030100	Accumap	12/23/1966	Regional	NA+K IS COMBINED IN NA. FE, BA, CO3, OH: ABSENT.		98150.00	3181.00	158.74	257.00	21.15	0.05	0.00	34169.00	1486.27	1666.16	1039.00	17.03	55504.00	1565.57	4000.00	83.28					
Birdbear Formation	50.45981821	-101.156966	587.20	ACC-03224	1W10172717160000	Accumap	9/24/1957	Regional			22719.00	1231.00	61.43	602.00	49.54	0.05	0.00	6137.00	266.94	377.91	450.00	7.37	9875.00	278.54	4424.00	92.11					
Birdbear Formation	51.8505786	-108.1981165	893.40	ACC-23305	1W30331622130100	Accumap	4/6/1954	Regional	PRIMARY SALINITY=90.32,SECONDARY SALINITY=9.48,SE		76330.00	1565.00	78.10	579.00	47.65	0.05	0.00	26949.00	1172.22	1297.96	152.00	2.49	42500.00	1198.77	4662.00	97.06					
Birdbear Formation	49.44098983	-105.0021825	1939.40	ACC-16245	1W20062302060100	Accumap	9/3/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=93.02,SEC		31861.00	650.00	32.44	56.00	4.61	0.05	0.00	11365.00	494.35	531.39	740.00	12.13	15531.00	438.07	3895.00	81.09					
Birdbear Formation	51.26720902	-103.1563433	666.00	ACC-04330	1W20260923160100	Accumap	N/A	Regional			95163.00	1998.00	99.71	847.00	69.70	0.05	0.00	33339.00	1450.16	1619.57	280.00	4.59	53250.00	1501.99	5449.00	113.45					
Birdbear Formation	49.58467293	-103.0706377	1670.90	ACC-15653	1W20070830080102	Accumap	N/A	Regional				3864.00	192.82	832.00	68.47	0.05	0.00	51626.00	2245.60	2506.89	239.00	3.92	86326.00	2434.94	3245.00	67.56					
Birdbear Formation	52.11253296	-108.5947051	762.00	ACC-06107	1W30361924130100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUDDY WATER		11483.00	420.00	20.96	131.00	10.78	0.05	0.00	3274.00	142.41	174.19	1130.00	18.52	2684.00	75.71	3843.00	80.01					
Birdbear Formation	49.30996097	-102.5531828	1822.70	ACC-23505	1W20040524070100	Accumap	1/8/1968	Regional	NISKU WATER SIMILAR TO W-385-65 FROM ROYALITE NOR		276635.00	19150.00	955.64	2700.00	222.19	0.05	0.00	83710.00	3641.18	4819.00	185.00	3.03	170210.00	4801.00	680.00	14.16					
Birdbear Formation	49.07078992	-102.2388663	1948.00	ACC-16276	1W20010229150100	Accumap	N/A	Regional				17520.00	874.30	2780.00	228.77	0.05	0.00	91174.00	3965.85	5068.91	74.00	1.21	179300.00	5057.40	448.00	9.33					
Birdbear Formation	49.02339353	-104.5689619	2316.35	ACC-16645	1W20012011090100	Accumap	11/21/1969	Regional	NA+K IS COMBINED IN NA.		129377.00	4141.00	206.65	570.00	46.91	0.05	0.00	45142.00	1963.57	2217.12	239.00	3.92	76095.00	2146.36	3190.00	66.42					
Birdbear Formation	49.2559657	-102.4580823	1824.20	ACC-23513	1W20030434093100	Accumap	3/11/1958	Regional	RECOVERED:OIL CUT WATERY DRILLING FLUID AND 36.58		275181.00	9000.00	449.12	1400.00	115.21	0.05	0.00	96081.00	4179.29	4743.62	210.00	3.44	166700.00	4702.00	1790.00	37.27					
Birdbear Formation	49.97719832	-101.6331877	959.95	ACC-08290	1W10123103010100	Accumap	3/27/1956	Regional	PRIMARY SALINITY: 90.90,SECONDARY SALINITY: 8.94,		134527.00	2655.00	132.49	935.00	76.94	0.05	0.00	48041.00	2089.67	2299.10	233.00	3.82	77500.00	2185.99	5281.00	109.95					
Birdbear Formation	50.21187247	-103.5667867	1289.50	ACC-23363	1W20141234061100	Accumap	9/14/2001	Regional	N.D. - NOT DETECTED. PRES. = PRESENT		40589.00	1321.00	65.92	329.00	27.07	295.00	7.56	13455.00	585.26	685.80	434.00	7.11	21135.00	596.14	3620.00	75.37					

Birdbear Formation	49.67114515	-101.3016693	985.25	ACC-08603	1W10082924050000	Accumap	12/28/1965	Regional			170375.00	4340.00	216.58	1466.00	120.64	0.05	0.00	59689.00	2596.33	2933.54	134.00	2.20	101545.00	2864.21	3201.00	66.64				
Birdbear Formation	49.32776264	-102.5418494	1812.60	ACC-23506	1W20040430120100	Accumap	10/17/1968	Regional	APPEARS TO BE FORMATION WATER.AS NACL FROM RES=29		299103.00	20170.00	1006.54	2190.00	180.22	0.05	0.00	92266.00	4013.35	5200.10	148.00	2.43	184000.00	5189.97	329.00	6.85				
Birdbear Formation	50.10018352	-104.557866	1526.80	ACC-23366	1W20131920090100	Accumap	7/8/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=88.26,SEC		72079.00	2035.00	101.55	513.00	42.22	0.05	0.00	24828.00	1079.96	1223.72	263.00	4.31	39500.00	1114.15	5073.00	105.62				
Birdbear Formation	49.56418989	-101.0854884	976.90	ACC-08531	1W10072716020000	Accumap	1/11/1954	Regional			180567.00	5253.00	262.14	1468.00	120.80	0.05	0.00	62745.00	2729.25	3112.20	116.00	1.90	108338.00	3055.82	2647.00	55.11				
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23405	1W20071103092103	Accumap	7/2/1997	Regional	YELLOW COLORED FILTRATE RECOVERED FROM A SAMPLE C		275855.00	9209.00	459.55	1700.00	139.89	2815.00	72.18	86864.00	3778.37	4449.82	519.00	8.51	174000.00	4907.91	749.00	15.59				
Birdbear Formation	49.57944378	-102.7535319	1616.80	ACC-23432	1W20070621164100	Accumap	6/27/1984	Regional	CLEAR COLORLESS FILTRATE RECOVERED FROM MUDDY WAT		214536.00	5646.00	281.75	923.00	75.95	2115.00	54.23	76530.00	3328.87	3740.67	427.00	7.00	127200.00	3587.85	1695.00	35.29				
Birdbear Formation	49.40446452	-103.9098762	1942.00	ACC-16255	1W20051524130100	Accumap	N/A	Regional			200251.00	6363.00	317.53	589.00	48.47	3300.00	84.62	65000.00	2827.34	3277.74	219.00	3.59	122886.00	3466.17	1894.00	39.43				
Birdbear Formation	51.5130377	-109.4876172	972.30	ACC-08475	1W30292529110100	Accumap	N/A	Regional			18287.00	337.00	16.82	107.00	8.81	0.05	0.00	6136.00	266.90	292.52	2040.00	33.43	7840.00	221.14	1827.00	38.04				
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23398	1W20071103092104	Accumap	7/2/1997	Regional	YELLOW COLORED FILTRATE RECOVERED FROM A SAMPLE C		275855.00	9209.00	459.55	1700.00	139.89	2815.00	72.18	86864.00	3778.37	4449.82	519.00	8.51	174000.00	4907.91	749.00	15.59				
Birdbear Formation	51.61446672	-107.6533383	817.80	ACC-23313	1W30301232100100	Accumap	8/28/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=91.22,SEC		103785.00	1901.00	94.87	736.00	60.57	0.05	0.00	37130.00	1615.06	1770.50	100.00	1.64	59118.00	1667.50	4851.00	101.00				
Birdbear Formation	49.80105308	-103.1213349	1522.50	ACC-23377	1W20100911020100	Accumap	5/21/1957	Regional	PRIMARY SALINITY=86.90,SECONDARY SALINITY=12.84,S		86651.00	2841.00	141.77	634.00	52.17	0.05	0.00	29582.00	1286.74	1480.69	245.00	4.02	49250.00	1389.16	4223.00	87.92				
Birdbear Formation	51.68011675	-109.4579738	917.00	ACC-07870	1W30312527013100	Accumap	N/A	Regional			28102.00	1130.00	56.39	243.00	20.00	269.00	6.90	7730.00	336.24	419.50	1350.00	22.12	9050.00	255.27	8240.00	171.56				
Birdbear Formation	50.01322704	-106.2352357	1592.00	ACC-15437	1W30120220090100	Accumap	N/A	Regional	SODIUM OBTAINED BY IONIC BALANCE.		3850.00	540.00	26.95	140.00	11.52	0.05	0.00	445.00	19.36	57.82	275.00	4.51	320.00	9.03	2130.00	44.35				
Birdbear Formation	50.08896886	-104.6425432	1479.80	ACC-14673	1W20132014130100	Accumap	N/A	Regional			41842.00	1279.00	63.83	280.00	23.04	0.05	0.00	13913.00	605.18	692.05	346.00	5.67	19556.00	551.60	6468.00	134.66				
Birdbear Formation	49.72956452	-100.8922871	772.75	ACC-06280	1W10092612050000	Accumap	N/A	Regional				1361.00	67.92	437.00	35.96	153.00	3.92	15300.00	665.51	773.30	317.00	5.20	23300.00	657.21	6156.00	128.17				
Birdbear Formation	50.82171811	-107.7733381	1282.00	ACC-23325	1W30211320230100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		13424.00	858.00	42.82	262.00	21.56	0.05	0.00	3263.00	141.93	206.31	390.00	6.39	4399.00	124.08	3868.00	80.53				
Birdbear Formation	51.52755563	-109.645667	989.10	ACC-08646	1W30292631100100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING APPROX.		27699.00	1073.00	53.55	355.00	29.21	0.05	0.00	8374.00	364.25	447.04	1888.00	30.94	11045.00	311.54	4857.00	101.12				
Birdbear Formation	49.87812879	-101.7848613	1084.15	ACC-09575	1W10103232084100	Accumap	2/21/1985	Regional	CLEAR,COLORLESS FILTRATE RECOVERED FROM A SAMPLE		181636.00	3403.00	169.82	122.00	10.04	933.00	23.92	65430.00	2846.04	3049.77	549.00	9.00	107800.00	3040.65	3399.00	70.77				
Birdbear Formation	49.58467293	-103.0706377	1670.90	ACC-15654	1W20070830080100	Accumap	N/A	Regional			146133.00	3864.00	192.82	832.00	68.47	0.05	0.00	51626.00	2245.60	2506.93	239.00	3.92	86326.00	2434.94	3245.00	67.56				
Birdbear Formation	49.83472033	-107.0008281	1644.10	ACC-23335	1W30100822080100	Accumap	8/24/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=25.2,SECO		3448.00	590.00	29.44	130.00	10.70	0.05	0.00	320.00	13.92	54.06	300.00	4.92	200.00	5.64	2070.00	43.10				
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23419	1W20071103092100	Accumap	7/2/1997	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		243376.00	7207.00	359.65	971.00	79.90	3754.00	96.26	79511.00	3458.53	3994.10	244.00	4.00	150000.00	4230.95	1358.00	28.27				
Birdbear Formation	49.3	-102.84	1916.30	U of A 98 - 095A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#2, 15/11/97, rec 711m (11m mud+700m SW, sal 4		297943.00	18000.00	900.00	2190.00	182.50	6800.00	174.36	88500.00	3847.83	5130.33	350.00	5.74	180000.00	5142.86			722.00	9.04		
Birdbear Formation	49.53179656	-105.170757	1920.20	ACC-16214	1W20072403090100	Accumap	N/A	Regional			11070.00	812.00	40.52	158.00	13.00	0.05	0.00	2775.00	120.71	174.23	450.00	7.37	3206.00	90.43	3669.00	76.39				
Birdbear Formation	49.03992639	-103.6075508	2370.00	ACC-16675	1W20011218132100	Accumap	N/A	Regional			306130.00	20108.00	1003.44	2436.00	200.46	3613.00	92.64	89902.00	3910.52	5206.83	500.00	8.19	186802.00	5269.00	2769.00	57.65				
Birdbear Formation	49.46	-104.57	2065.00	U of A 98 - 094A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#1, 25/6/98, rec 496m (120m muddy W+ 376m b		38011.00	1150.00	57.50	104.00	8.67	7060.00	181.03	9130.00	396.96	646.17	506.00	8.30	18600.00	531.43			14.40	0.18		
Birdbear Formation	50.28203621	-101.7219328	784.60	ACC-06488	1W10153117140100	Accumap	9/29/1972	Regional	NA+K IS COMBINED IN NA. FE: PRESENT. BE: ABSENT.		180262.00	2085.00	104.05	769.00	63.28	0.05	0.00	67123.00	2919.69	3087.01	171.00	2.80	107089.00	3020.59	3025.00	62.98				
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23411	1W20071103092102	Accumap	7/2/1997	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		274618.00	9409.00	469.53	2064.00	169.85	2737.00	70.18	85486.00	3718.43	4427.82	366.00	6.00	174000.00	4907.91	556.00	11.58				
Birdbear Formation	51.50947045	-109.6751077	965.60	ACC-08383	1W30292725060100	Accumap	N/A	Regional			25858.00	983.00	49.05	284.00	23.37	0.05	0.00	7868.00	342.24	414.66	2255.00	36.96	10343.00	291.74	4125.00	85.88				
Birdbear Formation	52.36261908	-109.4920978	748.00	ACC-05884	1W30392523039100	Accumap	N/A	Regional			30016.00	480.00	23.95	267.00	21.97	209.00	5.36	10400.00	452.37	503.68	777.00	12.73	17800.00	502.07	80.00	1.67				
Birdbear Formation	49.38276122	-102.721141	1804.40	ACC-23478	1W20050614050100	Accumap	12/14/1954	Regional	NA+K IS COMBINED IN NA.INSUFFICIENT DATA FOR CORR		119883.00	7800.00	389.24	966.00	79.49	0.05	0.00	36889.00	1604.58	2073.32	438.00	7.18	71690.00	2022.11	2100.00	43.72				
Birdbear Formation	51.79189217	-109.5913068	909.00	ACC-23309	1W30322635131100	Accumap	5/14/1998	Regional	REFRACTIVE INDEX:NOT ANALYZED.H2S 988.		23300.00	254.00	12.68	154.00	12.67	240.00	6.15	7440.00	323.62	355.14	2720.00	44.58	10900.00	307.45	585.00	12.18				
Birdbear Formation	51.81473555	-109.6281355	904.60	ACC-07757	1W30332609070100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING 70PERCE		14936.00	665.00	33.19	112.00	9.22	70.00	1.79	4322.00	188.00	232.22	641.00	10.51	4350.00	122.70	4685.00	97.54				
Birdbear Formation	49.59011962	-102.765517	1623.10	ACC-23422	1W20070628110100	Accumap	6/18/1969	Regional	NA+K IS COMBINED IN NA.		235925.00	5724.00	285.64	138.00	11.36	0.05	0.00	84297.00	3666.71	3963.71	415.00	6.80	143352.00	4043.44	748.00	15.57				
Birdbear Formation	51.72050485	-109.1626177	910.50	ACC-07805	1W30322302143100	Accumap	N/A	Regional			31868.00	1240.00	61.88	540.00	44.44	305.00	7.82	9600.00	417.58	531.73	1380.00	22.62	15200.00	428.74	3590.00	74.74				
Birdbear Formation	49.41044914	-102.5861803	1754.00	ACC-23484	1W20050526051100	Accumap	3/5/1999	Regional	TRACE IN FIELD FE. PALE YELLOW COLOURED FILTRATE		318198.00	19420.00	969.11	1457.00	119.90	3835.00	98.33	90545.00	3938.49	5125.58	0.00	0.00	202000.00	5697.68	494.00	10.29				
Birdbear Formation	49.25106635	-103.4508171	2081.00	ACC-23512	1W20031132072100	Accumap	8/12/1997	Regional			150940.00	7057.00	352.16	17.00	1.40	23994.00	615.23	34420.00	1497.19	2464.43	1145.00	18.77	80176.00	2261.47	4123.00	85.84				
Birdbear Formation	51.14821408	-104.8943931	892.80	ACC-07663	1W20252120090100	Accumap	9/10/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=81.20,SEC		34895.00	1551.00	77.40	339.00	27.90	0.05	0.00	10883.00	473.38	578.68	1230.00	20.16	16750.00	472.46	4142.00	86.24				
Birdbear Formation	50.16523	-102.9984894	1286.00	ACC-12015	1W20140814030100	Accumap	N/A	Regional			81709.00	2165.00	108.04	573.00	47.15	0.05	0.00	28268.00	1229.59	1384.78	645.00	10.57	45000.00	1269.29	5058.00	105.31				
Birdbear Formation	49.59657644	-102.6534916	1573.00	ACC-23435	1W20070532032100	Accumap	2/27/1984	Regional	NACL EQUIVALENT=56638.		59116.00	2105.00	105.05	168.00	13.82	431.00	11.05	19500.00	848.20	978.10	259.00	4.24	31950.00	901.19	4704.00	97.94				
Birdbear Formation	50.16571163	-101.4160151	729.10	ACC-05516	1W10142905140000	Accumap	1/23/1954	Regional			67621.00	1273.00	63.53	541.00	44.52	0.05	0.00	23664.00	1029.33	1137.37	134.00	2.20	35274.00	994.95	6723.00	139.97				
Birdbear Formation	49.29662707	-102.8398396	1913.00	ACC-23504	1W20040714083100	Accumap	10/1/1997	Regional			289614.00	15369.00	766.95	919.00	75.63	6955.00	178.33	89552.00	3895.29	4915.76	443.00	7.26	175312.00	4944.91	1065.00	22.17				
Birdbear Formation	49.97719832	-101.6331877	845.80	ACC-07255	1W10123103010100	Accumap	3/27/1956	Regional	PRIMARY SALINITY:80.94, SECONDARY SALINITY:15.96,		32542.00	1429.00	71.31	403.00	33.16	0.05	0.00	10193.00	443.37	547.84	1035.00	16.96	15500.00	437.20	4507.00	93.84				
Birdbear Formation	50.19538332	-108.4078466	1475.20	ACC-14622	1W30141828030100	Accumap	12/10/1954	Regional	PRIMARY SALINITY=87.24,SECONDARY SALINITY=10.02,S		14793.00	397.00	19.81	125.00	10.29	0.05	0.00	4734.00	205.92	236.02	395.00	6.47	4734.00	133.53	4609.00	95.96				
Birdbear Formation	49.45913078	-104.5748428	2058.00	ACC-23439	1W20062012114200	Accumap	7/3/1998	Regional	N.D. IN FIELD FE. N.D.= NOT DETECTED.		166256.00	3817.00	190.48	157.00	12.92	3495.00	89.62	57035.00	2480.88	2773.67	36.00	0.59	98974.00	2791.70	2556.00	53.22				
Birdbear Formation	50.17623209	-105.0974922	1456.90	ACC-23361	1W20142316130100	Accumap	7/31/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=86.52,SEC		59622.00	1927.00	96.16	495.00	40.73	0.05	0.00	20195.00	878.43	1015.33	230.00	3.77	33000.00	930.81	3892.00	81.03				
Birdbear Formation	51.18599482	-108.5592071	997.90	ACC-08761	1W30261902044000	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING APPROX.		48546.00	1201.00	59.93	486.00	39.99	320.00	8.21	17280.00	751.64	859.78	354.00	5.80	21880.00	617.16	7024.00	146.24				
Birdbear Formation	51.94179632	-108.9426204	795.50	ACC-06638	1W30342129020100	Accumap	N/A	Regional			19676.00	1080.00	53.89	480.00	39.50	0.05	0.00	5076.00	220.79	314.22	1235.00	20.24	6524.00	184.02	5280.00	109.93				
Birdbear Formation	49.2771237	-104.7332454	2214.40	ACC-16557	1W20042111030100	Accumap	N/A	Regional			10993.00	459.00	22.91	13.00	1.07	0.05	0.00	3381.00	147.07	171.08	290.00	4.75	3177.00	89.61	3650.00	75.99				
Birdbear Formation	49.27356015	-104.1951996	2158.00	ACC-23497	1W20041702140100	Accumap	1/27/1960	Regional	CACL=16587,MGCO3=367,MGCL=4132,NACL=195624,NASO4=		220352.00	5880.00	293.43	1118.00	92.00	0.05	0.00	78223.00	3402.51	3787.94	307.00	5.03	132060.00	3724.93	2764.00	57.55				
Birdbear Formation	49.75609636	-100.7557623	744.05	ACC-05813	1W10092524040000	Accumap	N/A	Regional			90708.00	2297.00	114.63	632.00	52.01	0.05	0.00	31507.00	1370.48	1537.11	1373.00	22.50	50348.00	1420.13	4551.00	94.75				
Birdbear Formation	51.71590984	-109.1668969	905.00	ACC-07765	1W30322302120102	Accumap	N/A	Regional				16900.00	843.36	2120.00	174.46	380.00	9.74	6000.00	260.99	1289.05			39490.00	1113.87	1820.00	37.89				
Birdbear Formation	49.19	-104.73	2184.00	U of A 01 - 405 A & B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	wellhead August-2001		19070.00	580.00	29.00	207.00	17.25	200.00	5.13	6830.00	296.96	350.50	522.00	8.56	9300.00	265.71			73.60	0.92		
Birdbear Formation	50.03151709	-107.2250291	1609.30	ACC-23332	1W30120930140100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		3745.00	629.00	31.39	122.00	10.04	0.05	0.00	434.00	18.88	60.32	268.00	4.39	267.00	7.53	2025.00	42.16				
Birdbear Formation	51.81423511	-109.800344	896.70	ACC-07690	1W30332708060100	Accumap	N/A	Regional				28.00	1.40	33.00	2.72	0.05	0.00	3449.00	150.02	154.14	2764.00	45.30	1600.00	45.13	2300.00	47.89				
Birdbear Formation	52.07242862	-109.4997848	830.00	ACC-07099	1W30362510040100	Accumap	N/A	Regional				23.00	1.15	19.00	1.56	0.05	0.00	1456.00	63.33	66.04	744.00	12.19	1435.00	40.48	317.00	6.60				
Birdbear Formation	49.7	-103.65	1671.50	U of A 99 - 179 A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#1, Jan 3/98, rec 216m muddy water 94,600 ppm,		141382.00	1950.00	97.50	133.00	11.08	2380.00	61.03	52700.00	2291.30	2462.34	441.00	7.23	82000.00	2342.86			27.60	0.35		
Birdbear Formation	49.73565203	-104.1658918	1728.20	ACC-15804	1W20091681110100	Accumap	N/A	Regional			143458.00	1806.00	90.12	370.00	30.45	0.05	0.00	53252.00	2316.33	2436.94	303.00	4.97	81896.00	2309.99	5830.00	121.38				
Birdbear Formation	49.43	-102.6	1744.50	U of A 01 - 020		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST-1, fluid rec #4, 2001-06-22		301743.00	15000.00	750.00	1890.00	157.50	3890.00	99.74	92500.00	4021.74	5051.26	2.50	0.04	186000.00	5314.29			628.00	7.86		

Birdbear Formation	52.11253296	-108.5947051	765.00	ACC-06148	1W30361924130100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING TRACE S		11455.00	323.00	16.12	164.00	13.50	0.05	0.00	3384.00	147.20	176.85	1280.00	20.98	3340.00	94.21	2963.00	61.69				
Birdbear Formation	50.01322704	-106.2352357	1578.90	ACC-15392	1W30120220090100	Accumap	N/A	Regional	NA&K IS COMBINEDIN NA.SAMPLED FROM MIDDLENA OBTAI		4445.00	540.00	26.95	150.00	12.34	0.05	0.00	625.00	27.19	66.48	320.00	5.24	340.00	9.59	2470.00	51.43				
Birdbear Formation	51.6869762	-109.6516269	925.40	ACC-07941	1W30312629100100	Accumap	N/A	Regional			14671.00	744.00	37.13	173.00	14.24	0.05	0.00	3991.00	173.60	224.96	1420.00	23.27	3756.00	105.94	4565.00	95.04				
Birdbear Formation	50.02872896	-101.0834537	680.90	ACC-04582	1W10122722090000	Accumap	9/12/1952	Regional			65501.00	1715.00	85.58	69.00	5.68	0.05	0.00	23127.00	1005.97	1097.23	530.00	8.69	34417.00	970.78	5643.00	117.49				
Birdbear Formation	50.71319512	-105.4256761	1022.90	ACC-08964	1W20202520094100	Accumap	N/A	Regional			8052.00	305.00	15.22	633.00	52.09	0.05	0.00	1742.00	75.77	143.87	376.00	6.16	4564.00	128.73	410.00	8.54				
Birdbear Formation	49.73204571	-104.6741526	1801.40	ACC-15925	1W20092017080100	Accumap	N/A	Regional			64271.00	1272.00	63.48	254.00	20.90	0.05	0.00	23086.00	1004.18	1088.60	311.00	5.10	35744.00	1008.21	3603.00	75.01				
Birdbear Formation	50.0031544	-100.9284388	686.50	ACC-04698	1W10122611150000	Accumap	3/5/1982	Regional	NACL EQUIV 126177.		128233.00	2455.00	122.51	799.00	65.75	750.00	19.23	45500.00	1979.14	2186.58	174.00	2.85	73344.00	2068.77	5210.00	108.47				
Birdbear Formation	49.51961588	-100.4242676	741.90	ACC-05761	1W10062231010000	Accumap	N/A	Regional			60706.00	2035.00	101.55	571.00	46.99	0.05	0.00	20304.00	883.17	1031.71	329.00	5.39	33363.00	941.05	4104.00	85.44				
Birdbear Formation	49.60145571	-103.0386198	1669.10	ACC-15650	1W20070833062100	Accumap	N/A	Regional			75681.00	2295.00	114.53	306.00	25.18	626.00	16.05	25500.00	1109.19	1264.94	201.00	3.29	40799.00	1150.79	5953.00	123.94				
Birdbear Formation	49.2624661	-105.246369	1994.00	ACC-23492	1W20042501031100	Accumap	6/13/2002	Regional			17759.00	925.00	46.16	69.00	5.68	259.00	6.64	5724.00	248.98	307.88	28.00	0.46	7603.00	214.45	3083.00	64.19				
Birdbear Formation	49.15	-104.44	2316.50	U of A 01 - 403 A & B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	no chemicals		252427.00	6450.00	322.50	931.00	77.58	3310.00	84.87	87200.00	3791.30	4290.95	186.00	3.05	153000.00	4371.43			462.00	5.78		
Birdbear Formation	51.32717905	-107.360042	1043.30	ACC-23317	1W30271021130100	Accumap	7/5/1954	Regional	NA+K IS COMBINED IN NA.		10571.00	558.00	27.85	154.00	12.67	0.05	0.00	3014.00	131.10	171.62	94.00	1.54	3991.00	112.57	2760.00	57.46				
Birdbear Formation	51.36744569	-109.9507218	984.50	ACC-23315	1W30282901100100	Accumap	7/17/1968	Regional	SAMPLE CONSISTED OF COLOURLESS WATER WITH SOME SE		38848.00	1393.00	69.51	416.00	34.23	0.05	0.00	12487.00	543.15	646.90	1130.00	18.52	19080.00	538.18	4342.00	90.40				
Birdbear Formation	50.89384502	-104.4741875	880.90	ACC-23346	1W20221829040100	Accumap	9/7/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=71.54,SEC		19170.00	1136.00	56.69	430.00	35.39	0.05	0.00	5320.00	231.41	323.48	1770.00	29.01	7750.00	218.60	3649.00	75.97				
Birdbear Formation	52.37019576	-109.4345597	746.00	ACC-05851	1W30392419091100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM WATERY MUD		4616.00	8.00	0.40	2.00	0.16	20.00	0.51	1655.00	71.99	73.10	884.00	14.49	1438.00	40.56	548.00	11.41				
Birdbear Formation	49.29602109	-102.8378615	1912.00	ACC-23503	1W20040714084100	Accumap	12/10/1997	Regional	DST CHAMBER #404. THE RECOVERY WAS DETERMINED AS		311712.00	19307.00	963.47	1958.00	161.13	563.00	14.44	98282.00	4275.03	5414.02	112.00	1.84	191255.00	5394.61	235.00	4.89				
Birdbear Formation	49.89970192	-102.0030256	1194.05	ACC-10952	1W10113412028100	Accumap	N/A	Regional			153433.00	2737.00	136.58	889.00	73.16	0.05	0.00	55480.00	2413.24	2622.98	286.00	4.69	89500.00	2524.47	4541.00	94.54				
Birdbear Formation	50.05094448	-101.0086579	709.45	ACC-05129	1W10122632040000	Accumap	N/A	Regional			69743.00	1865.00	93.07	655.00	53.90	0.05	0.00	23817.00	1035.98	1182.95	390.00	6.39	38064.00	1073.65	4952.00	103.10				
Birdbear Formation	51.12708381	-104.1269998	868.10	ACC-07492	1W20251614010100	Accumap	7/18/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=89.56,SEC		78171.00	1879.00	93.77	543.00	44.68	0.05	0.00	27289.00	1187.00	1325.46	190.00	3.11	42750.00	1205.82	5616.00	116.92				
Birdbear Formation	52.37019576	-109.4345597	753.50	ACC-05958	1W30392419091100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING TRACE S		34747.00	420.00	20.96	279.00	22.96	290.00	7.44	12370.00	538.06	589.44	1098.00	17.99	20200.00	569.77	89.00	1.85				
Birdbear Formation	49.5128056	-103.3866382	1791.00	ACC-23455	1W20061135061100	Accumap	4/11/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		281295.00	10010.00	499.53	1772.00	145.82	3812.00	97.74	92000.00	4001.77	4744.62	239.00	3.92	172900.00	4876.88	562.00	11.70				
Birdbear Formation	52.01819253	-108.8746284	750.40	ACC-05916	1W30352124060100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM WATERY MUD		26234.00	218.00	10.88	183.00	15.06	0.05	0.00	9156.00	398.26	424.24	2435.00	39.91	11900.00	335.66	2341.00	48.74				
Birdbear Formation	51.769726	-109.3875299	903.10	ACC-07745	1W30322430082100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM WATERY MUD		10215.00	452.00	22.56	16.00	1.32	27.00	0.69	2782.00	121.01	145.61	268.00	4.39	315.00	8.89	6354.00	132.29				
Birdbear Formation	49.43472874	-100.5309193	850.55	ACC-07307	1W10052333050000	Accumap	7/24/1956	Regional			112842.00	3081.00	153.75	168.00	13.82	0.05	0.00	40316.00	1753.65	1921.22	73.00	1.20	64906.00	1830.76	4286.00	89.23				
Birdbear Formation	50.5938212	-102.7353467	838.50	ACC-07187	1W20190602025000	Accumap	N/A	Regional			36555.00	1332.00	66.47	363.00	29.87	0.05	0.00	11768.00	511.88	608.22	284.00	4.65	17450.00	492.20	5358.00	111.55				
Birdbear Formation	51.92350135	-108.9779152	789.40	ACC-06566	1W30342118130100	Accumap	12/26/1958	Regional	CACL2=2371,MG(HCO3)2=491 ,MGCL2=902,NACL=7312,NA2 S		18200.00	856.00	42.72	320.00	26.33	0.05	0.00	4991.00	217.10	295.03	410.00	6.72	6958.00	196.26	4417.00	91.96				
Birdbear Formation	51.89800585	-109.3324039	864.10	ACC-23298	1W30342410040100	Accumap	8/13/1968	Regional	NA+K IS COMBINED IN NA.		21746.00	173.00	8.63	120.00	9.87	0.05	0.00	7670.00	333.63	352.13	2765.00	45.32	10468.00	295.26	550.00	11.45				
Birdbear Formation	52.37747774	-109.4157345	758.00	ACC-06042	1W30392429021100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUD		3033.00	12.00	0.60	6.00	0.49	19.00	0.49	1060.00	46.11	47.72	467.00	7.65	802.00	22.62	642.00	13.37				
Birdbear Formation	49.70000016	-103.6523295	1667.00	ACC-23380	1W20091301043100	Accumap	1/16/1998	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		101735.00	1802.00	89.92	206.00	16.95	1544.00	39.59	35880.00	1560.69	1707.06	166.00	2.72	57800.00	1630.33	4337.00	90.30				
Birdbear Formation	49.59677038	-99.82262167	492.40	ACC-02463	1W10071826050000	Accumap	3/18/1965	Regional	THE SAMPLE APPEARS TO BE DILUTED WITH FILTRATE WA		119486.00	2643.00	131.89	1118.00	92.00	0.05	0.00	41946.00	1824.55	2048.44	98.00	1.61	69500.00	1960.34	4181.00	87.05				
Birdbear Formation	49.45913078	-104.5748428	2058.00	ACC-23438	1W20062012114200	Accumap	7/3/1998	Regional	N.D. IN FIELD FE. N.D.= NOT DETECTED.		49065.00	1426.00	71.16	66.00	5.43	5343.00	137.00	13196.00	573.99	787.24	385.00	6.31	25938.00	731.62	2711.00	56.44				
Birdbear Formation	49.59037488	-103.0320478	1676.00	ACC-15669	1W20070828103100	Accumap	N/A	Regional			80050.00	3161.00	157.74	464.00	38.18	618.00	15.85	26000.00	1130.94	1342.70	175.00	2.87	43128.00	1216.48	6503.00	135.39				
Birdbear Formation	49.99187007	-100.9457304	692.50	ACC-04816	1W10122610010000	Accumap	N/A	Regional			87748.00	2237.00	111.63	665.00	54.72	0.05	0.00	30298.00	1317.89	1484.24	256.00	4.20	49133.00	1385.86	5159.00	107.41				
Birdbear Formation	49.70127591	-102.4979473	1574.00	ACC-23385	1W20090404069100	Accumap	11/19/1993	Regional	SAMPLE POINT:ABOVE TEST VALVE @ 1560 M.COLORLESS		205653.00	3804.00	189.83	850.00	69.95	2307.00	59.15	73076.00	3178.63	3497.41	244.00	4.00	123500.00	3483.49	1872.00	38.97				
Birdbear Formation	49.8	-104.07	1614.50	U of A 01 - 037A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST, Feb 15/01, rec 0.45m3 mud+1.2m3 salt water,		58468.00	1480.00	74.00	658.00	54.83	544.00	13.95	20300.00	882.61	1026.86	309.00	5.07	33500.00	957.14			20.40	0.26		
Birdbear Formation	49.43038195	-102.5988836	1739.00	ACC-23480	1W20050534159100	Accumap	7/9/2001	Regional	SAMPLING POINT:CHAMBER NO.001.		301742.00	16417.00	819.25	2040.00	167.87	4283.00	109.82	93818.00	4080.85	5177.52	75.00	1.23	184827.00	5213.30	282.00	5.87				
Birdbear Formation	49.75589385	-100.9207712	768.70	ACC-06202	1W10092622010000	Accumap	N/A	Regional			62030.00	1797.00	89.68	554.00	45.59	0.05	0.00	21122.00	918.76	1054.02	628.00	10.29	33363.00	941.05	4860.00	101.18				
Birdbear Formation	49.6303959	-103.2561846	1667.90	ACC-23394	1W20081011070100	Accumap	7/11/1967	Regional	THE SAMPLE CONSISTED OF MUDDY WATER AND THE FILTE		214683.00	5245.00	261.74	943.00	77.60	0.05	0.00	77097.00	3353.53	3692.87	150.00	2.46	129800.00	3661.19	1448.00	30.15				
Birdbear Formation	50.79646612	-102.7406444	705.60	ACC-05049	1W20210611140100	Accumap	N/A	Regional			68551.00	808.00	40.32	360.00	29.62	0.05	0.00	24583.00	1069.30	1139.25	115.00	1.88	33625.00	948.44	9001.00	187.40				
Birdbear Formation	49.43615995	-104.3204051	1950.50	ACC-23452	1W20061802012100	Accumap	11/9/2009	Regional			29910.00	554.00	27.65	216.00	17.77	207.00	5.31	10500.00	456.72	507.44	550.00	9.01	10823.00	305.28	7280.00	151.57				
Birdbear Formation	50.99207162	-104.3534617	829.70	ACC-07090	1W20231729130100	Accumap	12/4/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=81.42,SEC		21036.00	858.00	42.82	262.00	21.56	0.05	0.00	6485.00	282.08	346.46	555.00	9.10	8600.00	242.57	4558.00	94.90				
Birdbear Formation	49.56973556	-104.9374007	1875.00	ACC-16102	1W20072221044100	Accumap	N/A	Regional	NACL EQUIVALENT = 14579		16822.00	711.00	35.48	143.00	11.77	570.00	14.62	5007.00	217.79	279.62	1554.00	25.47	6407.00	180.72	2430.00	50.59				
Birdbear Formation	51.49122076	-109.5871638	1011.30	ACC-08876	1W30292622040100	Accumap	N/A	Regional			16559.00	944.00	47.11	212.00	17.45	0.05	0.00	4522.00	196.70	261.29	1425.00	23.35	5550.00	156.55	3905.00	81.30				
Birdbear Formation	51.09446213	-103.342863	761.70	ACC-06086	1W20241028010100	Accumap	N/A	Regional			113032.00	2054.00	102.50	746.00	61.39	0.05	0.00	40461.00	1759.95	1923.84	225.00	3.69	64000.00	1805.21	5546.00	115.47				
Birdbear Formation	49.13664927	-106.3156248	2034.50	ACC-16431	1W30020323050100	Accumap	N/A	Regional			4417.00	615.00	30.69	162.00	13.33	0.05	0.00	568.00	24.71	68.73	170.00	2.79	750.00	21.15	2152.00	44.80				
Birdbear Formation	49.44786041	-104.3806148	1944.60	ACC-16265	1W20061804130100	Accumap	N/A	Regional			70777.00	1708.00	85.23	291.00	23.95	0.05	0.00	25056.00	1089.87	1199.06	281.00	4.61	40498.00	1142.30	2943.00	61.27				
Birdbear Formation	49.37227444	-100.4175783	890.00	ACC-07644	1W10052208040000	Accumap	11/28/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=88.40.SEC		157990.00	4434.00	221.27	1144.00	94.14	0.05	0.00	55229.00	2402.33	2717.74	125.00	2.05	94000.00	2651.40	3121.00	64.98				
Birdbear Formation	51.90174417	-109.7830771	876.00	ACC-07552	1W30342709053100	Accumap	N/A	Regional			20503.00	649.00	32.39	78.00	6.42	80.00	2.05	6200.00	269.68	310.54	1197.00	19.62	5022.00	141.65	7277.00	151.51				
Birdbear Formation	50.04976959	-106.309139	1570.90	ACC-23331	1W30130302020100	Accumap	8/24/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=71.24,SEC		9410.00	503.00	25.10	187.00	15.39	0.05	0.00	2308.00	100.39	140.88	400.00	6.56	661.00	18.64	5554.00	115.63				
Birdbear Formation	49.43615995	-104.3204051	1950.50	ACC-23448	1W20061802012100	Accumap	11/9/2009	Regional			49429.00	2140.00	106.79	490.00	40.32	407.00	10.44	16600.00	722.06	879.58	232.70	3.81	25673.00	724.14	3980.00	82.86				
Birdbear Formation	49.12821465	-105.002591	2213.50	ACC-23514	1W20022315140100	Accumap	N/A	Regional	RECOVERY 768.09 M SULPHUROUS WATER.1000 ABOVE TOO		48961.00	1580.00	78.85	293.00	24.11	0.05	0.00	16659.00	724.63	827.58	515.00	8.44	25875.00	729.84	4300.00	89.53				
Birdbear Formation	49.43615995	-104.3204051	1950.50	ACC-23453	1W20061802012100	Accumap	11/9/2009	Regional			26025.00	514.00	25.65	160.00	13.17	189.00	4.85	8550.00	371.90	415.55	480.00	7.87	9564.00	269.77	6760.00	140.74				
Birdbear Formation	49.2295066	-104.840015	2133.60	ACC-23508	1W20032224150100	Accumap	1/18/1955	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=90.18,SEC		47114.00	948.00	47.31	379.00	31.19	0.05	0.00	16555.00	720.10	798.60	460.00	7.54	25375.00	715.74	3630.00	75.58				
Birdbear Formation	50.75912724	-105.1671608	918.70	ACC-23348	1W20212305130100	Accumap	2/10/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=70.60,SEC		12484.00	762.00	38.03	249.00	20.49	0.05	0.00	3229.00	140.45	198.97	275.00	4.51	3875.00	109.30	4094.00	85.24				
Birdbear Formation	49.2624661	-105.246369	1994.00	ACC-23491	1W20042501031100	Accumap	6/13/2002	Regional			15944.00	820.00	40.92	150.00	12.34	213.00	5.46	4910.00	213.57	272.75	354.00	5.80	6599.00	186.13	2878.00	59.92				
Birdbear Formation	49.15	-104.45	2308.50	U of A 01 - 402 A & B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	no chemicals		248308.00	6270.00	313.50	899.00	74.92	3040.00	77.95	86600.00	3765.22	4244.96	175.00	2.87	150000.00	4285.71			462.00	5.78		
Birdbear Formation	51.92350439	-108.9840535	785.80	ACC-06499	1W30342213160100	Accumap	N/A	Regional			20224.00	620.00	30.94	249.00	20.49	273.00	7.00	6100.00	265.34	323.78	1560.00	25.57	8480.00	239.19	2940.00	61.21				
Birdbear Formation	50.91658197	-102.3978961	584.30	ACC-03183	1W20220329040100	Accumap	N/A	Regional			22523.00	1499.00	74.80	213.00	17.53	0.05	0.00	6369.00	277.04	369.37	305.00	5.00	9500.00	267.96	4637.00	96.54				
Birdbear Formation	52.07242862	-109.4997848	830.00	ACC-07100	1W30362510040100	Accumap	N/A	Regional				26.00	1.30	5.00	0.41	0.05	0.00	875.00	38.06	39.77	842.00	13.80	550.00	15.51	387.00	8.06				
Birdbear Formation	49.59068454	-102.6537152	1574.50	ACC-23437	1W20070529113100	Accumap	6/8/2001	Regional			234691.00	4944.00	246.72	758.00	62.38	2465.00	63.21	83823.00	3646.10	4018.24	135.00	2.21	141438.00	3989.45	1130.00	23.53				
Birdbear Formation	49.43615995	-104.3204051	1950.50	ACC-23451	1W20061802012100	Accumap	11/9/2009	Regional			30720.00	525.00	26.20	260.00	21.40	239.00	6.13	10800.00	469.77	523.48	381.30	6.25	13088.00	369.16	5580.00	116.17				

Birdbear Formation	49.26173812	-103.4243671	2104.90	ACC-23499	1W20041104012100	Accumap	3/25/1998	Regional	ANALYSIS PERFORMED ON A COLOURLESS FILTRATE RECOV		297774.00	13850.00	691.15	2282.00	187.79	5181.00	132.85	92000.00	4001.77	5013.23	178.00	2.92	183800.00	5184.33						
Birdbear Formation	49.39767142	-100.4520164	869.75	ACC-07505	1W100523131500000	Accumap	2/3/1956	Regional	REC. 1170 SALT WATER.BY EVAPORATION- 123,240 PART			3314.00	165.38	838.00	68.96	0.05	0.00	41903.00	1822.68	2057.02	238.00	3.90	70000.00	1974.45	3805.00	79.22				
Birdbear Formation	51.97403148	-109.4212144	841.00	ACC-07212	1W30352406061100	Accumap	N/A	Regional			22019.00	242.00	12.08	117.00	9.63	137.00	3.51	7740.00	336.67	361.88	1150.00	18.85	12600.00	355.40	33.00	0.69				
Birdbear Formation	49.14978393	-101.3258321	1331.20	ACC-12559	1W10022929020000	Accumap	3/15/1954	Regional			251316.00	18273.00	911.87	4854.00	399.44	0.05	0.00	71354.00	3103.72	4415.04	134.00	2.20	155896.00	4397.26	805.00	16.76				
Birdbear Formation	51.48022775	-107.858501	871.10	ACC-07519	1W30291414080100	Accumap	2/7/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=81.94,SEC		30546.00	1290.00	64.37	339.00	27.90	0.05	0.00	9627.00	418.75	511.02	510.00	8.36	14410.00	406.45	4629.00	96.38				
Birdbear Formation	50.21298825	-100.992098	605.95	ACC-03467	1W10142629010000	Accumap	3/12/1968	Regional			42206.00	1253.00	62.53	591.00	48.63	0.05	0.00	13605.00	591.78	702.95	551.00	9.03	20079.00	566.36	6127.00	127.56				
Birdbear Formation	51.99565011	-109.7253696	895.00	ACC-07679	1W30352712151100	Accumap	N/A	Regional			10724.00	720.00	35.93	39.00	3.21	39.00	1.00	2830.00	123.10	163.23	146.00	2.39	588.00	16.59	6360.00	132.41				
Birdbear Formation	50.23858336	-105.4751867	1419.80	ACC-23358	1W20152611020100	Accumap	11/25/1958	Regional	CACL2=1485,MG(HCO3)2=1098,MGCL2,NACL=ABSENT,NA2SO		7333.00	536.00	26.75	126.00	10.37	0.05	0.00	1592.00	69.25	106.36	917.00	15.03	639.00	18.02	3523.00	73.35				
Birdbear Formation	52.10255236	-106.8395013	602.56	CSBR_02-343		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Sample from top of collector pan	BRINE-SHAFT	44351.61	1430.00	71.50	557.00	46.42	898.00	23.03	14989.86	651.73	792.68			24818.90	709.11	4920.00	102.50	17.19	0.22	-132.49	-17.38
Birdbear Formation	49.85876867	-100.1946294	483.50	ACC-02339	1W10102125010000	Accumap	9/16/1994	Regional	COLORLESS FILTRATE RECOVERED FROM WATERY MUD. NIT		49272.00	1690.00	84.34	675.00	55.55	78.00	2.00	15443.00	671.73	813.61	85.00	1.39	26100.00	736.19	5201.00	108.28				
Birdbear Formation	49.18629052	-104.7273365	2183.00	ACC-16533	1W20032102150102	Accumap	N/A	Regional				1169.00	58.34	257.00	21.15	4254.00	109.08	29243.00	1272.00	1460.29	427.00	7.00	43150.00	1217.10	6961.00	144.93				
Birdbear Formation	51.21083757	-106.6417457	1066.80	ACC-09333	1W30260509150100	Accumap	N/A	Regional			10128.00	954.00	47.61	375.00	30.86	0.05	0.00	2054.00	89.34	167.81	317.00	5.20	3887.00	109.64	2541.00	52.90				
Birdbear Formation	52.10255236	-106.8395013	601.95	CSBR_02-327		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Sample from collector pan	BRINE-SHAFT	45496.72	1470.00	73.50	495.00	41.25	851.00	21.82	15996.36	695.49	832.06	231.00	3.79	24915.52	711.87	4560.00	95.00	17.84	0.22	-134.87	-17.23
Birdbear Formation	49.01259441	-100.0880672	1087.25	ACC-09609	1W10012004160000	Accumap	2/10/1956	Regional	NA+K IS COMBINED IN NA.			1756.00	87.63	286.00	23.54	0.05	0.00	11602.00	504.66	615.82	148.00	2.43	19000.00	535.92	3731.00	77.68				
Birdbear Formation	49.40332301	-102.5653688	1743.00	ACC-23486	1W20050524132100	Accumap	3/17/1997	Regional	YELLOW COLORED FILTRATE RECOVERED FROM A SAMPLE C		339417.00	15420.00	769.50	2792.00	229.76	7429.00	190.49	112142.00	4877.90	6067.17	317.00	5.20	200000.00	5641.27	1317.00	27.42				
Birdbear Formation	49.18252251	-105.7301811	2077.50	ACC-16453	1W20032805090100	Accumap	N/A	Regional	DOES NOT APPEAR TO BE BIRDBEAR FORMATION WATER.		9413.00	623.00	31.09	133.00	10.94	0.05	0.00	2460.00	107.00	149.04	226.00	3.70	2846.00	80.28	3125.00	65.06				
Birdbear Formation	49.67434851	-100.1180442	569.40	ACC-03105	1W10082022120000	Accumap	8/20/1957	Regional	HYPOTHETICAL COMBINATIONS: CALCIUM CHLORIDE - 986		181559.00	3560.00	177.65	1555.00	127.96	0.05	0.00	67859.00	2951.70	3257.32	93.00	1.52	104725.00	2953.91	3767.00	78.43				
Birdbear Formation	50.76268671	-104.1577452	981.50	ACC-23349	1W20211609010100	Accumap	10/2/1956	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=86.24,SEC		42075.00	1346.00	67.17	370.00	30.45	0.05	0.00	14063.00	611.71	709.32	2480.00	40.64	19875.00	560.60	5200.00	108.26				
Birdbear Formation	49.72193681	-101.5289125	1078.10	ACC-09492	1W10093005132100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING TRACE S		168932.00	4452.00	222.17	1312.00	107.97	1175.00	30.13	61130.00	2659.01	3019.23	250.00	4.10	97550.00	2751.53	3062.00	63.75				
Birdbear Formation	50.0999464	-103.7403919	1336.00	ACC-23368	1W20131320093100	Accumap	1/6/1999	Regional	TRACE IN FIELD FE. YELLOW COLOURED FILTRATE RECOV		46225.00	1181.00	58.94	267.00	21.97	495.00	12.69	15170.00	659.86	753.43	885.00	14.50	24400.00	688.24	3827.00	79.68				
Birdbear Formation	50.98187799	-107.4957074	1179.60	ACC-10637	1W30231129010100	Accumap	N/A	Regional			11613.00	446.00	22.26	293.00	24.11	0.05	0.00	3138.00	136.50	182.86	398.00	6.52	3200.00	90.26	4138.00	86.15				
Birdbear Formation	50.38100804	-106.9700755	1453.90	ACC-23329	1W30160825160100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		8716.00	572.00	28.54	175.00	14.40	0.05	0.00	2021.00	87.91	130.86	988.00	16.19	1059.00	29.87	3901.00	81.22				
Birdbear Formation	51.79973352	-109.698937	908.60	ACC-07792	1W30332701070100	Accumap	N/A	Regional			20394.00	115.00	5.74	86.00	7.08	0.05	0.00	7455.00	324.27	337.13	1890.00	30.97	10750.00	303.22	23.00	0.48				
Birdbear Formation	50.21187247	-103.5667867	1289.50	ACC-23364	1W20141234061100	Accumap	9/14/2001	Regional	N.D. = NOT DETECTED. PRES. = PRESENT.		43166.00	1522.00	75.95	355.00	29.21	350.00	8.97	14235.00	619.19	733.30	602.00	9.87	22273.00	628.24	3829.00	79.72				
Birdbear Formation	51.57504509	-109.1009054	930.20	ACC-07978	1W30302313160100	Accumap	N/A	Regional				1588.00	79.25	462.00	38.02	0.05	0.00	10199.00	443.63	560.90	1220.00	19.99	15500.00	437.20	4988.00	103.85				
Birdbear Formation	49.01243861	-104.5408484	2335.50	ACC-16665	1W20011906130100	Accumap	2/14/1963	Regional			195391.00	5520.00	275.46	802.00	66.00	0.05	0.00	69483.00	3022.34	3363.80	215.00	3.52	118215.00	3334.41	1156.00	24.07				
Birdbear Formation	49.29891627	-104.9454314	2114.40	ACC-23493	1W20042218090100	Accumap	12/2/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=89.30,SEC		44499.00	1141.00	56.94	279.00	22.96	0.05	0.00	15331.00	666.86	746.76	550.00	9.01	23250.00	655.80	3948.00	82.20				
Birdbear Formation	51.71248059	-109.752115	908.30	ACC-07788	1W30322703060100	Accumap	N/A	Regional			24916.00	245.00	12.23	78.00	6.42	0.05	0.00	8993.00	391.17	409.82	1645.00	26.96	12070.00	340.45	1635.00	34.04				
Birdbear Formation	49.68118461	-105.4530569	1839.50	ACC-23392	1W20082627140100	Accumap	2/3/1956	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=32.00,SEC		4325.00	619.00	30.89	174.00	14.32	0.05	0.00	489.00	21.27	66.48	259.00	4.24	580.00	16.36	2204.00	45.89				
Birdbear Formation	49.99047095	-103.0546101	1405.90	ACC-13802	1W20120817012100	Accumap	N/A	Regional				581.00	28.99	49.00	4.03	35.00	0.90	4666.00	202.96	236.88	561.00	9.19	1100.00	31.03	9884.00	205.78				
Birdbear Formation	49.44482464	-102.7039487	1746.00	ACC-23468	1W20060602090100	Accumap	2/6/1998	Regional			298184.00	12405.00	619.04	1400.00	115.21	1843.00	47.26	103403.00	4497.78	5279.17	189.00	3.10	178042.00	5021.92	902.00	18.78				
Birdbear Formation	51.67597603	-109.6219414	935.70	ACC-08024	1W30312621160100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUD		45487.00	360.00	17.96	20.00	1.65	0.05	0.00	14708.00	639.76	659.41	808.00	13.24	3993.00	112.63	25506.00	531.03				
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23412	1W20071103092102	Accumap	7/2/1997	Regional	YELLOW COLORED FILTRATE RECOVERED FROM A SAMPLE C		275855.00	9209.00	459.55	1700.00	139.89	2815.00	72.18	86864.00	3778.37	4449.82	519.00	8.51	174000.00	4907.91	749.00	15.59				
Birdbear Formation	49.93078434	-108.5616046	1686.00	ACC-23334	1W30111920153100	Accumap	6/25/1996	Regional			9883.00	560.00	27.95	110.00	9.05	140.00	3.59	2240.00	97.43	138.01	599.00	9.82	984.00	27.76	5250.00	109.30				
Birdbear Formation	49.3676902	-104.4193991	2089.40	ACC-16457	1W20051807060100	Accumap	N/A	Regional			69543.00	1400.00	69.86	250.00	20.57	0.05	0.00	25093.00	1091.48	1181.92	449.00	7.36	39760.00	1121.48	2591.00	53.94				
Birdbear Formation	49.03799978	-105.6704845	2182.05	ACC-16532	1W20012815110100	Accumap	1/18/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=77.68,SEC		11776.00	670.00	33.43	132.00	10.86	0.05	0.00	3542.00	154.07	198.37	260.00	4.26	5700.00	160.78	1604.00	33.40				
Birdbear Formation	49.43	-102.6	1744.50	U of A 01 - 019		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST-1, fluid rec #3, 2001-06-22		300005.00	16100.00	805.00	1240.00	103.33	3900.00	100.00	91100.00	3960.87	4991.37	2.50	0.04	185000.00	5285.71			627.00	7.85		
Birdbear Formation	49.81653079	-106.5430882	2177.80	ACC-16521	1W30100418040100	Accumap	N/A	Regional			5450.00	702.00	35.03	3.00	0.25	0.05	0.00	1136.00	49.41	84.69	105.00	1.72	1280.00	36.10	2174.00	45.26				
Birdbear Formation	49.44482464	-102.7039487	1746.00	ACC-23466	1W20060602090100	Accumap	2/6/1998	Regional			293247.00	1277.00	63.73	787.00	64.76	1877.00	48.13	111435.00	4847.15	5023.65	238.00	3.90	173941.00	4906.24	3634.00	75.66				
Birdbear Formation	49.18629052	-104.7273365	2183.00	ACC-16536	1W20032102150100	Accumap	N/A	Regional	YELLOW FILTRATE RECOVERED FROM A SAMPLE CONTAININ		85432.00	1169.00	58.34	257.00	21.15	4225.00	108.33	29243.00	1272.00	1459.54	427.00	7.00	43150.00	1217.10	6961.00	144.93				
Birdbear Formation	49.47	-103.42	1837.50	U of A 98 - 125 A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#1, 24/5/98, rec 300m mcsw+1352m SW, s98-05658		309661.00	13900.00	695.00	1740.00	145.00	4020.00	103.08	103000.00	4478.26	5443.04	207.00	3.39	185000.00	5285.71			572.00	7.16		
Birdbear Formation	50.28203621	-101.7219328	734.70	ACC-05618	1W10153117140100	Accumap	10/6/1972	Regional	NA+K IS COMBINED IN NA.ANALYSIS DETERMINED ON A C		5451.00	16.00	0.80	5.00	0.41	0.05	0.00	1949.00	84.78	85.99	590.00	9.67	1910.00	53.87	823.00	17.13				
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23404	1W20071103092103	Accumap	7/2/1997	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		274618.00	9409.00	469.53	2064.00	169.85	2737.00	70.18	85486.00	3718.43	4427.82	366.00	6.00	174000.00	4907.91	556.00	11.58				
Birdbear Formation	51.92706984	-108.1981095	873.90	ACC-07534	1W30341622040100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		32435.00	800.00	39.92	344.00	28.31	0.05	0.00	11026.00	479.60	547.83	165.00	2.70	17095.00	482.19	3005.00	62.56				
Birdbear Formation	49.56493106	-101.7218634	1279.00	ACC-11938	1W10073214024100	Accumap	N/A	Regional			38905.00	508.00	25.35	6.00	0.49	189.00	4.85	13234.00	575.65	606.32	218.00	3.57	11839.00	333.94	12891.00	268.39				
Birdbear Formation	50.35556447	-108.2819695	1383.50	ACC-13412	1W30161721020100	Accumap	11/4/1957	Regional	137.16M MUDDY WATER, SAMPLE TAKEN 6.1M ABOVE PACK		10427.00	825.00	41.17	776.00	63.86	0.05	0.00	1602.00	69.68	174.71	655.00	10.73	2750.00	77.57	4152.00	86.44				
Birdbear Formation	49.45502281	-104.8786079	1990.30	ACC-16387	1W20062210080100	Accumap	N/A	Regional			50110.00	1402.00	69.96	349.00	28.72	0.05	0.00	17174.00	747.03	845.75	780.00	12.78	27100.00	764.39	3304.00	68.79				
Birdbear Formation	51.86158049	-109.887808	929.60	ACC-07974	1W30332827100100	Accumap	N/A	Regional			14083.00	1029.00	51.35	145.00	11.93	0.05	0.00	3441.00	149.68	212.99	1801.00	29.52	3211.00	90.57	4455.00	92.75				
Birdbear Formation	51.92706984	-108.1981095	876.60	ACC-23302	1W30341622040100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		59957.00	1115.00	55.64	847.00	69.70	0.05	0.00	20537.00	893.31	1018.65	84.00	1.38	32277.00	910.42	5097.00	106.12				
Birdbear Formation	51.26720902	-103.1563433	666.00	ACC-04329	1W20260923160100	Accumap	N/A	Regional			89183.00	1820.00	90.82	915.00	75.30	0.05	0.00	31090.00	1352.34	1518.46	265.00	4.34	49750.00	1403.27	5343.00	111.24				
Birdbear Formation	49.81653079	-106.5430882	1632.80	ACC-15576	1W30100418040100	Accumap	N/A	Regional			3876.00	600.00	29.94	145.00	11.93	0.05	0.00	373.00	16.22	58.10	275.00	4.51	261.00	7.36	2222.00	46.26				
Birdbear Formation	49.14363079	-105.298269	2195.00	ACC-16547	1W20022521133100	Accumap	N/A	Regional				1009.00	50.35	80.00	6.58	7725.00	198.08	5104.00	222.01	476.53	458.00	7.51	12340.00	348.07	4961.00	103.29				
Birdbear Formation	51.71590984	-109.1668969	905.00	ACC-07762	1W30323020120102	Accumap	N/A	Regional				943.00	47.06	398.00	32.75	462.00	11.85	9300.00	404.53	496.72	1410.00	23.11	16200.00	456.94	3090.00	64.33				
Birdbear Formation	51.30188294	-107.7820392	868.70	ACC-23316	1W30271316040100	Accumap	2/26/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY-65.52,SEC		19590.00	1205.00	60.13	214.00	17.61	0.05	0.00	3598.00	156.50	234.25	625.00	10.24	5282.00	148.99	3184.00	66.29				
Birdbear Formation	49.16540815	-107.4729563	1603.90	ACC-15501	1W30021131050100	Accumap	7/26/1955	Regional	PRIMARY SALINITY=23.96,SECONDARY SALINITY=73.74,S		4154.00	647.00	32.29	201.00	16.54	0.05	0.00	354.00	15.40	64.23	90.00	1.47	430.00	12.13	2432.00	50.63				
Birdbear Formation	49.07430772	-105.6092288	2183.60	ACC-16540	1W20012731040100	Accumap	N/A	Regional			10241.00	704.00	35.13	547.00	45.01	0.05	0.00	2118.00	92.13	172.27	280.00	4.59	4125.00	116.35	2467.00	51.36				
Birdbear Formation	49.44543414	-101.3217999	1164.20	ACC-10455	1W10062903040000	Accumap	4/6/1954	Regional			148067.00	5926.00	295.72	1377.00	113.31	0.05	0.00	49320.00	2145.30	2554.34	201.00	3.29	88260.00	2489.49	2983.00	62.11				
Birdbear Formation	49.06360547	-103.9959405	2396.75	ACC-16698	1W20011530070100	Accumap	N/A	Regional	FILTRATE REC'D FR SAMPLE CONTAINING TRACE SEDIMEN		375461.00	8088.00	403.61	2795.00	230.00	24490.00	627.95	109700.00	4771.68	6031.85	580.00	9.51	227400.00	6414.13	2403.00	50.03				

Birdbear Formation	49.91787612	-102.2364594	1277.10	ACC-11921	1W20110220010100	Accumap	9/27/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=88.06,SEC		145081.00	2916.00	145.52	1856.00	152.73	0.05	0.00	50547.00	2198.67	2496.92	435.00	7.13	84750.00	2390.49	4798.00	99.89				
Birdbear Formation	49.49557043	-104.0382991	1857.50	ACC-16058	1W20061625030100	Accumap	N/A	Regional	FILTRATE REC'D FR SAMPLE CONT APPROX. 90PERCENT S		149023.00	1121.00	55.94	49.00	4.03	24090.00	617.69	39340.00	1711.19	2387.34	622.00	10.19	67000.00	1889.83	16740.00	348.52				
Birdbear Formation	49.00439934	-104.3971876	2418.25	ACC-16720	1W20011806072100	Accumap	N/A	Regional			48995.00	1280.00	63.88	20.00	1.65	0.05	0.00	16800.00	730.76	796.28	891.00	14.60	20900.00	589.51	9080.00	189.04				
Birdbear Formation	51.9417159	-108.8296644	821.50	ACC-23301	1W30342030030100	Accumap	3/17/1982	Regional	CLEAR, COLORLESS FILTRATE RECOVERED FROM THE WATE		30985.00	1321.00	65.92	340.00	27.98	344.00	8.82	9801.00	426.32	529.02	44.00	0.72	17150.00	483.74	1985.00	41.33				
Birdbear Formation	51.92350439	-108.9840535	785.80	ACC-06500	1W30342213160100	Accumap	N/A	Regional			24906.00	660.00	32.94	337.00	27.73	402.00	10.31	8100.00	352.33	423.32	1205.00	19.75	11300.00	318.73	2900.00	60.38				
Birdbear Formation	51.71590984	-109.1668969	905.00	ACC-07763	1W30322302120102	Accumap	N/A	Regional				15150.00	756.03	1870.00	153.88	400.00	10.26	6500.00	282.73	1203.32			45660.00	1287.90	2120.00	44.14				
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23418	1W20071103092100	Accumap	7/2/1997	Regional	YELLOW COLORED FILTRATE RECOVERED FROM SAMPLE CON		275800.00	9209.00	459.55	1700.00	139.89	2815.00	72.18	86864.00	3778.37	4449.82	519.00	8.51	174000.00	4907.91	749.00	15.59				
Birdbear Formation	50.23858336	-105.4751867	1420.40	ACC-23360	1W20152611020100	Accumap	11/25/1958	Regional	CACL2=1529,MG(HCO3)2=1379,MGCL2,NACL=ABSENT,NA2SO		5564.00	552.00	27.55	122.00	10.04	0.05	0.00	984.00	42.80	80.39	1152.00	18.88	554.00	15.63	2200.00	45.80				
Birdbear Formation	51.92350439	-108.9840535	785.80	ACC-06501	1W30342213160100	Accumap	N/A	Regional			25798.00	770.00	38.43	399.00	32.83	387.00	9.92	8000.00	347.98	429.17	1670.00	27.37	11400.00	321.55	3170.00	66.00				
Birdbear Formation	50.41166313	-101.4044495	565.40	ACC-03075	1W10162934120000	Accumap	N/A	Regional				1329.00	66.32	493.00	40.57	0.05	0.00	11645.00	506.53	613.42	641.00	10.51	18198.00	513.30	4307.00	89.67				
Birdbear Formation	49.81462628	-101.0277891	791.75	ACC-06592	1W10102712040000	Accumap	6/16/1955	Regional			117437.00	4216.00	210.39	912.00	75.05	0.05	0.00	39697.00	1726.72	2012.16	232.00	3.80	67939.00	1916.31	4441.00	92.46				
Birdbear Formation	49.43	-102.6	1744.50	U of A 01 - 040A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST, June 22/01, rec 1452m, invert mud		287530.00	13800.00	690.00	1880.00	156.67	3820.00	97.95	88100.00	3830.43	4797.54	126.00	2.07	178000.00	5085.71			610.00	7.63		
Birdbear Formation	49.49	-101.18		U of A 98 - 135 A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	21/12/98, collected by Wascana		201295.00	5320.00	266.00	1480.00	123.33	1680.00	43.08	69100.00	3004.35	3443.60	86.00	1.41	122000.00	3485.71			307.00	3.84		
Birdbear Formation	49.74476052	-101.1418938	850.20	ACC-07300	1W10092718050000	Accumap	5/22/1952	Regional	NA+K=27582.			1794.00	89.53	732.00	60.24	0.05	0.00	27582.00	1199.75	1349.51	445.00	7.29	43877.00	1237.61	4830.00	100.56				
Birdbear Formation	49.13790019	-102.4950656	1966.25	ACC-16331	1W20020421054100	Accumap	7/14/1954	Regional	NA+K IS COMBINED IN NA.		234757.00	4775.00	238.29	3438.00	282.92	0.05	0.00	81800.00	3558.10	4079.30	146.00	2.39	143800.00	4056.07	798.00	16.61				
Birdbear Formation	51.92350439	-108.9840535	785.80	ACC-06503	1W30342213160100	Accumap	N/A	Regional			14591.00	376.00	18.76	167.00	13.74	166.00	4.26	4080.00	177.47	214.26	1240.00	20.32	5690.00	160.49	2870.00	59.75				
Birdbear Formation	50.06013387	-102.8963505	1320.40	ACC-12404	1W20130704160100	Accumap	N/A	Regional			50415.00	1754.00	87.53	327.00	26.91	428.00	10.97	16800.00	730.76	856.14	452.00	7.41	28514.00	804.28	2140.00	44.55				
Birdbear Formation	50.98476767	-104.7782782	902.50	ACC-07740	1W20232030080100	Accumap	1/8/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=82.06,SEC		31922.00	1223.00	61.03	427.00	35.14	0.05	0.00	10103.00	439.46	535.62	230.00	3.77	15500.00	437.20	4556.00	94.86				
Birdbear Formation	50.95618481	-106.7224339	1150.30	ACC-10296	1W30230613050100	Accumap	N/A	Regional			7006.00	810.00	40.42	309.00	25.43	0.05	0.00	1025.00	44.58	110.43	500.00	8.19	1550.00	43.72	2812.00	58.55				
Birdbear Formation	49.4705788	-104.5136335	2005.00	ACC-23441	1W20061916054100	Accumap	1/20/1981	Regional	PALE YELLOW FILTRATE RECOVERED FROM A SAMPLE CONT		49307.00	1902.00	94.91	365.00	30.04	344.00	8.82	14990.00	652.03	785.78	268.00	4.39	26130.00	737.03	5308.00	110.51				
Birdbear Formation	51.68011675	-109.4579738	917.00	ACC-07865	1W30312527013102	Accumap	N/A	Regional				1130.00	56.39	243.00	20.00	269.00	6.90	7730.00	336.24	419.50	1350.00	22.12	9050.00	255.27	8240.00	171.56				
Birdbear Formation	52.38858837	-109.3336692	732.00	ACC-05560	1W30392425131100	Accumap	N/A	Regional			21135.00	234.00	11.68	151.00	12.43	122.00	3.13	7510.00	326.67	353.89	946.00	15.50	11700.00	330.01	404.00	8.41				
Birdbear Formation	52.36261908	-109.4920978	748.00	ACC-05885	1W30392523039100	Accumap	N/A	Regional			18687.00	194.00	9.68	136.00	11.19	96.00	2.46	6800.00	295.78	319.11	705.00	11.55	10650.00	300.40	104.00	2.17				
Birdbear Formation	51.80956342	-106.0682567	636.00	ACC-03825	1W30330110032100	Accumap	N/A	Regional				1016.00	50.70	394.00	32.42	1062.00	27.23	14826.00	644.89	755.18	138.00	2.26	21735.00	613.07	6675.00	138.97				
Birdbear Formation	51.68011675	-109.4579738	917.00	ACC-07862	1W30312527013103	Accumap	N/A	Regional				1130.00	56.39	243.00	20.00	269.00	6.90	7730.00	336.24	419.50	1350.00	22.12	9050.00	255.27	8240.00	171.56				
Birdbear Formation	49.98084136	-100.751434	646.95	ACC-03996	1W10122406060000	Accumap	12/9/1968	Regional	SAMPLE RECEIVED WAS A CLEAR WATER WITH 10% SEDIME		118020.00	2163.00	107.94	700.00	57.60	0.05	0.00	42346.00	1841.95	2007.49	248.00	4.06	66800.00	1884.18	5763.00	119.99				
Birdbear Formation	49.06360547	-103.9959405	2396.75	ACC-16699	1W20011530070100	Accumap	N/A	Regional	FILTRATE REC'D FR SAMPLE CONTAINING TRACE SEDIMEN		281082.00	9650.00	481.56	948.00	78.01	6850.00	175.64	94310.00	4102.25	4837.06	549.00	9.00	168000.00	4738.67	774.00	16.11				
Birdbear Formation	51.49122076	-109.5871638	1011.30	ACC-08875	1W30292622040100	Accumap	N/A	Regional			16922.00	957.00	47.76	248.00	20.41	0.05	0.00	4671.00	203.18	271.38	1435.00	23.52	6475.00	182.64	3135.00	65.27				
Birdbear Formation	49.26469375	-101.4741585	1337.00	ACC-12657	1W10033033140100	Accumap	N/A	Regional			198750.00	4200.00	209.59	1210.00	99.57	0.05	0.00	71392.00	3105.38	3414.54	155.00	2.54	118750.00	3349.50	3043.00	63.35				
Birdbear Formation	49.83387443	-104.8482968	1736.10	ACC-23374	1W20102119050100	Accumap	4/18/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=78.82,SEC		21838.00	1121.00	55.94	260.00	21.40	0.05	0.00	6611.00	287.56	364.90	262.00	4.29	10175.00	287.00	3542.00	73.74				
Birdbear Formation	49.48579565	-100.6612419	837.75	ACC-07179	1W10062416140000	Accumap	N/A	Regional				1889.00	94.27	611.00	50.28	0.05	0.00	22897.00	995.96	1140.51	476.00	7.80	36547.00	1030.86	4901.00	102.04				
Birdbear Formation	49.49709467	-100.8699072	912.55	ACC-07819	1W10062624120000	Accumap	N/A	Regional			45570.00	1762.00	87.93	415.00	34.15	0.05	0.00	14701.00	639.46	761.54	1556.00	25.50	23172.00	653.60	3964.00	82.53				
Birdbear Formation	49.47595584	-104.5085758	1995.00	ACC-16396	1W20061916141100	Accumap	N/A	Regional				1517.00	75.70	146.00	12.01	2765.00	70.90	19000.00	826.45	984.89	501.00	8.21	31432.00	886.58	3008.00	62.63				
Birdbear Formation	50.17627465	-101.3361009	694.20	ACC-04849	1W10142911090000	Accumap	N/A	Regional			70158.00	1555.00	77.60	716.00	58.92	0.05	0.00	24070.00	1046.99	1183.51	183.00	3.00	36851.00	1039.43	6783.00	141.22				
Birdbear Formation	51.76320127	-109.8114787	908.30	ACC-07787	1W30322719160100	Accumap	N/A	Regional			21390.00	499.00	24.90	241.00	19.83	0.05	0.00	7080.00	307.96	352.80	627.00	10.28	9690.00	273.32	3250.00	67.66				
Birdbear Formation	51.57133334	-109.6281938	969.60	ACC-23312	1W30302617110100	Accumap	11/19/1956	Regional	PRIMARY SALINITY=87.96,PRIMARY ALKALINITY=1.96,SE		20679.00	516.00	25.75	73.00	6.01	0.05	0.00	6508.00	283.08	314.84	1840.00	30.16	2448.00	69.05	9996.00	208.12				
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23406	1W20071103092103	Accumap	7/2/1997	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		243376.00	7207.00	359.65	971.00	79.90	3754.00	96.26	76511.00	3328.04	3863.61	244.00	4.00	150000.00	4230.95	1358.00	28.27				
Birdbear Formation	51.68011675	-109.4579738	900.00	ACC-07720	1W30312527013102	Accumap	N/A	Regional				736.00	36.73	1.00	0.08	56.00	1.44	6250.00	271.86	310.10	268.00	4.39	1100.00	31.03	14100.00	293.56				
Birdbear Formation	49.07157778	-101.4549532	1459.20	ACC-14459	1W10013029160100	Accumap	N/A	Regional			236743.00	10205.00	509.26	1728.00	142.20	0.05	0.00	79191.00	3444.61	4096.07	145.00	2.38	144300.00	4070.18	1174.00	24.44				
Birdbear Formation	49.44	-102.7	1749.50	U of A 98 - 075A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#4, rec 748m murky salt W, 262,000 ppm 31/1/98		283729.00	1330.00	66.50	136.00	11.33	2370.00	60.77	97700.00	4247.83	4387.32	135.00	2.21	180000.00	5142.86			463.00	5.79		
Birdbear Formation	49.73281683	-106.4868427	1734.30	ACC-15811	1W30090416070100	Accumap	N/A	Regional			4688.00	536.60	26.78	385.80	31.75	0.05	0.00	1076.00	46.80	106.58	697.30	11.43	1750.00	49.36	2075.00	43.20				
Birdbear Formation	49.03829897	-104.0628303	2402.60	ACC-16702	1W20011615100100	Accumap	N/A	Regional			294491.00	12913.00	644.39	1205.00	99.16	4017.00	103.00	96850.00	4212.74	5059.07	89.00	1.46	179146.00	5053.06	270.00	5.62				
Birdbear Formation	49.31659693	-100.8078256	1008.10	ACC-08837	1W10042520080000	Accumap	N/A	Regional	TOTAL CONCENTRATION : 101328			2510.00	125.26	608.00	50.03	0.05	0.00	35627.00	1549.69	1724.98	573.00	9.39	57506.00	1622.03	4504.00	93.77				
Birdbear Formation	51.83994274	-109.8244204	898.90	ACC-07702	1W30332719033100	Accumap	N/A	Regional	SAMPLE CONSISTED OF MUDDY; SLIGHTLY SALT WATER		15396.00	180.00	8.98	97.00	7.98	68.00	1.74	5570.00	242.28	261.02	1387.00	22.73	7990.00	225.37	103.00	2.14				
Birdbear Formation	49.54	-102.42	1565.00	U of A 01 - 032A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#1, Nov 22/2000, rec 200m (180m W+ 20m M)		209689.00	5380.00	269.00	905.00	75.42	2020.00	51.79	71700.00	3117.39	3521.42	184.00	3.02	128000.00	3657.14			307.00	3.84		
Birdbear Formation	49.51202311	-100.5309152	771.20	ACC-06247	1W10062328120000	Accumap	9/10/1954	Regional	VO 15 MINS. SHUT IN 15 MINS.		67512.00	1933.00	96.46	654.00	53.82	0.05	0.00	22875.00	995.01	1145.29	250.00	4.10	36699.00	1035.15	5101.00	106.20				
Birdbear Formation	49.26	-103.42	2116.70	U of A 98 - 081A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST #3, 18/3/98, rec 940m W+20m Mud		203724.00	10700.00	535.00	1120.00	93.33	12500.00	320.51	58500.00	2543.48	3512.68	162.00	2.66	119000.00	3400.00			357.00	4.47		
Birdbear Formation	50.90192399	-107.3008018	1307.60	ACC-23324	1W30221027090100	Accumap	6/14/1956	Regional	NA+K IS COMBINED IN NA.INSUFFICIENT DATA FOR CORR		6637.00	708.00	35.33	251.00	20.66	0.05	0.00	1035.00	45.02	101.01	778.00	12.75	1065.00	30.04	2800.00	58.30				
Birdbear Formation	51.98504249	-109.5241038	844.00	ACC-07244	1W30352509042100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUD		7145.00	80.00	3.99	34.00	2.80	24.00	0.62	2505.00	108.96	116.40	213.00	3.49	3200.00	90.26	1058.00	22.03				
Birdbear Formation	49.06368778	-109.33752	1625.20	ACC-15562	1W30012530060100	Accumap	N/A	Regional			7523.00	682.00	34.03	97.00	7.98	0.05	0.00	1655.00	71.99	114.00	440.00	7.21	1360.00	38.36	3289.00	68.48				
Birdbear Formation	51.93606149	-108.9801062	784.50	ACC-23299	1W30342119123100	Accumap	2/26/2010	Regional	THE IONIC BALANCE FOR THIS WATER EXCEEDS 10% . TH		34987.00	2230.00	111.28	1670.00	137.43	342.00	8.77	6800.00	295.78	553.24	1285.10	21.06	20993.00	592.14	2320.00	48.30				
Birdbear Formation	52.05058336	-109.5414594	794.00	ACC-06616	1W30352532110102	Accumap	N/A	Regional				80.00	3.99	73.00	6.01	6.00	0.15	6295.00	273.82	283.97	1513.00	24.80	9675.00	272.90	23.00	0.48				
Birdbear Formation	49.38708267	-106.1841297	1947.70	ACC-16275	1W30050214122100	Accumap	4/28/1955	Regional	60.96M ABOVE PACKER.NA&K IS COMBINED IN NA.PRIMAR		4758.00	857.00	42.77	131.00	10.78	0.05	0.00	420.00	18.27	71.82	480.00	7.87	575.00	16.22	2295.00	47.78				
Birdbear Formation	50.13633443	-104.7789798	1487.70	ACC-23362	1W20142102040100	Accumap	9/3/1960	Regional	HYPOTHETICAL COMBINATIONS:CALCIUM CHLORIDE=3889,M			1404.00	70.06	441.00	36.29	0.05	0.00	20585.00	895.40	1002.65			35323.00	996.33	84.00	1.75	238.00	2.98		
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23420	1W20071103092100	Accumap	7/2/1997	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		226624.00	6406.00	319.68	0.05	0.00	4457.00	114.28	74455.00	3238.61	3672.28	0.00	0.00	139000.00	3920.68	1975.00	41.12				
Birdbear Formation	49.43	-102.6	1744.50	U of A 01 - 022B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST-1, chamber #001, 2001-06-22		300601.00	15000.00	750.00	2020.00	168.33	4300.00	110.26	91400.00	3973.91	5025.35	81.00	1.33	186000.00	5314.29			623.00	7.80		
Birdbear Formation	50.99439359	-101.2205775	472.30	ACC-02183	1W10232720020000	Accumap	12/30/1958	Regional			30723.00	982.00	49.00	458.00	37.69	0.05	0.00	9857.00	428.76	515.45	317.00	5.20	15165.00	427.75	3920.00	81.61				
Birdbear Formation	49.87683067	-101.7788402	1078.50	ACC-09500	1W10103233051100	Accumap	11/30/1984	Regional	TOTAL HARDNESS AS CACO3=6564 G/M3.TOTAL ALKALINIT		109895.00	1790.00	89.33	500.00	41.15	970.00	24.87	35000.00	1522.41	1678.42	581.00	9.52	65850.00	1857.39	5540.00	115.34				
Birdbear Formation	49.97719832	-101.6331877	768.40	ACC-06201	1W10123103010100	Accumap	3/27/1956	Regional	PRIMARY SALINITY: 93.70, PRIMARY ALKALINITY: 0.12		11530.00	146.00	7.29	55.00	4.53	0.05	0.00	4127.00	179.51	191.33	575.00	9.42	5000.00	141.03	1840.00	38.31				
Birdbear Formation	52.37019576	-109.4345597	746.00	ACC-05852	1W30392419091100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM WATERY MUD		5858.00	16.00	0.80	5.00	0.41	27.00	0.69	2045.00	88.95	91.03	1189.00	19.49	1988.00	56.07	523.00	10.89				

Birdbear Formation	51.68011675	-109.4579738	900.00	ACC-07723	1W30312527013100	Accumap	N/A	Regional			22695.00	736.00	36.73	1.00	0.08	56.00	1.44	6250.00	271.86	310.14	268.00	4.39	1100.00	31.03	14100.00	293.56				
Birdbear Formation	49.85876867	-100.1946294	483.50	ACC-02340	1W10102125010000	Accumap	9/16/1994	Regional	COLORLESS FILTRATE RECOVERED FROM A SAMPLE CONTAI		48005.00	1546.00	77.15	651.00	53.57	78.00	2.00	15075.00	655.73	788.44	110.00	1.80	25900.00	730.54	4633.00	96.46				
Birdbear Formation	49.31317732	-104.8052171	2063.50	ACC-23494	1W20042120120100	Accumap	7/29/1976	Regional	NACL EQUIV 11542.		13598.00	1160.00	57.89	31.00	2.55	0.05	0.00	3612.00	157.11	217.55	513.00	8.41	4972.00	140.24	3311.00	68.93				
Birdbear Formation	52.36261908	-109.4920978	748.00	ACC-05883	1W30392523039100	Accumap	N/A	Regional			29177.00	650.00	32.44	249.00	20.49	160.00	4.10	9700.00	421.93	478.95	1012.00	16.59	17400.00	490.79	4.00	0.08				
Birdbear Formation	52.37143633	-109.5137216	737.60	ACC-05676	1W30392522100100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM OIL FLECKED MUD		7388.00	70.00	3.49	37.00	3.04	0.05	0.00	2525.00	109.83	116.41	1055.00	17.29	2690.00	75.88	836.00	17.41				
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23399	1W20071103092104	Accumap	7/2/1997	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		243376.00	7207.00	359.65	971.00	79.90	3754.00	96.26	76511.00	3328.04	3863.61	244.00	4.00	150000.00	4230.95	1358.00	28.27				
Birdbear Formation	49.74349453	-102.6536883	1604.00	ACC-15502	1W20090520032100	Accumap	N/A	Regional			145839.00	2683.00	133.89	490.00	40.32	1463.00	37.51	49900.00	2170.53	2384.30	77.00	1.26	89653.00	2528.78	1478.00	30.77				
Birdbear Formation	49.7225529	-100.7327815	733.65	ACC-05599	1W10092406130000	Accumap	8/16/1955	Regional			41865.00	2190.00	109.29	454.00	37.36	0.05	0.00	12651.00	550.29	696.93	2269.00	37.19	20837.00	587.74	3464.00	72.12				
Birdbear Formation	49.40446452	-103.9098762	1942.00	ACC-23476	1W20051524130100	Accumap	7/6/1994	Regional			200251.00	6363.00	317.53	589.00	48.47	3300.00	84.62	65000.00	2827.34	3277.74	219.00	3.59	122886.00	3466.17	1894.00	39.43				
Birdbear Formation	49.43	-102.6	1744.50	U of A 01 - 021		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST-1, fluid rec #5, 2001-06-22		299879.00	14900.00	745.00	1970.00	164.17	3980.00	102.05	92900.00	4039.13	5073.29	264.00	4.33	184000.00	5257.14			636.00	7.96		
Birdbear Formation	49.5310012	-103.4098898	1778.50	ACC-23413	1W20071103092102	Accumap	7/2/1997	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		243376.00	7207.00	359.65	971.00	79.90	3754.00	96.26	76511.00	3328.04	3863.61	244.00	4.00	150000.00	4230.95	1358.00	28.27				
Birdbear Formation	49.74349453	-102.6536883	1604.00	ACC-23381	1W20090520032100	Accumap	6/20/1994	Regional	ND = NOT DETECTED		145839.30	2683.00	133.89	490.00	40.32	1463.00	37.51	49900.00	2170.53	2384.30	77.00	1.26	89653.00	2528.78	1478.00	30.77				
Birdbear Formation	50.01956318	-103.0049746	1371.60	ACC-13202	1W20120826042100	Accumap	N/A	Regional			59819.00	1657.00	82.69	374.00	30.78	0.05	0.00	20523.00	892.70	1010.79	791.00	12.96	31989.00	902.29	4356.00	90.69				
Birdbear Formation	49.5	-102.17	1511.50	U of A 00 - 031 A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#1, rec 3.1m3, july 8/99, 62m WCM+530mW(260,00		257505.00	14300.00	715.00	2250.00	187.50	3830.00	98.21	78900.00	3430.43	4446.89	752.00	12.33	156000.00	4457.14			517.00	6.47		
Birdbear Formation	50.42605031	-109.2825563	1242.10	ACC-11598	1W30172407164100	Accumap	N/A	Regional			31418.00	813.00	40.57	406.00	33.41	328.00	8.41	9380.00	408.01	490.59	1226.00	20.09	12980.00	366.12	6279.00	130.73				
Birdbear Formation	50.03227038	-100.8543931	632.30	ACC-03772	1W10122520160000	Accumap	N/A	Regional			58364.00	1867.00	93.17	433.00	35.63	0.05	0.00	19762.00	859.60	988.40	256.00	4.20	31665.00	893.15	4381.00	91.21				
Birdbear Formation	49.7225529	-100.7327815	733.65	ACC-05598	1W10092406130000	Accumap	N/A	Regional			100773.00	2715.00	135.49	803.00	66.08	0.05	0.00	34903.00	1518.20	1719.76	543.00	8.90	57445.00	1620.31	4364.00	90.86				
Birdbear Formation	50.99055758	-101.4832323	477.35	ACC-02252	1W10232916140000	Accumap	12/30/1958	Regional			21774.00	550.00	27.45	228.00	18.76	0.05	0.00	7215.00	313.83	360.04	671.00	11.00	10251.00	289.14	2835.00	59.02				
Birdbear Formation	50.33085481	-101.1219919	560.55	ACC-03034	1W10162703030000	Accumap	7/8/1958	Regional			39233.00	1237.00	61.73	579.00	47.65	0.05	0.00	12271.00	533.76	643.13	2806.00	45.99	17798.00	502.02	4494.00	93.56				
Birdbear Formation	51.26454717	-105.8894706	848.90	ACC-23340	1W20262832122100	Accumap	6/16/1967	Regional	RESISTIVITY:TOP=0.314@26.67C,BOTTOM=0.268@26.67C.		32979.00	1362.00	67.97	433.00	35.63	0.05	0.00	9961.00	433.28	536.88	342.00	5.60	13081.00	368.97	7800.00	162.40				
Birdbear Formation	49.93291156	-101.0488967	765.20	ACC-06153	1W10112724030000	Accumap	12/7/1955	Regional			101681.00	2248.00	112.18	650.00	53.49	0.05	0.00	35917.00	1562.30	1727.97	909.00	14.90	57324.00	1616.90	4633.00	96.46				
Birdbear Formation	49.4997428	-104.0654647	1866.00	ACC-16096	1W20061626054100	Accumap	N/A	Regional			122655.00	196.00	9.78	39.00	3.21	1120.00	28.72	43000.00	1870.39	1912.03	276.00	4.52	73770.00	2080.78	4250.00	88.48				
Birdbear Formation	50.05094448	-101.0086579	711.60	ACC-05191	1W10122632040000	Accumap	N/A	Regional			94123.00	2212.00	110.38	821.00	67.56	0.05	0.00	32752.00	1424.63	1602.58	353.00	5.79	52774.00	1488.56	5211.00	108.49				

Duperow Formation	52.48397341	-109.2323844	719.30	ACC-05344	1W30402334060100	Accumap	N/A	Regional			10115.00	86.00	4.29	61.00	5.02	0.05	0.00	3703.00	161.07	170.42	481.00	7.88	5705.00	160.92	78.00	1.62				
Duperow Formation	49.70299668	-105.0239889	1912.60	ACC-16197	1W20092302060100	Accumap	N/A	Regional			21537.00	625.00	31.19	185.00	15.22	0.05	0.00	7088.00	308.31	354.72	565.00	9.26	9909.00	279.50	3165.00	65.89				
Duperow Formation	48.68364	-106.22431	1719.07	33353	2.51E+13	USGS Produced Water DB	9/1/1965	Regional	Chemical & Geological Laboratories	Dst No. 2 Middle	5276.00	527.00	26.35	128.00	10.67	50.00	1.28	1026.00	44.61	83.63	183.00	3.00	1070.00	30.57	2320.00	48.33				
Duperow Formation	48.34152	-105.4877	2356.71	31458	2.51E+13	USGS Produced Water DB	1/22/1962	Regional	Chem Lab	Dst No. 1 Bottom	52909.00	1001.00	50.05	101.00	8.42	0.05	0.00	19117.00	831.17	889.64	440.00	7.21	28000.00	800.00	4473.00	93.19				
Duperow Formation	50.03151709	-107.2250291	1743.20	ACC-15822	1W30120930140100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		3878.00	572.00	28.54	113.00	9.30	0.05	0.00	549.00	23.88	61.73	220.00	3.61	564.00	15.91	1860.00	38.72				
Duperow Formation	49.70299668	-105.0239889	1975.10	ACC-16355	1W20092302060100	Accumap	N/A	Regional			48123.00	1310.00	65.37	259.00	21.31	0.05	0.00	16701.00	726.45	813.14	350.00	5.74	26129.00	737.00	3374.00	70.25				
Duperow Formation	49.31447094	-106.4078935	2058.30	ACC-16447	1W30040319120100	Accumap	N/A	Regional			2958.00	496.00	24.75	140.00	11.52	0.05	0.00	187.00	8.13	44.44	180.00	2.95	110.00	3.10	1844.00	38.39				
Duperow Formation	50.77366798	-105.3816876	1085.10	ACC-09588	1W20212510160100	Accumap	4/25/1962	Regional	NA=100000 PPM,K=370PPM,BR2=25PPM, PRIMARY SALINITY		261570.00	1432.00	71.46	614.00	50.53	0.05	0.00	99845.00	4343.01	4465.00	73.00	1.20	154322.00	4352.86	5284.00	110.01				
Duperow Formation	51.2217415	-106.5130882	1246.00	ACC-23599	1W30260416120100	Accumap	6/17/1954	Regional	NA+K IS COMBINED IN NA.		24573.00	1328.00	66.27	444.00	36.54	0.05	0.00	6880.00	299.26	402.07	1813.00	29.71	10650.00	300.40	3458.00	72.00				
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23683	1W20071103092104	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		300030.00	5966.00	297.72	1190.00	97.93	3812.00	97.74	106375.00	4627.05	5120.20	432.00	7.08	181400.00	5116.63	856.00	17.82				
Duperow Formation	49.14363079	-105.298269	2271.00	ACC-16589	1W20022521133100	Accumap	N/A	Regional				1161.00	57.94	121.00	9.96	7140.00	183.08	5380.00	234.02	484.53	397.00	6.51	12680.00	357.66	5313.00	110.62				
Duperow Formation	49.83320015	-101.1311299	935.70	ACC-08017	1W10102718070000	Accumap	11/30/1976	Regional	NACL EQUIV 34787		37903.00	1861.00	92.87	15.00	1.23	0.05	0.00	12232.00	532.06	626.17	117.00	1.92	17771.00	501.26	5907.00	122.98				
Duperow Formation	49.73660002	-104.8196009	2015.00	ACC-23674	1W20092117114100	Accumap	11/4/1997	Regional	WATER ANALYSIS WAS PERFORMED ON A SAMPLE OBTAINED		249161.00	11134.00	555.62	242.00	19.91	2499.00	64.08	84733.00	3685.68	4325.12	242.00	3.97	149039.00	4203.85	1272.00	26.48				
Duperow Formation	50.47854305	-100.9724376	748.70	ACC-05888	1W10172627010000	Accumap	N/A	Regional	V. O. 1 HR.		36894.00	1315.00	65.62	559.00	46.00	0.05	0.00	11619.00	505.40	617.02	519.00	8.51	17894.00	504.72	4988.00	103.85				
Duperow Formation	51.3415564	-105.384923	795.50	ACC-23640	1W20272525160100	Accumap	2/26/1969	Regional	SAMPLE POINT FROM TOP OF TOOL.NA+K IS COMBINED IN		26500.00	1484.00	74.06	67.00	5.51	0.05	0.00	8108.00	352.68	432.25	112.00	1.84	11119.00	313.63	5610.00	116.80				
Duperow Formation	50.58841948	-105.6299953	1158.20	ACC-10400	1W20192712040100	Accumap	N/A	Regional			160472.00	400.00	19.96	522.00	42.96	0.05	0.00	61693.00	2683.49	2746.41	312.00	5.11	96097.00	2710.55	1448.00	30.15				
Duperow Formation	51.87105102	-109.0440039	996.40	ACC-08740	1W30332234062100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING APPROX.		44935.00	2550.00	127.25	800.00	65.83	0.05	0.00	13200.00	574.17	767.43	990.00	16.22	24500.00	691.06	2890.00	60.17				
Duperow Formation	51.68328304	-109.2615884	1113.40	ACC-09898	1W30312330050100	Accumap	N/A	Regional			38492.00	257.00	12.82	1627.00	133.89	0.05	0.00	12036.00	523.54	670.36	1575.00	25.81	22800.00	643.10	194.00	4.04				
Duperow Formation	51.93203	-106.069691	682.72	ASBR_02-311		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Sample from drill hole casing	BRINE-SHAFT	82037.92	1880.00	94.00	692.00	57.67	2300.00	58.97	27459.15	1193.88	1404.52			43532.29	1243.78	6150.00	128.13	24.47	0.31	-140.40	-18.62
Duperow Formation	49.74476052	-101.1418938	992.40	ACC-08676	1W10092718050000	Accumap	5/22/1952	Regional	BY EVOPORATION 253,290, IGNITION 140580, CALCULAT			1193.00	59.53	769.00	63.28	0.05	0.00	17509.00	761.60	884.41	443.00	7.26	26622.00	750.91	6055.00	126.06				
Duperow Formation	49.18252251	-105.7301811	2188.50	ACC-16544	1W20032805090100	Accumap	N/A	Regional	HIGHLY DILUTED FORMATION WATER.		14792.00	781.00	38.97	143.00	11.77	0.05	0.00	4428.00	192.61	243.35	258.00	4.23	6492.00	183.12	2690.00	56.01				
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23689	1W20071103092103	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		233215.00	4805.00	239.78	291.00	23.95	4399.00	112.79	82225.00	3576.59	3952.83	581.00	9.52	138700.00	3912.22	2214.00	46.10				
Duperow Formation	49.44482464	-102.7039487	1892.00	ACC-23715	1W20060602090100	Accumap	2/3/1998	Regional			289867.00	3270.00	163.18	298.00	24.52	2011.00	51.56	108260.00	4709.04	4948.18	158.00	2.59	173696.00	4899.33	2174.00	45.26				
Duperow Formation	49.30148315	-105.2760304	2101.00	ACC-23730	1W20042514131100	Accumap	1/29/1998	Regional	USED CALC SPEC GRAV.		21163.00	925.00	46.16	199.00	16.38	213.00	5.46	6635.00	288.61	356.59	718.00	11.77	9555.00	269.51	2918.00	60.75				
Duperow Formation	52.89769173	-108.7457176	631.50	ACC-03760	1W30451919151200	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING APPROX.		86964.00	1902.00	94.91	972.00	79.99	1173.00	30.08	29230.00	1271.43	1476.37	671.00	11.00	53000.00	1494.94	15.00	0.31				
Duperow Formation	51.93203	-106.069691	771.72	ASBR_02-306		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Catching drip from new tubbing ring joint	BRINE-SHAFT	113849.72	2210.00	110.50	660.00	55.00	2960.00	75.90	38492.79	1673.60	1915.00			63815.66	1823.30	5670.00	118.13	40.71	0.51	-140.28	-18.04
Duperow Formation	50.17716879	-109.6086582	1492.30	ACC-14784	1W30142715150100	Accumap	N/A	Regional			159147.00	7575.00	378.01	2175.00	178.98	0.05	0.00	50604.00	2201.15	2758.15	503.00	8.24	95170.00	2684.40	3120.00	64.96				

Duperow Formation	51.70813908	-105.4502599	1024.80	ACC-08972	1W20322502042100	Accumap	N/A	Regional			144000.00	1750.00	87.33	330.00	27.16	3000.00	76.92	51980.00	2261.00	2452.22	170.00	2.79	78900.00	2225.48	7850.00	163.44					
Duperow Formation	51.79325662	-105.6951856	627.00	ACC-23637	1W20322736154100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		97096.00	1420.00	70.86	917.00	75.46	0.05	0.00	34797.00	1513.58	1659.91	102.00	1.67	55800.00	1573.91	4060.00	84.53					
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23696	1W20071103092100	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		233215.00	4805.00	239.78	291.00	23.95	4399.00	112.79	82225.00	3576.59	3952.83	581.00	9.52	138700.00	3912.22	2214.00	46.10					
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23694	1W20071103092102	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		233215.00	4805.00	239.78	291.00	23.95	4399.00	112.79	82225.00	3576.59	3952.83	581.00	9.52	138700.00	3912.22	2214.00	46.10					
Duperow Formation	50.15160932	-107.8390145	1692.90	ACC-15710	1W30141410030100	Accumap	N/A	Regional				999.00	49.85	202.00	16.62	0.05	0.00	978.00	42.54	109.02	1700.00	27.86	1200.00	33.85	2273.00	47.32					
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23684	1W20071103092104	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		233215.00	4805.00	239.78	291.00	23.95	4399.00	112.79	82225.00	3576.59	3952.83	581.00	9.52	138700.00	3912.22	2214.00	46.10					
Duperow Formation	52.54242673	-109.3223915	631.90	ACC-03768	1W30412424070200	Accumap	N/A	Regional	FILTRATE RECOVERED FROM OIL FLECKED MUD		6161.00	20.00	1.00	30.00	2.47	24.00	0.62	2185.00	95.04	99.16	854.00	14.00	2675.00	75.45	372.00	7.74					
Duperow Formation	46.84302	-102.95197	2822.14	40115	3.31E+13	USGS Produced Water DB	4/13/1954	Regional	Petroleum Eng Lab - Atlantic Refining Co	Dst #7	116825.00	4118.00	205.90	896.00	74.67	0.05	0.00	39265.00	1707.17	1987.74	520.00	8.52	70200.00	2005.71	1220.00	25.42					
Duperow Formation	48.35397	-105.56207	2330.20	33881	2.51E+13	USGS Produced Water DB		Regional		Dst No. 1	74221.00	1394.00	69.70	162.00	13.50	0.05	0.00	26882.00	1168.78	1251.98	645.00	10.57	40000.00	1142.86	5465.00	113.85					
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23695	1W20071103092100	Accumap	7/8/1997	Regional	SAMPLING POINT: MIDDLE. ANALYSIS PERFORMED ON A C		300030.00	5966.00	297.72	1190.00	97.93	3812.00	97.74	106375.00	4627.05	5120.20	432.00	7.08	181400.00	5116.63	856.00	17.82					
Duperow Formation	49.44482464	-102.7039487	1892.00	ACC-23714	1W20060602090100	Accumap	2/3/1998	Regional			290337.00	3280.00	163.68	322.00	26.50	2027.00	51.97	109641.00	4769.11	5011.14	90.00	1.47	172553.00	4867.09	2366.00	49.26					
Duperow Formation	49.68499486	-103.3257231	1725.00	ACC-23676	1W20081032023100	Accumap	9/22/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		213676.00	2923.00	145.87	243.00	20.00	10655.00	273.21	71875.00	3126.39	3564.77	285.00	4.67	123300.00	3477.84	4395.00	91.50					
Duperow Formation	48.68364	-106.22431	1881.84	33352	2.51E+13	USGS Produced Water DB	9/1/1965	Regional	Chemical & Geological Laboratories	Dst No. 3 Bottom	3737.00	497.00	24.85	122.00	10.17	60.00	1.54	522.00	22.70	59.83	207.00	3.39	770.00	22.00	1660.00	34.58					
Duperow Formation	50.51406887	-105.121352	1295.40	ACC-23657	1W20182316042100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.SAMPLED FROM MIDDLE.		27787.00	1460.00	72.86	498.00	40.98	0.05	0.00	8103.00	352.46	466.30	728.00	11.93	13600.00	383.61	3398.00	70.75					
Duperow Formation	49.80915982	-101.2303251	994.55	ACC-08713	1W10102804120200	Accumap	N/A	Regional				6384.00	318.58	2208.00	181.70	0.05	0.00	89893.00	3910.13	4410.40	90.00	1.47	154908.00	4369.39	1860.00	38.72					
Duperow Formation	49.80915982	-101.2303251	994.55	ACC-08712	1W10102804120202	Accumap	N/A	Regional				6384.00	318.58	2208.00	181.70	0.05	0.00	89893.00	3910.13	4410.40	90.00	1.47	154908.00	4369.39	1860.00	38.72					
Duperow Formation	48.68364	-106.22431	2081.78	33355	2.51E+13	USGS Produced Water DB	9/10/1965	Regional	Chemical & Geological Laboratories	Dst No. 5	5474.00	502.00	25.10	98.00	8.17	62.00	1.59	1157.00	50.30	86.46	378.00	6.20	1110.00	31.71	2350.00	48.96					
Duperow Formation	51.34108321	-103.0238273	652.50	ACC-04123	1W20270814160100	Accumap	N/A	Regional	SAMPLE CONSISTED OF A CLEAR FILTRATE REVOVERED FR		102003.00	1449.00	72.31	966.00	79.49	546.00	14.00	35530.00	1545.47	1711.23	346.00	5.67	59100.00	1667.00	4066.00	84.65					
Duperow Formation	52.62302206	-109.3094152	706.00	ACC-23572	1W30422318134100	Accumap	3/17/1982	Regional	CLEAR, COLORLESS FILTRATE RECOVEREDFROM A SAMPLE		35947.00	400.00	19.96	224.00	18.43	188.00	4.82	13370.00	581.56	624.76	122.00	2.00	21580.00	608.69	63.00	1.31					
Duperow Formation	52.99037702	-107.8877973	712.60	ACC-05210	1W30461330044100	Accumap	3/10/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY-88.66,SEC		19584.00	420.00	20.96	195.00	16.05	0.05	0.00	6649.00	289.22	326.22	220.00	3.61	9244.00	260.74	2968.00	61.79					
Duperow Formation	52.47309159	-108.722237	731.50	ACC-05550	1W30401930100100	Accumap	N/A	Regional			26416.00	210.00	10.48	207.00	17.03	0.05	0.00	9568.00	416.18	443.70	916.00	15.01	14290.00	403.07	1225.00	25.50					
Duperow Formation	49.3205931	-104.5984377	2307.30	ACC-23732	1W20042026030100	Accumap	10/15/1959	Regional	HYPOTHETICAL COMBINATIONS:CALCIUM CHLORIDE=22492,		207936.00	8120.00	405.21	3450.00	283.90	0.05	0.00	66884.00	2909.29	3604.42	893.00	14.64	123895.00	3494.63	4526.00	94.23					
Duperow Formation	50.06422841	-109.5629753	1453.90	ACC-14410	1W30132712020100	Accumap	N/A	Regional			169928.00	3465.00	172.91	380.00	31.27	0.05	0.00	59541.00	2589.89	2794.07	372.00	6.10	78170.00	2204.89	28000.00	582.96					
Duperow Formation	49.41481248	-100.6485777	549.50	ACC-02926	1W10052428010000	Accumap	9/5/1979	Regional			15476.00	600.00	29.94	5.80	0.48	80.00	2.05	4500.00	195.74	228.20	195.00	3.20	2930.00	82.64	7150.00	148.86					
Duperow Formation	48.41976	-108.02658	1492.91	32312	2.51E+13	USGS Produced Water DB	12/18/1954	Regional	Chem Lab	Dst No. 2	46094.00	1067.00	53.35	554.00	46.17	0.05	0.00	15475.00	672.83	772.34	187.00	3.07	22655.00	647.29	6251.00	130.23					
Duperow Formation	51.3415564	-105.384923	780.30	ACC-23641	1W20272525160100	Accumap	2/26/1969	Regional	NA+K IS COMBINED IN NA.SAMPLE POINT FROM TOP OF T		147521.00	2120.00	105.79	707.00	58.18	0.05	0.00	53797.00	2340.04	2504.01	215.00	3.52	82872.00	2337.52	7810.00	162.60					
Duperow Formation	52.70937974	-109.0973611	678.80	ACC-04529	1W30432214130100	Accumap	N/A	Regional			35234.00	276.00	13.77	168.00	13.82	0.05	0.00	12941.00	562.90	590.50	1977.00	32.40	19522.00	550.64	350.00	7.29					
Duperow Formation	50.54795532	-101.4564143	679.25	ACC-04538	1W10182918160000	Accumap	N/A	Regional			155156.00	2597.00	129.60	848.00	69.78	0.05	0.00	56375.00	2452.17	2651.55	104.00	1.70	90383.00	2549.38	4849.00	100.96					
Duperow Formation	46.84302	-102.95197	2749.60	40112	3.31E+13	USGS Produced Water DB	4/1/1954	Regional	Petroleum Eng Lab - Atlantic Refining Co	Dst #2	178828.00	5630.00	281.50	1040.00	86.67	0.05	0.00	62477.00	2716.39	3084.56	260.00	4.26	108000.00	3085.71	1679.00	34.98					
Duperow Formation	49.1400289	-105.8321082	2247.90	ACC-16572	1W20022921120100	Accumap	N/A	Regional			5219.00	591.00	29.49	144.00	11.85	0.05	0.00	989.00	43.02	84.40	165.00	2.70	1675.00	47.25	1654.00	34.44					
Duperow Formation	50.41371118	-107.8637723	1470.10	ACC-14568	1W30171409010100	Accumap	N/A	Regional	APPEARS TO BE FORMATION WATER		17109.00	872.00	43.52	192.00	15.80	0.05	0.00	4997.00	217.36	276.67	490.00	8.03	6608.00	186.39	3950.00	82.24					
Duperow Formation	49.53498514	-103.4041238	1923.00	ACC-23704	1W20071102134100	Accumap	10/10/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		250948.00	1682.00	83.94	243.00	20.00	10557.00	270.69	89125.00	3876.72	4250.66	312.00	5.11	145700.00	4109.67	3300.00	68.71					
Duperow Formation	51.94516063	-103.4092362	675.10	ACC-04481	1W20341030070100	Accumap	N/A	Regional			49020.00	1270.00	63.38	676.00	55.63	0.05	0.00	16347.00	711.05	830.06	300.00	4.92	25960.00	732.24	4457.00	92.79					
Duperow Formation	52.10255236	-106.8395013	666.57	CSBR_02-342		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Leak from crack in shaft liner	BRINE-SHAFT	45800.16	683.00	34.15	323.00	26.92	456.00	11.69	16757.30	728.58	801.34			26803.22	765.81	2268.00	47.25	21.25	0.27	-133.76	-17.33
Duperow Formation	48.37325	-105.64438	2294.84	33879	2.51E+13	USGS Produced Water DB		Regional		Dst No. 1	34429.00	755.00	37.75	135.00	11.25	495.00	12.69	11819.00	513.87	575.85	610.00	10.00	17600.00	502.86	3320.00	69.17					
Duperow Formation	49.53498514	-103.4041238	1923.00	ACC-23702	1W20071102134102	Accumap	10/10/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		250948.00	1682.00	83.94	243.00	20.00	10557.00	270.69	89125.00	3876.72	4250.66	312.00	5.11	145700.00	4109.67	3300.00	68.71					
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23692	1W20071103092102	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		314369.00	6527.00	325.71	510.00	41.97	3910.00	100.26	110400.00	4802.13	5269.82	102.00	1.67	192200.00	5421.26	720.00	14.99					
Duperow Formation	49.62276467	-99.79410895	521.55	ACC-02705	1W10081801030000	Accumap	5/22/1952	Regional	CARD IS VERY ILLEGIBLE - GUESSED.		67766.00	2587.00	129.10	1020.00	83.94	0.05	0.00	21952.00	954.86	1167.89	215.00	3.52	39480.00	1113.59	2512.00	52.30					
Duperow Formation	52.10255236	-106.8395013	707.10	CSBR_02-331		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Leak from crack in liner	BRINE-SHAFT	50352.14	1500.00	75.00	750.00	62.50	1060.00	27.18	16980.10	738.27	902.94			28348.07	809.94	5070.00	105.63	23.97	0.30	-135.15	-17.26
Duperow Formation	49.12	-104.82	2386.00	U of A 00 - 017 A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#1, rec 885m (200 C+ 20m Mud+665m br SW, sal 1		85825.00	686.00	34.30	182.00	15.17	360.00	9.23	31700.00	1378.26	1438.62	191.00	3.13	52100.00	1488.57			41.30	0.52			
Duperow Formation	48.46349	-105.65064	2481.07	31541	2.51E+13	USGS Produced Water DB	10/28/1965	Regional	Chem Lab	Dst No. 4 Mfe Tool	16275.00	670.00	33.50	101.00	8.42	185.00	4.74	5168.00	224.70	272.65	390.00	6.39	8000.00	228.57	1950.00	40.63					
Duperow Formation	50.00660691	-100.7288013	804.70	ACC-06757	1W10122417030000	Accumap	N/A	Regional			87411.00	3063.00	152.85	776.00	63.86	0.05	0.00	29407.00	1279.13	1495.84	281.00	4.61	50045.00	1411.59	3839.00	79.93					
Duperow Formation	49.43015639	-105.0524447	1976.60	ACC-23720	1W20052333120100	Accumap	9/14/1965	Regional			99952.00	2321.00	115.82	440.00	36.21	0.05	0.00	35765.00	1555.69	1707.90	464.00	7.60	58332.00	1645.33	2625.00	54.65					
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23682	1W20071103092104	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		314369.00	6527.00	325.71	510.00	41.97	3910.00	100.26	110400.00	4802.13	5269.82	102.00	1.67	192200.00	5421.26	720.00	14.99					
Duperow Formation	49.57901323	-101.2219814	1096.35	ACC-09726	1W10072821020000	Accumap	5/16/1952	Regional	INSUFFICIENT WATER FOR RESISTIVITY.		277639.00	10505.00	524.23	2481.00	204.16	0.05	0.00	93846.00	4082.07	4810.46	110.00	1.80	169764.00	4788.42	933.00	19.42					
Duperow Formation	49.56739202	-105.0083955	2016.30	ACC-16414	1W20072324042100	Accumap	N/A	Regional			50811.00	1230.00	61.38	7.00	0.58	0.05	0.00	18072.00	786.09	848.08	945.00	15.49	26556.00	749.05	4000.00	83.28					
Duperow Formation	48.95	-103.49	2568.60	U of A 98 - 028 A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	Wellhead, 19/8/98		313933.00	20300.00	1015.00	2380.00	198.33	5360.00	137.44	89500.00	3891.30	5271.73	58.00	0.95	194000.00	5542.86			756.00	9.46			
Duperow Formation	52.38205516	-109.4633908	739.10	ACC-05707	1W30392525071100	Accumap	N/A	Regional			8752.00	38.00	1.90	31.00	2.55	57.00	1.46	3100.00	134.84	140.75	567.00	9.29	4530.00	127.77	400.00	8.33					
Duperow Formation	50.41015283	-108.3964718	1531.00	ACC-15135	1W30171803150100	Accumap	1/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=78.82,SEC		81078.00	4266.00	212.88	1038.00	85.42	0.05	0.00	25494.00	1108.93	1407.23	700.00	11.47	48250.00	1360.96	1685.00	35.08					
Duperow Formation	52.10255236	-106.8395013	708.02	CSBR_02-340		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Small flow from crack in shaft liner	BRINE-SHAFT	48838.89	1480.00	74.00	778.00	64.83	1080.00	27.69	16875.45	733.72	900.24			26874.36	767.84	5190.00	108.13	21.08	0.26	-135.47	-17.62
Duperow Formation	49.37630588	-109.6294431	1846.50	ACC-16037	1W30052707140100	Accumap	N/A	Regional			150287.00	2423.00	120.91	7940.00	653.39	0.05	0.00	46620.00	2027.86	2802.16	453.00	7.42	92850.00	2618.96	1.00	0.02					
Duperow Formation	49.56973556	-104.9374007	1986.00	ACC-16378	1W20072221044100	Accumap	N/A	Regional	NACL EQUIVALENT 35623.		37835.00	1524.00	76.05	279.00	22.96	853.00	21.87	11770.00	511.97	632.79	1217.00	19.95	19139.00	539.84	3053.00	63.56					
Duperow Formation	50.35556447	-108.2819695	1542.90	ACC-15203	1W30161721020100	Accumap	11/4/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=75.38,SEC		49981.00	2784.00	138.93	906.00	74.56	0.05	0.00	15022.00	653.42	866.90	305.00	5.00	29000.00	817.98	2118.00	44.10					
Duperow Formation	49.6882037	-104.1433136	1970.50	ACC-16341	1W20081632060100	Accumap	N/A	Regional			250595.00	2483.00	123.91	418.00	34.40	0.05	0.00	94687.00	4118.65	4276.96	336.00	5.51	147741.00	4167.24	4930.00	102.64					
Duperow Formation	49.56	-103.48	1989.30	U of A 98 - 123 C		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	23/9/98, Swab #14		326680.00	28200.00	1410.00	3570.00	297.50	5540.00	142.05	84700.00	3682.61	5560.32	188.00	3.08	202000.00	5771.43			1030.00	12.89			
Duperow Formation	50.38100804	-106.9700755	1538.00	ACC-23609	1W30160825160100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		4957.00	629.00	31.39	175.00	14.40	0.05	0.00	741.00	32.23	78.02	366.00	6.00	495.00	13.96	2551.00	53.11					
Duperow Formation	50.7278115	-101.9324321	708.65	ACC-05114	1W10203324013100	Accumap	N/A	Regional				1048.00	52.30	296.00	24.36	0.05	0.00	4623.00	201.09	277.75	922.00	15.11	6887.00	194.26	3279.00	68.27					
Duperow Formation	49.20947384	-101.7904321	1681.25	ACC-15679	1W10033218030100	Accumap	N/A	Regional			275504.00	18438.00	920.11	2647.00	217.82	0.05	0.00	84100.00	3658.14	4796.07	220.00	3.61	169500.00	4780.98	599.00	12.47					

Duperow Formation	50.35556447	-108.2819695	1542.90	ACC-15204	1W30161721020100	Accumap	10/8/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=73.40,SEC		49898.00	2689.00	134.19	1182.00	97.27	0.05	0.00	14676.00	638.37	869.83	500.00	8.19	29000.00	817.98	2105.00	43.83				
Duperow Formation	46.84302	-102.95197	2822.14	40110	3.31E+13	USGS Produced Water DB	4/13/1954	Regional	The Atlantic Refining Company	Dst #7	122823.00	3934.00	196.70	826.00	68.83	0.05	0.00	42632.00	1853.57	2119.10	169.00	2.77	74400.00	2125.71	864.00	18.00				
Duperow Formation	49.25315537	-109.2701655	1852.00	ACC-16044	1W30032535064100	Accumap	N/A	Regional			27169.00	861.00	42.97	316.00	26.00	328.00	8.41	8089.00	351.85	429.21	397.00	6.51	13400.00	377.97	3778.00	78.66				
Duperow Formation	51.15622286	-106.1176029	976.60	ACC-08529	1W30250129040100	Accumap	1/31/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=77.96,SEC		31528.00	1252.00	62.48	673.00	55.38	0.05	0.00	9583.00	416.84	534.70	200.00	3.28	15800.00	445.66	4123.00	85.84				
Duperow Formation	49.81091792	-100.4140843	694.15	ACC-04848	1W10102204130000	Accumap	9/13/1960	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=82.38,SEC		149272.00	5022.00	250.61	2508.00	206.39	0.05	0.00	49118.00	2136.51	2593.51	135.00	2.21	90000.00	2538.57	2558.00	53.26				
Duperow Formation	49.01596502	-109.7323296	1615.40	ACC-15533	1W30012807020100	Accumap	N/A	Regional	INSUFFICIENT SAMPLE FOR RESISTIVITY		7257.00	393.00	19.61	99.00	8.15	0.05	0.00	1831.00	79.64	107.40	1280.00	20.98	1395.00	39.35	2259.00	47.03				
Duperow Formation	49.25315537	-109.2701655	1852.00	ACC-23628	1W30032535064102	Accumap	9/13/1994	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		27169.00	861.00	42.97	316.00	26.00	328.00	8.41	8089.00	351.85	429.21	397.00	6.51	13400.00	377.97	3778.00	78.66				
Duperow Formation	49.98747725	-104.858726	1676.40	ACC-23670	1W20122107153100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		28088.00	1158.00	57.79	298.00	24.52	0.05	0.00	8779.00	381.87	464.18	568.00	9.31	12870.00	363.02	4415.00	91.92				
Duperow Formation	49.20058408	-103.0685994	2193.60	ACC-16546	1W20030807150100	Accumap	N/A	Regional			289352.00	22550.00	1125.31	2730.00	224.65	0.05	0.00	84968.00	3695.90	5045.86	115.00	1.88	178500.00	5034.83	489.00	10.18				
Duperow Formation	51.96679488	-101.0355524	359.35	ACC-00963	1W10342635160000	Accumap	9/20/1955	Regional	INSUFFICIENT SAMPLE FOR RESISTIVITY DETERMINATION		4435.00	39.00	1.95	3.00	0.25	0.05	0.00	1586.00	68.99	71.18	330.00	5.41	1745.00	49.22	623.00	12.97				
Duperow Formation	51.4144445	-102.7409247	471.80	ACC-02174	1W20280611160100	Accumap	N/A	Regional			53430.00	881.00	43.96	500.00	41.15	0.05	0.00	18895.00	821.89	907.00	370.00	6.06	30000.00	846.19	2784.00	57.96				
Duperow Formation	50.41371118	-107.8637723	1470.10	ACC-14567	1W30171409010100	Accumap	N/A	Regional			20619.00	1120.00	55.89	203.00	16.71	0.05	0.00	5852.00	254.55	327.14	433.00	7.10	6661.00	187.88	6350.00	132.21				
Duperow Formation	50.66519091	-109.2855604	1371.00	ACC-13187	1W30202405080100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUD		9748.00	833.00	41.57	196.00	16.13	0.05	0.00	2124.00	92.39	150.09	325.00	5.33	1940.00	54.72	4330.00	90.15				
Duperow Formation	50.98187799	-107.4957074	1264.00	ACC-11789	1W30231129010100	Accumap	N/A	Regional			98959.00	1962.00	97.91	2005.00	164.99	0.05	0.00	33050.00	1437.59	1700.50	128.00	2.10	55750.00	1572.50	6064.00	126.25				
Duperow Formation	49.4566739	-107.1246945	1921.80	ACC-16218	1W30060911050100	Accumap	N/A	Regional			6231.00	376.00	18.76	125.00	10.29	0.05	0.00	1459.00	63.46	92.51	575.00	9.42	840.00	23.69	2856.00	59.46				
Duperow Formation	50.82171811	-107.7733381	1458.50	ACC-23607	1W30211332030100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		105288.00	2001.00	99.86	655.00	53.90	0.05	0.00	38156.00	1659.69	1813.45	824.00	13.50	57150.00	1611.99	6502.00	135.37				
Duperow Formation	49.73281683	-106.4868427	1877.30	ACC-16103	1W30090416070100	Accumap	N/A	Regional	SAMPLED FROM TOP.		4117.00	501.40	25.02	359.90	29.62	0.05	0.00	315.00	13.70	68.64	60.80	1.00	600.40	16.94	2272.00	47.30				
Duperow Formation	46.84302	-102.95197	2822.14	40109	3.31E+13	USGS Produced Water DB	8/14/1954	Regional	Chemical & Geological Laboratories	Dst No. 7	121872.00	4524.00	226.20	735.00	61.25	0.05	0.00	41574.00	1807.57	2095.02	770.00	12.62	71496.00	2042.74	3164.00	65.92				
Duperow Formation	49.90688805	-101.4097102	1012.70	ACC-08881	1W10112908070000	Accumap	N/A	Regional			48274.00	1258.00	62.78	843.00	69.37	0.05	0.00	15601.00	678.61	810.75	575.00	9.42	23910.00	674.41	6087.00	126.73				
Duperow Formation	49.81349764	-100.9067482	842.15	ACC-07221	1W10102611030200	Accumap	8/7/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=85.64,SEC		191479.00	5617.00	280.30	2378.00	195.69	0.05	0.00	65283.00	2839.65	3315.64	370.00	6.06	115500.00	3257.83	2519.00	52.45				
Duperow Formation	49.22251849	-105.1251872	2186.90	ACC-16543	1W20032423080100	Accumap	N/A	Regional				3353.00	167.32	524.00	43.12	0.05	0.00	49310.00	2144.86	2355.31	635.00	10.41	79750.00	2249.46	1615.00	33.62				
Duperow Formation	49.06368778	-109.33752	1719.10	ACC-15783	1W30012530060100	Accumap	N/A	Regional	SAMPLE INSUFFICIENT FOR RESISTIVITY		7660.00	858.00	42.82	175.00	14.40	0.05	0.00	1386.00	60.29	117.51	190.00	3.11	1260.00	35.54	3791.00	78.93				
Duperow Formation	49.81349764	-100.9067482	842.15	ACC-07220	1W10102611030200	Accumap	8/7/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=85.88,SEC		191606.00	5640.00	281.45	2276.00	187.29	0.05	0.00	65464.00	2847.52	3316.27	390.00	6.39	115500.00	3257.83	2534.00	52.76				
Duperow Formation	49.94759863	-100.4134359	675.90	ACC-04484		Accumap	9/10/1956	Regional			189844.00	5506.00	274.76	2221.00	182.77	0.05	0.00	64972.00	2826.12	3283.66	75.00	1.23	114500.00	3229.63	2570.00	53.51				
Duperow Formation	48.97692	-104.23445		34265	2.51E+13	USGS Produced Water DB	3/2/1972	Regional	Sun Oil Co	Wellhead	142440.89	2759.00	137.95	550.79	45.90	1084.00	27.79	51287.61	2229.90	2444.11	222.29	3.64	84447.50	2412.79	2799.92	58.33				
Duperow Formation	49.73690241	-99.55077746	436.65	ACC-01721	1W10091611130000	Accumap	N/A	Regional			48350.00	2695.00	134.49	821.00	67.56	0.05	0.00	14459.00	628.93	830.98	195.00	3.20	26994.00	761.40	3168.00	65.96				
Duperow Formation	52.50233446	-109.3940454	681.50	ACC-04596	1W30412404100100	Accumap	N/A	Regional				65.00	3.24	98.00	8.06	44.00	1.13	4279.00	186.13	198.56	449.00	7.36	1198.00	33.79	7438.00	154.86				
Duperow Formation	51.94516063	-103.4092362	555.30	ACC-02966	1W20341030070100	Accumap	N/A	Regional			51266.00	844.00	42.12	499.00	41.06	0.05	0.00	18151.00	789.52	872.71	420.00	6.88	28840.00	813.47	2490.00	51.84				
Duperow Formation	50.29420514	-101.134092	727.95	ACC-05496	1W10152721090000	Accumap	N/A	Regional	TOTAL CONCENTRATION: 60817			1662.00	82.94	536.00	44.11	0.05	0.00	20761.00	903.05	1030.10	244.00	4.00	32878.00	927.37	4712.00	98.10				
Duperow Formation	49.88605879	-104.2387623	1740.00	ACC-15817	1W20111703160100	Accumap	N/A	Regional				862.00	43.02	50.00	4.11	24486.00	627.85	11792.00	512.92	1186.32	1133.00	18.57	29046.00	819.28	16772.00	349.19				
Duperow Formation	52.70937974	-109.0973611	747.40	ACC-05877	1W30432214130100	Accumap	N/A	Regional			17931.00	953.00	47.56	204.00	16.79	0.05	0.00	5265.00	229.01	293.36	363.00	5.95	7496.00	211.43	3650.00	75.99				
Duperow Formation	50.77366798	-105.3816876	1011.60	ACC-23655	1W20212510160100	Accumap	4/25/1962	Regional	PRIMARY SALINITY=ALKALI SALINITY=82.6,SECONDARY S		36934.00	1306.00	65.17	526.00	43.29	0.05	0.00	11774.00	512.14	620.60	159.00	2.61	18354.00	517.70	4815.00	100.25				
Duperow Formation	51.46916126	-106.633695	1166.80	ACC-10484	1W30290510120100	Accumap	5/28/1954	Regional	NA+K IS COMBINED IN NA.RED BRWON WATER LIKE IRONA		22688.00	1505.00	75.10	420.00	34.56	0.05	0.00	5720.00	248.81	359.19	2978.00	48.81	8040.00	226.78	4005.00	83.38				
Duperow Formation	50.35320971	-108.187538	1409.70	ACC-13832	1W30161618163100	Accumap	N/A	Regional	GRAVITY APPEARS HIGHER THAN EXPECTED FOR WATER OF		85731.00	648.00	32.34	49.00	4.03	394.00	10.10	32600.00	1418.02	1464.47	273.00	4.47	51620.00	1456.01	147.00	3.06				
Duperow Formation	49.12155162	-104.4239712	2474.70	ACC-16809	1W20021913060100	Accumap	N/A	Regional			175363.00	4063.00	202.75	2306.00	189.76	0.05	0.00	60465.00	2630.08	3022.60	1015.00	16.63	104000.00	2933.46	3514.00	73.16				
Duperow Formation	49.81349764	-100.9067482	842.15	ACC-07219	1W10102611030200	Accumap	8/6/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=87.34,SEC		239087.00	6357.00	317.23	2509.00	206.47	0.05	0.00	83062.00	3612.99	4136.69	140.00	2.29	145250.00	4096.97	1841.00	38.33				
Duperow Formation	49.04837716	-104.1757803	2512.50	ACC-16869	1W20011723072100	Accumap	N/A	Regional			56385.00	1560.00	77.85	170.00	13.99	0.05	0.00	19200.00	835.15	927.17	2180.00	35.73	26900.00	758.75	6370.00	132.62				
Duperow Formation	49.73690241	-99.55077746	433.60	ACC-01688	1W10091611130000	Accumap	11/20/1956	Regional			54420.00	2928.00	146.12	851.00	70.03	0.05	0.00	16534.00	719.19	935.33	175.00	2.87	30625.00	863.82	3307.00	68.85				
Duperow Formation	50.17716879	-109.6086582	1492.30	ACC-14786	1W30142715150100	Accumap	N/A	Regional			161576.00	8240.00	411.20	1920.00	158.00	0.05	0.00	51252.00	2229.34	2798.53	444.00	7.28	96740.00	2728.68	2980.00	62.04				
Duperow Formation	49.83320015	-101.1311299	935.70	ACC-08019	1W10102718070000	Accumap	11/30/1976	Regional	NACL EQUIV 70889		73917.00	2825.00	140.98	425.00	34.97	0.05	0.00	24659.00	1072.61	1248.55	327.00	5.36	39534.00	1115.11	6147.00	127.98				
Duperow Formation	49.20947384	-101.7904321	1646.65	ACC-15609	1W10033218030100	Accumap	N/A	Regional			256160.00	18921.00	944.21	2833.00	233.13	0.05	0.00	75764.00	3295.55	4472.89	2.00	0.03	158000.00	4456.60	640.00	13.32				
Duperow Formation	49.73660002	-104.8196009	2015.00	ACC-23675	1W20092117114100	Accumap	10/28/1997	Regional			27538.00	1119.00	55.84	143.00	11.77	293.00	7.51	8903.00	387.26	462.36	1109.00	18.18	14387.00	405.80	1584.00	32.98				
Duperow Formation	50.41015283	-108.3964718	1553.30	ACC-15271	1W30171803150100	Accumap	1/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=78.82,SEC		105251.00	9052.00	451.72	2303.00	189.52	0.05	0.00	27859.00	1211.80	1853.03	325.00	5.33	61500.00	1734.69	1377.00	28.67				
Duperow Formation	49.07376953	-104.6572905	2369.20	ACC-16674	1W20012031010100	Accumap	N/A	Regional			147384.00	5602.00	279.55	1659.00	136.52	0.05	0.00	48998.00	2131.29	2547.37	255.00	4.18	88250.00	2489.21	2620.00	54.55				
Duperow Formation	50.01956318	-103.0049746	1412.70	ACC-13865	1W20120826042100	Accumap	N/A	Regional			54053.00	1360.00	67.87	251.00	20.66	0.05	0.00	18637.00	810.66	899.72	166.00	2.72	26584.00	749.84	7040.00	146.57				
Duperow Formation	49.05934339	-100.8031789	1271.00	ACC-11868	1W10012530010000	Accumap	8/6/1956	Regional			219434.00	8772.00	437.75	1652.00	135.94	0.05	0.00	73884.00	3213.77	3787.46	418.00	6.85	132250.00	3730.29	2458.00	51.18				
Duperow Formation	50.22754497	-105.7896883	1722.40	ACC-15792	1W20152804080100	Accumap	11/2/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=38.32,SEC		6805.00	950.00	47.41	266.00	21.89	0.05	0.00	989.00	43.02	112.32	245.00	4.02	2045.00	57.68	2434.00	50.68				
Duperow Formation	49.05934339	-100.8031789	1271.00	ACC-11866	1W10012530010002	Accumap	N/A	Regional				8772.00	437.75	1652.00	135.94	0.05	0.00	73884.00	3213.77	3787.46	418.00	6.85	132250.00	3730.29	2458.00	51.18				
Duperow Formation	51.70813908	-105.4502599	1062.20	ACC-09279	1W20322502042100	Accumap	N/A	Regional			177000.00	2190.00	109.29	400.00	32.92	3790.00	97.18	65080.00	2830.82	3069.96	260.00	4.26	99600.00	2809.35	5680.00	118.26				
Duperow Formation	50.20258478	-107.2817481	1732.20	ACC-15808	1W30141027090100	Accumap	N/A	Regional	INSUFFICIENT DATA FOR CORRELATION		4395.00	592.00	29.54	79.00	6.50	0.05	0.00	669.00	29.10	65.14	264.00	4.33	371.00	10.46	2420.00	50.38				
Duperow Formation	48.4065	-105.47016	2352.45	33232	2.51E+13	USGS Produced Water DB	2/12/1961	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 1 Top Fluid Recovery	309401.00	3084.00	154.20	422.28	35.19	0.05	0.00	117112.32	5091.84	5281.23	166.57	2.73	183109.99	5231.71	5589.35	116.44				
Duperow Formation	51.99642251	-106.9230471	743.70	ACC-05796	1W30350710140100	Accumap	N/A	Regional			49736.00	1413.00	70.51	778.00	64.02	0.05	0.00	16334.00	710.49	845.06	61.00	1.00	26499.00	747.44	4650.00	96.81				
Duperow Formation	49.05906476	-105.0753198	2350.75	ACC-16669	1W20012330040100	Accumap	N/A	Regional			164970.00	8628.00	430.56	1277.00	105.09	0.05	0.00	53102.00	2309.81	2845.45	975.00	15.98	98500.00	2778.33	2488.00	51.80				
Duperow Formation	49.88605879	-104.2387623	1719.00	ACC-15780	1W20111703160100	Accumap	N/A	Regional				823.00	41.07	12.00	0.99	26215.00	672.18	11022.00	479.43	1191.98	1220.00	19.99	29079.00	820.21	16909.00	352.04				
Duperow Formation	51.34544607	-107.5068236	1150.60	ACC-23596	1W30271132010100	Accumap	2/5/1959	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY-78.62,SEC		29895.00	1122.00	55.99	636.00	52.34	0.05	0.00	9148.00	397.92	506.24	185.00	3.03	14875.00	419.57	4023.00	83.76				
Duperow Formation	50.77366798	-105.3816876	1144.50	ACC-23653	1W20212510160100	Accumap	4/25/1962	Regional	NA=100,000 PPM.K=724PPM,BR2=54 PPM,PRIMARY SALINI		259449.00	2216.00	110.58	409.00	33.66	0.05	0.00	98633.00	4290.29	4434.54	12.00	0.20	154251.00	4350.86	3868.00	80.53				
Duperow Formation	46.84302	-102.95197	2822.14	40114	3.31E+13	USGS Produced Water DB	4/13/1954	Regional	Petroleum Eng Lab - Atlantic Refining Co	Dst #7	103503.00	1882.00	94.10	254.00	21.17	0.05	0.00	37598.00	1634.70	1749.96	258.00	4.23	58320.00	1666.29	5161.00	107.52				
Duperow Formation	50.65101539	-102.3508093	826.00	ACC-07055	1W20190327040100	Accumap	N/A	Regional				3222.00	160.79	688.00	56.62	0.05	0.00	32016.00	1392.62	1610.02	75.00	1.23	55000.00	1551.35	2745.00	57.15				
Duperow Formation	49.86462119	-100.9289383	848.10	ACC-07281	1W10102627070200	Accumap	4/18/1955	Regional	PROPERTIES OF REACTION IN PERCENT;PRIMARY SALINIT		240730.00	5781.00	288.49	2104.00	173.14	0.05	0.00	84954.00	3695.29	4156.92	66.00	1.08	146000.00	4118.13	1858.00	38.68				
Duperow Formation	49.56	-103.48	1876.00	U of A 98 - 123 B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	23/9/98, Swab #13		319400.00	29000.00	1450.00	3670.00	305.83	5770.00	147.95	82300.00	3578.26	5511.19	163.00	2.67	196000.00	5600.00			1000.00	12.52		
Duperow Formation	49.18629052	-104.7273365	2323.00	ACC-16650	1W20032102150100	Accumap	N/A	Regional	GREENISH YELLOW FILTRTE RECOVERED FROM A SAMPLE C		117747.00	2482.00	123.86	2501.00	205.81	1564.00	40.10	38439.00	1672.00	2041.67	1440.00	23.60	69000.00	1946.24	2321.00	48.32				
Duperow Formation	49.6882037	-104.1433136	1973.60	ACC-16349	1W20081632060100	Accumap	N/A	Regional			23755.00	408.00	20.36	62.00	5.10	0.05	0.00	8648.00	376.17	401.66	244.00	4.00	13232.00	373.23	1160.00	24.15				
Duperow Formation	49.18629052	-104.7273365	2323.00	ACC-16647	1W20032102150102	Accumap	N/A	Regional				2482.00	123.86	2501.00	205.81	1564.00	40.10	38439.00	1672.00	2041.67	1440.00	23.60	69000.00	1946.24	2321.00	48.32				
Duperow Formation	49.45502281	-104.8786079	2103.10	ACC-16461	1W20062210080100	Accumap	N/A	Regional			49998.00	1386.00	69.17	315.00	25.92	0.05	0.00	17209.00	748.55	843.67	630.00	10.32	27000.00	761.57	3457.00	71.97				

Duperow Formation	50.17623209	-105.0974922	1555.10	ACC-23667	1W20142316130100	Accumap	7/31/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=84.78,SEC		57614.00	1334.00	66.57	1020.00	83.94	0.05	0.00	19270.00	838.20	988.70	230.00	3.77	32250.00	909.66	3627.00	75.51				
Duperow Formation	49.56	-103.48	1876.00	U of A 98 - 123 A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	23/9/98, Swab #12		326208.00	28100.00	1405.00	3550.00	295.83	5600.00	143.59	83300.00	3621.74	5494.44	190.00	3.11	203000.00	5800.00			1020.00	12.77		
Duperow Formation	50.45199169	-101.7705075	833.00	SCS-IB-14-390		Potash Corp Sample Set	2013	Scissors	P3 Drill hole (814.2m grout curtain? Water depth	BRINE-SHAFT	221633.14	3650.00	182.50	1500.00	125.00	1500.00	38.46	76800.00	3339.13	3690.25	46.00	0.75	135231.55	3863.76	2547.60	53.07	194.09	2.43	-47.44	-2.21
Duperow Formation	50.66519091	-109.2855604	1328.90	ACC-12504	1W30202405080100	Accumap	N/A	Regional			40984.00	1482.00	73.96	372.00	30.61	0.05	0.00	13855.00	602.66	707.23	755.00	12.37	20390.00	575.13	4130.00	85.99				
Duperow Formation	48.443	-102.81217	3130.60	40581	3.31E+13	USGS Produced Water DB	8/7/1964	Regional	Chem Lab	Dst No. 1 (top)	280147.00	43368.00	2168.40	3864.00	322.00	8300.00	212.82	50729.00	2205.61	4910.27	866.00	14.20	173000.00	4942.86	450.00	9.38				
Duperow Formation	50.79646612	-102.7406444	770.80	ACC-06233	1W20210611140100	Accumap	N/A	Regional			32160.00	1101.00	54.94	131.00	10.78	0.05	0.00	10672.00	464.21	529.93	120.00	1.97	14750.00	416.04	5386.00	112.14				
Duperow Formation	49.62276467	-99.79410895	599.40	ACC-03389	1W10081801030000	Accumap	N/A	Regional	CAN'T READ CARD.		33085.00	870.00	43.42	394.00	32.42	0.05	0.00	11108.00	483.17	559.01	215.00	3.52	17371.00	489.97	3127.00	65.10				
Duperow Formation	49.81486317	-101.6194507	1086.60	ACC-09604	1W10103110040100	Accumap	N/A	Regional			164042.00	4304.00	214.78	1179.00	97.02	0.05	0.00	57640.00	2507.20	2819.00	365.00	5.98	97500.00	2750.12	3054.00	63.58				
Duperow Formation	49.3205931	-104.5984377	2296.10	ACC-16602	1W20042026030100	Accumap	10/15/1959	Regional	HYPOTHETICAL COMBINATIONS:CALCIUM CHLORIDE=5983,M		155580.00	2160.00	107.79	486.00	39.99	0.05	0.00	57477.00	2500.11	2650.61	981.00	16.08	90525.00	2553.38	3875.00	80.68				
Duperow Formation	49.20058408	-103.0685994	2159.50	ACC-16517	1W20030807150100	Accumap	7/30/1956	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY: 87.00,SE		161739.00	5525.00	275.71	1051.00	86.49	0.05	0.00	55755.00	2425.21	2787.41	315.00	5.16	97000.00	2736.02	2253.00	46.91				
Duperow Formation	49.59003081	-104.7704465	2103.10	ACC-16460	1W20072127100100	Accumap	N/A	Regional			69418.00	1381.00	68.92	254.00	20.90	0.05	0.00	25071.00	1090.53	1180.34	180.00	2.95	39500.00	1114.15	2996.00	62.38				
Duperow Formation	50.84350113	-109.4241019	1283.20	ACC-11974	1W30222505090100	Accumap	N/A	Regional			275715.00	5003.00	249.66	489.00	40.24	0.05	0.00	101936.00	4433.97	4723.91	813.00	13.32	165567.00	4670.04	1906.00	39.68				
Duperow Formation	49.35092148	-109.2372905	1797.70	ACC-15919	1W30052501010100	Accumap	N/A	Regional			5115.00	141.00	7.04	185.00	15.22	0.05	0.00	1516.00	65.94	88.85	157.00	2.57	2823.00	79.63	275.00	5.73				
Duperow Formation	51.06848812	-105.4875499	985.40	ACC-23647	1W20242530030100	Accumap	8/21/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=90,SECOND		113922.00	2616.00	130.55	771.00	63.45	0.05	0.00	40102.00	1744.34	1938.33	475.00	7.78	64128.00	1808.82	5830.00	121.38				
Duperow Formation	48.41456	-105.50029	2339.34	31666	2.51E+13	USGS Produced Water DB	4/29/1965	Regional	Chem Lab	Dst	46696.00	979.00	48.95	132.00	11.00	555.00	14.23	16505.00	717.61	793.23	537.00	8.80	26600.00	760.00	1650.00	34.38				
Duperow Formation	48.443	-102.81217	3130.60	40582	3.31E+13	USGS Produced Water DB	8/7/1964	Regional	Chem Lab	Dst No. 1 (middle)	336899.00	51986.00	2599.30	4704.00	392.00	8700.00	223.08	62087.00	2699.43	5915.25	512.00	8.39	209000.00	5971.43	160.00	3.33				
Duperow Formation	49.4273085	-102.6301098	1840.00	ACC-23728	1W20050533054100	Accumap	10/19/1999	Regional	PALE YELLOW COLOURED FILTRATE RECOVERED FROM A SA		317988.00	8184.00	408.40	1593.00	131.09	4301.00	110.28	112602.00	4897.91	5547.41	610.00	10.00	190000.00	5359.21	698.00	14.53				
Duperow Formation	49.12155162	-104.4239712	2465.20	ACC-16787	1W20021913060100	Accumap	N/A	Regional			135760.00	4015.00	200.36	1175.00	96.69	0.05	0.00	46616.00	2027.68	2324.73	550.00	9.01	78500.00	2214.20	4904.00	102.10				
Duperow Formation	51.8552	-105.2103		23982		IMII Project New Data	42060	Lanigan	upper Duperow		64200.00	1470.00	73.50	490.00	40.83	1460.00	37.44	20000.00	869.57	1022.41	106.00	1.74	35200.00	1005.71	5500.00	114.58	56.00	0.70		
Duperow Formation	50.68083665	-101.1864248	609.90	ACC-03503	1W10192732160000	Accumap	N/A	Regional			82517.00	2041.00	101.85	188.00	15.47	0.05	0.00	29496.00	1283.00	1400.33	61.00	1.00	46466.00	1310.64	4253.00	88.55				
Duperow Formation	48.03682	-105.14753	2424.38	33418	2.51E+13	USGS Produced Water DB	9/3/1969	Regional	Chemical & Geological Laboratories	Dst No. 4 Top	283418.00	4884.00	244.20	405.00	33.75	3900.00	100.00	102446.00	4454.17	4832.12	305.00	5.00	170000.00	4857.14	1633.00	34.02				
Duperow Formation	51.56716223	-104.693477	682.80	ACC-23638	1W20320130600100	Accumap	2/5/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=81.94,SEC		26413.00	939.00	46.86	392.00	32.26	0.05	0.00	8244.00	358.59	437.71	85.00	1.39	11750.00	331.42	5046.00	105.06				
Duperow Formation	50.17716879	-109.6086582	1414.60	ACC-13897	1W30142715150100	Accumap	N/A	Regional			143401.00	2670.00	133.24	605.00	49.79	0.05	0.00	51958.00	2260.05	2443.07	308.00	5.05	82360.00	2323.08	5500.00	114.51				
Duperow Formation	47.73378	-102.90702	2900.17	40117	3.31E+13	USGS Produced Water DB		Regional	Yapuncich-sanderson Laboratories		341683.00	22157.00	1107.85	2760.80	230.07	0.05	0.00	105998.06	4608.61	5946.53	1011.50	16.58	209873.16	5996.38	395.08	8.23				
Duperow Formation	50.5595004	-109.8349887	1347.20	ACC-12797	1W30182831010100	Accumap	N/A	Regional			14279.00	828.00	41.32	282.00	23.21	0.05	0.00	3733.00	162.38	226.90	1045.00	17.13	4760.00	134.26	3631.00	75.60				
Duperow Formation	50.98187799	-107.4957074	1249.70	ACC-11664	1W30231129010100	Accumap	N/A	Regional			13920.00	854.00	42.62	175.00	14.40	0.05	0.00	3880.00	168.77	225.79	283.00	4.64	5350.00	150.90	3378.00	70.33				
Duperow Formation	46.84302	-102.95197	2749.60	40111	3.31E+13	USGS Produced Water DB	4/1/1954	Regional	Petroleum Eng Lab - Atlantic Refining Co	Dst #2	167731.00	4516.00	225.80	924.00	77.00	0.05	0.00	59311.00	2578.74	2881.54	220.00	3.61	100200.00	2862.86	2560.00	53.33				
Duperow Formation	49.37630588	-109.6294431	1727.00	ACC-15800	1W30052707140100	Accumap	N/A	Regional			6867.00	625.00	31.19	197.00	16.21	0.05	0.00	1300.00	56.55	103.95	762.00	12.49	1143.00	32.24	2840.00	59.13				
Duperow Formation	52.10514214	-108.7792935	899.20	ACC-07710	1W30362022060100	Accumap	N/A	Regional			59616.00	1666.00	83.14	651.00	53.57	0.05	0.00	20003.00	870.08	1006.83	600.00	9.83	31580.00	890.76	5115.00	106.49				
Duperow Formation	49.60189346	-105.2640361	1975.00	ACC-16353	1W20072536074100	Accumap	N/A	Regional			110662.00	53.00	2.64	10.00	0.82	12008.00	307.90	34332.00	1493.36	1803.95	446.00	7.31	51622.00	1456.07	12024.00	250.34				
Duperow Formation	51.2217415	-106.5130882	1182.00	ACC-23602	1W30260416120100	Accumap	6/16/1954	Regional	NA+K IS COMBINED IN NA.		19276.00	1590.00	79.35	427.00	35.14	0.05	0.00	4620.00	200.96	315.44	1481.00	24.27	7930.00	223.68	3228.00	67.21				
Duperow Formation	49.27228498	-100.7793253	1070.80	ACC-09378	1W10042503050000	Accumap	N/A	Regional	MILLIGRAM EQUIVALENTS MULTIPLIED BY 10 ON THE PAT		13201.00	677.00	33.78	210.00	17.28	0.05	0.00	3682.00	160.16	211.22	1720.00	28.19	3200.00	90.26	3712.00	77.28				
Duperow Formation	49.37630588	-109.6294431	1704.40	ACC-15752	1W30052707140100	Accumap	N/A	Regional			26366.00	1425.00	71.11	370.00	30.45	0.05	0.00	7648.00	332.67	434.23	953.00	15.62	11600.00	327.19	4370.00	90.98				
Duperow Formation	49.20058408	-103.0685994	2145.20	ACC-16494	1W20030807150100	Accumap	N/A	Regional			247979.00	9020.00	450.12	874.00	71.92	0.05	0.00	86210.00	3749.92	4271.97	140.00	2.29	150500.00	4245.06	1235.00	25.71				
Duperow Formation	49.74476052	-101.1418938	927.05	ACC-07951	1W10092718050000	Accumap	5/22/1952	Regional				2594.00	129.45	788.00	64.85	0.05	0.00	54779.00	2382.75	2577.05	695.00	11.39	87734.00	2474.66	4321.00	89.96				
Duperow Formation	51.34544607	-107.5068236	1196.00	ACC-23597	1W30271132010100	Accumap	2/5/1959	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY-83.68,SEC		59090.00	1712.00	85.43	965.00	79.41	0.05	0.00	19414.00	844.46	1009.31	170.00	2.79	32250.00	909.66	4665.00	97.12				
Duperow Formation	48.41976	-108.02658	1186.28	32309	2.51E+13	USGS Produced Water DB	12/10/1954	Regional	Chem Lab	Dst	2442.00	227.00	11.35	86.00	7.17	0.05	0.00	447.00	19.43	37.95	319.00	5.23	118.00	3.37	1407.00	29.31				
Duperow Formation	49.83320015	-101.1311299	935.70	ACC-08020	1W10102718070000	Accumap	11/19/1976	Regional	NACL EQUIV 70672		72789.00	2889.00	144.17	464.00	38.18	0.05	0.00	24267.00	1055.56	1237.91	382.00	6.26	40475.00	1141.65	4312.00	89.78				
Duperow Formation	50.29420514	-101.134092	728.00	ACC-05498	1W10152721090000	Accumap	N/A	Regional	TOTAL CONCENTRATION : 31963			1235.00	61.63	325.00	26.74	0.05	0.00	10212.00	444.20	532.57	603.00	9.88	15529.00	438.02	4041.00	84.13				
Duperow Formation	48.23855	-99.22962	664.46	40531	3.30E+13	USGS Produced Water DB	9/1/1954	Regional	Chemical & Geological Laboratories	Dst # 1	17007.00	350.00	17.50	212.00	17.67	0.05	0.00	5859.00	254.74	289.91	122.00	2.00	9300.00	265.71	1226.00	25.54				
Duperow Formation	50.15160932	-107.8390145	1647.70	ACC-15611	1W30141410030100	Accumap	N/A	Regional				855.00	42.67	260.00	21.40	0.05	0.00	3772.00	164.07	228.14	178.00	2.92	5700.00	160.78	3099.00	64.52				
Duperow Formation	49.67987895	-103.3454729	1740.00	ACC-23679	1W20081030151100	Accumap	1/26/1998	Regional	ANALYSIS PERFORMED ON A YELLOW FILTRATE RECOVERED		293607.00	7167.00	357.65	2598.00	213.79	5767.00	147.87	101200.00	4401.95	5120.90	217.00	3.56	175600.00	4953.04	1058.00	22.03				
Duperow Formation	50.41015283	-108.3964718	1388.10	ACC-13496	1W30171803150100	Accumap	1/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=93.1,SECO		68734.00	1215.00	60.63	226.00	18.60	0.05	0.00	24600.00	1070.04	1149.27	370.00	6.06	35000.00	987.22	7511.00	156.38				
Duperow Formation	49.52130735	-103.4159263	1889.00	ACC-23707	1W20061134134100	Accumap	10/31/1997	Regional	ANALYSIS PERFORMED ON A YELLOW FILTRATE RECOVERED		220532.00	3564.00	177.85	291.00	23.95	9580.00	245.64	72450.00	3151.40	3598.22	420.00	6.88	129100.00	3641.44	5127.00	106.74				
Duperow Formation	48.34152	-105.4877	2357.93	31456	2.51E+13	USGS Produced Water DB	1/22/1962	Regional	Chem Lab	Dst No. 3 Bottom	68326.00	778.00	38.90	134.00	11.17	0.05	0.00	25448.00	1106.43	1156.50	440.00	7.21	38000.00	1085.71	3749.00	78.10				
Duperow Formation	51.2217415	-106.5130882	1148.50	ACC-23603	1W30260416120100	Accumap	6/16/1954	Regional	NA+K IS COMBINED IN NA.		9713.00	719.00	35.88	305.00	25.10	0.05	0.00	2108.00	91.69	152.67	653.00	10.70	2488.00	70.18	3440.00	71.62				
Duperow Formation	51.83248831	-105.6845585	707.70	ACC-05092	1W20332618120100	Accumap	N/A	Regional			110064.00	1590.00	79.35	932.00	76.70	0.05	0.00	39397.00	1713.67	1869.71	37.00	0.61	60876.00	1717.09	7196.00	149.82				
Duperow Formation	50.68083665	-101.1864248	573.90	ACC-03133	1W10192732160000	Accumap	N/A	Regional			59010.00	1461.00	72.91	328.00	26.99	0.05	0.00	20694.00	900.14	1000.04			32384.00	913.43	4101.00	85.38				
Duperow Formation	51.34108321	-103.0238273	652.60	ACC-04130	1W20270814160100	Accumap	N/A	Regional	NACL EQUIVALENT= 97462.		98827.00	918.00	45.81	508.00	41.80	780.00	20.00	35085.00	1526.11	1633.68	481.00	7.88	58104.00	1638.90	2951.00	61.44				
Duperow Formation	50.5595004	-109.8349887	1426.20	ACC-14080	1W30182831010100	Accumap	N/A	Regional			75399.00	2339.00	116.72	665.00	54.72	0.05	0.00	25538.00	1110.84	1282.29	715.00	11.72	42000.00	1184.67	4142.00	86.24				
Duperow Formation	49.57901323	-101.2219814	1151.85	ACC-10312	1W10072821020000	Accumap	5/16/1952	Regional	INSUFFICIENT WATER FOR RESISTIVITY.		272285.00	7975.00	397.97	1988.00	163.59	0.05	0.00	95233.00	4142.40	4703.97	85.00	1.39	165816.00	4677.07	1188.00	24.73				
Duperow Formation	49.7337296	-101.5296342	1142.25	ACC-10185	1W10093008123100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING APPROXI		77424.00	1289.00	64.32	112.00	9.22	375.00	9.62	27860.00	1211.84	1295.01	244.00	4.00	39000.00	1100.05	8543.00	177.86				
Duperow Formation	52.43235676	-109.6509415	766.00	ACC-23573	1W30402610161103	Accumap	1/22/2010	Regional			46941.00	553.00	27.60	378.00	31.11	513.00	13.15	16200.00	704.66	776.48	1070.00	17.54	28200.00	795.42	27.00	0.56				
Duperow Formation	52.43235676	-109.6509415	766.00	ACC-06161	1W30402610161100	Accumap	N/A	Regional			46941.00	553.00	27.60	378.00	31.11	513.00	13.15	16200.00	704.66	776.48	1070.00	17.54	28200.00	795.42	27.00	0.56				
Duperow Formation	50.00660691	-100.7288013	698.10	ACC-04911	1W10122417030000	Accumap	N/A	Regional			140740.00	3989.00	199.06	1172.00	96.45	0.05	0.00	48819.00	2123.51	2419.01	159.00	2.61	83104.00	2344.06	3497.00	72.81				
Duperow Formation	49.19386249	-104.2799062	2325.00	ACC-16657	1W20031707070100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUD		72946.00	1361.00	67.92	49.00	4.03	8348.00	214.05	19170.00	833.85	1119.31	244.00	4.00	30600.00	863.11	12790.00	266.29				
Duperow Formation	53.68817081	-109.6954039	663.90	ACC-04299	1W30542625010100	Accumap	N/A	Regional			36981.00	397.00	19.81	266.00	21.89	0.05	0.00	13589.00	591.09	632.79	670.00	10.98	22028.00	621.33	31.00	0.65				
Duperow Formation	49.0508242	-103.6006722	2449.00	ACC-16766	1W20011219112100	Accumap	N/A	Regional			291881.00	1580.00	78.85	4.00	0.33	5281.00	135.41	108829.00	4733.79	4948.04	33.00	0.54	172794.00	4873.89	3206.00	66.75				
Duperow Formation	52.94184143	-103.2724347	355.70	ACC-23631	1W20460905150100	Accumap	10/24/1955	Regional	PRIMARY SALINITY=90.10,PRIMARY ALKALINITY=0.96,SE		4701.00	87.00	4.34	33.00	2.72	0.05	0.00	1650.00	71.77	78.83	425.00	6.97	2020.00	56.98	677.00	14.10				
Duperow Formation	49.74	-104.82	2022.00	U of S 97 - 091A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#2, rec 1930m brackish water, sal 109,600 tds		42245.00	1110.00	55.50	114.00	9.50	338.00	8.67	14500.00	630.43	706.47	125.00	2.05	25400.00	725.71			37.30	0.47		
Duperow Formation	50.4714	-101.5451	741.27	RMBR_02-350		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	from crack in wall - using syringe	BRINE-SHAFT	226936.58	3090.00	154.50	1290.00	107.50	2820.00	72.31	82189.85	3573.47	3907.78			136196.00	3891.31	3570.00	74.38	156.79	1.96	-69.62	-6.13
Duperow Formation	53.58607747	-109.9105217	556.00	ACC-02978	1W30532722040100	Accumap	N/A	Regional			41859.00	1339.00	66.82	548.00	45.10	0.05	0.00	13945.00	606.57	718.49	355.00	5.82	25500.00	719.26	172.00	3.58				
Duperow Formation	49.20056811	-105.2812578	2278.10	ACC-16590	1W20032510160100	Accumap	N/A	Regional			55778.00	1510.00	75.35	495.00	40.73	0.05	0.00	19283.00	838.76	954.85	140.00	2.29	31950.00	901.19	2400.00	49.97				
Duperow Formation	50.51406887	-105.121352	1274.10	ACC-23658	1W20182316042100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.SAMPLED FROM MIDDLE.		21307.00	990.00	49.40	622.00	51.18	0.05	0.00	6080.00	264.47	365.05	230.00	3.77	11200.00	315.91	2185.00	45.49				
Duperow Formation	52.10514214	-108.7792935	899.20	ACC-07707	1W30362022060100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUDDY WATER		54883.00	1578.00	78.75	554.00	45.59	0.05	0.00	18395.00	800.14	924.51	665.00	10.90	28760.00	811.21	4930.00	102.64				
Duperow Formation	49.35066758	-104.7938282	2187.50	ACC-23721	1W20052105021100	Accumap	5/4/2000	Regional	PALE YELLOW COLOURED FILTRATE RECOVERED FROM MUDD		44700.00	2002.00	99.91	328.00	26.99	550.00	14.10	13300.00	578.52	719.48	1342.00	21.99	23400.00	660.03	3514.00	73.16				

Duperow Formation	49.98747725	-104.858726	1700.80	ACC-23671	1W20122107153100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.SAMPLED FROM BOTTOM.		110195.00	1166.00	58.19	715.00	58.84	0.05	0.00	40590.00	1765.57	1882.59	124.00	2.03	63980.00	1804.64	3620.00	75.37				
Duperow Formation	51.51279013	-104.9219141	740.70	ACC-05740	1W20292129100100	Accumap	N/A	Regional			52219.00	1508.00	75.25	411.00	33.82	0.05	0.00	17717.00	770.65	879.72	130.00	2.13	27375.00	772.15	5078.00	105.72				
Duperow Formation	49.81653079	-106.5430882	1711.50	ACC-15767	1W30100418040102	Accumap	3/7/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=35.90,SEC		4137.00	562.00	28.05	156.00	12.84	0.05	0.00	526.00	22.88	63.76	170.00	2.79	312.00	8.80	2479.00	51.61				
Duperow Formation	50.16523	-102.9984894	1388.70	ACC-13497	1W20140814030100	Accumap	N/A	Regional			162084.00	3608.00	180.05	696.00	57.27	0.05	0.00	58318.00	2536.69	2774.01	325.00	5.33	95500.00	2693.71	3637.00	75.72				
Duperow Formation	49.44482464	-102.7039487	1892.00	ACC-23713	1W20060602090100	Accumap	2/3/1998	Regional			294522.00	2445.00	122.01	229.00	18.84	2100.00	53.85	111103.00	4832.71	5027.28	108.00	1.77	176072.00	4966.35	2443.00	50.86				
Duperow Formation	51.76710156	-109.1847872	1088.00	ACC-23588	1W30322327030100	Accumap	2/18/1985	Regional	CALCIUM CARBONATE SCALING INDEX=1.06 AT20C,1.24 A		188022.00	7324.00	365.49	2140.00	176.10	5136.00	131.69	58500.00	2544.61	3231.70	1611.00	26.40	110913.00	3128.45	2398.00	49.93				
Duperow Formation	49.47138519	-101.7798032	1441.25	ACC-14276	1W10063207160100	Accumap	12/22/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=92.16,SEC		180320.00	3863.00	192.77	599.00	49.29	0.05	0.00	65466.00	2847.61	3089.68	293.00	4.80	107000.00	3018.08	3248.00	67.62				
Duperow Formation	52.34907671	-109.4714131	748.90	ACC-05890	1W30392513031100	Accumap	N/A	Regional			10971.00	113.00	5.64	75.00	6.17	77.00	1.97	3600.00	156.59	170.80	1100.00	18.03	5410.00	152.60	584.00	12.16				
Duperow Formation	49.05934339	-100.8031789	1220.25	ACC-11378	1W10012530010002	Accumap	N/A	Regional				2210.00	110.28	314.00	25.84	0.05	0.00	11046.00	480.47	616.60	1036.00	16.98	17875.00	504.19	4593.00	95.63				
Duperow Formation	49.05934339	-100.8031789	1220.25	ACC-11379	1W10012530010000	Accumap	8/6/1956	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=77.94,SEC		36548.00	2210.00	110.28	314.00	25.84	0.05	0.00	11046.00	480.47	616.60	1036.00	16.98	17875.00	504.19	4593.00	95.63				
Duperow Formation	49.05934339	-100.8031789	1220.25	ACC-11380	1W10012530010000	Accumap	8/6/1956	Regional			37074.00	2210.00	110.28	314.00	25.84	0.05	0.00	11046.00	480.47	616.60	1036.00	16.98	17875.00	504.19	4593.00	95.63				
Duperow Formation	50.91658197	-102.3978961	702.60	ACC-04985	1W20220329040100	Accumap	N/A	Regional			188378.00	3595.00	179.40	867.00	71.35	0.05	0.00	68448.00	2977.32	3228.07	120.00	1.97	111750.00	3152.06	3598.00	74.91				
Duperow Formation	50.35556447	-108.2819695	1482.50	ACC-14706	1W30161721020100	Accumap	10/8/1957	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=96.24,SEC		299234.00	1697.00	84.68	1320.00	108.62	0.05	0.00	113473.00	4935.80	5129.11	285.00	4.67	179250.00	5055.99	3354.00	69.83				
Duperow Formation	51.99642251	-106.9230471	794.00	ACC-06619	1W30350710140100	Accumap	N/A	Regional			74828.00	2093.00	104.45	689.00	56.70	0.05	0.00	25529.00	1110.45	1271.59	315.00	5.16	41272.00	1164.13	4930.00	102.64				
Duperow Formation	49.52211068	-106.4195467	1900.40	ACC-23619	1W30060436150100	Accumap	8/13/1958	Regional	SAMPLED 563.88M BELOW TOP OF FLUID.SIMILAR TO DUP		5581.00	667.00	33.29	69.00	5.68	0.05	0.00	1047.00	45.54	84.51	412.00	6.75	986.00	27.81	2400.00	49.97				
Duperow Formation	51.34108321	-103.0238273	652.60	ACC-04127	1W20270814160100	Accumap	N/A	Regional	NACL EQUIVALENT 97383.		99204.00	939.00	46.86	505.00	41.56	677.00	17.36	34674.00	1508.23	1613.96	488.00	8.00	58075.00	1638.08	3846.00	80.07				
Duperow Formation	50.01322704	-106.2352357	1678.20	ACC-15672	1W30120220090100	Accumap	N/A	Regional	NA&K IS COMBINED IN NA.ANALYSIS NO.3		3437.00	343.00	17.12	148.00	12.18	0.05	0.00	617.00	26.84	56.14	207.00	3.39	361.00	10.18	1761.00	36.66				
Duperow Formation	49.5310012	-103.4098898	1879.00	ACC-23681	1W20071103092104	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		247180.00	4404.00	219.77	146.00	12.01	4594.00	117.79	88550.00	3851.71	4200.99	300.00	4.92	146400.00	4129.41	2774.00	57.75				
Duperow Formation	49.5310012	-103.4098898	1879.00	ACC-23686	1W20071103092103	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		247180.00	4404.00	219.77	146.00	12.01	4594.00	117.79	88550.00	3851.71	4200.99	300.00	4.92	146400.00	4129.41	2774.00	57.75				
Duperow Formation	49.5310012	-103.4098898	1879.00	ACC-23691	1W20071103092102	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		247180.00	4404.00	219.77	146.00	12.01	4594.00	117.79	88550.00	3851.71	4200.99	300.00	4.92	146400.00	4129.41	2774.00	57.75				
Duperow Formation	50.06422841	-109.5629753	1329.80	ACC-12521	1W30132712020100	Accumap	N/A	Regional			65044.00	1056.00	52.70	232.00	19.09	0.05	0.00	20726.00	901.53	973.32	944.00	15.47	11086.00	312.70	31000.00	645.42				
Duperow Formation	49.5310012	-103.4098898	1879.00	ACC-23698	1W20071103092100	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		247180.00	4404.00	219.77	146.00	12.01	4594.00	117.79	88550.00	3851.71	4200.99	300.00	4.92	146400.00	4129.41	2774.00	57.75				
Duperow Formation	49.04837716	-104.1757803	2512.50	ACC-16868	1W20011723072100	Accumap	N/A	Regional			51018.00	1900.00	94.82	153.00	12.59	0.05	0.00	16500.00	717.71	825.29	3180.00	52.12	21900.00	617.72	7380.00	153.65				
Duperow Formation	49.73690241	-99.55077746	422.15	ACC-01537	1W10091611130000	Accumap	N/A	Regional			37646.00	2131.00	106.34	701.00	57.69	0.05	0.00	10989.00	477.99	642.02	415.00	6.80	19945.00	562.58	3417.00	71.14				
Duperow Formation	50.4714	-101.5451	624.84	RMBR_02-364		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	collecting drips in pump station	BRINE-SHAFT	189354.26	1030.00	51.50	406.00	33.83	300.00	7.69	76583.89	3329.73	3422.76			107763.72	3078.96	9390.00	195.63	133.97	1.68	-64.30	-5.83
Duperow Formation	49.52130735	-103.4159263	1886.00	ACC-23709	1W20061134134100	Accumap	10/31/1997	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		145332.00	2803.00	139.88	267.00	21.97	12708.00	325.85	43470.00	1890.84	2377.71	339.00	5.56	78700.00	2219.84	7045.00	146.68				
Duperow Formation	47.64855	-102.89487	2930.35	39375	3.30E+13	USGS Produced Water DB	8/19/1959	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 4	395969.00	25435.00	1271.75	2497.28	208.11	0.05	0.00	124093.84	5395.38	6875.24	310.34	5.09	242742.82	6935.51	1046.62	21.80				
Duperow Formation	49.60189346	-105.2640361	2042.00	ACC-16443	1W20072536074100	Accumap	N/A	Regional	NACL EQUIV. 33389. DST RECOVERY 2L SALT WATER AT		35112.00	1099.00	54.84	231.00	19.01	682.00	17.49	11415.00	496.52	587.82	322.00	5.28	18034.00	508.67	3329.00	69.31				
Duperow Formation	49.5310012	-103.4098898	1879.00	ACC-23697	1W20071103092100	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		259692.00	4404.00	219.77	486.00	39.99	4399.00	112.79	89700.00	3901.73	4274.01	288.00	4.72	157600.00	4445.32	2815.00	58.61				
Duperow Formation	50.47198744	-101.5449773	625.00	RS86-12		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville	Shaft 2	BRINE-SHAFT		1014.00	50.70	350.00	29.17	720.00	18.46	97000.00	4217.39	4316.72			138700.00	3962.86			880.00	11.01	-81.00	-5.10
Duperow Formation	49.5310012	-103.4098898	1879.00	ACC-23685	1W20071103092103	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		259692.00	4404.00	219.77	486.00	39.99	4399.00	112.79	89700.00	3901.73	4274.01	288.00	4.72	157600.00	4445.32	2815.00	58.61				
Duperow Formation	52.11253296	-108.5947051	804.10	ACC-06749	1W30361924130100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING TRACE S		14154.00	420.00	20.96	173.00	14.24	0.05	0.00	4166.00	181.21	216.44	1200.00	19.67	3552.00	100.19	4642.00	96.65				
Duperow Formation	52.01819253	-108.8746284	861.10	ACC-23584	1W30352124060100	Accumap	1/31/1968	Regional	SMALL AMOUNT OF ORGANIC MATTER DETECTED IN EVAPOR		51568.00	1369.00	68.32	661.00	54.39	0.05	0.00	17198.00	748.07	870.78	390.00	6.39	27000.00	761.57	4950.00	103.06				
Duperow Formation	51.34108321	-103.0238273	652.60	ACC-04129	1W20270814160100	Accumap	N/A	Regional	NACL EQUIVALENT 81252.		82430.00	700.00	34.93	363.00	29.87	906.00	23.23	29776.00	1295.18	1383.16	379.00	6.21	47849.00	1349.65	2457.00	51.15				
Duperow Formation	50.24896308	-101.7162789	875.05	ACC-07544	1W10153105100100	Accumap	N/A	Regional			109909.00	1650.00	82.34	515.00	42.38	0.05	0.00	39878.00	1734.60	1859.31	203.00	3.33	60625.00	1710.01	7038.00	146.53				
Duperow Formation	50.41015283	-108.3964718	1438.40	ACC-14245	1W30171803150100	Accumap	1/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=96.2,SECO		211652.00	2257.00	112.63	301.00	24.77	0.05	0.00	79759.00	3469.32	3606.72	160.00	2.62	123750.00	3490.54	5506.00	114.63				
Duperow Formation	48.46349	-105.65064	2343.91	31542	2.51E+13	USGS Produced Water DB	10/28/1965	Regional	Chem Lab	Dst No. 1 Mfe Tool	12011.00	586.00	29.30	85.00	7.08	145.00	3.72	3637.00	158.13	199.53	525.00	8.61	5300.00	151.43	1990.00	41.46				
Duperow Formation	49.20058408	-103.0685994	2147.30	ACC-16495	1W20030807150100	Accumap	N/A	Regional			58924.00	2977.00	148.56	341.00	28.06	0.05	0.00	19020.00	827.32	1003.94	490.00	8.03	33125.00	934.34	2971.00	61.86				
Duperow Formation	49.13790019	-102.4950656	2104.35	ACC-16462	1W20020421054100	Accumap	7/14/1954	Regional	NA+K IS COMBINED IN NA.		111825.00	6440.00	321.37	3580.00	294.60	0.05	0.00	30920.00	1344.94	1960.92	453.00	7.42	69600.00	1963.16	832.00	17.32				
Duperow Formation	49.32525967	-102.3438826	1858.00	ACC-16065	1W20040328084100	Accumap	N/A	Regional			294150.00	17657.00	881.13	2185.00	179.81	6187.00	158.64	88435.00	3846.71	5065.89	686.00	11.24	177937.00	5018.95	1063.00	22.13				
Duperow Formation	51.38540682	-104.9984439	767.20	ACC-23639	1W20282211140100	Accumap	10/4/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=89.38,SEC		89371.00	1763.00	87.98	890.00	73.24	0.05	0.00	31207.00	1357.43	1518.65	230.00	3.77	49000.00	1382.11	6397.00	133.18				
Duperow Formation	47.64165	-102.83502	3015.69	39374	3.30E+13	USGS Produced Water DB	7/9/1959	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 3	368907.00	21111.00	1055.55	2120.46	176.71	0.05	0.00	118792.48	5164.89	6397.15	377.37	6.19	226134.48	6460.99	563.06	11.73				
Duperow Formation	47.45592	-102.93278	3750.26	39777	3.30E+13	USGS Produced Water DB	6/29/1960	Regional		Dst #4	333945.00	44275.00	2213.75	3173.00	264.42	0.05	0.00	78235.00	3401.52	5879.69	98.00	1.61	208000.00	5942.86	214.00	4.46				
Duperow Formation	49.52130735	-103.4159263	1886.00	ACC-23708	1W20061134134100	Accumap	10/31/1997	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		108398.00	2242.00	111.88	85.00	6.99	13098.00	335.85	28060.00	1220.54	1674.42	403.00	6.60	56700.00	1599.30	7810.00	162.60				
Duperow Formation	51.23597276	-105.0402245	938.80	ACC-23646	1W20262220100100	Accumap	10/27/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=93.22,SEC		120983.00	1729.00	86.28	644.00	53.00	0.05	0.00	44050.00	1916.07	2055.34	220.00	3.61	68000.00	1918.03	6451.00	134.31				
Duperow Formation	48.22414	-105.68219	2328.67	33749	2.51E+13	USGS Produced Water DB		Regional		Dst No. 1	55488.00	2707.00	135.35	376.00	31.33	0.05	0.00	17996.00	782.43	949.12	610.00	10.00	31000.00	885.71	3100.00	64.58				
Duperow Formation	50.4714	-101.5451	603.66	RS86-09		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville		BRINE-SHAFT		2330.00	116.50	313.00	26.08	392.00	10.05	79900.00	3473.91	3626.55			110000.00	3142.86			647.00	8.10	-74.00	-4.60
Duperow Formation	49.23036112	-102.4578549	1978.50	ACC-16368	1W20030422163100	Accumap	N/A	Regional	AT 1000' ABOVE TOOL R=0.056 @ 23 DEGREES CELCIUS		250724.00	17835.00	890.01	1935.00	159.23	0.05	0.00	76086.00	3309.55	4358.80	148.00	2.43	153580.00	4331.93	1140.00	23.73				
Duperow Formation	48.41976	-108.02658	1386.84	32310	2.51E+13	USGS Produced Water DB	12/4/1954	Regional	Yapuncich - Sanderson Laboratories	Dst No. 1 Drilling Mud	3598.00	30.18	1.51	12.07	1.01	0.05	0.00	1391.30	60.49	63.01	2082.42	34.14	249.49	7.13	621.71	12.95				
Duperow Formation	50.77366798	-105.3816876	1112.50	ACC-23651	1W20212510160100	Accumap	4/25/1962	Regional	NA=4560 PPM,K=97 PPM,BR2=10 PPM,PRIMARY SALINITY=		15144.00	232.00	11.58	74.00	6.09	0.05	0.00	5078.00	220.88	238.55	195.00	3.20	4858.00	137.03	4683.00	97.50				
Duperow Formation	52.34907671	-109.4714131	759.90	ACC-06068	1W30392513031100	Accumap	N/A	Regional			34730.00	533.00	26.60	292.00	24.03	280.00	7.18	12300.00	535.02	592.84	1070.00	17.54	20200.00	569.77	54.00	1.12				
Duperow Formation	49.19386249	-104.2799062	2325.00	ACC-16656	1W20031707070100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING TRACE S		266965.00	9610.00	479.56	486.00	39.99	4761.00	122.08	85881.00	3735.61	4377.16	805.00	13.19	164000.00	4625.84	1416.00	29.48				

Duperow Formation	49.67434851	-100.1180442	607.30	ACC-03485	1W10082022120000	Accumap	8/20/1957	Regional	INSUFFICIENT SAMPLE FOR SP. GRAVITY. HYPOTHETICAL		16318.00	840.00	41.92	462.00	38.02	0.05	0.00	4301.00	187.08	267.02	488.00	8.00	6035.00	170.23	4173.00	86.88				
Duperow Formation	50.52266399	-100.9089846	598.50	ACC-03379	1W10182507020000	Accumap	3/18/1970	Regional			76455.00	1701.00	84.88	832.00	68.47	0.05	0.00	25725.00	1118.97	1272.33	1647.00	26.99	40642.00	1146.36	5908.00	123.00				
Duperow Formation	50.76268671	-104.1577452	1138.10	ACC-23656	1W20211609010100	Accumap	10/2/1956	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=96.44,SEC		214667.00	1801.00	89.87	489.00	40.24	0.05	0.00	81151.00	3529.87	3659.98	315.00	5.16	125500.00	3539.90	5571.00	115.99				
Duperow Formation	51.2217415	-106.5130882	1266.80	ACC-23598	1W30260416120100	Accumap	6/17/1954	Regional	NA+K IS COMBINED IN NA.		30889.00	1154.00	57.59	533.00	43.86	0.05	0.00	9575.00	416.49	517.94	307.00	5.03	14970.00	422.25	4350.00	90.57				
Duperow Formation	52.50233446	-109.3940454	681.50	ACC-04597	1W30412404100100	Accumap	N/A	Regional				57.00	2.84	93.00	7.65	43.00	1.10	4540.00	197.48	209.08	1208.00	19.80	1000.00	28.21	7666.00	159.61				
Duperow Formation	49.32854732	-104.8161409	2040.00	ACC-23731	1W20042130104100	Accumap	2/7/2000	Regional			238773.00	3162.00	157.79	413.00	33.99	3441.00	88.23	87413.00	3802.25	4082.04	311.00	5.10	142378.00	4015.96	1655.00	34.46				
Duperow Formation	51.79325662	-105.6951856	633.40	ACC-23636	1W20322736154100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		100297.00	1370.00	68.37	1000.00	82.29	0.05	0.00	36071.00	1569.00	1719.66	106.00	1.74	57150.00	1611.99	4600.00	95.77				
Duperow Formation	49.38276122	-102.721141	1926.90	ACC-23726	1W20050614050100	Accumap	12/14/1954	Regional	NA+K IS COMBINED IN NA.INSUFFICIENT DATA FOR CORR		247319.00	9910.00	494.54	1280.00	105.33	0.05	0.00	84253.00	3664.80	4264.67	856.00	14.03	149680.00	4221.93	1340.00	27.90				
Duperow Formation	49.25315537	-109.2701655	1824.00	ACC-23629	1W30032535064100	Accumap	9/13/1994	Regional	YELLOW COLORED FILTRATE RECOVERED FROM MUDDY WATE		9783.00	529.00	26.40	2.00	0.16	31.00	0.79	2620.00	113.96	141.32	183.00	3.00	525.00	14.81	5893.00	122.69				
Duperow Formation	51.18611538	-101.067791	643.15	ACC-03937	1W10252628040000	Accumap	10/18/1973	Regional			4914.00	540.00	26.95	78.00	6.42	0.05	0.00	970.00	42.19	75.56	98.00	1.61	973.00	27.44	2255.00	46.95				
Duperow Formation	50.4714	-101.5451	688.24	RMBR_02-352		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	spigot hose connected to grout plug	BRINE-SHAFT	215786.92	3280.00	164.00	1480.00	123.33	3320.00	85.13	77199.38	3356.49	3728.96	120.00	1.97	129235.54	3692.44	2985.00	62.19	153.49	1.92	-73.36	-6.99
Duperow Formation	49.0373404	-104.6700148	2456.00	ACC-16778	1W20012018112100	Accumap	3/23/1990	Regional	DARK GREEN COLORED FILTRATE RECOVERED FROM A SAMP		166761.00	2803.00	139.88	607.00	49.95	1994.00	51.13	57475.00	2500.02	2740.85	720.00	11.80	100500.00	2834.74	2662.00	55.42				
Duperow Formation	50.45199169	-101.7705075	780.00	SC13-PP01		Potash Corp Sample Set	2013	Scissors	Probe Hole C1, 771-780mSC; Samples Collected on J	BRINE-SHAFT	97419.00	2102.00	105.10	4809.00	400.75	955.00	24.49	26751.00	1163.09	1693.42	136.00	2.23	56050.00	1601.43	6564.00	136.75	51.00	0.64	-110.00	-13.80
Duperow Formation	51.70813908	-105.4502599	973.20	ACC-08490	1W20322502042100	Accumap	N/A	Regional			27879.00	530.00	26.45	5.00	0.41	0.05	0.00	8624.00	375.12	401.98	440.00	7.21	1820.00	51.34	16400.00	341.45				
Duperow Formation	49.25315537	-109.2701655	1768.00	ACC-23624	1W30032535064102	Accumap	9/13/1994	Regional	COLORED FILTRATE RECOVERED FROM MUDDY WATER. WTR		9813.00	529.00	26.40	2.00	0.16	31.00	0.79	2620.00	113.96	141.32	183.00	3.00	525.00	14.81	5893.00	122.69				
Duperow Formation	49.25315537	-109.2701655	1768.00	ACC-15855	1W30032535064100	Accumap	N/A	Regional			9813.00	529.00	26.40	2.00	0.16	31.00	0.79	2620.00	113.96	141.32	183.00	3.00	525.00	14.81	5893.00	122.69				
Duperow Formation	51.76710156	-109.1847872	1088.00	ACC-23587	1W30322327030100	Accumap	2/18/1985	Regional	CALCIUM CARBONATE SCALING INDEX=0.98 AT 20C,1.1 A		202865.00	7708.00	384.65	2203.00	181.29	5446.00	139.64	63500.00	2762.09	3490.06	1262.00	20.68	121129.00	3416.61	1617.00	33.67				
Duperow Formation	49.15159367	-104.4468649	2400.00	ACC-23743	1W20021926063100	Accumap	10/20/1997	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		198760.00	4084.00	203.80	656.00	53.98	4888.00	125.33	69000.00	3001.33	3384.13	998.00	16.36	117600.00	3317.07	1535.00	31.96				
Duperow Formation	49.70299668	-105.0239889	1963.80	ACC-16315	1W20092302060100	Accumap	N/A	Regional			34062.00	1143.00	57.04	232.00	19.09	0.05	0.00	11441.00	497.66	573.79	275.00	4.51	17945.00	506.16	3026.00	63.00				
Duperow Formation	51.2217415	-106.5130882	1231.10	ACC-23600	1W30260416120100	Accumap	6/16/1954	Regional	NA+K IS COMBINED IN NA.		21171.00	1350.00	67.37	382.00	31.44	0.05	0.00	5600.00	243.59	342.39	1994.00	32.68	8280.00	233.55	3565.00	74.22				
Duperow Formation	49.73281683	-106.4868427	1811.10	ACC-15937	1W30090416070100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		8774.00	456.00	22.76	307.00	25.26	0.05	0.00	1909.00	83.04	131.65	1341.00	21.98	1375.00	38.78	3369.00	70.14				
Duperow Formation	50.52266399	-100.9089846	613.10	ACC-03533	1W10182507020000	Accumap	3/18/1970	Regional			41722.00	1413.00	70.51	449.00	36.95	0.05	0.00	13594.00	591.31	698.77	622.00	10.19	20928.00	590.30	4716.00	98.19				
Duperow Formation	49.35	-104.79	2191.00	U of A 00 - 061 A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#3, rec 1063m brackish W 30,000 tds, used inve		26792.00	1430.00	71.50	262.00	21.83	336.00	8.62	8870.00	385.65	488.97	75.00	1.23	14300.00	408.57			20.20	0.25		
Duperow Formation	50.89437575	-109.8334565	1285.00	ACC-11995	1W30222828040100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING TRACE S		185716.00	2547.00	127.10	476.00	39.17	0.05	0.00	69017.00	3002.07	3168.38	575.00	9.42	109000.00	3074.49	4100.00	85.36				
Duperow Formation	51.5030835	-108.4806329	1092.70	ACC-09674	1W30291821143100	Accumap	N/A	Regional			201861.00	1434.00	71.56	2958.00	243.42	0.05	0.00	70400.00	3062.23	3377.20	68.00	1.11	127000.00	3582.21	1.00	0.02				
Duperow Formation	51.99607933	-109.8215445	941.80	ACC-08094	1W30352708150100	Accumap	N/A	Regional	WATER WAS SLIGHTLY MURKY WITH A TRACE OF OIL		27020.00	313.00	15.62	103.00	8.48	0.05	0.00	9904.00	430.80	454.93	986.00	16.16	15120.00	426.48	593.00	12.35				
Duperow Formation	50.00660691	-100.7288013	717.95	ACC-05321	1W10122417030000	Accumap	N/A	Regional			79249.00	3040.00	151.70	690.00	56.78	0.05	0.00	26332.00	1145.38	1353.86	342.00	5.60	44888.00	1266.13	3957.00	82.38				
Duperow Formation	49.54537171	-99.48138406	491.50	ACC-02446	1W10071505130000	Accumap	N/A	Regional			17753.00	1339.00	66.82	394.00	32.42	0.05	0.00	4507.00	196.04	295.29	390.00	6.39	7764.00	218.99	3359.00	69.93				
Duperow Formation	50.88331632	-102.1831091	667.50	ACC-04350	1W20220111140100	Accumap	N/A	Regional			85893.00	3159.00	157.64	537.00	44.19	0.05	0.00	29024.00	1262.47	1464.31	130.00	2.13	48500.00	1368.01	4543.00	94.58				
Duperow Formation	50.45199169	-101.7705075	780.00	SCS-IB-13-785		Potash Corp Sample Set	2013	Scissors	IB-14-390 Check Analysis; PP Analysis October 14,	CHECK-SHAFT	242910.00	3660.00	183.00	5800.00	483.33	1726.00	44.26	82519.00	3587.78	4298.37	43.00	0.70	146048.00	4172.80	2873.00	59.85	242.00	3.03	-49.00	-2.60
Duperow Formation	50.01322704	-106.2352357	1734.90	ACC-15812	1W30120220090100	Accumap	N/A	Regional	NA&K IS COMBINED IN NA. ANALYSIS NO.9		4512.00	682.00	34.03	172.00	14.15	0.05	0.00	680.00	29.58	77.79	256.00	4.20	615.00	17.35	2107.00	43.87				
Duperow Formation	51.34544607	-107.5068236	1244.20	ACC-23595	1W30271132010100	Accumap	2/5/1959	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY-83.72,SEC		54089.00	1712.00	85.43	787.00	64.76	0.05	0.00	17735.00	771.43	921.63	160.00	2.62	29250.00	825.04	4526.00	94.23				
Duperow Formation	50.45199169	-101.7705075	833.00	SCS-IB-14-390-PPCHECK		Potash Corp Sample Set	2013	Scissors	IB-14-391 Check Analysis; PP Analysis October 14,	CHECK-SHAFT	136094.00	2946.00	147.30	5213.00	434.42	1295.00	33.21	40149.00	1745.61	2360.53	112.00	1.84	81593.00	2331.23	4656.00	97.00	130.00	1.63	-98.00	-11.70
Duperow Formation	50.65101539	-102.3508093	826.00	ACC-07056	1W20190327040100	Accumap	N/A	Regional				3222.00	160.79	688.00	56.62	0.05	0.00	32016.00	1392.62	1610.02	75.00	1.23	55000.00	1551.35	2745.00	57.15				
Duperow Formation	50.03151709	-107.2250291	1766.60	ACC-23614	1W30120930140100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		4236.00	715.00	35.68	153.00	12.59	0.05	0.00	544.00	23.66	71.95	403.00	6.60	569.00	16.05	1852.00	38.56				
Duperow Formation	50.47198744	-101.5449773	672.56	RS86-15		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville	Shaft 2	BRINE-SHAFT		340.00	17.00	2460.00	205.00	3750.00	96.15	138000.00	6000.00	6320.99			182000.00	5200.00			840.00	10.51	-81.00	-6.00
Duperow Formation	51.34108321	-103.0238273	652.50	ACC-04124	1W20270814160100	Accumap	N/A	Regional	SAMPLE CONSISTED OF A CLEAR FILTRATE RECOVERED FR		104265.00	1578.00	78.75	840.00	69.12	553.00	14.18	36740.00	1598.10	1760.11	390.00	6.39	60000.00	1692.38	4164.00	86.69				
Duperow Formation	51.33089877	-105.0741406	825.70	ACC-23643	1W20272229040100	Accumap	7/8/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=93.26,SEC		141131.00	1949.00	97.26	789.00	64.93	0.05	0.00	51504.00	2240.30	2402.49	103.00	1.69	80500.00	2270.61	6286.00	130.87				
Duperow Formation	50.95618481	-106.7224339	1349.70	ACC-12834	1W30230613050100	Accumap	N/A	Regional			29558.00	1561.00	77.90	425.00	34.97	0.05	0.00	8841.00	384.56	497.43	305.00	5.00	14750.00	416.04	3676.00	76.53				
Duperow Formation	48.97692	-104.23445	2412.80	34256	2.51E+13	USGS Produced Water DB		Regional	Sun Oil Co Production Service Laboratory	Wellhead	188369.49	3351.00	167.55	867.50	72.29	0.05	0.00	68817.12	2992.05	3231.89	216.31	3.55	113200.80	3234.31	1916.57	39.93				
Duperow Formation	50.4714	-101.5451	603.66	RS86-10		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville		BRINE-SHAFT		340.00	17.00	2460.00	205.00	3750.00	96.15	138000.00	6000.00	6318.15			182000.00	5200.00			840.00	10.51	-81.00	-6.00
Duperow Formation	51.81411727	-103.1673314	676.70	ACC-23635	1W20330911080100	Accumap	11/30/1955	Regional	INSUFFICIENT DATA FOR CORRELATION.NA+K IS COMBINE		113294.00	1888.00	94.22	608.00	50.03	0.05	0.00	40993.00	1783.10	1927.34	330.00	5.41	64325.00	1814.37	5150.00	107.22				
Duperow Formation	50.41550207	-101.0989766	681.20	ACC-04586	1W10162735140000	Accumap	6/7/1957	Regional			72847.00	1944.00	97.01	573.00	47.15	0.05	0.00	25060.00	1090.05	1234.21	355.00	5.82	39750.00	1121.20	5165.00	107.53				
Duperow Formation	50.19538332	-108.4078466	1603.30	ACC-15500	1W30141828030100	Accumap	12/10/1954	Regional	PRIMARY SALINITY=90.62,SECONDARY SALINITY=9.24,SE		74578.00	1625.00	81.09	460.00	37.85	0.05	0.00	26440.00	1150.08	1269.02	110.00	1.80	41874.00	1181.11	4125.00	85.88				
Duperow Formation	49.61606372	-104.9556214	1914.10	ACC-16203	1W20082205060100	Accumap	N/A	Regional			209095.00	1666.00	83.14	216.00	17.77	1100.00	28.21	78765.00	3426.08	3555.17	165.00	2.70	122600.00	3458.10	4582.00	95.40				
Duperow Formation	50.41015283	-108.3964718	1480.70	ACC-14680	1W30171803150100	Accumap	1/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=86.64,SEC		47603.00	1885.00	94.07	166.00	13.66	0.05	0.00	16054.00	698.31	806.04	615.00	10.08	25500.00	719.26	3695.00	76.93				
Duperow Formation	50.01322704	-106.2352357	1701.70	ACC-15745	1W30120220090100	Accumap	N/A	Regional	NA&K IS COMBINED IN NA.ANALYSIS NO.19		2640.00	393.00	19.61	109.00	8.97	0.05	0.00	366.00	15.92	44.51	85.00	1.39	247.00	6.97	1440.00	29.98				
Duperow Formation	49.60419562	-104.3128189	1889.80	ACC-16133	1W20071836090100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING SMALL A		78596.00	1465.00	73.11	301.00	24.77	0.05	0.00	28356.00	1233.42	1331.33	395.00	6.47	43900.00	1238.26	4178.00	86.99				
Duperow Formation	50.4714	-101.5451	743.90	RS83-02		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1983	Rocanville		BRINE-SHAFT		5320.00	266.00	1180.00	98.33	2020.00	51.79	84000.00	3652.17	4068.30			130000.00	3714.29			992.00	12.42	-86.00	-5.90
Duperow Formation	50.5595004	-109.8349887	1392.30	ACC-13571	1W30182831010100	Accumap	N/A	Regional			50929.00	1822.00	90.92	489.00	40.24	0.05	0.00	16744.00	728.32	859.49	750.00	12.29	27000.00	761.57	4124.00	85.86				
Duperow Formation	50.40291232	-108.1215649	1520.60	ACC-15048	1W30171603070100	Accumap	N/A	Regional			82797.00	1744.00	87.03	334.00	27.49	0.05	0.00	29732.00	1293.27	1407.78	115.00	1.88	47000.00	1325.70	3872.00	80.61				
Duperow Formation	48.03682	-105.14753	1975.10	33420	2.51E+13	USGS Produced Water DB	9/3/1969	Regional	Chemical & Geological Laboratories	Dst No. 2	209895.00	3700.00	185.00	495.00	41.25	2500.00	64.10	75573.40	3285.80	3576.15	488.00	8.00	124000.00	3542.86	3569.00	74.35				
Duperow Formation	49.73207758	-104.911057	2002.50	ACC-16403	1W20092215060100	Accumap	N/A	Regional			50138.00	2005.00	100.05	431.00	35.47	0.05	0.00	16377.00	712.36	847.88	370.00	6.06	26750.00	754.52	4205.00	87.55				
Duperow Formation	50.4714	-101.5451	679.88	RS86-17		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville		BRINE-SHAFT		4040.00	202.00	1170.00	97.50	2160.00	55.38	90000.00	3913.04	4267.93			139000.00	3971.43			828.00	10.36	-82.00	-6.20
Duperow Formation	51.34108321	-103.0238273	652.80	ACC-04131	1W20270814160100	Accumap	N/A	Regional	NACL EQUIVALENT 81252.		82430.00	700.00	34.93	363.00	29.87	906.00	23.23	29776.00	1295.18	1383.16	379.00	6.21	47849.00	1349.65	2457.00	51.15				
Duperow Formation	50.47329172	-101.5449768	743.90	RS85-4		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1985	Rocanville	Shaft 1	BRINE-SHAFT		5320.00	266.00	1180.00	98.33	2020.00	51.79	84000.00	3652.17	4068.30			130000.00	3714.29			992.00	12.42	-86.00	-5.90
Duperow Formation	50.03151709	-107.2250291	1697.10	ACC-15728	1W30120930140100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		3867.00	629.00	31.39	131.00	10.78	0.05	0.00	493.00	21.44	63.62	220.00	3.61	435.00	12.27	1959.00	40.79				
Duperow Formation	50.66519091	-109.2855604	1371.00	ACC-13185	1W30202405080100	Accumap	N/A	Regional			1730.00	38.00	1.90	82.00	6.75	0.05	0.00	359.00	15.62	24.30	700.00	11.47	40.00	1.13	436.00	9.08				
Duperow Formation	50.47329172	-101.5449768	609.76	RS86-11		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville	Shaft 1	BRINE-SHAFT		763.00	38.15	301.00	25.08	400.00	10.26	76400.00	3321.74	3395.47			110000.00	3142.86			673.00	8.42	-82.00	-4.20

Duperow Formation	50.47329172	-101.5449768	609.76	RS85-3		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1985	Rocanville	Shaft 1	BRINE-SHAFT		763.00	38.15	301.00	25.08	400.00	10.26	76400.00	3321.74	3395.23			110000.00	3142.86			673.00	8.42	-82.00	-4.20
Duperow Formation	50.4714	-101.5451	609.60	RMBR_02-353		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	collecting drips in pump station using (dipper ty	BRINE-SHAFT	194771.77	791.00	39.55	270.00	22.50	590.00	15.13	78475.15	3411.96	3489.14			108179.41	3090.84	18990.00	395.63	129.95	1.63	-65.44	-4.99
Duperow Formation	51.24301588	-104.9116313	902.80	ACC-07742	1W20262129040100	Accumap	N/A	Regional			123281.00	1927.00	96.16	750.00	61.72	0.05	0.00	44582.00	1939.21	2097.09	60.00	0.98	69750.00	1967.39	6212.00	129.33				
Duperow Formation	51.99751722	-104.3242243	541.60	ACC-23633	1W20351711154100	Accumap	N/A	Regional	MIDDLE.NA+K IS COMBINED IN NA.		76015.00	1354.00	67.57	725.00	59.66	0.05	0.00	27009.00	1174.83	1302.05	128.00	2.10	43250.00	1219.92	3548.00	73.87				
Duperow Formation	49.62	-102.6	1700.80	U of A 01 - 004B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	SWAB, jan 8, 2001 bottletop says 5218-2		307180.00	17600.00	880.00	2400.00	200.00	4710.00	120.77	91300.00	3969.57	5202.09	123.00	2.02	189000.00	5400.00			709.00	8.87		
Duperow Formation	51.81411727	-103.1673314	626.70	ACC-23634	1W20330911080100	Accumap	11/30/1955	Regional	INSUFICIENT DATA FOR CORRELATION. NA+K IS COMBINE		106397.00	1273.00	63.53	675.00	55.55	0.05	0.00	38890.00	1691.62	1810.69	254.00	4.16	60455.00	1705.22	4850.00	100.98				
Duperow Formation	49.52	-103.4	1887.50	U of A 01 - 203 A & B		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	Aug 17/01,		299788.00	5700.00	285.00	774.00	64.50	3160.00	81.03	109000.00	4739.13	5184.65	220.00	3.61	180000.00	5142.86			318.00	3.98		
Duperow Formation	49.52130735	-103.4159263	1889.00	ACC-23706	1W20061134134100	Accumap	10/31/1997	Regional	ANALYSIS PERFORMED ON A YELLOW FILTRATE RECOVERED		143169.00	2402.00	119.87	219.00	18.02	11339.00	290.74	43010.00	1870.83	2298.73	434.00	7.11	79000.00	2228.30	6765.00	140.85				
Duperow Formation	50.87622981	-102.4677854	701.00	ACC-23649	1W20220411050100	Accumap	1/18/1954	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=93.40,SEC		179400.00	2830.00	141.22	749.00	61.64	0.05	0.00	65825.00	2863.23	3066.09	135.00	2.21	105250.00	2968.72	4611.00	96.00				
Duperow Formation	52.36367211	-107.8482817	819.00	ACC-06975	1W30391320040100	Accumap	N/A	Regional			291462.00	2243.00	111.93	800.00	65.83	0.05	0.00	110404.00	4802.30	4980.10	590.00	9.67	173000.00	4879.70	4424.00	92.11				
Duperow Formation	50.19538332	-108.4078466	1499.60	ACC-23611	1W30141828030100	Accumap	12/10/1954	Regional	PRIMARY SALINITY=74.48,SECONDARY SALINITY=22.62,S		17063.00	1011.00	50.45	263.00	21.64	0.05	0.00	4480.00	194.87	266.96	500.00	8.19	6979.00	196.85	3724.00	77.53				
Duperow Formation	48.3959	-105.59553	2307.34	31665	2.51E+13	USGS Produced Water DB	3/22/1962	Regional	Chem Lab	Dst No. 1 Top	268416.00	1967.00	98.35	346.00	28.83	0.05	0.00	102433.00	4453.61	4580.79	244.00	4.00	159000.00	4542.86	4550.00	94.79				
Duperow Formation	50.4714	-101.5451	705.92	RMBR_02-361		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	collecting from spigot hose	BRINE-SHAFT	228752.19	3060.00	153.00	1270.00	105.83	3680.00	94.36	83187.03	3616.83	3970.02			136019.26	3886.26	4140.00	86.25	152.17	1.90	-72.95	-7.08
Duperow Formation	49.11034159	-103.6285136	2383.50	ACC-23744	1W20021312120100	Accumap	4/18/1968	Regional	NA+K IS COMBINED IN NA.		323503.00	23861.00	1190.73	3408.00	280.45	0.05	0.00	95995.00	4175.55	5646.72	83.00	1.36	199982.00	5640.76	174.00	3.62				
Duperow Formation	50.4714	-101.5451	625.00	RS86-13		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville		BRINE-SHAFT		574.00	28.70	120.00	10.00	410.00	10.51	52400.00	2278.26	2327.47			81400.00	2325.71			510.00	6.38	-70.00	-5.00
Duperow Formation	51.48022775	-107.858501	1038.80	ACC-23593	1W30291414080100	Accumap	2/22/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=85.92,SEC		53021.00	1450.00	72.36	660.00	54.31	0.05	0.00	17763.00	772.65	899.32	140.00	2.29	28240.00	796.55	4839.00	100.75				
Duperow Formation	50.47198744	-101.5449773	692.07	RS86-18		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville	Shaft 2	BRINE-SHAFT		3920.00	196.00	1250.00	104.17	2450.00	62.82	93000.00	4043.48	4407.76			153500.00	4385.71			906.00	11.34	-82.00	-5.50
Duperow Formation	50.17716879	-109.6086582	1414.60	ACC-13899	1W30142715150100	Accumap	N/A	Regional			142950.00	2700.00	134.74	620.00	51.02	0.05	0.00	51725.00	2249.91	2435.67	305.00	5.00	82100.00	2315.74	5500.00	114.51				
Duperow Formation	52.54242673	-109.3223915	643.10	ACC-03936	1W30412424070200	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING TRACE S		33888.00	356.00	17.77	209.00	17.20	188.00	4.82	11910.00	518.06	557.86	714.00	11.70	20500.00	578.23	10.00	0.21				
Duperow Formation	49.44482464	-102.7039487	1892.00	ACC-23712	1W20606020090100	Accumap	2/3/1998	Regional			292699.00	1347.00	67.22	26.00	2.14	1961.00	50.28	111655.00	4856.72	4976.23	267.00	4.38	174613.00	4925.20	2750.00	57.25				
Duperow Formation	50.47198744	-101.5449773	679.88	RS86-16		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville	Shaft 2	BRINE-SHAFT		3560.00	178.00	710.00	59.17	3190.00	81.79	69700.00	3030.43	3353.76			142400.00	4068.57			720.00	9.01	-84.00	-6.40
Duperow Formation	48.03682	-105.14753	2112.26	33419	2.51E+13	USGS Produced Water DB	9/3/1969	Regional	Chemical & Geological Laboratories	Dst No. 3	319460.00	5402.00	270.10	585.00	48.75	4080.00	104.62	115646.00	5028.09	5451.55	268.00	4.39	192000.00	5485.71	1615.00	33.65				
Duperow Formation	52.0910882	-105.4946064	612.60	ACC-23632	1W20362515060100	Accumap	9/1/1959	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY-76.76,SEC		24810.00	941.00	46.96	597.00	49.13	0.05	0.00	7289.00	317.05	413.14	300.00	4.92	10650.00	300.40	5185.00	107.95				
Duperow Formation	51.26454717	-105.8894706	969.00	ACC-23644	1W20262832122100	Accumap	6/16/1967	Regional	NA+K IS COMBINED IN NA.RESISTIVITY:TOP 0.123@26.6		80969.00	2101.00	104.85	409.00	33.66	0.05	0.00	27991.00	1217.54	1356.04	229.00	3.75	41439.00	1168.84	8800.00	183.22				
Duperow Formation	49.57901323	-101.2219814	1130.50	ACC-10030	1W10072821020000	Accumap	5/16/1952	Regional	INSUFFICIENT WATER FOR RESISTIVITY.		43146.00	1908.00	95.21	520.00	42.79	0.05	0.00	13694.00	595.66	733.66	510.00	8.36	23441.00	661.19	3073.00	63.98				
Duperow Formation	50.4714	-101.5451	693.42	RMBR_02-362		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	spigot hose connected to grout plug	BRINE-SHAFT	209768.84	3470.00	173.50	1230.00	102.50	3260.00	83.59	74850.50	3254.37	3613.96			125646.52	3589.90	3480.00	72.50	147.98	1.85	-75.00	-6.50
Duperow Formation	50.01322704	-106.2352357	1734.90	ACC-15813	1W30120220090100	Accumap	N/A	Regional	NA&K IS COMBINED IN NA.ANALYSIS NO.20		4959.00	643.00	32.09	153.00	12.59	0.05	0.00	818.00	35.58	80.26	232.00	3.80	644.00	18.16	2469.00	51.40				
Duperow Formation	48.25409	-105.12379	2179.02	33285	2.51E+13	USGS Produced Water DB	9/8/1956	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 3	124171.00	1960.00	98.00	258.48	21.54	0.05	0.00	46177.45	2007.72	2127.26	170.17	2.79	74387.31	2125.35	1304.25	27.17				
Duperow Formation	49.20094918	-104.7700503	2225.00	ACC-16568	1W20032109154100	Accumap	N/A	Regional				1033.00	51.55	112.00	9.22	401.00	10.28	5500.00	239.24	310.26	1041.00	17.06	8403.00	237.02	3141.00	65.40				
Duperow Formation	48.71007	-105.31344	2014.73	33120	2.50E+13	USGS Produced Water DB	3/1/1961	Regional	Yapuncich, Sanderson & Brown Laboratories	Bottom Dst No. 2	242767.00	3932.00	196.60	792.05	66.00	0.05	0.00	89749.51	3902.15	4164.76	202.56	3.32	146164.72	4176.13	1925.50	40.11				
Duperow Formation	52.54242673	-109.3223915	635.50	ACC-03815	1W30412424070200	Accumap	N/A	Regional	FILTRATE RECOVERED FROM WATER PORTION OF SAMPLE		27803.00	228.00	11.38	117.00	9.63	188.00	4.82	10260.00	446.28	472.13	122.00	2.00	16580.00	467.66	115.00	2.39				
Duperow Formation	51.29790075	-105.4435522	755.90	ACC-23642	1W20272510140100	Accumap	6/7/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=91.66,SEC		102470.00	1949.00	97.26	579.00	47.65	0.05	0.00	36647.00	1594.05	1738.96	110.00	1.80	57000.00	1607.76	6241.00	129.94				
Duperow Formation	49.67017557	-103.0140105	1729.70	ACC-15807	1W20080827030100	Accumap	N/A	Regional			286529.00	4080.00	203.60	640.00	52.67	0.05	0.00	107067.00	4657.15	4913.42	275.00	4.51	173000.00	4879.70	1467.00	30.54				
Duperow Formation	50.4714	-101.5451	624.84	RMBR_02-363		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	collecting from shaft wall outside pump station	BRINE-SHAFT	191179.42	736.00	36.80	280.00	23.33	540.00	13.85	76085.36	3308.06	3382.04			107205.61	3063.02	18570.00	386.88	135.98	1.70	-65.29	-5.31
Duperow Formation	49.44160797	-103.0297055	1967.00	ACC-16334	1W20060804063100	Accumap	N/A	Regional	NACL EQUIV. 334258. CHAMBER CONTENTS 2350 MLS SAL		333274.00	20338.00	1014.92	2384.00	196.18	5249.00	134.59	99683.00	4335.97	5681.32	262.00	4.29	204973.00	5781.54	385.00	8.02				
Duperow Formation	50.4714	-101.5451	742.80	RMBR_02-360		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	collecting from spigot hose	BRINE-SHAFT	222082.81	3250.00	162.50	1200.00	100.00	3790.00	97.18	79230.38	3444.80	3804.48			133061.46	3801.76	4200.00	87.50	147.38	1.84	-75.25	-7.23
Duperow Formation	49.2355945	-100.8133588	1134.60	ACC-10087	1W10032520150000	Accumap	7/9/1970	Regional			172919.00	2434.00	121.46	230.00	18.93	0.05	0.00	64353.00	2799.20	2939.59	134.00	2.20	99482.00	2806.02	6286.00	130.87				
Duperow Formation	51.70813908	-105.4502599	1168.00	ACC-10498	1W20322502042100	Accumap	N/A	Regional			166000.00	2010.00	100.30	375.00	30.86	3530.00	90.51	58415.00	2540.91	2762.36	240.00	3.93	95000.00	2679.60	6430.00	133.87				
Duperow Formation	49.60419562	-104.3128189	1973.60	ACC-16350	1W20071836090100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING SMALL A		157556.00	2106.00	105.10	408.00	33.57	0.05	0.00	58673.00	2552.13	2690.84	395.00	6.47	93000.00	2623.19	2973.00	61.90				
Duperow Formation	52.62302206	-109.3094152	695.00	ACC-23570	1W30422318134100	Accumap	3/17/1982	Regional	CLEAR, COLORLESS FILTRATE RCOVERED FROM THE WATER		40088.00	424.00	21.16	190.00	15.64	563.00	14.44	13560.00	589.83	641.02			25000.00	705.16	300.00	6.25				
Duperow Formation	50.16157756	-105.1828637	1519.40	ACC-23664	1W20142411140100	Accumap	8/30/1954	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=88.34,SEC		46124.00	1301.00	64.92	319.00	26.25	0.05	0.00	15870.00	690.31	781.48	220.00	3.61	25250.00	712.21	3164.00	65.87				
Duperow Formation	50.17623209	-105.0974922	1598.10	ACC-23665	1W20142316130100	Accumap	7/31/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=87.78,SEC		63286.00	1778.00	88.73	525.00	43.20	0.05	0.00	21785.00	947.59	1079.52	245.00	4.02	35500.00	1001.33	3577.00	74.47				
Duperow Formation	46.84302	-102.95197	2749.60	40108	3.31E+13	USGS Produced Water DB	8/14/1954	Regional	Chemical & Geological Laboratories	Dst No. 2	154289.00	5499.00	274.95	640.00	53.33	0.05	0.00	53512.00	2326.61	2654.89	476.00	7.80	92349.00	2638.54	2054.00	42.79				
Duperow Formation	51.06848812	-105.4875499	893.40	ACC-23648	1W20242530030100	Accumap	8/21/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=87.42,SEC		66586.00	2008.00	100.20	498.00	40.98	0.05	0.00	22573.00	981.87	1123.06	920.00	15.08	35571.00	1003.33	5016.00	104.43				
Duperow Formation	50.4714	-101.5451	737.01	RMBR_02-351		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	water shooting out from "pin hole"	BRINE-SHAFT	220672.49	2910.00	145.50	1240.00	103.33	2840.00	72.82	78929.97	3431.74	3753.39			133343.02	3809.80	3750.00	78.13	155.54	1.95	-71.28	-6.73
Duperow Formation	50.15160932	-107.8390145	1729.10	ACC-15806	1W30141410030100	Accumap	N/A	Regional				1331.00	66.42	375.00	30.86	0.05	0.00	10405.00	452.59	549.87	213.00	3.49	17125.00	483.03	3051.00	63.52				
Duperow Formation	49.70299668	-105.0239889	1938.50	ACC-16243	1W20092302060100	Accumap	N/A	Regional			12333.00	612.00	30.54	142.00	11.69	0.05	0.00	3599.00	156.55	198.77	850.00	13.93	4732.00	133.47	2398.00	49.93				
Duperow Formation	48.41456	-105.50029	2341.78	31667	2.51E+13	USGS Produced Water DB	4/29/1965	Regional	Chem Lab	Dst	66291.00	1006.00	50.30	165.00	13.75	670.00	17.18	24039.00	1045.17	1127.84	561.00	9.20	38400.00	1097.14	1725.00	35.94				
Duperow Formation	50.35556447	-108.2819695	1482.50	ACC-14707	1W30161721020100	Accumap	11/4/1957	Regional	NA+K IS COMBINED IN NA. PRIMARY SALINITY=96.76,SE		295924.00	1816.00	90.62	899.00	73.98	0.05	0.00	112683.00	4901.43	5066.04	240.00	3.93	177000.00	4992.53	3407.00	70.93				
Duperow Formation	49.96883338	-105.0806092	1766.00	ACC-15851	1W20122304090100	Accumap	6/13/1954	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=89.76,SEC		33096.00	1757.00	87.68	234.00	19.26	0.05	0.00	10321.00	448.94	555.87	255.00	4.18	16850.00	475.28	3679.00	76.60				
Duperow Formation	52.3179496	-109.5471655	807.00	ACC-23581	1W30382532133100	Accumap	6/4/1993	Regional	SALINITY = 2.48%		23800.00	276.00	13.77	157.00	12.92	106.00	2.72	8520.00	370.60	400.00	628.00	10.29	14000.00	394.89	142.00	2.96				
Duperow Formation	49.77653332	-107.41308	1750.20	ACC-23615	1W30091134070100	Accumap	N/A	Regional			5458.00	434.00	21.66	279.00	22.96	0.05	0.00	901.00	39.19	83.81	1115.00	18.27	355.00	10.01	2374.00	49.43				

Duperow Formation	52.11253296	-108.5947051	886.10	ACC-07625	1W30361924130100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING TRACE S		34541.00	1025.00	51.15	486.00	39.99	0.05	0.00	10998.00	478.39	569.57	1180.00	19.34	15740.00	443.97	5111.00	106.41				
Duperow Formation	51.46916126	-106.633695	1003.40	ACC-08810	1W30290510120100	Accumap	5/28/1954	Regional	NA+K IS COMBINED IN NA.		25729.00	1367.00	68.22	666.00	54.81	0.05	0.00	7185.00	312.53	435.55	587.00	9.62	12770.00	360.20	3154.00	65.67				
Duperow Formation	51.27822652	-101.6534118	538.75	ACC-02830	1W10263029050100	Accumap	N/A	Regional			6726.00	803.00	40.07	52.00	4.28	0.05	0.00	1343.00	58.42	102.77	190.00	3.11	1250.00	35.26	3076.00	64.04				
Duperow Formation	51.51275459	-105.1973946	684.30	ACC-04649	1W20292329090100	Accumap	N/A	Regional			68739.00	1694.00	84.54	747.00	61.47	0.05	0.00	23334.00	1014.97	1160.98	205.00	3.36	36250.00	1022.48	6509.00	135.52				
Duperow Formation	49.96500119	-105.5813648	1763.30	ACC-23668	1W20122702080100	Accumap	1/19/1970	Regional	SAMPLE POINT FROM 27.43M ABOVE TOOL.NA+K IS COMBI		2923.00	222.00	11.08	125.00	10.29	0.05	0.00	501.00	21.79	43.16	449.00	7.36	262.00	7.39	1364.00	28.40				
Duperow Formation	51.11569635	-104.7023858	914.40	ACC-07832	1W20252011050100	Accumap	N/A	Regional			78622.00	1515.00	75.60	581.00	47.81	0.05	0.00	27712.00	1205.40	1328.82	220.00	3.61	42500.00	1198.77	6094.00	126.88				
Duperow Formation	49.68921731	-106.3121398	1788.30	ACC-15909	1W30080335060100	Accumap	N/A	Regional			7477.00	899.00	44.86	145.00	11.93	0.05	0.00	1080.00	46.98	103.77	2500.00	40.97	465.00	13.12	2388.00	49.72				
Duperow Formation	48.37325	-105.64438	2350.62	33880	2.51E+13	USGS Produced Water DB		Regional		Dst	125679.00	4180.00	209.00	680.00	56.67	2100.00	53.85	42140.00	1832.17	2152.26	659.00	10.80	75000.00	2142.86	1250.00	26.04				
Duperow Formation	48.08322	-103.0036	2709.67	39641	3.31E+13	USGS Produced Water DB	1/24/1958	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 4	347328.00	18706.00	935.30	2533.93	211.16	0.05	0.00	112275.62	4881.55	6028.01	220.71	3.62	213069.80	6087.71	634.68	13.22				
Duperow Formation	52.10255236	-106.8395013	701.01	CSBR_02-330		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Leak from crack in liner, above collector pan	BRINE-SHAFT	50967.33	1540.00	77.00	761.00	63.42	1070.00	27.44	17249.77	749.99	917.84			28584.37	816.70	5220.00	108.75	21.80	0.27	-135.84	-17.43
Duperow Formation	49.70396013	-103.6617783	1760.00	ACC-15845	1W20091302074100	Accumap	1/21/1998	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		282318.00	8729.00	435.60	1554.00	127.88	2835.00	72.69	95450.00	4151.84	4787.83	139.00	2.28	173000.00	4879.70	611.00	12.72				
Duperow Formation	52.10255236	-106.8395013	647.67	CSBR_02-329		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Sample from collector pan	BRINE-SHAFT	46327.33	1630.00	81.50	695.00	57.92	1060.00	27.18	15520.07	674.79	841.38	399.00	6.54	25213.17	720.38	5370.00	111.88	19.66	0.25	-135.62	-17.35
Duperow Formation	46.84302	-102.95197	3648.46	40107	3.31E+13	USGS Produced Water DB	9/3/1968	Regional	Chemical & Geological Laboratories	Dst No. 3	310599.00	15447.00	772.35	2145.00	178.75	4900.00	125.64	98283.00	4273.17	5349.91	109.00	1.79	189000.00	5400.00	770.00	16.04				
Duperow Formation	51.68328304	-109.2615884	1113.40	ACC-09899	1W30312330050100	Accumap	N/A	Regional			191127.00	61.00	3.04	5006.00	411.95	0.05	0.00	67300.00	2927.39	3344.71	159.00	2.61	118500.00	3342.45	36.00	0.75				
Duperow Formation	52.091746	-106.854477	674.09	CS86-15		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Cory	2 Shaft	BRINE-SHAFT		2183.00	109.15	620.00	51.67	630.00	16.15	18300.00	795.65	972.62			33800.00	965.71			173.00	2.17	-133.00	-16.50
Duperow Formation	52.10255236	-106.8395013	691.56	CSBR_02-341		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Leak from collector hose	BRINE-SHAFT	49516.14	1450.00	72.50	806.00	67.17	1100.00	28.21	16939.87	736.52	904.39			27458.25	784.52	5220.00	108.75	21.57	0.27	-134.30	-17.27
Duperow Formation	49.10418551	-102.7706682	2254.30	ACC-23746	1W20020608010100	Accumap	3/26/1957	Regional	CORRELATES DUPEROW IN DST 5 (W-27-57).NA+K IS COM		352458.00	32740.00	1633.81	4360.00	358.79	0.05	0.00	96194.00	4184.20	6176.81	204.00	3.34	218480.00	6162.53	480.00	9.99				
Duperow Formation	49.81581334	-105.1594187	1912.60	ACC-16196	1W20102414030100	Accumap	9/3/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=90.48,SEC		49264.00	1472.00	73.46	65.00	5.35	0.05	0.00	17229.00	749.42	828.22	260.00	4.26	26303.00	741.91	3935.00	81.93				
Duperow Formation	49.73281683	-106.4868427	1877.30	ACC-16104	1W30090416070100	Accumap	9/1/1953	Regional	NA+K IS COMBINED IN NA.SAMPLED FROM TOP OF WATER		5536.00	693.00	34.58	113.00	9.30	0.05	0.00	917.00	39.89	83.77	375.00	6.15	281.00	7.93	3347.00	69.68				
Duperow Formation	49.14363079	-105.298269	2296.00	ACC-16601	1W20022521133100	Accumap	N/A	Regional				1121.00	55.94	146.00	12.01	6650.00	170.51	6621.00	288.00	526.04	519.00	8.51	13560.00	382.48	4902.00	102.06				
Duperow Formation	50.46723695	-100.545404	591.95	ACC-03314	1W10172323060000	Accumap	9/18/1956	Regional			27537.00	1242.00	61.98	326.00	26.83	0.05	0.00	8423.00	366.38	455.19	935.00	15.32	12750.00	359.63	3861.00	80.39				
Duperow Formation	49.10418551	-102.7706682	2215.60	ACC-23745	1W20020608010100	Accumap	2/28/1957	Regional	CALCIUM CONTENT APPEARS HIGH.NA+K IS COMBINED NA.		228552.00	20910.00	1043.47	3040.00	250.16	0.05	0.00	62305.00	2710.11	4003.74	417.00	6.83	141120.00	3980.48	760.00	15.82				
Duperow Formation	49.37630588	-109.6294431	1813.90	ACC-15960	1W30052707140100	Accumap	N/A	Regional			42347.00	1068.00	53.30	825.00	67.89	0.05	0.00	13660.00	594.18	715.36	894.00	14.65	22080.00	622.80	3820.00	79.53				
Duperow Formation	51.29439264	-107.8407319	930.90	ACC-23594	1W30271412100100	Accumap	7/14/1969	Regional	NA+K IS COMBINED IN NA.SAMPLE POINT:TOP OF FLUID.		55395.00	1399.00	69.81	476.00	39.17	0.05	0.00	18761.00	816.06	925.04	298.00	4.88	27421.00	773.45	7040.00	146.57				
Duperow Formation	52.091746	-106.854477	625.91	CS86-11		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Cory	2 Shaft	BRINE-SHAFT		1954.00	97.70	820.00	68.33	430.00	11.03	17000.00	739.13	916.19			29200.00	834.29			155.00	1.94	-143	-16.8
Duperow Formation	51.67606348	-107.1172881	848.60	ACC-07285	1W30310819160100	Accumap	N/A	Regional			31271.00	1288.00	64.27	466.00	38.35	0.05	0.00	9750.00	424.10	526.72	158.00	2.59	15677.00	442.19	3932.00	81.86				
Duperow Formation	49.82666801	-105.4131138	1871.20	ACC-23672	1W20102613130100	Accumap	7/12/1954	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=32.24,SEC		1370.00	213.00	10.63	32.00	2.63	0.05	0.00	145.00	6.31	19.57	245.00	4.02	35.00	0.99	700.00	14.57				
Duperow Formation	49.86462119	-100.9289383	806.95	ACC-06788	1W10102627070200	Accumap	4/18/1955	Regional	PROPERTIES OF REACTION IN PERCENT;PRIMARY SALINIT		199255.00	3291.00	164.23	1315.00	108.21	0.05	0.00	72380.00	3148.35	3420.80	125.00	2.05	118500.00	3342.45	3707.00	77.18				
Duperow Formation	52.89769173	-108.7457176	631.50	ACC-03762	1W30451919151200	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUDDY WATER		74729.00	1634.00	81.54	496.00	40.82	933.00	23.92	25906.00	1126.85	1273.10	630.00	10.32	43800.00	1235.44	1329.00	27.67				
Duperow Formation	50.56658898	-106.3795639	1506.00	ACC-23608	1W30180332100100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.ANALYSIS NO.31		5896.00	715.00	35.68	197.00	16.21	0.05	0.00	705.00	30.67	82.60	683.00	11.19	742.00	20.93	2181.00	45.41				
Duperow Formation	51.0111255	-107.3042771	1325.60	ACC-23604	1W30241002040100	Accumap	9/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=54.62,SEC		8763.00	926.00	46.21	217.00	17.86	0.05	0.00	1773.00	77.12	141.19	170.00	2.79	2500.00	70.52	3263.00	67.94				
Duperow Formation	51.0111255	-107.3042771	1374.00	ACC-23606	1W30241002040100	Accumap	9/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=63,SECOND		14476.00	1260.00	62.88	315.00	25.92	0.05	0.00	3475.00	151.15	239.95	215.00	3.52	5750.00	162.19	3570.00	74.33				
Duperow Formation	49.68921731	-106.3121398	1853.20	ACC-16049	1W30080335060100	Accumap	N/A	Regional			3643.00	361.00	18.01	115.00	9.46	0.05	0.00	589.00	25.62	53.10	390.00	6.39	155.00	4.37	2033.00	42.33				
Duperow Formation	49.50460159	-100.8699274	950.50	ACC-08190	1W10062625040000	Accumap	11/9/1981	Regional	PALE YELLOW FILTRATE RECOVERED FROM MUD. C81-1115		39622.00	1802.00	89.92	632.00	52.01	265.00	6.79	12550.00	545.89	694.60	1952.00	31.99	20750.00	585.28	1671.00	34.79				
Duperow Formation	52.11253296	-108.5947051	874.80	ACC-07540	1W30361924130100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUDDU WATER		11382.00	417.00	20.81	122.00	10.04	0.05	0.00	3140.00	136.58	167.47	1100.00	18.03	1631.00	46.00	4971.00	103.50				
Duperow Formation	49.06368778	-109.33752	1725.80	ACC-15799	1W30012530060100	Accumap	N/A	Regional			5165.00	690.00	34.43	103.00	8.48	0.05	0.00	809.00	35.19	78.10	460.00	7.54	810.00	22.85	2293.00	47.74				
Duperow Formation	47.45592	-102.93278	3154.68	39778	3.30E+13	USGS Produced Water DB	6/29/1960	Regional	Chem Lab	Dst No. 2	267831.00	11825.00	591.25	1336.00	111.33	0.05	0.00	90317.00	3926.83	4629.41	317.00	5.20	163000.00	4657.14	1197.00	24.94				
Duperow Formation	51.21083757	-106.6417457	1188.70	ACC-10812	1W30260509150100	Accumap	N/A	Regional			19720.00	1176.00	58.69	418.00	34.40	0.05	0.00	5400.00	234.89	327.97	288.00	4.72	8720.00	245.96	3718.00	77.41				
Duperow Formation	49.5310012	-103.4098898	1879.00	ACC-23680	1W20071103092104	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		259692.00	4404.00	219.77	486.00	39.99	4399.00	112.79	89700.00	3901.73	4274.01	288.00	4.72	157600.00	4445.32	2815.00	58.61				
Duperow Formation	52.3179496	-109.5471655	807.00	ACC-23580	1W30382532133100	Accumap	6/4/1993	Regional	THE '30 MINUTE' API MUD FILTRATE LOSS IS 28 MLS.		25900.00	259.00	12.92	161.00	13.25	127.00	3.26	9040.00	393.22	422.64	533.00	8.74	15700.00	442.84	75.00	1.56				
Duperow Formation	51.26454717	-105.8894706	896.70	ACC-23645	1W20262832122100	Accumap	6/16/1967	Regional	NA+K IS COMBINED IN NA.RESISTIVITY:TOP 0.174@26.6		66249.00	2153.00	107.44	456.00	37.52	0.05	0.00	21889.00	952.12	1097.08	205.00	3.36	30946.00	872.87	10600.00	220.69				
Duperow Formation	49.53498514	-103.4041238	1923.00	ACC-23701	1W20071102134103	Accumap	10/10/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		294742.00	14010.00	699.14	2622.00	215.77	4888.00	125.33	92000.00	4001.77	5041.70	190.00	3.11	180200.00	5082.79	831.00	17.30				
Duperow Formation	49.53498514	-103.4041238	1923.00	ACC-23703	1W20071102134102	Accumap	10/10/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		294742.00	14010.00	699.14	2622.00	215.77	4888.00	125.33	92000.00	4001.77	5041.70	190.00	3.11	180200.00	5082.79	831.00	17.30				
Duperow Formation	51.46916126	-106.633695	1099.40	ACC-09761	1W30290510120100	Accumap	5/28/1954	Regional	NA+K IS COMBINED IN NA.FIVE MUDDY WELL WTIH DST N		25093.00	657.00	32.79	526.00	43.29	0.05	0.00	7950.00	345.81	421.88	202.00	3.31	12180.00	343.55	3578.00	74.49				
Duperow Formation	49.53498514	-103.4041238	1923.00	ACC-23705	1W20071102134100	Accumap	10/10/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		294742.00	14010.00	699.14	2622.00	215.77	4888.00	125.33	92000.00	4001.77	5041.70	190.00	3.11	180200.00	5082.79	831.00	17.30				
Duperow Formation	49.58787961	-105.3537264	2052.20	ACC-16444	1W20072529083100	Accumap	N/A	Regional			21519.00	1164.00	58.09	181.00	14.89	586.00	15.03	6150.00	267.51	355.52	322.00	5.28	10324.00	291.20	2791.00	58.11				
Duperow Formation	52.091746	-106.854477	626.83	CS86-12		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Cory	2 Shaft	BRINE-SHAFT		2202.00	110.10	670.00	55.83	430.00	11.03	17000.00	739.13	916.09			29600.00	845.71			12945.00	162.02	-127	-16
Duperow Formation	50.17623209	-105.0974922	1581.90	ACC-23666	1W20142316130100	Accumap	7/31/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=86.12,SEC		63823.00	1803.00	89.97	750.00	61.72	0.05	0.00	21627.00	940.72	1092.41	230.00	3.77	36000.00	1015.43	3530.00	73.49				
Duperow Formation	49.80105308	-103.1213349	1656.60	ACC-23673	1W20100911020100	Accumap	5/21/1957	Regional	NA+K IS COMBINED NA.PRIMARY SALINITY=88.74,SECOND		235807.00	7254.00	361.99	1159.00	95.38	0.05	0.00	82894.00	3605.69	4063.06	195.00	3.20	142750.00	4026.46	1654.00	34.44				
Duperow Formation	51.932055	-106.071873	725.61	AS86-10		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Allan		BRINE-SHAFT		2355.00	117.75	610.00	50.83	1930.00	49.49	39300.00	1708.70	1928.04			65000.00	1857.14			323.00	4.04	-137	-16.9
Duperow Formation	51.93203	-106.069691	701.22	AS86-07		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Allan		BRINE-SHAFT		2059.00	102.95	520.00	43.33	1390.00	35.64	25700.00	1117.39	1300.08			40900.00	1168.57			208.00	2.60	-138	-18.1
Duperow Formation	51.93203	-106.069691	713.41	AS86-09		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Allan		BRINE-SHAFT		2245.00	112.25	510.00	42.50	1370.00	35.13	27000.00	1173.91	1364.49			44500.00	1271.43			211.00	2.64	-140	-17.6

Duperow Formation	51.93203	-106.069691	681.19	ASBR_02-320		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Leak from shaft liner	BRINE-SHAFT	81171.10	1890.00	94.50	699.00	58.25	2290.00	58.72	27391.38	1190.93	1402.40	163.00	2.67	42713.57	1220.39	6000.00	125.00	23.70	0.30	-141.32	-18.35
Duperow Formation	49.5310012	-103.4098898	1879.00	ACC-23690	1W20071103092102	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		259692.00	4404.00	219.77	486.00	39.99	4399.00	112.79	89700.00	3901.73	4274.01	288.00	4.72	157600.00	4445.32	2815.00	58.61				
Duperow Formation	51.93203	-106.069691	774.09	AS86-11		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Allan		BRINE-SHAFT		2770.00	138.50	650.00	54.17	2280.00	58.46	46600.00	2026.09	2277.22			0.05	0.00			318.00	3.98	-138.00	-18.00
Duperow Formation	49.68447609	-107.428364	1793.00	ACC-23616	1W30081133011100	Accumap	1/6/1997	Regional	INVOICE CODE: 2240-160		3467.00	510.00	25.45	160.00	13.17	70.00	1.79	330.00	14.35	54.76	226.00	3.70	396.00	11.17	1775.00	36.96				
Duperow Formation	50.19538332	-108.4078466	1567.30	ACC-23610	1W30141828030100	Accumap	12/10/1954	Regional	PRIMARY SALINITY=89.08,SECONDARY SALINITY=10.24,S		61196.00	1552.00	77.45	438.00	36.04	0.05	0.00	21274.00	925.37	1038.86	435.00	7.13	33400.00	942.09	4318.00	89.90				
Duperow Formation	50.40291232	-108.1215649	1478.90	ACC-14661	1W30171603070100	Accumap	N/A	Regional			18074.00	557.00	27.80	151.00	12.43	0.05	0.00	5889.00	256.16	296.38	100.00	1.64	7850.00	221.42	3527.00	73.43				
Duperow Formation	49.98333161	-105.2283034	1906.50	ACC-23669	1W20122409110100	Accumap	11/22/1954	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=69.28,SEC		11914.00	856.00	42.72	201.00	16.54	0.05	0.00	3070.00	133.54	192.79	530.00	8.69	4480.00	126.36	2777.00	57.82				
Duperow Formation	51.93203	-106.069691	707.01	AS86-08		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Allan		BRINE-SHAFT		2007.00	100.35	330.00	27.50	1250.00	32.05	24900.00	1082.61	1242.51			42700.00	1220.00			211.00	2.64	-139.00	-18.30
Duperow Formation	51.93203	-106.069691	682.72	ASBR_02-310		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Sample from pump station wall	BRINE-SHAFT	82718.68	1890.00	94.50	691.00	57.58	2340.00	60.00	27348.37	1189.06	1401.14			44362.62	1267.50	6060.00	126.25	26.69	0.33	-140.29	-18.60
Duperow Formation	50.52266399	-100.9089846	598.50	ACC-03378	1W10182507020000	Accumap	3/18/1970	Regional			48092.00	1501.00	74.90	548.00	45.10	0.05	0.00	15792.00	686.91	806.91	860.00	14.09	24477.00	690.41	4914.00	102.31				
Duperow Formation	51.93203	-106.069691	733.62	ASBR_02-307		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Catching drip from new tubbing ring joint	BRINE-SHAFT	111997.60	2140.00	107.00	767.00	63.92	2730.00	70.00	38282.51	1664.46	1905.37			62219.23	1777.69	5820.00	121.25	38.50	0.48	-136.97	-17.62
Duperow Formation	51.93203	-106.069691	682.72	ASBR_02-309		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Sample from pump station floor	BRINE-SHAFT	82649.35	1870.00	93.50	688.00	57.33	2280.00	58.46	27218.94	1183.43	1392.73	202.00	3.31	44481.77	1270.91	5880.00	122.50	27.90	0.35	-140.08	-18.41
Duperow Formation	52.62302206	-109.3094152	694.00	ACC-23571	1W30422318134100	Accumap	12/30/1981	Regional	CLEAR,COLORLESS FILTRATE RECOVERED FRO MUD CONTAI		2674.00	20.00	1.00	5.00	0.41	10.00	0.26	920.00	40.02	41.68	537.00	8.80	825.00	23.27	357.00	7.43				
Duperow Formation	51.93203	-106.069691	746.72	ASBR_02-321		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Seepage from shaft liner	BRINE-SHAFT	108269.78	1960.00	98.00	496.00	41.33	2470.00	63.33	36857.79	1602.51	1805.18			61739.12	1763.97	4710.00	98.13	36.86	0.46	-140.04	-18.14
Duperow Formation	48.68364	-106.22431	1680.97	33354	2.51E+13	USGS Produced Water DB	9/1/1965	Regional	Chemical & Geological Laboratories	Dst No. 1 Bottom	5237.00	600.00	30.00	135.00	11.25	70.00	1.79	947.00	41.17	84.94	183.00	3.00	1520.00	43.43	1870.00	38.96				
Duperow Formation	51.93203	-106.069691	785.74	ASBR_02-305		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Catching drips from crack in shaft liner.	BRINE-SHAFT	76182.28	1830.00	91.50	763.00	63.58	580.00	14.87	24280.31	1055.67	1225.62			47510.31	1357.44	1104.00	23.00	112.00	1.40	-122.56	-14.54
Duperow Formation	49.38708267	-106.1841297	2004.10	ACC-16404	1W30050214122100	Accumap	4/28/1955	Regional	152.4M ABOVE PACKER.NA&K IS COMBINED IN NA.PRIMAR		3454.00	621.00	30.99	137.00	11.27	0.05	0.00	214.00	9.31	51.57	195.00	3.20	110.00	3.10	2177.00	45.32				
Duperow Formation	51.34108321	-103.0238273	652.60	ACC-04126	1W20270814160100	Accumap	N/A	Regional	NACL EQUIV. 51127.		51641.00	377.00	18.81	219.00	18.02	1024.00	26.26	18675.00	812.32	875.34	443.00	7.26	30123.00	849.66	780.00	16.24				
Duperow Formation	50.22754497	-105.7896883	1634.70	ACC-15578	1W20152804080100	Accumap	10/15/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=55.42,SEC		8118.00	750.00	37.43	249.00	20.49	0.05	0.00	1654.00	71.94	129.86	250.00	4.10	1980.00	55.85	3362.00	70.00				
Duperow Formation	48.43408	-105.60753	2333.24	33230	2.51E+13	USGS Produced Water DB	1/25/1961	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 1 Bottom	29658.00	844.17	42.21	142.06	11.84	0.05	0.00	10321.18	448.75	502.79	485.45	7.96	15953.42	455.81	2158.46	44.97				
Duperow Formation	49.67744206	-104.7868145	2017.80	ACC-16418	1W20082128090100	Accumap	N/A	Regional			44275.00	1884.00	94.02	248.00	20.41	0.05	0.00	14445.00	628.32	742.75	600.00	9.83	22832.00	644.01	4266.00	88.82				
Duperow Formation	50.82842153	-107.4333242	1432.30	ACC-14172	1W30211135120100	Accumap	N/A	Regional	INSUFFICIENT DATA FOR CORRELATION		59657.00	1676.00	83.64	416.00	34.23	0.05	0.00	20431.00	888.70	1006.57	310.00	5.08	31774.00	896.23	5050.00	105.14				
Duperow Formation	49.6296749	-104.9398076	1911.00	ACC-16183	1W20082209050100	Accumap	N/A	Regional	COLOURLESS FILTRATE RECOVERED FROM WATERY MUD.		150999.00	400.00	19.96	121.00	9.96	15744.00	403.69	44447.00	1933.34	2365.93	163.00	2.67	78000.00	2200.10	12120.00	252.34				
Duperow Formation	49.69618106	-99.45815206	420.15	ACC-01512	1W10081533040000	Accumap	N/A	Regional			18513.00	1118.00	55.79	254.00	20.90	0.05	0.00	5317.00	231.28	307.97	196.00	3.21	8500.00	239.75	3128.00	65.12				
Duperow Formation	49.39983923	-105.7642147	2165.30	ACC-23718	1W20052819112100	Accumap	N/A	Regional			2753.00	520.00	25.95	105.00	8.64	0.05	0.00	154.00	6.70	41.29	117.00	1.92	127.00	3.58	1730.00	36.02				
Duperow Formation	48.34152	-105.4877	2358.85	31457	2.51E+13	USGS Produced Water DB	1/22/1962	Regional	Chem Lab	Dst No. 2 Bottom	37327.00	751.00	37.55	67.00	5.58	0.05	0.00	13382.00	581.83	624.96	440.00	7.21	19100.00	545.71	3810.00	79.38				
Duperow Formation	48.30156	-105.37281	2289.05	31584	2.51E+13	USGS Produced Water DB	1/22/1962	Regional	Chem Lab	Dst No. 1 Bottom	30822.00	890.00	44.50	168.00	14.00	0.05	0.00	10702.00	465.30	523.80	840.00	13.77	16500.00	471.43	2148.00	44.75				
Duperow Formation	50.10434288	-107.6059206	1649.00	ACC-23613	1W30131220150100	Accumap	7/12/1968	Regional	NA&K IS COMBINED IN K.		11425.00	402.00	20.06	104.00	8.56	0.05	0.00	3259.00	141.76	170.38	1237.00	20.27	2221.00	62.65	4202.00	87.49				
Duperow Formation	50.35556447	-108.2819695	1447.20	ACC-14332	1W30161721020100	Accumap	10/8/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=62.76,SEC		17754.00	908.00	45.31	827.00	68.05	0.05	0.00	4389.00	190.91	304.28	355.00	5.82	8125.00	229.18	3330.00	69.33				
Duperow Formation	49.83320015	-101.1311299	935.70	ACC-08018	1W10102718070000	Accumap	11/30/1976	Regional	NACL EQUIV 42857		45509.00	1946.00	97.11	170.00	13.99	0.05	0.00	14958.00	650.64	761.74	126.00	2.06	23042.00	649.93	5267.00	109.66				
Duperow Formation	47.64855	-102.89487	3521.96	39376	3.30E+13	USGS Produced Water DB	10/5/1959	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 8	275334.00	34298.00	1714.90	5001.92	416.83	0.05	0.00	63237.33	2749.45	4881.18	283.36	4.65	172617.98	4931.94	39.42	0.82				
Duperow Formation	50.41371118	-107.8637723	1453.90	ACC-14407	1W30171409010100	Accumap	N/A	Regional	APPEARS TO BE DILUTED FORMATION WATER		16423.00	811.00	40.47	210.00	17.28	0.05	0.00	4721.00	205.35	263.10	763.00	12.50	5968.00	168.34	3950.00	82.24				
Duperow Formation	46.75959	-104.58145	2206.75	31301	2.51E+13	USGS Produced Water DB	6/19/1952	Regional	Chemical & Geological Laboratories	Dst #2	29706.00	6596.00	329.80	118.00	9.83	0.05	0.00	4258.00	185.13	524.76	195.00	3.20	18000.00	514.29	638.00	13.29				
Duperow Formation	50.41371118	-107.8637723	1542.60	ACC-15199	1W30171409010100	Accumap	N/A	Regional	APPEARS TO BE FORMATION WATER SLIGHTLY MORE DILUT		17582.00	806.00	40.22	196.00	16.13	0.05	0.00	5322.00	231.49	287.84	378.00	6.19	7460.00	210.42	3420.00	71.20				
Duperow Formation	48.443	-102.81217	3130.60	40583	3.31E+13	USGS Produced Water DB	8/7/1964	Regional	Chem Lab	Dst No. 1 (bottom)	337456.00	53098.00	2654.90	5208.00	434.00	8200.00	210.26	60692.00	2638.78	5939.38	293.00	4.80	210000.00	6000.00	104.00	2.17				
Duperow Formation	49.05934339	-100.8031789	1182.00	ACC-10666	1W10012530010000	Accumap	8/6/1956	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=85.28,SEC		169198.00	6630.00	330.85	1201.00	98.83	0.05	0.00	57224.00	2489.10	2918.79	248.00	4.06	101500.00	2862.95	2521.00	52.49				
Duperow Formation	48.43408	-105.60753	2392.38	33231	2.51E+13	USGS Produced Water DB	1/29/1961	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 2 Bottom	20380.00	701.37	35.07	117.74	9.81	0.05	0.00	7146.62	310.72	355.60	593.78	9.73	10860.50	310.30	1901.10	39.61				
Duperow Formation	49.39983923	-105.7642147	2187.90	ACC-23716	1W20052819112100	Accumap	N/A	Regional			4306.00	732.00	36.53	140.00	11.52	0.05	0.00	418.00	18.18	66.23	218.00	3.57	600.00	16.92	2198.00	45.76				
Duperow Formation	50.6825164	-103.2510577	1086.00	ACC-09596	1W20200906034100	Accumap	N/A	Regional	COLORLESS FILTRATE RECOVERED FROM A SAMPLE CONTAI		201294.00	2202.00	109.89	971.00	79.90	3324.00	85.23	71729.00	3120.04	3394.84	171.00	2.80	118000.00	3328.35	4897.00	101.95				
Duperow Formation	49.90688805	-101.4097102	1033.85	ACC-09033	1W10112908070000	Accumap	N/A	Regional			44230.00	1179.00	58.84	860.00	70.77	0.05	0.00	14105.00	613.53	743.14	455.00	7.46	21692.00	611.85	5939.00	123.65				
Duperow Formation	49.12	-104.82	2386.00	U of A 00 - 044 A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#1, rec 885m (200 C+ 20m Mud+665m br SW, sal 1		93729.00	1860.00	93.00	466.00	38.83	758.00	19.44	33600.00	1460.87	1615.38	112.00	1.84	55600.00	1588.57			44.50	0.56		
Duperow Formation	49.31	-103.08	2000.00	U of A 98 - 099 A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#2, 24/11/97, rec 551m (548m W+ 3m M, 237,000		306831.00	18500.00	925.00	2170.00	180.83	6670.00	171.03	89100.00	3873.91	5186.35	178.00	2.92	188000.00	5371.43			800.00	10.01		
Duperow Formation	49.20056811	-105.2812578	2262.50	ACC-16584	1W20032510160100	Accumap	N/A	Regional			61694.00	1370.00	68.37	1575.00	129.61	0.05	0.00	19962.00	868.30	1066.27	392.00	6.42	35400.00	998.51	2995.00	62.36				
Duperow Formation	48.46349	-105.65064	2481.07	31543	2.51E+13	USGS Produced Water DB	10/28/1965	Regional	Chem Lab	Dst No. 4 Middle	18871.00	725.00	36.25	135.00	11.25	195.00	5.00	6051.00	263.09	316.88	317.00	5.20	9500.00	271.43	2100.00	43.75				
Duperow Formation	48.41976	-108.02658	1492.91	32311	2.51E+13	USGS Produced Water DB	12/9/1954	Regional	Yapuncich - Sanderson Laboratories	Top Of Tool Dst No 2	47405.00	1280.00	64.00	402.87	33.57	0.05	0.00	16006.34	695.93	793.50	392.54	6.44	23349.93	667.14	6172.18	128.59				
Duperow Formation	51.0111255	-107.3042771	1325.60	ACC-23605	1W30241002040100	Accumap	9/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=61.48,SEC		9224.00	790.00	39.42	210.00	17.28	0.05	0.00	2079.00	90.43	147.14	280.00	4.59	2375.00	66.99	3632.00	75.62				
Duperow Formation	50.00660691	-100.7288013	775.70	ACC-06339	1W10122417030000	Accumap	N/A	Regional			92943.00	3175.00	158.44	778.00	64.02	0.05	0.00	31458.00	1368.35	1590.81	262.00	4.29	53381.00	1505.68	3877.00	80.72				
Duperow Formation	49.18252251	-105.7301811	2164.10	ACC-16520	1W20032805090100	Accumap	N/A	Regional	VERY DILUTE FORMATION WATER.		2703.00	270.00	13.47	72.00	5.92	0.05	0.00	469.00	20.40	39.80	242.00	3.97	200.00	5.64	1450.00	30.19				
Duperow Formation	50.47854305	-100.9724376	704.10	ACC-05024	1W10172627010000	Accumap	N/A	Regional			35423.00	1244.00	62.08	533.00	43.86	0.05	0.00	11156.00	485.26	591.20	427.00	7.00	17136.00	483.34	4927.00	102.58				
Duperow Formation	49.47013268	-103.3439574	1934.00	ACC-16229	1W20061018060100	Accumap	N/A	Regional			303916.00	11409.00	569.34	1409.00	115.95	0.05	0.00	104875.00	4561.81	5247.13	146.00	2.39	185530.00	5233.13	546.00	11.37				
Duperow Formation	46.84302	-102.95197	2749.60	40113	3.31E+13	USGS Produced Water DB	4/1/1954	Regional	Petroleum Eng Lab - Atlantic Refining Co	Dst #2	127330.00	2680.00	134.00	428.00	35.67	0.05	0.00	46308.00	2013.39	2183.06			75800.00	2165.71	1936.00	40.33				
Duperow Formation	52.7095634	-109.2909626	712.60	ACC-05211	1W3043231613O100	Accumap	N/A	Regional			36238.00	734.00	36.63	558.00	45.92	0.05	0.00	12387.00	538.80	621.35	876.00	14.36	21038.00	593.41	645.00	13.43				
Duperow Formation	52.43235676	-109.6509415	766.00	ACC-23574	1W30402610161102	Accumap	1/22/2010	Regional			46941.00	553.00	27.60	378.00	31.11	513.00	13.15	16200.00	704.66	776.48	1070.00	17.54	28200.00	795.42	27.00	0.56				
Duperow Formation	50.66519091	-109.2855604	1371.00	ACC-13186	1W30202405080100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUD		8433.00	637.00	31.79	175.00	14.40	0.05	0.00	1940.00	84.39	130.57	195.00	3.20	1796.00	50.66	3690.00	76.83				
Duperow Formation	52.3179496	-109.5471655	807.00	ACC-23582	1W30382532133100	Accumap	6/4/1993	Regional	THE '30 MINUTE' API MUD FILTRATE LOSS IS 20 MLS.		7160.00	90.00	4.49	38.00	3.13	64.00	1.64	2250.00	97.87	107.12	433.00	7.10	3000.00	84.62	1280.00	26.65				
Duperow Formation	49.24146515	-109.51215	1756.90	ACC-23620	1W30032725100100	Accumap	6/16/1971	Regional	NA+K IS COMBINED IN NA.5902,2160.		8326.00	479.00	23.90	52.00	4.28	0.05	0.00	2160.00	93.95	122.14	605.00	9.92	964.00	27.19	4037.00	84.05				
Duperow Formation	49.52211068	-106.4195467	1900.40	ACC-23618	1W30060436150100	Accumap	8/20/1958	Regional	NA+K IS COMBINED IN NA.SAMPLED 106.68M BELOW TOP		28669.00	1282.00	63.98	44.00	3.62	0.05	0.00	9242.00	402.00	469.60	217.00	3.56	12684.00	357.77	5200.00	108.26				
Duperow Formation	46.75959	-104.58145	2628.90	31304	2.51E+13	USGS Produced Water DB	7/8/1952	Regional	Chemical & Geological Laboratories	Dst #5	8884.00	486.00	24.30	61.00	5.08	0.05	0.00	2714.00	118.00	147.38	245.00	4.02	3900.00	111.43	1602.00	33.38				

Duperow Formation	49.06357527	-104.2529018	2494.50	ACC-16833		1W20011729053102	Accumap	N/A	Regional				5606.00	279.75	971.00	79.90	8485.00	217.56	84143.00	3660.01	4236.69	1171.00	19.19	156500.00	4414.29	1008.00	20.99				
Duperow Formation	49.13664927	-106.3156248	2159.50	ACC-16516		1W30020323050100	Accumap	N/A	Regional			3653.00	712.00	35.53	149.00	12.26	0.05	0.00	157.00	6.83	54.62	240.00	3.93	115.00	3.24	2280.00	47.47				
Duperow Formation	49.35732125	-102.4072763	1882.10	ACC-16117		1W20050306120100	Accumap	N/A	Regional			210237.00	16732.00	834.97	2102.00	172.98	0.05	0.00	61106.00	2657.96	3665.91	180.00	2.95	129250.00	3645.67	867.00	18.05				
Duperow Formation	51.76710156	-109.1847872	1088.00	ACC-23591		1W30322327030100	Accumap	2/15/1985	Regional	CLEAR,COLORLESS FILTRATE RECOVERED FROM A SAMPLE		207124.00	8048.00	401.62	2138.00	175.94	5943.00	152.38	62990.00	2739.91	3469.47	1592.00	26.09	124800.00	3520.15	1613.00	33.58				
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23699		1W20071103092100	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		314369.00	6527.00	325.71	510.00	41.97	3910.00	100.26	110400.00	4802.13	5269.82	102.00	1.67	192200.00	5421.26	720.00	14.99				
Duperow Formation	50.51406887	-105.121352	1211.60	ACC-23659		1W20182316042100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.SAMPLED FROM MIDDLE.		27573.00	1348.00	67.27	617.00	50.77	0.05	0.00	8062.00	350.68	468.72	98.00	1.61	14040.00	396.02	3408.00	70.95				
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23687		1W20071103092103	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		314369.00	6527.00	325.71	510.00	41.97	3910.00	100.26	110400.00	4802.13	5269.82	102.00	1.67	192200.00	5421.26	720.00	14.99				
Duperow Formation	52.41449247	-109.6460124	732.10	ACC-05566		1W30402602122100	Accumap	N/A	Regional			34021.00	466.00	23.25	258.00	21.23	0.05	0.00	12303.00	535.15	579.67	1049.00	17.19	19911.00	561.62	33.00	0.69				
Duperow Formation	52.36017804	-109.8002335	1438.00	ACC-23575		1W30392715029102	Accumap	4/25/2012	Regional	THIS ANALYSIS AND CALCULATIONS ARE BASED ON PH=SM		65617.00	605.00	30.19	609.00	50.12	410.00	10.51	23400.00	1017.84	1108.64	563.20	9.23	40100.00	1131.07	216.00	4.50				
Duperow Formation	49.67744206	-104.7868145	1940.40	ACC-16249		1W20082128090100	Accumap	N/A	Regional			8725.00	879.00	43.86	197.00	16.21	0.05	0.00	1485.00	64.59	124.67	2375.00	38.92	923.00	26.03	2866.00	59.67				
Duperow Formation	50.98187799	-107.4957074	1384.70	ACC-13434		1W30231129010100	Accumap	N/A	Regional			226887.00	7337.00	366.14	2141.00	176.18	0.05	0.00	77775.00	3383.02	3925.34	60.00	0.98	138000.00	3892.48	1574.00	32.77				
Duperow Formation	49.6296749	-104.9398076	1911.00	ACC-16187		1W20082209050100	Accumap	N/A	Regional	PALE GREEN FILTRATE FROM A SAMPLE CONTAINING A TR		69942.00	641.00	31.99	243.00	20.00	4755.00	121.92	20415.00	888.00	1061.60	653.00	10.70	35500.00	1001.33	7621.00	158.67				
Duperow Formation	49.06357827	-104.2528988	2494.50	ACC-16843		1W20011729053100	Accumap	N/A	Regional	COLORLESS FILTRATE RECOVERED FROM A SAMPLE CONTAI		257884.00	5606.00	279.75	971.00	79.90	8485.00	217.56	84143.00	3660.01	4236.69	1171.00	19.19	156500.00	4414.29	1008.00	20.99				
Duperow Formation	49.17355885	-102.2831328	1921.60	ACC-16217		1W20020336150100	Accumap	12/31/1954	Regional	PRIMARY SALINITY=76.26,SECONDARY SALINITY=23.64,S		201810.00	13291.00	663.26	2073.00	170.59	0.05	0.00	61580.00	2678.58	3512.43	202.00	3.31	123500.00	3483.49	1267.00	26.38				
Duperow Formation	49.05934339	-100.8031789	1271.00	ACC-11867		1W10012530010000	Accumap	8/6/1956	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=84.86,SEC		219222.00	8772.00	437.75	1652.00	135.94	0.05	0.00	73884.00	3213.77	3787.46	418.00	6.85	132250.00	3730.29	2458.00	51.18				
Duperow Formation	49.81578205	-105.3852532	1818.10	ACC-15973		1W20102518030100	Accumap	N/A	Regional			6250.00	647.00	32.29	165.00	13.58	0.05	0.00	1186.00	51.59	97.45	250.00	4.10	1450.00	40.90	2552.00	53.13				
Duperow Formation	51.2217415	-106.5130882	1207.30	ACC-23601		1W30260416120100	Accumap	6/16/1954	Regional	NA+K IS COMBINED IN NA.		28150.00	951.00	47.46	579.00	47.65	0.05	0.00	8755.00	380.82	475.92	313.00	5.13	14170.00	399.68	3382.00	70.41				
Duperow Formation	49.1400289	-105.8321082	2206.80	ACC-16555		1W20022921120100	Accumap	N/A	Regional			3760.00	662.00	33.04	103.00	8.48	0.05	0.00	323.00	14.05	55.56	490.00	8.03	285.00	8.04	1897.00	39.50				
Duperow Formation	50.71319512	-105.4256761	1172.30	ACC-10542		1W20202520094100	Accumap	N/A	Regional			182071.00	229.00	11.43	1216.00	100.07	0.05	0.00	69189.00	3009.55	3122.66	42.00	0.69	110965.00	3129.92	385.00	8.02				
Duperow Formation	46.75959	-104.58145	2545.38		31303	2.51E+13	USGS Produced Water DB	8/4/1952	Regional	Chemical & Geological Laboratories	Dst #4	7485.00	498.00	24.90	43.00	3.58	0.05	0.00	2161.00	93.96	122.44	205.00	3.36	2900.00	82.86	1770.00	36.88				
Duperow Formation	49.35336646	-99.9209611	733.05	ACC-05591		1W10041936130000	Accumap	9/12/1956	Regional			86298.00	2739.00	136.68	1022.00	84.10	0.05	0.00	28876.00	1256.04	1476.82	464.00	7.60	49134.00	1385.89	4063.00	84.59				
Duperow Formation	52.5241751	-109.6515308	763.80	ACC-06120		1W30412615010100	Accumap	N/A	Regional			41336.00	1248.00	62.28	786.00	64.68	0.05	0.00	13224.00	575.21	702.17	718.00	11.77	22000.00	620.54	3350.00	69.75	10.00	0.13		
Duperow Formation	50.77366798	-105.3816876	1125.90	ACC-23652		1W20212510160100	Accumap	4/25/1962	Regional	NA=101600 PPM,K=346 PPM,BR2=20 PPM,PRIMARY SALINI		285936.70	1537.00	76.70	3.71	0.31	0.05	0.00	109903.00	4780.51	4857.52			169676.00	4785.94	4798.00	99.89				
Duperow Formation	49.43710312	-102.8050188	1937.00	ACC-16235		1W20060606030100	Accumap	N/A	Regional	COLORLESS FILTRATE FROM MUDDY WATER.		291595.00	11610.00	579.37	971.00	79.90	3366.00	86.31	92004.00	4001.95	4747.35	244.00	4.00	182500.00	5147.66	899.00	18.72				
Duperow Formation	51.84618015	-108.9890058	874.00	ACC-23586		1W30332224119100	Accumap	2/3/2010	Regional	DATE SAMPLED WAS ESTIMATED.SAMPLE POINT IS SWABBE		35484.00	1750.00	87.33	785.00	64.60	369.00	9.46	9240.00	401.92	563.97	1152.00	18.88	18020.00	508.28	4140.00	86.19				
Duperow Formation	50.10434288	-107.6059206	1790.70	ACC-23612		1W30131220150100	Accumap	7/12/1968	Regional	NA&K IS COMBINED IN NA.		6852.00	626.00	31.24	131.00	10.78	0.05	0.00	1552.00	67.51	109.53	522.00	8.55	2338.00	65.95	1683.00	35.04				
Duperow Formation	52.36691116	-109.8065396	757.10	ACC-06021		1W30392722061100	Accumap	N/A	Regional			22666.00	161.00	8.03	219.00	18.02	140.00	3.59	8300.00	361.03	390.67	315.00	5.16	13345.00	376.41	180.00	3.75				
Duperow Formation	52.54242673	-109.3223915	635.50	ACC-03816		1W30412424070200	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING TRACE S		21334.00	200.00	9.98	74.00	6.09	86.00	2.21	7488.00	325.71	343.98	634.00	10.39	12710.00	358.50	16.00	0.33				
Duperow Formation	49.06368778	-109.33752	1719.10	ACC-15782		1W30012530060100	Accumap	N/A	Regional			6968.00	692.00	34.53	138.00	11.36	0.05	0.00	1385.00	60.24	106.13	425.00	6.97	1235.00	34.83	3093.00	64.40				
Duperow Formation	51.67597603	-109.6219414	1028.70	ACC-09013		1W30312621160100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM SAMPLE CONTAINING APPROX.		81507.00	3156.00	157.49	821.00	67.56	0.05	0.00	26483.00	1151.95	1377.04	1748.00	28.65	43635.00	1230.78	5663.00	117.90				
Duperow Formation	50.17716879	-109.6086582	1385.90	ACC-13452		1W30142715150100	Accumap	N/A	Regional			42570.00	952.00	47.51	40.00	3.29	0.05	0.00	14171.00	616.40	667.20	325.00	5.33	13282.00	374.64	13800.00	287.31				
Duperow Formation	48.41976	-108.02658	1186.28		32308	2.51E+13	USGS Produced Water DB	12/10/1954	Regional	Yapuncich - Sanderson Laboratories		2686.00	257.28	12.86	107.54	8.96	0.05	0.00	483.41	21.02	42.84	562.80	9.23	134.67	3.85	1426.10	29.71				
Duperow Formation	49.54537171	-99.48138406	491.50	ACC-02447		1W10071505130000	Accumap	N/A	Regional			20060.00	1292.00	64.47	574.00	47.24	0.05	0.00	5165.00	224.66	336.37	464.00	7.60	9099.00	256.65	3466.00	72.16				
Duperow Formation	50.94441784	-105.5226924	891.50	ACC-07649		1W20232611090100	Accumap	N/A	Regional				792.00	39.52	81.00	6.67	0.05	0.00	2041.00	88.78	134.97	120.00	1.97	1505.00	42.45	4354.00	90.65				
Duperow Formation	49.22599841	-103.2645296	2218.00	ACC-16559		1W20031022090100	Accumap	N/A	Regional	CLEAR COLORLESS FILTRATE FROM MUDDY WATER.		304418.00	3203.00	159.84	243.00	20.00	1959.00	50.23	111000.00	4828.23	5058.17	159.00	2.61	185000.00	5218.18	2818.00	58.67				
Duperow Formation	49.69618106	-99.45815206	420.15	ACC-01511		1W10081533040000	Accumap	N/A	Regional			17358.00	1172.00	58.49	291.00	23.95	0.05	0.00	4752.00	206.70	289.13	244.00	4.00	7886.00	222.44	3013.00	62.73				
Duperow Formation	51.70813908	-105.4502599	1118.60	ACC-09940		1W20322502042100	Accumap	N/A	Regional			123000.00	1280.00	63.88	265.00	21.81	2050.00	52.56	43685.00	1900.19	2038.31	250.00	4.10	64000.00	1805.21	11400.00	237.35				
Duperow Formation	49.53498514	-103.4041238	1923.00	ACC-23700		1W20071102134103	Accumap	10/10/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		250948.00	1682.00	83.94	243.00	20.00	10557.00	270.69	89125.00	3876.72	4250.66	312.00	5.11	145700.00	4109.67	3300.00	68.71				
Duperow Formation	49.66390451	-109.4297097	1910.20	ACC-16181		1W30082623110100	Accumap	8/26/1954	Regional	NA+K IS COMBINED IN NA		11355.00	955.00	47.66	285.00	23.45	0.05	0.00	2500.00	108.74	179.89	1323.00	21.68	3650.00	102.95	2642.00	55.01				
Duperow Formation	49.41987943	-100.6328087	796.60	ACC-06653		1W10052427070000	Accumap	11/29/1952	Regional			74440.00	2360.00	117.77	610.00	50.20	0.05	0.00	25200.00	1096.14	1264.11	360.00	5.90	40950.00	1155.05	4960.00	103.27				
Duperow Formation	50.15160932	-107.8390145	1709.00	ACC-15759		1W30141410030100	Accumap	N/A	Regional				1288.00	64.27	289.00	23.78	0.05	0.00	4891.00	212.75	300.80	945.00	15.49	8000.00	225.65	2851.00	59.36				
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23688		1W20071103092103	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		300030.00	5966.00	297.72	1190.00	97.93	3812.00	97.74	106375.00	4627.05	5120.20	432.00	7.08	181400.00	5116.63	856.00	17.82				
Duperow Formation	51.04951871	-101.208675	527.80	ACC-02741		1W10242704130000	Accumap	N/A	Regional			33005.00	1192.00	59.48	513.00	42.22	0.05	0.00	10391.00	451.98	553.68	427.00	7.00	16287.00	459.40	4195.00	87.34				
Duperow Formation	49.5310012	-103.4098898	1900.00	ACC-23693		1W20071103092102	Accumap	7/8/1997	Regional	ANALYSIS PERFORMED ON A COLORLESS FILTRATE RECOVE		300030.00	5966.00	297.72	1190.00	97.93	3812.00	97.74	106375.00	4627.05	5120.20	432.00	7.08	181400.00	5116.63	856.00	17.82				
Duperow Formation	52.57122662	-108.8429031	761.10	ACC-06081		1W30412032070100	Accumap	N/A	Regional			100687.00	1050.00	52.40	2022.00	166.39	0.05	0.00	35280.00	1534.59	1753.38	325.00	5.33	58600.00	1652.89	3410.00	71.00				
Duperow Formation	51.34108321	-103.0238273	652.60	ACC-04128		1W20270814160100	Accumap	N/A	Regional	NACL EQUIVALENT = 89915.		91333.00	817.00	40.77	567.00	46.66	739.00	18.95	31575.00	1373.44	1479.77	423.00	6.93	53940.00	1521.45	3272.00	68.12				
Duperow Formation	49.25315537	-109.2701655	1852.00	ACC-23630		1W30032535064100	Accumap	9/13/1994	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM A SAM		27169.00	861.00	42.97	316.00	26.00	328.00	8.41	8089.00	351.85	429.21	397.00	6.51	13400.00	377.97	3778.00	78.66				
Duperow Formation	49.73690241	-99.55077746	422.15	ACC-01538		1W10091611130000	Accumap	N/A	Regional			37739.00	2064.00	103.00	698.00	57.44	0.05	0.00	11106.00	483.08	643.52	240.00	3.93	20000.00	564.13	3631.00	75.60				
Souris River Formation	50.54795532	-101.4564143	781.65	ACC-06445		1W10182918160000	Accumap	N/A	Regional			170374.00	5433.00	271.12	1721.00	141.62	0.05	0.00	58131.00	2528.56	2941.30	134.00	2.20	102151.00	2881.31	2804.00	58.38				
Souris River Formation	51.93213321	-106.0708618	826.90	ACC-07060		1W30340122054100	Accumap	N/A	Regional	OTHER ELEMENTS: CU: 0.09 ; PO4: 3700 MG/L		301460.00	5300.00	264.48	2300.00	189.27	2200.00	56.41	115000.00	5002.22	5512.24	1560.00	25.57	173000.00	4879.70	2100.00	43.72				
Souris River Formation	50.47854305	-100.9724376	841.45	ACC-07213		1W10172627010000	Accumap	N/A	Regional	V. O. 1 HR.		201323.00	2594.00	129.45	1022.00	84.10	0.05	0.00	74309.00	3232.26	3445.81	201.00	3.29	118894.00	3353.57	4303.00	89.59				
Souris River Formation	49.1400289	-105.8321082	2379.90	ACC-16686		1W20022921120100	Accumap	N/A	Regional			6006.00	745.00	37.18	170.00	13.99	0.05	0.00	1118.00	48.63	99.83	140.00	2.29	2400.00	67.70	1432.00	29.81				
Souris River Formation	50.22380693	-99.82333429	629.45	ACC-03725		1W10141826160000	Accumap	4/18/1957	Regional			50615.00	1748.00	87.23	514.00	42.30	0.05	0.00	16750.00	728.58	858.11	205.00	3.36	27250.00	768.62	4148.00	86.36				
Souris River Formation	50.4714	-101.5451	770.84	RMBR_02-359			Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	collecting from spigot hose	BRINE-SHAFT	218255.32	3620.00	181.00	1480.00	123.33	2540.00	65.13	77271.03	3359.61	3729.07	100.00	1.64	131986.86	3771.05	3270.00	68.13	163.27	2.04	-72.82	-6.97
Souris River Formation	52.10255236	-106.8395013	882.35	CSBR_02-333			Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Seepage from crack, and drip from old grout hole	BRINE-SHAFT	270002.31	19300.00	965.00	4200.00	350.00	2820.00	72.31	75078.37	3264.28	4651.58			167620.08	4789.15	654.00	13.63	754.00	9.44	-104.99	-11.42
Souris River Formation	50.15160932	-107.8390145	1887.30	ACC-16126		1W30141410030100	Accumap	N/A	Regional				1126.00	56.19	224.00	18.43	0.05	0.00	2847.00	123.84	198.46	488.00	8.00	4550.00	128.34	2988.00	62.21				
Souris River Formation	53.80049187	-109.1196195	718.40	ACC-05329		1W30552131140100	Accumap	N/A	Regional			38037.00	495.00	24.70	523.00	43.04	0.05	0.00	13528.00	588.43	656.17	591.00	9.69	22900.00	645.93							
Souris River Formation	50.32636989	-101.7106204	1039.35	ACC-09083		1W10153132160100	Accumap	N/A	Regional			311043.00	2271.00	113.33	1943.00	159.89	0.05	0.00	116427.00	5064.29	5337.51	220.00	3.61	186250.00	5253.43	3932.00	81.86				
Souris River Formation	49.05906476	-105.0753198	2524.85	ACC-16886		1W20012330040100	Accumap	N/A	Regional			5680.00	641.00	31.99	64.00	5.27	0.05	0.00	1119.00	48.67	85.93	245.00	4.02	920.00	25.95	2691.00	56.03				
Souris River Formation	49.70022854	-99.23733102	339.85	ACC-00821		1W10081436080000	Accumap	N/A	Regional			50459.00	4057.00	202.46	974.00	80.15	0.05	0.00	13568.00	590.17	872.78	305.00	5.00	28571.00	805.88	2984.00	62.13				
Souris River Formation	51.99898782	-107.1444756	969.30	ACC-08440		1W30350818042100	Accumap	N/A	Regional			318111.00	64500.00	3218.72	11900.00	979.26	1775.00	45.51	32000.00	1391.92	5635.31	545.00	8.93	207000.00	5838.72							
Souris River Formation	52.10255236	-106.8395013	877.17	CSBR_02-337			Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Seepage from liner joint	BRINE-SHAFT	297709.36	19900.00	995.00	3980.00	331.67	3170.00	81.28	86259.60	3750.42	5158.37			183310.86	5237.45	606.00	12.63	873.00	10.93	-98.64	-10.07
Souris River Formation	52.39757325	-108.1369054	1043.60	ACC-23784		1W30391532053100	Accumap	5/30/1950	Regional	CHEMISTRY DEPT NO.2,RED PHEASANT#2.MIDDLE.		143657.00	1767.00	88.18	1370.00	112.74	0.05	0.00	52000.00	2261.87	2462.79	77.90	1.28	84200.00	2374.98	4230.00	88.07				
Souris River Formation	53.19500169	-108.9744107	767.00	ACC-06179		1W30492102051100	Accumap	N/A	Regional				1161.00	57.94	253.00	20.82	0.05	0.00	74968.00	3260.92	3339.68	159.00	2.61	113300.00	3195.78	7111.00	148.05				

Souris River Formation	50.51406887	-105.121352	1400.90	ACC-23802	1W20182316042100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.SAMPLED FROM MIDDLE.		25961.00	1234.00	61.58	555.00	45.67	0.05	0.00	7648.00	332.67	439.92	100.00	1.64	13100.00	369.50	3320.00	69.12				
Souris River Formation	53.84057179	-108.0234073	475.50	ACC-02238	1W30561416100100	Accumap	2/11/1956	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=90.24,SEC		11700.00	193.00	9.63	117.00	9.63	0.05	0.00	4096.00	178.17	197.43	470.00	7.70	5958.00	168.05	866.00	18.03				
Souris River Formation	53.13462862	-104.395232	393.20	ACC-23797	1W20481715010100	Accumap	9/22/1955	Regional	INSUFFICIENT SAMPLE FOR RESISTIVITY OR SPECIFIC G		4514.00	70.00	3.49	32.00	2.63	0.05	0.00	1544.00	67.16	73.29	332.00	5.44	1500.00	42.31	1164.00	24.23				
Souris River Formation	49.20054571	-104.7049675	2386.00	ACC-23820	1W20032112150100	Accumap	N/A	Regional	MIDDLE, ABANDONED 05-NOV-1951. NA+K IS COMBINED I		95885.00	842.00	42.02	12500.00	1028.64	0.05	0.00	20279.00	882.09	1955.03	393.00	6.44	61200.00	1726.23	625.00	13.01				
Souris River Formation	52.10255236	-106.8395013	920.45	CSBR_02-334		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Leak from crack in shaft liner near collector pan	BRINE-SHAFT	328092.15	43700.00	2185.00	12500.00	1041.67	9250.00	237.18	52233.09	2271.00	5734.85			207984.25	5942.41	30.00	0.63	2390.00	29.91	-94.00	-7.43
Souris River Formation	49.80105308	-103.1213349	1783.10	ACC-23806	1W20100911020100	Accumap	5/21/1957	Regional	PRIMARY SALINITY=52.98,SECONDARY SALINITY=46.92,S		207254.00	28935.00	1443.93	3416.00	281.11	0.05	0.00	44682.00	1943.56	3668.60	230.00	3.77	129500.00	3652.72	608.00	12.66				
Souris River Formation	49.46811559	-103.3894154	2057.00	ACC-23809	1W20061114033100	Accumap	3/26/1998	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		330967.00	33870.00	1690.20	5730.00	471.53	6158.00	157.90	76475.00	3326.48	5645.71	327.00	5.36	208000.00	5866.92	407.00	8.47				
Souris River Formation	49.69511119	-103.6460779	1911.60	ACC-16193	1W20081336140100	Accumap	3/18/1998	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		321068.00	26110.00	1302.96	4370.00	359.61	5278.00	135.33	85100.00	3701.64	5499.21	154.00	2.52	199700.00	5632.81	356.00	7.41				
Souris River Formation	52.091746	-106.854477	929.88	CS86-23		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Cory	2 Shaft	BRINE-SHAFT		50720.00	2536.00	3700.00	308.33	7100.00	182.05	51000.00	2217.39	5243.78			207000.00	5914.29			2206.00	27.61	-102.00	-9.20
Souris River Formation	51.04951871	-101.208675	627.10	ACC-03692	1W10242704130000	Accumap	N/A	Regional			37222.00	1308.00	65.27	568.00	46.74	0.05	0.00	11781.00	512.44	624.46	470.00	7.70	18410.00	519.28	4685.00	97.54				
Souris River Formation	50.54795532	-101.4564143	809.40	ACC-06852	1W10182918160000	Accumap	N/A	Regional			130529.00	2690.00	134.24	586.00	48.22	0.05	0.00	49996.00	2174.70	2357.16	366.00	6.00	72185.00	2036.08	4706.00	97.98				
Souris River Formation	49.81349764	-100.9067482	995.50	ACC-08722	1W10102611030200	Accumap	8/7/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=86.70,SEC		135808.00	3179.00	158.64	1856.00	152.73	0.05	0.00	46600.00	2026.99	2338.36	165.00	2.70	79250.00	2235.35	4842.00	100.81				
Souris River Formation	54.79988585	-109.3782843	439.00	ACC-01746	1W30672313121100	Accumap	N/A	Regional	WATER EXTRACTED FROM THE MUD. SALINITY = 0.02PERC		1317.00	8.70	0.43	1.60	0.13	4.60	0.12	400.00	17.40	18.13	610.00	10.00	101.00	2.85	160.00	3.33				
Souris River Formation	49.52211068	-106.4195467	2036.10	ACC-23796	1W30060436150100	Accumap	8/13/1958	Regional	NA+K IS COMBINED IN NA.SAMPLED 960.12M BELOW TOP		39980.00	588.00	29.34	107.00	8.81	0.05	0.00	13559.00	589.78	627.93	294.00	4.82	12682.00	357.71	12750.00	265.45				
Souris River Formation	51.51279013	-104.9219141	911.40	ACC-07810	1W20292129100100	Accumap	N/A	Regional			272633.00	6774.00	338.04	1908.00	157.01	0.05	0.00	96760.00	4208.82	4703.88	50.00	0.82	165750.00	4675.20	1391.00	28.96				
Souris River Formation	49.35732125	-102.4072763	1972.10	ACC-16345	1W20050306120100	Accumap	N/A	Regional			267405.00	25887.00	1291.83	3331.00	274.11	0.05	0.00	71766.00	3121.65	4687.59	165.00	2.70	165750.00	4675.20	506.00	10.53				
Souris River Formation	49.6964949	-107.2001407	1904.00	ACC-23793	1W30080932133100	Accumap	7/3/1997	Regional			4524.00	600.00	29.94	120.00	9.87	84.00	2.15	530.00	23.05	65.02	280.00	4.59	354.00	9.99	2556.00	53.22				
Souris River Formation	53.68817081	-109.6954039	764.10	ACC-06139	1W30542625010100	Accumap	N/A	Regional			39267.00	397.00	19.81	218.00	17.94	0.05	0.00	14581.00	634.24	671.99	575.00	9.42	23496.00	662.74						
Souris River Formation	50.7278115	-101.9324321	807.40	ACC-06805	1W10203324013100	Accumap	N/A	Regional				1240.00	61.88	355.00	29.21	0.05	0.00	8625.00	375.17	466.26	844.00	13.83	13348.00	376.50	3659.00	76.18				
Souris River Formation	50.78158597	-108.7547462	1574.30	ACC-15371	1W30212018080100	Accumap	N/A	Regional	SAMPLE OF COLOURLESS WATER CONTAINING A SMALL LAY		430035.00	93053.00	4643.59	11470.00	943.88	0.05	0.00	50009.00	2175.27	7762.92	520.00	8.52	274800.00	7751.11	178.00	3.71				
Souris River Formation	51.09299123	-101.7296086	715.25	ACC-05284	1W10243122160100	Accumap	N/A	Regional			97968.00	2371.00	118.32	870.00	71.59	0.05	0.00	33938.00	1476.22	1666.13	365.00	5.98	54500.00	1537.25	5924.00	123.34				
Souris River Formation	50.54795532	-101.4564143	764.45	ACC-06140	1W10182918160000	Accumap	N/A	Regional			211456.00	6002.00	299.52	1404.00	115.54	0.05	0.00	74141.00	3224.95	3640.00	92.00	1.51	126779.00	3575.97	3038.00	63.25				
Souris River Formation	53.76034154	-109.7698862	787.90	ACC-06537	1W30552623040100	Accumap	N/A	Regional			52134.00	1373.00	68.52	780.00	64.19	0.05	0.00	17753.00	772.21	904.92	300.00	4.92	31875.00	899.08	53.00	1.10				
Souris River Formation	49.41987943	-100.6328087	960.45	ACC-08305	1W10052427070000	Accumap	11/29/1952	Regional	SALINITY 380; 000 CL.		94130.00	2720.00	135.74	780.00	64.19	0.05	0.00	32340.00	1406.71	1606.63	230.00	3.77	53360.00	1505.09	4700.00	97.85				
Souris River Formation	54.34541056	-109.1809682	544.10	ACC-02881	1W30622211080100	Accumap	N/A	Regional			16758.00	192.00	9.58	124.00	10.20	0.05	0.00	6062.00	263.68	283.47	410.00	6.72	9375.00	264.43	595.00	12.39				
Souris River Formation	53.76034154	-109.7698862	787.90	ACC-06536	1W30552623040100	Accumap	N/A	Regional			55050.00	1405.00	70.11	735.00	60.48	0.05	0.00	18934.00	823.58	954.18	310.00	5.08	33625.00	948.44	41.00	0.85				
Souris River Formation	49.16540815	-107.4729563	1892.80	ACC-16138	1W30021131050100	Accumap	8/11/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=50.38,SEC		3015.00	249.00	12.43	125.00	10.29	0.05	0.00	530.00	23.05	45.77	190.00	3.11	365.00	10.30	1556.00	32.40				
Souris River Formation	53.37877105	-108.5400516	778.80	ACC-06394	1W30511802160100	Accumap	N/A	Regional	BA IS ALSO ABSENT.		40849.00	646.00	32.24	77.00	6.34	0.05	0.00	14904.00	648.29	686.90	800.00	13.11	22386.00	631.43	2035.00	42.37				
Souris River Formation	51.41506897	-102.9286646	739.00	ACC-05700	1W20280709164100	Accumap	N/A	Regional	COLOURLESS FILTRATE RECOVERED FROM WATERY MUD. MN		264052.00	1962.00	97.91	267.00	21.97	6020.00	154.36	96760.00	4208.82	4482.87	183.00	3.00	151000.00	4259.16	7670.00	159.69				
Souris River Formation	50.41371118	-107.8637723	1696.80	ACC-15722	1W30171409010100	Accumap	N/A	Regional	REC: 4487' SALT WATER		19862.00	769.00	38.38	185.00	15.22	0.05	0.00	6261.00	272.34	325.94	255.00	4.18	8632.00	243.48	3760.00	78.28				
Souris River Formation	54.7347711	-109.3783512	466.30	ACC-02091	1W30662326040100	Accumap	N/A	Regional			94431.00	863.00	43.07	4.00	0.33	0.05	0.00	35814.00	1557.82	1601.22	220.00	3.61	54210.00	1529.07	3320.00	69.12				
Souris River Formation	49.2355945	-100.8133588	1286.30	ACC-12017	1W10032520150000	Accumap	N/A	Regional			46894.00	2256.00	112.58	127.00	10.45	0.05	0.00	15245.00	663.12	786.15	79.00	1.29	23960.00	675.82	5221.00	108.70				
Souris River Formation	53.68817081	-109.6954039	862.60	ACC-07418	1W30542625010100	Accumap	N/A	Regional			122128.00	1270.00	63.38	774.00	63.69	0.05	0.00	45415.00	1975.44	2102.51	255.00	4.18	74404.00	2098.67	10.00	0.21				
Souris River Formation	49.51824187	-108.9236087	2066.60	ACC-16449	1W30662232090100	Accumap	N/A	Regional	SAMPLE INSUFFICIENT FOR RESISTIVITY		76062.00	8604.00	429.36	27.00	2.22	0.05	0.00	20017.00	870.69	1302.28	233.00	3.82	42750.00	1205.82	4371.00	91.00				
Souris River Formation	51.34544607	-107.5068236	1397.50	ACC-23785	1W30271132010100	Accumap	2/5/1959	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY-85.06,SEC		70745.00	1907.00	95.16	1040.00	85.58	0.05	0.00	23654.00	1028.89	1209.64	160.00	2.62	39250.00	1107.10	4815.00	100.25				
Souris River Formation	54.7347711	-109.3783512	524.30	ACC-02725	1W30662326040100	Accumap	N/A	Regional	REC. 370' S. W.		63417.00	518.00	25.85	3.00	0.25	0.05	0.00	24062.00	1046.64	1072.73	410.00	6.72	36010.00	1015.71	2390.00	49.76				
Souris River Formation	50.424609	-107.0100892	1776.40	ACC-15877	1W30170811130100	Accumap	N/A	Regional			13053.00	905.00	45.16	263.00	21.64	0.05	0.00	3420.00	148.76	215.60	220.00	3.61	5470.00	154.29	2774.00	57.75				
Souris River Formation	50.424609	-107.0100892	1776.40	ACC-15876	1W30170811130100	Accumap	N/A	Regional			13053.00	905.00	45.16	263.00	21.64	0.05	0.00	3420.00	148.76	215.60	220.00	3.61	5470.00	154.29	2774.00	57.75				
Souris River Formation	53.10950897	-106.6408089	556.30	ACC-02979	1W30480503080100	Accumap	N/A	Regional			32998.00	984.00	49.10	468.00	38.51	0.05	0.00	10635.00	462.60	550.25	571.00	9.36	15884.00	448.03	4455.00	92.75				
Souris River Formation	50.4714	-101.5451	777.44	RS86-20		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville		BRINE-SHAFT		4080.00	204.00	810.00	67.50	2800.00	71.79	72100.00	3134.78	3478.08			142400.00	4068.57			720.00	9.01	-74.00	-6.40
Souris River Formation	51.93203	-106.069691	847.30	ASBR_02-323		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Drip from hole in concrete liner	BRINE-SHAFT	315344.91	6260.00	313.00	2130.00	177.50	2300.00	58.97	111131.59	4831.81	5381.28			192092.25	5488.35	1089.00	22.69	337.00	4.22	-124.78	-15.22
Souris River Formation	53.29039734	-104.5606495	341.10	ACC-00838	1W20501803132100	Accumap	N/A	Regional			5237.00	52.00	2.59	32.00	2.63	82.00	2.10	1800.00	78.30	85.62	181.00	2.97	2230.00	62.90	860.00	17.91				
Souris River Formation	50.48684803	-106.9704786	1717.00	ACC-23788	1W30180801010100	Accumap	9/3/1997	Regional	INVOICE CODE=2250-235		13865.00	1015.00	50.65	232.00	19.09	166.00	4.26	3273.00	142.37	216.36	254.00	4.16	6421.00	181.11	2504.00	52.13				
Souris River Formation	51.93203	-106.069691	850.35	ASBR_02-324		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan		BRINE-SHAFT	314899.41	6510.00	325.50	2160.00	180.00	2360.00	60.51	111666.68	4855.07	5421.09			190768.83	5450.54	1080.00	22.50	348.00	4.36	-123.59	-14.63
Souris River Formation	51.93203	-106.069691	853.66	AS02-03		Potash Corp Sample Set	2002	Allan	Service Shaft	BRINE-SHAFT		6867.00	343.35	2169.00	180.75	2530.00	64.87	118552.00	5154.43	5743.41			201924.00	5769.26	843.00	17.56			-125.30	-15.00
Souris River Formation	50.03151709	-107.2250291	1932.10	ACC-23792	1W30120930140100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		3758.00	686.00	34.23	113.00	9.30	0.05	0.00	442.00	19.23	62.78	268.00	4.39	455.00	12.83	1794.00	37.35				
Souris River Formation	51.93203	-106.069691	943.31	ASBR_02-302		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Using syringe to sample water from crack in shaft	BRINE-SHAFT	457300.91	118000.00	5900.00	17900.00	1491.67	9600.00	246.15	9844.16	428.01	8065.83			296601.61	8474.33	201.00	4.19	5050.00	63.20	-47.04	-0.55
Souris River Formation	50.7278115	-101.9324321	858.50	ACC-07374	1W10203324013100	Accumap	N/A	Regional				2920.00	145.72	1021.00	84.02	0.05	0.00	85744.00	3729.65	3959.39	366.00	6.00	136320.00	3845.09	5203.00	108.33				
Souris River Formation	51.93203	-106.069691	841.46	AS86-13		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Allan		BRINE-SHAFT		2370.00	118.50	2400.00	200.00	2410.00	61.79	73000.00	3173.91	3580.04			136000.00	3885.71			1174.00	14.69	-105.00	-10.40
Souris River Formation	54.38518776	-109.6049783	533.40	ACC-02766	1W30622525010100	Accumap	N/A	Regional	BA ABSENT		8601.00	137.00	6.84	93.00	7.65	0.05	0.00	3071.00	133.58	148.11	120.00	1.97	5128.00	144.64	51.00	1.06				
Souris River Formation	50.28632646	-106.7523893	1783.10	ACC-23789	1W30150627060100	Accumap	10/9/1959	Regional	NA+K IS COMBINED IN NA.CALCULATED RESISTIVITY:1.3		6248.00	839.00	41.87	113.00	9.30	0.05	0.00	1010.00	43.93	95.10	305.00	5.00	981.00	27.67	3000.00	62.46				
Souris River Formation	49.90688805	-101.4097102	1158.10	ACC-10399	1W10112908070000	Accumap	N/A	Regional			172117.00	3087.00	154.05	1144.00	94.14	0.05	0.00	62148.00	2703.29	2951.48	155.00	2.54	101558.00	2864.58	4025.00	83.80				
Souris River Formation	54.51996719	-106.2592562	425.20	ACC-23774	1W30640208080100	Accumap	3/8/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=27.92,SEC		522.00	80.00	3.99	39.00	3.21	0.05	0.00	64.00	2.78	9.99	420.00	6.88	48.00	1.35	84.00	1.75				
Souris River Formation	50.91658197	-102.3978961	861.10	ACC-07409	1W20220329040100	Accumap	N/A	Regional			279149.00	8569.00	427.62	393.00	32.34	0.05	0.00	99696.00	4336.53	4796.49	28.00	0.46	169000.00	4766.87	1463.00	30.46				
Souris River Formation	50.46723695	-100.545404	733.95	ACC-05602	1W10172323060000	Accumap	9/18/1956	Regional			100218.00	2132.00	106.39	527.00	43.37	0.05	0.00	35718.00	1553.65	1703.41	215.00	3.52	56500.00	1593.66	5126.00	106.72				
Souris River Formation	48.47096	-105.07855	2682.24	33627	2.51E+13	USGS Produced Water DB	2/15/1965	Regional	Chem Lab		162413.00	2611.00	130.55	297.00	24.75	500.00	12.82	58380.00	2538.26	2706.38	647.00	10.61	98000.00	2800.00	2300.00	47.92				
Souris River Formation	47.78878	-102.94847	2937.66	39500	3.31E+13	USGS Produced Water DB	5/30/1957	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 7	392525.00	20710.00	1035.50	1968.29	164.02	0.05	0.00	129051.34	5610.93	6810.45	369.66	6.06	240000.24	6857.15	613.27	12.78				
Souris River Formation	51.27822652	-101.6534118	652.30	ACC-04122	1W10263029050100	Accumap	N/A	Regional			6726.00	803.00	40.07	52.00	4.28	0.05	0.00	1343.00	58.42	102.77	190.00	3.11	1250.00	35.26	3076.00	64.04				
Souris River Formation	49.94759863	-100.4134359	759.40	ACC-06053	1W10112227040000	Accumap	9/10/1956	Regional	PRIMARY SALINITY=94.2,SECONDARY SALINITY=5.76,SEC		197789.00	2505.00	125.01	866.00	71.26	0.05	0.00	73255.00	3186.41	3382.68	80.00	1.31	116500.00	3286.04	4624.00	96.27				
Souris River Formation	52.93	-106.8556	929.88	CS86-22		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Cory		BRINE-SHAFT		68500.00	3425.00	18300.00	1525.00	6300.00	161.54	60000.00	2608.70	7720.23			228000.00	6514.29			5956.00	74.54	-94.00	-8.40
Souris River Formation	50.76268671	-104.1577452	1225.60	ACC-23801	1W20211609010100	Accumap	10/2/1956	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=96.62,SEC		240155.00	1967.00	98.16	492.00	40.49	0.05	0.00	91054.00	3960.63	4099.27	350.00	5.74	141500.00	3991.20	4970.00	103.47				
Souris River Formation	49.70022854	-99.23733102	339.85	ACC-00822	1W10081436080000	Accumap	N/A	Regional			47287.00	3759.00	187.58	788.00	64.85	0.05	0.00	12535.00	545.24	797.67	390.00	6.39	25932.00	731.45	3883.00	80.84				

Souris River Formation	50.56681984	-101.0585608	827.85	ACC-07067	1W10182630040000	Accumap	N/A	Regional	FAIR INITIAL PUFF WITH FAINT AIRBLOW THROUGHOUT.		50001.00	1677.00	83.69	472.00	38.84	0.05	0.00	16570.00	720.75	843.28	476.00	7.80	26296.00	741.71	4510.00	93.90				
Souris River Formation	52.37873469	-105.7193884	762.00	ACC-06110	1W20392629040100	Accumap	N/A	Regional			205744.00	2511.00	125.31	373.00	30.69	0.05	0.00	77102.00	3353.75	3509.75	55.00	0.90	120636.00	3402.70	5067.00	105.49				
Souris River Formation	54.38518776	-109.6049783	533.40	ACC-02767	1W30622525010100	Accumap	N/A	Regional			10378.00	52.00	2.59	71.00	5.84	0.05	0.00	3804.00	165.46	173.94	605.00	9.92	5730.00	161.62	115.00	2.39				
Souris River Formation	50.41015283	-108.3964718	1709.90	ACC-15760	1W30171803150100	Accumap	1/29/1958	Regional			169574.00	2257.00	112.63	391.00	32.18	0.05	0.00	63297.00	2753.26	2898.07	135.00	2.21	100250.00	2827.69	3313.00	68.98				
Souris River Formation	50.7278115	-101.9324321	858.50	ACC-07373	1W10203324013100	Accumap	N/A	Regional				2440.00	121.76	851.00	70.03	0.05	0.00	42113.00	1831.81	2023.60	756.00	12.39	68160.00	1922.55	4255.00	88.59				
Souris River Formation	54.18190332	-108.8621603	538.00	ACC-02829	1W30602013020100	Accumap	N/A	Regional	REC. 810' BRACKISH WATER		20529.00	403.00	20.11	230.00	18.93	0.05	0.00	7061.00	307.14	346.17	495.00	8.11	11000.00	310.27	1340.00	27.90				
Souris River Formation	49.83320015	-101.1311299	1075.20	ACC-09456	1W10102718070000	Accumap	11/19/1976	Regional	NACL EQUIV 55304		57027.00	1733.00	86.48	108.00	8.89	0.05	0.00	20019.00	870.78	966.15	59.00	0.97	31702.00	894.20	3406.00	70.91				
Souris River Formation	52.10255236	-106.8395013	836.64	CSBR_02-332		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Seepage from crack in shaft liner	BRINE-SHAFT	174904.00	20100.00	1005.00	6370.00	530.83	1470.00	37.69	34889.96	1516.95	3090.48			110997.69	3171.36	1122.00	23.38	691.00	8.65	-99.78	-10.11
Souris River Formation	48.75203	-103.30896	2891.64		40386 3.30E+13	USGS Produced Water DB	8/13/1968	Regional	Chem Lab	Dst No. 7 Bottom	326033.00	65582.00	3279.10	5280.00	440.00	5000.00	128.21	44911.00	1952.65	5799.96	268.00	4.39	205000.00	5857.14	128.00	2.67				
Souris River Formation	50.4714	-101.5451	774.39	RS83-03		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1983	Rocanville		BRINE-SHAFT		4170.00	208.50	1870.00	155.83	2280.00	58.46	102000.00	4434.78	4857.58			144900.00	4140.00			750.00	9.39	-84.00	-6.60
Souris River Formation	49.46811559	-103.3894154	2057.00	ACC-23808	1W20061114033100	Accumap	3/26/1998	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		331076.00	37920.00	1892.31	3229.00	265.72	6158.00	157.90	74750.00	3251.44	5566.97	190.00	3.11	208400.00	5878.20	428.00	8.91				
Souris River Formation	51.55606162	-101.8690195	550.60	ACC-02931	1W10293236060100	Accumap	N/A	Regional			53648.00	967.00	48.26	328.00	26.99	0.05	0.00	19334.00	840.98	916.26	278.00	4.56	31112.00	877.56	1628.00	33.89				
Souris River Formation	51.11569635	-104.7023858	1048.50	ACC-09156	1W20252011050100	Accumap	N/A	Regional			80178.00	1329.00	66.32	485.00	39.91	0.05	0.00	28689.00	1247.90	1354.13	220.00	3.61	43500.00	1226.98	5955.00	123.98				
Souris River Formation	49.95132958	-99.69158126	532.65	ACC-02760	1W10111726070000	Accumap	8/1/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=93.34.		169316.00	2865.00	142.97	950.00	78.18	0.05	0.00	61701.00	2683.84	2904.99	80.00	1.31	100720.00	2840.94	3000.00	62.46				
Souris River Formation	50.10992145	-99.51367623	422.45	ACC-01540	1W10131519030000	Accumap	8/21/1956	Regional	VERY ILLEGIBLE.		127120.00	2153.00	107.44	878.00	72.25	0.05	0.00	45637.00	1985.10	2164.79	130.00	2.13	72500.00	2044.96	5822.00	121.21				
Souris River Formation	52.41816425	-105.1638122	795.50	ACC-06645	1W20402206140100	Accumap	N/A	Regional				2083.00	103.95	97.00	7.98	0.05	0.00	116777.00	5079.51	5191.44	205.00	3.36	180600.00	5094.07	4588.00	95.52				
Souris River Formation	51.2217415	-106.5130882	1356.70	ACC-23787	1W30260416120100	Accumap	6/17/1954	Regional	NA+K IS COMBINED IN NA.		31380.00	1461.00	72.91	565.00	46.49	0.05	0.00	9240.00	401.92	521.32	394.00	6.46	15180.00	428.17	4540.00	94.52				
Souris River Formation	48.75203	-103.30896	2876.09		40387 3.30E+13	USGS Produced Water DB	8/13/1968	Regional	Chem Lab	Dst No. 6 Bottom	327497.00	41463.00	2073.15	5280.00	440.00	7500.00	192.31	69870.00	3037.83	5743.28	256.00	4.20	203000.00	5800.00	258.00	5.38				
Souris River Formation	52.99037702	-107.8877973	761.10	ACC-06082	1W30461330044100	Accumap	N/A	Regional			14151.00	1520.00	75.85	544.00	44.77	0.05	0.00	2939.00	127.84	248.46	668.00	10.95	3500.00	98.72	4980.00	103.68				
Souris River Formation	49.78125557	-99.96485369	672.40	ACC-04436	1W10091927160000	Accumap	N/A	Regional			115579.00	2524.00	125.95	655.00	53.90	0.05	0.00	41193.00	1791.79	1971.65	256.00	4.20	66423.00	1873.55	4528.00	94.27				
Souris River Formation	52.10255236	-106.8395013	862.54	CSBR_02-338		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Seepage from liner joint	BRINE-SHAFT	225512.33	22000.00	1100.00	5980.00	498.33	2280.00	58.46	53623.57	2331.46	3988.25			140536.94	4015.34	828.00	17.25	803.00	10.05	-107.06	-11.63
Souris River Formation	50.00660691	-100.7288013	891.50	ACC-07650	1W10122417030000	Accumap	N/A	Regional			226206.00	4320.00	215.58	1087.00	89.45	0.05	0.00	82292.00	3579.50	3884.53	67.00	1.10	135636.00	3825.80	2804.00	58.38				
Souris River Formation	52.091746	-106.854477	889.94	CS86-18		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Cory	2 Shaft	BRINE-SHAFT		25300.00	1265.00	4750.00	395.83	1890.00	48.46	81000.00	3521.74	5231.03			171000.00	4885.71			2157.00	27.00	-112.00	-10.80
Souris River Formation	52.58935747	-104.6895899	701.70	ACC-23798	1W20421904120100	Accumap	6/27/1967	Regional	NA+K IS COMBINED IN NA.		75230.00	1336.00	66.67	756.00	62.21	0.05	0.00	26353.00	1146.29	1275.17	73.00	1.20	40779.00	1150.23	5933.00	123.52				
Souris River Formation	50.03151709	-107.2250291	1956.80	ACC-23791	1W30120930140100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		3728.00	643.00	32.09	153.00	12.59	0.05	0.00	448.00	19.49	64.17	195.00	3.20	520.00	14.67	1769.00	36.83				
Souris River Formation	51.14228783	-101.9874958	765.80	ACC-06159	1W10253311080100	Accumap	N/A	Regional			92151.00	1994.00	99.51	692.00	56.95	0.05	0.00	32384.00	1408.62	1565.08	330.00	5.41	51250.00	1445.58	5501.00	114.53				
Souris River Formation	49.20054571	-104.7049675	2416.50	ACC-23819	1W20032112150100	Accumap	N/A	Regional	BOTTOM, ABANDONED 05-NOV-1951. NA+K IS COMBINED I		19129.00	1524.00	76.05	920.00	75.71	0.05	0.00	5090.00	221.40	375.56	1000.00	16.39	9400.00	265.14	1810.00	37.68				
Souris River Formation	47.78878	-102.94847			40607 3.31E+13	USGS Produced Water DB	10/18/1965	Regional	U. S. Dept Of The Interior Bureau Of Mines	Storage Tank	364767.00	59500.00	2975.00	2575.00	214.58	0.05	0.00	73900.00	3213.04	6402.63	63.00	1.03	225160.00	6433.14	1510.00	31.46	2029.00	25.39		
Souris River Formation	47.71175	-102.50285	3209.54		39836 3.30E+13	USGS Produced Water DB	9/22/1954	Regional	Yapunicih - Sanderson Laboratories	Dst No. 1	78405.00	1954.00	97.70	64.78	5.40	0.05	0.00	27757.49	1206.85	1309.95	323.91	5.31	40096.87	1145.62	8372.81	174.43				
Souris River Formation	50.45199169	-101.7705075	974.00	SC13-PP03		Potash Corp Sample Set	2014	Scissors	943m Grout Curtain, 31m	BRINE-SHAFT	234501.00	3723.00	186.15	2470.00	205.83	6611.00	169.51	79329.00	3449.09	4010.58	406.00	6.66	138478.00	3956.51	3323.00	69.23	160.00	2.00	-55.00	1.50
Souris River Formation	54.15999954	-109.2621451	585.20	ACC-03196	1W30602205100100	Accumap	N/A	Regional	REC: 1620. FE		16915.00	263.00	13.12	85.00	6.99	0.05	0.00	6072.00	264.12	284.24	688.00	11.28	9102.00	256.73	590.00	12.28				
Souris River Formation	48.75203	-103.30896	2826.72		40388 3.30E+13	USGS Produced Water DB	8/13/1968	Regional	Chem Lab	Dst No. 5 Bottom	321806.00	44986.00	2249.30	3465.00	288.75	7500.00	192.31	66593.00	2895.35	5625.71	159.00	2.61	199000.00	5685.71	184.00	3.83				
Souris River Formation	49.03833449	-100.8273558	1399.95	ACC-13702	1W10012613090000	Accumap	9/12/1952	Regional			103566.00	5145.00	256.75	847.00	69.70	0.05	0.00	33525.00	1458.26	1784.71	360.00	5.90	61352.00	1730.52	2337.00	48.66				
Souris River Formation	49.80915982	-101.2303251	1140.55	ACC-10164	1W10102804120202	Accumap	N/A	Regional				7296.00	364.09	1380.00	113.56	0.05	0.00	94249.00	4099.60	4577.25	90.00	1.47	160866.00	4537.44	1803.00	37.54				
Souris River Formation	49.35092148	-109.2372905	1980.00	ACC-16370	1W30025010100	Accumap	N/A	Regional	NO BR OR I PRESENT		2811.00	283.00	14.12	252.00	20.74	0.05	0.00	324.00	14.09	49.45	208.00	3.41	1448.00	40.84	282.00	5.87				
Souris River Formation	48.47096	-105.07855	2182.37		33626 2.51E+13	USGS Produced Water DB	6/3/1965	Regional	Chem Lab	Dst No. 2	284770.00	2232.00	111.60	237.00	19.75	1350.00	34.62	107869.00	4689.96	4857.36	146.00	2.39	170000.00	4857.14	3000.00	62.50				
Souris River Formation	54.48723752	-106.6122017	347.20	ACC-23776	1W30630536010100	Accumap	3/30/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=23.46,PRI		580.00	102.00	5.09	42.00	3.46	0.05	0.00	62.00	2.70	11.24	415.00	6.80	33.00	0.93	82.00	1.71				
Souris River Formation	51.09446213	-103.342863	1057.70	ACC-09237	1W20241028010100	Accumap	N/A	Regional			310241.00	6660.00	332.35	2125.00	174.87	0.05	0.00	111378.00	4844.67	5351.89	63.00	1.03	189000.00	5331.00	1015.00	21.13				
Souris River Formation	49.2559657	-102.4580823	2031.80	ACC-23821	1W20030434093100	Accumap	3/11/1958	Regional	HIGH TOTAL SOLIDS AND CHLORIDE MAY BE CAUSED BY A		310276.00	38680.00	1930.24	4780.00	393.35	0.05	0.00	72515.00	3154.22	5477.81	116.00	1.90	193910.00	5469.49	275.00	5.73				
Souris River Formation	49.86462119	-100.9289383	991.50	ACC-08664	1W10102627070200	Accumap	4/18/1955	Regional	PROPERTIES OF REACTION IN PERCENT;PRIMARY SALINIT		243199.00	3659.00	182.59	1236.00	101.71	0.05	0.00	89476.00	3891.99	4176.29	61.00	1.00	146000.00	4118.13	2798.00	58.25				
Souris River Formation	49.81349764	-100.9067482	995.45	ACC-08718	1W10102611030200	Accumap	8/7/1957	Regional			226256.00	3800.00	189.63	3002.00	247.04	0.05	0.00	79889.00	3474.98	3911.64	55.00	0.90	136250.00	3843.12	3288.00	68.46				
Souris River Formation	47.71175	-102.50285	3307.08		39834 3.30E+13	USGS Produced Water DB	9/22/1954	Regional	Yapunicih - Sanderson Laboratories	Dst No. 3	330630.00	21403.00	1070.15	5308.46	442.37	0.05	0.00	98493.53	4282.33	5794.85	417.48	6.84	204482.88	5842.37	736.18	15.34				
Souris River Formation	50.41371118	-107.8637723	1672.20	ACC-15658	1W30171409010100	Accumap	N/A	Regional	REC: 3866' SALT WATER		37428.00	1729.00	86.28	365.00	30.04	0.05	0.00	11888.00	517.10	633.42	456.00	7.47	19930.00	562.15	3060.00	63.71				
Souris River Formation	54.1129759	-109.4377333	585.20	ACC-03197	1W30592319070100	Accumap	N/A	Regional	250' SLIGHTLY MUDDY SALTY WATER. FE		4223.00	19.00	0.95	5.00	0.41	0.05	0.00	1389.00	60.42	61.78	1402.00	22.98	1161.00	32.75	175.00	3.64				
Souris River Formation	50.02495386	-100.910563	958.60	ACC-08279	1W10122624060000	Accumap	4/21/1954	Regional			85324.00	2734.00	136.43	783.00	64.43	0.05	0.00	28937.00	1258.69	1459.56	190.00	3.11	48657.00	1372.44	4023.00	83.76				
Souris River Formation	50.03151709	-107.2250291	1920.80	ACC-16216	1W30120930140100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		3768.00	643.00	32.09	153.00	12.59	0.05	0.00	476.00	20.70	65.38	207.00	3.39	520.00	14.67	1769.00	36.83				
Souris River Formation	50.41015283	-108.3964718	1698.00	ACC-15729	1W30171803150100	Accumap	1/29/1958	Regional			165050.00	2480.00	123.76	376.00	30.94	0.05	0.00	61270.00	2665.09	2819.80	170.00	2.79	97250.00	2743.07	3590.00	74.74				
Souris River Formation	53.44065812	-108.9823483	759.00	ACC-06051	1W30512135010100	Accumap	N/A	Regional	NO BA OR FE PRESENT		53846.00	1434.00	71.56	693.00	57.03	0.05	0.00	18407.00	800.66	929.25	737.00	12.08	32333.00	912.00	242.00	5.04				
Souris River Formation	47.7377	-102.89063	3418.03		39377 3.31E+13	USGS Produced Water DB	5/4/1958	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 5	331315.00	9430.00	471.50	1040.76	86.73	0.05	0.00	118339.70	5145.20	5703.43	158.76	2.60	201415.87	5754.74	1011.36	21.07				
Souris River Formation	54.1129759	-109.4377333	618.80	ACC-03600	1W30592319070100	Accumap	N/A	Regional	NA+K IS A RECALCULATED VALUE BY SEM TO BALANCE CA		8856.00	79.00	3.94	22.00	1.81	0.05	0.00	3222.00	140.15	145.90	827.00	13.55	4631.00	130.62	75.00	1.56				
Souris River Formation	50.424609	-107.0100892	1791.90	ACC-15910	1W30170811130100	Accumap	N/A	Regional	SAMPLE CONTAINED A SMALL AMOUNT OF SEDIMENT		13451.00	946.00	47.21	273.00	22.47	0.05	0.00	3529.00	153.50	223.21	170.00	2.79	5800.00	163.60	2732.00	56.88				
Souris River Formation	49.28043671	-104.7325006	2489.00	ACC-16825	1W20042111060100	Accumap	N/A	Regional	SAMPLE CONTAINED APPROX. 35PERCENT SEDIMENT		32937.00	584.00	29.14	61.00	5.02	0.05	0.00	11027.00	479.65	513.85	1400.00	22.94	10500.00	296.17	9364.00	194.96				
Souris River Formation	50.45199169	-101.7705075	956.00	SC13-PP02		Potash Corp Sample Set	2014	Scissors	Probe Hole S16, 943m Grout Curtain, 13m; Arbitrar	BRINE-SHAFT	277499.00	2972.00	148.60	2184.00	182.00	5728.00	146.87	100607.00	4374.22	4851.69	115.00	1.89	162546.00	4644.17	3133.00	65.27	215.00	2.69	-53.00	-2.80
Souris River Formation	54.51996719	-106.2592562	425.20	ACC-23773	1W30640208080100	Accumap	3/8/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=44.82,PRI		772.00	59.00	2.94	31.00	2.55	0.05	0.00	186.00	8.09	13.59	307.00	5.03	60.00	1.69	211.00	4.39				
Souris River Formation	49.81349764	-100.9067482	995.50	ACC-08723	1W10102611030200	Accumap	8/6/1957	Regional			281644.00	4087.00	203.95	2161.00	177.83	0.05	0.00	83008.00	3610.64	3992.43	49.00	0.80	139250.00	3927.74	3114.00	64.83				
Souris River Formation	50.40291232	-108.1215649	1701.70	ACC-15746	1W30171603070100	Accumap	N/A	Regional			119591.00	4738.00	236.44	957.00	78.75	0.05	0.00	40252.00	1750.86	2066.05	85.00	1.39	72250.00	2037.91	1309.00	27.25				
Souris River Formation	49.48593427	-99.04097503	494.55	ACC-02484	1W10061216130000	Accumap	3/7/1957	Regional	FOR THE DEPTH 1605-1640'; IT WOULD BE DST #2		36993.00	1448.00	72.26	592.00	48.72	0.05	0.00	11569.00	503.22	624.20	225.00	3.69	18750.00	528.87	4409.00	91.79				
Souris River Formation	50.88331632	-102.1831091	772.40	ACC-06269	1W20220211140100	Accumap	N/A	Regional			227920.00	5674.00	283.15	1457.00	119.90	0.05	0.00	81005.00	3523.52	3926.56	55.00	0.90	137750.00	3885.43	1979.00	41.20				
Souris River Formation	49.94321682	-105.7562997	1924.50	ACC-16220	1W20112827130100	Accumap	N/A	Regional			8242.00	880.00	43.91	179.00	14.73	0.05	0.00	1706.00	74.21	132.85	246.00	4.03	2700.00	76.16	2531.00	52.70				
Souris River Formation	50.44552528	-99.42631598	275.10	ACC-00336	1W10171511160000	Accumap	N/A	Regional				2190.00	109.29	425.00	34.97	0.05	0.00	24918.00	1083.87	1228.13	224.00	3.67	41300.00	1164.92	2850.00	59.34				
Souris River Formation	47.78761	-102.90634	2900.48		39501 3.31E+13	USGS Produced Water DB	6/25/1958	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 1	335891.00	17831.00	891.55	1957.62	163.14	0.05	0.00	109656.35	4767.67	5822.35	894.68	14.67	205526.40	5872.18	478.74	9.97				
Souris River Formation	49.39057687	-100.3275292	1028.10	ACC-09003	1W10052213050000	Accumap	N/A	Regional	SAMPLE SMALL FOR RES. CHECK; 0.08 AT 45F.		208035.00	11613.00	579.52	1300.00	106.98	0.05	0.00	66945.00	2911.94	3598.44	281.00	4.61	126172.00	3558.85	1724.00	35.89				
Souris River Formation	47.71175	-102.50285	3307.08		39832 3.30E+13	USGS Produced Water DB	8/24/1954	Regional	Petroleum Eng Lab Atlantic Refining Co	Dst #3	253225.00	20900.00	1045.00	1486.00	123.83	0.05	0.00	74483.00	3238.39	4407.22	236.00	3.87	156000.00	4457.14	120.00	2.50				
Souris River Formation	52.41806824	-105.1637142	795.50	ACC-06639	1W20402206140200	Accumap	N/A	Regional			304351.00	2083.00	103.95	97.00	7.98	0.05	0.00	116777.00	5079.51	5191.48	205.00	3.36	180600.00	5094.07	4588.00	95.52				
Souris River Formation	48.75421	-105.40027	1979.68		33363 2.50E+13	USGS Produced Water DB	12/11/1967	Regional	Chem Lab	Test Tank	87150.00	1847.00	92.35	162.00	13.50	800.00	20.51	31118.00	1352.96	1479.32	403.00	6.61	50000.00	1428.57	3025.00	63.02				
Souris River Formation	48.47096	-105.07855	2714.55		33625 2.51E+13	USGS Produced Water DB	6/22/1965	Regional	Chem Lab	Dst No. 4	116053.00	206.00	10.30	41.00	3.42	4300.00	110.26	40850.00	1776.09	1968.50	3392.00	55.61	66000.00	1885.71	2510.00	52.29				
Souris River Formation	50.22754497	-105.7896883	1910.20	ACC-16182	1W20152804080100	Accumap	11/2/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=52.34,SEC		13515.00	1572.00	78.45	383.00	31.52	0.05	0.00	2775.00	120.71	230.67	120.00	1.97	6375.00	179.82	2351.00	48.95				
Souris River Formation	50.008496	-105.432347	1896.80	ACC-23805	1W20122624061100	Accumap	3/24/1970	Regional	SAMPLE POINT FROM 27.43M ABOVE TOOL.TOTAL IRON=1.		27709.00	1055.00	52.65	248.00	20.41	0.05	0.00	8952.00	389.39	462.45	654.00	10.72	13786.00	388.85	3013.00	62.73				

Souris River Formation	49.16458048	-109.2768771	1968.00	ACC-16338	1W30022534052100	Accumap	N/A	Regional	REC: 15M GASSY MUD; 1200M WATER		10535.00	561.00	28.00	117.00	9.63	160.00	4.10	2965.00	128.97	170.72	146.00	2.39	3425.00	96.61	3160.00	65.79				
Souris River Formation	48.75421	-105.40027	1974.19	33362	2.50E+13	USGS Produced Water DB	12/11/1967	Regional	Chem Lab	Test Tank	83631.00	1434.00	71.70	162.00	13.50	900.00	23.08	30084.00	1308.00	1416.28	390.00	6.39	47600.00	1360.00	3259.00	67.90				
Souris River Formation	48.57775	-104.02338		40410	3.31E+13	USGS Produced Water DB	1/25/1965	Regional	Chemical & Geological Laboratories	Production	35897.00	762.00	38.10	116.00	9.67	350.00	8.97	12845.00	558.48	616.08	1122.00	18.39	21000.00	600.00	265.00	5.52				
Souris River Formation	50.28632646	-106.7523893	1783.10	ACC-23790	1W30150627060100	Accumap	10/9/1959	Regional	NA+K IS COMBINED IN NA.CALCULATED RESISTIVITY:1.4		5727.00	839.00	41.87	109.00	8.97	0.05	0.00	813.00	35.36	86.20	357.00	5.85	709.00	20.00	2900.00	60.38				
Souris River Formation	48.11243	-103.00869	2199.13	39396	3.31E+13	USGS Produced Water DB	5/28/1959	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 1	393407.00	20166.00	1008.30	3111.35	259.28	0.05	0.00	127960.58	5563.50	6831.08	72.78	1.19	241944.98	6912.71	189.23	3.94				
Souris River Formation	50.4714	-101.5451	792.07	RS86-21		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville		BRINE-SHAFT		7940.00	397.00	1980.00	165.00	840.00	21.54	99000.00	4304.35	4887.89			157000.00	4485.71			1121.00	14.03	-74.00	-1.90
Souris River Formation	50.41371118	-107.8637723	1653.30	ACC-15619	1W30171409010100	Accumap	N/A	Regional	REC: 1044' SALT WATER. APPEARS TO BE FORMATION WA		83302.00	4736.00	236.34	912.00	75.05	0.05	0.00	25760.00	1120.50	1431.89	239.00	3.92	47695.00	1345.30	3960.00	82.45				
Souris River Formation	53.68817081	-109.6954039	781.50	ACC-06442	1W30542625010100	Accumap	N/A	Regional			27897.00	794.00	39.62	194.00	15.96	0.05	0.00	9729.00	423.19	478.77	500.00	8.19	16643.00	469.44						
Souris River Formation	50.424609	-107.0100892	1755.70	ACC-15841	1W30170811130100	Accumap	N/A	Regional	SAMPLE CONTAINED SOME SEDIMENT		8087.00	661.00	32.99	51.00	4.20	0.05	0.00	1870.00	81.34	118.56	100.00	1.64	544.00	15.34	4823.00	100.41				
Souris River Formation	48.11243	-103.00869	3163.82	39395	3.31E+13	USGS Produced Water DB	6/28/1959	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 4	356282.00	30336.00	1516.80	2052.00	171.00	0.05	0.00	103891.20	4517.01	6204.81	162.00	2.66	219504.00	6271.54	420.00	8.75				
Souris River Formation	49.69511119	-103.6460779	1911.60	ACC-16194	1W20081336140100	Accumap	3/18/1998	Regional	ANALYSIS PERFORMED ON A PALE YELLOW FILTRATE RECO		331619.00	26830.00	1338.89	3521.00	289.75	5376.00	137.85	87975.00	3826.70	5592.83	244.00	4.00	207400.00	5850.00	274.00	5.70				
Souris River Formation	50.32636989	-101.7106204	1039.35	ACC-09084	1W10153132160100	Accumap	N/A	Regional			311043.00	2271.00	113.33	1943.00	159.89	0.05	0.00	116427.00	5064.29	5337.51	220.00	3.61	186250.00	5253.43	3932.00	81.86				
Souris River Formation	50.4714	-101.5451	791.57	RMBR_02-349		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	spigot hose connected to grout plug	BRINE-SHAFT	228173.56	6310.00	315.50	929.00	77.42	2290.00	58.72	77243.11	3358.40	3810.03			140645.56	4018.44	1698.00	35.38	184.80	2.31	-58.57	-2.93
Souris River Formation	53.93515637	-109.0514452	562.70	ACC-03050	1W30572122040100	Accumap	N/A	Regional			12037.00	112.00	5.59	82.00	6.75	0.05	0.00	4368.00	190.00	202.33	700.00	11.47	6750.00	190.39	25.00	0.52				
Souris River Formation	51.8552	-105.2103		23983		IMII Project New Data	42059	Lanigan	upper souris river water @ bleeder valve		286000.00	3970.00	198.50	1640.00	136.67	5350.00	137.18	95900.00	4169.57	4645.50	26.00	0.43	177000.00	5057.14	2100.00	43.75	220.00	2.75		
Souris River Formation	49.47138519	-101.7798032	1636.60	ACC-15580	1W10063207160100	Accumap	12/22/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=87.08,SEC		214541.00	7529.00	375.72	1250.00	102.86	0.05	0.00	74090.00	3222.73	3701.31	398.00	6.52	129750.00	3659.77	1726.00	35.94				
Souris River Formation	51.14228783	-101.9874958	756.40	ACC-06014	1W10253311080100	Accumap	N/A	Regional			3566.00	174.00	8.68	45.00	3.70	0.05	0.00	1094.00	47.59	59.97	110.00	1.80	1840.00	51.90	303.00	6.31				
Souris River Formation	50.87622981	-102.4677854	833.60	ACC-23799	1W20220411050100	Accumap	1/18/1954	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=77.78,SEC		73899.00	4109.00	205.05	957.00	78.75	0.05	0.00	22825.00	992.83	1276.63	100.00	1.64	43250.00	1219.92	2658.00	55.34				
Souris River Formation	53.82615908	-109.3486608	701.00	ACC-04955	1W30562310120100	Accumap	N/A	Regional	BA ABSENT		13034.00	123.00	6.14	97.00	7.98	0.05	0.00	4685.00	203.79	217.94	942.00	15.44	7148.00	201.62	38.00	0.79				
Souris River Formation	49.42289202	-100.6941874	925.50	ACC-07942	1W10052430090000	Accumap	12/14/1978	Regional	PALE YELLOW FILTRATE RECOVERED FROM WATERY MUD SA		22687.00	521.00	26.00	61.00	5.02	0.05	0.00	7184.00	312.49	343.51	451.00	7.39	4750.00	133.98	9720.00	202.37				
Souris River Formation	53.68817081	-109.6954039	784.90	ACC-06496	1W30542625010100	Accumap	N/A	Regional			27445.00	437.00	21.81	484.00	39.83	0.05	0.00	9513.00	413.79	475.43	355.00	5.82	16643.00	469.44	13.00	0.27				
Souris River Formation	49.20947384	-101.7904321	1798.35	ACC-15920	1W10033218030100	Accumap	N/A	Regional			324410.00	22389.00	1117.27	3192.00	262.67	0.05	0.00	98210.00	4271.89	5651.84	262.00	4.29	200000.00	5641.27	357.00	7.43				
Souris River Formation	52.091746	-106.854477	899.39	CS86-19		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Cory		BRINE-SHAFT		22640.00	1132.00	1500.00	125.00	2290.00	58.72	130000.00	5652.17	6978.24			199000.00	5685.71			2804.00	35.09	-107.00	-9.60
Souris River Formation	52.10255236	-106.8395013	800.98	CSBR_02-339		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Drip from crack in shaft liner	BRINE-SHAFT	243534.64	26800.00	1340.00	8410.00	700.83	2340.00	60.00	51474.17	2238.01	4338.84			153324.54	4380.70	519.00	10.81	995.00	12.45	-93.20	-6.02
Souris River Formation	49.64089657	-106.4402306	2026.00	ACC-23794	1W30080414021100	Accumap	N/A	Regional	NA&K IS COMBINED IN NA.		10406.00	750.00	37.43	278.00	22.88	0.05	0.00	2390.00	103.96	164.26	333.00	5.46	2735.00	77.14	3920.00	81.61				
Souris River Formation	49.51824187	-108.9236087	2079.10	ACC-16454	1W30062232090100	Accumap	N/A	Regional			112231.00	7463.00	372.42	1649.00	135.70	0.05	0.00	33209.00	1444.51	1952.63	670.00	10.98	67750.00	1910.98	1490.00	31.02				
Souris River Formation	48.75203	-103.30896	2857.20	40389	3.30E+13	USGS Produced Water DB	8/13/1968	Regional	Chem Lab	Dst No. 5 Middle	319738.00	27100.00	1355.00	2888.00	240.67	6000.00	153.85	87259.00	3793.87	5543.38	220.00	3.61	196000.00	5600.00	383.00	7.98				
Souris River Formation	50.41015283	-108.3964718	1674.00	ACC-15663	1W30171803150100	Accumap	1/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=70.44,SEC		143246.00	10887.00	543.29	2408.00	198.16	0.05	0.00	40596.00	1765.83	2507.27	165.00	2.70	87500.00	2468.06	1774.00	36.93				
Souris River Formation	52.93	-106.8556	846.95	CS86-16		Wittrup, M.B., 1988. The Origin Of Water Leaks In	1986	Cory		BRINE-SHAFT		22180.00	1109.00	6600.00	550.00	710.00	18.21	36000.00	1565.22	3242.42			96400.00	2754.29			906.00	11.34	-120.00	-9.60
Souris River Formation	53.58607747	-109.9105217	676.70	ACC-04508	1W30532722040100	Accumap	N/A	Regional	REC. 1508' FROM 500' ABOVE PACKER		109219.00	5555.00	277.21	2799.00	230.33	0.05	0.00	32547.00	1415.71	1923.26	260.00	4.26	68000.00	1918.03	58.00	1.21				
Souris River Formation	54.040783	-109.7693818	739.10	ACC-05708	1W30582626050100	Accumap	N/A	Regional	FE		48972.00	827.00	41.27	90.00	7.41	0.05	0.00	17745.00	771.86	820.54	381.00	6.24	25859.00	729.39	4070.00	84.74				
Souris River Formation	49.2355945	-100.8133588	1286.30	ACC-12018	1W10032520150000	Accumap	7/9/1970	Regional			254945.00	12805.00	639.00	2782.00	228.93	0.05	0.00	81964.00	3565.23	4433.17	85.00	1.39	156503.00	4414.38	806.00	16.78				
Souris River Formation	52.39757325	-108.1369054	1043.60	ACC-23783	1W30391532053100	Accumap	5/30/1950	Regional	CHEMISTRY DEPT NO.330/50.SAMPLE NO.1,RED PHEASANT			1810.00	90.32	1215.00	99.98	0.05	0.00	47200.00	2053.08	2243.39	77.40	1.27	74600.00	2104.19	4330.00	90.15				
Souris River Formation	52.99037702	-107.8877973	761.10	ACC-06083	1W30461330044100	Accumap	3/10/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY-88.10,SEC		63880.00	1408.00	70.26	721.00	59.33	0.05	0.00	22047.00	958.99	1088.59	640.00	10.49	34902.00	984.46	4487.00	93.42				
Souris River Formation	53.29438952	-108.8169678	727.90	ACC-23782	1W30502011020100	Accumap	6/23/1960	Regional	CALCULATED RESISTIVITY:0.076 OM.APPEARS TO BE FOR		118530.00	3630.00	181.15	755.00	62.13	0.05	0.00	41315.00	1797.10	2040.38	810.00	13.27	71380.00	2013.37	640.00	13.32				
Souris River Formation	51.93203	-106.069691	898.81	ASBR_02-303		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Catching drips from salt build up	BRINE-SHAFT	321043.76	8790.00	439.50	2790.00	232.50	3240.00	83.08	109578.87	4764.30	5519.38			195319.29	5580.55	897.00	18.69	422.00	5.28	-125.97	-14.38
Souris River Formation	51.93203	-106.069691	842.73	ASBR_02-322		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Seepage from shaft liner	BRINE-SHAFT	304257.21	6560.00	328.00	2290.00	190.83	2040.00	52.31	107056.05	4654.61	5225.75			184797.21	5279.92	1149.00	23.94	359.00	4.49	-123.25	-14.86
Souris River Formation	51.93203	-106.069691	813.17	ASBR_02-304		Jensen, G.K., 2003, November. Hydrochemical And S	2002	Allan	Using syringe to sample drip from anchor bolt	BRINE-SHAFT	224102.63	18500.00	925.00	5640.00	470.00	1740.00	44.62	56956.21	2476.36	3915.97			139802.32	3994.35	756.00	15.75	696.00	8.71	-103.05	-10.62
Souris River Formation	50.35556447	-108.2819695	1708.10	ACC-15758	1W30161721020100	Accumap	11/14/1957	Regional	NA+K IS COMBINED IN NA. PRIMARY SALINITY=84.50,SE		75389.00	1601.00	79.89	1181.00	97.19	0.05	0.00	25261.00	1098.79	1275.87	305.00	5.00	43250.00	1219.92	3646.00	75.91				
Souris River Formation	49.32747332	-104.8161418	2310.00	ACC-23816	1W20042130079100	Accumap	7/21/2000	Regional	PALE YELLOW COLOURED FILTRATE RECOVERED FROM A SA		266899.00	4725.00	235.79	1068.00	87.89	2055.00	52.69	95950.00	4173.59	4549.83	18.00	0.29	162000.00	4569.43	1083.00	22.55				
Souris River Formation	49.58319573	-103.9675175	2053.00	ACC-23807	1W20071527041100	Accumap	9/5/2002	Regional	THE IONIC BALANCE FOR THIS WATER EXCEEDS 10%. THE		223419.00	2180.00	108.79	335.00	27.57	1820.00	46.67	75300.00	3275.37	3458.28	137.30	2.25	141956.00	4004.06	1691.00	35.21				
Souris River Formation	47.71175	-102.50285	3209.54	39833	3.30E+13	USGS Produced Water DB	8/15/1954	Regional	Petroleum Eng Lab Atlantic Refining Co	Dst #1	72999.00	1518.00	75.90	138.00	11.50	0.05	0.00	25803.00	1121.87	1209.27	1134.00	18.59	36840.00	1052.57	7566.00	157.63				
Souris River Formation	49.1400289	-105.8321082	2365.30	ACC-16671	1W20022921120100	Accumap	N/A	Regional			5906.00	754.00	37.63	174.00	14.32	0.05	0.00	1058.00	46.02	98.00	200.00	3.28	2340.00	66.00	1379.00	28.71				
Souris River Formation	49.74476052	-101.1418938	1108.55	ACC-09861	1W10092718050000	Accumap	5/22/1952	Regional				5488.00	273.87	1328.00	109.28	0.05	0.00	104609.00	4550.24	4933.38	75.00	1.23	173536.00	4894.82	1751.00	36.46				
Souris River Formation	47.71175	-102.50285	3209.54	39835	3.30E+13	USGS Produced Water DB	9/22/1954	Regional	Yapuncich - Sanderson Laboratories	Dst No. 1	75060.00	1992.00	99.60	25.44	2.12	0.05	0.00	26508.48	1152.54	1254.26	360.40	5.91	38441.96	1098.34	7913.96	164.87				
Souris River Formation	49.30996097	-102.5531828	2084.90	ACC-23817	1W20040524070100	Accumap	1/8/1968	Regional	NO SOURIS RIVER WATER FROM THIS AREA ON FILE.CONC		301901.00	37290.00	1860.87	3770.00	310.24	0.05	0.00	72234.00	3142.00	5313.11	267.00	4.38	187760.00	5296.03	580.00	12.08				
Souris River Formation	49.30996097	-102.5531828	2084.80	ACC-16455	1W20040524070102	Accumap	N/A	Regional				37290.00	1860.87	3770.00	310.24	0.05	0.00	72234.00	3142.00	5313.11	267.00	4.38	187760.00	5296.03	580.00	12.08				
Souris River Formation	49.80915982	-101.2303251	1140.55	ACC-10165	1W10102804120200	Accumap	N/A	Regional				7296.00	364.09	1380.00	113.56	0.05	0.00	94249.00	4099.60	4577.25	90.00	1.47	160866.00	4537.44	1803.00	37.54				
Souris River Formation	52.41806824	-105.1637142	795.50	ACC-06642	1W20402206140200	Accumap	N/A	Regional			304350.00	2083.00	103.95	97.00	7.98	0.05	0.00	116777.00	5079.51	5191.44	205.00	3.36	180600.00	5094.07	4588.00	95.52				
Souris River Formation	49.39057687	-100.3275292	1028.10	ACC-09002	1W10052213050000	Accumap	N/A	Regional	MIXED WITH MUD. 0.11 AT 39F.		110279.00	8199.00	409.15	740.00	60.90	0.05	0.00	32901.00	1431.11	1901.16	897.00	14.70	65088.00	1835.90	2454.00	51.09				
Souris River Formation	47.43009	-102.0849	3069.34	40179	3.31E+13	USGS Produced Water DB				Dst No. 2	309430.00	36811.00	1840.55	4590.00	382.50	7400.00	189.74	68960.00	2998.26	5412.50	769.00	12.61	191000.00	5457.14	280.00	5.83				
Souris River Formation	49.64089657	-106.4402306	1989.70	ACC-23795	1W30080414021100	Accumap	N/A	Regional	NA&K IS COMBINED IN NA.		23754.00	1160.00	57.89	407.00	33.49	0.05	0.00	7150.00	311.01	402.39	252.00	4.13	12100.00	341.30	2685.00	55.90				
Souris River Formation	49.70022854	-99.23733102	339.85	ACC-00820	1W10081436080000	Accumap	N/A	Regional			63702.00	4578.00	228.45	1334.00	109.78	0.05	0.00	17656.00	767.99	1106.22	171.00	2.80	36759.00	1036.84	3192.00	66.46				
Souris River Formation	53.29039734	-104.5606495	341.10	ACC-00839	1W20501803132100	Accumap	N/A	Regional			5203.00	54.00	2.69	25.00	2.06	81.00	2.08	1800.00	78.30	85.12	153.00	2.51	2230.00	62.90	860.00	17.91				
Souris River Formation	49.28761721	-103.1218805	2221.00	ACC-16567	1W20040911131100	Accumap	N/A	Regional				4204.00	209.79	486.00	39.99	9032.00	231.59	106214.00	4620.05	5100.84	134.00	2.20	193000.00	5443.83	823.00	17.13				
Souris River Formation	53.29039734	-104.5606495	353.30	ACC-00926	1W20501803132100	Accumap	N/A	Regional			3128.00	180.00	8.98	44.00	3.62	0.05	0.00	769.00	33.45	46.05	270.00	4.42	380.00	10.72	1485.00	30.92				
Dawson Bay Formation	50.51406887	-105.121352	1524.00	ACC-23554	1W20182316042100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.SAMPLED FROM BOTTOM.		261459.00	5150.00	257.00	8605.00	708.11	0.05	0.00	83853.00	3647.40	4612.51	545.00	8.93	163000.00	4597.64	306.00	6.37				
Dawson Bay Formation	49.15153946	-103.1317851	2422.00	ACC-23566	1W20020927064100	Accumap	5/15/1987	Regional	CLEAR,COLORLESS FILTRATE RECOVERED FROM MUDDY WAT		384040.00	76680.00	3826.54	5589.00	459.92	14670.00	376.15	38890.00	1691.62	6353.29	427.00	7.00	247500.00	6981.07	284.00	5.91				

Dawson Bay Formation	49.01601737	-103.4430126	2663.00	ACC-17022	1W20011108034100	Accumap	6/17/1985	Regional	CLEAR,COLORLESS FILTRATE RECOVERED FROM A SAMPLE		297384.00	31230.00	1558.46	122.00	10.04	2665.00	68.33	79430.00	3455.01	5091.67	264.00	4.33	183500.00	5175.87	173.00	3.60				
Dawson Bay Formation	49.01601737	-103.4430126	2664.00	ACC-17027	1W20011108034100	Accumap	4/25/1985	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM SAMPL		312037.00	488.00	24.35	1.00	0.08	1250.00	32.05	126400.00	5498.09	5554.50	628.00	10.29	173600.00	4896.62	9526.00	198.33				
Dawson Bay Formation	49.01601737	-103.4430126	2663.00	ACC-17016	1W20011108034100	Accumap	6/5/1985	Regional	AMBER COLORED FILTRATE RECOVERED FROM A SAMPLE CO		484248.00	120100.00	5993.31	9404.00	773.86	2633.00	67.51	40990.00	1782.96	8617.49	522.00	8.55	310500.00	8758.07	99.00	2.06				
Dawson Bay Formation	51.55606162	-101.8690195	612.50	ACC-03527	1W10293236060100	Accumap	N/A	Regional			85878.00	1508.00	75.25	727.00	59.83	0.05	0.00	30760.00	1337.98	1473.10	102.00	1.67	50393.00	1421.40	2387.00	49.70				
Dawson Bay Formation	51.18600639	-101.0675739	644.05	ACC-03954	1W10252628040200	Accumap	N/A	Regional				540.00	26.95	78.00	6.42	0.05	0.00	970.00	42.19	75.56	98.00	1.61	973.00	27.44	2255.00	46.95				
Dawson Bay Formation	49.15153946	-103.1317851	2422.00	ACC-23567	1W20020927064100	Accumap	5/15/1987	Regional	CLEAR,COLORELSS FILTRATE RECOVERED FROM MUDDY WAT		313217.00	3403.00	169.82	243.00	20.00	3162.00	81.08	110100.00	4789.08	5059.77	98.00	1.61	193500.00	5457.93	2531.00	52.70				
Dawson Bay Formation	49.01601737	-103.4430126	2663.00	ACC-17020	1W20011108034100	Accumap	6/5/1985	Regional	PALE AMBER COLORED FILTRATE RECOVERED FROM SAMPLE		527147.00	140100.00	6991.37	10890.00	896.15	2461.00	63.10	34450.00	1498.49	9448.95	590.00	9.67	338500.00	9547.85	156.00	3.25				
Dawson Bay Formation	51.55606162	-101.8690195	622.30	ACC-03636	1W10293236060100	Accumap	N/A	Regional			85634.00	1470.00	73.36	798.00	65.67	0.05	0.00	30487.00	1326.11	1465.17	142.00	2.33	49370.00	1392.55	3366.00	70.08				
Dawson Bay Formation	49.62276467	-99.79410895	731.80	ACC-05551	1W10081801030000	Accumap	N/A	Regional	VERY HARD TO READ.		157295.00	2930.00	146.21	699.00	57.52	0.05	0.00	57117.00	2484.45	2688.19	100.00	1.64	91791.00	2589.09	4658.00	96.98				
Dawson Bay Formation	52.99037702	-107.8877973	892.80	ACC-07665	1W30461330044100	Accumap	3/10/1953	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY-91.72,SEC		150319.00	2301.00	114.83	1193.00	98.17	0.05	0.00	54310.00	2362.35	2575.35	112.00	1.84	87727.00	2474.46	4733.00	98.54				
Dawson Bay Formation	49.43818631	-100.7402744	1167.70	ACC-10496	1W10052535090000	Accumap	7/21/1958	Regional			37623.00	1571.00	78.40	454.00	37.36	0.05	0.00	11883.00	516.88	632.64	634.00	10.39	19169.00	540.69	3912.00	81.45				
Dawson Bay Formation	49.71140884	-100.0214046	770.55	ACC-06224	1W10091905030000	Accumap	N/A	Regional			205258.00	3022.00	150.81	954.00	78.51	0.05	0.00	75554.00	3286.41	3515.73	60.00	0.98	121750.00	3434.12	3918.00	81.57				
Dawson Bay Formation	51.55606162	-101.8690195	634.75	ACC-03808	1W10293236060100	Accumap	N/A	Regional			68810.00	1586.00	79.15	610.00	50.20	0.05	0.00	23853.00	1037.55	1166.93	205.00	3.36	37539.00	1058.84	5016.00	104.43				
Dawson Bay Formation	52.10255236	-106.8395013	990.86	CSBR_02-336		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Seepage from liner joint	BRINE-SHAFT	487495.63	124000.00	6200.00	20100.00	1675.00	20100.00	515.38	6985.87	303.73	8694.12			310759.74	8878.85	258.00	5.38	5400.00	67.58	-53.23	1.79
Dawson Bay Formation	49.01601737	-103.4430126	2663.00	ACC-17018	1W20011108034100	Accumap	6/5/1985	Regional	AMBER COLORED FILTRATE RECOVERED FROM A SAMPLE CO		54384.00	9129.00	455.56	826.00	67.97	735.00	18.85	8960.00	389.74	932.07	110.00	1.80	33900.00	956.20	724.00	15.07				
Dawson Bay Formation	49.15153946	-103.1317851	2422.00	ACC-23565	1W20020927064100	Accumap	5/15/1987	Regional	CLEAR,COLORLESS FILTRATE RECOVERED FROM MUDDY WAT		311739.00	12810.00	639.25	122.00	10.04	4488.00	115.08	99860.00	4343.67	5107.75	232.00	3.80	193500.00	5457.93	691.00	14.39				
Dawson Bay Formation	52.94553934	-104.0871505	564.80	ACC-23541	1W20461510010100	Accumap	11/22/1957	Regional	NA+K IS COMBINED IN NA.		2035.00	299.00	14.92	55.00	4.53	0.05	0.00	214.00	9.31	28.76	793.00	13.00	234.00	6.60	440.00	9.16				
Dawson Bay Formation	49.15153946	-103.1317851	2422.00	ACC-23564	1W20020927064100	Accumap	5/15/1987	Regional	CLEAR,COLORLESS FILTRATE RECOVERED FROM MUDDY WAT		322497.00	17020.00	849.34	122.00	10.04	5202.00	133.38	97800.00	4254.06	5246.49	220.00	3.61	201500.00	5683.58	609.00	12.68				
Dawson Bay Formation	49.38273914	-102.9969788	2190.00	ACC-23561	1W20050815083100	Accumap	6/2/1987	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM MUD.T		304618.00	1001.00	49.95	121.00	9.96	2822.00	72.36	109880.00	4779.51	4911.60	195.00	3.20	185000.00	5218.18	5563.00	115.82				
Dawson Bay Formation	49.50743306	-108.2899452	2148.90	ACC-16497	1W30061730130100	Accumap	4/14/1959	Regional	PRIMARY SALINITY=10.78,SECONDARY SALINITY=82.64,S		3595.00	708.00	35.33	192.00	15.80	0.05	0.00	142.00	6.18	57.31	230.00	3.77	375.00	10.58	2065.00	42.99				
Dawson Bay Formation	54.0691966	-108.2744485	445.60	ACC-01822	1W30591601050100	Accumap	N/A	Regional			10466.00	190.00	9.48	106.00	8.72	0.05	0.00	3600.00	156.59	174.80	390.00	6.39	5300.00	149.49	830.00	17.28				
Dawson Bay Formation	50.49	-106.97	1720.50	U of A 98 - 071A		Rostron, B.J., Kelley, L.I., Kreis, L.K. and Holm		Regional	DST#5, 18/8/97 MISRUN		11492.00	730.00	36.50	177.00	14.75	134.00	3.44	3690.00	160.43	216.47	192.00	3.15	5920.00	169.14			5.43	0.07		
Dawson Bay Formation	51.50426674	-105.3291682	1072.90	ACC-23547	1W20292428041100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		174023.00	1150.00	57.39	1183.00	97.35	0.05	0.00	64989.00	2826.86	2981.60	61.00	1.00	102800.00	2899.61	3840.00	79.95				
Dawson Bay Formation	51.2217415	-106.5130882	1456.40	ACC-23529	1W30260416120100	Accumap	6/17/1954	Regional	NA+K IS COMBINED IN NA.		72353.00	1630.00	81.34	822.00	67.64	0.05	0.00	24550.00	1067.86	1216.85	211.00	3.46	39600.00	1116.97	4540.00	94.52				
Dawson Bay Formation	53.70183893	-105.6204471	351.40	ACC-00913	1W20542533010100	Accumap	N/A	Regional	SAMPLE INSUFFICIENT FOR RESISTIVITY OR SPECIFIC G		3591.00	68.00	3.39	14.00	1.15	0.05	0.00	1209.00	52.59	57.13	180.00	2.95	1360.00	38.36	760.00	15.82				
Dawson Bay Formation	51.46974626	-102.007231	666.90	ACC-23548	1W20280136095000	Accumap	4/11/1968	Regional	SAMPLE AS RECEIVED WAS A TURBID SALT WATER. FILTE		173206.00	2403.00	119.92	1079.00	88.79	0.05	0.00	63221.00	2749.96	2958.67	49.00	0.80	100450.00	2833.33	5980.00	124.50				
Dawson Bay Formation	49.38690549	-103.2018726	2211.00	ACC-16556	1W20050918104100	Accumap	N/A	Regional	ANALYSIS WAS PREFORMED ON A MUD FILTRATE		310390.00	983.00	49.05	20.00	1.65	5824.00	149.33	115575.00	5027.23	5226.89	388.00	6.36	177823.00	5015.74	9763.00	203.26				
Dawson Bay Formation	49.22919738	-103.0706419	2330.00	ACC-16661	1W20030819152100	Accumap	N/A	Regional				2500.00	124.76	38.00	3.13	9744.00	249.85	113721.00	4946.59	5323.69	413.00	6.77	187274.00	5282.32	4186.00	87.15				
Dawson Bay Formation	51.21083757	-106.6417457	1476.80	ACC-14637	1W30260509150100	Accumap	N/A	Regional			65635.00	1745.00	87.08	776.00	63.86	0.05	0.00	22292.00	969.65	1120.59	229.00	3.75	36743.00	1036.39	3850.00	80.16				
Dawson Bay Formation	51.96679488	-101.0355524	469.20	ACC-02133	1W10342635160000	Accumap	9/20/1955	Regional			10277.00	100.00	4.99	47.00	3.87	0.05	0.00	3636.00	158.16	167.02	815.00	13.36	4800.00	135.39	879.00	18.30				
Dawson Bay Formation	50.22380693	-99.82333429	651.95	ACC-04106	1W10141826160000	Accumap	4/18/1957	Regional			137867.00	2960.00	147.71	1495.00	123.03	0.05	0.00	48232.00	2097.97	2368.71	140.00	2.29	80750.00	2277.66	4290.00	89.32				
Dawson Bay Formation	48.4028	-101.66499	2318.61	39586	3.31E+13	USGS Produced Water DB		Regional	Yapuncich Sanderson Laboratories	Dst No. 2	152273.00	18844.00	942.20	3129.68	260.81	0.05	0.00	34435.30	1497.19	2700.19	325.09	5.33	94518.54	2700.53	1185.75	24.70				
Dawson Bay Formation	49.38276122	-102.721141	2111.00	ACC-23562	1W20050614050100	Accumap	11/25/1954	Regional	NA + K IS COMBINED IN NA.INSUFFICIENT DATA FOR CO		22685.00	102.00	5.09	32.00	2.63	0.05	0.00	8398.00	365.29	373.02	407.00	6.67	10846.00	305.93	2900.00	60.38				
Dawson Bay Formation	49.01601737	-103.4430126	2663.00	ACC-17021	1W20011108034100	Accumap	6/17/1985	Regional	CLEAR,COLORLESS FILTRATE RECOVERED FROM A SAMPLE		339279.00	28830.00	1438.69	3888.00	319.95	2471.00	63.36	91950.00	3999.60	5821.44	320.00	5.24	211400.00	5962.82	420.00	8.74				
Dawson Bay Formation	50.00660691	-100.7288013	921.25	ACC-07910	1W10122417030000	Accumap	N/A	Regional			164250.00	3969.00	198.06	1101.00	90.60	0.05	0.00	58192.00	2531.21	2819.88	287.00	4.70	97359.00	2746.14	3342.00	69.58				
Dawson Bay Formation	49.07430772	-105.6092288	2470.70	ACC-16803	1W20012731040100	Accumap	N/A	Regional			83399.00	1383.00	69.02	1005.00	82.70	0.05	0.00	29357.00	1276.96	1428.68	215.00	3.52	48000.00	1353.91	3439.00	71.60				
Dawson Bay Formation	50.58841948	-105.6299953	1521.60	ACC-15061	1W20192712040100	Accumap	N/A	Regional	BA ABSENT		309285.00	1820.00	90.82	437.00	35.96	0.05	0.00	118765.00	5165.99	5292.81	102.00	1.67	185810.00	5241.02	2350.00	48.93				
Dawson Bay Formation	50.10992145	-99.51367623	453.00	ACC-01911	1W10131519030000	Accumap	N/A	Regional	AMOUNTS ARE GUESSES DUE TO TOTAL ILLEGIBILITY OF		155990.00	2815.00	140.48	708.00	58.26	0.05	0.00	56606.00	2462.22	2660.96	105.00	1.72	90500.00	2552.68	5256.00	109.43				
Dawson Bay Formation	52.93853257	-107.9597022	873.90	ACC-07535	1W30461403120100	Accumap	N/A	Regional			182584.00	2774.00	138.43	1114.00	91.67	0.05	0.00	66707.00	2901.59	3131.73	110.00	1.80	108500.00	3060.39	3378.00	70.33				
Dawson Bay Formation	53.13462862	-104.395232	462.40	ACC-23538	1W20481715010100	Accumap	9/22/1955	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=76.70,SEC		13050.00	656.00	32.74	199.00	16.38	0.05	0.00	3717.00	161.68	210.79	333.00	5.46	4375.00	123.40	3939.00	82.01				
Dawson Bay Formation	49.39057687	-100.3275292	1100.95	ACC-09787	1W10052213050000	Accumap	N/A	Regional	0.07 AT 44F		209422.00	4725.00	235.79	1585.00	130.43	0.05	0.00	74470.00	3239.26	3605.48	116.00	1.90	125687.00	3545.17	2839.00	59.11				
Dawson Bay Formation	50.10434288	-107.6059206	1956.80	ACC-23532	1W30131220150100	Accumap	7/12/1968	Regional	NA&K IS COMBINED IN NA.		3244.00	470.00	23.45	108.00	8.89	0.05	0.00	392.00	17.05	49.39	195.00	3.20	396.00	11.17	1683.00	35.04				
Dawson Bay Formation	50.47854305	-100.9724376	875.20	ACC-07546	1W10172627010000	Accumap	N/A	Regional	V. O. 1 HR.		98661.00	2094.00	104.50	782.00	64.35	0.05	0.00	34690.00	1508.93	1677.78	378.00	6.19	55201.00	1557.02	5516.00	114.84				
Dawson Bay Formation	49.58923722	-98.73640355	442.90	ACC-01807	1W10071022160000	Accumap	N/A	Regional				1930.00	96.31	214.00	17.61	0.05	0.00	14707.00	639.72	753.64	154.00	2.52	24780.00	698.95	2500.00	52.05				
Dawson Bay Formation	53.45164289	-102.8471375	99.70	ACC-00013	1W20510632154200	Accumap	N/A	Regional	U3O8 1.93PPM. DAWSON BAY IS COMPANY PICK; LIKELY		11182.00	184.00	9.18	106.00	8.72	0.05	0.00	3906.00	169.90	187.84	312.00	5.11	5905.00	166.56	749.00	15.59				
Dawson Bay Formation	49.94759863	-100.4134359	792.00	ACC-06602	1W10112227040000	Accumap	9/10/1956	Regional			79429.00	2339.00	116.72	665.00	54.72	0.05	0.00	27142.00	1180.61	1352.06	530.00	8.69	44500.00	1255.18	4253.00	88.55				
Dawson Bay Formation	48.4028	-101.66499	1833.68	39588	3.31E+13	USGS Produced Water DB		Regional	Yapuncich Sanderson Laboratories	Dst No. 1 Bottom	333887.00	10027.00	501.35	2338.79	194.90	0.05	0.00	116694.10	5073.66	5769.91	421.03	6.90	203446.44	5812.76	1172.95	24.44				
Dawson Bay Formation	49.78125557	-99.96485369	702.70	ACC-04986	1W10091927160000	Accumap	N/A	Regional			114779.00	2503.00	124.91	680.00	55.96	0.05	0.00	40847.00	1776.74	1957.61	268.00	4.39	65816.00	1856.43	4665.00	97.12				
Dawson Bay Formation	49.39057687	-100.3275292	1100.95	ACC-09786	1W10052213050000	Accumap	N/A	Regional			213903.00	3989.00	199.06	912.00	75.05	0.05	0.00	78103.00	3397.29	3671.40	91.00	1.49	128235.00	3617.04	2573.00	53.57				
Dawson Bay Formation	49.82552779	-99.82851464	634.00	ACC-03797	1W10101810160000	Accumap	7/28/1967	Regional			185130.00	2814.00	140.43	235.00	19.34	0.05	0.00	68929.00	2998.24	3158.01	85.00	1.39	108581.00	3062.67	4486.00	93.40				
Dawson Bay Formation	50.88331632	-102.1831091	872.30	ACC-07526	1W20220211140100	Accumap	N/A	Regional			77345.00	1729.00	86.28	98.00	8.06	0.05	0.00	27869.00	1212.23	1306.58	190.00	3.11	42750.00	1205.82	4709.00	98.04				
Dawson Bay Formation	49.01601737	-103.4430126	2663.00	ACC-17019	1W20011108034100	Accumap	6/5/1985	Regional	PALE AMBER COLORED FILTRATE RECOVERED FROM SAMPLE		500389.00	127900.00	6382.55	11590.00	953.75	2266.00	58.10	36120.00	1571.13	8965.39	673.00	11.03	321700.00	9073.99	140.00	2.91				
Dawson Bay Formation	49.40150168	-100.6950626	1141.75	ACC-10176	1W10052419010000	Accumap	8/23/1954	Regional			107590.00	3326.00	165.98	682.00	56.12	0.05	0.00	37180.00	1617.24	1839.34	464.00	7.60	62176.00	1753.76	3762.00	78.32				
Dawson Bay Formation	49.84017558	-99.99867423	691.60	ACC-04801	1W10101916140000	Accumap	N/A	Regional	CARBONATE : NIL.		12136.00	845.00	42.17	114.00	9.38	0.05	0.00	3330.00	144.85	196.40	105.00	1.72	4580.00	129.19	3162.00	65.83				
Dawson Bay Formation	50.91658197	-102.3978961	916.80	ACC-07861	1W20220329040100	Accumap	N/A	Regional			229715.00	4660.00	232.55	229.00	18.84	0.05	0.00	84638.00	3681.55	3932.94	71.00	1.16	137500.00	3878.37	2617.00	54.49				
Dawson Bay Formation	52.44729608	-104.7739539	805.30	ACC-06776	1W20402014150100	Accumap	N/A	Regional			134465.00	2260.00	112.78	630.00	51.84	0.05	0.00	48742.00	2120.16	2284.78	153.00	2.51	75880.00	2140.30	6800.00	141.58				
Dawson Bay Formation	49.15153946	-103.1317851	2422.00	ACC-23569	1W20020927064100	Accumap	5/15/1987	Regional	CLEAR,COLORLESS FILTRATE RECOVERED FROM MUDDY WAT		438077.00	116900.00	5833.62	10210.00	840.19	14990.00	384.36	16320.00	709.88	7767.09	488.00	8.00	279000.00	7869.57	169.00	3.52				
Dawson Bay Formation	49.01601737	-103.4430126	2663.00	ACC-17017	1W20011108034100	Accumap	6/5/1985	Regional	AMBER COLORED FILTRATE RECOVERED FROM A SAMPLE CO		478698.00	120100.00	5993.31	10570.00	869.82	1821.00	46.69	37930.00	1649.86	8559.57	695.00	11.39	307500.00	8673.45	82.00	1.71				
Dawson Bay Formation	52.94184143	-103.2724347	503.50	ACC-23542	1W20460905150100	Accumap	10/24/1955	Regional	PRIMARY SALINITY=85.66,SECONDARY SALINITY=5.70,SE		4519.00	131.00	6.54	53.00	4.36	0.05	0.00	1497.00	65.12	76.01	370.00	6.06	1960.00	55.28	681.00	14.18				

Dawson Bay Formation	51.0111255	-107.3042771	1579.20	ACC-23530	1W30241002040100	Accumap	9/29/1958	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=82.84,SEC		61439.00	2519.00	125.70	660.00	54.31	0.05	0.00	19977.00	868.95	1048.97	175.00	2.87	34000.00	959.02	4197.00	87.38				
Dawson Bay Formation	51.51275459	-105.1973946	1029.60	ACC-09018	1W20292329090100	Accumap	N/A	Regional			282962.00	1944.00	97.01	472.00	38.84	0.05	0.00	107962.00	4696.08	4831.93	181.00	2.97	168000.00	4738.67	4403.00	91.67				
Dawson Bay Formation	49.01601737	-103.4430126	2663.00	ACC-17023	1W20011108034100	Accumap	6/17/1985	Regional	CLEAR,COLORLESS FILTRATE RECOVERED FROM A SAMPLE		277334.00	28430.00	1418.73	5395.00	443.96	2317.00	59.41	69700.00	3031.78	4953.73	293.00	4.80	171000.00	4823.29	199.00	4.14				
Dawson Bay Formation	49.62276467	-99.79410895	731.25	ACC-05538	1W10081801030000	Accumap	5/22/1952	Regional	HARD TO READ		152245.00	2751.00	137.28	970.00	79.82	0.05	0.00	54902.00	2388.10	2605.21	135.00	2.21	88830.00	2505.57	4657.00	96.96				
Dawson Bay Formation	50.8123924	-102.2263529	941.00	ACC-23552	1W20210221039100	Accumap	2/2/2001	Regional			292812.00	1069.00	53.35	17.00	1.40	14302.00	366.72	104482.00	4544.71	4965.25	311.00	5.10	167529.00	4725.38	4987.00	103.83				
Dawson Bay Formation	49.03582286	-103.211654	2597.50	ACC-16933	1W20011013083100	Accumap	12/24/1991	Regional			386000.00	78500.00	3917.36	2980.00	245.23	29700.00	761.54	42600.00	1853.00	6776.70	181.00	2.97	232000.00	6543.87	140.00	2.91				
Dawson Bay Formation	50.98187799	-107.4957074	1591.70	ACC-15436	1W30231129010100	Accumap	N/A	Regional			161320.00	2944.00	146.91	2168.00	178.41	0.05	0.00	56430.00	2454.57	2779.89	92.00	1.51	95250.00	2686.66	4436.00	92.36				
Dawson Bay Formation	52.37464505	-106.4390093	823.00	ACC-23527	1W30390424160100	Accumap	N/A	Regional	NA&K IS COMBINED IN NA.PRIMARY SALINITY=90.26,SEC		308241.00	5340.00	266.48	3067.00	252.39	0.05	0.00	110559.00	4809.05	5327.91	49.00	0.80	188000.00	5302.80	1226.00	25.53				
Dawson Bay Formation	49.81349764	-100.9067482	1022.30	ACC-08957	1W10102611030200	Accumap	8/7/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=74.64,SEC		63812.00	2892.00	144.32	1653.00	136.03	0.05	0.00	18966.00	824.97	1105.32	390.00	6.39	35750.00	1008.38	4359.00	90.75				
Dawson Bay Formation	53.2985559	-104.5652734	325.50	ACC-23537	1W20501809080100	Accumap	4/13/1956	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=84.42,PRI		4020.00	108.00	5.39	16.00	1.32	0.05	0.00	1317.00	57.29	63.99	31.00	0.51	890.00	25.10	1390.00	28.94				
Dawson Bay Formation	53.42145586	-106.2959259	474.30	ACC-23525	1W30510219130100	Accumap	6/20/1957	Regional	NA&K IS COMBINED IN NA.PRIMARY SALINITY=82.76,SEC		10671.00	222.00	11.08	232.00	19.09	0.05	0.00	3404.00	148.07	178.24	440.00	7.21	5250.00	148.08	1099.00	22.88				
Dawson Bay Formation	51.54766861	-101.8814377	558.55	ACC-02999	1W10293226162100	Accumap	10/4/1974	Regional	ANALYSIS DETERMINED ON A CLEAR COLORLESS FILTRATE		109765.00	1898.00	94.72	846.00	69.62	0.05	0.00	39243.00	1706.97	1871.31	132.00	2.16	62450.00	1761.49	5196.00	108.18				
Dawson Bay Formation	50.4714	-101.5451	889.94	RS86-26		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville		BRINE-SHAFT		7620.00	381.00	2000.00	166.67	2160.00	55.38	143000.00	6217.39	6820.44			199000.00	5685.71			2200.00	27.53	-59	-1.4
Dawson Bay Formation	53.74171644	-105.7033389	341.10	ACC-23536	1W20552507160100	Accumap	2/5/1957	Regional	PRIMARY SALINITY=88.38,PRIMARY ALKALINITY=3.64,SE		5492.00	99.00	4.94	29.00	2.39	0.05	0.00	1942.00	84.47	91.80	405.00	6.64	2246.00	63.35	856.00	17.82				
Dawson Bay Formation	49.64153538	-101.5901501	1465.50	ACC-14519	1W10083111061100	Accumap	N/A	Regional	14.5PPM STRONTIUM AND ANALYSIS PERFORMED ON MUD F		327688.00	823.00	41.07	24.00	1.97	504.00	12.92	126033.00	5482.13	5538.06	293.00	4.80	185027.00	5218.94	14968.00	311.63	15.00	0.19		
Dawson Bay Formation	50.47329172	-101.5449768	863.61	RS85-6		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1985	Rocanville	Shaft 1	BRINE-SHAFT		7620.00	381.00	2000.00	166.67	2160.00	55.38	143000.00	6217.39	6820.44			199000.00	5685.71			2200.00	27.53	-59	-1.4
Dawson Bay Formation	49.01601737	-103.4430126	2663.00	ACC-17015	1W20011108034100	Accumap	6/5/1985	Regional	AMBER COLORED FILTRATE RECOVERED FROM A SAMPLE CO		451606.00	123300.00	6153.00	8286.00	681.86	2149.00	55.10	29570.00	1286.22	8176.05	769.00	12.60	287400.00	8106.51	132.00	2.75				
Dawson Bay Formation	49.30990512	-103.8480531	2371.40	ACC-16676	1W20041420080100	Accumap	N/A	Regional			319172.00	1682.00	83.94	369.00	30.37	0.05	0.00	122687.00	5336.58	5450.92	290.00	4.75	190300.00	5367.67	3843.00	80.01				
Dawson Bay Formation	53.09095834	-104.7364678	442.00	ACC-23539	1W20471932010100	Accumap	2/25/1966	Regional	NA+K IS COMBINED IN NA.		3166.00	617.00	30.79	146.00	12.01	0.05	0.00	207.00	9.00	51.81	172.00	2.82	923.00	26.03	1101.00	22.92				
Dawson Bay Formation	52.53829013	-104.7858425	822.00	ACC-23543	1W20412023040100	Accumap	4/4/1957	Regional	NA+K IS COMBINED IN NA.SIMILAR TO WINNIPEGOSIS IN		26604.00	686.00	34.23	227.00	18.68	0.05	0.00	8978.00	390.52	443.43	497.00	8.15	13216.00	372.78	3000.00	62.46				
Dawson Bay Formation	50.56681984	-101.0585608	858.05	ACC-07368	1W10182630040000	Accumap	N/A	Regional			256932.00	2510.00	125.26	847.00	69.70	0.05	0.00	96615.00	4202.52	4397.47	122.00	2.00	153106.00	4318.56	3732.00	77.70				
Dawson Bay Formation	48.34806	-105.52051	2334.77	33616	2.51E+13	USGS Produced Water DB	9/14/1964	Regional	Chem Lab	Production	52383.00	667.00	33.35	134.00	11.17	660.00	16.92	18733.00	814.48	879.38	537.00	8.80	28000.00	800.00	3900.00	81.25				
Dawson Bay Formation	50.4714	-101.5451	878.05	RS86-22		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville		BRINE-SHAFT		6550.00	327.50	1590.00	132.50	2890.00	74.10	118000.00	5130.43	5664.54			186000.00	5314.29			2114.00	26.46	-68	-2.1
Dawson Bay Formation	53.48744656	-106.2039067	486.80	ACC-02393	1W30520215080100	Accumap	8/1/1957	Regional	PRIMARY SALINITY=56.52,SECONDARY SALINITY=39.36,S		11742.00	418.00	20.86	841.00	69.21	0.05	0.00	2670.00	116.14	206.20	470.00	7.70	6250.00	176.29	1069.00	22.26				
Dawson Bay Formation	52.09597244	-106.3830348	972.00	ACC-08472	1W30360316123100	Accumap	N/A	Regional			257836.00	1892.00	94.42	180.00	14.81	35200.00	902.56	72261.00	3143.18	4152.70	91.00	1.49	144448.00	4074.35	3764.00	78.37				
Dawson Bay Formation	49.82552779	-99.82851464	634.00	ACC-03795	1W10101810160000	Accumap	7/28/1967	Regional			23467.00	1037.00	51.75	27.00	2.22	0.05	0.00	7428.00	323.10	377.07	244.00	4.00	8977.00	253.21	5754.00	119.80				
Dawson Bay Formation	50.47329172	-101.5449768		R585-5		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1985	Rocanville	Shaft 1	BRINE-SHAFT		6550.00	327.50	1590.00	132.50	2890.00	74.10	118000.00	5130.43	5664.54			186000.00	5314.29			2110.00	26.41	-68	-2.1
Dawson Bay Formation	49.58787961	-105.3537264	2285.00	ACC-16593	1W20072529083100	Accumap	N/A	Regional			42028.00	1279.00	63.83	153.00	12.59	2870.00	73.59	12290.00	534.58	684.41	240.00	3.93	21086.00	594.76	4110.00	85.57				
Dawson Bay Formation	49.94321682	-105.7562997	1966.00	ACC-16329	1W20112827130100	Accumap	N/A	Regional			23729.00	1296.00	64.67	233.00	19.17	0.05	0.00	7214.00	313.79	397.64	230.00	3.77	11750.00	331.42	3006.00	62.58				
Dawson Bay Formation	51.54766861	-101.8814377	558.55	ACC-02998	1W10293226162100	Accumap	N/A	Regional	FILTRATE RECOVERED FROM MUDDY WATER		109766.00	1898.00	94.72	846.00	69.62	0.05	0.00	39243.00	1706.97	1871.34	132.00	2.16	62450.00	1761.49	5196.00	108.18				
Dawson Bay Formation	51.6443709	-103.7029145	894.30	ACC-23546	1W20301231053100	Accumap	6/1/1966	Regional	NA+K IS COMBINED IN NA.SAMPLED FROM MIDDLE OF REC		209551.00	3320.00	165.68	1507.00	124.01	0.05	0.00	76376.00	3322.17	3611.86	105.00	1.72	128011.00	3610.72	172.00	3.58				
Dawson Bay Formation	49.43818631	-100.7402744	1167.70	ACC-10497	1W10052535090000	Accumap	7/23/1958	Regional			40432.00	1754.00	87.53	1110.00	91.34	0.05	0.00	11757.00	511.40	690.27	475.00	7.78	21000.00	592.33	4336.00	90.28				
Dawson Bay Formation	49.21680666	-106.7883683	2311.90	ACC-16643	1W30030617130100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=20.36,SEC		3827.00	705.00	35.18	140.00	11.52	0.05	0.00	274.00	11.92	58.62	193.00	3.16	425.00	11.99	2090.00	43.51				
Dawson Bay Formation	49.33785247	-103.0744256	2220.00	ACC-16566	1W20040831062100	Accumap	N/A	Regional	PALE YELLOW FILTRATE RECOVERED FROM MUD.		302161.00	6086.00	303.71	146.00	12.01	10558.00	270.72	104604.00	4550.02	5135.78	580.00	9.51	178500.00	5034.83	1627.00	33.87				
Dawson Bay Formation	50.20254485	-101.6792128	1155.50	ACC-10379	1W10143120084100	Accumap	10/29/1997	Regional			250934.00	2790.00	139.23	879.00	72.33	3730.00	95.64	91907.00	3997.73	4304.69	133.00	2.18	149030.00	4203.59	2465.00	51.32				
Dawson Bay Formation	50.16157756	-105.1828637	1736.80	ACC-23557	1W20142411140100	Accumap	8/30/1954	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=83.28,SEC		54463.00	1465.00	73.11	315.00	25.92	0.05	0.00	18955.00	824.50	923.53	215.00	3.52	30125.00	849.72	3388.00	70.54				
Dawson Bay Formation	49.82552779	-99.82851464	634.00	ACC-03796	1W10101810160000	Accumap	7/28/1967	Regional			132310.00	2579.00	128.70	625.00	51.43	0.05	0.00	47767.00	2077.75	2257.88	122.00	2.00	76432.00	2155.87	4785.00	99.62				
Dawson Bay Formation	51.76706894	-103.6629737	813.80	ACC-23545	1W20321229010100	Accumap	10/29/1954	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=90.04,SEC		112470.00	2283.00	113.93	945.00	77.76	0.05	0.00	39770.00	1729.90	1921.59	185.00	3.03	64250.00	1812.26	5130.00	106.81				
Dawson Bay Formation	52.94553934	-104.0871505	577.00	ACC-23540	1W20461510010100	Accumap	11/22/1957	Regional	NA+K IS COMBINED IN NA		22838.00	817.00	40.77	62.00	5.10	0.05	0.00	7809.00	339.67	385.54	454.00	7.44	12576.00	354.72	1120.00	23.32				
Dawson Bay Formation	49.81349764	-100.9067482	1022.30	ACC-08956	1W10102611030200	Accumap	8/6/1957	Regional			116419.00	2940.00	146.71	2538.00	208.85	0.05	0.00	38203.00	1661.74	2017.31	165.00	2.70	68000.00	1918.03	4657.00	96.96				
Dawson Bay Formation	50.4714	-101.5451	883.92	RMBR_02-357		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	sample from tubbing	BRINE-SHAFT	309446.32	4760.00	238.00	1720.00	143.33	3760.00	96.41	111552.94	4850.13	5327.87			186902.11	5340.06	1446.00	30.13	261.32	3.27	-50.43	-2.87
Dawson Bay Formation	50.47198744	-101.5449773	884.15	RS86-24		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville	Shaft 2	BRINE-SHAFT		5410.00	270.50	1050.00	87.50	3930.00	100.77	108000.00	4695.65	5155.79			201500.00	5757.14			1190.00	14.89	-49.00	-1.90
Dawson Bay Formation	50.4714	-101.5451	877.52	RMBR_02-358		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	collecting from spigot hose	BRINE-SHAFT	309095.63	4590.00	229.50	1710.00	142.50	3640.00	93.33	111344.55	4841.07	5306.40			187091.87	5345.48	1335.00	27.81	266.73	3.34	-46.33	-2.35
Dawson Bay Formation	50.4714	-101.5451	877.82	RMBR_02-348		Jensen, G.K., 2003, November. Hydrochemical And S		Rocanville	from tubbing seep spigot hose	BRINE-SHAFT	314644.19	4570.00	228.50	1630.00	135.83	3770.00	96.67	113057.40	4915.54	5376.54	199.00	3.26	190708.81	5448.82	1326.00	27.63	259.11	3.24	-45.15	-2.42
Dawson Bay Formation	53.10168674	-107.8227772	941.50	ACC-08092	1W30471334144100	Accumap	N/A	Regional			107348.00	1729.00	86.28	804.00	66.16	0.05	0.00	38673.00	1682.18	1834.62	465.00	7.62	62182.00	1753.93	3495.00	72.77				
Dawson Bay Formation	49.35336646	-99.9209611	948.85	ACC-08183	1W10041936130000	Accumap	9/12/1956	Regional			208487.00	2905.00	144.97	917.00	75.46	0.05	0.00	77095.00	3353.44	3573.87	238.00	3.90	123140.00	3473.33	4192.00	87.28				
Dawson Bay Formation	50.15160932	-107.8390145	1920.20	ACC-16215	1W30141410030100	Accumap	N/A	Regional				1580.00	78.85	329.00	27.07	0.05	0.00	18111.00	787.78	893.70	223.00	3.65	29000.00	817.98	3473.00	72.31				
Dawson Bay Formation	49.81349764	-100.9067482	1022.30	ACC-08958	1W10102611030200	Accumap	8/7/1957	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=81.54,SEC		118931.00	3513.00	175.31	2494.00	205.23	0.05	0.00	38634.00	1680.48	2061.03	220.00	3.61	69500.00	1960.34	4682.00	97.48				
Dawson Bay Formation	49.60189346	-105.2640361	2215.00	ACC-16558	1W20072536074100	Accumap	N/A	Regional	NACL EQUIV. 87492. THE DST CHAMBER CONTAINED 2200		89289.00	1492.00	74.45	256.00	21.07	1593.00	40.85	31552.00	1372.43	1508.70	221.00	3.62	50541.00	1425.58	3634.00	75.66				
Dawson Bay Formation	50.51406887	-105.121352	1523.10	ACC-23553	1W20182316042100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.SAMPLED FROM BOTTOM.		260264.00	1485.00	74.11	4240.00	348.91	0.05	0.00	94234.00	4098.95	4521.97	303.00	4.97	159400.00	4496.09	502.00	10.45				
Dawson Bay Formation	49.39057687	-100.3275292	1100.95	ACC-09788	1W10052213050000	Accumap	N/A	Regional	0.13 AT 46F		104384.00	4063.00	202.75	1027.00	84.51	0.05	0.00	34576.00	1503.97	1791.24	671.00	11.00	60538.00	1707.56	3509.00	73.06				
Dawson Bay Formation	51.33406278	-104.3594921	1163.70	ACC-23551	1W20271729070100	Accumap	7/12/1966	Regional	SAMPLED FROM BOTTOM.		329863.00	2964.00	147.91	2134.00	175.61	0.05	0.00	122993.00	5349.89	5673.41	85.00	1.39	199600.00	5629.99	2087.00	43.45				
Dawson Bay Formation	49.48593427	-99.04097503	533.40	ACC-02763	1W10061216130000	Accumap	3/7/1957	Regional			10138.00	847.00	42.27	364.00	29.95	0.05	0.00	2104.00	91.52	163.74	300.00	4.92	3125.00	88.14	3398.00	70.75				
Dawson Bay Formation	52.26592299	-106.08977	924.50	ACC-23528	1W30380116060100	Accumap	9/1/1959	Regional	NA&K IS COMBINED IN NA.PRIMARY SALINITY=93.36,SEC		316400.00	1510.00	75.35	3481.00	286.45	0.05	0.00	116969.00	5087.87	5449.67	160.00	2.62	190000.00	5359.21	4280.00	89.11				
Dawson Bay Formation	51.36297217	-102.9532648	835.20	ACC-07154	1W20270729080100	Accumap	N/A	Regional			159806.00	1177.00	58.74	1630.00	134.13	0.05	0.00	58800.00	2557.66	2750.53	104.00	1.70	95150.00	2683.83	2945.00	61.31				
Dawson Bay Formation	50.7278115	-101.9324321	887.15	ACC-07629	1W10203324013100	Accumap	N/A	Regional				9160.00	457.11	2600.00	213.96	0.05	0.00	34799.00	1513.67	2184.74	566.00	9.28	74905.00	2112.80	3035.00	63.19				
Dawson Bay Formation	50.46723695	-100.545404	767.50	ACC-06186	1W10172323060000	Accumap	9/18/1956	Regional			204795.00	2318.00	115.67	1155.00	95.05	0.05	0.00	75770.00	3295.81	3506.53	60.00	0.98	121000.00	3412.97	4492.00	93.52				
Dawson Bay Formation	48.4028	-101.66499	2318.61	39585	3.31E+13	USGS Produced Water DB		Regional	Yapuncich Sanderson Laboratories	Dst No. 2 Bottom	122768.00	14933.00	746.65	2577.75	214.81	0.05	0.00	27929.26	1214.32	2175.78	303.52	4.98	75880.00	2168.00	1298.63	27.05				

Dawson Bay Formation	48.34806	-105.52051	2393.29	33617	2.51E+13	USGS Produced Water DB	10/14/1960	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 5	45521.00	1027.00	51.35	191.58	15.97	0.05	0.00	16241.04	706.13	773.45	803.40	13.17	24982.65	713.79	2683.15	55.90				
Dawson Bay Formation	48.34806	-105.52051	2464.92	33618	2.51E+13	USGS Produced Water DB	10/19/1960	Regional	Yapuncich, Sanderson & Brown Laboratories	Dst No. 8	46348.00	948.74	47.44	131.71	10.98	0.05	0.00	16733.60	727.55	785.96	540.23	8.86	25569.62	730.56	2698.04	56.21				
Dawson Bay Formation	49.15153946	-103.1317851	2422.00	ACC-23568	1W20020927064100	Accumap	5/15/1987	Regional	PALE YELLOW COLORED FILTRATE RECOVERED FROM MUDDY		442531.00	119300.00	5953.39	11420.00	939.76	13060.00	334.87	11000.00	478.47	7705.66	537.00	8.80	287000.00	8095.22	214.00	4.46				
Dawson Bay Formation	48.4028	-101.66499	1833.68	39587	3.31E+13	USGS Produced Water DB		Regional	Yapuncich Sanderson Laboratories	Dst No. 1 Middle	333777.00	9560.00	478.00	2128.83	177.40	0.05	0.00	117451.62	5106.59	5761.99	230.88	3.78	203108.10	5803.09	1414.88	29.48				
Dawson Bay Formation	50.87622981	-102.4677854	943.40	ACC-08121	1W20220411050100	Accumap	1/18/1954	Regional	NA+K IS COMBINED IN NA,PRIMARY SALINITY=74.42,SEC		131148.00	8690.00	433.65	1835.00	151.00	0.05	0.00	39102.00	1700.84	2285.50	85.00	1.39	79750.00	2249.46	1686.00	35.10				
Dawson Bay Formation	49.21270194	-106.3888309	2389.90	ACC-23533	1W30030318091100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.		4208.00	635.00	31.69	145.00	11.93	0.05	0.00	513.00	22.31	65.93	147.00	2.41	800.00	22.57	1968.00	40.97				
Dawson Bay Formation	49.50743306	-108.2899452	2148.90	ACC-16496	1W30061730130100	Accumap	4/21/1959	Regional	NA+K IS COMBINED IN NA.PRIMARY SALINITY=4.10,SECO		3998.00	842.00	42.02	237.00	19.50	0.05	0.00	60.00	2.61	64.13	310.00	5.08	375.00	10.58	2331.00	48.53				
Dawson Bay Formation	50.01322704	-106.2352357	1941.60	ACC-16251	1W30120220090100	Accumap	N/A	Regional	NA&K IS COMBINED IN NA.ANALYSIS NO.7		19575.00	1216.00	60.68	284.00	23.37	0.05	0.00	6028.00	262.20	346.26	146.00	2.39	9350.00	263.73	2551.00	53.11				
Dawson Bay Formation	50.51406887	-105.121352	1524.00	ACC-23555	1W20182316042100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.SAMPLED FROM BOTTOM.		259930.00	3480.00	173.66	22820.00	1877.88	0.05	0.00	62900.00	2736.00	4787.54	480.00	7.87	169400.00	4778.16	850.00	17.70				
Dawson Bay Formation	53.74171644	-105.7033389	341.10	ACC-23534	1W20552507160100	Accumap	2/5/1957	Regional	PRIMARY SALINITY=86.36,SECONDARY SALINITY=7.08,SE		8151.00	206.00	10.28	104.00	8.56	0.05	0.00	2743.00	119.31	138.15	450.00	7.37	3880.00	109.44	946.00	19.70				
Dawson Bay Formation	50.28632646	-106.7523893	1862.30	ACC-23531	1W30150627060100	Accumap	10/9/1959	Regional	NA+K IS COMBINED IN NA.CALCUALTED RESISTIVITY:0.8		9460.00	1011.00	50.45	141.00	11.60	0.05	0.00	2026.00	88.13	150.18	348.00	5.70	2834.00	79.94	3100.00	64.54				
Dawson Bay Formation	50.47198744	-101.5449773	884.15	RS86-23		Wittrup, M.B. And Kyser, T.K., 1990. The Petrogen	1986	Rocanville	Shaft 2	BRINE-SHAFT		7840.00	392.00	1920.00	160.00	2810.00	72.05	135000.00	5869.57	6495.74			227000.00	6485.71			2157.00	27.00	-60	-1.4
Dawson Bay Formation	51.37082974	-104.5349875	1133.90	ACC-10079	1W20281806130100	Accumap	N/A	Regional			276756.00	4084.00	203.80	1580.00	130.02	0.05	0.00	101742.00	4425.53	4759.39	65.00	1.07	167200.00	4716.10	2084.00	43.39				
Dawson Bay Formation	50.75228555	-106.197923	1553.00	ACC-15268	1W30210203070100	Accumap	4/11/1955	Regional	NA+K IS COMBINED IN NA.SAMPLED FROM MIDDLE.PRIMAR		28272.00	1429.00	71.31	447.00	36.78	0.05	0.00	8437.00	366.99	475.08	475.00	7.78	14000.00	394.89	3484.00	72.54				
Dawson Bay Formation	51.99751722	-104.3242243	767.50	ACC-23544	1W20351711154100	Accumap	N/A	Regional	NA+K IS COMBINED IN NA.MIDDLE.		165504.00	1395.00	69.61	725.00	59.66	0.05	0.00	61352.00	2668.66	2797.94	117.00	1.92	96600.00	2724.73	3360.00	69.95				
Dawson Bay Formation	52.02644176	-107.1949179	1072.80	ACC-09401	1W30350922164100	Accumap	N/A	Regional	WATER ANALYSES DATA ARE NOT ON GEODATA FILE. THIS		314192.00	15000.00	748.54	5470.00	450.13	4100.00	105.13	97000.00	4219.26	5522.80	146.00	2.39	192000.00	5415.62	440.00	9.16				
Dawson Bay Formation	52.10255236	-106.8395013	995.12	CSBR_02-335		Jensen, G.K., 2003, November. Hydrochemical And S		Cory	Drip from grout plug	BRINE-SHAFT	494741.32	124000.00	6200.00	20200.00	1683.33	19200.00	492.31	6947.02	302.04	8677.69			318746.03	9107.03	273.00	5.69	5490.00	68.71	-48.34282647	0.642012469