



# **Geochemical Data from Produced Water Contamination Investigations: Osage-Skiatook Petroleum Environmental Research (OSPER) Sites, Osage County, Oklahoma**

Open-File Report 2007-1055



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**A.** Location and construction characteristics of monitoring wells at the Osage-Skiatook Petroleum Environmental Research (OSPER) sites A and B, Osage County, Oklahoma.

**B.** Analytic data for water samples collected for the Osage-Skiatook Petroleum Environmental Research project.

## Conversion Factors

### SI to Inch/Pound

| Multiply                            | By        | To obtain                             |
|-------------------------------------|-----------|---------------------------------------|
| Length                              |           |                                       |
| centimeter (cm)                     | 0.3937    | inch (in.)                            |
| millimeter (mm)                     | 0.03937   | inch (in.)                            |
| meter (m)                           | 3.281     | foot (ft)                             |
| kilometer (km)                      | 0.6214    | mile (mi)                             |
| Area                                |           |                                       |
| square meter (m <sup>2</sup> )      | 0.0002471 | acre                                  |
| hectare (ha)                        | 2.471     | acre                                  |
| square kilometer (km <sup>2</sup> ) | 0.3861    | square mile (mi <sup>2</sup> )        |
| Volume                              |           |                                       |
| cubic meter (m <sup>3</sup> )       | 6.290     | barrel (petroleum, 1 barrel = 42 gal) |
| liter (L)                           | 0.2642    | gallon (gal)                          |
| Mass                                |           |                                       |
| gram (g)                            | 0.03527   | ounce (oz)                            |
| kilogram (kg)                       | 2.205     | pound (lb)                            |

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$^{\circ}\text{F}=(1.8\times^{\circ}\text{C})+32$$

Vertical coordinate information is referenced to the insert datum name (and abbreviation) here, for instance, "North American Vertical Datum of 1988 (NAVD 88)"

Horizontal coordinate information is referenced to the insert datum name (and abbreviation) here, for instance, "North American Datum of 1983 (NAD 83)"

Altitude, as used in this report, refers to distance above the vertical datum.

Specific conductance is given in microsiemens per centimeter at 25 degrees Celsius (μS/cm at 25°C).

Concentrations of chemical constituents in water are given either in milligrams per liter (mg/L) or micrograms per liter (μg/L).

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## **Abstract**

We report chemical and isotopic analyses of 345 water samples collected from the Osage-Skiatook Petroleum Environmental Research (OSPER) project. Water samples were collected as part of an ongoing multi-year USGS investigation to study the transport, fate, natural attenuation, and ecosystem impacts of inorganic salts and organic compounds present in produced water releases at two oil and gas production sites from an aging petroleum field located in Osage County, in northeast Oklahoma. The water samples were collected primarily from monitoring wells and surface waters at the two research sites, OSPER A (legacy site) and OSPER B (active site), during the period March, 2001 to February, 2005. The data include produced water samples taken from seven active oil wells, one coal-bed methane well and two domestic groundwater wells in the vicinity of the OSPER sites.

## **Introduction**

The U.S. Geological Survey is investigating the impacts of produced water and hydrocarbon releases at two research sites under the Osage-Skiatook Petroleum Environmental Research (OSPER) project. The two OSPER research sites “A” and “B” are located within the Lester and Branstetter leases, respectively, in the southeastern part of the Osage Reservation, Osage County, in northeastern Oklahoma (fig. 1). Both of these sites are located on Federal lands (Osage Nation holds the mineral rights and the Army Corps of Engineers holds the surface rights) adjacent to Skiatook Lake, a 4,250-hectare reservoir that provides drinking water to the local communities and is a major recreational fishery. Site A is the legacy or “depleted” site, which is impacted by produced water and hydrocarbon releases that occurred primarily 65-80 years ago. Site B is the “active” site, which is similar to site A in terms of oil production and size of impacted area, but is actively producing from stripper wells and continues to be impacted by ongoing produced water and hydrocarbon releases to this day.

Investigations aimed at mapping and characterizing the geology, hydrology, contaminant sources and impacted areas at the OSPER sites began in February, 2001 and continue to present. Initial results of investigations at the OSPER sites are discussed in Kharaka and Otton, 2003, and reports therein, including location, geologic setting, and oil production history (Otton and Zielinski, 2003), geophysical characterization of subsurface geology and hydrology by ground electromagnetic (EM) and DC resistivity surveys (Smith and others, 2003), aqueous

geochemistry (Kharaka and others, 2003), organic microbial biochemistry of hydrocarbons, (Godsy and others, 2003), hydrology (Herkelrath and Kharaka, 2003), and soil geochemistry (Zielinski and others, 2003; Rice and others, 2003, and Kampbell and others, 2003). The OSPER sites have been extensively surveyed to a high degree of accuracy using real-time kinematic (RTK) global positioning system (GPS) surveys (Abbott, 2003).

In March 2001, a reconnaissance survey was conducted by the USGS in which water, oil, and gas samples were taken from eight active oil wells located in the Branstetter lease (site B) and in areas adjoining the Lester lease (site A) to characterize the crude oil and produced water contaminant sources (fig. 2). Water samples were also obtained from Skiatook Lake and two domestic water wells, to characterize the chemical and isotopic compositions of the pristine local ground and surface waters. Water samples were also collected during this time from several seeps, pools and shallow hand-dug holes at site B.

In February, 2002, intensive studies of the OSPER sites began, which included the drilling, coring, and completion of numerous monitoring wells in and around the impacted areas at both sites. Holes were drilled using rotary core, auger core, or direct push (Geoprobe®) rigs. Most of these holes were completed as monitoring wells, with 2.5 or 5.1 cm diameter PVC tubing and screened intervals at favorable water-bearing zones. Most of the rotary- and auger-drilled holes were completed with multiple wells (2 or 3). As of May, 2004, a total of 82 holes were drilled (42 at site A; 40 at site B) and 103 screened monitoring wells (58 at site A, 45 at site B) were completed and conditioned for hydrologic monitoring and water sampling.

We have carried out eight major sampling trips and several minor trips to the OSPER sites to collect water samples and important field parameters, including water levels and in-situ temperature and electrical conductivity measurements, from monitoring wells and other surface waters. Presented in this report are the major and trace inorganic solutes, organic components, and water isotope results from 345 water samples collected through February, 2005. These data are being released at this time with minimal interpretation. Some results, with interpretations, from these data have been presented in Kharaka and others (2003, 2005, 2007). Studies are continuing at the OSPER sites to evaluate the long-term and short-term effects of hydrocarbons and the dissolved and suspended constituents of produced water on soil and ground and surface waters, and the natural processes that may be impacting those effects.

## **Methods**

### **Drilling and well completions**

The locations of monitoring wells for OSPER sites A and B are shown in figures 3 and 4, respectively, and the location and well completion parameters are summarized in Appendix A. Well locations were selected on the basis of: (1)- the presence of salt scars, degraded oil, brine pools, dead trees and shrubs and other visible surface features; (2)- results of electrical conductance, Cl, Br and SO<sub>4</sub> measurements on aqueous leachates from samples of shallow soil (0-15 cm) and selected soil profiles (Zielinski and others, 2003); and (3)- results of electromagnetic (EM) and DC resistivity surveys used to map the subsurface distribution of salt in groundwater, soil and bedrock (Smith and others, 2003). Additional wells were sited based on results of chemical analysis of water samples obtained from prior drilled wells.

At each site, relatively deep wells were located and drilled at some distance from the impacted areas in order to characterize the local stratigraphy (Otton and Zielinski, 2003) and local groundwater (Kharaka and others, 2003). These wells, designated as “R” for “rotary” (AR-01 at site A; BR-01 and BR-02 at site B; fig. 2), are distinct from the other monitoring wells in

that they were drilled with a rotary bit, which required water for cooling; also, prior to completion, additional water was introduced to the open holes to facilitate geophysical logging. These wells required additional cleaning and water sampling, compared to the auger-drilled wells (designated as “A”) and direct-push wells (designated as “E”), which were drilled without the aid of water.

After drilling, the holes were prepared for completions. Wet holes were repeatedly cleaned of water and slough using submersible pumps and/or hand bailers. Screen intervals were determined based on shows of water-bearing zones in drill cuttings, recovered core, or the hole itself. The rotary (“R”) wells and auger-core (“A”) wells were of sufficient bore diameter (> 20 cm) and usually sufficient depth (~5 to 20 m for “A” wells; 21-30 m for “R” wells) that multiple water bearing zones were identified and later screened. Most “A” and “R” wells were completed with two screened intervals, typically screened intervals of 5-10 ft using 5.1 cm diameter PVC. The site A wells AA-10 and AA-11 were completed with 3 screened wells. The direct-push “E” holes were typically shallower (~1-6 m depth) and had a smaller borehole diameter (~4 cm); all of the “E” holes were completed with a single screened well, generally with screened intervals set at 1 to 2.5 ft, using 2.5 cm diameter PVC. Clean and graded sand was used around the screened intervals and bentonite pellets and chips were used to isolate screened intervals in wells with multiple completions. The bottom of the wells were capped. A single shallow open-hole well was created at site A (AP-01), by hand-pushing a length of core liner into the asphaltic pit (fig. 3).

Monitoring wells, after completion, were cleaned numerous times using hand bailers or submersible pumps until the electrical conductivity was determined to be stable. During sampling trips, which typically were 3 to 12 months apart, the usual procedure was to: (1) measure static water levels in the wells; (2) obtain in-situ measurement of conductivity and temperature using submersible probes; (3) pump the wells (usually 1 to 3 well-bore volumes, depending on recharge rates and conductance stability); and (4) allow the well to refill (usually several hours to overnight). Periodically, in-situ measurements of dissolved oxygen (DO) and Eh were also performed prior to pumping and sampling. Water samples for analysis were collected with either Teflon® bailers or submersible or peristaltic pumps, with Teflon or tygon tubing.

## **Sampling methods**

The methods used in sample collection, preservation and field and laboratory determinations of chemical components and isotopes are detailed in Kharaka and Hanor (2004), and Kharaka and others (2000, 2003). Most field chemistry was performed in a mobile laboratory equipped with pH meters, a spectrophotometer, and filtration, titration and other field equipment. Field determinations included conductance, pH, alkalinity,  $H_2S$  and  $NH_4$ . Raw water samples were usually filtered through a 0.1  $\mu m$  filter using either a syringe, peristaltic pump or compressed nitrogen. Filtered samples were stored in high-density polyethylene bottles prerinsed with deionized water for anions, and prerinsed with 5% nitric acid ( $HNO_3$ ) then deionized water for metals and silica. The aliquots for metal and silica were acidified to pH ~1 with ultrex-grade nitric acid ( $HNO_3$ ). Sample aliquots for dissolved organic carbon (DOC), carboxylic acid anions, and BTEX organics, were collected without headspace in cleaned and burned 40 ml amber glass vials and were stored below 4°C. Samples for DOC were filtered through 0.1  $\mu m$ . Samples for carboxylics were filtered through 0.1  $\mu m$  and preserved with 40 mg/L mercuric chloride ( $HgCl_2$ ); Samples for BTEX were stored unfiltered, acidified to pH~1 with ultrex-grade hydrochloric acid (HCl). For water isotopes, two 20-ml glass bottles with polyseal caps were filled with raw water.

Water samples for tritium analyses were collected in 1-liter glass bottles with Teflon® polyseal caps.

All of the water samples were analyzed for inorganic and organic solutes at USGS Water Resources laboratories in Menlo Park, CA. Concentrations of major, minor and trace cations, B and SiO<sub>2</sub> were determined by inductively coupled plasma mass spectrometry (ICP-MS). Concentrations of Cl, Br, NO<sub>3</sub>, PO<sub>4</sub>, SO<sub>4</sub>, and organic carboxylic acid anions (acetate, butyrate, formate, malonate, oxalate, propionate, and succinate) were determined by ion chromatography (IC). Dissolved organic carbon (DOC) was determined with a MQ-1001 (MQ Scientific) high-temperature, non-catalytic, organic carbon analyzer. Concentrations of BTEX compounds (benzene, toluene, ethylbenzene, m-xylene, p-xylene, and o-xylene) were determined with a SRI-8610C gas chromatograph (GC), using flame ionization detector (FID) and 30m MXT-Volatile column. The reported concentrations for major cations and anions carry an uncertainty of ±3%. Precision values for minor and trace chemicals are generally ±5%, but could be ±10% for values close to detection limits (Kharaka and Hanor, 2004).

Stable water isotopes were determined in the USGS Stable Isotope Laboratories in Menlo Park, CA or Reston, VA. Results for stable isotope measurements are reported in δ-values that are expressed in parts per thousand (per mil, ‰) relative to Standard Mean Ocean Water (SMOW). In the case of oxygen, the equation used is:

$$\delta^{18}\text{O} = \left( \frac{(^{18}\text{O}/^{16}\text{O})_{\text{sample}}}{(^{18}\text{O}/^{16}\text{O})_{\text{SMOW}}} - 1 \right) \times 10^3,$$

and in the case of hydrogen, the equation used is:

$$\delta^2\text{H} = \left( \frac{(^2\text{H}/^1\text{H})_{\text{sample}}}{(^2\text{H}/^1\text{H})_{\text{SMOW}}} - 1 \right) \times 10^3.$$

The Standard Deviation of reported values for samples are ±0.2‰ for δ<sup>18</sup>O and ±2‰ for δD. Tritium concentration is reported in Tritium Units (1 TU = 1 tritium atom/10<sup>18</sup> hydrogen atoms) ± 1 sigma uncertainty (Thatcher and others, 1977).

## Data Summary

Appendix A contains a summary of the locations and well completion parameters for the site A and site B monitoring wells. Well names are identified by a letter “A” or “B” which indicates OSPER site A or B, followed by a letter “A”, “E”, “R” or “P” for well type (auger, direct-push Geoprobe, rotary, and hand-pushed), followed by the well number, and for wells having multiple completions, a letter “S”, “M” or “D”, indicating the shallow, middle, and deep completions, respectively.

Appendix B contains analytical results for 345 water samples. The water samples are presented in the following order:

- Local domestic groundwater wells: 2 samples from 2 wells near site A, (fig. 2).
- Local oil/gas wells: 8 samples, 7 from oil wells; and 1 coal-bed methane well (fig. 2).
- Skiatook Lake water: 7 samples, collected during the period October, 2001 to May, 2004. Lake water samples were collected near site A or B, except 01OS-111 which was collected near the Skiatook Lake dam (fig. 2).

- Site A, monitoring well samples: 171 water samples from 58 monitoring wells (fig. 3).
- Site B, monitoring well samples: 146 water samples from 45 monitoring wells (fig. 4).
- Site B, surface samples: 10 water samples from 6 different surface sites and including a sample (02OS-314) of produced water from the brine tank (fig. 4).

The groupings of groundwater wells, oil/gas wells, and Skiatook Lake samples are ordered by date. The site A and site B well sample groups are ordered by well number, then by date. The site B surface waters are order by sample location, then by date.

The analytic data for water samples are organized in Appendix B (from left to right) by site identification, date and time, field parameters (specific conductance, pH, temperature, alkalinity), total dissolved solids, major inorganic solutes (in alphabetical order), minor solutes (including infrequently analyzed solutes, such as H<sub>2</sub>S and ammonia), organic compounds, and finally stable water isotopes and tritium. Solutes and organic compounds that have qualify information, such as “below” (indicated by “<” symbol) or “near” (indicated by “n”) lower detection limit, are preceded by a qualifier column. The water temperatures reported are the temperature from the conductivity/temperature at the time the water sample was processed; and they are not necessarily the in-situ water temperature.

## Acknowledgements

We are grateful to the Osage Nation, the Army Corps of Engineers and Bureau of Indian Affairs, as well as the field operators for permission to conduct research at these sites. We are also grateful for the financial support for this research provided by DOE National Petroleum Technology Office, E&P Environmental (Nancy Comstock, Project Coordinator). Shallow drilling at the sites was carried out with equipment and operators from USEPA, Ada Research Laboratory, particularly Ken Jewell and Donald Kampbell. We are grateful to USGS colleagues Tyler Coplen and Carol Kendall, and their respective laboratories, for stable water isotope analysis, Bob Michel for tritium analyses, and Brent Topping for DOC analysis. We are also grateful for logistical and field support from our USGS colleagues at the Tulsa field office, Jim Wellman (Supervisor), Caleb Cope, and Kyle Davis.

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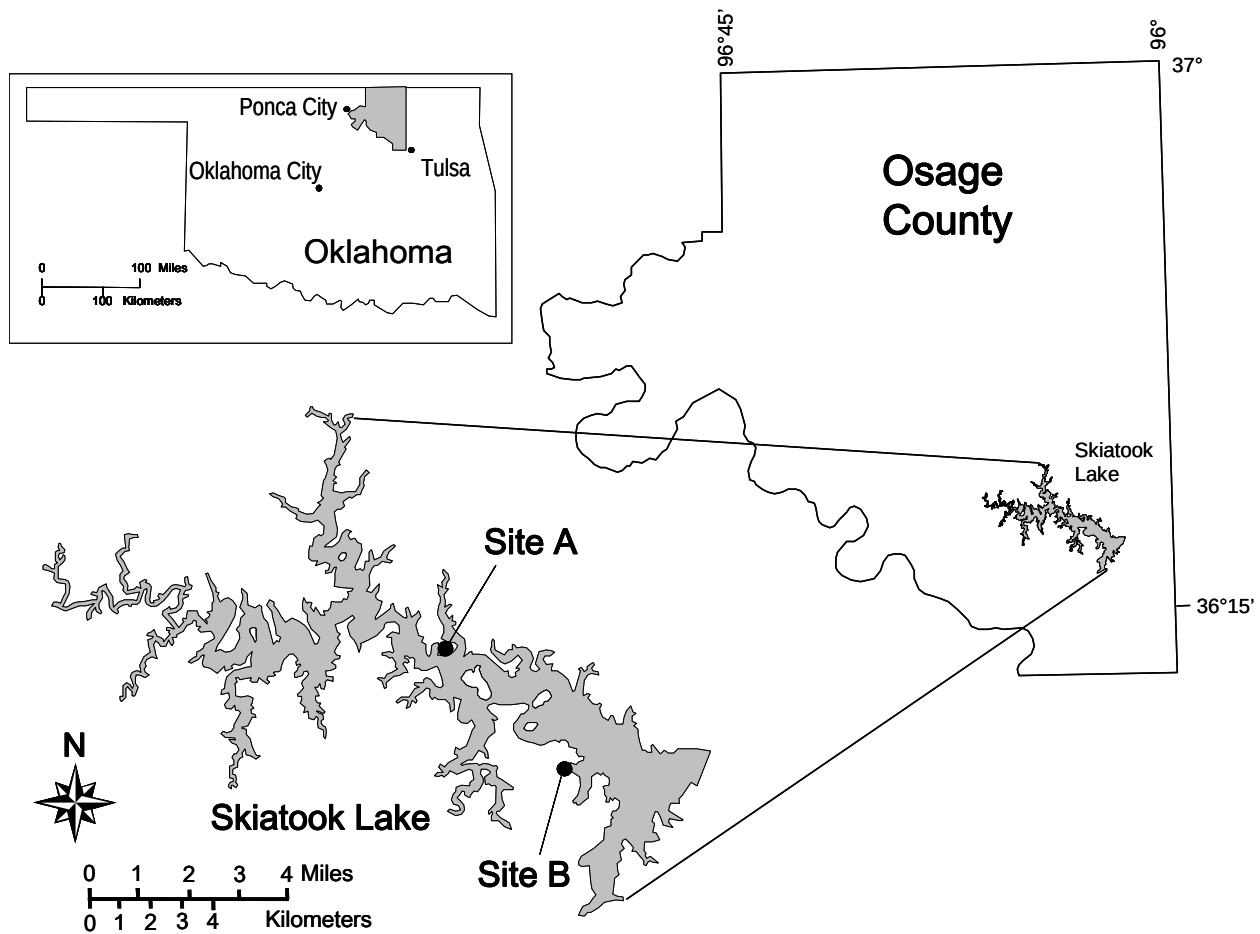


**Figure 1.** Map showing the locations of OSPER sites A and B, adjacent to Skiatook Lake in Osage County, Oklahoma.

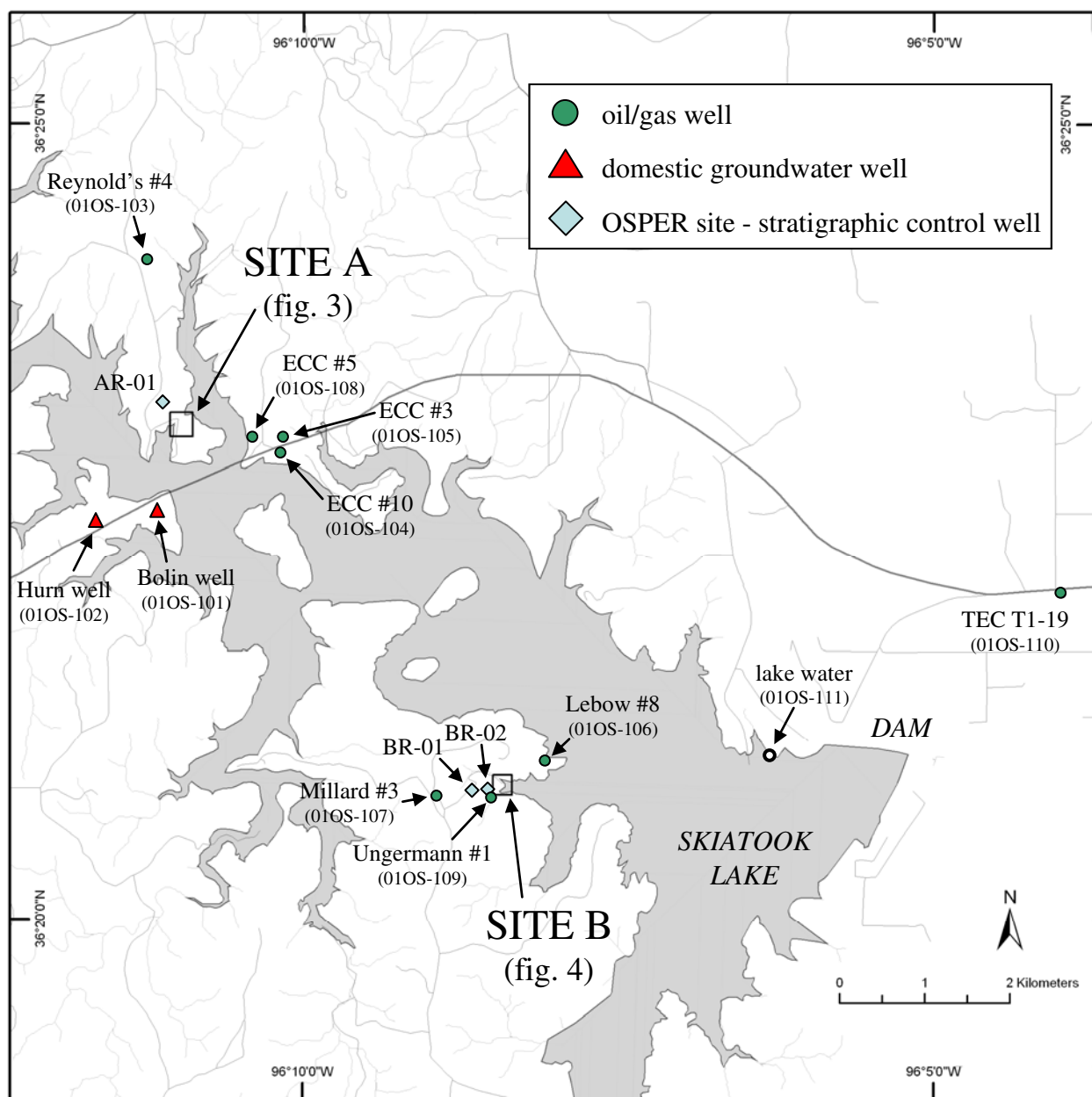


**Figure 2.** Map of the Skiatook Lake region of Osage County, Oklahoma, showing locations of sampled oil wells, domestic groundwater wells, and stratigraphic control wells at OSPER sites A and B. Also shown is the lake water sample 01OS-111, near dam.

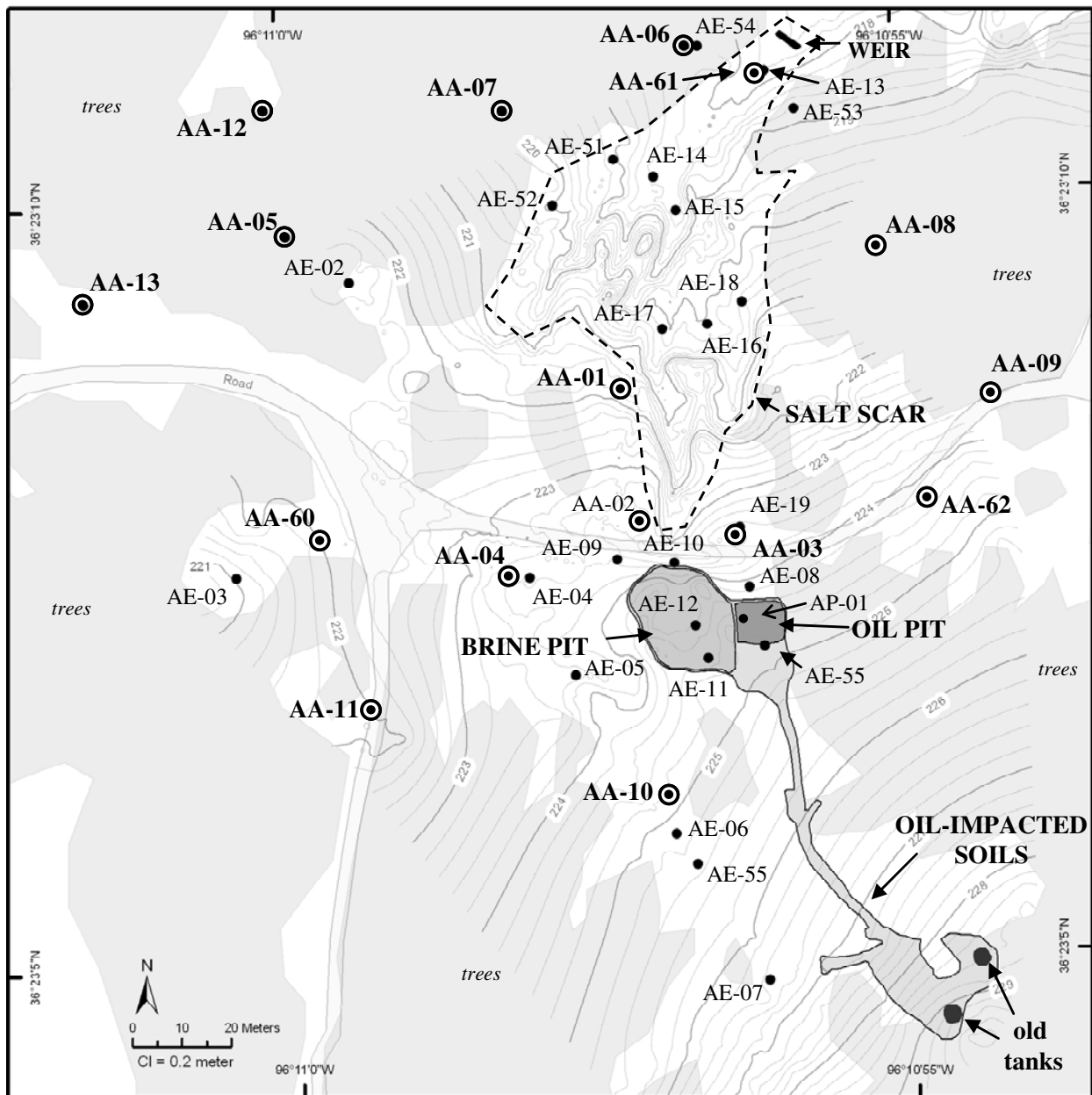


Figure 3. Map of OSPER site A, showing location of monitoring wells.

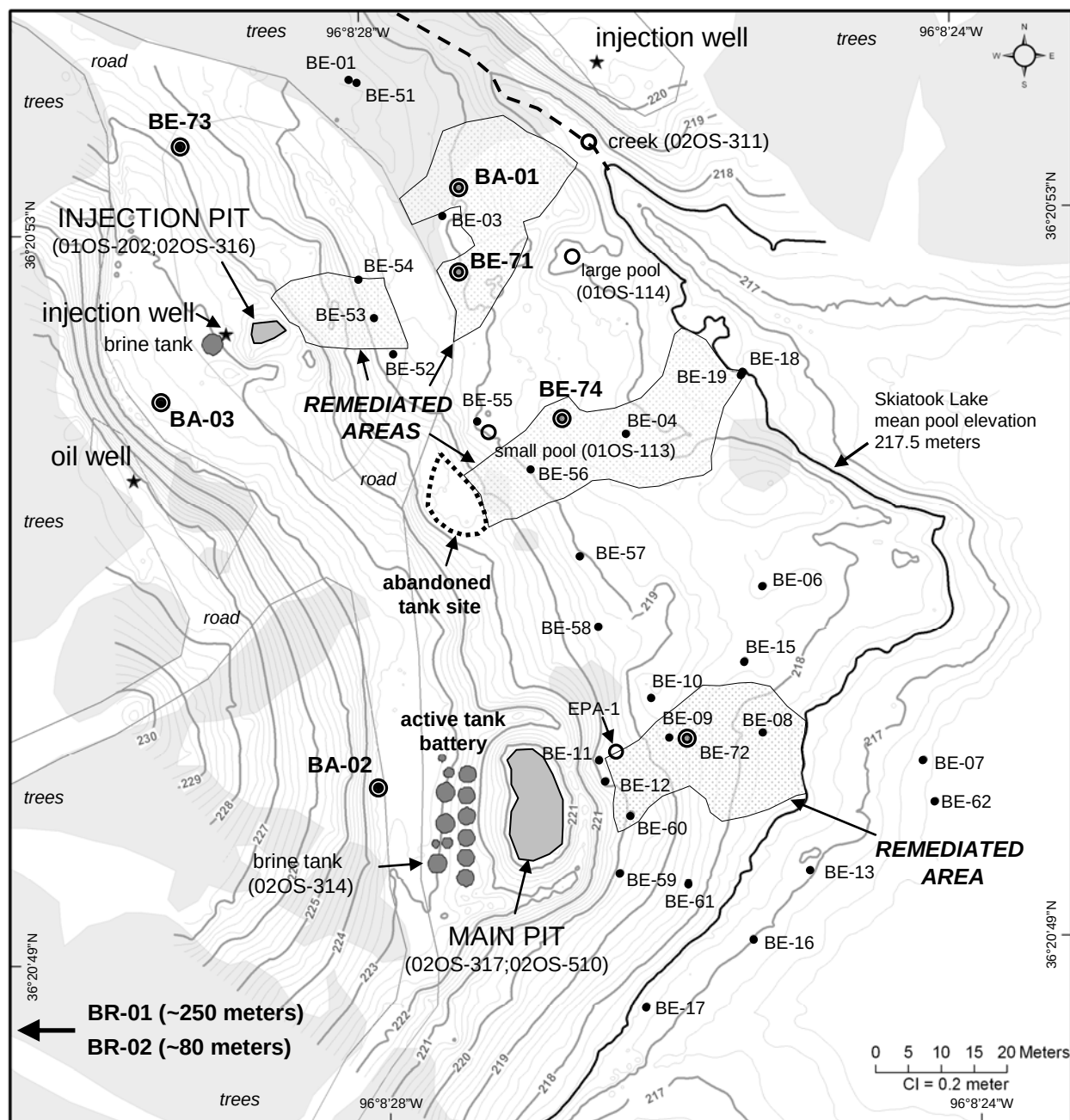


**Figure 4.** Map of OSPER site B, showing location of monitoring wells and surface water sampling sites.

Appendix B. Analytic data for water samples collected for the Osage-Skiatook Petroleum Environmental Research project.

[ -, not determined; column labeled q followed by an element/compound contains the qualify information for the reported analytic concentration for the element; <, value

| Field site                        | Field Sample ID | Station name                 | Site Identification | Collection Date | Time  | field                               | field                       | field                         | field                                                                          | field                          | field                          | inorganic | inorganic |
|-----------------------------------|-----------------|------------------------------|---------------------|-----------------|-------|-------------------------------------|-----------------------------|-------------------------------|--------------------------------------------------------------------------------|--------------------------------|--------------------------------|-----------|-----------|
|                                   |                 |                              |                     |                 |       | Specific conductance, field (µS/cm) | pH, field, (standard units) | Temperature, whole water (°C) | Alkalinity, water dissolved, total incremental titration, field (mg/L as HCO3) | Dissolved solids, total (mg/L) | Barium, dissolved (mg/L as Ba) |           |           |
|                                   |                 |                              |                     |                 |       |                                     |                             |                               |                                                                                |                                |                                |           |           |
| Local domestic ground water wells |                 |                              |                     |                 |       |                                     |                             |                               |                                                                                |                                |                                |           |           |
|                                   | 01OS-101        | Bolin well                   | 362228096113701     | 03/05/2001      | 16:25 | 928                                 | 6.04                        | 18.4                          | 72                                                                             | 518                            | 0.14                           |           |           |
|                                   | 01OS-102        | Hurn well                    | 362333096110801     | 03/06/2001      | 11:30 | 490                                 | 7.18                        | 17.8                          | 269                                                                            | 420                            | 0.21                           |           |           |
| Local oil/gas wells               |                 |                              |                     |                 |       |                                     |                             |                               |                                                                                |                                |                                |           |           |
|                                   | 01OS-103        | Reynolds #4                  | 362408096111301     | 03/06/2001      | 10:00 | 192,000                             | 6.19                        | 14.5                          | 109                                                                            | 177,000                        | 451                            |           |           |
|                                   | 01OS-104        | ECC #10                      | 362355096100901     | 03/07/2001      | -     | 163,000                             | 6.69                        | 21.7                          | 244                                                                            | 134,000                        | 339                            |           |           |
|                                   | 01OS-105        | ECC #3                       | 362301096100801     | 03/07/2001      | 14:30 | 191,000                             | 6.06                        | 23.3                          | 105                                                                            | 185,000                        | 461                            |           |           |
|                                   | 01OS-106        | Lebow #8                     | 362159096080301     | 03/08/2001      | -     | 185,000                             | 6.29                        | 34.0                          | 185                                                                            | 162,000                        | 879                            |           |           |
|                                   | 01OS-107        | Millard #3                   | 362146096095501     | 03/08/2001      | -     | 149,000                             | 6.39                        | 20.8                          | 146                                                                            | 123,000                        | 311                            |           |           |
|                                   | 01OS-108        | ECC #5                       | 362301096102301     | 03/09/2001      | 10:00 | 186,000                             | 6.38                        | 21.5                          | 118                                                                            | 162,000                        | 309                            |           |           |
|                                   | 01OS-109        | Ungermann #1                 | 362146096082901     | 03/09/2001      | 14:30 | 156,000                             | 6.33                        | 25.4                          | 182                                                                            | 128,000                        | 396                            |           |           |
|                                   | 01OS-110        | TEC T1-19 (coal-bed methane) | 362202096045801     | 03/10/2001      | 10:00 | 145,000                             | 6.81                        | 24.0                          | 280                                                                            | 114,000                        | 12.3                           |           |           |
| Skiatook Lake                     |                 |                              |                     |                 |       |                                     |                             |                               |                                                                                |                                |                                |           |           |
|                                   | 01OS-111        | Skiatook Lake, near dam      | -                   | 03/10/2001      | 14:45 | 224                                 | 6.71                        | 7.2                           | 74                                                                             | 153                            | 0.05                           |           |           |
| B                                 | 02OS-309        | Skiatook Lake, site B        | -                   | 02/22/2002      | 13:00 | 287                                 | 8.08                        | 11.8                          | 80                                                                             | 187                            | 0.07                           |           |           |
| B                                 | 02OS-310        | Skiatook Lake, site B        | -                   | 02/22/2002      | 13:30 | 254                                 | 8.14                        | 10.9                          | 76                                                                             | 165                            | 0.06                           |           |           |
| B                                 | 02OS-338        | Skiatook Lake, site B        | -                   | 02/20/2002      | 15:30 | 245                                 | 7.11                        | 4.7                           | -                                                                              | 120                            | 0.05                           |           |           |
| A                                 | 02OS-339        | Skiatook Lake, site A        | -                   | 03/01/2002      | 10:00 | 246                                 | 6.95                        | 23.0                          | -                                                                              | 102                            | 0.04                           |           |           |
| B                                 | 02OS-520        | Skiatook Lake, site B        | -                   | 11/20/2002      | 8:30  | 270                                 | 6.60                        | 11.9                          | 86                                                                             | 181                            | 0.06                           |           |           |
| A                                 | 04OS-212        | Skiatook Lake, site A        | -                   | 05/19/2004      | 13:45 | 246                                 | 7.70                        | 28.0                          | 77                                                                             | 167                            | 0.06                           |           |           |
| Site A; monitoring wells          |                 |                              |                     |                 |       |                                     |                             |                               |                                                                                |                                |                                |           |           |
| A                                 | 02OS-430        | AA-01D                       | 362308096105702     | 06/13/2002      | 9:15  | 38,000                              | 6.54                        | 16.2                          | 445                                                                            | 25,400                         | 0.35                           |           |           |
| A                                 | 02OS-523        | AA-01D                       | 362308096105702     | 11/20/2002      | 14:00 | 37,700                              | 6.28                        | 19.7                          | 1,460                                                                          | 24,700                         | 4.4                            |           |           |
| A                                 | 03OS-108        | AA-01D                       | 362308096105702     | 03/26/2003      | 11:30 | 37,000                              | 6.45                        | 15.1                          | 1,220                                                                          | 23,900                         | 6.0                            |           |           |
| A                                 | 03OS-205        | AA-01D                       | 362308096105702     | 06/06/2003      | 17:00 | 37,100                              | 6.53                        | 21.5                          | 1,230                                                                          | 24,100                         | 5.8                            |           |           |
| A                                 | 04OS-105        | AA-01D                       | 362308096105702     | 01/14/2004      | 12:00 | 36,800                              | 6.58                        | 18.3                          | 834                                                                            | 23,100                         | 3.5                            |           |           |
| A                                 | 04OS-203        | AA-01D                       | 362308096105702     | 05/17/2004      | 17:00 | 39,100                              | 6.23                        | 27.4                          | 532                                                                            | 24,600                         | 0.71                           |           |           |
| A                                 | 05OS-134        | AA-01D                       | 362308096105702     | 02/09/2005      | 12:30 | 35,500                              | 6.30                        | 13.0                          | 382                                                                            | 22,400                         | 0.19                           |           |           |
| A                                 | 02OS-337        | AA-02S                       | 362307096105701     | 03/05/2002      | 9:00  | 7,150                               | 7.50                        | 16.3                          | 519                                                                            | 4,350                          | 0.11                           |           |           |
| A                                 | 02OS-426        | AA-02S                       | 362307096105701     | 06/12/2002      | 17:00 | 19,800                              | 6.23                        | 18.5                          | 255                                                                            | 11,700                         | 0.66                           |           |           |
| A                                 | 02OS-522        | AA-02S                       | 362307096105701     | 11/20/2002      | 13:00 | 19,000                              | 6.11                        | 19.8                          | 254                                                                            | 11,300                         | 0.21                           |           |           |
| A                                 | 03OS-106        | AA-02S                       | 362307096105701     | 03/26/2003      | 9:30  | 18,800                              | 6.14                        | 15.8                          | 236                                                                            | 11,300                         | 0.15                           |           |           |
| A                                 | 03OS-207        | AA-02S                       | 362307096105701     | 06/07/2003      | 14:00 | 19,200                              | 6.18                        | 22.6                          | 257                                                                            | 11,400                         | 0.55                           |           |           |
| A                                 | 04OS-104        | AA-02S                       | 362307096105701     | 01/14/2004      | 11:00 | 19,400                              | 6.22                        | 15.5                          | 309                                                                            | 11,600                         | 0.13                           |           |           |
| A                                 | 04OS-230        | AA-02S                       | 362307096105701     | 05/22/2004      | 9:00  | 19,400                              | 6.05                        | 18.2                          | 229                                                                            | 11,300                         | 0.43                           |           |           |
| A                                 | 05OS-139        | AA-02S                       | 362307096105701     | 02/09/2005      | 15:45 | 18,700                              | 6.21                        | 15.1                          | 236                                                                            | 11,300                         | 0.23                           |           |           |
| A                                 | 02OS-336        | AA-02D                       | 362307096105702     | 03/05/2002      | 9:10  | 4,600                               | 7.66                        | 16.3                          | 633                                                                            | 3,190                          | 0.08                           |           |           |
| A                                 | 02OS-427        | AA-02D                       | 362307096105702     | 06/12/2002      | 17:30 | 3,420                               | 6.91                        | 17.8                          | 824                                                                            | 2,770                          | 0.14                           |           |           |
| A                                 | 02OS-527        | AA-02D                       | 362307096105702     | 11/21/2002      | 10:00 | 2,240                               | 6.95                        | 22.4                          | 854                                                                            | 2,010                          | 0.15                           |           |           |
| A                                 | 03OS-107        | AA-02D                       | 362307096105702     | 03/26/2003      | 10:20 | 2,220                               | 7.27                        | 17.9                          | 953                                                                            | 2,010                          | 0.13                           |           |           |
| A                                 | 03OS-208        | AA-02D                       | 362307096105702     | 06/07/2003      | 15:00 | 2,710                               | 7.28                        | 21.5                          | 973                                                                            | 2,270                          | 0.11                           |           |           |
| A                                 | 04OS-103        | AA-02D                       | 362307096105702     | 01/14/2004      | 9:30  | 2,190                               | 7.04                        | 14.8                          | 813                                                                            | 2,270                          | 0.06                           |           |           |

| Field site | Field Sample ID | Station name | Site Identification | Collection Date | Time  | Specific conductance, field (μS/cm) | pH, field, (standard units) | Temperature, water (°C) | Alkalinity, water dissolved, total incremental | Dissolved solids, total (mg/L) | Barium, dissolved (mg/L as Ba) |
|------------|-----------------|--------------|---------------------|-----------------|-------|-------------------------------------|-----------------------------|-------------------------|------------------------------------------------|--------------------------------|--------------------------------|
|            |                 |              |                     |                 |       |                                     |                             |                         | titration, field (mg/L as HCO3)                |                                |                                |
| A          | 04OS-231        | AA-02D       | 362307096105702     | 05/22/2004      | 9:40  | 2,550                               | 6.98                        | 20.0                    | 801                                            | 2,100                          | 0.04                           |
| A          | 05OS-140        | AA-02D       | 362307096105702     | 02/09/2005      | 17:30 | 2,120                               | 6.89                        | 13.2                    | 726                                            | 1,950                          | 0.05                           |
| A          | 02OS-428        | AA-03S       | 362307096105601     | 06/12/2002      | 18:00 | 6,050                               | 6.64                        | 18.8                    | 301                                            | 3,460                          | 1.9                            |
| A          | 03OS-103        | AA-03S       | 362307096105601     | 03/25/2003      | 14:00 | 12,500                              | 5.40                        | 13.1                    | 10                                             | 6,800                          | 0.81                           |
| A          | 03OS-203        | AA-03S       | 362307096105601     | 06/06/2003      | 15:00 | 6,970                               | 5.61                        | 21.3                    | 23                                             | 3,730                          | 0.49                           |
| A          | 04OS-205        | AA-03S       | 362307096105601     | 05/18/2004      | 11:25 | 1,810                               | 6.14                        | 22.4                    | 50                                             | 960                            | 0.14                           |
| A          | 05OS-142        | AA-03S       | 362307096105601     | 02/09/2005      | 18:30 | 1,840                               | 6.02                        | 15.6                    | 51                                             | 1,020                          | 0.12                           |
| A          | 02OS-429        | AA-03D       | 362307096105602     | 06/12/2002      | 17:30 | 18,000                              | 6.73                        | 16.4                    | 894                                            | 10,500                         | 1.4                            |
| A          | 02OS-524        | AA-03D       | 362307096105602     | 11/20/2002      | 15:00 | 19,600                              | 6.63                        | 13.0                    | 641                                            | 12,100                         | 1.0                            |
| A          | 03OS-104        | AA-03D       | 362307096105602     | 03/25/2003      | 14:10 | 20,300                              | 6.67                        | 15.0                    | 516                                            | 12,200                         | 0.89                           |
| A          | 03OS-204        | AA-03D       | 362307096105602     | 06/06/2003      | 16:10 | 13,200                              | 6.74                        | 19.6                    | 365                                            | 7,620                          | 0.40                           |
| A          | 04OS-116        | AA-03D       | 362307096105602     | 01/16/2004      | 16:45 | 18,500                              | 6.73                        | 12.2                    | 454                                            | 10,600                         | 0.23                           |
| A          | 04OS-211        | AA-03D       | 362307096105602     | 05/19/2004      | 13:30 | 7,040                               | 6.94                        | 23.8                    | 228                                            | 3,980                          | 0.32                           |
| A          | 05OS-141        | AA-03D       | 362307096105602     | 02/09/2005      | 18:15 | 8,310                               | 6.91                        | 15.0                    | 288                                            | 4,870                          | 0.33                           |
| A          | 02OS-424        | AA-04S       | 362307096105801     | 06/12/2002      | 16:15 | 9,630                               | 5.66                        | -                       | 54                                             | 5,300                          | 6.3                            |
| A          | 02OS-526        | AA-04S       | 362307096105801     | 11/20/2002      | 17:00 | 10,300                              | 5.83                        | 13.5                    | 45                                             | 5,590                          | 8.1                            |
| A          | 03OS-101        | AA-04S       | 362307096105801     | 03/25/2003      | 13:15 | 9,900                               | 5.53                        | 11.0                    | 34                                             | 5,310                          | 5.6                            |
| A          | 03OS-201        | AA-04S       | 362307096105801     | 06/06/2003      | 11:00 | 9,240                               | 4.74                        | 21.5                    | 12                                             | 5,110                          | 8.4                            |
| A          | 04OS-109        | AA-04S       | 362307096105801     | 01/15/2004      | 11:45 | 9,910                               | 5.49                        | 14.4                    | 33                                             | 5,870                          | 5.9                            |
| A          | 04OS-201        | AA-04S       | 362307096105801     | 05/17/2004      | 14:45 | 8,950                               | 5.27                        | 33.0                    | 27                                             | 4,930                          | 6.2                            |
| A          | 05OS-112        | AA-04S       | 362307096105801     | 02/05/2005      | 10:30 | 8,510                               | 5.15                        | 14.3                    | 20                                             | 4,720                          | 7.3                            |
| A          | 02OS-425        | AA-04D       | 362307096105802     | 06/12/2002      | 16:45 | 9,620                               | 6.99                        | -                       | 279                                            | 5,760                          | 1.4                            |
| A          | 02OS-525        | AA-04D       | 362307096105802     | 11/20/2002      | 16:00 | 10,210                              | 5.50                        | 12.5                    | 26                                             | 5,480                          | 8.1                            |
| A          | 03OS-102        | AA-04D       | 362307096105802     | 03/25/2003      | 13:33 | 10,040                              | 5.96                        | 13.0                    | 76                                             | 5,460                          | 6.3                            |
| A          | 03OS-202        | AA-04D       | 362307096105802     | 06/06/2003      | 13:30 | 9,960                               | 5.87                        | 20.2                    | 94                                             | 5,540                          | 6.7                            |
| A          | 05OS-113        | AA-04D       | 362307096105802     | 02/05/2005      | 12:40 | 8,560                               | 5.79                        | 16.6                    | 50                                             | 4,810                          | 6.6                            |
| A          | 04OS-117        | AA-05S       | 362309096105903     | 01/19/2004      | 13:00 | 19,900                              | 6.18                        | 10.3                    | 117                                            | 11,200                         | 3.2                            |
| A          | 04OS-226        | AA-05S       | 362309096105903     | 05/21/2004      | 13:30 | 18,600                              | 5.96                        | 19.4                    | 135                                            | 10,800                         | 2.0                            |
| A          | 05OS-118        | AA-05S       | 362309096105903     | 02/07/2005      | 12:30 | 17,200                              | 5.84                        | 8.4                     | 82                                             | 10,000                         | 1.8                            |
| A          | 04OS-118        | AA-05D       | 362309096105904     | 01/19/2004      | 14:00 | 1,620                               | 7.17                        | 10.6                    | 598                                            | 1,380                          | 0.02                           |
| A          | 04OS-216        | AA-05D       | 362309096105904     | 05/20/2004      | 11:15 | 1,610                               | 6.93                        | 19.8                    | 592                                            | 1,390                          | 0.02                           |
| A          | 05OS-117        | AA-05D       | 362309096105904     | 02/07/2005      | 11:10 | 1,580                               | 7.02                        | 7.9                     | 612                                            | 1,470                          | 0.03                           |
| A          | 04OS-119        | AA-06S       | 362310096105605     | 01/19/2004      | 14:45 | 47,500                              | 6.51                        | 8.0                     | 438                                            | 29,300                         | 0.95                           |
| A          | 04OS-233        | AA-06S       | 362310096105605     | 05/22/2004      | 11:00 | 46,200                              | 6.22                        | 18.3                    | 424                                            | 29,500                         | 1.0                            |
| A          | 05OS-136        | AA-06S       | 362310096105605     | 02/09/2005      | 14:30 | 47,500                              | 6.33                        | 13.8                    | 436                                            | 30,000                         | 0.74                           |
| A          | 04OS-120        | AA-06D       | 362310096105606     | 01/20/2004      | 11:30 | 26,600                              | 6.86                        | 10.8                    | 485                                            | 16,300                         | 0.24                           |
| A          | 04OS-234        | AA-06D       | 362310096105606     | 05/22/2004      | 11:30 | 46,000                              | 6.33                        | 19.8                    | 460                                            | 29,500                         | 0.52                           |
| A          | 05OS-135        | AA-06D       | 362310096105606     | 02/09/2005      | 13:30 | 41,800                              | 6.37                        | 13.9                    | 441                                            | 26,000                         | 0.42                           |
| A          | 04OS-121        | AA-07S       | 362310096105801     | 01/20/2004      | 13:00 | 32,700                              | 6.18                        | 11.6                    | 395                                            | 20,800                         | 0.08                           |
| A          | 04OS-222        | AA-07S       | 362310096105801     | 05/21/2004      | 9:00  | 19,700                              | 5.86                        | 18.6                    | 221                                            | 12,000                         | 0.17                           |
| A          | 05OS-138        | AA-07S       | 362310096105801     | 02/09/2005      | 15:45 | 19,500                              | 5.69                        | 14.1                    | 121                                            | 11,800                         | 0.22                           |
| A          | 04OS-153        | AA-07D       | 362310096105802     | 01/24/2004      | 12:00 | 14,300                              | 7.11                        | 20.4                    | 400                                            | 8,600                          | 0.04                           |
| A          | 04OS-223        | AA-07D       | 362310096105802     | 05/21/2004      | 9:30  | 20,300                              | 6.37                        | 19.3                    | 343                                            | 12,700                         | 0.12                           |
| A          | 05OS-137        | AA-07D       | 362310096105802     | 02/09/2005      | 15:15 | 26,100                              | 6.32                        | 15.2                    | 384                                            | 16,000                         | 0.13                           |
| A          | 04OS-157        | AA-08S       | 362309096105501     | 01/24/2004      | 13:40 | 15,800                              | 6.87                        | 20.4                    | 803                                            | 9,310                          | 0.10                           |

| Field site | Field Sample ID | Station name | Site Identification | Collection Date | Time  | Specific           | pH, field,                   | Temperature | Alkalinity,                       | Dissolved            | Barium,                |
|------------|-----------------|--------------|---------------------|-----------------|-------|--------------------|------------------------------|-------------|-----------------------------------|----------------------|------------------------|
|            |                 |              |                     |                 |       | conductance, field | whole water (standard units) |             | water dissolved, titration, field |                      |                        |
|            |                 |              |                     |                 |       | (µS/cm)            |                              | (°C)        | (mg/L as HCO3)                    | solids, total (mg/L) | dissolved (mg/L as Ba) |
| A          | 04OS-221        | AA-08S       | 362309096105501     | 05/20/2004      | 15:30 | 20,900             | 6.58                         | 19.7        | 804                               | 13,300               | 0.08                   |
| A          | 05OS-123        | AA-08S       | 362309096105501     | 02/08/2005      | 11:00 | 24,000             | 6.69                         | 10.7        | 704                               | 14,900               | 0.08                   |
| A          | 04OS-156        | AA-08D       | 362309096105502     | 01/24/2004      | 13:30 | 3,160              | 7.00                         | 20.4        | 555                               | 2,820                | 0.02                   |
| A          | 04OS-218        | AA-08D       | 362309096105502     | 05/20/2004      | 12:15 | 3,100              | 6.79                         | 21.9        | 587                               | 2,850                | 0.02                   |
| A          | 05OS-124        | AA-08D       | 362309096105502     | 02/08/2005      | 11:45 | 2,540              | 6.85                         | 11.8        | 494                               | 2,460                | 0.01                   |
| A          | 04OS-155        | AA-09S       | 362308096105401     | 01/24/2004      | 13:00 | 4,170              | 6.98                         | 20.4        | 979                               | 3,520                | 0.06                   |
| A          | 04OS-232        | AA-09S       | 362308096105401     | 05/22/2004      | 10:00 | 7,070              | 6.64                         | 20.3        | 899                               | 5,220                | 0.04                   |
| A          | 05OS-122        | AA-09S       | 362308096105401     | 02/08/2005      | 10:00 | 7,340              | 6.94                         | 12.2        | 1,300                             | 5,670                | 0.04                   |
| A          | 04OS-154        | AA-09D       | 362308096105402     | 01/24/2004      | 12:50 | 2,730              | 7.05                         | 20.4        | 562                               | 2,500                | 0.02                   |
| A          | 04OS-217        | AA-09D       | 362308096105402     | 05/20/2004      | 12:00 | 2,670              | 6.76                         | 20.3        | 556                               | 2,500                | 0.02                   |
| A          | 05OS-121        | AA-09D       | 362308096105402     | 02/08/2005      | 9:25  | 2,530              | 6.44                         | 11.9        | 556                               | 2,470                | 0.02                   |
| A          | 04OS-152        | AA-10S       | 362306096105605     | 01/23/2004      | 14:20 | 2,440              | 6.86                         | 20.4        | 247                               | 1,450                | 0.58                   |
| A          | 04OS-224        | AA-10S       | 362306096105605     | 05/21/2004      | 11:45 | 3,320              | 6.03                         | 22.2        | 205                               | 1,880                | 0.37                   |
| A          | 05OS-127        | AA-10S       | 362306096105605     | 02/08/2005      | 14:30 | 3,320              | 5.89                         | 9.0         | 114                               | 1,820                | 0.28                   |
| A          | 04OS-151        | AA-10M       | 362306096105606     | 01/23/2004      | 14:10 | 5,700              | 7.14                         | 20.4        | 538                               | 3,620                | 0.21                   |
| A          | 04OS-229        | AA-10M       | 362306096105606     | 05/21/2004      | 16:00 | 17,900             | 6.64                         | 20.0        | 408                               | 10,700               | 1.1                    |
| A          | 05OS-126        | AA-10M       | 362306096105606     | 02/08/2005      | 14:00 | 18,300             | 6.50                         | 11.7        | 303                               | 10,700               | 0.72                   |
| A          | 04OS-158        | AA-10D       | 362306096105607     | 01/24/2004      | 14:15 | 1,870              | 7.16                         | 20.4        | 454                               | 1,620                | 0.03                   |
| A          | 04OS-215        | AA-10D       | 362306096105607     | 05/20/2004      | 10:30 | 1,850              | 6.84                         | 19.6        | 443                               | 1,620                | 0.02                   |
| A          | 05OS-125        | AA-10D       | 362306096105607     | 02/08/2005      | 12:45 | 1,810              | 6.87                         | 11.5        | 441                               | 1,660                | 0.02                   |
| A          | 04OS-161        | AA-11S       | 362306096105901     | 01/24/2004      | 15:05 | 22,700             | 6.56                         | 20.4        | 297                               | 13,200               | 0.53                   |
| A          | 04OS-225        | AA-11S       | 362306096105901     | 05/21/2004      | 12:15 | 17,500             | 6.24                         | 21.5        | 311                               | 10,300               | 0.55                   |
| A          | 05OS-131        | AA-11S       | 362306096105901     | 02/09/2005      | 10:30 | 15,500             | 6.39                         | 10.1        | 268                               | 9,030                | 0.50                   |
| A          | 04OS-160        | AA-11M       | 362306096105902     | 01/24/2004      | 14:55 | 16,000             | 6.93                         | 20.4        | 376                               | 8,860                | 0.23                   |
| A          | 04OS-228        | AA-11M       | 362306096105902     | 05/21/2004      | 15:30 | 3,950              | 6.77                         | 19.5        | 461                               | 2,630                | 0.08                   |
| A          | 05OS-132        | AA-11M       | 362306096105902     | 02/09/2005      | 11:30 | 8,750              | 6.91                         | 12.8        | 488                               | 5,470                | 0.18                   |
| A          | 04OS-159        | AA-11D       | 362306096105903     | 01/24/2004      | 14:45 | 18,700             | 6.64                         | 20.4        | 335                               | 10,100               | 0.37                   |
| A          | 04OS-213        | AA-11D       | 362306096105903     | 05/20/2004      | 9:00  | 1,260              | 6.86                         | 20.3        | 417                               | 1,050                | 0.03                   |
| A          | 05OS-130        | AA-11D       | 362306096105903     | 02/09/2005      | 9:30  | 2,750              | 6.85                         | 10.3        | 417                               | 1,900                | 0.05                   |
| A          | 04OS-165        | AA-12S       | 362310096110001     | 01/24/2004      | 16:30 | 12,700             | 6.88                         | 20.4        | 460                               | 7,070                | 0.25                   |
| A          | 04OS-227        | AA-12S       | 362310096110001     | 05/21/2004      | 14:15 | 18,900             | 6.49                         | 19.0        | 591                               | 11,600               | 0.11                   |
| A          | 05OS-114        | AA-12S       | 362310096110001     | 02/05/2005      | 14:30 | 1,140              | 7.23                         | 19.2        | 424                               | 939                  | 0.05                   |
| A          | 04OS-164        | AA-12D       | 362310096110002     | 01/24/2004      | 16:15 | 2,770              | 7.14                         | 20.4        | 329                               | 2,360                | 0.03                   |
| A          | 04OS-214        | AA-12D       | 362310096110002     | 05/20/2004      | 10:00 | 2,470              | 6.82                         | 20.1        | 324                               | 2,210                | 0.01                   |
| A          | 05OS-115        | AA-12D       | 362310096110002     | 02/05/2005      | 16:00 | 2,390              | 6.99                         | 17.7        | 317                               | 2,250                | 0.02                   |
| A          | 04OS-163        | AA-13S       | 362309096110101     | 01/24/2004      | 16:00 | 1,320              | 7.22                         | 20.4        | 372                               | 1,010                | 0.24                   |
| A          | 04OS-220        | AA-13S       | 362309096110101     | 05/20/2004      | 13:50 | 1,750              | 7.09                         | 24.3        | 636                               | 1,480                | 0.09                   |
| A          | 05OS-119        | AA-13S       | 362309096110101     | 02/07/2005      | 14:45 | 1,290              | 7.20                         | 7.6         | 811                               | 1,330                | 0.09                   |
| A          | 04OS-162        | AA-13D       | 362309096110102     | 01/24/2004      | 15:45 | 1,860              | 7.32                         | 20.4        | 254                               | 1,470                | 0.12                   |
| A          | 04OS-219        | AA-13D       | 362309096110102     | 05/20/2004      | 13:30 | 1,850              | 7.10                         | 21.1        | 362                               | 1,530                | 0.05                   |
| A          | 05OS-120        | AA-13D       | 362309096110102     | 02/07/2005      | 16:20 | 1,840              | 7.42                         | 11.5        | 456                               | 1,700                | 0.04                   |
| A          | 03OS-155        | AA-60S       | 362307096105901     | 04/02/2003      | 9:00  | 716                | 7.54                         | 28.5        | 190                               | 541                  | 0.04                   |
| A          | 03OS-218        | AA-60S       | 362307096105901     | 06/05/2003      | 14:26 | 1,160              | -                            | 26.8        | -                                 | 514                  | 0.20                   |
| A          | 04OS-108        | AA-60S       | 362307096105901     | 01/15/2004      | 10:50 | 2,960              | 6.49                         | 14.0        | 192                               | 1,830                | 0.42                   |
| A          | 03OS-154        | AA-60D       | 362307096105902     | 04/02/2003      | 9:00  | 5,690              | 6.89                         | 26.5        | 354                               | 3,240                | 0.27                   |

| Field site | Field Sample ID | Station name | Site Identification | Collection Date | Time  | Specific conductance, field (µS/cm) | pH, field, (standard units) | Temperature, water (°C) | Alkalinity, water dissolved, total incremental | Dissolved solids, total (mg/L) | Barium, dissolved (mg/L as Ba) |
|------------|-----------------|--------------|---------------------|-----------------|-------|-------------------------------------|-----------------------------|-------------------------|------------------------------------------------|--------------------------------|--------------------------------|
|            |                 |              |                     |                 |       |                                     |                             |                         | titration, field (mg/L as HCO3)                |                                |                                |
| A          | 03OS-210        | AA-60D       | 362307096105902     | 06/07/2003      | 17:30 | 4,490                               | 6.97                        | 18.1                    | 338                                            | 2,550                          | 0.30                           |
| A          | 04OS-107        | AA-60D       | 362307096105902     | 01/15/2004      | 9:00  | 6,230                               | 7.02                        | 12.9                    | 339                                            | 4,450                          | 2.0                            |
| A          | 04OS-204        | AA-60D       | 362307096105902     | 05/18/2004      | 10:20 | 5,710                               | 6.73                        | 23.6                    | 337                                            | 3,290                          | 0.32                           |
| A          | 05OS-116        | AA-60D       | 362307096105902     | 02/07/2005      | 9:50  | 5,700                               | 6.80                        | 6.9                     | 323                                            | 3,400                          | 0.36                           |
| A          | 03OS-153        | AA-61        | 362310096105604     | 04/02/2003      | 8:37  | 29,800                              | 6.58                        | 26.8                    | 70                                             | 16,800                         | 0.48                           |
| A          | 03OS-209        | AA-61        | 362310096105604     | 06/07/2003      | 16:30 | 32,400                              | 6.79                        | 23.6                    | 137                                            | 18,600                         | 0.37                           |
| A          | 04OS-101        | AA-61        | 362310096105604     | 01/13/2004      | 14:00 | 31,200                              | 6.56                        | 13.4                    | 217                                            | 19,200                         | 0.18                           |
| A          | 04OS-206        | AA-61        | 362310096105604     | 05/18/2004      | 13:45 | 26,600                              | 6.46                        | 26.7                    | 263                                            | 16,000                         | 0.17                           |
| A          | 05OS-129        | AA-61        | 362310096105604     | 02/08/2005      | 16:20 | 32,000                              | 6.52                        | 7.5                     | 318                                            | 19,000                         | 0.14                           |
| A          | 04OS-202        | AA-62        | 362307096105401     | 05/17/2004      | 15:30 | 11,000                              | 5.67                        | 25.2                    | 32                                             | 6,360                          | 0.04                           |
| A          | 05OS-128        | AA-62        | 362307096105401     | 02/08/2005      | 15:20 | 7,150                               | 5.88                        | 8.4                     | 44                                             | 4,110                          | 0.03                           |
| A          | 02OS-434        | AE-04        | 362307096105803     | 06/13/2002      | 11:50 | 370                                 | -                           | 22.4                    | -                                              | 163                            | 0.03                           |
| A          | 02OS-332        | AE-05        | 362306096105701     | 03/03/2002      | 13:15 | 85                                  | -                           | -                       | -                                              | 41                             | 0.01                           |
| A          | 02OS-333        | AE-06        | 362305096105602     | 03/03/2002      | 13:30 | 125                                 | -                           | 16.8                    | -                                              | 70                             | 0.12                           |
| A          | 02OS-435        | AE-06        | 362305096105602     | 06/13/2002      | 13:00 | 60                                  | -                           | 23.3                    | -                                              | 37                             | 0.25                           |
| A          | 04OS-111        | AE-06        | 362305096105602     | 01/15/2004      | 13:00 | 86                                  | 5.60                        | 13.5                    | 13                                             | 65                             | 0.15                           |
| A          | 02OS-334        | AE-07        | 362304096105601     | 03/03/2002      | 14:00 | 200                                 | 5.28                        | -                       | 3                                              | 81                             | 0.07                           |
| A          | 04OS-110        | AE-07        | 362304096105601     | 01/15/2004      | 12:30 | 95                                  | -                           | 15.0                    | -                                              | 102                            | 0.17                           |
| A          | 02OS-326        | AE-08        | 362307096105603     | 03/01/2002      | 15:30 | 2,040                               | 6.35                        | 7.5                     | 13                                             | 1,000                          | 0.19                           |
| A          | 02OS-432        | AE-08        | 362307096105603     | 06/13/2002      | 11:15 | 574                                 | 6.04                        | 20.8                    | 23                                             | 131                            | 0.08                           |
| A          | 04OS-114        | AE-08        | 362307096105603     | 01/15/2004      | 16:00 | 2,190                               | 5.32                        | 12.1                    | 8                                              | 1,070                          | 0.99                           |
| A          | 02OS-331        | AE-10        | 362307096105604     | 03/03/2002      | 13:00 | 155                                 | 5.74                        | 19.8                    | 13                                             | 98                             | 0.08                           |
| A          | 02OS-328        | AE-12        | 362307096105605     | 03/03/2002      | 11:30 | 823                                 | 7.30                        | 16.6                    | 457                                            | 700                            | 0.02                           |
| A          | 02OS-436        | AE-12        | 362307096105605     | 06/13/2002      | 13:30 | 776                                 | -                           | 23.6                    | -                                              | 220                            | 0.04                           |
| A          | 02OS-325        | AE-13        | 362310096105601     | 03/01/2002      | 14:30 | 20,700                              | -                           | 7.2                     | -                                              | 12,200                         | 0.53                           |
| A          | 02OS-329        | AE-13        | 362310096105601     | 03/03/2002      | 12:00 | 18,000                              | 5.55                        | 16.4                    | 14                                             | 9,940                          | 0.41                           |
| A          | 02OS-431        | AE-13        | 362310096105601     | 06/13/2002      | 10:45 | 19,900                              | 5.63                        | 21.5                    | 57                                             | 12,300                         | 0.44                           |
| A          | 03OS-118        | AE-13        | 362310096105601     | 03/27/2003      | 9:30  | 20,100                              | 5.48                        | 23.5                    | 15                                             | 11,900                         | 0.23                           |
| A          | 03OS-223        | AE-13        | 362310096105601     | 06/07/2003      | 13:00 | 26,000                              | -                           | -                       | -                                              | 14,000                         | 0.23                           |
| A          | 04OS-102        | AE-13        | 362310096105601     | 01/13/2004      | 14:30 | 19,300                              | 5.73                        | 13.4                    | 21                                             | 12,000                         | 0.15                           |
| A          | 04OS-207        | AE-13        | 362310096105601     | 05/18/2004      | 14:30 | 17,400                              | 5.19                        | 26.2                    | 26                                             | 9,890                          | 0.26                           |
| A          | 03OS-116        | AE-14        | 362310096105602     | 03/26/2003      | 15:56 | 5,260                               | -                           | 13.5                    | -                                              | 2,790                          | 0.23                           |
| A          | 02OS-330        | AE-15        | 362309096105601     | 03/03/2002      | 12:30 | 4,050                               | -                           | -                       | -                                              | 2,180                          | 0.11                           |
| A          | 02OS-437        | AE-15        | 362309096105601     | 06/13/2002      | 14:30 | 29,500                              | -                           | 25.2                    | -                                              | 14,800                         | 1.3                            |
| A          | 03OS-115        | AE-15        | 362309096105601     | 03/26/2003      | 15:45 | 8,520                               | -                           | 12.9                    | -                                              | 4,790                          | 0.15                           |
| A          | 03OS-113        | AE-16        | 362309096105602     | 03/26/2003      | 15:20 | 620                                 | -                           | 12.9                    | -                                              | 431                            | 0.04                           |
| A          | 03OS-114        | AE-17        | 362309096105603     | 03/26/2003      | 15:30 | 8,740                               | -                           | 12.7                    | -                                              | 4,880                          | 0.31                           |
| A          | 03OS-112        | AE-18        | 362309096105604     | 03/26/2003      | 15:15 | 21,300                              | -                           | 11.6                    | -                                              | 13,700                         | 0.32                           |
| A          | 02OS-433        | AE-19        | 362307096105606     | 06/13/2002      | 11:30 | 332                                 | -                           | 22.2                    | -                                              | 147                            | 0.04                           |
| A          | 03OS-109        | AE-51        | 362310096105701     | 03/26/2003      | 13:15 | 33,300                              | -                           | 12.1                    | -                                              | 20,600                         | 0.35                           |
| A          | 03OS-220        | AE-51        | 362310096105701     | 06/05/2003      | 14:55 | 31,900                              | -                           | 25.9                    | -                                              | 19,800                         | 0.21                           |
| A          | 03OS-219        | AE-52        | 362309096105701     | 06/05/2003      | 14:40 | 22,000                              | -                           | -                       | -                                              | 14,400                         | 0.03                           |
| A          | 04OS-208        | AE-52        | 362309096105701     | 05/19/2004      | 10:00 | 22,200                              | 6.54                        | 27.5                    | 368                                            | 15,200                         | 0.02                           |
| A          | 03OS-111        | AE-53        | 362310096105501     | 03/26/2003      | 14:30 | 12,900                              | 5.62                        | 11.5                    | 17                                             | 6,220                          | 0.27                           |
| A          | 03OS-222        | AE-53        | 362310096105501     | 06/05/2003      | 15:15 | 18,100                              | -                           | 27.0                    | -                                              | 10,400                         | 0.26                           |

| Field site               | Field Sample ID | Station name | Site Identification | Collection Date | Time  | Specific           | pH, field,            | Temperature | Alkalinity,                       | Dissolved            | Barium,                |
|--------------------------|-----------------|--------------|---------------------|-----------------|-------|--------------------|-----------------------|-------------|-----------------------------------|----------------------|------------------------|
|                          |                 |              |                     |                 |       | conductance, field | whole water (standard |             | water dissolved, titration, field |                      |                        |
|                          |                 |              |                     |                 |       | (µS/cm)            | units)                | (°C)        | (mg/L as HCO3)                    | solids, total (mg/L) | dissolved (mg/L as Ba) |
| A                        | 04OS-106        | AE-53        | 362310096105501     | 01/14/2004      | 14:45 | 27,300             | 6.64                  | 16.2        | 432                               | 17,000               | 0.12                   |
| A                        | 04OS-210        | AE-53        | 362310096105501     | 05/19/2004      | 11:00 | 11,900             | 6.33                  | 25.6        | 120                               | 6,660                | 0.21                   |
| A                        | 03OS-110        | AE-54        | 362310096105603     | 03/26/2003      | 13:45 | 6,180              | 6.17                  | 11.5        | 16                                | 3,660                | 2.7                    |
| A                        | 03OS-221        | AE-54        | 362310096105603     | 06/05/2003      | 15:00 | 15,300             | -                     | 24.4        | -                                 | 8,360                | 4.8                    |
| A                        | 04OS-209        | AE-54        | 362310096105603     | 05/19/2004      | 10:30 | 4,830              | 5.56                  | 28.3        | 11                                | 2,550                | 1.2                    |
| A                        | 03OS-117        | AE-56        | 362307096105607     | 03/26/2003      | 16:30 | 3,330              | 6.40                  | 12.4        | 339                               | 1,910                | 0.61                   |
| A                        | 04OS-112        | AE-56        | 362307096105607     | 01/15/2004      | 14:00 | 2,860              | -                     | 13.7        | -                                 | 1,280                | 0.71                   |
| A                        | 02OS-324        | AP-01        | 362307096105608     | 02/28/2002      | 11:00 | 170,000            | 5.79                  | -           | 239                               | 110,000              | 15.5                   |
| A                        | 02OS-327        | AR-01        | 362314096110701     | 03/03/2002      | 11:00 | 428                | 6.64                  | 13.4        | 125                               | 315                  | 0.31                   |
| A                        | 02OS-438        | AR-01        | 362314096110701     | 06/13/2002      | 14:45 | 526                | 6.46                  | 16.6        | 221                               | 434                  | 0.54                   |
| A                        | 03OS-105        | AR-01        | 362314096110701     | 03/25/2003      | 17:00 | 481                | 6.47                  | 16.5        | 149                               | 334                  | 0.34                   |
| A                        | 03OS-206        | AR-01        | 362314096110701     | 06/07/2003      | 10:45 | 604                | 6.72                  | 24.4        | 282                               | 474                  | 0.54                   |
| A                        | 04OS-113        | AR-01        | 362314096110701     | 01/15/2004      | 16:15 | 720                | 6.74                  | 14.5        | 396                               | 601                  | 0.65                   |
| A                        | 04OS-235        | AR-01        | 362314096110701     | 05/22/2004      | 14:00 | 635                | 6.53                  | 21.4        | 359                               | 545                  | 0.61                   |
| A                        | 05OS-133        | AR-01        | 362314096110701     | 02/09/2005      | 12:08 | 440                | 6.42                  | 13.9        | 162                               | 332                  | 0.40                   |
| Site B; monitoring wells |                 |              |                     |                 |       |                    |                       |             |                                   |                      |                        |
| B                        | 02OS-322        | BA-01S       | 362052096802701     | 02/26/2002      | 15:30 | 18,500             | 7.14                  | 16.5        | 161                               | 11,100               | 0.25                   |
| B                        | 02OS-403        | BA-01S       | 362052096802701     | 06/10/2002      | 14:00 | 13,000             | 5.40                  | 21.9        | 33                                | 7,630                | 0.60                   |
| B                        | 02OS-516        | BA-01S       | 362052096802701     | 11/19/2002      | 12:00 | 15,600             | 6.74                  | 15.9        | 482                               | 11,700               | 0.06                   |
| B                        | 03OS-141        | BA-01S       | 362052096802701     | 04/01/2003      | 8:44  | 8,730              | 5.15                  | 19.2        | 10                                | 4,700                | 0.22                   |
| B                        | 03OS-216        | BA-01S       | 362052096802701     | 06/09/2003      | 18:45 | 9,700              | 6.44                  | 24.3        | 216                               | 6,160                | 0.09                   |
| B                        | 04OS-125        | BA-01S       | 362052096802701     | 01/22/2004      | 9:00  | 4,690              | 5.57                  | 8.5         | 24                                | 2,440                | 0.08                   |
| B                        | 04OS-239        | BA-01S       | 362052096802701     | 05/24/2004      | 13:30 | 8,770              | 6.25                  | 25.7        | 292                               | 6,240                | 0.12                   |
| B                        | 05OS-106        | BA-01S       | 362052096802701     | 02/03/2005      | 15:45 | 11,000             | 6.68                  | 11.7        | 1,020                             | 10,400               | 0.03                   |
| B                        | 02OS-323        | BA-01D       | 362052096802702     | 02/26/2002      | 16:00 | 12,900             | 7.03                  | 17.9        | 459                               | 8,990                | 0.12                   |
| B                        | 02OS-405        | BA-01D       | 362052096802702     | 06/10/2002      | 16:00 | 9,500              | 7.11                  | 18.9        | 424                               | 7,250                | 0.02                   |
| B                        | 02OS-517        | BA-01D       | 362052096802702     | 11/19/2002      | 12:30 | 9,600              | 7.49                  | 19.1        | 406                               | 7,100                | 0.02                   |
| B                        | 03OS-142        | BA-01D       | 362052096802702     | 04/01/2003      | 9:30  | 9,950              | 7.55                  | 18.9        | 437                               | 7,190                | 0.02                   |
| B                        | 03OS-217        | BA-01D       | 362052096802702     | 06/09/2003      | 19:00 | 8,500              | 7.15                  | 21.1        | 521                               | 6,980                | 0.02                   |
| B                        | 04OS-126        | BA-01D       | 362052096802702     | 01/22/2004      | 9:30  | 8,050              | 7.03                  | 9.3         | 575                               | 6,660                | 0.02                   |
| B                        | 04OS-240        | BA-01D       | 362052096802702     | 05/24/2004      | 14:00 | 7,330              | 6.90                  | 24.8        | 568                               | 6,560                | 0.02                   |
| B                        | 05OS-107        | BA-01D       | 362052096802702     | 02/04/2005      | 9:30  | 7,440              | 7.03                  | 12.9        | 571                               | 6,560                | 0.02                   |
| B                        | 02OS-318        | BA-02S       | 362050096802701     | 02/26/2002      | 13:30 | 10,500             | 7.48                  | 17.1        | 990                               | 8,890                | 0.05                   |
| B                        | 02OS-319        | BA-02D       | 362050096802702     | 02/26/2002      | 14:00 | 9,680              | 6.80                  | 15.5        | 285                               | 7,760                | 0.03                   |
| B                        | 02OS-401        | BA-02D       | 362050096802702     | 06/10/2002      | 10:30 | 8,100              | 6.75                  | 18.0        | 1,030                             | 7,990                | 0.01                   |
| B                        | 02OS-501        | BA-02D       | 362050096802702     | 11/12/2002      | 16:30 | 8,780              | 6.78                  | 17.8        | 995                               | 7,480                | 0.01                   |
| B                        | 03OS-119        | BA-02D       | 362050096802702     | 03/27/2003      | 15:50 | 8,540              | 6.81                  | 18.6        | 987                               | 7,490                | 0.02                   |
| B                        | 03OS-211        | BA-02D       | 362050096802702     | 06/09/2003      | 10:30 | 8,130              | 6.82                  | 19.9        | 1,030                             | 7,490                | 0.01                   |
| B                        | 04OS-124        | BA-02D       | 362050096802702     | 01/21/2004      | 14:30 | 8,810              | 6.75                  | 12.3        | 1,040                             | 7,680                | 0.01                   |
| B                        | 04OS-238        | BA-02D       | 362050096802702     | 05/24/2004      | 12:00 | 8,290              | 6.66                  | 21.8        | 1,030                             | 7,700                | 0.01                   |
| B                        | 05OS-102        | BA-02D       | 362050096802702     | 02/02/2005      | 15:15 | 8,190              | 6.63                  | 13.4        | 1,020                             | 7,550                | 0.01                   |
| B                        | 02OS-320        | BA-03S       | 362051096802801     | 02/26/2002      | 14:30 | 9,910              | 7.33                  | 16.0        | 829                               | 7,830                | 0.04                   |
| B                        | 02OS-504        | BA-03S       | 362051096802801     | 11/13/2002      | 14:30 | 18,700             | 6.69                  | 20.1        | 887                               | 11,400               | 0.08                   |
| B                        | 03OS-120        | BA-03S       | 362051096802801     | 03/28/2003      | 9:45  | 19,100             | 6.68                  | 9.7         | 873                               | 11,900               | 0.09                   |
| B                        | 03OS-212        | BA-03S       | 362051096802801     | 06/09/2003      | 12:00 | 20,300             | 6.67                  | 22.3        | 890                               | 12,800               | 0.11                   |

| Field site | Field Sample ID | Station name | Site Identification | Collection Date | Time  | Specific conductance, field (μS/cm) | pH, field, (standard units) | Temperature, water (°C) | Alkalinity, water dissolved, total incremental | Dissolved solids, total (mg/L) | Barium, dissolved (mg/L as Ba) |
|------------|-----------------|--------------|---------------------|-----------------|-------|-------------------------------------|-----------------------------|-------------------------|------------------------------------------------|--------------------------------|--------------------------------|
|            |                 |              |                     |                 |       |                                     |                             |                         | titration, field (mg/L as HCO3)                |                                |                                |
| B          | 04OS-122        | BA-03S       | 362051096802801     | 01/21/2004      | 13:00 | 19,300                              | 6.66                        | 9.2                     | 887                                            | 12,000                         | 0.11                           |
| B          | 04OS-236        | BA-03S       | 362051096802801     | 05/24/2004      | 10:00 | 20,100                              | 6.57                        | 22.2                    | 869                                            | 13,100                         | 0.11                           |
| B          | 05OS-105        | BA-03S       | 362051096802801     | 02/03/2005      | 13:15 | 20,100                              | 6.45                        | 16.1                    | 861                                            | 12,900                         | 0.13                           |
| B          | 02OS-321        | BA-03D       | 362051096802802     | 02/26/2002      | 15:00 | 8,160                               | 6.81                        | 16.3                    | 819                                            | 7,210                          | 0.02                           |
| B          | 02OS-402        | BA-03D       | 362051096802802     | 06/10/2002      | 12:00 | 7,200                               | 6.70                        | 19.2                    | 808                                            | 6,840                          | 0.01                           |
| B          | 02OS-505        | BA-03D       | 362051096802802     | 11/13/2002      | 15:00 | 7,120                               | 6.70                        | 17.9                    | 757                                            | 5,800                          | 0.02                           |
| B          | 03OS-121        | BA-03D       | 362051096802802     | 03/28/2003      | 10:00 | 6,960                               | 6.89                        | 9.4                     | 714                                            | 5,580                          | 0.02                           |
| B          | 03OS-213        | BA-03D       | 362051096802802     | 06/09/2003      | 14:00 | 6,600                               | 7.26                        | 23.3                    | 741                                            | 5,610                          | 0.02                           |
| B          | 04OS-123        | BA-03D       | 362051096802802     | 01/21/2004      | 13:30 | 7,700                               | 6.74                        | 10.4                    | 804                                            | 6,480                          | 0.01                           |
| B          | 04OS-237        | BA-03D       | 362051096802802     | 05/24/2004      | 10:30 | 7,530                               | 6.64                        | 22.9                    | 821                                            | 6,840                          | 0.01                           |
| B          | 05OS-104        | BA-03D       | 362051096802802     | 02/03/2005      | 11:20 | 7,700                               | 6.58                        | 14.5                    | 791                                            | 6,590                          | 0.01                           |
| B          | 02OS-423        | BE-01        | 362053096802707     | 06/12/2002      | 9:45  | 7,070                               | 8.91                        | 19.7                    | 79                                             | 5,530                          | 0.08                           |
| B          | 04OS-144        | BE-01        | 362053096802707     | 01/23/2004      | 16:00 | 10,900                              | -                           | -                       | -                                              | 8,710                          | 0.03                           |
| B          | 02OS-303        | BE-03        | 362052096802703     | 02/20/2002      | 15:00 | 22,200                              | 5.96                        | 19.3                    | 36                                             | 13,100                         | 2.3                            |
| B          | 02OS-411        | BE-03        | 362052096802703     | 06/11/2002      | 11:15 | 14,900                              | 5.02                        | 26.7                    | 17                                             | 8,420                          | 1.4                            |
| B          | 03OS-144        | BE-03        | 362052096802703     | 04/01/2003      | 11:10 | 8,800                               | 5.30                        | 15.9                    | 19                                             | 4,670                          | 0.56                           |
| B          | 02OS-408        | BE-04        | 362051096802601     | 06/11/2002      | 10:00 | 31,600                              | -                           | 27.5                    | -                                              | 19,300                         | 1.8                            |
| B          | 03OS-148        | BE-04        | 362051096802601     | 04/01/2003      | 15:15 | 30,200                              | -                           | 29.0                    | -                                              | 17,800                         | 1.3                            |
| B          | 04OS-242        | BE-04        | 362051096802601     | 05/24/2004      | 17:00 | 26,600                              | 5.01                        | 27.6                    | 12                                             | 16,100                         | 0.97                           |
| B          | 02OS-409        | BE-06        | 362050096802501     | 06/11/2002      | 10:15 | 9,950                               | -                           | 23.9                    | -                                              | 5,080                          | 0.46                           |
| B          | 02OS-519        | BE-06        | 362050096802501     | 11/19/2002      | 16:00 | 4,700                               | 6.41                        | 15.0                    | 37                                             | 2,600                          | 0.29                           |
| B          | 03OS-139        | BE-06        | 362050096802501     | 03/31/2003      | 15:00 | 1,180                               | 6.06                        | 24.3                    | 60                                             | 613                            | 0.09                           |
| B          | 02OS-305        | BE-07        | 362050096802401     | 02/21/2002      | 12:00 | 39,100                              | 6.23                        | 11.9                    | 178                                            | 24,000                         | 14.2                           |
| B          | 02OS-414        | BE-07        | 362050096802401     | 06/11/2002      | 14:30 | 33,700                              | -                           | 30.1                    | -                                              | 20,300                         | 10.2                           |
| B          | 02OS-415        | BE-07        | 362050096802401     | 06/11/2002      | 15:30 | 32,700                              | 6.20                        | 24.7                    | 233                                            | 19,700                         | 15.2                           |
| B          | 02OS-508        | BE-07        | 362050096802401     | 11/14/2002      | 13:30 | 32,300                              | 6.41                        | 13.5                    | 354                                            | 19,900                         | 3.3                            |
| B          | 03OS-151        | BE-07        | 362050096802401     | 04/02/2003      | 8:45  | 15,500                              | 6.45                        | 21.7                    | 151                                            | 8,680                          | 8.5                            |
| B          | 04OS-136        | BE-07        | 362050096802401     | 01/23/2004      | 11:45 | 17,300                              | 6.27                        | 11.8                    | 190                                            | 9,700                          | 7.0                            |
| B          | 02OS-422        | BE-08        | 362050096802502     | 06/12/2002      | 9:30  | 19,900                              | 6.68                        | 25.0                    | 820                                            | 16,000                         | 0.04                           |
| B          | 02OS-515        | BE-08        | 362050096802502     | 11/19/2002      | 10:30 | 35,600                              | 6.50                        | 17.5                    | 410                                            | 24,600                         | 0.05                           |
| B          | 03OS-147        | BE-08        | 362050096802502     | 04/01/2003      | 14:30 | 33,200                              | 6.32                        | 25.9                    | 193                                            | 20,800                         | 0.16                           |
| B          | 04OS-129        | BE-08        | 362050096802502     | 01/22/2004      | 10:45 | 26,900                              | 6.77                        | 13.3                    | 414                                            | 18,300                         | 0.04                           |
| B          | 02OS-412        | BE-09        | 362050096802503     | 06/11/2002      | 12:00 | 17,500                              | 5.98                        | 23.9                    | 185                                            | 10,500                         | 0.90                           |
| B          | 02OS-511        | BE-09        | 362050096802503     | 11/18/2002      | 11:00 | 35,900                              | -                           | 18.3                    | 89                                             | 23,200                         | 3.8                            |
| B          | 03OS-146        | BE-09        | 362050096802503     | 04/01/2003      | 14:00 | 26,600                              | 5.28                        | 25.2                    | 32                                             | 15,600                         | 1.8                            |
| B          | 04OS-128        | BE-09        | 362050096802503     | 01/22/2004      | 10:10 | 28,000                              | 5.51                        | 11.5                    | 28                                             | 16,600                         | 3.8                            |
| B          | 02OS-413        | BE-10        | 362050096802504     | 06/11/2002      | 13:45 | 18,200                              | 4.40                        | 22.8                    | 0                                              | 13,300                         | 0.51                           |
| B          | 02OS-507        | BE-10        | 362050096802504     | 11/14/2002      | 11:45 | 34,600                              | 4.41                        | 15.5                    | 0                                              | 21,400                         | 0.80                           |
| B          | 03OS-129        | BE-10        | 362050096802504     | 03/30/2003      | 11:30 | 27,400                              | 4.67                        | 16.5                    | 3.1                                            | 16,300                         | 0.50                           |
| B          | 04OS-131        | BE-10        | 362050096802504     | 01/22/2004      | 15:00 | 36,100                              | 4.79                        | 9.2                     | 6.4                                            | 21,500                         | 0.74                           |
| B          | 02OS-420        | BE-11        | 362050096802601     | 06/12/2002      | 9:00  | 32,000                              | 6.36                        | 22.0                    | 232                                            | 20,200                         | 0.47                           |
| B          | 02OS-506        | BE-11        | 362050096802601     | 11/14/2002      | 10:45 | 24,600                              | -                           | 18.3                    | 294                                            | 15,000                         | 0.28                           |
| B          | 03OS-128        | BE-11        | 362050096802601     | 03/30/2003      | 11:00 | 45,200                              | 6.44                        | 20.2                    | 139                                            | 28,400                         | 1.6                            |
| B          | 04OS-130        | BE-11        | 362050096802601     | 01/22/2004      | 14:30 | 33,600                              | 6.50                        | 10.0                    | 100                                            | 20,000                         | 3.1                            |
| B          | 02OS-421        | BE-12        | 362050096802602     | 06/12/2002      | 9:15  | 29,400                              | 6.65                        | 22.3                    | 447                                            | 20,000                         | 0.07                           |

| Field site | Field Sample ID | Station name | Site Identification | Collection Date | Time  | Specific conductance, field (μS/cm) | pH, field, (standard units) | Temperature, water (°C) | Alkalinity, water dissolved, total incremental | Dissolved solids, total (mg/L) | Barium, dissolved (mg/L as Ba) |
|------------|-----------------|--------------|---------------------|-----------------|-------|-------------------------------------|-----------------------------|-------------------------|------------------------------------------------|--------------------------------|--------------------------------|
|            |                 |              |                     |                 |       |                                     |                             |                         | titration, field (mg/L as HCO3)                |                                |                                |
| B          | 02OS-509        | BE-12        | 362050096802602     | 11/16/2002      | 12:10 | 33,300                              | -                           | 17.6                    | -                                              | 23,300                         | 0.17                           |
| B          | 03OS-145        | BE-12        | 362050096802602     | 04/01/2003      | 13:30 | 47,700                              | 6.66                        | 27.4                    | 129                                            | 30,700                         | 0.30                           |
| B          | 04OS-127        | BE-12        | 362050096802602     | 01/22/2004      | 9:45  | 24,700                              | 6.36                        | 9.5                     | 53                                             | 14,500                         | 2.3                            |
| B          | 02OS-307        | BE-13        | 362049096802401     | 02/21/2002      | 16:00 | 27,100                              | 6.26                        | 12.1                    | 181                                            | 17,400                         | 0.23                           |
| B          | 02OS-416        | BE-13        | 362049096802401     | 06/11/2002      | 16:00 | 20,900                              | 6.59                        | 22.1                    | 824                                            | 16,600                         | 0.10                           |
| B          | 02OS-512        | BE-13        | 362049096802401     | 11/18/2002      | 15:30 | 20,800                              | 7.14                        | 17.2                    | 888                                            | 17,400                         | 0.03                           |
| B          | 03OS-127        | BE-13        | 362049096802401     | 03/30/2003      | 9:45  | 21,000                              | 6.97                        | 16.7                    | 1,150                                          | 18,000                         | 0.02                           |
| B          | 04OS-138        | BE-13        | 362049096802401     | 01/23/2004      | 13:00 | 20,100                              | 6.87                        | 13.3                    | 1,210                                          | 17,500                         | 0.02                           |
| B          | 02OS-410        | BE-15        | 362050096802506     | 06/11/2002      | 10:35 | 9,380                               | 6.39                        | 23.5                    | 142                                            | 5,500                          | 0.17                           |
| B          | 02OS-518        | BE-15        | 362050096802506     | 11/19/2002      | 15:00 | 9,400                               | 7.11                        | 21.3                    | 174                                            | 5,610                          | 0.08                           |
| B          | 03OS-140        | BE-15        | 362050096802506     | 03/31/2003      | 16:15 | 6,040                               | 6.06                        | 19.8                    | 84                                             | 3,250                          | 0.15                           |
| B          | 02OS-417        | BE-16        | 362049096802501     | 06/11/2002      | 16:30 | 18,600                              | 6.14                        | 22.6                    | 325                                            | 14,500                         | 0.03                           |
| B          | 02OS-513        | BE-16        | 362049096802501     | 11/18/2002      | 17:00 | 16,900                              | 6.61                        | 15.1                    | 786                                            | 15,900                         | 0.02                           |
| B          | 03OS-125        | BE-16        | 362049096802501     | 03/28/2003      | 16:00 | 16,700                              | 6.41                        | 10.6                    | 582                                            | 14,800                         | 0.02                           |
| B          | 04OS-137        | BE-16        | 362049096802501     | 01/23/2004      | 12:30 | 14,100                              | 6.49                        | 12.2                    | 337                                            | 11,000                         | 0.02                           |
| B          | 02OS-418        | BE-17        | 362048096802601     | 06/11/2002      | 17:00 | 16,300                              | 7.06                        | 34.7                    | 1,260                                          | 16,400                         | 0.04                           |
| B          | 02OS-514        | BE-17        | 362048096802601     | 11/19/2002      | 9:45  | 10,900                              | 7.41                        | 19.0                    | 1,090                                          | 15,000                         | 0.02                           |
| B          | 03OS-126        | BE-17        | 362048096802601     | 03/30/2003      | 9:15  | 15,700                              | 7.33                        | 18.5                    | 1,160                                          | 15,600                         | 0.02                           |
| B          | 04OS-135        | BE-17        | 362048096802601     | 01/23/2004      | 11:00 | 15,400                              | 7.31                        | 12.3                    | 1,090                                          | 14,700                         | 0.02                           |
| B          | 02OS-407        | BE-18        | 362052096802501     | 06/11/2002      | 9:45  | 16,300                              | 6.17                        | 23.2                    | 275                                            | 10,100                         | 0.58                           |
| B          | 02OS-521        | BE-18        | 362052096802501     | 11/20/2002      | 9:45  | 19,600                              | 6.26                        | 14.7                    | 290                                            | 12,700                         | 0.16                           |
| B          | 03OS-149        | BE-18        | 362052096802501     | 04/01/2003      | 15:45 | 9,260                               | 6.18                        | 19.4                    | 104                                            | 5,120                          | 0.26                           |
| B          | 04OS-140        | BE-18        | 362052096802501     | 01/23/2004      | 14:00 | 11,800                              | 6.18                        | 13.0                    | 153                                            | 6,690                          | 0.53                           |
| B          | 03OS-150        | BE-19        | 362052096802502     | 04/01/2003      | 16:15 | 10,200                              | 6.52                        | 20.6                    | 203                                            | 5,700                          | 0.84                           |
| B          | 03OS-143        | BE-51        | 362053096802708     | 04/01/2003      | 10:30 | 4,150                               | 6.97                        | 17.4                    | 182                                            | 2,870                          | 0.02                           |
| B          | 04OS-143        | BE-51        | 362053096802708     | 01/23/2004      | 16:30 | 2,410                               | 6.89                        | 13.9                    | 100                                            | 1,590                          | 0.01                           |
| B          | 03OS-135        | BE-52        | 362052096802704     | 03/31/2003      | 12:00 | 22,400                              | 6.97                        | 18.0                    | 363                                            | 14,500                         | 0.07                           |
| B          | 03OS-136        | BE-53        | 362052096802705     | 03/31/2003      | 12:30 | 34,400                              | 4.74                        | 28.9                    | 7                                              | 21,100                         | 1.1                            |
| B          | 04OS-142        | BE-53        | 362052096802705     | 01/23/2004      | 15:00 | 46,600                              | 4.44                        | 15.8                    | 0                                              | 29,800                         | 2.1                            |
| B          | 03OS-130        | BE-54        | 362052096802706     | 03/30/2003      | 16:00 | 9,980                               | 5.94                        | 14.8                    | 67                                             | 5,460                          | 0.67                           |
| B          | 03OS-134        | BE-55        | 362051096802603     | 03/31/2003      | 11:30 | 40,400                              | 6.71                        | 18.8                    | 403                                            | 27,500                         | 0.10                           |
| B          | 04OS-141        | BE-55        | 362051096802603     | 01/23/2004      | 14:30 | 36,300                              | 6.45                        | 13.2                    | 309                                            | 24,100                         | 0.13                           |
| B          | 04OS-245        | BE-55        | 362051096802603     | 05/25/2004      | 10:30 | 37,900                              | 6.40                        | 22.7                    | 653                                            | 26,600                         | 0.07                           |
| B          | 03OS-133        | BE-56        | 362051096802604     | 03/31/2003      | 10:45 | 25,400                              | 6.30                        | 24.2                    | 130                                            | 15,200                         | 1.6                            |
| B          | 04OS-244        | BE-56        | 362051096802604     | 05/25/2004      | 10:00 | 38,200                              | 6.57                        | 24.9                    | 245                                            | 24,900                         | 0.43                           |
| B          | 03OS-132        | BE-57        | 362051096802605     | 03/31/2003      | 10:00 | 7,400                               | 7.07                        | 15.9                    | 135                                            | 4,050                          | 0.13                           |
| B          | 03OS-131        | BE-58        | 362050096802604     | 03/30/2003      | 17:00 | 4,930                               | 6.69                        | 13.1                    | 51                                             | 2,530                          | 0.07                           |
| B          | 04OS-139        | BE-58        | 362050096802604     | 01/23/2004      | 13:30 | 9,650                               | 7.10                        | 16.2                    | 123                                            | 5,720                          | 0.04                           |
| B          | 03OS-123        | BE-59        | 362049096802601     | 03/28/2003      | 13:15 | 24,300                              | 6.90                        | 9.8                     | 330                                            | 14,400                         | 0.65                           |
| B          | 04OS-133        | BE-59        | 362049096802601     | 01/23/2004      | 10:00 | 10,100                              | 7.07                        | 11.2                    | 171                                            | 5,560                          | 0.30                           |
| B          | 03OS-122        | BE-60        | 362049096802602     | 03/28/2003      | 12:45 | 11,700                              | 5.41                        | 10.2                    | 25                                             | 6,300                          | 0.81                           |
| B          | 04OS-132        | BE-60        | 362049096802602     | 01/23/2004      | 9:45  | 20,200                              | 5.73                        | 11.5                    | 26                                             | 12,900                         | 3.8                            |
| B          | 03OS-124        | BE-61        | 362049096802502     | 03/28/2003      | 15:30 | 15,900                              | 6.64                        | 10.3                    | 430                                            | 10,600                         | 0.06                           |
| B          | 04OS-134        | BE-61        | 362049096802502     | 01/23/2004      | 10:30 | 10,600                              | 6.80                        | 11.4                    | 309                                            | 7,060                          | 0.03                           |
| B          | 03OS-152        | BE-62        | 362049096802402     | 04/02/2003      | 9:45  | 25,600                              | 6.66                        | 21.9                    | 480                                            | 15,700                         | 0.09                           |

| Field site                                                        | Field Sample ID | Station name                            | Site Identification | Collection Date | Time  | Specific conductance, field (µS/cm) | pH, field, (standard units) | Temperature, whole water (°C) | Alkalinity, water dissolved, total incremental titration, field (mg/L as HCO3) | Dissolved solids, total (mg/L) | Barium, dissolved (mg/L as Ba) |
|-------------------------------------------------------------------|-----------------|-----------------------------------------|---------------------|-----------------|-------|-------------------------------------|-----------------------------|-------------------------------|--------------------------------------------------------------------------------|--------------------------------|--------------------------------|
| B                                                                 | 04OS-145        | BE-62                                   | 362049096802402     | 01/25/2004      | 11:30 | 20,700                              | -                           | 19.7                          | -                                                                              | 13,600                         | 0.09                           |
| B                                                                 | 04OS-248        | BE-71                                   | 362052096082707     | 05/27/2004      | 9:45  | 12,200                              | 6.63                        | 24.8                          | 945                                                                            | 10,400                         | 0.06                           |
| B                                                                 | 05OS-109        | BE-71                                   | 362052096082707     | 02/04/2005      | 12:45 | 13,300                              | 6.60                        | 16.8                          | 949                                                                            | 11,600                         | 0.01                           |
| B                                                                 | 04OS-249        | BE-72                                   | 362050096082507     | 05/27/2004      | 10:15 | 13,400                              | 6.54                        | 22.1                          | 248                                                                            | 10,300                         | 0.02                           |
| B                                                                 | 05OS-108        | BE-72                                   | 362050096082507     | 02/04/2005      | 11:10 | 12,900                              | 6.64                        | 14.0                          | 1,010                                                                          | 11,400                         | 0.01                           |
| B                                                                 | 04OS-247        | BE-73                                   | 362053096082801     | 05/27/2004      | 9:10  | 16,200                              | 6.73                        | 25.2                          | 1,130                                                                          | 12,900                         | 0.03                           |
| B                                                                 | 05OS-111        | BE-73                                   | 362053096082801     | 02/04/2005      | 15:45 | 17,100                              | 6.89                        | 16.4                          | 1,280                                                                          | 14,300                         | 0.02                           |
| B                                                                 | 04OS-250        | BE-74                                   | 362051096082606     | 05/27/2004      | 11:00 | 20,500                              | 6.47                        | 22.1                          | 519                                                                            | 15,500                         | 0.08                           |
| B                                                                 | 05OS-110        | BE-74                                   | 362051096082606     | 02/04/2005      | 14:50 | 25,100                              | 6.49                        | 15.2                          | 978                                                                            | 18,600                         | 0.01                           |
| B                                                                 | 02OS-304        | BR-01 (prior to completion)             | 362048096803901     | 02/21/2002      | 9:00  | 2,320                               | 8.30                        | 14.0                          | 253                                                                            | 1,420                          | 0.08                           |
| B                                                                 | 02OS-308        | BR-01 (prior to completion)             | 362048096803901     | 02/22/2002      | 10:00 | 3,860                               | 8.77                        | 15.1                          | 253                                                                            | 2,280                          | 0.01                           |
| B                                                                 | 02OS-315        | BR-01 (prior to completion)             | 362048096803901     | 02/25/2002      | 12:00 | 3,410                               | -                           | 14.0                          | -                                                                              | 1,800                          | 0.01                           |
| B                                                                 | 04OS-246        | BR-01S                                  | 362048096803901     | 05/25/2004      | 9:30  | 18,400                              | -                           | 25.1                          | -                                                                              | 10,900                         | 3.3                            |
| B                                                                 | 02OS-406        | BR-01D                                  | 362048096803902     | 06/10/2002      | 17:30 | 15,400                              | 6.44                        | 18.0                          | 252                                                                            | 9,380                          | 1.7                            |
| B                                                                 | 02OS-503        | BR-01D                                  | 362048096803902     | 11/13/2002      | 11:15 | 3,120                               | 6.88                        | 16.3                          | 511                                                                            | 2,220                          | 0.24                           |
| B                                                                 | 03OS-137        | BR-01D                                  | 362048096803902     | 03/31/2003      | 12:00 | 1,550                               | 6.79                        | 26.2                          | 551                                                                            | 1,270                          | 0.04                           |
| B                                                                 | 03OS-215        | BR-01D                                  | 362048096803902     | 06/09/2003      | 16:15 | 1,420                               | 6.96                        | 26.2                          | 562                                                                            | 1,270                          | 0.04                           |
| B                                                                 | 04OS-241        | BR-01D                                  | 362048096803902     | 05/24/2004      | 15:40 | 1,460                               | 6.67                        | 22.5                          | 558                                                                            | 1,260                          | 0.04                           |
| B                                                                 | 05OS-103        | BR-01D                                  | 362048096803902     | 02/03/2005      | 9:00  | 1,380                               | 6.65                        | 9.8                           | 558                                                                            | 1,250                          | 0.03                           |
| B                                                                 | 02OS-312        | BR-02 (prior to completion)             | 362048096803101     | 02/23/2002      | 12:00 | 13,200                              | 7.82                        | 19.0                          | 263                                                                            | 7,260                          | 4.6                            |
| B                                                                 | 02OS-313        | BR-02 (prior to completion)             | 362048096803101     | 02/24/2002      | 11:15 | 13,800                              | 7.62                        | 22.3                          | 351                                                                            | 7,720                          | 0.41                           |
| B                                                                 | 02OS-335        | BR-02D                                  | 362048096803102     | 03/04/2002      | 15:30 | 5,520                               | 7.59                        | 16.7                          | 218                                                                            | 3,070                          | 0.60                           |
| B                                                                 | 02OS-404        | BR-02D                                  | 362048096803102     | 06/10/2002      | 14:45 | 6,300                               | 6.94                        | 19.6                          | 493                                                                            | 5,100                          | 0.42                           |
| B                                                                 | 02OS-502        | BR-02D                                  | 362048096803102     | 11/13/2002      | 9:15  | 6,310                               | 6.86                        | 17.2                          | 573                                                                            | 4,220                          | 0.06                           |
| B                                                                 | 03OS-138        | BR-02D                                  | 362048096803102     | 03/31/2003      | 11:00 | 8,300                               | 6.71                        | 28.3                          | 594                                                                            | 5,520                          | 0.14                           |
| B                                                                 | 03OS-214        | BR-02D                                  | 362048096803102     | 06/09/2003      | 15:45 | 8,600                               | 6.90                        | 22.5                          | 660                                                                            | 6,050                          | 0.04                           |
| B                                                                 | 04OS-243        | BR-02D                                  | 362048096803102     | 05/25/2004      | 9:00  | 8,690                               | 6.60                        | 20.8                          | 683                                                                            | 6,590                          | 0.03                           |
| B                                                                 | 05OS-101        | BR-02D                                  | 362048096803102     | 02/02/2005      | 10:15 | 7,990                               | 6.75                        | 8.7                           | 737                                                                            | 5,940                          | 0.04                           |
| <b>Site B; surface waters and reinjection tank produced water</b> |                 |                                         |                     |                 |       |                                     |                             |                               |                                                                                |                                |                                |
| B                                                                 | 01OS-113        | small pool, near abandoned tank battery | -                   | 03/13/2001      | 9:45  | 10,900                              | 7.13                        | 12.9                          | 143                                                                            | 6,020                          | 4.4                            |
| B                                                                 | 02OS-301        | small pool, near abandoned tank battery | -                   | 02/20/2002      | 9:30  | 21,800                              | 8.30                        | 6.3                           | 59                                                                             | 12,000                         | 3.75                           |
| B                                                                 | 01OS-114        | large pool, nr BA-01 well               | -                   | 03/13/2001      | 10:15 | 4,780                               | 7.26                        | 11.4                          | 134                                                                            | 2,520                          | 0.56                           |
| B                                                                 | 01OS-201        | EPA-1 "hand dug" hole                   | -                   | 12/11/2001      | -     | 117,000                             | 4.31                        | 12.1                          | 0                                                                              | 82,000                         | 113                            |
| B                                                                 | 02OS-311        | creek, near BA-01 well                  | -                   | 02/22/2002      | 16:30 | 8,440                               | 6.74                        | 11.2                          | 273                                                                            | 4,830                          | 0.27                           |
| B                                                                 | 01OS-202        | injection pit                           | -                   | 12/11/2001      | -     | 23,600                              | 6.46                        | 9.1                           | 53                                                                             | 13,000                         | 19.3                           |
| B                                                                 | 02OS-316        | injection pit                           | -                   | 02/25/2002      | 14:00 | 67,000                              | 8.52                        | 10.5                          | 57                                                                             | 42,100                         | 88.4                           |
| B                                                                 | 02OS-317        | main pit                                | -                   | 02/25/2002      | 16:15 | 57,600                              | 6.62                        | 6.8                           | 146                                                                            | 35,300                         | 100                            |
| B                                                                 | 02OS-510        | main pit                                | -                   | 11/18/2002      | 10:15 | 59,000                              | 6.71                        | 15.4                          | 82                                                                             | 39,200                         | 101                            |
| B                                                                 | 02OS-314        | reinjection tank, produced water        | -                   | 02/24/2002      | 14:45 | 164,000                             | 6.50                        | 24.4                          | 139                                                                            | 134,000                        | 460                            |

Index B. Analytic data for water samples

determined; column labeled q followed by n is below lower detection limit; n, value is near the lower detection limit]

|                                   |                              | inorganic                       | inorganic                       | inorganic                        | inorganic                         | inorganic                         | inorganic                        |                      | inorganic                        | inorganic                      | inorganic                         | inorganic                        |
|-----------------------------------|------------------------------|---------------------------------|---------------------------------|----------------------------------|-----------------------------------|-----------------------------------|----------------------------------|----------------------|----------------------------------|--------------------------------|-----------------------------------|----------------------------------|
| Field Sample ID                   | Station name                 | Bromide, dissolved (mg/L as Br) | Calcium, dissolved (mg/L as Ca) | Chloride, dissolved (mg/L as Cl) | Magnesium, dissolved (mg/L as Mg) | Manganese, dissolved (mg/L as Mn) | Potassium, dissolved (mg/L as K) | qSiO2 (mg/L as SiO2) | Silica, dissolved (mg/L as SiO2) | Sodium, dissolved (mg/L as Na) | Strontium, dissolved (mg/L as Sr) | Sulfate, dissolved (mg/L as SO4) |
| Local domestic ground water wells |                              |                                 |                                 |                                  |                                   |                                   |                                  |                      |                                  |                                |                                   |                                  |
| 01OS-101                          | Bolin well                   | 0.86                            | 57.1                            | 216                              | 25.1                              | 0.002                             | 0.96                             |                      | 26                               | 69.2                           | 0.24                              | 45.1                             |
| 01OS-102                          | Hurn well                    | 0.13                            | 36.3                            | 23.9                             | 18.5                              | 0.35                              | 0.97                             |                      | 14                               | 36.0                           | 0.33                              | 18.3                             |
| Local oil/gas wells               |                              |                                 |                                 |                                  |                                   |                                   |                                  |                      |                                  |                                |                                   |                                  |
| 01OS-103                          | Reynolds #4                  | 346                             | 11,200                          | 110,000                          | 1,980                             | 6.0                               | 688                              | <                    | 16                               | 51,700                         | 500                               | 0.3                              |
| 01OS-104                          | ECC #10                      | 285                             | 5,400                           | 82,100                           | 2,350                             | 2.8                               | 105                              | <                    | 16                               | 42,400                         | 905                               | 0.2                              |
| 01OS-105                          | ECC #3                       | 364                             | 11,900                          | 113,000                          | 2,070                             | 10.0                              | 646                              | <                    | 16                               | 55,000                         | 514                               | 0.4                              |
| 01OS-106                          | Lebow #8                     | 346                             | 9,960                           | 99,500                           | 1,830                             | 0.93                              | 266                              | <                    | 16                               | 48,600                         | 504                               | 0.7                              |
| 01OS-107                          | Millard #3                   | 335                             | 6,250                           | 75,400                           | 1,530                             | 1.3                               | 110                              | <                    | 16                               | 38,100                         | 521                               | 0.2                              |
| 01OS-108                          | ECC #5                       | 320                             | 9,980                           | 101,000                          | 1,910                             | 7.5                               | 482                              | <                    | 21                               | 47,000                         | 505                               | 0.4                              |
| 01OS-109                          | Ungermann #1                 | 338                             | 6,940                           | 78,500                           | 1,510                             | 0.95                              | 146                              | <                    | 21                               | 39,200                         | 502                               | 0.2                              |
| 01OS-110                          | TEC T1-19 (coal-bed methane) | 257                             | 5,870                           | 70,100                           | 1,830                             | 5.4                               | 186                              | <                    | 16                               | 34,100                         | 565                               | 80.7                             |
| Skiatook Lake                     |                              |                                 |                                 |                                  |                                   |                                   |                                  |                      |                                  |                                |                                   |                                  |
| 01OS-111                          | Skiatook Lake, near dam      | 0.11                            | 20.0                            | 24.6                             | 4.97                              | 0.003                             | 2.2                              |                      | 2.8                              | 13.5                           | 0.19                              | 10.0                             |
| 02OS-309                          | Skiatook Lake, site B        | 0.20                            | 23.1                            | 39.7                             | 6.21                              | 0.088                             | 2.6                              |                      | 1.5                              | 20.9                           | 0.27                              | 11.6                             |
| 02OS-310                          | Skiatook Lake, site B        | 0.14                            | 21.7                            | 29.1                             | 5.69                              | 0.032                             | 2.5                              |                      | 1.4                              | 16.0                           | 0.21                              | 11.3                             |
| 02OS-338                          | Skiatook Lake, site B        | 0.06                            | 17.2                            | 14.7                             | 7.49                              | 0.0001                            | 2.0                              |                      | 6.6                              | 12.9                           | 0.08                              | 58.2                             |
| 02OS-339                          | Skiatook Lake, site A        | 0.11                            | 20.6                            | 25.5                             | 6.52                              | 0.0001                            | 2.3                              |                      | 2.8                              | 15.6                           | 0.16                              | 27.8                             |
| 02OS-520                          | Skiatook Lake, site B        | 0.15                            | 23.4                            | 31.4                             | 6.17                              | 0.11                              | 2.6                              |                      | 2.1                              | 17.3                           | 0.22                              | 11.1                             |
| 04OS-212                          | Skiatook Lake, site A        | 0.13                            | 21.4                            | 29.2                             | 5.77                              | 0.0057                            | 2.6                              |                      | 1.5                              | 16.5                           | 0.20                              | 12.2                             |
| Site A; monitoring wells          |                              |                                 |                                 |                                  |                                   |                                   |                                  |                      |                                  |                                |                                   |                                  |
| 02OS-430                          | AA-01D                       | 54.5                            | 3,360                           | 16,100                           | 2,520                             | 5.2                               | 26                               |                      | 18                               | 2,180                          | 8.28                              | 696                              |
| 02OS-523                          | AA-01D                       | 50.3                            | 3,040                           | 15,100                           | 2,310                             | 22.0                              | 23                               |                      | 36                               | 2,550                          | 10.8                              | 4.7                              |
| 03OS-108                          | AA-01D                       | 47.9                            | 2,890                           | 14,900                           | 2,430                             | 22.0                              | 19                               |                      | 27                               | 2,260                          | 9.53                              | 2.8                              |
| 03OS-205                          | AA-01D                       | 48.0                            | 2,840                           | 15,100                           | 2,430                             | 22.0                              | 18                               |                      | 26                               | 2,280                          | 9.29                              | 3.2                              |
| 04OS-105                          | AA-01D                       | 43.8                            | 2,690                           | 13,900                           | 2,320                             | 17.0                              | 20                               |                      | -                                | 2,190                          | 10.0                              | 179                              |
| 04OS-203                          | AA-01D                       | 49.5                            | 3,080                           | 15,600                           | 2,530                             | 22.0                              | 18                               |                      | 21                               | 2,230                          | 8.93                              | 469                              |
| 05OS-134                          | AA-01D                       | 42.9                            | 2,310                           | 13,500                           | 2,000                             | 52.0                              | 14                               |                      | 19                               | 2,590                          | 10.5                              | 1,430                            |
| 02OS-337                          | AA-02S                       | 5.73                            | 288                             | 1,860                            | 175                               | 0.41                              | 11                               |                      | 22                               | 947                            | 3.61                              | 512                              |
| 02OS-426                          | AA-02S                       | 23.2                            | 547                             | 7,030                            | 273                               | 1.70                              | 13                               |                      | 14                               | 3,400                          | 8.22                              | 137                              |
| 02OS-522                          | AA-02S                       | 21.1                            | 541                             | 6,580                            | 277                               | 2.20                              | 13                               |                      | 15                               | 3,410                          | 8.13                              | 221                              |
| 03OS-106                          | AA-02S                       | 21.2                            | 541                             | 6,590                            | 265                               | 2.20                              | 12                               |                      | 18                               | 3,360                          | 8.48                              | 242                              |
| 03OS-207                          | AA-02S                       | 21.1                            | 514                             | 6,710                            | 257                               | 1.80                              | 12                               |                      | 15                               | 3,480                          | 8.47                              | 122                              |
| 04OS-104                          | AA-02S                       | 20.8                            | 911                             | 6,470                            | 485                               | 1.80                              | 14                               | <                    | -                                | 2,700                          | 7.78                              | 256                              |
| 04OS-230                          | AA-02S                       | 20.4                            | 518                             | 6,680                            | 253                               | 1.80                              | 12                               |                      | 19                               | 3,380                          | 8.60                              | 183                              |
| 05OS-139                          | AA-02S                       | 20.6                            | 538                             | 6,540                            | 267                               | 1.80                              | 12                               |                      | 17                               | 3,400                          | 8.47                              | 241                              |
| 02OS-336                          | AA-02D                       | 3.05                            | 176                             | 813                              | 115                               | 0.12                              | 8.1                              |                      | 27                               | 656                            | 2.57                              | 740                              |
| 02OS-427                          | AA-02D                       | 1.43                            | 171                             | 436                              | 103                               | 0.49                              | 5.7                              |                      | 24                               | 525                            | 2.78                              | 668                              |
| 02OS-527                          | AA-02D                       | 0.34                            | 161                             | 75.9                             | 110                               | 0.20                              | 4.4                              |                      | 28                               | 230                            | 2.98                              | 535                              |
| 03OS-107                          | AA-02D                       | 0.38                            | 160                             | 87.5                             | 118                               | 0.16                              | 4.4                              |                      | 29                               | 212                            | 3.08                              | 436                              |
| 03OS-208                          | AA-02D                       | 0.92                            | 176                             | 276                              | 129                               | 0.18                              | 4.8                              |                      | 31                               | 276                            | 3.62                              | 395                              |
| 04OS-103                          | AA-02D                       | 0.36                            | 165                             | 75.0                             | 116                               | 0.14                              | 4.5                              |                      | 21                               | 187                            | 3.21                              | 554                              |

| Field<br>Sample<br>ID | Station name | Bromide,<br>dissolved<br>(mg/L as Br) | Calcium,<br>dissolved<br>(mg/L as Ca) | Chloride,<br>dissolved<br>(mg/L as Cl) | Magnesium,<br>dissolved<br>(mg/L as Mg) | Manganese,<br>dissolved<br>(mg/L as Mn) | Potassium,<br>dissolved<br>(mg/L as K) | qSiO2 (mg/L as SiO2) | Silica<br>dissolved<br>(mg/L as Na) | Sodium,<br>dissolved<br>(mg/L as Sr) | Strontium,<br>dissolved<br>(mg/L as Sr) | Sulfate,<br>dissolved<br>(mg/L as SO4) |
|-----------------------|--------------|---------------------------------------|---------------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|----------------------|-------------------------------------|--------------------------------------|-----------------------------------------|----------------------------------------|
| 04OS-231              | AA-02D       | 0.70                                  | 169                                   | 208                                    | 115                                     | 0.12                                    | 4.7                                    |                      | 17                                  | 258                                  | 3.37                                    | 520                                    |
| 05OS-140              | AA-02D       | 0.44                                  | 184                                   | 123                                    | 127                                     | 0.11                                    | 4.5                                    |                      | 28                                  | 160                                  | 3.43                                    | 592                                    |
| 02OS-428              | AA-03S       | 6.52                                  | 96.1                                  | 1,860                                  | 40.7                                    | 2.20                                    | 3.0                                    |                      | 18                                  | 1,110                                | 3.29                                    | 5.7                                    |
| 03OS-103              | AA-03S       | 13.1                                  | 295                                   | 4,160                                  | 174                                     | 3.50                                    | 5.6                                    |                      | 19                                  | 2,040                                | 5.77                                    | 65.7                                   |
| 03OS-203              | AA-03S       | 6.91                                  | 128                                   | 2,220                                  | 66.6                                    | 1.20                                    | 3.5                                    |                      | 20                                  | 1,210                                | 3.43                                    | 49.3                                   |
| 04OS-205              | AA-03S       | 1.70                                  | 18.0                                  | 502                                    | 6.02                                    | 0.11                                    | 0.91                                   |                      | 14                                  | 333                                  | 1.01                                    | 31.9                                   |
| 05OS-142              | AA-03S       | 1.78                                  | 19.3                                  | 548                                    | 6.32                                    | 0.027                                   | 0.68                                   |                      | 11                                  | 354                                  | 1.17                                    | 31.0                                   |
| 02OS-429              | AA-03D       | 18.8                                  | 404                                   | 5,630                                  | 166                                     | 14.0                                    | 23                                     |                      | 23                                  | 3,250                                | 5.04                                    | 23.4                                   |
| 02OS-524              | AA-03D       | 21.6                                  | 519                                   | 6,860                                  | 249                                     | 18.0                                    | 19                                     |                      | 33                                  | 3,660                                | 7.21                                    | 79.6                                   |
| 03OS-104              | AA-03D       | 21.5                                  | 573                                   | 6,830                                  | 259                                     | 13.0                                    | 19                                     |                      | 24                                  | 3,540                                | 6.89                                    | 375                                    |
| 03OS-204              | AA-03D       | 13.3                                  | 289                                   | 4,310                                  | 134                                     | 5.50                                    | 11                                     |                      | 23                                  | 2,380                                | 4.78                                    | 77.1                                   |
| 04OS-116              | AA-03D       | 19.1                                  | 478                                   | 6,030                                  | 215                                     | 10.0                                    | 16                                     |                      | 22                                  | 3,210                                | 6.09                                    | 126                                    |
| 04OS-211              | AA-03D       | 6.88                                  | 120                                   | 2,190                                  | 54.4                                    | 2.00                                    | 6.4                                    |                      | 16                                  | 1,310                                | 2.05                                    | 34.8                                   |
| 05OS-141              | AA-03D       | 8.45                                  | 180                                   | 2,740                                  | 77.9                                    | 2.90                                    | 7.1                                    |                      | 16                                  | 1,510                                | 2.84                                    | 38.8                                   |
| 02OS-424              | AA-04S       | 11.5                                  | 198                                   | 3,240                                  | 62.5                                    | 12.0                                    | 4.9                                    |                      | 25                                  | 1,670                                | 7.46                                    | 5.9                                    |
| 02OS-526              | AA-04S       | 11.4                                  | 217                                   | 3,370                                  | 78.2                                    | 14.0                                    | 4.5                                    |                      | 28                                  | 1,800                                | 7.88                                    | 5.5                                    |
| 03OS-101              | AA-04S       | 11.0                                  | 222                                   | 3,230                                  | 83.0                                    | 12.0                                    | 4.0                                    |                      | 27                                  | 1,660                                | 7.70                                    | 10.5                                   |
| 03OS-201              | AA-04S       | 10.5                                  | 198                                   | 3,090                                  | 70.7                                    | 14.0                                    | 4.2                                    |                      | 27                                  | 1,650                                | 8.04                                    | 1.7                                    |
| 04OS-109              | AA-04S       | 10.8                                  | 200                                   | 3,240                                  | 73.4                                    | 13.0                                    | 4.1                                    |                      | -                                   | 1,720                                | 7.48                                    | 7.9                                    |
| 04OS-201              | AA-04S       | 10.3                                  | 190                                   | 2,990                                  | 69.2                                    | 13.0                                    | 3.7                                    |                      | 26                                  | 1,580                                | 7.54                                    | 4.7                                    |
| 05OS-112              | AA-04S       | 9.85                                  | 176                                   | 2,880                                  | 66.0                                    | 11.0                                    | 3.2                                    |                      | 23                                  | 1,510                                | 6.51                                    | 1.7                                    |
| 02OS-425              | AA-04D       | 11.5                                  | 548                                   | 3,410                                  | 238                                     | 4.30                                    | 25                                     |                      | 19                                  | 1,150                                | 4.80                                    | 56.8                                   |
| 02OS-525              | AA-04D       | 11.9                                  | 196                                   | 3,340                                  | 68.4                                    | 14.0                                    | 4.4                                    |                      | 28                                  | 1,770                                | 7.85                                    | 2.6                                    |
| 03OS-102              | AA-04D       | 11.1                                  | 311                                   | 3,310                                  | 123                                     | 11.0                                    | 6.4                                    |                      | 27                                  | 1,560                                | 7.52                                    | 9.8                                    |
| 03OS-202              | AA-04D       | 11.4                                  | 334                                   | 3,320                                  | 136                                     | 12.0                                    | 6.5                                    |                      | 28                                  | 1,560                                | 7.39                                    | 8.5                                    |
| 05OS-113              | AA-04D       | 9.91                                  | 188                                   | 2,900                                  | 71.6                                    | 11.0                                    | 3.8                                    |                      | 24                                  | 1,540                                | 6.33                                    | 3.0                                    |
| 04OS-117              | AA-05S       | 20.9                                  | 816                                   | 6,880                                  | 440                                     | 15.0                                    | 7.1                                    |                      | 27                                  | 2,800                                | 10.1                                    | 23.6                                   |
| 04OS-226              | AA-05S       | 19.9                                  | 717                                   | 6,630                                  | 405                                     | 12.0                                    | 5.0                                    |                      | 31                                  | 2,810                                | 10.1                                    | 20.6                                   |
| 05OS-118              | AA-05S       | 19.0                                  | 613                                   | 6,200                                  | 342                                     | 14.0                                    | 4.5                                    |                      | 29                                  | 2,710                                | 8.98                                    | 18.0                                   |
| 04OS-118              | AA-05D       | 0.25                                  | 133                                   | 52.6                                   | 114                                     | 0.041                                   | 4.8                                    |                      | 19                                  | 69                                   | 1.37                                    | 387                                    |
| 04OS-216              | AA-05D       | 0.24                                  | 130                                   | 55.8                                   | 109                                     | 0.057                                   | 4.3                                    |                      | 19                                  | 80.1                                 | 1.35                                    | 399                                    |
| 05OS-117              | AA-05D       | 0.24                                  | 123                                   | 58.8                                   | 97.9                                    | 0.20                                    | 4.5                                    |                      | 18                                  | 123                                  | 1.69                                    | 434                                    |
| 04OS-119              | AA-06S       | 57.8                                  | 2,590                                 | 18,100                                 | 1,980                                   | 1.60                                    | 22                                     | <                    | 11                                  | 5,610                                | 42.3                                    | 401                                    |
| 04OS-233              | AA-06S       | 55.0                                  | 2,530                                 | 18,300                                 | 1,980                                   | 1.20                                    | 18                                     |                      | 13                                  | 5,680                                | 42.4                                    | 368                                    |
| 05OS-136              | AA-06S       | 57.9                                  | 2,580                                 | 18,700                                 | 2,000                                   | 1.10                                    | 18                                     |                      | 18                                  | 5,780                                | 46.6                                    | 341                                    |
| 04OS-120              | AA-06D       | 29.2                                  | 1210                                  | 9,310                                  | 881                                     | 0.52                                    | 25                                     |                      | 20                                  | 3,490                                | 25.1                                    | 776                                    |
| 04OS-234              | AA-06D       | 58.7                                  | 2,550                                 | 18,300                                 | 2,000                                   | 2.30                                    | 26                                     |                      | 15                                  | 5,710                                | 52.5                                    | 379                                    |
| 05OS-135              | AA-06D       | 49.7                                  | 2,310                                 | 16,200                                 | 1,850                                   | 1.70                                    | 19                                     |                      | 19                                  | 4,690                                | 44.5                                    | 419                                    |
| 04OS-121              | AA-07S       | 37.6                                  | 2,670                                 | 12,000                                 | 1,640                                   | 12.0                                    | 29                                     |                      | 26                                  | 2,580                                | 6.90                                    | 1,440                                  |
| 04OS-222              | AA-07S       | 20.7                                  | 1,170                                 | 6,990                                  | 751                                     | 36.0                                    | 18                                     |                      | 41                                  | 2,100                                | 10.7                                    | 620                                    |
| 05OS-138              | AA-07S       | 21.3                                  | 1,240                                 | 7,170                                  | 773                                     | 24.0                                    | 11                                     |                      | 37                                  | 1,950                                | 8.88                                    | 422                                    |
| 04OS-153              | AA-07D       | 11.9                                  | 359                                   | 3,830                                  | 222                                     | 0.31                                    | 17                                     |                      | 24                                  | 2,370                                | 8.11                                    | 1,360                                  |
| 04OS-223              | AA-07D       | 21.5                                  | 926                                   | 6,950                                  | 665                                     | 15.0                                    | 22                                     |                      | 30                                  | 2,860                                | 16.3                                    | 857                                    |
| 05OS-137              | AA-07D       | 28.9                                  | 1,880                                 | 9,410                                  | 1,240                                   | 18.0                                    | 22                                     |                      | 25                                  | 2,220                                | 13.8                                    | 765                                    |
| 04OS-157              | AA-08S       | 14.6                                  | 500                                   | 4,590                                  | 605                                     | 1.10                                    | 25                                     |                      | 19                                  | 1,870                                | 6.57                                    | 873                                    |

| Field<br>Sample<br>ID | Station name | Bromide,<br>dissolved<br>(mg/L as Br) | Calcium,<br>dissolved<br>(mg/L as Ca) | Chloride,<br>dissolved<br>(mg/L as Cl) | Magnesium,<br>dissolved<br>(mg/L as Mg) | Manganese,<br>dissolved<br>(mg/L as Mn) | Potassium,<br>dissolved<br>(mg/L as K) | qSiO2 (mg/L as SiO2) | Silica<br>dissolved<br>(mg/L as Na) | Sodium,<br>dissolved<br>(mg/L as Sr) | Strontium,<br>dissolved<br>(mg/L as Sr) | Sulfate,<br>dissolved<br>(mg/L as SO4) |
|-----------------------|--------------|---------------------------------------|---------------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|----------------------|-------------------------------------|--------------------------------------|-----------------------------------------|----------------------------------------|
| 04OS-221              | AA-08S       | 21.8                                  | 738                                   | 7,030                                  | 883                                     | 6.60                                    | 23                                     | 26                   | 2,780                               | 10.3                                 | 988                                     |                                        |
| 05OS-123              | AA-08S       | 26.3                                  | 926                                   | 8,240                                  | 1,170                                   | 9.60                                    | 27                                     | 28                   | 2,650                               | 8.37                                 | 1,060                                   |                                        |
| 04OS-156              | AA-08D       | 0.25                                  | 275                                   | 70.6                                   | 219                                     | 0.19                                    | 6.1                                    | 23                   | 192                                 | 3.21                                 | 1,470                                   |                                        |
| 04OS-218              | AA-08D       | 0.25                                  | 277                                   | 68.9                                   | 201                                     | 0.36                                    | 5.7                                    | 25                   | 224                                 | 3.10                                 | 1,460                                   |                                        |
| 05OS-124              | AA-08D       | 0.20                                  | 271                                   | 53.0                                   | 205                                     | 0.22                                    | 4.0                                    | 26                   | 92.4                                | 2.85                                 | 1,310                                   |                                        |
| 04OS-155              | AA-09S       | 1.22                                  | 282                                   | 379                                    | 307                                     | 0.63                                    | 12                                     | 22                   | 278                                 | 2.95                                 | 1,260                                   |                                        |
| 04OS-232              | AA-09S       | 4.63                                  | 349                                   | 1,460                                  | 395                                     | 1.10                                    | 12                                     | 15                   | 742                                 | 3.08                                 | 1,330                                   |                                        |
| 05OS-122              | AA-09S       | 4.99                                  | 318                                   | 1,610                                  | 364                                     | 0.86                                    | 12                                     | 27                   | 919                                 | 2.64                                 | 1,110                                   |                                        |
| 04OS-154              | AA-09D       | 0.29                                  | 271                                   | 50.6                                   | 226                                     | 0.24                                    | 4.8                                    | 27                   | 80                                  | 2.55                                 | 1,280                                   |                                        |
| 04OS-217              | AA-09D       | 0.19                                  | 275                                   | 50.2                                   | 229                                     | 0.22                                    | 3.9                                    | 26                   | 76.6                                | 2.51                                 | 1,280                                   |                                        |
| 05OS-121              | AA-09D       | 0.18                                  | 264                                   | 51.3                                   | 219                                     | 0.24                                    | 4.0                                    | 23                   | 78.3                                | 2.48                                 | 1,270                                   |                                        |
| 04OS-152              | AA-10S       | 2.06                                  | 30.4                                  | 600                                    | 11.6                                    | 2.80                                    | 4.6                                    | 16                   | 464                                 | 1.10                                 | 62.1                                    |                                        |
| 04OS-224              | AA-10S       | 3.03                                  | 33.0                                  | 930                                    | 12.1                                    | 4.20                                    | 1.9                                    | 13                   | 648                                 | 1.50                                 | 23.0                                    |                                        |
| 05OS-127              | AA-10S       | 3.44                                  | 32.6                                  | 1,000                                  | 10.7                                    | 4.30                                    | 1.6                                    | 18                   | 612                                 | 1.40                                 | 19.5                                    |                                        |
| 04OS-151              | AA-10M       | 4.24                                  | 376                                   | 1,360                                  | 250                                     | 2.40                                    | 8.3                                    | 24                   | 469                                 | 3.49                                 | 582                                     |                                        |
| 04OS-229              | AA-10M       | 18.9                                  | 1,450                                 | 6,410                                  | 713                                     | 0.92                                    | 11                                     | 28                   | 1,510                               | 10.8                                 | 94.5                                    |                                        |
| 05OS-126              | AA-10M       | 20.7                                  | 1,450                                 | 6,760                                  | 655                                     | 0.49                                    | 9.9                                    | 28                   | 1,410                               | 11.0                                 | 60.7                                    |                                        |
| 04OS-158              | AA-10D       | 0.20                                  | 184                                   | 37.5                                   | 129                                     | 0.076                                   | 5.0                                    | 19                   | 66.8                                | 2.41                                 | 720                                     |                                        |
| 04OS-215              | AA-10D       | 0.20                                  | 181                                   | 40.1                                   | 127                                     | 0.14                                    | 4.0                                    | 23                   | 69.2                                | 2.45                                 | 730                                     |                                        |
| 05OS-125              | AA-10D       | 0.25                                  | 184                                   | 56.1                                   | 118                                     | 0.12                                    | 3.7                                    | 29                   | 72.4                                | 2.28                                 | 754                                     |                                        |
| 04OS-161              | AA-11S       | 25.1                                  | 1,410                                 | 8,030                                  | 634                                     | 5.40                                    | 17                                     | 21                   | 2,620                               | 12.6                                 | 128                                     |                                        |
| 04OS-225              | AA-11S       | 19.7                                  | 901                                   | 6,110                                  | 396                                     | 7.20                                    | 12                                     | 27                   | 2,370                               | 10.5                                 | 95.6                                    |                                        |
| 05OS-131              | AA-11S       | 17.4                                  | 752                                   | 5,470                                  | 329                                     | 4.90                                    | 9.8                                    | 30                   | 2,070                               | 7.65                                 | 68.9                                    |                                        |
| 04OS-160              | AA-11M       | 15.8                                  | 945                                   | 4,970                                  | 445                                     | 2.70                                    | 16                                     | 21                   | 1,660                               | 8.67                                 | 405                                     |                                        |
| 04OS-228              | AA-11M       | 2.75                                  | 256                                   | 852                                    | 111                                     | 1.30                                    | 5.5                                    | 27                   | 438                                 | 3.73                                 | 466                                     |                                        |
| 05OS-132              | AA-11M       | 8.61                                  | 524                                   | 2,780                                  | 255                                     | 2.60                                    | 8.1                                    | 29                   | 1,030                               | 7.62                                 | 346                                     |                                        |
| 04OS-159              | AA-11D       | 18.6                                  | 1,110                                 | 5,990                                  | 500                                     | 3.30                                    | 12                                     | 23                   | 1,920                               | 9.68                                 | 184                                     |                                        |
| 04OS-213              | AA-11D       | 0.28                                  | 114                                   | 72.4                                   | 58.3                                    | 0.24                                    | 2.8                                    | 24                   | 87.0                                | 1.18                                 | 269                                     |                                        |
| 05OS-130              | AA-11D       | 1.96                                  | 196                                   | 611                                    | 98.3                                    | 0.65                                    | 3.2                                    | 28                   | 252                                 | 1.99                                 | 287                                     |                                        |
| 04OS-165              | AA-12S       | 12.1                                  | 596                                   | 3,830                                  | 483                                     | 0.80                                    | 12                                     | 21                   | 1,230                               | 6.72                                 | 418                                     |                                        |
| 04OS-227              | AA-12S       | 20.2                                  | 1,050                                 | 6,510                                  | 880                                     | 1.00                                    | 15                                     | 22                   | 1,910                               | 11.7                                 | 542                                     |                                        |
| 05OS-114              | AA-12S       | 0.34                                  | 57.8                                  | 103                                    | 26.6                                    | 0.084                                   | 2.5                                    | 24                   | 170                                 | 0.57                                 | 128                                     |                                        |
| 04OS-164              | AA-12D       | 0.55                                  | 301                                   | 161                                    | 171                                     | 0.11                                    | 4.9                                    | 19                   | 118                                 | 6.42                                 | 1,240                                   |                                        |
| 04OS-214              | AA-12D       | 0.24                                  | 288                                   | 72.1                                   | 160                                     | 0.092                                   | 4.5                                    | 23                   | 97.0                                | 6.43                                 | 1,230                                   |                                        |
| 05OS-115              | AA-12D       | 0.28                                  | 287                                   | 89.2                                   | 162                                     | 0.081                                   | 4.8                                    | 20                   | 102                                 | 6.32                                 | 1,260                                   |                                        |
| 04OS-163              | AA-13S       | 0.44                                  | 78.2                                  | 133                                    | 46.9                                    | 0.12                                    | 3.7                                    | 21                   | 140                                 | 0.92                                 | 212                                     |                                        |
| 04OS-220              | AA-13S       | 0.20                                  | 105                                   | 56.9                                   | 57.0                                    | 0.29                                    | 3.9                                    | 23                   | 223                                 | 1.37                                 | 370                                     |                                        |
| 05OS-119              | AA-13S       | 0.09                                  | 69.3                                  | 23.7                                   | 28.0                                    | 0.074                                   | 3.6                                    | 25                   | 213                                 | 0.99                                 | 159                                     |                                        |
| 04OS-162              | AA-13D       | 0.44                                  | 169                                   | 123                                    | 89.4                                    | 0.16                                    | 5.4                                    | 19                   | 123                                 | 4.43                                 | 678                                     |                                        |
| 04OS-219              | AA-13D       | 0.19                                  | 168                                   | 52.7                                   | 89.0                                    | 0.17                                    | 4.3                                    | 22                   | 140                                 | 4.47                                 | 680                                     |                                        |
| 05OS-120              | AA-13D       | 0.19                                  | 190                                   | 54.7                                   | 99.1                                    | 0.14                                    | 4.5                                    | 20                   | 117                                 | 5.58                                 | 750                                     |                                        |
| 03OS-155              | AA-60S       | 0.21                                  | 7.41                                  | 40.7                                   | 2.63                                    | 0.33                                    | 2.3                                    | 14                   | 142                                 | 0.11                                 | 141                                     |                                        |
| 03OS-218              | AA-60S       | 0.71                                  | 15.5                                  | 199                                    | 5.48                                    | 3.70                                    | 2.0                                    | 16                   | 232                                 | 0.31                                 | 39.0                                    |                                        |
| 04OS-108              | AA-60S       | 2.84                                  | 58.8                                  | 782                                    | 23.5                                    | 5.80                                    | 2.6                                    | <                    | 11                                  | 535                                  | 1.54                                    | 130                                    |
| 03OS-154              | AA-60D       | 4.27                                  | 576                                   | 1,620                                  | 292                                     | 0.52                                    | 6.5                                    | 24                   | 103                                 | 2.69                                 | 259                                     |                                        |

| Field<br>Sample<br>ID | Station name | Bromide,<br>dissolved<br>(mg/L as Br) | Calcium,<br>dissolved<br>(mg/L as Ca) | Chloride,<br>dissolved<br>(mg/L as Cl) | Magnesium,<br>dissolved<br>(mg/L as Mg) | Manganese,<br>dissolved<br>(mg/L as Mn) | Potassium,<br>dissolved<br>(mg/L as K) |   | Silica<br>dissolved<br>(mg/L as SiO2) | Sodium,<br>dissolved<br>(mg/L as Na) | Strontium,<br>dissolved<br>(mg/L as Sr) | Sulfate,<br>dissolved<br>(mg/L as SO4) |
|-----------------------|--------------|---------------------------------------|---------------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|---|---------------------------------------|--------------------------------------|-----------------------------------------|----------------------------------------|
| 03OS-210              | AA-60D       | 3.12                                  | 457                                   | 1,280                                  | 219                                     | 0.36                                    | 5.4                                    |   | 27                                    | 75.8                                 | 2.10                                    | 138                                    |
| 04OS-107              | AA-60D       | 5.48                                  | 495                                   | 1,850                                  | 240                                     | 0.79                                    | 6.6                                    | < | 21                                    | 320                                  | 2.65                                    | 109                                    |
| 04OS-204              | AA-60D       | 4.78                                  | 520                                   | 1,730                                  | 248                                     | 0.61                                    | 5.9                                    |   | 25                                    | 243                                  | 2.43                                    | 163                                    |
| 05OS-116              | AA-60D       | 5.16                                  | 498                                   | 1,850                                  | 243                                     | 0.49                                    | 6.3                                    |   | 23                                    | 312                                  | 2.45                                    | 137                                    |
| 03OS-153              | AA-61        | 34.0                                  | 1,440                                 | 10,500                                 | 1,550                                   | 33.0                                    | 7.8                                    |   | 5                                     | 2,640                                | 9.70                                    | 497                                    |
| 03OS-209              | AA-61        | 37.0                                  | 1,590                                 | 11,700                                 | 1,720                                   | 15.0                                    | 4.7                                    |   | 9                                     | 2,880                                | 9.86                                    | 464                                    |
| 04OS-101              | AA-61        | 38.1                                  | 1,690                                 | 11,600                                 | 1,730                                   | 17.0                                    | 3.1                                    |   | -                                     | 2,920                                | 9.64                                    | 583                                    |
| 04OS-206              | AA-61        | 30.1                                  | 1,380                                 | 9,870                                  | 1,430                                   | 17.0                                    | 2.7                                    |   | 10                                    | 2,510                                | 9.40                                    | 489                                    |
| 05OS-129              | AA-61        | 37.1                                  | 1,650                                 | 11,800                                 | 1,650                                   | 19.0                                    | 2.3                                    |   | 19                                    | 2,780                                | 9.70                                    | 649                                    |
| 04OS-202              | AA-62        | 10.6                                  | 403                                   | 3,530                                  | 368                                     | 13.0                                    | 2.7                                    |   | 22                                    | 1,410                                | 6.96                                    | 557                                    |
| 05OS-128              | AA-62        | 6.94                                  | 245                                   | 2,280                                  | 222                                     | 6.80                                    | 1.3                                    |   | 14                                    | 901                                  | 4.26                                    | 382                                    |
| 02OS-434              | AE-04        | 0.27                                  | 2.17                                  | 76.7                                   | 0.43                                    | 0.013                                   | 0.96                                   |   | 11                                    | 59.6                                 | 0.07                                    | 10.2                                   |
| 02OS-332              | AE-05        | 0.07                                  | 0.20                                  | 3.29                                   | 0.03                                    | 0.001                                   | 0.02                                   |   | 10                                    | 11.8                                 | 0.004                                   | 14.2                                   |
| 02OS-333              | AE-06        | 0.16                                  | 4.01                                  | 8.03                                   | 0.99                                    | 0.042                                   | 0.14                                   |   | 10                                    | 14.4                                 | 0.22                                    | 18.6                                   |
| 02OS-435              | AE-06        | 0.11                                  | 5.84                                  | 2.19                                   | 1.11                                    | 0.23                                    | 0.75                                   |   | 16                                    | 3.97                                 | 0.25                                    | 6.0                                    |
| 04OS-111              | AE-06        | 0.14                                  | 2.97                                  | 2.55                                   | 0.63                                    | 0.019                                   | 0.08                                   |   | 11                                    | 12.1                                 | 0.18                                    | 21.3                                   |
| 02OS-334              | AE-07        | 0.16                                  | 0.82                                  | 20.0                                   | 0.21                                    | 0.0071                                  | 0.10                                   |   | 12                                    | 23.0                                 | 0.04                                    | 20.6                                   |
| 04OS-110              | AE-07        | 0.12                                  | 3.58                                  | 6.91                                   | 1.00                                    | 0.026                                   | 0.09                                   |   | 8                                     | 12.0                                 | 0.18                                    | 20.2                                   |
| 02OS-326              | AE-08        | 1.28                                  | 19.1                                  | 580                                    | 4.85                                    | 0.39                                    | 1.6                                    |   | 11                                    | 341                                  | 1.17                                    | 14.3                                   |
| 02OS-432              | AE-08        | 0.14                                  | 3.42                                  | 27.5                                   | 1.30                                    | 0.070                                   | 1.6                                    |   | 37                                    | 22.9                                 | 0.18                                    | 8.0                                    |
| 04OS-114              | AE-08        | 1.49                                  | 87.8                                  | 663                                    | 24.0                                    | 0.37                                    | 0.90                                   |   | 12                                    | 262                                  | 5.60                                    | 6.0                                    |
| 02OS-331              | AE-10        | 0.06                                  | 2.91                                  | 17.4                                   | 0.56                                    | 0.086                                   | 0.72                                   |   | 10                                    | 23.7                                 | 0.18                                    | 28.5                                   |
| 02OS-328              | AE-12        | 0.51                                  | 8.41                                  | 37.6                                   | 1.85                                    | 0.028                                   | 1.7                                    |   | 3                                     | 179                                  | 0.57                                    | 4.9                                    |
| 02OS-436              | AE-12        | 0.26                                  | 14.4                                  | 19.3                                   | 2.76                                    | 0.16                                    | 2.4                                    |   | 10                                    | 154                                  | 0.93                                    | 12.3                                   |
| 02OS-325              | AE-13        | 23.9                                  | 974                                   | 7,660                                  | 836                                     | 120                                     | 5.7                                    |   | 7                                     | 2,340                                | 27.2                                    | 192                                    |
| 02OS-329              | AE-13        | 19.9                                  | 756                                   | 6,300                                  | 629                                     | 102                                     | 2.4                                    |   | 10                                    | 1,980                                | 22.7                                    | 92.3                                   |
| 02OS-431              | AE-13        | 25.7                                  | 975                                   | 7,770                                  | 815                                     | 87.0                                    | 2.7                                    |   | 15                                    | 2,250                                | 23.8                                    | 248                                    |
| 03OS-118              | AE-13        | 22.2                                  | 1,020                                 | 7,520                                  | 865                                     | 43.0                                    | 2.3                                    |   | 18                                    | 2,190                                | 21.8                                    | 168                                    |
| 03OS-223              | AE-13        | 26.9                                  | 1,150                                 | 8,760                                  | 1,170                                   | 44.0                                    | 2.6                                    |   | 15                                    | 2,420                                | 21.3                                    | 349                                    |
| 04OS-102              | AE-13        | 22.8                                  | 999                                   | 7,330                                  | 891                                     | 46.0                                    | 1.3                                    |   | -                                     | 2,050                                | 20.2                                    | 236                                    |
| 04OS-207              | AE-13        | 18.8                                  | 811                                   | 6,250                                  | 697                                     | 54.0                                    | 2.0                                    |   | 14                                    | 1,850                                | 18.2                                    | 148                                    |
| 03OS-116              | AE-14        | 4.86                                  | 145                                   | 1,670                                  | 47.7                                    | 0.56                                    | 3.0                                    |   | 10                                    | 865                                  | 5.45                                    | 32.9                                   |
| 02OS-330              | AE-15        | 4.00                                  | 65.1                                  | 1,300                                  | 32.2                                    | 0.039                                   | 1.9                                    |   | 6                                     | 726                                  | 1.31                                    | 38.8                                   |
| 02OS-437              | AE-15        | 29.0                                  | 953                                   | 9,130                                  | 477                                     | 2.80                                    | 6.8                                    |   | 17                                    | 4,040                                | 16.2                                    | 115                                    |
| 03OS-115              | AE-15        | 7.36                                  | 208                                   | 2,880                                  | 116                                     | 0.0046                                  | 1.4                                    |   | 11                                    | 1,460                                | 3.49                                    | 79.6                                   |
| 03OS-113              | AE-16        | 0.07                                  | 70.6                                  | 30.3                                   | 13.7                                    | 0.010                                   | 0.68                                   |   | 10                                    | 44.6                                 | 1.07                                    | 260                                    |
| 03OS-114              | AE-17        | 7.92                                  | 106                                   | 2,850                                  | 33.7                                    | 0.020                                   | 3.0                                    |   | 22                                    | 1,690                                | 6.05                                    | 163                                    |
| 03OS-112              | AE-18        | 22.0                                  | 521                                   | 8,160                                  | 166                                     | 0.037                                   | 5.6                                    |   | 9                                     | 4,540                                | 19.6                                    | 208                                    |
| 02OS-433              | AE-19        | 0.41                                  | 5.63                                  | 58.8                                   | 1.43                                    | 0.14                                    | 0.46                                   |   | 12                                    | 50.0                                 | 0.24                                    | 16.8                                   |
| 03OS-109              | AE-51        | 38.2                                  | 1,380                                 | 12,700                                 | 716                                     | 5.70                                    | 17                                     |   | 18                                    | 5,280                                | 40.5                                    | 360                                    |
| 03OS-220              | AE-51        | 35.0                                  | 1,270                                 | 11,900                                 | 664                                     | 3.20                                    | 9.2                                    |   | 18                                    | 5,340                                | 38.9                                    | 481                                    |
| 03OS-219              | AE-52        | 20.4                                  | 1,020                                 | 6,730                                  | 1,330                                   | 2.50                                    | 8.0                                    |   | 15                                    | 2,360                                | 9.34                                    | 2,890                                  |
| 04OS-208              | AE-52        | 22.2                                  | 1,210                                 | 7,270                                  | 1,350                                   | 0.71                                    | 6.1                                    |   | 20                                    | 2,160                                | 8.65                                    | 2,780                                  |
| 03OS-111              | AE-53        | 13.8                                  | 470                                   | 3,960                                  | 602                                     | 18.0                                    | 3.2                                    |   | 27                                    | 993                                  | 3.91                                    | 118                                    |
| 03OS-222              | AE-53        | 21.5                                  | 895                                   | 6,500                                  | 1,050                                   | 14.0                                    | 4.4                                    |   | 17                                    | 1,520                                | 5.12                                    | 371                                    |

| Field<br>Sample<br>ID           | Station name | Bromide,<br>dissolved<br>(mg/L as Br) | Calcium,<br>dissolved<br>(mg/L as Ca) | Chloride,<br>dissolved<br>(mg/L as Cl) | Magnesium,<br>dissolved<br>(mg/L as Mg) | Manganese,<br>dissolved<br>(mg/L as Mn) | Potassium,<br>dissolved<br>(mg/L as K) | qSiO2 (mg/L as SiO2) | Silica<br>dissolved<br>(mg/L as SiO2) | Sodium,<br>dissolved<br>(mg/L as Na) | Strontium,<br>dissolved<br>(mg/L as Sr) | Sulfate,<br>dissolved<br>(mg/L as SO4) |
|---------------------------------|--------------|---------------------------------------|---------------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|----------------------|---------------------------------------|--------------------------------------|-----------------------------------------|----------------------------------------|
| 04OS-106 AE-53                  |              | 32.7                                  | 1,460                                 | 9,970                                  | 1,630                                   | 5.00                                    | 5.5                                    |                      | -                                     | 2,340                                | 6.53                                    | 698                                    |
| 04OS-210 AE-53                  |              | 13.3                                  | 557                                   | 4,110                                  | 622                                     | 5.10                                    | 2.5                                    |                      | 15                                    | 990                                  | 3.59                                    | 216                                    |
| 03OS-110 AE-54                  |              | 6.52                                  | 124                                   | 1,950                                  | 46.7                                    | 1.20                                    | 4.1                                    |                      | 18                                    | 1,480                                | 5.58                                    | 5.82                                   |
| 03OS-221 AE-54                  |              | 16.6                                  | 282                                   | 5,100                                  | 118                                     | 6.90                                    | 5.5                                    |                      | 20                                    | 2,790                                | 11.8                                    | 2.75                                   |
| 04OS-209 AE-54                  |              | 5.11                                  | 72.8                                  | 1,530                                  | 27.4                                    | 0.48                                    | 1.9                                    |                      | 19                                    | 870                                  | 3.33                                    | 7.25                                   |
| 03OS-117 AE-56                  |              | 3.03                                  | 122                                   | 873                                    | 40.2                                    | 2.40                                    | 5.6                                    |                      | 13                                    | 448                                  | 7.47                                    | 6.34                                   |
| 04OS-112 AE-56                  |              | 2.51                                  | 110                                   | 696                                    | 35.7                                    | 0.51                                    | 5.2                                    |                      | 8                                     | 350                                  | 8.86                                    | 0.27                                   |
| 02OS-324 AP-01                  |              | 233                                   | 6,050                                 | 68,100                                 | 1,610                                   | 6.20                                    | 87                                     | <                    | 32                                    | 32,900                               | 447                                     | 43.1                                   |
| 02OS-327 AR-01                  |              | 0.36                                  | 45.7                                  | 70.4                                   | 16.2                                    | 0.91                                    | 1.1                                    |                      | 25                                    | 20.3                                 | 0.32                                    | 7.36                                   |
| 02OS-438 AR-01                  |              | 0.56                                  | 56.4                                  | 76.8                                   | 23.2                                    | 2.10                                    | 1.5                                    |                      | 23                                    | 22.7                                 | 0.34                                    | 5.55                                   |
| 03OS-105 AR-01                  |              | 0.33                                  | 38.2                                  | 80.3                                   | 16.4                                    | 0.85                                    | 0.94                                   |                      | 23                                    | 18.6                                 | 0.21                                    | 4.80                                   |
| 03OS-206 AR-01                  |              | 0.24                                  | 55.2                                  | 57.4                                   | 23.9                                    | 3.40                                    | 1.0                                    |                      | 22                                    | 22.3                                 | 0.34                                    | 4.94                                   |
| 04OS-113 AR-01                  |              | 0.22                                  | 69.7                                  | 40.3                                   | 30.8                                    | 6.70                                    | 0.95                                   |                      | 20                                    | 28.3                                 | 0.46                                    | 5.28                                   |
| 04OS-235 AR-01                  |              | 0.20                                  | 61.3                                  | 34.5                                   | 27.0                                    | 6.10                                    | 0.94                                   |                      | 21                                    | 24.7                                 | 0.39                                    | 5.61                                   |
| 05OS-133 AR-01                  |              | 0.23                                  | 39.4                                  | 59.2                                   | 16.2                                    | 2.70                                    | 0.60                                   |                      | 24                                    | 16.0                                 | 0.24                                    | 6.20                                   |
| <b>Site B; monitoring wells</b> |              |                                       |                                       |                                        |                                         |                                         |                                        |                      |                                       |                                      |                                         |                                        |
| 02OS-322 BA-01S                 |              | 25.9                                  | 763                                   | 6,110                                  | 415                                     | 8.9                                     | 30                                     |                      | 10                                    | 2,660                                | 23.5                                    | 867                                    |
| 02OS-403 BA-01S                 |              | 20.1                                  | 502                                   | 4,660                                  | 174                                     | 22                                      | 4.5                                    |                      | 16                                    | 2,080                                | 17.7                                    | 99.0                                   |
| 02OS-516 BA-01S                 |              | 16.3                                  | 579                                   | 3,830                                  | 846                                     | 6.7                                     | 9.2                                    |                      | 31                                    | 2,240                                | 14.6                                    | 3,670                                  |
| 03OS-141 BA-01S                 |              | 11.1                                  | 269                                   | 2,810                                  | 104                                     | 6.8                                     | 1.9                                    |                      | 13                                    | 1,370                                | 9.78                                    | 93.6                                   |
| 03OS-216 BA-01S                 |              | 12.3                                  | 342                                   | 3,060                                  | 246                                     | 6.3                                     | 5.6                                    |                      | 12                                    | 1,550                                | 9.94                                    | 696                                    |
| 04OS-125 BA-01S                 |              | 5.40                                  | 118                                   | 1,390                                  | 51.6                                    | 1.2                                     | 1.4                                    |                      | 10                                    | 741                                  | 3.87                                    | 97.4                                   |
| 04OS-239 BA-01S                 |              | 8.90                                  | 365                                   | 2,220                                  | 415                                     | 6.7                                     | 6.6                                    |                      | 10                                    | 1,170                                | 10.1                                    | 1,730                                  |
| 05OS-106 BA-01S                 |              | 6.14                                  | 469                                   | 1,670                                  | 1,070                                   | 1.5                                     | 18                                     |                      | 12                                    | 1,140                                | 9.14                                    | 4,940                                  |
| 02OS-323 BA-01D                 |              | 13.5                                  | 558                                   | 3,190                                  | 453                                     | 5.5                                     | 36                                     |                      | 16                                    | 1,780                                | 17.7                                    | 2,430                                  |
| 02OS-405 BA-01D                 |              | 7.76                                  | 411                                   | 2,050                                  | 315                                     | 1.9                                     | 17                                     |                      | 16                                    | 1,550                                | 16.2                                    | 2,420                                  |
| 02OS-517 BA-01D                 |              | 7.58                                  | 388                                   | 2,040                                  | 297                                     | 1.4                                     | 14                                     |                      | 15                                    | 1,550                                | 15.7                                    | 2,330                                  |
| 03OS-142 BA-01D                 |              | 7.39                                  | 415                                   | 1,990                                  | 344                                     | 2.2                                     | 16                                     |                      | 17                                    | 1,480                                | 16.1                                    | 2,440                                  |
| 03OS-217 BA-01D                 |              | 5.38                                  | 461                                   | 1,500                                  | 407                                     | 3.0                                     | 17                                     |                      | 16                                    | 1,200                                | 15.4                                    | 2,800                                  |
| 04OS-126 BA-01D                 |              | 3.25                                  | 465                                   | 998                                    | 432                                     | 1.6                                     | 14                                     |                      | 14                                    | 1,010                                | 15.6                                    | 3,110                                  |
| 04OS-240 BA-01D                 |              | 2.88                                  | 481                                   | 940                                    | 451                                     | 2.3                                     | 14                                     |                      | 16                                    | 899                                  | 14.9                                    | 3,140                                  |
| 05OS-107 BA-01D                 |              | 3.13                                  | 464                                   | 963                                    | 396                                     | 2.3                                     | 14                                     |                      | 15                                    | 901                                  | 15.9                                    | 3,190                                  |
| 02OS-318 BA-02S                 |              | 5.44                                  | 418                                   | 1,540                                  | 735                                     | 0.39                                    | 35                                     |                      | 16                                    | 1,220                                | 7.39                                    | 3,910                                  |
| 02OS-319 BA-02D                 |              | 5.39                                  | 448                                   | 1,470                                  | 850                                     | 0.10                                    | 22                                     |                      | 13                                    | 894                                  | 7.47                                    | 3,750                                  |
| 02OS-401 BA-02D                 |              | 4.13                                  | 438                                   | 1,150                                  | 793                                     | 0.056                                   | 19                                     |                      | 14                                    | 831                                  | 6.99                                    | 3,700                                  |
| 02OS-501 BA-02D                 |              | 4.81                                  | 447                                   | 1,340                                  | 766                                     | 0.068                                   | 19                                     |                      | 14                                    | 738                                  | 7.49                                    | 3,130                                  |
| 03OS-119 BA-02D                 |              | 4.66                                  | 433                                   | 1,280                                  | 789                                     | 0.11                                    | 20                                     |                      | 15                                    | 748                                  | 7.33                                    | 3,180                                  |
| 03OS-211 BA-02D                 |              | 3.82                                  | 420                                   | 994                                    | 744                                     | 0.050                                   | 19                                     |                      | 15                                    | 783                                  | 7.11                                    | 3,460                                  |
| 04OS-124 BA-02D                 |              | 4.12                                  | 442                                   | 1,140                                  | 798                                     | 0.039                                   | 19                                     |                      | 11                                    | 785                                  | 7.14                                    | 3,410                                  |
| 04OS-238 BA-02D                 |              | 3.76                                  | 431                                   | 1,060                                  | 770                                     | 0.054                                   | 18                                     |                      | 11                                    | 786                                  | 7.12                                    | 3,570                                  |
| 05OS-102 BA-02D                 |              | 4.36                                  | 428                                   | 1,240                                  | 754                                     | 0.055                                   | 19                                     |                      | 12                                    | 724                                  | 7.59                                    | 3,330                                  |
| 02OS-320 BA-03S                 |              | 6.53                                  | 401                                   | 1,800                                  | 465                                     | 0.79                                    | 31                                     |                      | 19                                    | 1,410                                | 10.0                                    | 2,840                                  |
| 02OS-504 BA-03S                 |              | 26.0                                  | 672                                   | 5,910                                  | 997                                     | 7.3                                     | 23                                     |                      | 21                                    | 1,930                                | 11.2                                    | 943                                    |
| 03OS-120 BA-03S                 |              | 27.0                                  | 733                                   | 6,230                                  | 1,130                                   | 8.2                                     | 20                                     |                      | 17                                    | 1,890                                | 12.6                                    | 906                                    |
| 03OS-212 BA-03S                 |              | 30.4                                  | 797                                   | 7,070                                  | 1,190                                   | 10                                      | 21                                     |                      | 16                                    | 2,070                                | 13.4                                    | 701                                    |

| Field<br>Sample<br>ID | Station name | Bromide,<br>dissolved<br>(mg/L as Br) | Calcium,<br>dissolved<br>(mg/L as Ca) | Chloride,<br>dissolved<br>(mg/L as Cl) | Magnesium,<br>dissolved<br>(mg/L as Mg) | Manganese,<br>dissolved<br>(mg/L as Mn) | Potassium,<br>dissolved<br>(mg/L as K) | qSiO2 (mg/L as SiO2) | Silica<br>dissolved<br>(mg/L as SiO2) | Sodium,<br>dissolved<br>(mg/L as Na) | Strontium,<br>dissolved<br>(mg/L as Sr) | Sulfate,<br>dissolved<br>(mg/L as SO4) |
|-----------------------|--------------|---------------------------------------|---------------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|----------------------|---------------------------------------|--------------------------------------|-----------------------------------------|----------------------------------------|
| 04OS-122              | BA-03S       | 27.2                                  | 751                                   | 6,350                                  | 1,140                                   | 9.4                                     | 19                                     |                      | 11                                    | 1,910                                | 12.6                                    | 865                                    |
| 04OS-236              | BA-03S       | 30.5                                  | 838                                   | 7,180                                  | 1,230                                   | 8.7                                     | 19                                     |                      | 13                                    | 2,120                                | 13.6                                    | 797                                    |
| 05OS-105              | BA-03S       | 30.7                                  | 775                                   | 7,110                                  | 1,180                                   | 10                                      | 19                                     |                      | 16                                    | 2,120                                | 13.3                                    | 792                                    |
| 02OS-321              | BA-03D       | 3.32                                  | 496                                   | 1,080                                  | 577                                     | 0.27                                    | 15                                     |                      | 13                                    | 859                                  | 12.5                                    | 3,320                                  |
| 02OS-402              | BA-03D       | 3.09                                  | 476                                   | 999                                    | 538                                     | 0.20                                    | 12                                     |                      | 16                                    | 863                                  | 12.2                                    | 3,080                                  |
| 02OS-505              | BA-03D       | 3.28                                  | 416                                   | 1,000                                  | 398                                     | 0.20                                    | 11                                     |                      | 16                                    | 797                                  | 11.9                                    | 2,350                                  |
| 03OS-121              | BA-03D       | 3.31                                  | 392                                   | 983                                    | 375                                     | 0.17                                    | 11                                     |                      | 17                                    | 811                                  | 11.8                                    | 2,230                                  |
| 03OS-213              | BA-03D       | 3.21                                  | 394                                   | 979                                    | 384                                     | 0.085                                   | 11                                     |                      | 16                                    | 799                                  | 11.4                                    | 2,230                                  |
| 04OS-123              | BA-03D       | 2.84                                  | 447                                   | 937                                    | 490                                     | 0.22                                    | 12                                     |                      | 14                                    | 821                                  | 11.2                                    | 2,910                                  |
| 04OS-237              | BA-03D       | 2.82                                  | 464                                   | 952                                    | 528                                     | 0.23                                    | 12                                     |                      | 15                                    | 842                                  | 12.1                                    | 3,160                                  |
| 05OS-104              | BA-03D       | 4.18                                  | 447                                   | 1,230                                  | 475                                     | 0.24                                    | 12                                     |                      | 15                                    | 792                                  | 12.1                                    | 2,780                                  |
| 02OS-423              | BE-01        | 3.61                                  | 246                                   | 1,090                                  | 508                                     | 0.49                                    | 40                                     |                      | 3                                     | 767                                  | 3.92                                    | 2,780                                  |
| 04OS-144              | BE-01        | 3.84                                  | 372                                   | 1,100                                  | 947                                     | 1.9                                     | 20                                     |                      | 5                                     | 1,000                                | 6.09                                    | 5,250                                  |
| 02OS-303              | BE-03        | 35.3                                  | 931                                   | 7,940                                  | 371                                     | 58                                      | 11                                     |                      | 13                                    | 3,480                                | 35.7                                    | 164                                    |
| 02OS-411              | BE-03        | 22.9                                  | 556                                   | 5,090                                  | 173                                     | 26                                      | 5.0                                    |                      | 12                                    | 2,430                                | 22.5                                    | 60.6                                   |
| 03OS-144              | BE-03        | 11.2                                  | 271                                   | 2,810                                  | 98.5                                    | 13                                      | 2.4                                    |                      | 10                                    | 1,360                                | 11.0                                    | 59.4                                   |
| 02OS-408              | BE-04        | 48.1                                  | 1,100                                 | 12,000                                 | 388                                     | 35                                      | 15                                     |                      | 13                                    | 5,640                                | 51.2                                    | 76.3                                   |
| 03OS-148              | BE-04        | 40.8                                  | 1,030                                 | 10,900                                 | 347                                     | 10                                      | 11                                     |                      | 9                                     | 5,380                                | 51.9                                    | 58.4                                   |
| 04OS-242              | BE-04        | 37.5                                  | 813                                   | 9,770                                  | 325                                     | 35                                      | 12                                     |                      | 10                                    | 4,970                                | 41.0                                    | 92.3                                   |
| 02OS-409              | BE-06        | 11.1                                  | 197                                   | 3,150                                  | 296                                     | 26                                      | 1.5                                    |                      | 13                                    | 1,280                                | 4.01                                    | 95.6                                   |
| 02OS-519              | BE-06        | 4.76                                  | 85.4                                  | 1,570                                  | 120                                     | 0.10                                    | 1.5                                    |                      | 11                                    | 729                                  | 1.90                                    | 45.2                                   |
| 03OS-139              | BE-06        | 0.80                                  | 17.8                                  | 308                                    | 19.0                                    | 0.17                                    | 0.34                                   |                      | 6                                     | 175                                  | 0.45                                    | 21.8                                   |
| 02OS-305              | BE-07        | 67.7                                  | 1,410                                 | 14,600                                 | 535                                     | 91                                      | 13                                     |                      | 9                                     | 6,800                                | 79.4                                    | 15.7                                   |
| 02OS-414              | BE-07        | 57.9                                  | 1,210                                 | 12,500                                 | 478                                     | 84                                      | 13                                     |                      | 8                                     | 5,740                                | 64.6                                    | 43.4                                   |
| 02OS-415              | BE-07        | 56.1                                  | 1,120                                 | 12,000                                 | 421                                     | 72                                      | 14                                     |                      | 11                                    | 5,570                                | 64.0                                    | 19.9                                   |
| 02OS-508              | BE-07        | 53.2                                  | 1,040                                 | 12,000                                 | 521                                     | 71                                      | 9.8                                    |                      | 12                                    | 5,540                                | 53.9                                    | 97.1                                   |
| 03OS-151              | BE-07        | 21.7                                  | 435                                   | 5,150                                  | 198                                     | 31                                      | 6.3                                    |                      | 7                                     | 2,570                                | 24.8                                    | 30.5                                   |
| 04OS-136              | BE-07        | 24.2                                  | 488                                   | 5,760                                  | 270                                     | 36                                      | 5.3                                    |                      | 8                                     | 2,810                                | 25.9                                    | 58.5                                   |
| 02OS-422              | BE-08        | 23.1                                  | 773                                   | 5,690                                  | 1,430                                   | 3.4                                     | 9.5                                    |                      | 11                                    | 2,450                                | 15.6                                    | 4,780                                  |
| 02OS-515              | BE-08        | 51.8                                  | 1,410                                 | 12,600                                 | 1,450                                   | 4.6                                     | 8.8                                    |                      | 36                                    | 5,530                                | 40.7                                    | 3,010                                  |
| 03OS-147              | BE-08        | 46.0                                  | 1,220                                 | 11,700                                 | 938                                     | 0.74                                    | 7.0                                    |                      | 7                                     | 5,230                                | 44.3                                    | 1,310                                  |
| 04OS-129              | BE-08        | 34.7                                  | 1,010                                 | 8,710                                  | 1,230                                   | 0.084                                   | 9.1                                    | <                    | 5.3                                   | 3,900                                | 26.8                                    | 2,880                                  |
| 02OS-412              | BE-09        | 28.9                                  | 301                                   | 6,310                                  | 149                                     | 52                                      | 2.7                                    |                      | 9                                     | 3,300                                | 15.8                                    | 125                                    |
| 02OS-511              | BE-09        | 57.9                                  | 1,350                                 | 14,100                                 | 495                                     | 92                                      | 4.9                                    |                      | 12                                    | 6,750                                | 64.0                                    | 86.3                                   |
| 03OS-146              | BE-09        | 40.8                                  | 768                                   | 9,430                                  | 300                                     | 76                                      | 4.0                                    |                      | 9                                     | 4,760                                | 38.8                                    | 65.8                                   |
| 04OS-128              | BE-09        | 40.2                                  | 1,000                                 | 10,000                                 | 318                                     | 33                                      | 5.6                                    | <                    | 5.3                                   | 4,950                                | 43.0                                    | 64.8                                   |
| 02OS-413              | BE-10        | 36.5                                  | 830                                   | 8,180                                  | 634                                     | 66                                      | 3.5                                    |                      | 17                                    | 3,060                                | 29.7                                    | 470                                    |
| 02OS-507              | BE-10        | 54.2                                  | 1,730                                 | 13,200                                 | 899                                     | 46                                      | 4.1                                    |                      | 12                                    | 5,020                                | 59.8                                    | 300                                    |
| 03OS-129              | BE-10        | 42.0                                  | 1,170                                 | 10,100                                 | 731                                     | 46                                      | 2.8                                    |                      | 11                                    | 3,890                                | 41.7                                    | 267                                    |
| 04OS-131              | BE-10        | 54.4                                  | 1,540                                 | 13,100                                 | 801                                     | 21                                      | 4.5                                    | <                    | 5.3                                   | 5,640                                | 52.2                                    | 253                                    |
| 02OS-420              | BE-11        | 54.6                                  | 1,100                                 | 12,500                                 | 1,150                                   | 22                                      | 2.3                                    |                      | 10                                    | 4,860                                | 36.2                                    | 277                                    |
| 02OS-506              | BE-11        | 41.1                                  | 648                                   | 9,060                                  | 977                                     | 24                                      | 1.3                                    |                      | 12                                    | 3,610                                | 18.4                                    | 300                                    |
| 03OS-128              | BE-11        | 82.1                                  | 1,880                                 | 17,600                                 | 1,330                                   | 17                                      | 3.0                                    |                      | 10                                    | 6,960                                | 76.7                                    | 189                                    |
| 04OS-130              | BE-11        | 50.5                                  | 1,030                                 | 12,100                                 | 441                                     | 0.96                                    | 7.8                                    | <                    | 5.3                                   | 6,210                                | 42.6                                    | 69.5                                   |
| 02OS-421              | BE-12        | 46.8                                  | 1,150                                 | 10,500                                 | 1,380                                   | 3.3                                     | 3.6                                    |                      | 12                                    | 4,000                                | 24.9                                    | 2,510                                  |

| Field<br>Sample<br>ID | Station name | Bromide,<br>dissolved<br>(mg/L as Br) | Calcium,<br>dissolved<br>(mg/L as Ca) | Chloride,<br>dissolved<br>(mg/L as Cl) | Magnesium,<br>dissolved<br>(mg/L as Mg) | Manganese,<br>dissolved<br>(mg/L as Mn) | Potassium,<br>dissolved<br>(mg/L as K) | qSiO2 (mg/L as SiO2) | Silica<br>dissolved<br>(mg/L as SiO2) | Sodium,<br>dissolved<br>(mg/L as Na) | Strontium,<br>dissolved<br>(mg/L as Sr) | Sulfate,<br>dissolved<br>(mg/L as SO4) |
|-----------------------|--------------|---------------------------------------|---------------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|----------------------|---------------------------------------|--------------------------------------|-----------------------------------------|----------------------------------------|
| 02OS-509              | BE-12        | 58.4                                  | 1,570                                 | 12,800                                 | 1,160                                   | 2.2                                     | 6.0                                    |                      | 12                                    | 5,600                                | 44.0                                    | 1,970                                  |
| 03OS-145              | BE-12        | 79.4                                  | 2,090                                 | 18,100                                 | 984                                     | 0.049                                   | 8.8                                    |                      | 7                                     | 8,170                                | 81.5                                    | 987                                    |
| 04OS-127              | BE-12        | 36.6                                  | 707                                   | 8,650                                  | 261                                     | 0.011                                   | 6.7                                    | <                    | 5.3                                   | 4,630                                | 29.9                                    | 50.0                                   |
| 02OS-307              | BE-13        | 46.4                                  | 910                                   | 9,900                                  | 948                                     | 280                                     | 5.7                                    |                      | 5                                     | 3,520                                | 29.2                                    | 583                                    |
| 02OS-416              | BE-13        | 24.5                                  | 671                                   | 5,630                                  | 1,460                                   | 74                                      | 8.9                                    |                      | 10                                    | 2,880                                | 16.4                                    | 4,970                                  |
| 02OS-512              | BE-13        | 20.1                                  | 557                                   | 4,820                                  | 1,690                                   | 12                                      | 7.8                                    |                      | 13                                    | 2,940                                | 12.7                                    | 6,480                                  |
| 03OS-127              | BE-13        | 19.8                                  | 582                                   | 4,710                                  | 1,820                                   | 9.2                                     | 7.5                                    |                      | 12                                    | 2,780                                | 13.3                                    | 6,900                                  |
| 04OS-138              | BE-13        | 18.6                                  | 578                                   | 4,580                                  | 1,780                                   | 7.9                                     | 11                                     |                      | 14                                    | 2,660                                | 12.8                                    | 6,680                                  |
| 02OS-410              | BE-15        | 11.5                                  | 348                                   | 3,090                                  | 311                                     | 9.1                                     | 1.5                                    |                      | 10                                    | 1,180                                | 4.70                                    | 385                                    |
| 02OS-518              | BE-15        | 12.0                                  | 305                                   | 3,060                                  | 340                                     | 0.047                                   | 1.2                                    |                      | 11                                    | 1,250                                | 4.14                                    | 441                                    |
| 03OS-140              | BE-15        | 6.88                                  | 199                                   | 1,840                                  | 167                                     | 8.5                                     | 0.60                                   |                      | 8                                     | 757                                  | 3.10                                    | 175                                    |
| 02OS-417              | BE-16        | 13.2                                  | 492                                   | 3,130                                  | 1,370                                   | 110                                     | 4.7                                    |                      | 12                                    | 2,140                                | 8.35                                    | 6,910                                  |
| 02OS-513              | BE-16        | 10.5                                  | 446                                   | 2,730                                  | 1,610                                   | 38                                      | 3.8                                    |                      | 11                                    | 2,270                                | 8.37                                    | 7,980                                  |
| 03OS-125              | BE-16        | 11.2                                  | 418                                   | 2,710                                  | 1,520                                   | 59                                      | 3.2                                    |                      | 9                                     | 2,100                                | 8.14                                    | 7,390                                  |
| 04OS-137              | BE-16        | 11.7                                  | 408                                   | 3,070                                  | 993                                     | 37                                      | 3.1                                    |                      | 8                                     | 1,710                                | 7.18                                    | 4,360                                  |
| 02OS-418              | BE-17        | 7.31                                  | 494                                   | 2,020                                  | 1,710                                   | 16                                      | 12                                     |                      | 14                                    | 2,030                                | 8.34                                    | 8,870                                  |
| 02OS-514              | BE-17        | 6.78                                  | 440                                   | 1,850                                  | 1,560                                   | 9.8                                     | 12                                     |                      | 11                                    | 1,910                                | 7.57                                    | 8,110                                  |
| 03OS-126              | BE-17        | 7.10                                  | 455                                   | 1,880                                  | 1,750                                   | 7.9                                     | 11                                     |                      | 11                                    | 1,920                                | 8.46                                    | 8,420                                  |
| 04OS-135              | BE-17        | 6.69                                  | 428                                   | 1,870                                  | 1,530                                   | 7.2                                     | 8.2                                    |                      | 8                                     | 1,800                                | 7.80                                    | 7,910                                  |
| 02OS-407              | BE-18        | 23.4                                  | 554                                   | 5,800                                  | 253                                     | 46                                      | 7.6                                    |                      | 11                                    | 2,780                                | 22.1                                    | 290                                    |
| 02OS-521              | BE-18        | 26.5                                  | 622                                   | 6,600                                  | 638                                     | 49                                      | 6.7                                    |                      | 13                                    | 3,100                                | 20.0                                    | 1,280                                  |
| 03OS-149              | BE-18        | 10.4                                  | 266                                   | 2,840                                  | 195                                     | 16                                      | 3.1                                    |                      | 8                                     | 1,350                                | 9.60                                    | 304                                    |
| 04OS-140              | BE-18        | 13.3                                  | 368                                   | 3,710                                  | 247                                     | 24                                      | 4.3                                    |                      | 8                                     | 1,730                                | 13.8                                    | 412                                    |
| 03OS-150              | BE-19        | 11.7                                  | 352                                   | 3,250                                  | 163                                     | 18                                      | 3.2                                    |                      | 8                                     | 1,520                                | 14.1                                    | 117                                    |
| 03OS-143              | BE-51        | 2.44                                  | 76.7                                  | 613                                    | 256                                     | 0.17                                    | 3.0                                    |                      | 18                                    | 498                                  | 1.37                                    | 1,210                                  |
| 04OS-143              | BE-51        | 1.39                                  | 37.8                                  | 356                                    | 133                                     | 0.047                                   | 1.8                                    |                      | 18                                    | 274                                  | 0.72                                    | 667                                    |
| 03OS-135              | BE-52        | 30.9                                  | 760                                   | 7,670                                  | 1,420                                   | 1.4                                     | 6.9                                    |                      | 11                                    | 2,410                                | 9.89                                    | 1,860                                  |
| 03OS-136              | BE-53        | 56.9                                  | 1,440                                 | 13,000                                 | 937                                     | 60                                      | 4.2                                    |                      | 17                                    | 5,330                                | 48.8                                    | 205                                    |
| 04OS-142              | BE-53        | 81.2                                  | 2,380                                 | 18,600                                 | 1,070                                   | 48                                      | 5.3                                    |                      | 18                                    | 7,320                                | 85.3                                    | 139                                    |
| 03OS-130              | BE-54        | 12.7                                  | 335                                   | 3,220                                  | 126                                     | 5.0                                     | 3.1                                    |                      | 8                                     | 1,560                                | 11.0                                    | 104                                    |
| 03OS-134              | BE-55        | 59.3                                  | 1,150                                 | 15,000                                 | 2,200                                   | 4.9                                     | 12                                     |                      | 14                                    | 5,780                                | 36.7                                    | 2,920                                  |
| 04OS-141              | BE-55        | 51.9                                  | 1,010                                 | 13,500                                 | 1,620                                   | 5.7                                     | 8.1                                    |                      | 12                                    | 5,540                                | 35.2                                    | 2,080                                  |
| 04OS-245              | BE-55        | 53.0                                  | 997                                   | 13,600                                 | 2,320                                   | 5.6                                     | 12                                     |                      | 10                                    | 5,270                                | 29.6                                    | 3,620                                  |
| 03OS-133              | BE-56        | 32.7                                  | 629                                   | 9,100                                  | 371                                     | 11                                      | 9.1                                    |                      | 10                                    | 4,690                                | 26.7                                    | 184                                    |
| 04OS-244              | BE-56        | 56.0                                  | 936                                   | 14,500                                 | 1,220                                   | 16                                      | 8.2                                    |                      | 10                                    | 6,670                                | 32.3                                    | 1,210                                  |
| 03OS-132              | BE-57        | 8.57                                  | 121                                   | 2,280                                  | 149                                     | 1.8                                     | 2.3                                    |                      | 15                                    | 1,160                                | 2.72                                    | 166                                    |
| 03OS-131              | BE-58        | 4.90                                  | 100                                   | 1,500                                  | 129                                     | 0.077                                   | 0.66                                   |                      | 15                                    | 649                                  | 1.51                                    | 74                                     |
| 04OS-139              | BE-58        | 10.5                                  | 302                                   | 2,780                                  | 427                                     | 0.079                                   | 0.89                                   |                      | 11                                    | 1,070                                | 3.67                                    | 992                                    |
| 03OS-123              | BE-59        | 35.3                                  | 870                                   | 8,480                                  | 844                                     | 0.12                                    | 10                                     |                      | 12                                    | 3,320                                | 19.5                                    | 469                                    |
| 04OS-133              | BE-59        | 13.1                                  | 292                                   | 3,210                                  | 254                                     | 0.29                                    | 5.5                                    |                      | 9                                     | 1,410                                | 6.44                                    | 185                                    |
| 03OS-122              | BE-60        | 16.3                                  | 295                                   | 3,820                                  | 184                                     | 2.0                                     | 3.0                                    |                      | 7                                     | 1,860                                | 12.2                                    | 57.2                                   |
| 04OS-132              | BE-60        | 32.6                                  | 749                                   | 7,760                                  | 307                                     | 0.65                                    | 5.1                                    |                      | 6                                     | 3,870                                | 32.6                                    | 62.9                                   |
| 03OS-124              | BE-61        | 18.8                                  | 408                                   | 4,360                                  | 849                                     | 10                                      | 6.8                                    |                      | 13                                    | 2,040                                | 10.8                                    | 2,420                                  |
| 04OS-134              | BE-61        | 11.3                                  | 238                                   | 2,770                                  | 544                                     | 5.3                                     | 3.6                                    |                      | 8                                     | 1,420                                | 5.94                                    | 1,740                                  |
| 03OS-152              | BE-62        | 32.5                                  | 751                                   | 7,640                                  | 756                                     | 71                                      | 12                                     |                      | 9                                     | 3,720                                | 30.7                                    | 2,150                                  |

| Field<br>Sample<br>ID                             | Station name                            | Bromide,<br>dissolved<br>(mg/L as Br) | Calcium,<br>dissolved<br>(mg/L as Ca) | Chloride,<br>dissolved<br>(mg/L as Cl) | Magnesium,<br>dissolved<br>(mg/L as Mg) | Manganese,<br>dissolved<br>(mg/L as Mn) | Potassium,<br>dissolved<br>(mg/L as K) | qSiO2 (mg/L as SiO2) | Silica<br>dissolved<br>(mg/L as SiO2) | Sodium,<br>dissolved<br>(mg/L as Na) | Strontium,<br>dissolved<br>(mg/L as Sr) | Sulfate,<br>dissolved<br>(mg/L as SO4) |
|---------------------------------------------------|-----------------------------------------|---------------------------------------|---------------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|----------------------|---------------------------------------|--------------------------------------|-----------------------------------------|----------------------------------------|
| 04OS-145                                          | BE-62                                   | 29.4                                  | 640                                   | 7,040                                  | 626                                     | 64                                      | 14                                     |                      | 10                                    | 3,600                                | 26.0                                    | 1,510                                  |
| 04OS-248                                          | BE-71                                   | 6.78                                  | 636                                   | 1,980                                  | 987                                     | 3.3                                     | 39                                     |                      | 23                                    | 1,160                                | 14.2                                    | 4,620                                  |
| 05OS-109                                          | BE-71                                   | 10.3                                  | 656                                   | 2,850                                  | 1,210                                   | 0.96                                    | 19                                     |                      | 14                                    | 1,210                                | 15.2                                    | 4,680                                  |
| 04OS-249                                          | BE-72                                   | 8.43                                  | 587                                   | 2,370                                  | 1,110                                   | 0.33                                    | 22                                     |                      | 12                                    | 1,270                                | 11.9                                    | 4,670                                  |
| 05OS-108                                          | BE-72                                   | 9.74                                  | 569                                   | 2,550                                  | 1,190                                   | 0.27                                    | 22                                     |                      | 12                                    | 1,290                                | 11.4                                    | 4,710                                  |
| 04OS-247                                          | BE-73                                   | 13.3                                  | 590                                   | 3,360                                  | 1,410                                   | 12                                      | 41                                     |                      | 19                                    | 1,540                                | 7.95                                    | 4,820                                  |
| 05OS-111                                          | BE-73                                   | 18.0                                  | 665                                   | 4,270                                  | 1,480                                   | 0.39                                    | 20                                     |                      | 14                                    | 1,740                                | 10.0                                    | 4,740                                  |
| 04OS-250                                          | BE-74                                   | 21.6                                  | 872                                   | 5,840                                  | 1,880                                   | 1.4                                     | 40                                     |                      | 13                                    | 1,800                                | 20.2                                    | 4,460                                  |
| 05OS-110                                          | BE-74                                   | 30.2                                  | 949                                   | 7,630                                  | 2,140                                   | 0.42                                    | 32                                     |                      | 13                                    | 2,120                                | 22.9                                    | 4,700                                  |
| 02OS-304                                          | BR-01 (prior to completion)             | 1.73                                  | 76.6                                  | 446                                    | 37.9                                    | 0.20                                    | 6.2                                    |                      | 7                                     | 334                                  | 1.89                                    | 254                                    |
| 02OS-308                                          | BR-01 (prior to completion)             | 3.63                                  | 25.5                                  | 977                                    | 11.0                                    | 0.003                                   | 4.6                                    |                      | 4                                     | 770                                  | 1.32                                    | 223                                    |
| 02OS-315                                          | BR-01 (prior to completion)             | 3.11                                  | 26.5                                  | 794                                    | 10.9                                    | 0.009                                   | 4.2                                    |                      | 5                                     | 688                                  | 1.34                                    | 252                                    |
| 04OS-246                                          | BR-01S                                  | 26.8                                  | 760                                   | 6,720                                  | 430                                     | 8.5                                     | 7.9                                    |                      | 35                                    | 2,840                                | 13.4                                    | 41.4                                   |
| 02OS-406                                          | BR-01D                                  | 24.2                                  | 680                                   | 5,570                                  | 347                                     | 4.1                                     | 7.1                                    |                      | 31                                    | 2,360                                | 11.3                                    | 96.6                                   |
| 02OS-503                                          | BR-01D                                  | 3.22                                  | 211                                   | 753                                    | 97.1                                    | 1.1                                     | 3.0                                    |                      | 22                                    | 371                                  | 1.94                                    | 240                                    |
| 03OS-137                                          | BR-01D                                  | 0.41                                  | 142                                   | 96.7                                   | 63.6                                    | 0.33                                    | 2.3                                    |                      | 23                                    | 113                                  | 0.89                                    | 273                                    |
| 03OS-215                                          | BR-01D                                  | 0.35                                  | 143                                   | 91.1                                   | 63.0                                    | 0.25                                    | 2.3                                    |                      | 23                                    | 109                                  | 0.86                                    | 271                                    |
| 04OS-241                                          | BR-01D                                  | 0.36                                  | 142                                   | 94.7                                   | 60.7                                    | 0.33                                    | 2.2                                    |                      | 22                                    | 109                                  | 0.92                                    | 271                                    |
| 05OS-103                                          | BR-01D                                  | 0.34                                  | 141                                   | 89.9                                   | 61.0                                    | 0.12                                    | 2.1                                    |                      | 20                                    | 104                                  | 0.84                                    | 276                                    |
| 02OS-312                                          | BR-02 (prior to completion)             | 17.3                                  | 361                                   | 4,240                                  | 189                                     | 0.19                                    | 17                                     |                      | 6                                     | 2,040                                | 17.6                                    | 82.3                                   |
| 02OS-313                                          | BR-02 (prior to completion)             | 17.3                                  | 407                                   | 4,370                                  | 240                                     | 0.33                                    | 16                                     |                      | 6                                     | 2,000                                | 17.9                                    | 273                                    |
| 02OS-335                                          | BR-02D                                  | 6.38                                  | 162                                   | 1,630                                  | 88.3                                    | 0.48                                    | 10                                     |                      | 14                                    | 795                                  | 6.32                                    | 127                                    |
| 02OS-404                                          | BR-02D                                  | 9.26                                  | 276                                   | 2,460                                  | 171                                     | 0.32                                    | 10                                     |                      | 15                                    | 1,270                                | 10.9                                    | 353                                    |
| 02OS-502                                          | BR-02D                                  | 4.99                                  | 250                                   | 1,350                                  | 179                                     | 0.16                                    | 9.0                                    |                      | 13                                    | 881                                  | 8.31                                    | 911                                    |
| 03OS-138                                          | BR-02D                                  | 7.89                                  | 338                                   | 2,120                                  | 245                                     | 0.16                                    | 10                                     |                      | 17                                    | 1,180                                | 12.6                                    | 955                                    |
| 03OS-214                                          | BR-02D                                  | 7.26                                  | 389                                   | 2,020                                  | 317                                     | 0.12                                    | 11                                     |                      | 14                                    | 1,160                                | 13.5                                    | 1,410                                  |
| 04OS-243                                          | BR-02D                                  | 7.11                                  | 424                                   | 2,050                                  | 371                                     | 0.14                                    | 11                                     |                      | 14                                    | 1,240                                | 14.7                                    | 1,740                                  |
| 05OS-101                                          | BR-02D                                  | 6.86                                  | 369                                   | 1,920                                  | 306                                     | 0.16                                    | 11                                     |                      | 17                                    | 1,110                                | 12.9                                    | 1,420                                  |
| <b>Site B; surface waters and reinjection tai</b> |                                         |                                       |                                       |                                        |                                         |                                         |                                        |                      |                                       |                                      |                                         |                                        |
| 01OS-113                                          | small pool, near abandoned tank battery | 13.0                                  | 288                                   | 3,560                                  | 55.6                                    | 2.9                                     | 5.4                                    |                      | 2                                     | 1,930                                | 13.2                                    | 9.2                                    |
| 02OS-301                                          | small pool, near abandoned tank battery | 34.7                                  | 734                                   | 7,360                                  | 214                                     | 0.16                                    | 15                                     | <                    | 3                                     | 3,520                                | 34.3                                    | 49.7                                   |
| 01OS-114                                          | large pool, nr BA-01 well               | 6.25                                  | 173                                   | 1,470                                  | 57                                      | 3.1                                     | 2.4                                    |                      | 4                                     | 641                                  | 4.7                                     | 22.5                                   |
| 01OS-201                                          | EPA-1 "hand dug" hole                   | 227                                   | 5,180                                 | 52,000                                 | 1,240                                   | 17                                      | 54                                     | <                    | 16                                    | 22,700                               | 341                                     | 12.3                                   |
| 02OS-311                                          | creek, near BA-01 well                  | 10.6                                  | 345                                   | 2,550                                  | 132                                     | 14                                      | 4.3                                    |                      | 9                                     | 1,190                                | 9.86                                    | 271                                    |
| 01OS-202                                          | injection pit                           | 35.0                                  | 673                                   | 7,990                                  | 142                                     | 1.3                                     | 12                                     | <                    | 3                                     | 3,980                                | 46.1                                    | 4.83                                   |
| 02OS-316                                          | injection pit                           | 121                                   | 2,450                                 | 26,200                                 | 444                                     | 0.45                                    | 36                                     | <                    | 6                                     | 12,500                               | 172                                     | 5.1                                    |
| 02OS-317                                          | main pit                                | 100                                   | 1,970                                 | 21,600                                 | 439                                     | 3.1                                     | 35                                     |                      | 5                                     | 10,600                               | 141                                     | 11.2                                   |
| 02OS-510                                          | main pit                                | 101                                   | 2,080                                 | 23,800                                 | 512                                     | 0.75                                    | 46                                     | <                    | 9                                     | 12,300                               | 149                                     | 9.2                                    |
| 02OS-314                                          | reinjection tank, produced water        | 338                                   | 7,640                                 | 82,100                                 | 1,580                                   | 0.84                                    | 232                                    | <                    | 32                                    | 40,400                               | 472                                     | 2.5                                    |

Index B. Analytic data for water samples

| determined; column labeled q followed by an |                              | minor/trace<br>inorganic                     | minor/trace<br>inorganic             | minor/trace<br>inorganic                             | minor/trace<br>inorganic               | minor/trace<br>inorganic                  | minor/trace<br>inorganic                    | minor/trace<br>inorganic                      | minor/trace<br>inorganic |      |       |       |      |
|---------------------------------------------|------------------------------|----------------------------------------------|--------------------------------------|------------------------------------------------------|----------------------------------------|-------------------------------------------|---------------------------------------------|-----------------------------------------------|--------------------------|------|-------|-------|------|
| Field<br>Sample<br>ID                       | Station name                 | Ammonia,<br>dissolved<br>qNH4 (mg/L as NH4+) | Boron<br>dissolved<br>qB (mg/L as B) | Hydrogen sulfide,<br>dissolved<br>qH2S (mg/L as H2S) | Iron,<br>dissolved<br>qFe (mg/L as Fe) | Lithium,<br>dissolved<br>qLi (mg/L as Li) | Nitrate,<br>dissolved<br>qNO3 (mg/L as NO3) | Phosphate,<br>dissolved<br>qPO4 (mg/L as PO4) |                          |      |       |       |      |
| Local domestic ground water wells           |                              |                                              |                                      |                                                      |                                        |                                           |                                             |                                               |                          |      |       |       |      |
| 01OS-101                                    | Bolin well                   | <                                            | 0.1                                  | 0.02                                                 | <                                      | 0.4                                       | 0.01                                        | 0.016                                         | 5.2                      | 0.02 |       |       |      |
| 01OS-102                                    | Hurn well                    |                                              | 0.5                                  | 0.07                                                 | <                                      | 0.4                                       | 0.12                                        | 0.008                                         | <                        | 0.02 | <     | 0.003 |      |
| Local oil/gas wells                         |                              |                                              |                                      |                                                      |                                        |                                           |                                             |                                               |                          |      |       |       |      |
| 01OS-103                                    | Reynolds #4                  |                                              | 38                                   | 8.8                                                  | <                                      | 0.4                                       | 50                                          | 36.5                                          | <                        | 0.1  | <     | 1.5   |      |
| 01OS-104                                    | ECC #10                      |                                              | 79                                   | 2.9                                                  | <                                      | 0.4                                       | 27                                          | 8.01                                          | <                        | 0.1  | <     | 1.5   |      |
| 01OS-105                                    | ECC #3                       |                                              | 45                                   | 8.7                                                  | <                                      | 0.4                                       | 31                                          | 37.9                                          | <                        | 0.1  | <     | 1.5   |      |
| 01OS-106                                    | Lebow #8                     |                                              | 78                                   | 3.6                                                  | <                                      | 0.4                                       | 67                                          | 11.5                                          | <                        | 0.1  | <     | 1.5   |      |
| 01OS-107                                    | Millard #3                   |                                              | 56                                   | 1.8                                                  | <                                      | 0.4                                       | 29                                          | 5.96                                          | <                        | 0.1  | <     | 1.5   |      |
| 01OS-108                                    | ECC #5                       |                                              | 48                                   | 6.9                                                  | <                                      | 0.4                                       | 24                                          | 27.1                                          | <                        | 0.1  | <     | 1.5   |      |
| 01OS-109                                    | Ungermann #1                 |                                              | 59                                   | 1.8                                                  | <                                      | 0.4                                       | 38                                          | 7.14                                          | <                        | 0.1  | <     | 1.5   |      |
| 01OS-110                                    | TEC T1-19 (coal-bed methane) |                                              | 59                                   | 2.4                                                  |                                        | 2.5                                       | 126                                         | 6.88                                          | <                        | 0.1  | <     | 1.5   |      |
| Skiatook Lake                               |                              |                                              |                                      |                                                      |                                        |                                           |                                             |                                               |                          |      |       |       |      |
| 01OS-111                                    | Skiatook Lake, near dam      |                                              | -                                    | 0.02                                                 | -                                      | <                                         | 0.006                                       | 0.002                                         | 0.76                     | <    | 0.002 |       |      |
| 02OS-309                                    | Skiatook Lake, site B        |                                              | -                                    | 0.03                                                 | -                                      | <                                         | 0.006                                       | 0.002                                         | 0.65                     | <    | 0.02  |       |      |
| 02OS-310                                    | Skiatook Lake, site B        |                                              | -                                    | 0.03                                                 | -                                      | <                                         | 0.006                                       | 0.002                                         | 0.68                     | <    | 0.02  |       |      |
| 02OS-338                                    | Skiatook Lake, site B        |                                              | -                                    | 0.01                                                 | -                                      |                                           | 0.01                                        | 0.010                                         | 0.78                     | <    | 0.02  |       |      |
| 02OS-339                                    | Skiatook Lake, site A        |                                              | -                                    | 0.02                                                 | -                                      | <                                         | 0.006                                       | 0.004                                         | 0.38                     | <    | 0.02  |       |      |
| 02OS-520                                    | Skiatook Lake, site B        |                                              | -                                    | 0.03                                                 | -                                      | <                                         | 0.006                                       | 0.002                                         | 0.71                     | <    | 0.03  |       |      |
| 04OS-212                                    | Skiatook Lake, site A        |                                              | -                                    | 0.02                                                 | -                                      |                                           | 0.008                                       | 0.001                                         | 0.73                     |      | -     |       |      |
| Site A; monitoring wells                    |                              |                                              |                                      |                                                      |                                        |                                           |                                             |                                               |                          |      |       |       |      |
| 02OS-430                                    | AA-01D                       |                                              | -                                    | <                                                    | 0.05                                   | -                                         | <                                           | 0.5                                           | 0.16                     | <    | 1     | <     | 2.4  |
| 02OS-523                                    | AA-01D                       |                                              | -                                    |                                                      | 0.09                                   | -                                         |                                             | 25                                            | 0.17                     | <    | 0.2   | <     | 0.25 |
| 03OS-108                                    | AA-01D                       |                                              | -                                    | <                                                    | 0.05                                   | -                                         |                                             | 64                                            | 0.13                     | <    | 0.8   | <     | 0.8  |
| 03OS-205                                    | AA-01D                       |                                              | -                                    | <                                                    | 0.10                                   | -                                         |                                             | 81                                            | 0.13                     |      | 0.8   |       | 0.8  |
| 04OS-105                                    | AA-01D                       |                                              | -                                    | <                                                    | 0.10                                   | -                                         |                                             | 69                                            | 0.12                     | <    | 1.5   |       | -    |
| 04OS-203                                    | AA-01D                       |                                              | -                                    | <                                                    | 1.00                                   | -                                         |                                             | 41                                            | 0.12                     | <    | 2     |       | -    |
| 05OS-134                                    | AA-01D                       |                                              | -                                    | <                                                    | 0.15                                   | -                                         |                                             | 9.2                                           | 0.095                    | <    | 1     |       | -    |
| 02OS-337                                    | AA-02S                       |                                              | -                                    |                                                      | 0.19                                   | -                                         | <                                           | 0.13                                          | 0.064                    |      | 10    | <     | 0.2  |
| 02OS-426                                    | AA-02S                       |                                              | -                                    | <                                                    | 0.01                                   | -                                         | <                                           | 0.13                                          | 0.076                    | <    | 1     | <     | 1.5  |
| 02OS-522                                    | AA-02S                       |                                              | -                                    |                                                      | 0.03                                   | -                                         | <                                           | 0.13                                          | 0.11                     | <    | 0.2   | <     | 0.25 |
| 03OS-106                                    | AA-02S                       |                                              | -                                    | <                                                    | 0.02                                   | -                                         | <                                           | 0.13                                          | 0.11                     | <    | 0.5   | <     | 0.5  |
| 03OS-207                                    | AA-02S                       |                                              | -                                    | <                                                    | 0.05                                   | -                                         | <                                           | 0.25                                          | 0.067                    |      | 0.6   |       | 0.6  |
| 04OS-104                                    | AA-02S                       |                                              | -                                    |                                                      | 0.07                                   | -                                         |                                             | 0.50                                          | 0.12                     | <    | 0.8   |       | -    |
| 04OS-230                                    | AA-02S                       |                                              | -                                    | <                                                    | 0.15                                   | -                                         |                                             | 0.10                                          | 0.083                    | <    | 0.8   |       | -    |
| 05OS-139                                    | AA-02S                       |                                              | -                                    | <                                                    | 0.08                                   | -                                         |                                             | 0.55                                          | 0.098                    |      | 0.68  |       | -    |
| 02OS-336                                    | AA-02D                       |                                              | -                                    |                                                      | 0.29                                   | -                                         | <                                           | 0.05                                          | 0.061                    |      | 15    | <     | 0.1  |
| 02OS-427                                    | AA-02D                       |                                              | -                                    |                                                      | 0.29                                   | -                                         |                                             | 2.9                                           | 0.050                    | <    | 0.2   | <     | 0.6  |
| 02OS-527                                    | AA-02D                       |                                              | -                                    |                                                      | 0.32                                   | -                                         |                                             | 2.2                                           | 0.043                    | <    | 0.04  | <     | 0.05 |
| 03OS-107                                    | AA-02D                       |                                              | -                                    |                                                      | 0.34                                   | -                                         |                                             | 0.04                                          | 0.036                    | <    | 0.04  |       | 0.08 |
| 03OS-208                                    | AA-02D                       |                                              | -                                    |                                                      | 0.40                                   | -                                         | <                                           | 0.05                                          | 0.034                    |      | 0.04  | <     | 0.04 |
| 04OS-103                                    | AA-02D                       |                                              | -                                    |                                                      | 0.33                                   | -                                         |                                             | 2.7                                           | 0.039                    | <    | 0.06  |       | -    |

| Field<br>Sample<br>ID | Station name | Ammonia,<br>dissolved | Boron<br>dissolved | Hydrogen sulfide,<br>dissolved | Iron,<br>dissolved | Lithium,<br>dissolved | Nitrate,<br>dissolved | Phosphate,<br>dissolved |      |   |      |
|-----------------------|--------------|-----------------------|--------------------|--------------------------------|--------------------|-----------------------|-----------------------|-------------------------|------|---|------|
|                       |              | qNH4 (mg/L as NH4+)   | qB (mg/L as B)     | qH2S (mg/L as H2S)             | qFe (mg/L as Fe)   | qLi (mg/L as Li)      | qNO3 (mg/L as NO3)    | qPO4 (mg/L as PO4)      |      |   |      |
| 04OS-231              | AA-02D       | -                     | 0.30               | <                              | 0.2                | 0.77                  | 0.046                 | <                       | 0.06 | - |      |
| 05OS-140              | AA-02D       | -                     | 0.32               | -                              | -                  | 1.4                   | 0.032                 | <                       | 0.01 | - |      |
| 02OS-428              | AA-03S       | -                     | 0.16               | -                              | -                  | 6.8                   | 0.039                 | <                       | 0.2  | < | 0.3  |
| 03OS-103              | AA-03S       | -                     | 0.07               | -                              | -                  | 0.14                  | 0.050                 | <                       | 0.4  | < | 0.4  |
| 03OS-203              | AA-03S       | -                     | 0.14               | -                              | <                  | 0.13                  | 0.040                 | -                       | 0.58 | < | 0.3  |
| 04OS-205              | AA-03S       | -                     | 0.11               | -                              | <                  | 0.02                  | 0.019                 | <                       | 0.1  | - | -    |
| 05OS-142              | AA-03S       | -                     | 0.08               | -                              | -                  | 0.09                  | 0.015                 | <                       | 0.05 | - | -    |
| 02OS-429              | AA-03D       | -                     | 0.12               | -                              | -                  | 4.6                   | 0.13                  | <                       | 0.2  | < | 0.6  |
| 02OS-524              | AA-03D       | -                     | 0.10               | -                              | -                  | 7.0                   | 0.13                  | <                       | 0.2  | < | 0.25 |
| 03OS-104              | AA-03D       | -                     | 0.13               | -                              | -                  | 6.9                   | 0.098                 | <                       | 0.8  | < | 0.8  |
| 03OS-204              | AA-03D       | -                     | 0.07               | -                              | -                  | 0.19                  | 0.090                 | -                       | 0.5  | - | 0.5  |
| 04OS-116              | AA-03D       | -                     | 0.11               | -                              | -                  | 3.2                   | 0.097                 | <                       | 0.6  | - | -    |
| 04OS-211              | AA-03D       | -                     | 0.07               | -                              | -                  | 0.05                  | 0.039                 | -                       | 0.37 | - | -    |
| 05OS-141              | AA-03D       | -                     | 0.09               | -                              | -                  | 0.17                  | 0.043                 | -                       | 0.14 | - | -    |
| 02OS-424              | AA-04S       | -                     | 0.07               | -                              | <                  | 0.13                  | 0.047                 | -                       | 1.8  | < | 0.5  |
| 02OS-526              | AA-04S       | -                     | 0.09               | -                              | <                  | 0.13                  | 0.064                 | -                       | 1.7  | < | 0.05 |
| 03OS-101              | AA-04S       | -                     | 0.08               | -                              | <                  | 0.13                  | 0.052                 | -                       | 1.4  | < | 0.2  |
| 03OS-201              | AA-04S       | -                     | 0.09               | -                              | <                  | 0.13                  | 0.047                 | -                       | 4.6  | < | 0.2  |
| 04OS-109              | AA-04S       | -                     | 0.09               | -                              | -                  | 0.23                  | 0.053                 | -                       | 2.8  | - | -    |
| 04OS-201              | AA-04S       | -                     | <                  | 0.10                           | -                  | <                     | 0.1                   | 0.046                   | 4.5  | - | -    |
| 05OS-112              | AA-04S       | -                     | 0.09               | -                              | <                  | 0.05                  | 0.043                 | -                       | 1.2  | - | -    |
| 02OS-425              | AA-04D       | -                     | 0.12               | -                              | <                  | 0.13                  | 0.088                 | <                       | 0.5  | < | 0.5  |
| 02OS-525              | AA-04D       | -                     | 0.10               | -                              | <                  | 0.13                  | 0.055                 | -                       | 1.4  | < | 0.05 |
| 03OS-102              | AA-04D       | -                     | 0.07               | -                              | <                  | 0.13                  | 0.058                 | -                       | 0.3  | < | 0.2  |
| 03OS-202              | AA-04D       | -                     | 0.08               | -                              | -                  | 1.5                   | 0.057                 | -                       | 3.2  | - | 0.2  |
| 05OS-113              | AA-04D       | -                     | 0.08               | -                              | -                  | 0.13                  | 0.046                 | -                       | 1.4  | - | -    |
| 04OS-117              | AA-05S       | -                     | <                  | 0.04                           | -                  | 0.71                  | 0.10                  | -                       | 1.0  | - | -    |
| 04OS-226              | AA-05S       | -                     | <                  | 0.15                           | -                  | <                     | 0.08                  | 0.085                   | 1.4  | - | -    |
| 05OS-118              | AA-05S       | -                     | <                  | 0.10                           | -                  | <                     | 0.13                  | 0.078                   | 1.3  | - | -    |
| 04OS-118              | AA-05D       | -                     | 0.17               | -                              | <                  | 0.025                 | 0.038                 | -                       | 0.71 | - | -    |
| 04OS-216              | AA-05D       | -                     | 0.17               | -                              | <                  | 0.015                 | 0.042                 | -                       | 0.49 | - | -    |
| 05OS-117              | AA-05D       | -                     | 0.16               | -                              | -                  | 0.03                  | 0.048                 | -                       | 0.03 | - | -    |
| 04OS-119              | AA-06S       | -                     | <                  | 0.15                           | -                  | 0.87                  | 0.20                  | -                       | 3.3  | - | -    |
| 04OS-233              | AA-06S       | -                     | <                  | 0.80                           | -                  | <                     | 0.3                   | 0.19                    | <    | 3 | -    |
| 05OS-136              | AA-06S       | -                     | <                  | 0.30                           | -                  | 1.7                   | 0.19                  | -                       | 1.1  | - | -    |
| 04OS-120              | AA-06D       | -                     | 0.38               | -                              | -                  | 0.41                  | 0.18                  | <                       | 1    | - | -    |
| 04OS-234              | AA-06D       | -                     | <                  | 0.80                           | -                  | 2.5                   | 0.23                  | <                       | 2    | - | -    |
| 05OS-135              | AA-06D       | -                     | <                  | 0.30                           | -                  | 2.4                   | 0.20                  | <                       | 1    | - | -    |
| 04OS-121              | AA-07S       | -                     | 0.20               | -                              | -                  | 2.6                   | 0.43                  | -                       | 2.8  | - | -    |
| 04OS-222              | AA-07S       | -                     | <                  | 0.30                           | -                  | 4.4                   | 0.29                  | <                       | 0.8  | - | -    |
| 05OS-138              | AA-07S       | -                     | <                  | 0.08                           | -                  | 2.3                   | 0.23                  | <                       | 0.4  | - | -    |
| 04OS-153              | AA-07D       | -                     | 0.73               | -                              | -                  | 0.15                  | 0.26                  | <                       | 0.4  | - | -    |
| 04OS-223              | AA-07D       | -                     | <                  | 0.30                           | -                  | 0.30                  | 0.34                  | <                       | 0.6  | - | -    |
| 05OS-137              | AA-07D       | -                     | <                  | 0.15                           | -                  | 1.12                  | 0.31                  | <                       | 0.5  | - | -    |
| 04OS-157              | AA-08S       | -                     | 0.27               | -                              | <                  | 0.13                  | 0.27                  | <                       | 0.5  | - | -    |

| Field<br>Sample<br>ID | Station name | Ammonia,<br>dissolved | Boron<br>dissolved | Hydrogen sulfide,<br>dissolved | Iron,<br>dissolved | Lithium,<br>dissolved | Nitrate,<br>dissolved | Phosphate,<br>dissolved |       |      |       |
|-----------------------|--------------|-----------------------|--------------------|--------------------------------|--------------------|-----------------------|-----------------------|-------------------------|-------|------|-------|
|                       |              | qNH4 (mg/L as NH4+)   | qB (mg/L as B)     | qH2S (mg/L as H2S)             | qFe (mg/L as Fe)   | qLi (mg/L as Li)      | qNO3 (mg/L as NO3)    | qPO4 (mg/L as PO4)      |       |      |       |
| 04OS-221              | AA-08S       | -                     | <                  | 0.30                           | <                  | 0.2                   | 4.7                   | 0.26                    | <     | 1    | -     |
| 05OS-123              | AA-08S       | -                     |                    | 0.10                           |                    | -                     | 9.9                   | 0.25                    | <     | 0.4  | -     |
| 04OS-156              | AA-08D       | -                     |                    | 0.42                           |                    | -                     | <                     | 0.05                    | 0.035 | 0.32 | -     |
| 04OS-218              | AA-08D       | -                     |                    | 0.36                           |                    | -                     |                       | 0.55                    | 0.038 | <    | 0.1   |
| 05OS-124              | AA-08D       | -                     |                    | 0.33                           |                    | -                     |                       | 0.74                    | 0.025 | <    | 0.02  |
| 04OS-155              | AA-09S       | -                     |                    | 0.28                           |                    | -                     |                       | 0.06                    | 0.092 | <    | 0.16  |
| 04OS-232              | AA-09S       | -                     | <                  | 0.20                           | <                  | 0.2                   |                       | 2.5                     | 0.14  | <    | 0.2   |
| 05OS-122              | AA-09S       | -                     |                    | 0.21                           |                    | -                     |                       | 1.1                     | 0.17  | <    | 0.1   |
| 04OS-154              | AA-09D       | -                     |                    | 0.32                           |                    | -                     | <                     | 0.03                    | 0.027 | <    | 0.04  |
| 04OS-217              | AA-09D       | -                     |                    | 0.29                           |                    | -                     | <                     | 0.03                    | 0.025 | <    | 0.06  |
| 05OS-121              | AA-09D       | -                     |                    | 0.31                           |                    | -                     |                       | 0.99                    | 0.025 | <    | 0.02  |
| 04OS-152              | AA-10S       | -                     |                    | 0.12                           |                    | -                     |                       | 0.03                    | 0.013 |      | 2.7   |
| 04OS-224              | AA-10S       | -                     |                    | 0.16                           |                    | -                     | <                     | 0.015                   | 0.005 |      | 0.14  |
| 05OS-127              | AA-10S       | -                     |                    | 0.13                           |                    | -                     |                       | 0.06                    | 0.005 |      | 0.14  |
| 04OS-151              | AA-10M       | -                     |                    | 0.23                           |                    | -                     |                       | 0.07                    | 0.040 |      | 0.33  |
| 04OS-229              | AA-10M       | -                     | <                  | 0.15                           |                    | 0.3                   |                       | 2.4                     | 0.088 | <    | 0.8   |
| 05OS-126              | AA-10M       | -                     |                    | 0.16                           |                    | -                     |                       | 4.7                     | 0.091 | <    | 0.3   |
| 04OS-158              | AA-10D       | -                     |                    | 0.49                           |                    | -                     | <                     | 0.025                   | 0.021 |      | 0.02  |
| 04OS-215              | AA-10D       | -                     |                    | 0.49                           |                    | -                     |                       | 0.04                    | 0.021 | <    | 0.04  |
| 05OS-125              | AA-10D       | -                     |                    | 0.46                           |                    | -                     |                       | 0.49                    | 0.023 | <    | 0.02  |
| 04OS-161              | AA-11S       | -                     |                    | 0.07                           |                    | -                     | <                     | 0.25                    | 0.16  |      | 1.7   |
| 04OS-225              | AA-11S       | -                     | <                  | 0.15                           | <                  | 0.2                   |                       | 10                      | 0.13  | <    | 0.8   |
| 05OS-131              | AA-11S       | -                     |                    | 0.07                           |                    | -                     |                       | 6.3                     | 0.11  | <    | 0.25  |
| 04OS-160              | AA-11M       | -                     |                    | 0.26                           |                    | -                     | <                     | 0.13                    | 0.12  |      | 0.7   |
| 04OS-228              | AA-11M       | -                     |                    | 0.40                           |                    | 1.7                   |                       | 0.21                    | 0.041 | <    | 0.1   |
| 05OS-132              | AA-11M       | -                     |                    | 0.28                           |                    | -                     |                       | 1.1                     | 0.067 | <    | 0.15  |
| 04OS-159              | AA-11D       | -                     |                    | 0.15                           |                    | -                     | <                     | 0.13                    | 0.12  | <    | 0.8   |
| 04OS-213              | AA-11D       | -                     |                    | 0.32                           |                    | -                     | <                     | 0.015                   | 0.014 | <    | 0.025 |
| 05OS-130              | AA-11D       | -                     |                    | 0.30                           |                    | -                     |                       | 1.0                     | 0.024 |      | 0.08  |
| 04OS-165              | AA-12S       | -                     |                    | 0.14                           |                    | -                     | <                     | 0.13                    | 0.11  |      | 1.9   |
| 04OS-227              | AA-12S       | -                     | <                  | 0.15                           | <                  | 0.2                   |                       | 2.4                     | 0.16  | <    | 0.8   |
| 05OS-114              | AA-12S       | -                     |                    | 0.12                           |                    | -                     |                       | 0.17                    | 0.020 | <    | 0.01  |
| 04OS-164              | AA-12D       | -                     |                    | 0.94                           |                    | -                     | <                     | 0.05                    | 0.024 | <    | 0.16  |
| 04OS-214              | AA-12D       | -                     |                    | 0.98                           |                    | -                     |                       | 0.19                    | 0.022 | <    | 0.04  |
| 05OS-115              | AA-12D       | -                     |                    | 0.94                           |                    | -                     | <                     | 0.03                    | 0.023 |      | 1.2   |
| 04OS-163              | AA-13S       | -                     |                    | 0.15                           |                    | -                     | <                     | 0.025                   | 0.028 |      | 3.0   |
| 04OS-220              | AA-13S       | -                     |                    | 0.21                           |                    | 1.1                   |                       | 0.62                    | 0.035 | <    | 0.04  |
| 05OS-119              | AA-13S       | -                     |                    | 0.19                           |                    | -                     | <                     | 0.03                    | 0.036 | <    | 0.01  |
| 04OS-162              | AA-13D       | -                     |                    | 0.71                           |                    | -                     | <                     | 0.025                   | 0.020 |      | 0.14  |
| 04OS-219              | AA-13D       | -                     |                    | 0.68                           | <                  | 0.2                   |                       | 0.35                    | 0.024 | <    | 0.06  |
| 05OS-120              | AA-13D       | -                     |                    | 0.80                           |                    | -                     |                       | 0.03                    | 0.021 | <    | 0.03  |
| 03OS-155              | AA-60S       | -                     |                    | 0.01                           |                    | -                     | <                     | 0.01                    | 0.020 |      | 0.64  |
| 03OS-218              | AA-60S       | -                     |                    | 0.03                           |                    | -                     | <                     | 0.01                    | 0.036 |      | 0.09  |
| 04OS-108              | AA-60S       | -                     |                    | 0.02                           |                    | -                     |                       | 0.42                    | 0.021 | <    | 0.1   |
| 03OS-154              | AA-60D       | -                     |                    | 0.20                           |                    | -                     |                       | 1.7                     | 0.15  | <    | 0.2   |

| Field<br>Sample<br>ID | Station name | Ammonia,<br>dissolved | Boron<br>dissolved | Hydrogen sulfide,<br>dissolved | Iron,<br>dissolved | Lithium,<br>dissolved | Nitrate,<br>dissolved | Phosphate,<br>dissolved |      |      |     |     |
|-----------------------|--------------|-----------------------|--------------------|--------------------------------|--------------------|-----------------------|-----------------------|-------------------------|------|------|-----|-----|
|                       |              | qNH4 (mg/L as NH4+)   | qB (mg/L as B)     | qH2S (mg/L as H2S)             | qFe (mg/L as Fe)   | qLi (mg/L as Li)      | qNO3 (mg/L as NO3)    | qPO4 (mg/L as PO4)      |      |      |     |     |
| 03OS-210              | AA-60D       | -                     | 0.19               | -                              | 3.1                | 0.12                  | 0.2                   | <                       | 0.2  |      |     |     |
| 04OS-107              | AA-60D       | -                     | 0.18               | -                              | 5.2                | 0.12                  | <                     | 0.2                     | -    |      |     |     |
| 04OS-204              | AA-60D       | -                     | 0.13               | -                              | 3.0                | 0.14                  | <                     | 0.2                     | -    |      |     |     |
| 05OS-116              | AA-60D       | -                     | 0.16               | -                              | <                  | 0.05                  | 0.13                  | 0.11                    | -    |      |     |     |
| 03OS-153              | AA-61        | -                     | <                  | 0.05                           | -                  | 5.7                   | 0.064                 | <                       | 1    | <    | 1   |     |
| 03OS-209              | AA-61        | -                     | <                  | 0.05                           | -                  | 9.5                   | 0.036                 | 1                       | <    | 1    |     |     |
| 04OS-101              | AA-61        | -                     | <                  | 0.05                           | -                  | 7.2                   | 0.029                 | <                       | 1.5  | -    |     |     |
| 04OS-206              | AA-61        | -                     | <                  | 0.50                           | -                  | 8.5                   | 0.020                 | <                       | 1    | -    |     |     |
| 05OS-129              | AA-61        | -                     | <                  | 0.10                           | -                  | 33                    | 0.033                 | <                       | 1    | -    |     |     |
| 04OS-202              | AA-62        | -                     | <                  | 0.25                           | -                  | <                     | 0.25                  | 0.037                   | 5.8  | -    |     |     |
| 05OS-128              | AA-62        | -                     | <                  | 0.02                           | -                  | 0.29                  | 0.021                 | 4.2                     | -    |      |     |     |
| 02OS-434              | AE-04        | -                     | 0.04               | -                              | 0.10               | 0.002                 | 1.2                   | <                       | 0.03 |      |     |     |
| 02OS-332              | AE-05        | -                     | 0.02               | -                              | 0.06               | 0.001                 | 1.1                   | <                       | 0.02 |      |     |     |
| 02OS-333              | AE-06        | -                     | 0.02               | -                              | 0.012              | 0.001                 | 14                    | <                       | 0.02 |      |     |     |
| 02OS-435              | AE-06        | -                     | 0.03               | -                              | 0.26               | 0.002                 | 0.32                  | <                       | 0.03 |      |     |     |
| 04OS-111              | AE-06        | -                     | 0.01               | -                              | 0.014              | 0.001                 | 0.27                  | -                       |      |      |     |     |
| 02OS-334              | AE-07        | -                     | 0.01               | -                              | 0.16               | 0.002                 | 1.2                   | <                       | 0.02 |      |     |     |
| 04OS-110              | AE-07        | -                     | 0.01               | -                              | 0.03               | 0.001                 | 0.26                  | -                       |      |      |     |     |
| 02OS-326              | AE-08        | -                     | 0.14               | -                              | <                  | 0.025                 | 0.048                 | 0.08                    | <    | 0.02 |     |     |
| 02OS-432              | AE-08        | -                     | 0.04               | -                              | 4.0                | 0.015                 | 0.60                  | <                       | 0.03 |      |     |     |
| 04OS-114              | AE-08        | -                     | 0.03               | -                              | 0.12               | 0.055                 | <                     | 0.08                    | -    |      |     |     |
| 02OS-331              | AE-10        | -                     | 0.02               | -                              | 0.013              | 0.025                 | 0.25                  | <                       | 0.02 |      |     |     |
| 02OS-328              | AE-12        | -                     | 0.34               | -                              | 0.04               | 0.032                 | 3.1                   | <                       | 0.02 |      |     |     |
| 02OS-436              | AE-12        | -                     | 0.49               | -                              | 1.5                | 0.058                 | <                     | 0.02                    | <    | 0.03 |     |     |
| 02OS-325              | AE-13        | -                     | 0.02               | -                              | <                  | 0.25                  | 0.039                 | 6.9                     | <    | 0.2  |     |     |
| 02OS-329              | AE-13        | -                     | <                  | 0.03                           | -                  | 1.9                   | 0.024                 | 9.7                     | <    | 0.1  |     |     |
| 02OS-431              | AE-13        | -                     | <                  | 0.03                           | -                  | 4.8                   | 0.025                 | <                       | 1    | <    | 1.1 |     |
| 03OS-118              | AE-13        | -                     | 0.05               | -                              | <                  | 0.25                  | 0.017                 | 9.8                     | <    | 0.8  |     |     |
| 03OS-223              | AE-13        | -                     | <                  | 0.05                           | -                  | <                     | 0.25                  | 0.029                   | 1    | 1    |     |     |
| 04OS-102              | AE-13        | -                     | <                  | 0.05                           | -                  | 0.60                  | 0.011                 | <                       | 0.8  | -    |     |     |
| 04OS-207              | AE-13        | -                     | <                  | 0.25                           | -                  | 0.79                  | 0.017                 | <                       | 0.8  | -    |     |     |
| 03OS-116              | AE-14        | -                     | 0.03               | -                              | <                  | 0.13                  | 0.009                 | 9.1                     | <    | 0.1  |     |     |
| 02OS-330              | AE-15        | -                     | 0.01               | -                              | <                  | 0.05                  | 0.013                 | 5.3                     | <    | 0.02 |     |     |
| 02OS-437              | AE-15        | -                     | <                  | 0.02                           | -                  | <                     | 0.25                  | 0.069                   | 11   | <    | 1.4 |     |
| 03OS-115              | AE-15        | -                     | <                  | 0.02                           | -                  | <                     | 0.13                  | 0.017                   | 19   | <    | 0.2 |     |
| 03OS-113              | AE-16        | -                     | 0.01               | -                              | <                  | 0.025                 | 0.001                 | 0.18                    | <    | 0.02 |     |     |
| 03OS-114              | AE-17        | -                     | 0.28               | -                              | <                  | 0.13                  | 0.070                 | <                       | 0.2  | <    | 0.2 |     |
| 03OS-112              | AE-18        | -                     | <                  | 0.04                           | -                  | <                     | 0.25                  | 0.005                   | 6.8  | <    | 0.8 |     |
| 02OS-433              | AE-19        | -                     | 0.07               | -                              | 0.11               | 0.006                 | 0.38                  | <                       | 0.03 |      |     |     |
| 03OS-109              | AE-51        | -                     | <                  | 0.04                           | -                  | <                     | 0.25                  | 0.024                   | 8.7  | <    | 1   |     |
| 03OS-220              | AE-51        | -                     | <                  | 0.05                           | -                  | <                     | 0.25                  | 0.037                   | 9.6  | <    | 1   |     |
| 03OS-219              | AE-52        | -                     | 0.09               | -                              | <                  | 0.25                  | 0.048                 | 1.3                     | <    | 1    |     |     |
| 04OS-208              | AE-52        | -                     | <                  | 0.50                           | -                  | <                     | 0.5                   | 0.053                   | 2.2  |      |     |     |
| 03OS-111              | AE-53        | -                     | <                  | 0.02                           | -                  | <                     | 0.13                  | 0.011                   | <    | 0.4  | <   | 0.4 |
| 03OS-222              | AE-53        | -                     | <                  | 0.03                           | -                  | <                     | 0.13                  | 0.044                   | 0.6  | <    | 0.6 |     |

| Field Sample ID          | Station name | Ammonia, dissolved<br>qNH4 (mg/L as NH4+) | Boron dissolved<br>qB (mg/L as B) | Hydrogen sulfide, dissolved<br>qH2S (mg/L as H2S) | Iron, dissolved<br>qFe (mg/L as Fe) | Lithium, dissolved<br>qLi (mg/L as Li) | Nitrate, dissolved<br>qNO3 (mg/L as NO3) | Phosphate, dissolved<br>qPO4 (mg/L as PO4) |       |      |     |      |      |
|--------------------------|--------------|-------------------------------------------|-----------------------------------|---------------------------------------------------|-------------------------------------|----------------------------------------|------------------------------------------|--------------------------------------------|-------|------|-----|------|------|
| 04OS-106                 | AE-53        | -                                         | <                                 | 0.05                                              | -                                   | 1.0                                    | 0.067                                    | <                                          | 1     | -    |     |      |      |
| 04OS-210                 | AE-53        | -                                         | <                                 | 0.25                                              | -                                   | <                                      | 0.25                                     | 0.020                                      | <     | 0.4  | -   |      |      |
| 03OS-110                 | AE-54        | -                                         | <                                 | 0.01                                              | -                                   | <                                      | 0.05                                     | 0.017                                      |       | 0.53 | <   | 0.2  |      |
| 03OS-221                 | AE-54        | -                                         | <                                 | 0.03                                              | -                                   | <                                      | 0.13                                     | 0.035                                      |       | 0.30 | <   | 0.3  |      |
| 04OS-209                 | AE-54        | -                                         | <                                 | 0.10                                              | -                                   | <                                      | 0.1                                      | 0.008                                      | <     | 0.1  |     | -    |      |
| 03OS-117                 | AE-56        | -                                         |                                   | 0.23                                              | -                                   |                                        | 51                                       | 0.025                                      |       | 0.23 | <   | 0.1  |      |
| 04OS-112                 | AE-56        | -                                         |                                   | 0.21                                              | -                                   |                                        | 65                                       | 0.023                                      | <     | 0.02 |     | -    |      |
| 02OS-324                 | AP-01        | -                                         |                                   | 1.9                                               | -                                   |                                        | 610                                      | 3.22                                       | <     | 4    | <   | 1.0  |      |
| 02OS-327                 | AR-01        | <                                         | 0.1                               | 0.02                                              | <                                   | 0.2                                    | <                                        | 0.006                                      | 0.010 |      | 1.2 | <    | 0.02 |
| 02OS-438                 | AR-01        | -                                         |                                   | 0.02                                              | -                                   |                                        | 0.22                                     | 0.011                                      | <     | 0.02 | <   | 0.03 |      |
| 03OS-105                 | AR-01        | -                                         |                                   | 0.01                                              | -                                   |                                        | 0.48                                     | 0.010                                      | <     | 0.02 | <   | 0.02 |      |
| 03OS-206                 | AR-01        | -                                         |                                   | 0.02                                              | -                                   |                                        | 0.21                                     | 0.008                                      |       | 0.02 | <   | 0.02 |      |
| 04OS-113                 | AR-01        | -                                         |                                   | 0.03                                              | -                                   |                                        | 2.0                                      | 0.007                                      |       | 0.03 |     | -    |      |
| 04OS-235                 | AR-01        | -                                         |                                   | 0.02                                              | -                                   |                                        | 3.2                                      | 0.007                                      | <     | 0.02 |     | -    |      |
| 05OS-133                 | AR-01        | -                                         |                                   | 0.02                                              | -                                   |                                        | 4.5                                      | 0.005                                      |       | 0.02 |     | -    |      |
| Site B; monitoring wells |              |                                           |                                   |                                                   |                                     |                                        |                                          |                                            |       |      |     |      |      |
| 02OS-322                 | BA-01S       | -                                         |                                   | 0.74                                              | -                                   | <                                      | 0.25                                     | 0.071                                      |       | 8.1  | <   | 0.4  |      |
| 02OS-403                 | BA-01S       | -                                         |                                   | 0.11                                              | -                                   |                                        | 0.82                                     | 0.010                                      | <     | 0.5  | <   | 0.6  |      |
| 02OS-516                 | BA-01S       | -                                         |                                   | 0.3                                               | -                                   | <                                      | 0.25                                     | 0.080                                      |       | 1.1  | <   | 0.25 |      |
| 03OS-141                 | BA-01S       | -                                         |                                   | 0.06                                              | -                                   |                                        | 0.05                                     | 0.005                                      |       | 0.45 | <   | 0.3  |      |
| 03OS-216                 | BA-01S       | -                                         |                                   | 0.16                                              | -                                   | <                                      | 0.13                                     | 0.038                                      |       | 0.30 | <   | 0.3  |      |
| 04OS-125                 | BA-01S       | -                                         |                                   | 0.07                                              | -                                   | <                                      | 0.05                                     | 0.004                                      |       | 0.16 |     | -    |      |
| 04OS-239                 | BA-01S       | -                                         |                                   | 0.37                                              | -                                   | <                                      | 0.075                                    | 0.037                                      | <     | 0.3  |     | -    |      |
| 05OS-106                 | BA-01S       | -                                         |                                   | 1.6                                               | -                                   |                                        | 1.2                                      | 0.18                                       | <     | 0.2  |     | -    |      |
| 02OS-323                 | BA-01D       | -                                         |                                   | 3.9                                               | -                                   | <                                      | 0.13                                     | 0.15                                       |       | 0.33 | <   | 0.25 |      |
| 02OS-405                 | BA-01D       | -                                         |                                   | 4.6                                               | -                                   | <                                      | 0.13                                     | 0.11                                       | <     | 0.4  | <   | 0.3  |      |
| 02OS-517                 | BA-01D       | -                                         |                                   | 4.5                                               | -                                   | <                                      | 0.13                                     | 0.11                                       | <     | 0.2  | <   | 0.6  |      |
| 03OS-142                 | BA-01D       | -                                         |                                   | 4.5                                               | -                                   | <                                      | 0.025                                    | 0.11                                       |       | 0.5  | <   | 0.2  |      |
| 03OS-217                 | BA-01D       | -                                         |                                   | 4.1                                               | -                                   | <                                      | 0.13                                     | 0.094                                      |       | 6.3  | <   | 0.2  |      |
| 04OS-126                 | BA-01D       | -                                         |                                   | 4.4                                               | -                                   |                                        | 0.08                                     | 0.088                                      | <     | 0.3  |     | -    |      |
| 04OS-240                 | BA-01D       | -                                         |                                   | 4.3                                               | -                                   |                                        | 0.33                                     | 0.081                                      | <     | 0.3  |     | -    |      |
| 05OS-107                 | BA-01D       | -                                         |                                   | 4.4                                               | -                                   |                                        | 2.2                                      | 0.083                                      | <     | 0.2  |     | -    |      |
| 02OS-318                 | BA-02S       | -                                         |                                   | 1.7                                               | -                                   | <                                      | 0.13                                     | 0.22                                       |       | 0.28 | <   | 0.3  |      |
| 02OS-319                 | BA-02D       | -                                         |                                   | 1.8                                               | -                                   | <                                      | 0.13                                     | 0.20                                       | <     | 0.1  | <   | 0.3  |      |
| 02OS-401                 | BA-02D       | -                                         |                                   | 1.9                                               | -                                   | <                                      | 0.13                                     | 0.19                                       | <     | 0.2  | <   | 0.3  |      |
| 02OS-501                 | BA-02D       | -                                         |                                   | 2.1                                               | -                                   | <                                      | 0.13                                     | 0.17                                       | <     | 0.2  | <   | 0.25 |      |
| 03OS-119                 | BA-02D       | -                                         |                                   | 2.0                                               | -                                   | <                                      | 0.13                                     | 0.18                                       | <     | 0.2  | <   | 0.2  |      |
| 03OS-211                 | BA-02D       | -                                         |                                   | 1.9                                               | -                                   | <                                      | 0.13                                     | 0.18                                       |       | 0.20 | <   | 0.2  |      |
| 04OS-124                 | BA-02D       | -                                         |                                   | 2.0                                               | -                                   | <                                      | 0.13                                     | 0.18                                       | <     | 0.4  |     | -    |      |
| 04OS-238                 | BA-02D       | -                                         |                                   | 1.9                                               | -                                   | <                                      | 0.075                                    | 0.17                                       | <     | 0.4  |     | -    |      |
| 05OS-102                 | BA-02D       | -                                         |                                   | 2.0                                               | -                                   |                                        | 0.60                                     | 0.17                                       |       | 0.32 |     | -    |      |
| 02OS-320                 | BA-03S       | -                                         |                                   | 3.9                                               | -                                   | <                                      | 0.13                                     | 0.19                                       | <     | 0.1  | <   | 0.3  |      |
| 02OS-504                 | BA-03S       | -                                         |                                   | 1.2                                               | -                                   | <                                      | 0.25                                     | 0.17                                       | <     | 0.2  | <   | 0.25 |      |
| 03OS-120                 | BA-03S       | -                                         |                                   | 1.0                                               | -                                   | <                                      | 0.25                                     | 0.16                                       | <     | 0.6  | <   | 0.6  |      |
| 03OS-212                 | BA-03S       | -                                         |                                   | 0.79                                              | -                                   | <                                      | 0.25                                     | 0.15                                       |       | 0.60 | <   | 0.6  |      |

| Field<br>Sample<br>ID | Station name | Ammonia,<br>dissolved | Boron<br>dissolved | Hydrogen sulfide,<br>dissolved | Iron,<br>dissolved | Lithium,<br>dissolved | Nitrate,<br>dissolved | Phosphate,<br>dissolved |      |      |      |      |
|-----------------------|--------------|-----------------------|--------------------|--------------------------------|--------------------|-----------------------|-----------------------|-------------------------|------|------|------|------|
|                       |              | qNH4 (mg/L as NH4+)   | qB (mg/L as B)     | qH2S (mg/L as H2S)             | qFe (mg/L as Fe)   | qLi (mg/L as Li)      | qNO3 (mg/L as NO3)    | qPO4 (mg/L as PO4)      |      |      |      |      |
| 04OS-122              | BA-03S       | -                     | 1.0                | -                              | 0.24               | 0.16                  | <                     | 0.8                     | -    |      |      |      |
| 04OS-236              | BA-03S       | -                     | 0.80               | -                              | <                  | 0.15                  | 0.15                  | <                       | 0.8  | -    |      |      |
| 05OS-105              | BA-03S       | -                     | 0.84               | -                              | 2.8                | 0.14                  | <                     | 0.4                     | -    |      |      |      |
| 02OS-321              | BA-03D       | -                     | 4.6                | -                              | <                  | 0.13                  | 0.14                  | <                       | 0.1  | <    | 0.3  |      |
| 02OS-402              | BA-03D       | -                     | 5.1                | -                              | 0.88               | 0.13                  | <                     | 0.2                     | <    | 0.3  |      |      |
| 02OS-505              | BA-03D       | -                     | 5.7                | -                              | <                  | 0.13                  | 0.11                  | <                       | 0.2  | <    | 0.3  |      |
| 03OS-121              | BA-03D       | -                     | 6.0                | -                              | <                  | 0.13                  | 0.11                  |                         | 5.8  | <    | 0.2  |      |
| 03OS-213              | BA-03D       | -                     | 5.9                | -                              | <                  | 0.13                  | 0.10                  |                         | 6.4  | <    | 0.2  |      |
| 04OS-123              | BA-03D       | -                     | 5.1                | -                              | 1.2                | 0.12                  | <                     | 0.3                     |      | -    |      |      |
| 04OS-237              | BA-03D       | -                     | 4.8                | -                              | 1.3                | 0.13                  | <                     | 0.4                     |      | -    |      |      |
| 05OS-104              | BA-03D       | -                     | 4.9                | -                              | 1.4                | 0.12                  | <                     | 0.2                     |      | -    |      |      |
| 02OS-423              | BE-01        | -                     | 0.80               | -                              | <                  | 0.13                  | 0.12                  | <                       | 0.2  | <    | 0.3  |      |
| 04OS-144              | BE-01        | -                     | 0.72               | -                              | 0.14               | 0.045                 |                       | 0.97                    |      | -    |      |      |
| 02OS-303              | BE-03        | -                     | 0.04               | -                              | 0.31               | 0.041                 |                       | 5.1                     | <    | 0.4  |      |      |
| 02OS-411              | BE-03        | -                     | 0.07               | -                              | 0.74               | 0.011                 | <                     | 0.5                     | <    | 0.8  |      |      |
| 03OS-144              | BE-03        | -                     | 0.04               | -                              | 0.15               | 0.004                 |                       | 0.64                    | <    | 0.3  |      |      |
| 02OS-408              | BE-04        | -                     | 0.27               | -                              | <                  | 0.25                  | 0.041                 | 5.6                     | <    | 1.5  |      |      |
| 03OS-148              | BE-04        | -                     | 0.12               | -                              | <                  | 0.25                  | 0.034                 | 29                      | <    | 1    |      |      |
| 04OS-242              | BE-04        | -                     | <                  | 0.40                           | -                  | <                     | 0.15                  | 0.042                   | <    | 1    | -    |      |
| 02OS-409              | BE-06        | -                     | 0.06               | -                              | <                  | 0.13                  | 0.012                 | <                       | 0.5  | <    | 0.4  |      |
| 02OS-519              | BE-06        | -                     | 0.03               | -                              | <                  | 0.05                  | 0.005                 |                         | 0.21 | <    | 0.05 |      |
| 03OS-139              | BE-06        | -                     | <                  | 0.002                          | -                  | 0.025                 | 0.001                 |                         | 2.9  | <    | 0.04 |      |
| 02OS-305              | BE-07        | 9.8                   | 0.11               | 0.9                            | 150                | 0.21                  |                       | 3.1                     | <    | 0.2  |      |      |
| 02OS-414              | BE-07        | -                     | 0.17               | -                              | 120                | 0.14                  | <                     | 1.0                     | <    | 1.8  |      |      |
| 02OS-415              | BE-07        | -                     | 0.16               | -                              | 120                | 0.20                  | <                     | 1.0                     | <    | 1.8  |      |      |
| 02OS-508              | BE-07        | -                     | 0.13               | -                              | 180                | 0.095                 | <                     | 0.2                     | <    | 0.25 |      |      |
| 03OS-151              | BE-07        | -                     | 0.10               | -                              | 48                 | 0.054                 | <                     | 0.5                     | <    | 0.5  |      |      |
| 04OS-136              | BE-07        | -                     | 0.08               | -                              | 22                 | 0.050                 | <                     | 0.6                     |      | -    |      |      |
| 02OS-422              | BE-08        | -                     | 0.82               | -                              | <                  | 0.25                  | 0.15                  | <                       | 1    | <    | 0.6  |      |
| 02OS-515              | BE-08        | -                     | 0.37               | -                              | <                  | 0.5                   | 0.069                 |                         | 42   | <    | 0.5  |      |
| 03OS-147              | BE-08        | -                     | 0.21               | -                              | <                  | 0.25                  | 0.036                 |                         | 68   | <    | 1    |      |
| 04OS-129              | BE-08        | -                     | 0.57               | -                              | <                  | 0.25                  | 0.083                 |                         | 56   |      | -    |      |
| 02OS-412              | BE-09        | -                     | 0.02               | -                              | 3.4                | 0.008                 | <                     | 0.5                     | <    | 0.9  |      |      |
| 02OS-511              | BE-09        | -                     | <                  | 0.07                           | -                  | 36                    | <                     | 0.005                   | <    | 0.2  | <    | 0.25 |
| 03OS-146              | BE-09        | -                     | 0.09               | -                              | 54                 | 0.004                 | <                     | 0.8                     | <    | 0.8  |      |      |
| 04OS-128              | BE-09        | -                     | 0.06               | -                              | 3.3                | 0.003                 |                       | 42                      |      | -    |      |      |
| 02OS-413              | BE-10        | -                     | <                  | 0.03                           | -                  | <                     | 0.25                  | 0.010                   | <    | 0.5  | <    | 1.2  |
| 02OS-507              | BE-10        | -                     | 0.03               | -                              | <                  | 0.25                  | 0.007                 |                         | 83   | <    | 0.5  |      |
| 03OS-129              | BE-10        | -                     | <                  | 0.04                           | -                  | <                     | 0.25                  | 0.006                   |      | 20   | <    | 1    |
| 04OS-131              | BE-10        | -                     | <                  | 0.05                           | -                  | <                     | 0.25                  | 0.004                   |      | 25   |      | -    |
| 02OS-420              | BE-11        | -                     | <                  | 0.03                           | -                  | <                     | 0.25                  | 0.038                   | <    | 1    | <    | 2    |
| 02OS-506              | BE-11        | -                     | 0.12               | -                              | <                  | 0.25                  | 0.016                 |                         | 5.4  | n    | 0.4  |      |
| 03OS-128              | BE-11        | -                     | <                  | 0.07                           | -                  | <                     | 0.5                   | 0.032                   |      | 38   | <    | 1    |
| 04OS-130              | BE-11        | -                     | 0.13               | -                              | <                  | 0.25                  | 0.065                 |                         | 29   |      | -    |      |
| 02OS-421              | BE-12        | -                     | 0.06               | -                              | <                  | 0.25                  | 0.042                 |                         | 1.2  | <    | 1.5  |      |

| Field<br>Sample<br>ID | Station name | Ammonia,<br>dissolved | Boron<br>dissolved | Hydrogen sulfide,<br>dissolved | Iron,<br>dissolved | Lithium,<br>dissolved | Nitrate,<br>dissolved | Phosphate,<br>dissolved |      |      |     |   |
|-----------------------|--------------|-----------------------|--------------------|--------------------------------|--------------------|-----------------------|-----------------------|-------------------------|------|------|-----|---|
|                       |              | qNH4 (mg/L as NH4+)   | qB (mg/L as B)     | qH2S (mg/L as H2S)             | qFe (mg/L as Fe)   | qLi (mg/L as Li)      | qNO3 (mg/L as NO3)    | qPO4 (mg/L as PO4)      |      |      |     |   |
| 02OS-509              | BE-12        | -                     | 0.14               | -                              | <                  | 0.5                   | 0.049                 | 41                      | <    | 0.25 |     |   |
| 03OS-145              | BE-12        | -                     | <                  | 0.10                           | -                  | <                     | 0.5                   | 0.060                   | 51   | <    | 2.0 |   |
| 04OS-127              | BE-12        | -                     | 0.24               | -                              | <                  | 0.25                  | 0.028                 | 33                      |      | -    |     |   |
| 02OS-307              | BE-13        | 3.4                   | 0.04               | 1.8                            | 130                | 0.007                 | <                     | 0.5                     | <    | 0.1  |     |   |
| 02OS-416              | BE-13        | -                     | 0.39               | -                              | 9.1                | 0.082                 | <                     | 1.0                     | <    | 0.6  |     |   |
| 02OS-512              | BE-13        | -                     | 0.52               | -                              | <                  | 0.25                  | 0.084                 | 1.7                     | <    | 0.5  |     |   |
| 03OS-127              | BE-13        | -                     | 0.42               | -                              | <                  | 0.25                  | 0.099                 | 1.2                     | <    | 0.5  |     |   |
| 04OS-138              | BE-13        | -                     | 0.42               | -                              | <                  | 0.25                  | 0.12                  | <                       | 0.80 | -    |     |   |
| 02OS-410              | BE-15        | -                     | 0.03               | -                              | <                  | 0.13                  | 0.006                 | 4.0                     | <    | 0.4  |     |   |
| 02OS-518              | BE-15        | -                     | 0.05               | -                              | <                  | 0.13                  | 0.007                 | 0.15                    | <    | 0.6  |     |   |
| 03OS-140              | BE-15        | -                     | <                  | 0.01                           | -                  | <                     | 0.01                  | 0.002                   | 0.22 | <    | 0.2 |   |
| 02OS-417              | BE-16        | -                     | 0.30               | -                              | 9.0                | 0.037                 | <                     | 0.5                     | <    | 0.6  |     |   |
| 02OS-513              | BE-16        | -                     | 0.43               | -                              | 16                 | 0.053                 |                       | 4.0                     | <    | 0.5  |     |   |
| 03OS-125              | BE-16        | -                     | 0.33               | -                              | 13                 | 0.040                 |                       | 2.8                     | <    | 0.4  |     |   |
| 04OS-137              | BE-16        | -                     | 0.16               | -                              | <                  | 0.25                  | 0.022                 | <                       | 0.6  | -    |     |   |
| 02OS-418              | BE-17        | -                     | 0.41               | -                              | <                  | 0.25                  | 0.078                 | <                       | 1    | <    | 1.5 |   |
| 02OS-514              | BE-17        | -                     | 0.54               | -                              | <                  | 0.25                  | 0.075                 | 0.9                     | <    | 0.5  |     |   |
| 03OS-126              | BE-17        | -                     | 0.40               | -                              | <                  | 0.25                  | 0.076                 | 0.5                     | <    | 0.4  |     |   |
| 04OS-135              | BE-17        | -                     | 0.26               | -                              | <                  | 0.25                  | 0.051                 | <                       | 0.8  | -    |     |   |
| 02OS-407              | BE-18        | -                     | 0.16               | -                              | 33                 | 0.018                 | <                     | 0.5                     | <    | 0.8  |     |   |
| 02OS-521              | BE-18        | -                     | 0.09               | -                              | 35                 | 0.021                 |                       | 0.21                    | <    | 0.25 |     |   |
| 03OS-149              | BE-18        | -                     | <                  | 0.03                           | -                  | 3.7                   | 0.006                 | 1.9                     | <    | 0.3  |     |   |
| 04OS-140              | BE-18        | -                     | <                  | 0.05                           | -                  | 4.5                   | 0.008                 | 0.7                     |      | -    |     |   |
| 03OS-150              | BE-19        | -                     | 0.04               | -                              | 30                 | 0.006                 |                       | 0.9                     | <    | 0.3  |     |   |
| 03OS-143              | BE-51        | -                     | 0.03               | -                              | <                  | 0.01                  | 0.021                 | 2.2                     | <    | 0.1  |     |   |
| 04OS-143              | BE-51        | -                     | 0.02               | -                              | 0.03               | 0.012                 |                       | 0.11                    |      | -    |     |   |
| 03OS-135              | BE-52        | -                     | <                  | 0.05                           | -                  | <                     | 0.25                  | 0.042                   | <    | 0.8  |     |   |
| 03OS-136              | BE-53        | -                     | <                  | 0.05                           | -                  | 36                    | 0.010                 | 18                      | <    | 1    |     |   |
| 04OS-142              | BE-53        | -                     | <                  | 0.20                           | -                  | 17                    | <                     | 0.008                   |      | 38   | -   |   |
| 03OS-130              | BE-54        | -                     | 0.10               | -                              | 0.22               | 0.002                 |                       | 5.9                     | <    | 0.3  |     |   |
| 03OS-134              | BE-55        | -                     | <                  | 0.10                           | -                  | <                     | 0.5                   | 0.048                   | <    | 2    | <   | 2 |
| 04OS-141              | BE-55        | -                     | <                  | 0.20                           | -                  | 1.0                   | 0.034                 | <                       | 1.5  |      | -   |   |
| 04OS-245              | BE-55        | -                     | <                  | 0.80                           | -                  | 0.36                  | 0.064                 | <                       | 2    |      | -   |   |
| 03OS-133              | BE-56        | -                     | 0.13               | -                              | 0.33               | 0.047                 |                       | 11                      | <    | 1    |     |   |
| 04OS-244              | BE-56        | -                     | <                  | 0.80                           | -                  | <                     | 0.3                   | 0.062                   |      | 2    | -   |   |
| 03OS-132              | BE-57        | -                     | 0.06               | -                              | 0.24               | 0.025                 | <                     | 0.3                     | <    | 0.3  |     |   |
| 03OS-131              | BE-58        | -                     | 0.02               | -                              | <                  | 0.05                  | 0.005                 | 0.4                     | <    | 0.2  |     |   |
| 04OS-139              | BE-58        | -                     | <                  | 0.05                           | -                  | <                     | 0.13                  | 0.013                   |      | 0.5  | -   |   |
| 03OS-123              | BE-59        | -                     | 0.14               | -                              | <                  | 0.25                  | 0.087                 | 1.5                     | <    | 0.8  |     |   |
| 04OS-133              | BE-59        | -                     | 0.07               | -                              | <                  | 0.13                  | 0.033                 | 1.1                     |      | -    |     |   |
| 03OS-122              | BE-60        | -                     | 0.13               | -                              | 0.83               | 0.005                 |                       | 6.2                     | <    | 0.4  |     |   |
| 04OS-132              | BE-60        | -                     | <                  | 0.10                           | -                  | <                     | 0.25                  | 0.003                   |      | 5.0  | -   |   |
| 03OS-124              | BE-61        | -                     | 0.08               | -                              | <                  | 0.13                  | 0.041                 | 0.6                     | <    | 0.4  |     |   |
| 04OS-134              | BE-61        | -                     | 0.11               | -                              | <                  | 0.13                  | 0.021                 | 0.7                     |      | -    |     |   |
| 03OS-152              | BE-62        | -                     | 0.41               | -                              | 59                 | 0.18                  | <                     | 1                       | <    | 1    |     |   |

| Field Sample ID                                     | Station name                            | Ammonia, dissolved<br>qNH4 (mg/L as NH4+) | Boron dissolved<br>qB (mg/L as B) | Hydrogen sulfide, dissolved<br>qH2S (mg/L as H2S) | Iron, dissolved<br>qFe (mg/L as Fe) | Lithium, dissolved<br>qLi (mg/L as Li) | Nitrate, dissolved<br>qNO3 (mg/L as NO3) | Phosphate, dissolved<br>qPO4 (mg/L as PO4) |
|-----------------------------------------------------|-----------------------------------------|-------------------------------------------|-----------------------------------|---------------------------------------------------|-------------------------------------|----------------------------------------|------------------------------------------|--------------------------------------------|
| 04OS-145                                            | BE-62                                   | -                                         | 0.39                              | -                                                 | 47                                  | 0.16                                   | < 0.8                                    | -                                          |
| 04OS-248                                            | BE-71                                   | -                                         | 3.1                               | -                                                 | 4.1                                 | 0.20                                   | < 0.5                                    | -                                          |
| 05OS-109                                            | BE-71                                   | -                                         | 2.4                               | -                                                 | 3.0                                 | 0.19                                   | < 0.25                                   | -                                          |
| 04OS-249                                            | BE-72                                   | -                                         | 2.4                               | -                                                 | 1.1                                 | 0.22                                   | < 0.5                                    | -                                          |
| 05OS-108                                            | BE-72                                   | -                                         | 2.3                               | -                                                 | < 0.5                               | 0.23                                   | < 0.25                                   | -                                          |
| 04OS-247                                            | BE-73                                   | -                                         | 1.3                               | -                                                 | < 0.15                              | 0.30                                   | < 0.4                                    | -                                          |
| 05OS-111                                            | BE-73                                   | -                                         | 0.94                              | -                                                 | 2.8                                 | 0.19                                   | < 0.25                                   | -                                          |
| 04OS-250                                            | BE-74                                   | -                                         | 2.1                               | -                                                 | 2.1                                 | 0.27                                   | < 0.8                                    | -                                          |
| 05OS-110                                            | BE-74                                   | -                                         | 2.2                               | -                                                 | 1.6                                 | 0.31                                   | < 0.4                                    | -                                          |
| 02OS-304                                            | BR-01 (prior to completion)             | -                                         | 1.0                               | -                                                 | < 0.025                             | 0.040                                  | 0.27                                     | < 0.02                                     |
| 02OS-308                                            | BR-01 (prior to completion)             | -                                         | 1.5                               | -                                                 | < 0.05                              | 0.049                                  | < 0.05                                   | < 0.02                                     |
| 02OS-315                                            | BR-01 (prior to completion)             | -                                         | 1.7                               | -                                                 | < 0.025                             | 0.046                                  | < 0.05                                   | < 0.02                                     |
| 04OS-246                                            | BR-01S                                  | -                                         | < 0.20                            | -                                                 | < 0.075                             | 0.13                                   | < 0.8                                    | -                                          |
| 02OS-406                                            | BR-01D                                  | -                                         | 0.13                              | -                                                 | < 0.13                              | 0.12                                   | < 0.5                                    | < 0.8                                      |
| 02OS-503                                            | BR-01D                                  | -                                         | 0.31                              | -                                                 | 0.48                                | 0.051                                  | 0.07                                     | n 0.06                                     |
| 03OS-137                                            | BR-01D                                  | -                                         | 0.35                              | -                                                 | 0.03                                | 0.044                                  | 0.08                                     | < 0.04                                     |
| 03OS-215                                            | BR-01D                                  | -                                         | 0.36                              | -                                                 | 0.16                                | 0.045                                  | 0.08                                     | 0.02                                       |
| 04OS-241                                            | BR-01D                                  | -                                         | 0.34                              | -                                                 | 2.0                                 | 0.043                                  | 0.18                                     | -                                          |
| 05OS-103                                            | BR-01D                                  | -                                         | 0.34                              | -                                                 | 0.80                                | 0.043                                  | 0.05                                     | -                                          |
| 02OS-312                                            | BR-02 (prior to completion)             | -                                         | 2.8                               | -                                                 | < 0.13                              | 0.23                                   | < 0.2                                    | < 0.04                                     |
| 02OS-313                                            | BR-02 (prior to completion)             | 4.6                                       | 3.1                               | < 0.2                                             | < 0.13                              | 0.22                                   | < 0.2                                    | < 0.04                                     |
| 02OS-335                                            | BR-02D                                  | -                                         | 1.4                               | -                                                 | < 0.025                             | 0.10                                   | 0.23                                     | < 0.02                                     |
| 02OS-404                                            | BR-02D                                  | -                                         | 5.2                               | -                                                 | 0.27                                | 0.13                                   | < 0.5                                    | < 0.4                                      |
| 02OS-502                                            | BR-02D                                  | -                                         | 6.7                               | -                                                 | < 0.05                              | 0.079                                  | 8.4                                      | < 0.25                                     |
| 03OS-138                                            | BR-02D                                  | -                                         | 6.5                               | -                                                 | 1.5                                 | 0.12                                   | < 0.3                                    | < 0.3                                      |
| 03OS-214                                            | BR-02D                                  | -                                         | 6.2                               | -                                                 | 1.2                                 | 0.12                                   | 0.58                                     | < 0.2                                      |
| 04OS-243                                            | BR-02D                                  | -                                         | 6.1                               | -                                                 | 0.96                                | 0.12                                   | < 0.3                                    | -                                          |
| 05OS-101                                            | BR-02D                                  | -                                         | 6.1                               | -                                                 | 5.0                                 | 0.10                                   | < 0.15                                   | -                                          |
| <b>Site B; surface waters and reinjection tanks</b> |                                         |                                           |                                   |                                                   |                                     |                                        |                                          |                                            |
| 01OS-113                                            | small pool, near abandoned tank battery | < 0.1                                     | 0.11                              | -                                                 | < 0.13                              | 0.015                                  | < 0.4                                    | < 0.04                                     |
| 02OS-301                                            | small pool, near abandoned tank battery | -                                         | 0.25                              | -                                                 | < 0.25                              | 0.16                                   | < 0.3                                    | < 0.4                                      |
| 01OS-114                                            | large pool, nr BA-01 well               | 0.1                                       | 0.02                              | -                                                 | < 0.05                              | 0.002                                  | 0.66                                     | < 0.015                                    |
| 01OS-201                                            | EPA-1 "hand dug" hole                   | -                                         | 0.57                              | -                                                 | 130                                 | 2.85                                   | < 2                                      | < 1                                        |
| 02OS-311                                            | creek, near BA-01 well                  | -                                         | 0.05                              | -                                                 | 17                                  | 0.029                                  | < 0.15                                   | < 0.04                                     |
| 01OS-202                                            | injection pit                           | -                                         | 0.11                              | -                                                 | 1.8                                 | 0.16                                   | < 0.4                                    | < 0.2                                      |
| 02OS-316                                            | injection pit                           | -                                         | 0.45                              | -                                                 | < 0.50                              | 1.07                                   | < 1.5                                    | < 0.4                                      |
| 02OS-317                                            | main pit                                | 20                                        | 0.57                              | 0.4                                               | 41                                  | 1.40                                   | < 1                                      | < 0.2                                      |
| 02OS-510                                            | main pit                                | -                                         | 0.65                              | -                                                 | < 0.5                               | 2.06                                   | < 0.2                                    | < 0.25                                     |
| 02OS-314                                            | reinjection tank, produced water        | 70                                        | 2.9                               | < 0.2                                             | 36                                  | 8.48                                   | < 0.5                                    | < 0.1                                      |

ndix B. Analytic data for water samples

determined; column labeled q followed by an

|                                   |                              | organic                         |   | organic            |   | organic           |   | organic             |   | organic                 |   | organic            |   | organic             |   | organic                        |   |                     |   |
|-----------------------------------|------------------------------|---------------------------------|---|--------------------|---|-------------------|---|---------------------|---|-------------------------|---|--------------------|---|---------------------|---|--------------------------------|---|---------------------|---|
| Field Sample ID                   | Station name                 | Total organic carbon, dissolved |   | Acetate, dissolved |   | Benzene dissolved |   | Butyrate, dissolved |   | Ethylbenzene, dissolved |   | Formate, dissolved |   | Malonate, dissolved |   | m-Xylene + p-Xylene, dissolved |   | o-Xylene, dissolved |   |
|                                   |                              | (mg/L)                          | q | (mg/L)             | q | (mg/L)            | q | (mg/L)              | q | (mg/L)                  | q | (mg/L)             | q | (mg/L)              | q | (mg/L)                         | q | (mg/L)              | q |
| Local domestic ground water wells |                              |                                 |   |                    |   |                   |   |                     |   |                         |   |                    |   |                     |   |                                |   |                     |   |
| 01OS-101                          | Bolin well                   | -                               | < | 0.02               |   | -                 | < | 0.05                |   | -                       |   | 0.02               | < | 0.15                |   | -                              |   | -                   |   |
| 01OS-102                          | Hurn well                    | 0.4                             | < | 0.02               |   | -                 | < | 0.05                |   | -                       |   | 0.05               | < | 0.08                |   | -                              |   | -                   |   |
| Local oil/gas wells               |                              |                                 |   |                    |   |                   |   |                     |   |                         |   |                    |   |                     |   |                                |   |                     |   |
| 01OS-103                          | Reynolds #4                  | 5.4                             |   | 0.87               |   | 0.76              | < | 0.25                |   | 0.005                   |   | 0.25               | < | 0.15                |   | 0.022                          |   | 0.025               |   |
| 01OS-104                          | ECC #10                      | 2.5                             |   | 2.2                |   | -                 | < | 0.25                |   | -                       |   | 0.14               | < | 0.15                |   | -                              |   | -                   |   |
| 01OS-105                          | ECC #3                       | 3.4                             |   | 0.52               |   | 0.70              | < | 0.25                |   | 0.004                   |   | 0.36               | < | 0.15                |   | 0.020                          |   | 0.028               |   |
| 01OS-106                          | Lebow #8                     | 3.0                             |   | 2.4                |   | 0.49              | < | 0.25                |   | 0.011                   |   | 0.38               | < | 0.15                |   | 0.048                          |   | 0.047               |   |
| 01OS-107                          | Millard #3                   | 1.9                             |   | 0.61               |   | -                 | < | 0.25                |   | -                       |   | 0.38               | < | 0.15                |   | -                              |   | -                   |   |
| 01OS-108                          | ECC #5                       | 5.8                             |   | 5.2                |   | 0.90              | < | 0.25                |   | 0.006                   |   | 0.26               | < | 0.15                |   | 0.028                          |   | 0.043               |   |
| 01OS-109                          | Ungermann #1                 | 6.6                             |   | 1.5                |   | 0.23              | < | 0.25                |   | 0.016                   |   | 0.38               | < | 0.15                |   | 0.076                          |   | 0.089               |   |
| 01OS-110                          | TEC T1-19 (coal-bed methane) | 4.3                             |   | 1.4                |   | 0.34              | < | 0.25                |   | 0.020                   |   | 0.32               | < | 0.15                |   | 0.077                          |   | 0.065               |   |
| Skiatook Lake                     |                              |                                 |   |                    |   |                   |   |                     |   |                         |   |                    |   |                     |   |                                |   |                     |   |
| 01OS-111                          | Skiatook Lake, near dam      | 4.5                             |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-309                          | Skiatook Lake, site B        | 3.8                             |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-310                          | Skiatook Lake, site B        | 3.8                             |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-338                          | Skiatook Lake, site B        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-339                          | Skiatook Lake, site A        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-520                          | Skiatook Lake, site B        | 4.4                             |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-212                          | Skiatook Lake, site A        | 4.8                             |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| Site A; monitoring wells          |                              |                                 |   |                    |   |                   |   |                     |   |                         |   |                    |   |                     |   |                                |   |                     |   |
| 02OS-430                          | AA-01D                       | 99                              |   | 170                |   | -                 | < | 0.2                 |   | -                       | < | 0.08               | < | 0.4                 |   | -                              |   | -                   |   |
| 02OS-523                          | AA-01D                       | 498                             |   | -                  |   | 0.20              |   | -                   | < | 0.15                    |   | -                  |   | -                   | < | 0.19                           | < | 0.09                |   |
| 03OS-108                          | AA-01D                       | 255                             |   | 660                | n | 0.006             | < | 0.35                | n | 0.007                   |   | 0.35               | < | 0.1                 | n | 0.005                          | n | 0.020               |   |
| 03OS-205                          | AA-01D                       | 122                             |   | 260                |   | 0.041             | < | 0.32                | n | 0.002                   |   | 0.19               | < | 0.06                | n | 0.003                          | < | 0.09                |   |
| 04OS-105                          | AA-01D                       | 31                              |   | 0.11               |   | -                 | < | 0.1                 |   | -                       |   | 0.14               |   | -                   |   | -                              |   | -                   |   |
| 04OS-203                          | AA-01D                       | 12                              |   | 0.08               | < | 0.005             | < | 0.1                 | < | 0.005                   |   | 0.08               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-134                          | AA-01D                       | 12                              |   | 0.9                | < | 0.005             | < | 0.25                | < | 0.005                   | < | 0.1                |   | -                   | < | 0.01                           | < | 0.006               |   |
| 02OS-337                          | AA-02S                       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-426                          | AA-02S                       | 2.4                             |   | 0.08               |   | -                 | < | 0.2                 |   | -                       |   | 0.09               | < | 0.2                 |   | -                              |   | -                   |   |
| 02OS-522                          | AA-02S                       | 2.5                             |   | -                  | < | 0.075             |   | -                   | < | 0.15                    |   | -                  |   | -                   | < | 0.19                           | < | 0.09                |   |
| 03OS-106                          | AA-02S                       | 2.6                             |   | 0.03               | n | 0.007             | < | 0.1                 | n | 0.004                   |   | 0.04               | < | 0.05                | n | 0.004                          | n | 0.011               |   |
| 03OS-207                          | AA-02S                       | 2.8                             |   | 0.04               | < | 0.010             | < | 0.07                | n | 0.001                   |   | 0.05               | < | 0.03                | < | 0.012                          | < | 0.009               |   |
| 04OS-104                          | AA-02S                       | 1.9                             |   | 0.03               |   | -                 | < | 0.05                |   | -                       | < | 0.02               |   | -                   |   | -                              |   | -                   |   |
| 04OS-230                          | AA-02S                       | 1.9                             |   | 0.05               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-139                          | AA-02S                       | 2.8                             |   | 0.06               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 02OS-336                          | AA-02D                       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-427                          | AA-02D                       | 113                             |   | 200                |   | -                 | < | 0.2                 |   | -                       | < | 0.08               | < | 0.25                |   | -                              |   | -                   |   |
| 02OS-527                          | AA-02D                       | 30                              |   | -                  |   | 0.21              |   | -                   |   | 0.21                    |   | -                  |   | -                   | < | 0.19                           | < | 0.09                |   |
| 03OS-107                          | AA-02D                       | 10                              | < | 0.02               | < | 0.04              | < | 0.1                 | n | 0.007                   | < | 0.05               | < | 0.3                 | < | 0.075                          | < | 0.05                |   |
| 03OS-208                          | AA-02D                       | 4.0                             |   | 0.04               |   | 0.028             | < | 0.27                | n | 0.004                   | < | 0.04               | < | 0.65                | n | 0.04                           | < | 0.009               |   |
| 04OS-103                          | AA-02D                       | 2.9                             |   | 3.0                |   | -                 | < | 0.1                 |   | -                       | < | 0.04               |   | -                   |   | -                              |   | -                   |   |

| Field Sample ID | Station name | Total organic carbon, dissolved |   | Acetate, dissolved |   | Benzene dissolved |   | Butyrate, dissolved |   | Ethylbenzene, dissolved |   | Formate, dissolved |   | Malonate, dissolved |   | m-Xylene + p-Xylene, dissolved |   | o-Xylene, dissolved |   |
|-----------------|--------------|---------------------------------|---|--------------------|---|-------------------|---|---------------------|---|-------------------------|---|--------------------|---|---------------------|---|--------------------------------|---|---------------------|---|
|                 |              | (mg/L)                          | q | (mg/L)             | q | (mg/L)            | q | (mg/L)              | q | (mg/L)                  | q | (mg/L)             | q | (mg/L)              | q | (mg/L)                         | q | (mg/L)              | q |
| 04OS-231        | AA-02D       | 5.1                             |   | 3.0                | < | 0.005             | < | 0.1                 | < | 0.005                   |   | 0.05               | < | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-140        | AA-02D       | 3.9                             |   | 0.79               | < | 0.005             | < | 0.05                | < | 0.005                   |   | 0.02               | < | -                   | < | 0.01                           | < | 0.006               |   |
| 02OS-428        | AA-03S       | 53                              |   | 100                |   | -                 | < | 0.2                 |   | -                       | < | 0.08               | < | 0.06                |   | -                              |   | -                   |   |
| 03OS-103        | AA-03S       | 4.4                             | < | 0.02               | n | 0.006             | < | 0.05                | < | 0.05                    |   | 0.03               | < | 0.02                | n | 0.004                          |   | 0.062               |   |
| 03OS-203        | AA-03S       | 5.1                             |   | 0.02               | n | 0.001             | < | 0.05                | n | 0.003                   |   | 0.11               | < | 0.03                | n | 0.002                          | n | 0.001               |   |
| 04OS-205        | AA-03S       | 4.4                             |   | 0.07               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-142        | AA-03S       | 5.0                             |   | 0.10               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 02OS-429        | AA-03D       | 203                             |   | 520                |   | -                 |   | 0.51                |   | -                       | < | 0.08               | < | 0.06                |   | -                              |   | -                   |   |
| 02OS-524        | AA-03D       | 20                              |   | -                  |   | 0.21              |   | -                   | < | 0.15                    |   | -                  |   | -                   | < | 0.19                           | < | 0.09                |   |
| 03OS-104        | AA-03D       | 19                              |   | 0.09               | n | 0.005             |   | 0.1                 | n | 0.007                   |   | 0.13               | < | 0.05                | n | 0.007                          | < | 0.05                |   |
| 03OS-204        | AA-03D       | 8.4                             |   | 0.04               | n | 0.001             | < | 0.27                | n | 0.002                   |   | 0.05               | < | 0.05                | n | 0.001                          | < | 0.009               |   |
| 04OS-116        | AA-03D       | 8.0                             |   | 0.05               |   | -                 | < | 0.05                |   | -                       | < | 0.02               |   | -                   |   | -                              |   | -                   |   |
| 04OS-211        | AA-03D       | 4.4                             |   | 0.03               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-141        | AA-03D       | 5.8                             |   | 0.07               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 02OS-424        | AA-04S       | 3.6                             | < | 0.04               |   | -                 | < | 0.05                |   | -                       | < | 0.04               | < | 0.06                |   | -                              |   | -                   |   |
| 02OS-526        | AA-04S       | 3.5                             |   | -                  | < | 0.075             |   | -                   | < | 0.15                    |   | -                  |   | -                   | < | 0.19                           | < | 0.09                |   |
| 03OS-101        | AA-04S       | 3.6                             | < | 0.02               | n | 0.013             | < | 0.05                | n | 0.003                   |   | 0.05               | < | 0.1                 | n | 0.026                          | n | 0.02                |   |
| 03OS-201        | AA-04S       | 3.5                             | < | 0.02               | < | 0.010             | < | 0.05                | < | 0.007                   |   | 0.06               | < | 0.1                 | n | 0.001                          | < | 0.009               |   |
| 04OS-109        | AA-04S       | 3.3                             |   | 0.05               |   | -                 | < | 0.05                |   | -                       | < | 0.02               |   | -                   |   | -                              |   | -                   |   |
| 04OS-201        | AA-04S       | 3.0                             |   | 0.03               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-112        | AA-04S       | 2.0                             |   | 0.28               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 02OS-425        | AA-04D       | 1.9                             | < | 0.04               |   | -                 | < | 0.1                 |   | -                       | < | 0.08               | < | 0.03                |   | -                              |   | -                   |   |
| 02OS-525        | AA-04D       | 3.6                             |   | -                  |   | 0.21              |   | -                   | < | 0.15                    |   | -                  |   | -                   | < | 0.19                           | < | 0.09                |   |
| 03OS-102        | AA-04D       | 3.3                             | < | 0.02               | n | 0.009             | < | 0.05                | n | 0.022                   |   | 0.04               | < | 0.05                | n | 0.021                          | < | 0.05                |   |
| 03OS-202        | AA-04D       | 4.6                             |   | 0.03               | < | 0.010             | < | 0.05                | < | 0.007                   |   | 0.04               | < | 0.1                 | n | 0.002                          | < | 0.009               |   |
| 05OS-113        | AA-04D       | 2.0                             |   | 0.07               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-117        | AA-05S       | 6.1                             |   | 0.06               | < | 0.01              | < | 0.05                | < | 0.01                    |   | 0.03               |   | -                   | < | 0.01                           | < | 0.01                |   |
| 04OS-226        | AA-05S       | 3.3                             |   | 0.04               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-118        | AA-05S       | 2.9                             |   | 0.16               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-118        | AA-05D       | 1.2                             |   | 0.28               | < | 0.010             | < | 0.1                 | < | 0.01                    | < | 0.04               |   | -                   | < | 0.01                           | < | 0.01                |   |
| 04OS-216        | AA-05D       | 0.4                             | < | 0.04               | < | 0.005             | < | 0.1                 | < | 0.005                   |   | 0.09               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-117        | AA-05D       | 0.6                             |   | 0.06               | < | 0.005             | < | 0.05                | < | 0.005                   |   | 0.04               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-119        | AA-06S       | 3.6                             |   | 0.10               |   | 0.006             | < | 0.1                 | < | 0.01                    |   | 0.07               |   | -                   | < | 0.01                           | < | 0.01                |   |
| 04OS-233        | AA-06S       | 2.9                             |   | 0.16               | n | 0.001             | < | 0.1                 | < | 0.005                   | < | 0.04               |   | -                   | < | 0.01                           | n | 0.001               |   |
| 05OS-136        | AA-06S       | 1.7                             |   | 0.12               | < | 0.005             | < | 0.1                 | < | 0.005                   | < | 0.04               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-120        | AA-06D       | 10                              |   | 0.26               | n | 0.002             | < | 0.15                | < | 0.01                    | < | 0.06               |   | -                   | < | 0.01                           | < | 0.01                |   |
| 04OS-234        | AA-06D       | 1.7                             |   | 0.30               | < | 0.005             | < | 0.1                 | < | 0.005                   |   | 0.08               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-135        | AA-06D       | 3.2                             |   | 0.18               | n | 0.002             | < | 0.1                 | n | 0.001                   | < | 0.04               |   | -                   | < | 0.01                           | n | 0.001               |   |
| 04OS-121        | AA-07S       | 38                              |   | 0.38               | n | 0.001             | < | 0.25                | < | 0.01                    |   | 0.34               |   | -                   | < | 0.01                           | n | 0.001               |   |
| 04OS-222        | AA-07S       | 3.3                             | < | 0.04               | < | 0.005             | < | 0.1                 | < | 0.005                   | < | 0.04               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-138        | AA-07S       | 2.2                             |   | 0.17               | < | 0.005             | < | 0.1                 | < | 0.005                   | < | 0.04               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-153        | AA-07D       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-223        | AA-07D       | 3.7                             |   | 0.10               | < | 0.005             | < | 0.15                | < | 0.005                   | < | 0.06               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-137        | AA-07D       | 2.4                             |   | 0.28               | < | 0.005             | < | 0.1                 | < | 0.005                   | < | 0.04               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-157        | AA-08S       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |

| Field Sample ID | Station name | Total organic carbon, dissolved |   | Acetate, dissolved |   | Benzene dissolved |   | Butyrate, dissolved |   | Ethylbenzene, dissolved |   | Formate, dissolved |   | Malonate, dissolved |   | m-Xylene + p-Xylene, dissolved |   | o-Xylene, dissolved |   |
|-----------------|--------------|---------------------------------|---|--------------------|---|-------------------|---|---------------------|---|-------------------------|---|--------------------|---|---------------------|---|--------------------------------|---|---------------------|---|
|                 |              | (mg/L)                          | q | (mg/L)             | q | (mg/L)            | q | (mg/L)              | q | (mg/L)                  | q | (mg/L)             | q | (mg/L)              | q | (mg/L)                         | q | (mg/L)              | q |
| 04OS-221        | AA-08S       | 25                              |   | 2.2                | < | 0.005             | < | 0.15                | < | 0.005                   |   | 0.07               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-123        | AA-08S       | 13                              |   | 1.0                | < | 0.005             | < | 0.25                | < | 0.005                   | < | 0.1                |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-156        | AA-08D       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-218        | AA-08D       | 13                              |   | 2.1                | < | 0.005             | < | 0.15                | < | 0.005                   |   | 0.10               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-124        | AA-08D       | 0.8                             | < | 0.02               | < | 0.005             | < | 0.05                | < | 0.005                   |   | 0.05               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-155        | AA-09S       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-232        | AA-09S       | 5.3                             |   | 0.32               | < | 0.005             | < | 0.15                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-122        | AA-09S       | 22                              |   | 1.1                | < | 0.005             | < | 0.25                | < | 0.005                   | < | 0.1                |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-154        | AA-09D       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-217        | AA-09D       | 0.4                             | < | 0.06               | < | 0.005             | < | 0.15                | < | 0.005                   |   | 0.08               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-121        | AA-09D       | 0.6                             | < | 0.02               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-152        | AA-10S       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-224        | AA-10S       | 15                              |   | 0.08               |   | 0.010             | < | 0.05                | < | 0.005                   |   | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-127        | AA-10S       | 10                              |   | 0.27               | < | 0.005             | < | 0.05                | n | 0.001                   |   | 0.03               |   | -                   | n | 0.003                          | n | 0.001               |   |
| 04OS-151        | AA-10M       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-229        | AA-10M       | 26                              |   | 3.1                | < | 0.005             | < | 0.05                | < | 0.005                   |   | 0.07               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-126        | AA-10M       | 4.4                             |   | 0.08               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-158        | AA-10D       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-215        | AA-10D       | 1.2                             | < | 0.06               |   | 0.35              | < | 0.15                |   | 0.015                   |   | 0.11               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-125        | AA-10D       | 2.3                             |   | 0.04               |   | 0.18              | < | 0.05                | n | 0.004                   |   | 0.03               |   | -                   | n | 0.003                          | < | 0.006               |   |
| 04OS-161        | AA-11S       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-225        | AA-11S       | 4.3                             |   | 0.26               | < | 0.005             | < | 0.05                | < | 0.005                   |   | 0.03               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-131        | AA-11S       | 2.2                             |   | 0.10               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-160        | AA-11M       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-228        | AA-11M       | 25                              |   | 9.9                |   | 0.013             | < | 0.1                 |   | 0.005                   |   | 0.04               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-132        | AA-11M       | 7.1                             |   | 0.10               |   | 0.006             | < | 0.05                |   | 0.009                   |   | 0.03               |   | -                   |   | 0.036                          |   | 0.012               |   |
| 04OS-159        | AA-11D       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-213        | AA-11D       | 1.9                             | < | 0.02               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-130        | AA-11D       | 1.2                             |   | 0.04               | n | 0.001             | < | 0.05                | n | 0.0004                  | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-165        | AA-12S       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-227        | AA-12S       | 20                              |   | 1.2                | < | 0.005             | < | 0.1                 | < | 0.005                   |   | 0.05               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-114        | AA-12S       | 5.9                             |   | 0.10               | < | 0.005             | < | 0.05                | < | 0.005                   |   | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-164        | AA-12D       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-214        | AA-12D       | 0.5                             | < | 0.06               | < | 0.005             | < | 0.15                | < | 0.005                   | < | 0.06               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-115        | AA-12D       | 1.5                             |   | 0.05               | < | 0.005             | < | 0.05                | < | 0.005                   |   | 0.06               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-163        | AA-13S       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-220        | AA-13S       | 72                              |   | 52                 | < | 0.005             | < | 0.1                 | < | 0.005                   |   | 0.17               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-119        | AA-13S       | 25                              |   | 0.38               | < | 0.005             | < | 0.15                | < | 0.005                   | < | 0.06               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-162        | AA-13D       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-219        | AA-13D       | 25                              |   | 9.8                | < | 0.005             | < | 0.15                | < | 0.005                   |   | 0.09               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-120        | AA-13D       | 10                              |   | 0.69               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 03OS-155        | AA-60S       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 03OS-218        | AA-60S       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-108        | AA-60S       | 18                              |   | 0.17               |   | -                 | < | 0.15                |   | -                       |   | 0.22               |   | -                   |   | -                              |   | -                   |   |
| 03OS-154        | AA-60D       | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |

| Field Sample ID | Station name | Total organic carbon, dissolved |   | Acetate, dissolved |   | Benzene dissolved |   | Butyrate, dissolved |   | Ethylbenzene, dissolved |   | Formate, dissolved |   | Malonate, dissolved |   | m-Xylene + p-Xylene, dissolved |   | o-Xylene, dissolved |   |
|-----------------|--------------|---------------------------------|---|--------------------|---|-------------------|---|---------------------|---|-------------------------|---|--------------------|---|---------------------|---|--------------------------------|---|---------------------|---|
|                 |              | (mg/L)                          | q | (mg/L)             | q | (mg/L)            | q | (mg/L)              | q | (mg/L)                  | q | (mg/L)             | q | (mg/L)              | q | (mg/L)                         | q | (mg/L)              | q |
| 03OS-210        | AA-60D       | 1.9                             |   | 0.71               | n | 0.002             | < | 0.05                | < | 0.007                   |   | 0.06               | < | 0.1                 | n | 0.001                          | < | 0.009               |   |
| 04OS-107        | AA-60D       | 1.1                             |   | 0.68               |   | -                 | < | 0.05                |   | -                       |   | 0.03               |   | -                   |   | -                              |   | -                   |   |
| 04OS-204        | AA-60D       | 0.7                             | < | 0.02               | < | 0.005             | < | 0.05                | < | 0.005                   |   | 0.03               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-116        | AA-60D       | 1.2                             |   | 0.07               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 03OS-153        | AA-61        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 03OS-209        | AA-61        | 12                              |   | 11                 |   | 0.020             | < | 0.07                |   | 0.009                   |   | 0.08               | < | 0.2                 | n | 0.005                          |   | 0.01                |   |
| 04OS-101        | AA-61        | 4.8                             | < | 0.04               |   | -                 | < | 0.1                 |   | -                       | < | 0.04               |   | -                   |   | -                              |   | -                   |   |
| 04OS-206        | AA-61        | 3.8                             |   | 0.09               | < | 0.005             | < | 0.1                 | < | 0.005                   | < | 0.04               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-129        | AA-61        | 3.1                             |   | 0.11               |   | 0.008             | < | 0.15                | < | 0.005                   | < | 0.06               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 04OS-202        | AA-62        | 2.2                             |   | 0.05               | < | 0.005             | < | 0.1                 | < | 0.005                   | < | 0.04               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 05OS-128        | AA-62        | 2.2                             |   | 0.59               | < | 0.005             | < | 0.1                 | < | 0.005                   | < | 0.04               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 02OS-434        | AE-04        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-332        | AE-05        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-333        | AE-06        | -                               |   | -                  | < | 0.075             |   | -                   | < | 0.15                    |   | -                  |   | -                   | < | 0.19                           | < | 0.09                |   |
| 02OS-435        | AE-06        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-111        | AE-06        | 9.1                             | < | 0.02               |   | -                 | < | 0.05                |   | -                       |   | 0.03               |   | -                   |   | -                              |   | -                   |   |
| 02OS-334        | AE-07        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-110        | AE-07        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-326        | AE-08        | -                               |   | 0.27               | < | 0.075             | < | 0.25                | < | 0.15                    |   | 0.26               | < | 0.5                 | < | 0.19                           | < | 0.09                |   |
| 02OS-432        | AE-08        | 9.4                             |   | 0.57               |   | -                 | < | 0.1                 |   | -                       |   | 0.36               | < | 0.06                |   | -                              |   | -                   |   |
| 04OS-114        | AE-08        | 10                              |   | 0.34               |   | -                 | < | 0.15                |   | -                       | < | 0.06               |   | -                   |   | -                              |   | -                   |   |
| 02OS-331        | AE-10        | 11                              |   | 0.19               | < | 0.075             | < | 0.05                | < | 0.15                    |   | 0.15               | < | 0.08                | < | 0.19                           | < | 0.09                |   |
| 02OS-328        | AE-12        | 69                              |   | 0.48               | < | 0.075             | < | 0.1                 | < | 0.15                    |   | 1.2                | < | 0.08                | < | 0.19                           | < | 0.09                |   |
| 02OS-436        | AE-12        | 106                             |   | 0.23               |   | -                 | < | 0.1                 |   | -                       |   | 0.28               | < | 0.1                 |   | -                              |   | -                   |   |
| 02OS-325        | AE-13        | -                               |   | -                  | < | 0.075             |   | -                   | < | 0.15                    |   | -                  |   | -                   |   | 0.68                           | < | 0.09                |   |
| 02OS-329        | AE-13        | 4.7                             |   | 0.29               | < | 0.075             | < | 0.05                | < | 0.15                    |   | 0.21               | < | 0.08                | < | 0.19                           | < | 0.09                |   |
| 02OS-431        | AE-13        | 5.1                             |   | 0.04               |   | -                 | < | 0.05                |   | -                       | < | 0.04               | < | 0.08                |   | -                              |   | -                   |   |
| 03OS-118        | AE-13        | 6.8                             |   | 0.04               | < | 0.04              | < | 0.05                | < | 0.05                    |   | 0.04               | < | 0.04                | < | 0.075                          | n | 0.015               |   |
| 03OS-223        | AE-13        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-102        | AE-13        | 4.4                             |   | 0.14               |   | -                 | < | 0.05                |   | -                       |   | 0.10               |   | -                   |   | -                              |   | -                   |   |
| 04OS-207        | AE-13        | 4.3                             |   | 0.12               | < | 0.005             | < | 0.05                | < | 0.005                   | < | 0.02               |   | -                   | < | 0.01                           | < | 0.006               |   |
| 03OS-116        | AE-14        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-330        | AE-15        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-437        | AE-15        | -                               |   | 0.07               |   | -                 | < | 0.2                 |   | -                       | < | 0.08               | < | 0.2                 |   | -                              |   | -                   |   |
| 03OS-115        | AE-15        | 6.5                             |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 03OS-113        | AE-16        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 03OS-114        | AE-17        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 03OS-112        | AE-18        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 02OS-433        | AE-19        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 03OS-109        | AE-51        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 03OS-220        | AE-51        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 03OS-219        | AE-52        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |
| 04OS-208        | AE-52        | 2.4                             |   | 0.74               | < | 0.005             | < | 0.25                | < | 0.005                   | < | 0.1                |   | -                   | < | 0.01                           | < | 0.006               |   |
| 03OS-111        | AE-53        | 10                              |   | 0.03               | n | 0.004             | < | 0.05                | n | 0.004                   |   | 0.05               | < | 0.1                 | < | 0.075                          | n | 0.031               |   |
| 03OS-222        | AE-53        | -                               |   | -                  |   | -                 |   | -                   |   | -                       |   | -                  |   | -                   |   | -                              |   | -                   |   |

| Field<br>Sample<br>ID    | Station name | Total<br>organic<br>carbon,<br>dissolved |   | Acetate,<br>dissolved |   | Benzene<br>dissolved |   | Butyrate,<br>dissolved |   | Ethylbenzene,<br>dissolved |   | Formate,<br>dissolved |   | Malonate,<br>dissolved |   | m-Xylene +<br>p-Xylene,<br>dissolved |   | o-Xylene,<br>dissolved |   |
|--------------------------|--------------|------------------------------------------|---|-----------------------|---|----------------------|---|------------------------|---|----------------------------|---|-----------------------|---|------------------------|---|--------------------------------------|---|------------------------|---|
|                          |              | (mg/L)                                   | q | (mg/L)                | q | (mg/L)               | q | (mg/L)                 | q | (mg/L)                     | q | (mg/L)                | q | (mg/L)                 | q | (mg/L)                               | q | (mg/L)                 | q |
| 04OS-106                 | AE-53        | 2.5                                      |   | 0.24                  |   | -                    | < | 0.15                   |   | -                          | < | 0.06                  |   | -                      |   | -                                    |   | -                      |   |
| 04OS-210                 | AE-53        | 4.9                                      |   | 0.06                  | < | 0.005                | < | 0.05                   | < | 0.005                      | < | 0.02                  |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 03OS-110                 | AE-54        | 2.0                                      |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 03OS-221                 | AE-54        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 04OS-209                 | AE-54        | 1.9                                      |   | 0.11                  | < | 0.005                | < | 0.05                   | < | 0.005                      | < | 0.02                  |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 03OS-117                 | AE-56        | 93                                       |   | 0.57                  |   | 1.6                  | < | 0.1                    |   | 0.087                      |   | 0.4                   | < | 0.04                   | n | 0.033                                |   | 0.062                  |   |
| 04OS-112                 | AE-56        | 82                                       |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-324                 | AP-01        | -                                        |   | 210                   |   | 0.29                 |   | 4.2                    | < | 0.15                       |   | 3.1                   |   | 0.17                   | < | 0.19                                 | < | 0.09                   |   |
| 02OS-327                 | AR-01        | 1.1                                      |   | 0.03                  |   | 0.054                | < | 0.05                   | < | 0.05                       |   | 0.04                  | < | 0.08                   | < | 0.075                                | < | 0.05                   |   |
| 02OS-438                 | AR-01        | 4.4                                      |   | 0.07                  |   | 0.17                 | < | 0.1                    | < | 0.05                       |   | 0.07                  | < | 0.2                    | < | 0.075                                | < | 0.05                   |   |
| 03OS-105                 | AR-01        | 2.4                                      |   | 0.22                  |   | 1.24                 | < | 0.05                   | < | 0.05                       |   | 0.02                  | < | 0.08                   | < | 0.075                                | < | 0.05                   |   |
| 03OS-206                 | AR-01        | 5.3                                      |   | 0.04                  |   | 0.28                 | < | 0.07                   |   | 0.023                      |   | 0.03                  | < | 0.03                   |   | 0.018                                | < | 0.009                  |   |
| 04OS-113                 | AR-01        | 5.9                                      |   | 0.06                  |   | -                    | < | 0.05                   |   | -                          |   | 0.09                  |   | -                      |   | -                                    |   | -                      |   |
| 04OS-235                 | AR-01        | 1.8                                      |   | 0.04                  |   | 0.060                | < | 0.05                   | n | 0.001                      |   | 0.03                  |   | -                      | n | 0.001                                | n | 0.004                  |   |
| 05OS-133                 | AR-01        | 2.8                                      |   | 0.12                  |   | 0.036                | < | 0.05                   | n | 0.001                      |   | 0.03                  |   | -                      | n | 0.001                                | < | 0.006                  |   |
| Site B; monitoring wells |              |                                          |   |                       |   |                      |   |                        |   |                            |   |                       |   |                        |   |                                      |   |                        |   |
| 02OS-322                 | BA-01S       | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-403                 | BA-01S       | 7.6                                      |   | 0.90                  |   | -                    | < | 0.05                   |   | -                          | < | 0.04                  | < | 0.08                   |   | -                                    |   | -                      |   |
| 02OS-516                 | BA-01S       | 7.4                                      |   | -                     |   | 0.20                 |   | -                      | < | 0.15                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-141                 | BA-01S       | 7.2                                      |   | 0.03                  | n | 0.006                | < | 0.05                   | < | 0.05                       |   | 0.03                  | < | 0.03                   | < | 0.075                                | < | 0.05                   |   |
| 03OS-216                 | BA-01S       | 7.5                                      |   | 0.03                  |   | 0.001                | < | 0.07                   | n | 0.005                      | < | 0.02                  | < | 0.2                    | < | 0.012                                | < | 0.009                  |   |
| 04OS-125                 | BA-01S       | 6.9                                      |   | 0.18                  | n | 0.001                | < | 0.05                   | < | 0.01                       | < | 0.02                  |   | -                      | < | 0.01                                 | n | 0.001                  |   |
| 04OS-239                 | BA-01S       | 8.3                                      | < | 0.1                   | < | 0.005                | < | 0.25                   | < | 0.005                      | < | 0.15                  |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 05OS-106                 | BA-01S       | 7.2                                      | < | 0.1                   | < | 0.005                | < | 0.25                   | < | 0.005                      | < | 0.1                   |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 02OS-323                 | BA-01D       | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-405                 | BA-01D       | 1.1                                      | < | 0.04                  |   | -                    | < | 0.15                   |   | -                          | < | 0.04                  | < | 1.8                    |   | -                                    |   | -                      |   |
| 02OS-517                 | BA-01D       | 2.8                                      |   | -                     |   | 0.20                 |   | -                      | < | 0.15                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-142                 | BA-01D       | 1.9                                      | < | 0.04                  | n | 0.011                | < | 0.1                    | < | 0.05                       |   | 0.17                  | < | 0.65                   | < | 0.075                                | < | 0.05                   |   |
| 03OS-217                 | BA-01D       | 2.4                                      | < | 0.04                  | n | 0.001                | < | 0.14                   | n | 0.011                      |   | 0.05                  | < | 0.65                   | < | 0.012                                | < | 0.009                  |   |
| 04OS-126                 | BA-01D       | 1.0                                      |   | 0.14                  | < | 0.010                | < | 0.25                   | n | 0.002                      | < | 0.1                   |   | -                      | n | 0.002                                | < | 0.01                   |   |
| 04OS-240                 | BA-01D       | 1.1                                      |   | 0.39                  | < | 0.005                | < | 0.25                   | < | 0.005                      | < | 0.1                   |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 05OS-107                 | BA-01D       | 0.5                                      | < | 0.1                   | < | 0.005                | < | 0.15                   | < | 0.005                      | < | 0.06                  |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 02OS-318                 | BA-02S       | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-319                 | BA-02D       | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-401                 | BA-02D       | 12                                       |   | 0.03                  |   | -                    | < | 0.3                    |   | -                          | < | 0.04                  | < | 1.5                    |   | -                                    |   | -                      |   |
| 02OS-501                 | BA-02D       | 0.5                                      |   | -                     |   | 0.21                 |   | -                      |   | 0.22                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-119                 | BA-02D       | 1.2                                      | < | 0.04                  | < | 0.04                 | < | 0.1                    | n | 0.055                      | < | 0.04                  | < | 1.3                    | n | 0.015                                | n | 0.003                  |   |
| 03OS-211                 | BA-02D       | 1.0                                      |   | 0.09                  | < | 0.01                 | < | 0.14                   | < | 0.007                      | < | 0.04                  | < | 1.3                    | n | 0.001                                | < | 0.009                  |   |
| 04OS-124                 | BA-02D       | 1.0                                      |   | 0.26                  | < | 0.01                 | < | 0.25                   | < | 0.01                       | < | 0.1                   |   | -                      | < | 0.01                                 | < | 0.01                   |   |
| 04OS-238                 | BA-02D       | 0.7                                      | < | 0.1                   | < | 0.005                | < | 0.25                   | < | 0.005                      |   | 0.26                  |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 05OS-102                 | BA-02D       | 1.6                                      |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-320                 | BA-03S       | -                                        |   | -                     |   | 6.4                  |   | -                      |   | 0.72                       |   | -                     |   | -                      |   | 0.76                                 |   | 0.58                   |   |
| 02OS-504                 | BA-03S       | 4.8                                      |   | -                     |   | 0.21                 |   | -                      | < | 0.15                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-120                 | BA-03S       | 5.3                                      | < | 0.04                  | < | 0.04                 | < | 0.18                   | < | 0.05                       |   | 0.20                  | < | 0.2                    | n | 0.003                                | < | 0.05                   |   |
| 03OS-212                 | BA-03S       | 5.5                                      | < | 0.04                  | n | 0.002                | < | 0.11                   | n | 0.002                      |   | 0.06                  | < | 0.3                    | n | 0.001                                | < | 0.009                  |   |

| Field<br>Sample<br>ID | Station name | Total<br>organic<br>carbon,<br>dissolved |   | Acetate,<br>dissolved |   | Benzene<br>dissolved |   | Butyrate,<br>dissolved |   | Ethylbenzene,<br>dissolved |   | Formate,<br>dissolved |   | Malonate,<br>dissolved |   | m-Xylene +<br>p-Xylene,<br>dissolved |   | o-Xylene,<br>dissolved |   |
|-----------------------|--------------|------------------------------------------|---|-----------------------|---|----------------------|---|------------------------|---|----------------------------|---|-----------------------|---|------------------------|---|--------------------------------------|---|------------------------|---|
|                       |              | (mg/L)                                   | q | (mg/L)                | q | (mg/L)               | q | (mg/L)                 | q | (mg/L)                     | q | (mg/L)                | q | (mg/L)                 | q | (mg/L)                               | q | (mg/L)                 | q |
| 04OS-122              | BA-03S       | 6.3                                      |   | 0.18                  | n | 0.002                | < | 0.15                   | n | 0.003                      | < | 0.06                  |   | -                      | < | 0.01                                 | < | 0.01                   |   |
| 04OS-236              | BA-03S       | 5.5                                      |   | 0.16                  | < | 0.005                | < | 0.15                   | < | 0.005                      | < | 0.06                  |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 05OS-105              | BA-03S       | 4.8                                      | < | 0.06                  | < | 0.005                | < | 0.15                   | < | 0.005                      | < | 0.06                  |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 02OS-321              | BA-03D       | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-402              | BA-03D       | 1.4                                      | < | 0.075                 |   | -                    | < | 0.1                    |   | -                          | < | 0.2                   | < | 1.0                    |   | -                                    |   | -                      |   |
| 02OS-505              | BA-03D       | 0.2                                      |   | -                     |   | 0.20                 |   | -                      |   | 0.21                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-121              | BA-03D       | 0.4                                      | < | 0.04                  | n | 0.011                | < | 0.1                    | < | 0.05                       | < | 0.04                  | < | 0.65                   | < | 0.075                                | n | 0.021                  |   |
| 03OS-213              | BA-03D       | 1.1                                      | < | 0.04                  | n | 0.0016               | < | 0.14                   | n | 0.001                      |   | 0.05                  | < | 0.5                    | n | 0.001                                | n | 0.001                  |   |
| 04OS-123              | BA-03D       | 0.8                                      |   | 0.66                  | < | 0.01                 | < | 0.25                   | < | 0.01                       | < | 0.1                   |   | -                      | < | 0.01                                 | < | 0.01                   |   |
| 04OS-237              | BA-03D       | 0.8                                      |   | 0.80                  | < | 0.005                | < | 0.25                   | < | 0.005                      | < | 0.1                   |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 05OS-104              | BA-03D       | 0.4                                      | < | 0.1                   | < | 0.005                | < | 0.25                   | < | 0.005                      | < | 0.1                   |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 02OS-423              | BE-01        | 13                                       |   | 3.8                   |   | -                    |   | 0.23                   |   | -                          |   | 0.22                  | < | 1.6                    |   | -                                    |   | -                      |   |
| 04OS-144              | BE-01        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-303              | BE-03        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-411              | BE-03        | 7.5                                      | < | 0.04                  |   | -                    | < | 0.1                    |   | -                          |   | 0.05                  | < | 0.08                   |   | -                                    |   | -                      |   |
| 03OS-144              | BE-03        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-408              | BE-04        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 03OS-148              | BE-04        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 04OS-242              | BE-04        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-409              | BE-06        | -                                        | < | 0.04                  |   | -                    | < | 0.075                  |   | -                          |   | 0.06                  | < | 0.08                   |   | -                                    |   | -                      |   |
| 02OS-519              | BE-06        | 13                                       |   | -                     |   | 0.21                 |   | -                      | < | 0.15                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-139              | BE-06        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-305              | BE-07        | 28                                       |   | 0.28                  | < | 0.075                | < | 0.1                    | < | 0.15                       |   | 0.37                  | < | 0.03                   | < | 0.19                                 | < | 0.09                   |   |
| 02OS-414              | BE-07        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-415              | BE-07        | 28                                       |   | 0.07                  |   | -                    | < | 0.1                    |   | -                          |   | 0.15                  | < | 0.03                   |   | -                                    |   | -                      |   |
| 02OS-508              | BE-07        | 29                                       |   | -                     |   | 0.23                 |   | -                      | < | 0.15                       |   | -                     |   | -                      | < | 0.19                                 |   | 0.52                   |   |
| 03OS-151              | BE-07        | 25                                       |   | 0.16                  |   | 0.11                 | < | 0.05                   |   | 0.13                       |   | 0.27                  | < | 0.02                   |   | 0.082                                |   | 0.22                   |   |
| 04OS-136              | BE-07        | 24                                       |   | 0.19                  |   | 0.014                | < | 0.05                   |   | 0.076                      |   | 0.19                  |   | -                      |   | 0.035                                |   | 0.029                  |   |
| 02OS-422              | BE-08        | 8.2                                      | < | 0.04                  |   | -                    | < | 0.25                   |   | -                          | < | 0.04                  | < | 1.6                    |   | -                                    |   | -                      |   |
| 02OS-515              | BE-08        | 55                                       |   | -                     | < | 0.075                |   | -                      |   | 0.21                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-147              | BE-08        | 61                                       |   | 0.16                  | < | 0.04                 | < | 0.1                    | < | 0.05                       |   | 0.16                  | < | 0.2                    | < | 0.075                                | < | 0.05                   |   |
| 04OS-129              | BE-08        | 83                                       | < | 0.1                   | n | 0.001                | < | 0.25                   | < | 0.01                       | < | 0.1                   |   | -                      | n | 0.001                                | < | 0.01                   |   |
| 02OS-412              | BE-09        | 21                                       | < | 0.02                  |   | -                    | < | 0.1                    |   | -                          |   | 0.03                  | < | 0.08                   |   | -                                    |   | -                      |   |
| 02OS-511              | BE-09        | 63                                       |   | -                     |   | 0.21                 |   | -                      | < | 0.15                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-146              | BE-09        | 48                                       |   | 0.32                  | < | 0.04                 |   | 0.03                   | n | 0.028                      |   | 0.39                  | < | 0.03                   | n | 0.072                                |   | 0.051                  |   |
| 04OS-128              | BE-09        | 75                                       |   | 0.25                  | n | 0.001                | < | 0.05                   | < | 0.01                       |   | 0.14                  |   | -                      |   | 0.005                                | < | 0.01                   |   |
| 02OS-413              | BE-10        | -                                        | < | 0.04                  |   | -                    | < | 0.05                   |   | -                          | < | 0.04                  | < | 0.2                    |   | -                                    |   | -                      |   |
| 02OS-507              | BE-10        | 17                                       |   | -                     | < | 0.075                |   | -                      |   | 0.214                      |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-129              | BE-10        | 15                                       | < | 0.02                  | < | 0.04                 | < | 0.05                   | < | 0.05                       |   | 0.03                  | < | 0.05                   | < | 0.075                                | n | 0.006                  |   |
| 04OS-131              | BE-10        | 27                                       |   | 0.09                  | n | 0.001                | < | 0.1                    | < | 0.01                       | < | 0.04                  |   | -                      | < | 0.01                                 | n | 0.001                  |   |
| 02OS-420              | BE-11        | 9.4                                      | < | 0.04                  |   | -                    | < | 0.1                    |   | -                          | < | 0.04                  | < | 0.2                    |   | -                                    |   | -                      |   |
| 02OS-506              | BE-11        | 10                                       |   | -                     | < | 0.075                |   | -                      | < | 0.15                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-128              | BE-11        | 18                                       |   | 0.10                  | n | 0.012                | < | 0.07                   | < | 0.05                       |   | 0.08                  | < | 0.2                    | < | 0.075                                |   | 0.76                   |   |
| 04OS-130              | BE-11        | 33                                       |   | 0.08                  | n | 0.001                | < | 0.06                   | n | 0.001                      |   | 0.03                  |   | -                      | n | 0.001                                | < | 0.01                   |   |
| 02OS-421              | BE-12        | 12                                       | < | 0.04                  |   | -                    | < | 0.15                   |   | -                          | < | 0.04                  | < | 1.0                    |   | -                                    |   | -                      |   |

| Field<br>Sample<br>ID | Station name | Total<br>organic<br>carbon,<br>dissolved |   | Acetate,<br>dissolved |   | Benzene<br>dissolved |   | Butyrate,<br>dissolved |   | Ethylbenzene,<br>dissolved |   | Formate,<br>dissolved |   | Malonate,<br>dissolved |   | m-Xylene +<br>p-Xylene,<br>dissolved |   | o-Xylene,<br>dissolved |   |
|-----------------------|--------------|------------------------------------------|---|-----------------------|---|----------------------|---|------------------------|---|----------------------------|---|-----------------------|---|------------------------|---|--------------------------------------|---|------------------------|---|
|                       |              | (mg/L)                                   | q | (mg/L)                | q | (mg/L)               | q | (mg/L)                 | q | (mg/L)                     | q | (mg/L)                | q | (mg/L)                 | q | (mg/L)                               | q | (mg/L)                 | q |
| 02OS-509              | BE-12        | 24                                       |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 03OS-145              | BE-12        | 33                                       |   | 0.15                  |   | -                    | < | 0.07                   |   | -                          |   | 0.14                  | < | 0.45                   |   | -                                    |   | -                      |   |
| 04OS-127              | BE-12        | 34                                       |   | 0.07                  | < | 0.010                | < | 0.05                   | < | 0.01                       | < | 0.02                  |   | -                      | < | 0.01                                 | < | 0.01                   |   |
| 02OS-307              | BE-13        | 12                                       |   | 0.56                  | < | 0.075                | < | 0.1                    | < | 0.15                       |   | 0.68                  | < | 0.08                   |   | 0.68                                 | < | 0.09                   |   |
| 02OS-416              | BE-13        | 11                                       | < | 0.02                  |   | -                    | < | 0.2                    |   | -                          | < | 0.04                  | < | 1.8                    |   | -                                    |   | -                      |   |
| 02OS-512              | BE-13        | 6.6                                      |   | -                     | < | 0.075                |   | -                      |   | 0.27                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-127              | BE-13        | 4.2                                      | < | 0.08                  | n | 0.008                | < | 0.28                   | n | 0.007                      | < | 0.08                  | < | 2.6                    | < | 0.075                                | n | 0.026                  |   |
| 04OS-138              | BE-13        | 5.8                                      |   | 0.45                  |   | -                    | < | 0.4                    |   | -                          | < | 0.16                  |   | -                      |   | -                                    |   | -                      |   |
| 02OS-410              | BE-15        | 19                                       | < | 0.02                  |   | -                    | < | 0.075                  |   | -                          |   | 0.04                  | < | 0.2                    |   | -                                    |   | -                      |   |
| 02OS-518              | BE-15        | 33                                       |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 03OS-140              | BE-15        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-417              | BE-16        | 14                                       |   | 0.04                  |   | -                    | < | 0.1                    |   | -                          |   | 0.05                  | < | 3.0                    |   | -                                    |   | -                      |   |
| 02OS-513              | BE-16        | 6.7                                      |   | -                     | < | 0.075                |   | -                      |   | 0.22                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-125              | BE-16        | 6.5                                      |   | -                     | < | 0.04                 |   | -                      | < | 0.05                       |   | -                     |   | -                      | n | 0.004                                | < | 0.05                   |   |
| 04OS-137              | BE-16        | 9.0                                      | < | 0.1                   | n | 0.001                | < | 0.25                   | < | 0.01                       | < | 0.1                   |   | -                      | < | 0.01                                 | < | 0.01                   |   |
| 02OS-418              | BE-17        | 9.2                                      | < | 0.1                   |   | -                    | < | 0.35                   |   | -                          | < | 0.1                   | < | 4.0                    |   | -                                    |   | -                      |   |
| 02OS-514              | BE-17        | 8.6                                      |   | -                     | < | 0.075                |   | -                      | < | 0.15                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-126              | BE-17        | 5.8                                      | < | 0.1                   |   | 0.01                 | < | 0.27                   | < | 0.05                       | < | 0.1                   | < | 1.6                    | < | 0.075                                | < | 0.05                   |   |
| 04OS-135              | BE-17        | 9.1                                      |   | 0.81                  |   | -                    | < | 0.4                    |   | -                          | < | 0.16                  |   | -                      |   | -                                    |   | -                      |   |
| 02OS-407              | BE-18        | 18                                       | < | 0.04                  |   | -                    | < | 0.15                   |   | -                          |   | 0.09                  | < | 0.15                   |   | -                                    |   | -                      |   |
| 02OS-521              | BE-18        | 19                                       |   | -                     |   | 0.205                |   | -                      |   | 0.212                      |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-149              | BE-18        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 04OS-140              | BE-18        | 14                                       |   | 0.10                  |   | -                    | < | 0.05                   |   | -                          |   | 0.02                  |   | -                      |   | -                                    |   | -                      |   |
| 03OS-150              | BE-19        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 03OS-143              | BE-51        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 04OS-143              | BE-51        | 1.9                                      |   | 0.11                  | < | 0.01                 | < | 0.05                   | n | 0.003                      |   | 0.04                  |   | -                      | n | 0.002                                | < | 0.01                   |   |
| 03OS-135              | BE-52        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 03OS-136              | BE-53        | 17                                       |   | 0.16                  | n | 0.021                | < | 0.05                   | < | 0.05                       |   | 0.34                  | < | 0.1                    | < | 0.075                                | < | 0.05                   |   |
| 04OS-142              | BE-53        | 14                                       |   | 0.18                  |   | -                    | < | 0.05                   |   | -                          |   | 0.08                  |   | -                      |   | -                                    |   | -                      |   |
| 03OS-130              | BE-54        | 10                                       |   | 0.02                  | n | 0.009                | < | 0.05                   | < | 0.05                       |   | 0.04                  | < | 0.1                    | n | 0.006                                |   | 0.225                  |   |
| 03OS-134              | BE-55        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 04OS-141              | BE-55        | 7.5                                      |   | 0.19                  | < | 0.01                 | < | 0.25                   | < | 0.01                       | < | 0.1                   |   | -                      | < | 0.01                                 | < | 0.01                   |   |
| 04OS-245              | BE-55        | 6.8                                      |   | 0.64                  | < | 0.005                | < | 0.4                    | < | 0.005                      | < | 0.16                  |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 03OS-133              | BE-56        | 13                                       |   | 0.06                  | n | 0.01                 | < | 0.07                   | < | 0.05                       |   | 0.09                  | < | 0.05                   | < | 0.075                                | < | 0.05                   |   |
| 04OS-244              | BE-56        | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 03OS-132              | BE-57        | -                                        |   | -                     | n | 0.012                |   | -                      | < | 0.05                       |   | -                     |   | -                      | < | 0.075                                | < | 0.05                   |   |
| 03OS-131              | BE-58        | 5.8                                      |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 04OS-139              | BE-58        | 5.3                                      |   | 0.18                  |   | -                    | < | 0.1                    |   | -                          |   | 0.07                  |   | -                      |   | -                                    |   | -                      |   |
| 03OS-123              | BE-59        | 13                                       |   | 0.06                  | < | 0.04                 | < | 0.1                    | n | 0.006                      |   | 0.05                  | < | 0.2                    | < | 0.075                                |   | 0.212                  |   |
| 04OS-133              | BE-59        | 18                                       |   | 0.10                  | n | 0.001                | < | 0.05                   | < | 0.01                       | < | 0.02                  |   | -                      | < | 0.01                                 | < | 0.01                   |   |
| 03OS-122              | BE-60        | 28                                       |   | -                     | < | 0.04                 |   | -                      | < | 0.05                       |   | -                     |   | -                      | n | 0.003                                | < | 0.05                   |   |
| 04OS-132              | BE-60        | 37                                       |   | 0.10                  | n | 0.001                | < | 0.05                   | < | 0.01                       |   | 0.06                  |   | -                      | < | 0.01                                 | < | 0.01                   |   |
| 03OS-124              | BE-61        | 5.5                                      |   | -                     | n | 0.010                |   | -                      | < | 0.05                       |   | -                     |   | -                      | n | 0.003                                | n | 0.025                  |   |
| 04OS-134              | BE-61        | 6.5                                      |   | 0.55                  | < | 0.01                 | < | 0.25                   | < | 0.01                       | < | 0.1                   |   | -                      | < | 0.01                                 | < | 0.01                   |   |
| 03OS-152              | BE-62        | 32                                       |   | 0.13                  |   | 0.058                | < | 0.1                    | n | 0.019                      |   | 0.36                  | < | 0.4                    | n | 0.013                                | < | 0.05                   |   |

| Field<br>Sample<br>ID                               | Station name                            | Total<br>organic<br>carbon,<br>dissolved |   | Acetate,<br>dissolved |   | Benzene<br>dissolved |   | Butyrate,<br>dissolved |   | Ethylbenzene,<br>dissolved |   | Formate,<br>dissolved |   | Malonate,<br>dissolved |   | m-Xylene +<br>p-Xylene,<br>dissolved |   | o-Xylene,<br>dissolved |   |
|-----------------------------------------------------|-----------------------------------------|------------------------------------------|---|-----------------------|---|----------------------|---|------------------------|---|----------------------------|---|-----------------------|---|------------------------|---|--------------------------------------|---|------------------------|---|
|                                                     |                                         | (mg/L)                                   | q | (mg/L)                | q | (mg/L)               | q | (mg/L)                 | q | (mg/L)                     | q | (mg/L)                | q | (mg/L)                 | q | (mg/L)                               | q | (mg/L)                 | q |
| 04OS-145                                            | BE-62                                   | 24                                       |   | 0.61                  |   | 0.012                | < | 0.15                   |   | 0.052                      |   | 0.12                  |   | -                      |   | 0.041                                |   | 0.031                  |   |
| 04OS-248                                            | BE-71                                   | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 05OS-109                                            | BE-71                                   | 1.1                                      | < | 0.1                   | < | 0.005                | < | 0.5                    | < | 0.005                      | < | 0.2                   |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 04OS-249                                            | BE-72                                   | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 05OS-108                                            | BE-72                                   | 1.4                                      | < | 0.1                   | < | 0.005                | < | 0.4                    | < | 0.005                      | < | 0.16                  |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 04OS-247                                            | BE-73                                   | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 05OS-111                                            | BE-73                                   | 3.6                                      |   | 0.27                  | < | 0.005                | < | 0.05                   | < | 0.005                      |   | 0.17                  |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 04OS-250                                            | BE-74                                   | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 05OS-110                                            | BE-74                                   | 1.0                                      |   | 0.31                  | < | 0.005                | < | 0.75                   | < | 0.005                      | < | 0.3                   |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 02OS-304                                            | BR-01 (prior to completion)             | 1.8                                      |   | 0.90                  |   | -                    | < | 0.25                   |   | -                          |   | 0.57                  | < | 0.5                    |   | -                                    |   | -                      |   |
| 02OS-308                                            | BR-01 (prior to completion)             | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-315                                            | BR-01 (prior to completion)             | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 04OS-246                                            | BR-01S                                  | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-406                                            | BR-01D                                  | 6.7                                      |   | 0.04                  |   | -                    | < | 0.15                   |   | -                          |   | 0.06                  | < | 0.1                    |   | -                                    |   | -                      |   |
| 02OS-503                                            | BR-01D                                  | 1.3                                      |   | -                     | < | 0.075                |   | -                      | < | 0.15                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-137                                            | BR-01D                                  | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 03OS-215                                            | BR-01D                                  | 0.9                                      |   | 0.02                  | n | 0.001                | < | 0.1                    | n | 0.003                      | < | 0.02                  | < | 0.2                    | n | 0.001                                | n | 0.001                  |   |
| 04OS-241                                            | BR-01D                                  | 0.6                                      |   | 0.06                  | < | 0.005                | < | 0.05                   | < | 0.005                      | < | 0.02                  |   | -                      | < | 0.01                                 | < | 0.006                  |   |
| 05OS-103                                            | BR-01D                                  | 0.1                                      |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-312                                            | BR-02 (prior to completion)             | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-313                                            | BR-02 (prior to completion)             | 7.6                                      |   | 0.09                  | < | 0.075                | < | 0.1                    | < | 0.15                       |   | 0.11                  | < | 0.075                  | < | 0.19                                 | < | 0.09                   |   |
| 02OS-335                                            | BR-02D                                  | 5.2                                      |   | 0.09                  |   | 0.24                 | < | 0.1                    | < | 0.15                       |   | 0.12                  | < | 0.075                  | < | 0.19                                 | < | 0.09                   |   |
| 02OS-404                                            | BR-02D                                  | 5.3                                      |   | 0.14                  |   | -                    | < | 0.15                   |   | -                          |   | 0.07                  | < | 0.15                   |   | -                                    |   | -                      |   |
| 02OS-502                                            | BR-02D                                  | 0.6                                      |   | -                     |   | 0.28                 |   | -                      | < | 0.15                       |   | -                     |   | -                      | < | 0.19                                 | < | 0.09                   |   |
| 03OS-138                                            | BR-02D                                  | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 03OS-214                                            | BR-02D                                  | 1.1                                      | < | 0.02                  | < | 0.01                 | < | 0.11                   | n | 0.011                      |   | 0.05                  | < | 0.3                    | < | 0.012                                | < | 0.009                  |   |
| 04OS-243                                            | BR-02D                                  | 0.6                                      |   | 0.62                  |   | 0.022                | < | 0.25                   |   | 0.052                      | < | 0.1                   |   | -                      |   | 0.06                                 |   | 0.04                   |   |
| 05OS-101                                            | BR-02D                                  | 5.6                                      |   | 0.36                  | n | 0.0003               | < | 0.25                   |   | 0.010                      | < | 0.1                   |   | -                      |   | 0.017                                |   | 0.01                   |   |
| <b>Site B; surface waters and reinjection tanks</b> |                                         |                                          |   |                       |   |                      |   |                        |   |                            |   |                       |   |                        |   |                                      |   |                        |   |
| 01OS-113                                            | small pool, near abandoned tank battery | 14                                       |   | 1.1                   |   | -                    | < | 0.25                   |   | -                          |   | 0.14                  | < | 0.75                   |   | -                                    |   | -                      |   |
| 02OS-301                                            | small pool, near abandoned tank battery | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 01OS-114                                            | large pool, nr BA-01 well               | 9.1                                      |   | 0.06                  |   | -                    | < | 0.1                    |   | -                          |   | 0.20                  | < | 0.3                    |   | -                                    |   | -                      |   |
| 01OS-201                                            | EPA-1 "hand dug" hole                   |                                          |   | 0.05                  |   | -                    | < | 0.2                    |   | -                          | < | 0.08                  | < | 0.1                    |   | -                                    |   | -                      |   |
| 02OS-311                                            | creek, near BA-01 well                  | 4.5                                      |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 01OS-202                                            | injection pit                           | -                                        |   | 0.03                  |   | -                    | < | 0.1                    |   | -                          |   | 0.04                  | < | 0.05                   |   | -                                    |   | -                      |   |
| 02OS-316                                            | injection pit                           | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-317                                            | main pit                                | 43                                       |   | 0.63                  |   | 0.23                 | < | 0.1                    | < | 0.15                       |   | 0.31                  | < | 0.03                   | < | 0.19                                 | < | 0.09                   |   |
| 02OS-510                                            | main pit                                | -                                        |   | -                     |   | -                    |   | -                      |   | -                          |   | -                     |   | -                      |   | -                                    |   | -                      |   |
| 02OS-314                                            | reinjection tank, produced water        | 4.6                                      |   | 0.72                  |   | 4.0                  | < | 0.25                   |   | 0.73                       |   | 0.26                  | < | 0.15                   |   | 0.71                                 |   | 0.43                   |   |

Index B. Analytic data for water samples

determined; column labeled q followed by an

|                                   |                              | organic            |   | organic               |   | organic              |   | organic            |                                 | isotope                       | isotope            | isotope         | isotope |
|-----------------------------------|------------------------------|--------------------|---|-----------------------|---|----------------------|---|--------------------|---------------------------------|-------------------------------|--------------------|-----------------|---------|
| Field Sample ID                   | Station name                 | Oxalate, dissolved |   | Propionate, dissolved |   | Succinate, dissolved |   | Toluene, dissolved | O-18/O-16, stable isotope ratio | H-2/H-1, stable isotope ratio | H-3, tritium units | H-3 uncertainty |         |
|                                   |                              | mg/L               | q | mg/L                  | q | mg/L                 | q | mg/L               | ratio (permil)                  | ratio (permil)                | 1 sigma            | 1 sigma         |         |
|                                   |                              |                    |   |                       |   |                      |   |                    |                                 |                               |                    |                 |         |
| Local domestic ground water wells |                              |                    |   |                       |   |                      |   |                    |                                 |                               |                    |                 |         |
| 01OS-101                          | Bolin well                   | -                  | < | 0.05                  | < | 0.02                 |   | -                  | -5.72                           | -35.16                        | -                  | -               |         |
| 01OS-102                          | Hurn well                    | -                  | < | 0.05                  | < | 0.02                 |   | -                  | -5.73                           | -34.89                        | -                  | -               |         |
| Local oil/gas wells               |                              |                    |   |                       |   |                      |   |                    |                                 |                               |                    |                 |         |
| 01OS-103                          | Reynolds #4                  | -                  | < | 0.25                  | < | 0.5                  |   | 0.31               | -2.03                           | -9.91                         | -                  | -               |         |
| 01OS-104                          | ECC #10                      | -                  | < | 0.25                  | < | 0.25                 |   | -                  | -2.95                           | -13.00                        | -                  | -               |         |
| 01OS-105                          | ECC #3                       | -                  | < | 0.25                  | < | 0.5                  |   | 0.30               | -1.77                           | -9.32                         | -                  | -               |         |
| 01OS-106                          | Lebow #8                     | -                  | < | 0.25                  | < | 1.2                  |   | 0.40               | -2.57                           | -10.60                        | -                  | -               |         |
| 01OS-107                          | Millard #3                   | -                  | < | 0.25                  | < | 0.25                 |   | -                  | -3.51                           | -19.06                        | -                  | -               |         |
| 01OS-108                          | ECC #5                       | -                  | < | 0.25                  | < | 0.62                 |   | 0.37               | -2.18                           | -10.05                        | -                  | -               |         |
| 01OS-109                          | Ungermann #1                 | -                  | < | 0.25                  | < | 0.25                 |   | 0.37               | -3.38                           | -17.09                        | -                  | -               |         |
| 01OS-110                          | TEC T1-19 (coal-bed methane) | -                  | < | 0.25                  | < | 0.12                 |   | 0.52               | -2.92                           | -14.36                        | -                  | -               |         |
| Skiatook Lake                     |                              |                    |   |                       |   |                      |   |                    |                                 |                               |                    |                 |         |
| 01OS-111                          | Skiatook Lake, near dam      | -                  |   | -                     |   | -                    |   | -                  | -2.46                           | -15.27                        | -                  | -               |         |
| 02OS-309                          | Skiatook Lake, site B        | -                  |   | -                     |   | -                    |   | -                  | -1.75                           | -13.66                        | -                  | -               |         |
| 02OS-310                          | Skiatook Lake, site B        | -                  |   | -                     |   | -                    |   | -                  | -1.77                           | -14.50                        | 5.3                | 0.4             |         |
| 02OS-338                          | Skiatook Lake, site B        | -                  |   | -                     |   | -                    |   | -                  | -4.66                           | -29.89                        | -                  | -               |         |
| 02OS-339                          | Skiatook Lake, site A        | -                  |   | -                     |   | -                    |   | -                  | -2.79                           | -19.30                        | -                  | -               |         |
| 02OS-520                          | Skiatook Lake, site B        | -                  |   | -                     |   | -                    |   | -                  | -                               | -                             | -                  | -               |         |
| 04OS-212                          | Skiatook Lake, site A        | 0.07               |   | -                     |   | -                    |   | -                  | -3.14                           | -                             | 4.2                | 0.28            |         |
| Site A; monitoring wells          |                              |                    |   |                       |   |                      |   |                    |                                 |                               |                    |                 |         |
| 02OS-430                          | AA-01D                       | -                  | < | 0.2                   | < | 0.04                 |   | -                  | -5.30                           | -                             | -                  | -               |         |
| 02OS-523                          | AA-01D                       | -                  |   | -                     |   | -                    |   | 0.35               | -                               | -                             | -                  | -               |         |
| 03OS-108                          | AA-01D                       | -                  | < | 0.26                  | < | 0.1                  | < | 0.050              | -                               | -                             | -                  | -               |         |
| 03OS-205                          | AA-01D                       | -                  | < | 0.15                  | < | 0.06                 | < | 0.01               | -                               | -                             | -                  | -               |         |
| 04OS-105                          | AA-01D                       | -                  | < | 0.1                   | < | 0.1                  |   | -                  | -                               | -                             | 1.0                | 0.3             |         |
| 04OS-203                          | AA-01D                       | -                  | < | 0.1                   | < | 0.1                  | < | 0.005              | -                               | -                             | -                  | -               |         |
| 05OS-134                          | AA-01D                       | -                  | < | 0.25                  | < | 0.5                  | < | 0.005              | -                               | -                             | 1.2                | 0.3             |         |
| 02OS-337                          | AA-02S                       | -                  |   | -                     |   | -                    |   | -                  | -5.38                           | -32.68                        | -                  | -               |         |
| 02OS-426                          | AA-02S                       | -                  | < | 0.2                   | < | 0.02                 |   | -                  | -5.06                           | -                             | -                  | -               |         |
| 02OS-522                          | AA-02S                       | -                  |   | -                     |   | -                    |   | 0.36               | -                               | -                             | -                  | -               |         |
| 03OS-106                          | AA-02S                       | -                  | < | 0.05                  | < | 0.02                 | n | 0.005              | -                               | -                             | -                  | -               |         |
| 03OS-207                          | AA-02S                       | -                  | < | 0.05                  | < | 0.02                 | < | 0.005              | -                               | -                             | -                  | -               |         |
| 04OS-104                          | AA-02S                       | -                  | < | 0.05                  | < | 0.05                 |   | -                  | -5.45                           | -                             | -                  | -               |         |
| 04OS-230                          | AA-02S                       | -                  | < | 0.05                  | < | 0.05                 | < | 0.005              | -5.24                           | -                             | -                  | -               |         |
| 05OS-139                          | AA-02S                       | -                  | < | 0.05                  | < | 0.1                  | < | 0.005              | -                               | -                             | 9.9                | 0.4             |         |
| 02OS-336                          | AA-02D                       | -                  |   | -                     |   | -                    |   | -                  | -5.47                           | -33.62                        | -                  | -               |         |
| 02OS-427                          | AA-02D                       | -                  | < | 0.2                   | < | 0.04                 |   | -                  | -5.85                           | -                             | -                  | -               |         |
| 02OS-527                          | AA-02D                       | -                  |   | -                     |   | -                    |   | 0.27               | -                               | -                             | -                  | -               |         |
| 03OS-107                          | AA-02D                       | -                  | < | 0.5                   |   | 0.07                 | n | 0.005              | -                               | -                             | -                  | -               |         |
| 03OS-208                          | AA-02D                       | -                  | < | 1.7                   | < | 0.04                 |   | 0.013              | -                               | -                             | -                  | -               |         |
| 04OS-103                          | AA-02D                       | -                  | < | 0.1                   | < | 0.1                  |   | -                  | -5.95                           | -                             | -                  | -               |         |

| Field<br>Sample<br>ID | Station name | Oxalate,<br>dissolved<br>(mg/L) | q | Propionate,<br>dissolved<br>(mg/L) | q | Succinate,<br>dissolved<br>(mg/L) | q | Toluene,<br>dissolved<br>(mg/L) | O-18/O-16,<br>stable isotope<br>ratio<br>(permil) | H-2/H-1,<br>stable isotope<br>ratio<br>(permil) | H-3,<br>tritium units+/-<br>1 sigma | H-3 uncertainty<br>tritium units<br>1 sigma |
|-----------------------|--------------|---------------------------------|---|------------------------------------|---|-----------------------------------|---|---------------------------------|---------------------------------------------------|-------------------------------------------------|-------------------------------------|---------------------------------------------|
| 04OS-231              | AA-02D       | 0.13                            | < | 0.1                                | < | 0.1                               | < | 0.005                           | -5.83                                             | -                                               | 0.1                                 | 0.3                                         |
| 05OS-140              | AA-02D       | -                               | < | 0.05                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | -0.09                               | 0.24                                        |
| 02OS-428              | AA-03S       | -                               |   | 3.3                                | < | 0.04                              |   | -                               | -5.53                                             | -                                               | -                                   | -                                           |
| 03OS-103              | AA-03S       | -                               | < | 0.1                                | < | 0.02                              | n | 0.025                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-203              | AA-03S       | -                               | < | 0.05                               |   | 0.07                              | n | 0.001                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-205              | AA-03S       | -                               | < | 0.05                               | < | 0.05                              | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 05OS-142              | AA-03S       | -                               | < | 0.05                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 02OS-429              | AA-03D       | -                               |   | 0.7                                | < | 0.04                              |   | -                               | -5.18                                             | -                                               | -                                   | -                                           |
| 02OS-524              | AA-03D       | -                               |   | -                                  |   | -                                 |   | 0.32                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-104              | AA-03D       | -                               | < | 0.05                               | < | 0.02                              | < | 0.050                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-204              | AA-03D       | -                               | < | 0.05                               | < | 0.02                              | n | 0.001                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-116              | AA-03D       | -                               | < | 0.05                               | < | 0.05                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-211              | AA-03D       | -                               | < | 0.05                               | < | 0.05                              | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 05OS-141              | AA-03D       | -                               | < | 0.05                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 02OS-424              | AA-04S       | -                               | < | 0.05                               | < | 0.04                              |   | -                               | -5.92                                             | -                                               | -                                   | -                                           |
| 02OS-526              | AA-04S       | -                               |   | -                                  |   | -                                 |   | 0.26                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-101              | AA-04S       | -                               | < | 0.05                               | < | 0.02                              |   | 0.12                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-201              | AA-04S       | -                               | < | 0.05                               | < | 0.02                              | n | 0.001                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-109              | AA-04S       | -                               | < | 0.05                               | < | 0.05                              |   | -                               | -5.78                                             | -                                               | -                                   | -                                           |
| 04OS-201              | AA-04S       | -                               | < | 0.05                               | < | 0.05                              | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 05OS-112              | AA-04S       | -                               | < | 0.05                               | < | 0.5                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 02OS-425              | AA-04D       | -                               | < | 0.1                                | < | 0.02                              |   | -                               | -5.91                                             | -                                               | -                                   | -                                           |
| 02OS-525              | AA-04D       | -                               |   | -                                  |   | -                                 |   | 0.28                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-102              | AA-04D       | -                               | < | 0.05                               | < | 0.02                              | n | 0.044                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-202              | AA-04D       | -                               | < | 0.05                               |   | 0.14                              | < | 0.001                           | -                                                 | -                                               | -                                   | -                                           |
| 05OS-113              | AA-04D       | -                               | < | 0.05                               | < | 0.5                               | < | 0.005                           | -                                                 | -                                               | 6.9                                 | 0.4                                         |
| 04OS-117              | AA-05S       | -                               | < | 0.05                               | < | 0.05                              | < | 0.01                            | -5.52                                             | -                                               | -                                   | -                                           |
| 04OS-226              | AA-05S       | -                               | < | 0.05                               | < | 0.05                              | < | 0.005                           | -5.70                                             | -                                               | 5.8                                 | 0.3                                         |
| 05OS-118              | AA-05S       | -                               | < | 0.05                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | 5.3                                 | 0.3                                         |
| 04OS-118              | AA-05D       | -                               | < | 0.1                                | < | 0.1                               | < | 0.01                            | -5.81                                             | -                                               | -                                   | -                                           |
| 04OS-216              | AA-05D       | -                               | < | 0.1                                | < | 0.1                               | < | 0.005                           | -5.24                                             | -                                               | 0.22                                | 0.24                                        |
| 05OS-117              | AA-05D       | -                               | < | 0.05                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | -0.04                               | 0.24                                        |
| 04OS-119              | AA-06S       | -                               | < | 0.1                                | < | 0.1                               | < | 0.01                            | -5.21                                             | -                                               | -                                   | -                                           |
| 04OS-233              | AA-06S       | -                               | < | 0.1                                | < | 0.1                               | n | 0.001                           | -5.25                                             | -                                               | 1.4                                 | 0.3                                         |
| 05OS-136              | AA-06S       | -                               | < | 0.1                                | < | 0.2                               | < | 0.005                           | -                                                 | -                                               | 1                                   | 0.3                                         |
| 04OS-120              | AA-06D       | -                               | < | 0.15                               | < | 0.15                              | < | 0.01                            | -5.33                                             | -                                               | -                                   | -                                           |
| 04OS-234              | AA-06D       | -                               | < | 0.1                                |   | 0.10                              | < | 0.005                           | -5.18                                             | -                                               | -                                   | -                                           |
| 05OS-135              | AA-06D       | -                               | < | 0.1                                | < | 0.2                               | < | 0.005                           | -                                                 | -                                               | 1                                   | 0.3                                         |
| 04OS-121              | AA-07S       | -                               | < | 0.25                               | < | 0.25                              | < | 0.01                            | -5.41                                             | -                                               | -                                   | -                                           |
| 04OS-222              | AA-07S       | -                               | < | 0.1                                | < | 0.1                               | < | 0.005                           | -6.02                                             | -                                               | 2.72                                | 0.27                                        |
| 05OS-138              | AA-07S       | -                               | < | 0.1                                | < | 0.2                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-153              | AA-07D       | -                               |   | -                                  |   | -                                 |   | -                               | -5.58                                             | -                                               | -                                   | -                                           |
| 04OS-223              | AA-07D       | -                               | < | 0.15                               |   | 0.27                              | < | 0.005                           | -5.72                                             | -                                               | 0.93                                | 0.25                                        |
| 05OS-137              | AA-07D       | -                               | < | 0.1                                | < | 0.2                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-157              | AA-08S       | -                               |   | -                                  |   | -                                 |   | -                               | -5.74                                             | -                                               | -                                   | -                                           |

| Field<br>Sample<br>ID | Station name | Oxalate,<br>dissolved<br>(mg/L) | q | Propionate,<br>dissolved<br>(mg/L) | q | Succinate,<br>dissolved<br>(mg/L) | q | Toluene,<br>dissolved<br>(mg/L) | O-18/O-16,<br>stable isotope<br>ratio<br>(permil) | H-2/H-1,<br>stable isotope<br>ratio<br>(permil) | H-3,<br>tritium units+/-<br>1 sigma | H-3 uncertainty<br>tritium units<br>1 sigma |
|-----------------------|--------------|---------------------------------|---|------------------------------------|---|-----------------------------------|---|---------------------------------|---------------------------------------------------|-------------------------------------------------|-------------------------------------|---------------------------------------------|
| 04OS-221              | AA-08S       | -                               |   | 13                                 | < | 0.15                              | < | 0.005                           | -5.79                                             | -                                               | 1.35                                | 0.24                                        |
| 05OS-123              | AA-08S       | -                               | < | 0.25                               | < | 0.5                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-156              | AA-08D       | -                               |   | -                                  |   | -                                 |   | -                               | -5.60                                             | -                                               | -                                   | -                                           |
| 04OS-218              | AA-08D       | -                               |   | 12                                 | < | 0.15                              | < | 0.005                           | -5.46                                             | -                                               | -0.07                               | 0.23                                        |
| 05OS-124              | AA-08D       | -                               | < | 0.05                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-155              | AA-09S       | -                               |   | -                                  |   | -                                 |   | -                               | -5.90                                             | -                                               | -                                   | -                                           |
| 04OS-232              | AA-09S       | -                               |   | 0.20                               | < | 0.15                              | < | 0.005                           | -5.76                                             | -                                               | 0.3                                 | 0.27                                        |
| 05OS-122              | AA-09S       | -                               |   | 0.52                               | < | 0.5                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-154              | AA-09D       | -                               |   | -                                  |   | -                                 |   | -                               | -5.53                                             | -                                               | -                                   | -                                           |
| 04OS-217              | AA-09D       | -                               | < | 0.15                               | < | 0.15                              | < | 0.005                           | -5.55                                             | -                                               | 0                                   | 0.23                                        |
| 05OS-121              | AA-09D       | -                               | < | 0.05                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-152              | AA-10S       | -                               |   | -                                  |   | -                                 |   | -                               | -6.28                                             | -                                               | -                                   | -                                           |
| 04OS-224              | AA-10S       | -                               | < | 0.05                               | < | 0.05                              | n | 0.003                           | -6.20                                             | -                                               | 4.2                                 | 0.3                                         |
| 05OS-127              | AA-10S       | -                               | < | 0.05                               | < | 0.1                               |   | 0.006                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-151              | AA-10M       | -                               |   | -                                  |   | -                                 |   | -                               | -3.86                                             | -                                               | -                                   | -                                           |
| 04OS-229              | AA-10M       | -                               |   | 10                                 | < | 0.05                              | < | 0.005                           | -5.82                                             | -                                               | -                                   | -                                           |
| 05OS-126              | AA-10M       | -                               | < | 0.05                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | 1.7                                 | 0.3                                         |
| 04OS-158              | AA-10D       | -                               |   | -                                  |   | -                                 |   | -                               | -5.65                                             | -                                               | -                                   | -                                           |
| 04OS-215              | AA-10D       | -                               | < | 0.15                               | < | 0.15                              |   | 0.022                           | -5.76                                             | -                                               | 0.27                                | 0.21                                        |
| 05OS-125              | AA-10D       | -                               | < | 0.05                               | < | 0.1                               |   | 0.026                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-161              | AA-11S       | -                               |   | -                                  |   | -                                 |   | -                               | -5.76                                             | -                                               | -                                   | -                                           |
| 04OS-225              | AA-11S       | -                               | < | 0.05                               | < | 0.05                              | < | 0.005                           | -5.78                                             | -                                               | -                                   | -                                           |
| 05OS-131              | AA-11S       | -                               | < | 0.05                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | 4.5                                 | 0.4                                         |
| 04OS-160              | AA-11M       | -                               |   | -                                  |   | -                                 |   | -                               | -5.69                                             | -                                               | -                                   | -                                           |
| 04OS-228              | AA-11M       | 0.33                            |   | 21                                 | < | 0.1                               | < | 0.005                           | -5.42                                             | -                                               | 0                                   | 0.3                                         |
| 05OS-132              | AA-11M       | -                               | < | 0.05                               | < | 0.1                               |   | 2.2                             | -                                                 | -                                               | -                                   | -                                           |
| 04OS-159              | AA-11D       | -                               |   | -                                  |   | -                                 |   | -                               | -5.67                                             | -                                               | -                                   | -                                           |
| 04OS-213              | AA-11D       | -                               | < | 0.05                               | < | 0.05                              | < | 0.005                           | -5.31                                             | -                                               | 0.23                                | 0.23                                        |
| 05OS-130              | AA-11D       | -                               | < | 0.05                               | < | 0.1                               |   | 0.017                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-165              | AA-12S       | -                               |   | -                                  |   | -                                 |   | -                               | -5.74                                             | -                                               | -                                   | -                                           |
| 04OS-227              | AA-12S       | -                               |   | 9.8                                | < | 0.1                               | < | 0.005                           | -5.71                                             | -                                               | -0.2                                | 0.3                                         |
| 05OS-114              | AA-12S       | -                               | < | 0.05                               | < | 0.5                               | < | 0.005                           | -                                                 | -                                               | 0.1                                 | 0.29                                        |
| 04OS-164              | AA-12D       | -                               |   | -                                  |   | -                                 |   | -                               | -5.57                                             | -                                               | -                                   | -                                           |
| 04OS-214              | AA-12D       | -                               | < | 0.15                               | < | 0.15                              | < | 0.005                           | -5.48                                             | -                                               | 0.12                                | 0.22                                        |
| 05OS-115              | AA-12D       | -                               | < | 0.05                               | < | 0.5                               | < | 0.005                           | -                                                 | -                                               | -0.12                               | 0.23                                        |
| 04OS-163              | AA-13S       | -                               |   | -                                  |   | -                                 |   | -                               | -5.82                                             | -                                               | -                                   | -                                           |
| 04OS-220              | AA-13S       | 0.39                            |   | 87                                 | < | 0.1                               | < | 0.005                           | -5.73                                             | -                                               | 0.19                                | 0.23                                        |
| 05OS-119              | AA-13S       | 0.03                            | < | 0.15                               | < | 0.3                               | < | 0.005                           | -                                                 | -                                               | -0.33                               | 0.22                                        |
| 04OS-162              | AA-13D       | 0.05                            |   | -                                  |   | -                                 |   | -                               | -5.71                                             | -                                               | -                                   | -                                           |
| 04OS-219              | AA-13D       | 0.22                            |   | 35                                 | < | 0.15                              | < | 0.005                           | -5.60                                             | -                                               | 0.15                                | 0.23                                        |
| 05OS-120              | AA-13D       | -                               |   | 0.36                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | -0.05                               | 0.23                                        |
| 03OS-155              | AA-60S       | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-218              | AA-60S       | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-108              | AA-60S       | -                               | < | 0.15                               | < | 0.15                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-154              | AA-60D       | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |

| Field<br>Sample<br>ID | Station name | Oxalate,<br>dissolved<br>(mg/L) | q | Propionate,<br>dissolved<br>(mg/L) | q | Succinate,<br>dissolved<br>(mg/L) | q | Toluene,<br>dissolved<br>(mg/L) | O-18/O-16,<br>stable isotope<br>ratio<br>(permil) | H-2/H-1,<br>stable isotope<br>ratio<br>(permil) | H-3,<br>tritium units+/-<br>1 sigma | H-3 uncertainty<br>tritium units<br>1 sigma |
|-----------------------|--------------|---------------------------------|---|------------------------------------|---|-----------------------------------|---|---------------------------------|---------------------------------------------------|-------------------------------------------------|-------------------------------------|---------------------------------------------|
| 03OS-210              | AA-60D       | -                               | < | 0.07                               |   | 0.10                              | n | 0.001                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-107              | AA-60D       | -                               | < | 0.05                               | < | 0.05                              |   | -                               | -5.89                                             | -                                               | -                                   | -                                           |
| 04OS-204              | AA-60D       | -                               | < | 0.05                               | < | 0.05                              | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 05OS-116              | AA-60D       | -                               | < | 0.05                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | 1.46                                | 0.26                                        |
| 03OS-153              | AA-61        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-209              | AA-61        | -                               |   | 0.3                                |   | 0.04                              |   | 0.025                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-101              | AA-61        | -                               | < | 0.1                                | < | 0.1                               |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-206              | AA-61        | -                               | < | 0.1                                | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 05OS-129              | AA-61        | -                               | < | 0.15                               | < | 0.3                               | n | 0.002                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-202              | AA-62        | -                               | < | 0.1                                | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 05OS-128              | AA-62        | -                               | < | 0.1                                | < | 0.2                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 02OS-434              | AE-04        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-332              | AE-05        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-333              | AE-06        | -                               |   | -                                  |   | -                                 | < | 0.11                            | -                                                 | -                                               | -                                   | -                                           |
| 02OS-435              | AE-06        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-111              | AE-06        | -                               | < | 0.05                               | < | 0.05                              |   | -                               | -5.83                                             | -                                               | -                                   | -                                           |
| 02OS-334              | AE-07        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-110              | AE-07        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-326              | AE-08        | -                               | < | 0.25                               | < | 0.1                               | < | 0.11                            | -5.18                                             | -27.79                                          | -                                   | -                                           |
| 02OS-432              | AE-08        | -                               | < | 0.1                                | < | 0.06                              |   | -                               | -4.64                                             | -                                               | -                                   | -                                           |
| 04OS-114              | AE-08        | -                               | < | 0.15                               | < | 0.15                              |   | -                               | -5.96                                             | -                                               | -                                   | -                                           |
| 02OS-331              | AE-10        | -                               | < | 0.05                               |   | 0.04                              | < | 0.11                            | -5.92                                             | -38.29                                          | -                                   | -                                           |
| 02OS-328              | AE-12        | -                               | < | 0.2                                |   | 0.27                              | < | 0.11                            | -3.06                                             | -18.65                                          | -                                   | -                                           |
| 02OS-436              | AE-12        | -                               | < | 0.1                                | < | 0.04                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-325              | AE-13        | -                               |   | -                                  |   | -                                 | < | 0.11                            | -5.11                                             | -28.95                                          | -                                   | -                                           |
| 02OS-329              | AE-13        | -                               | < | 0.05                               |   | 0.14                              | < | 0.11                            | -5.31                                             | -29.04                                          | -                                   | -                                           |
| 02OS-431              | AE-13        | -                               | < | 0.05                               | < | 0.12                              |   | -                               | -5.38                                             | -                                               | -                                   | -                                           |
| 03OS-118              | AE-13        | -                               | < | 0.05                               | < | 0.02                              | n | 0.029                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-223              | AE-13        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-102              | AE-13        | -                               | < | 0.05                               | < | 0.05                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-207              | AE-13        | -                               | < | 0.05                               | < | 0.05                              | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-116              | AE-14        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-330              | AE-15        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-437              | AE-15        | -                               | < | 0.2                                | < | 0.12                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-115              | AE-15        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-113              | AE-16        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-114              | AE-17        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-112              | AE-18        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-433              | AE-19        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-109              | AE-51        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-220              | AE-51        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-219              | AE-52        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-208              | AE-52        | -                               | < | 0.25                               | < | 0.25                              | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-111              | AE-53        | -                               | < | 0.05                               | < | 0.06                              | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-222              | AE-53        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |

| Field<br>Sample<br>ID           | Station name | Oxalate,<br>dissolved<br>(mg/L) | q | Propionate,<br>dissolved<br>(mg/L) | q | Succinate,<br>dissolved<br>(mg/L) | q | Toluene,<br>dissolved<br>(mg/L) | O-18/O-16,<br>stable isotope<br>ratio<br>(permil) | H-2/H-1,<br>stable isotope<br>ratio<br>(permil) | H-3,<br>tritium units+/-<br>1 sigma | H-3 uncertainty<br>tritium units<br>1 sigma |
|---------------------------------|--------------|---------------------------------|---|------------------------------------|---|-----------------------------------|---|---------------------------------|---------------------------------------------------|-------------------------------------------------|-------------------------------------|---------------------------------------------|
| 04OS-106                        | AE-53        | -                               | < | 0.15                               | < | 0.15                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-210                        | AE-53        | -                               | < | 0.05                               | < | 0.05                              | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-110                        | AE-54        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-221                        | AE-54        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-209                        | AE-54        | -                               | < | 0.05                               |   | 0.25                              | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-117                        | AE-56        | -                               | < | 0.14                               |   | 0.30                              |   | 0.066                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-112                        | AE-56        | 0.16                            |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-324                        | AP-01        | -                               |   | 44                                 |   | 1.4                               |   | 0.34                            | -2.77                                             | -13.58                                          | -                                   | -                                           |
| 02OS-327                        | AR-01        | -                               | < | 0.1                                | < | 0.02                              | < | 0.11                            | -5.66                                             | -32.97                                          | 1.3                                 | 0.3                                         |
| 02OS-438                        | AR-01        | -                               | < | 0.1                                | < | 0.02                              |   | 0.058                           | -6.34                                             | -                                               | -                                   | -                                           |
| 03OS-105                        | AR-01        | -                               | < | 0.1                                |   | 0.08                              |   | 0.20                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-206                        | AR-01        | -                               | < | 0.34                               |   | 0.14                              |   | 0.067                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-113                        | AR-01        | -                               | < | 0.05                               | < | 0.05                              |   | -                               | -6.5                                              | -                                               | -                                   | -                                           |
| 04OS-235                        | AR-01        | 0.04                            | < | 0.05                               | < | 0.05                              |   | 0.006                           | -6.53                                             | -                                               | 3.1                                 | 0.3                                         |
| 05OS-133                        | AR-01        | tr                              | < | 0.05                               | < | 0.1                               |   | 0.017                           | -                                                 | -                                               | 0.1                                 | 0.3                                         |
| <b>Site B; monitoring wells</b> |              |                                 |   |                                    |   |                                   |   |                                 |                                                   |                                                 |                                     |                                             |
| 02OS-322                        | BA-01S       | -                               |   | -                                  |   | -                                 |   | -                               | -5.46                                             | -30.33                                          | -                                   | -                                           |
| 02OS-403                        | BA-01S       | -                               | < | 0.05                               | < | 0.08                              |   | -                               | -5.36                                             | -                                               | -                                   | -                                           |
| 02OS-516                        | BA-01S       | -                               |   | -                                  |   | -                                 |   | 0.26                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-141                        | BA-01S       | -                               | < | 0.05                               |   | 0.03                              | n | 0.006                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-216                        | BA-01S       | -                               | < | 0.1                                |   | 0.13                              | < | 0.01                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-125                        | BA-01S       | -                               | < | 0.05                               | < | 0.05                              | < | 0.01                            | -6.53                                             | -                                               | -                                   | -                                           |
| 04OS-239                        | BA-01S       | -                               | < | 0.25                               | < | 0.25                              | < | 0.005                           | -5.90                                             | -                                               | -                                   | -                                           |
| 05OS-106                        | BA-01S       | -                               | < | 0.25                               | < | 0.5                               | < | 0.005                           | -                                                 | -                                               | 1                                   | 0.3                                         |
| 02OS-323                        | BA-01D       | -                               |   | -                                  |   | -                                 |   | -                               | -5.60                                             | -30.66                                          | -                                   | -                                           |
| 02OS-405                        | BA-01D       | -                               | < | 0.15                               | < | 0.15                              |   | -                               | -5.87                                             | -                                               | -                                   | -                                           |
| 02OS-517                        | BA-01D       | -                               |   | -                                  |   | -                                 |   | 0.30                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-142                        | BA-01D       | -                               | < | 0.1                                |   | 0.13                              | n | 0.004                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-217                        | BA-01D       | -                               | < | 0.21                               | < | 0.04                              | < | 0.01                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-126                        | BA-01D       | -                               | < | 0.25                               | < | 0.25                              | n | 0.001                           | -5.91                                             | -                                               | -                                   | -                                           |
| 04OS-240                        | BA-01D       | -                               | < | 0.25                               | < | 0.25                              | < | 0.005                           | -5.99                                             | -                                               | -                                   | -                                           |
| 05OS-107                        | BA-01D       | -                               | < | 0.15                               | < | 0.3                               | < | 0.005                           | -                                                 | -                                               | -0.4                                | 0.3                                         |
| 02OS-318                        | BA-02S       | -                               |   | -                                  |   | -                                 |   | -                               | -5.54                                             | -32.38                                          | -                                   | -                                           |
| 02OS-319                        | BA-02D       | -                               |   | -                                  |   | -                                 |   | -                               | -5.57                                             | -31.74                                          | -                                   | -                                           |
| 02OS-401                        | BA-02D       | -                               | < | 0.3                                | < | 0.02                              |   | -                               | -6.07                                             | -                                               | -                                   | -                                           |
| 02OS-501                        | BA-02D       | -                               |   | -                                  |   | -                                 |   | 0.33                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-119                        | BA-02D       | -                               | < | 0.17                               | < | 0.04                              |   | 0.077                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-211                        | BA-02D       | -                               | < | 0.14                               | < | 0.04                              | n | 0.0012                          | -                                                 | -                                               | -                                   | -                                           |
| 04OS-124                        | BA-02D       | -                               | < | 0.25                               | < | 0.25                              | < | 0.01                            | -6.02                                             | -                                               | -                                   | -                                           |
| 04OS-238                        | BA-02D       | -                               | < | 0.25                               | < | 0.25                              | < | 0.005                           | -5.87                                             | -                                               | -                                   | -                                           |
| 05OS-102                        | BA-02D       | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-320                        | BA-03S       | -                               |   | -                                  |   | -                                 |   | 1.3                             | -5.52                                             | -32.08                                          | -                                   | -                                           |
| 02OS-504                        | BA-03S       | -                               |   | -                                  |   | -                                 |   | 0.27                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-120                        | BA-03S       | -                               | < | 0.1                                | < | 0.04                              | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-212                        | BA-03S       | -                               | < | 0.1                                | < | 0.04                              | n | 0.002                           | -                                                 | -                                               | -                                   | -                                           |

| Field<br>Sample<br>ID | Station name | Oxalate,<br>dissolved<br>(mg/L) | q | Propionate,<br>dissolved<br>(mg/L) | q | Succinate,<br>dissolved<br>(mg/L) | q | Toluene,<br>dissolved<br>(mg/L) | O-18/O-16,<br>stable isotope<br>ratio<br>(permil) | H-2/H-1,<br>stable isotope<br>ratio<br>(permil) | H-3,<br>tritium units+/-<br>1 sigma | H-3 uncertainty<br>tritium units<br>1 sigma |
|-----------------------|--------------|---------------------------------|---|------------------------------------|---|-----------------------------------|---|---------------------------------|---------------------------------------------------|-------------------------------------------------|-------------------------------------|---------------------------------------------|
| 04OS-122              | BA-03S       | -                               | < | 0.15                               | < | 0.15                              | n | 0.001                           | -5.45                                             | -                                               | -                                   | -                                           |
| 04OS-236              | BA-03S       | -                               | < | 0.15                               | < | 0.15                              | < | 0.005                           | -5.42                                             | -                                               | -                                   | -                                           |
| 05OS-105              | BA-03S       | -                               | < | 0.15                               | < | 0.3                               | < | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 02OS-321              | BA-03D       | -                               |   | -                                  |   | -                                 |   | -                               | -5.47                                             | -31.56                                          | -                                   | -                                           |
| 02OS-402              | BA-03D       | -                               | < | 0.1                                | < | 0.1                               |   | -                               | -5.91                                             | -                                               | -                                   | -                                           |
| 02OS-505              | BA-03D       | -                               |   | -                                  |   | -                                 |   | 0.39                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-121              | BA-03D       | -                               | < | 0.17                               | < | 0.04                              | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-213              | BA-03D       | -                               | < | 1.4                                |   | 0.11                              | < | 0.01                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-123              | BA-03D       | -                               | < | 0.25                               | < | 0.25                              | < | 0.01                            | -5.85                                             | -                                               | -                                   | -                                           |
| 04OS-237              | BA-03D       | -                               | < | 0.25                               | < | 0.25                              | < | 0.005                           | -5.81                                             | -                                               | -                                   | -                                           |
| 05OS-104              | BA-03D       | -                               | < | 0.25                               | < | 0.5                               | n | 0.001                           | -                                                 | -                                               | -                                   | -                                           |
| 02OS-423              | BE-01        | -                               |   | 1.3                                |   | 1.2                               |   | -                               | -5.19                                             | -                                               | -                                   | -                                           |
| 04OS-144              | BE-01        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-303              | BE-03        | -                               |   | -                                  |   | -                                 |   | -                               | -5.40                                             | -29.55                                          | -                                   | -                                           |
| 02OS-411              | BE-03        | -                               | < | 0.1                                | < | 0.04                              |   | -                               | -5.32                                             | -                                               | -                                   | -                                           |
| 03OS-144              | BE-03        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-408              | BE-04        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-148              | BE-04        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-242              | BE-04        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-409              | BE-06        | -                               | < | 0.15                               | < | 0.15                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-519              | BE-06        | -                               |   | -                                  |   | -                                 |   | 0.32                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-139              | BE-06        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-305              | BE-07        | -                               | < | 0.1                                |   | 0.08                              |   | 0.33                            | -5.45                                             | -35.50                                          | 3.9                                 | 0.3                                         |
| 02OS-414              | BE-07        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-415              | BE-07        | -                               | < | 0.1                                | < | 0.02                              |   | -                               | -5.39                                             | -                                               | -                                   | -                                           |
| 02OS-508              | BE-07        | -                               |   | -                                  |   | -                                 |   | 0.27                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-151              | BE-07        | -                               | < | 0.05                               |   | 0.88                              |   | 0.19                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-136              | BE-07        | -                               | < | 0.05                               | < | 0.05                              |   | 0.028                           | -6.30                                             | -                                               | -                                   | -                                           |
| 02OS-422              | BE-08        | -                               | < | 0.25                               | < | 0.12                              |   | -                               | -5.44                                             | -                                               | -                                   | -                                           |
| 02OS-515              | BE-08        | -                               |   | -                                  |   | -                                 |   | 0.26                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-147              | BE-08        | -                               | < | 0.05                               | < | 0.02                              | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-129              | BE-08        | -                               | < | 0.25                               | < | 0.25                              | < | 0.01                            | -5.40                                             | -                                               | -                                   | -                                           |
| 02OS-412              | BE-09        | -                               | < | 0.1                                | < | 0.03                              |   | -                               | -5.41                                             | -                                               | -                                   | -                                           |
| 02OS-511              | BE-09        | -                               |   | -                                  |   | -                                 |   | 0.45                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-146              | BE-09        | -                               |   | 0.09                               | < | 0.02                              | n | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-128              | BE-09        | -                               | < | 0.05                               | < | 0.05                              | n | 0.004                           | -5.64                                             | -                                               | -                                   | -                                           |
| 02OS-413              | BE-10        | -                               | < | 0.05                               | < | 0.04                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-507              | BE-10        | -                               |   | -                                  |   | -                                 |   | 0.32                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-129              | BE-10        | -                               | < | 0.05                               | < | 0.02                              | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-131              | BE-10        | -                               | < | 0.1                                | < | 0.1                               | < | 0.01                            | -4.32                                             | -                                               | -                                   | -                                           |
| 02OS-420              | BE-11        | -                               | < | 0.1                                | < | 0.04                              |   | -                               | -4.00                                             | -                                               | -                                   | -                                           |
| 02OS-506              | BE-11        | -                               |   | -                                  |   | -                                 |   | 0.35                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-128              | BE-11        | -                               | < | 0.05                               | < | 0.02                              | n | 0.022                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-130              | BE-11        | -                               | < | 0.062                              | < | 0.06                              | n | 0.001                           | -3.43                                             | -                                               | -                                   | -                                           |
| 02OS-421              | BE-12        | -                               | < | 0.15                               | < | 0.06                              |   | -                               | -4.97                                             | -                                               | -                                   | -                                           |

| Field<br>Sample<br>ID | Station name | Oxalate,<br>dissolved<br>(mg/L) | q | Propionate,<br>dissolved<br>(mg/L) | q | Succinate,<br>dissolved<br>(mg/L) | q | Toluene,<br>dissolved<br>(mg/L) | O-18/O-16,<br>stable isotope<br>ratio<br>(permil) | H-2/H-1,<br>stable isotope<br>ratio<br>(permil) | H-3,<br>tritium units+/-<br>1 sigma | H-3 uncertainty<br>tritium units<br>1 sigma |
|-----------------------|--------------|---------------------------------|---|------------------------------------|---|-----------------------------------|---|---------------------------------|---------------------------------------------------|-------------------------------------------------|-------------------------------------|---------------------------------------------|
| 02OS-509              | BE-12        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-145              | BE-12        | -                               | < | 0.05                               |   | 0.27                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-127              | BE-12        | -                               | < | 0.05                               | < | 0.05                              | < | 0.01                            | -4.53                                             | -                                               | -                                   | -                                           |
| 02OS-307              | BE-13        | -                               | < | 0.1                                |   | 0.04                              | < | 0.11                            | -5.12                                             | -33.16                                          | 3.8                                 | 0.3                                         |
| 02OS-416              | BE-13        | -                               | < | 0.15                               | < | 0.12                              |   | -                               | -5.36                                             | -                                               | -                                   | -                                           |
| 02OS-512              | BE-13        | -                               |   | -                                  |   | -                                 |   | 0.31                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-127              | BE-13        | -                               | < | 0.34                               | < | 0.08                              | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-138              | BE-13        | -                               | < | 0.4                                | < | 0.4                               |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-410              | BE-15        | -                               | < | 0.075                              | < | 0.15                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-518              | BE-15        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-140              | BE-15        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-417              | BE-16        | -                               | < | 0.1                                | < | 0.2                               |   | -                               | -5.44                                             | -                                               | -                                   | -                                           |
| 02OS-513              | BE-16        | -                               |   | -                                  |   | -                                 |   | 0.280                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-125              | BE-16        | -                               |   | -                                  |   | -                                 | n | 0.007                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-137              | BE-16        | -                               | < | 0.25                               | < | 0.25                              | n | 0.001                           | -                                                 | -                                               | -                                   | -                                           |
| 02OS-418              | BE-17        | -                               | < | 0.35                               | < | 0.2                               |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-514              | BE-17        | -                               |   | -                                  |   | -                                 |   | 0.27                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-126              | BE-17        | -                               | < | 0.34                               | < | 0.1                               | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-135              | BE-17        | -                               | < | 0.4                                | < | 0.4                               |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-407              | BE-18        | -                               | < | 0.15                               | < | 0.04                              |   | -                               | -5.35                                             | -                                               | -                                   | -                                           |
| 02OS-521              | BE-18        | -                               |   | -                                  |   | -                                 |   | 0.33                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-149              | BE-18        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-140              | BE-18        | 0.30                            | < | 0.05                               | < | 0.05                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-150              | BE-19        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-143              | BE-51        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-143              | BE-51        | -                               | < | 0.05                               | < | 0.05                              | < | 0.01                            | -5.79                                             | -                                               | -                                   | -                                           |
| 03OS-135              | BE-52        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-136              | BE-53        | -                               | < | 0.05                               | < | 0.02                              | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-142              | BE-53        | -                               | < | 0.05                               | < | 0.05                              |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-130              | BE-54        | -                               | < | 0.05                               | < | 0.02                              | n | 0.007                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-134              | BE-55        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-141              | BE-55        | -                               | < | 0.25                               | < | 0.25                              | < | 0.01                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-245              | BE-55        | -                               | < | 0.4                                | < | 0.4                               | < | 0.005                           | -4.64                                             | -                                               | -                                   | -                                           |
| 03OS-133              | BE-56        | -                               | < | 0.05                               | < | 0.02                              | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-244              | BE-56        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-132              | BE-57        | -                               |   | -                                  |   | -                                 | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-131              | BE-58        | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 04OS-139              | BE-58        | -                               | < | 0.1                                | < | 0.1                               |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-123              | BE-59        | -                               | < | 0.05                               | < | 0.02                              | n | 0.005                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-133              | BE-59        | -                               | < | 0.05                               | < | 0.05                              | n | 0.001                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-122              | BE-60        | -                               |   | -                                  |   | -                                 | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-132              | BE-60        | -                               | < | 0.05                               | < | 0.02                              | n | 0.001                           | -4.79                                             | -                                               | -                                   | -                                           |
| 03OS-124              | BE-61        | -                               |   | -                                  |   | -                                 | < | 0.05                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-134              | BE-61        | -                               | < | 0.25                               | < | 0.25                              | n | 0.001                           | -                                                 | -                                               | -                                   | -                                           |
| 03OS-152              | BE-62        | -                               | < | 0.1                                |   | 0.01                              | n | 0.028                           | -                                                 | -                                               | -                                   | -                                           |

| Field<br>Sample<br>ID                              | Station name                            | Oxalate,<br>dissolved<br>(mg/L) |   | Propionate,<br>dissolved<br>(mg/L) |   | Succinate,<br>dissolved<br>(mg/L) |   | Toluene,<br>dissolved<br>(mg/L) | O-18/O-16,<br>stable isotope<br>ratio<br>(permil) | H-2/H-1,<br>stable isotope<br>ratio<br>(permil) | H-3,<br>tritium units+/-<br>1 sigma | H-3 uncertainty<br>tritium units<br>1 sigma |
|----------------------------------------------------|-----------------------------------------|---------------------------------|---|------------------------------------|---|-----------------------------------|---|---------------------------------|---------------------------------------------------|-------------------------------------------------|-------------------------------------|---------------------------------------------|
| 04OS-145                                           | BE-62                                   | -                               | < | 0.15                               | < | 0.15                              |   | 0.049                           | -5.83                                             | -                                               | -                                   | -                                           |
| 04OS-248                                           | BE-71                                   | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 05OS-109                                           | BE-71                                   | -                               | < | 0.5                                | < | 1.0                               | < | 0.005                           | -                                                 | -                                               | 0.66                                | 0.24                                        |
| 04OS-249                                           | BE-72                                   | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 05OS-108                                           | BE-72                                   | -                               | < | 0.4                                | < | 0.8                               | < | 0.005                           | -                                                 | -                                               | 1.2                                 | 0.3                                         |
| 04OS-247                                           | BE-73                                   | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 05OS-111                                           | BE-73                                   | -                               | < | 0.05                               | < | 0.1                               | < | 0.005                           | -                                                 | -                                               | 7.2                                 | 0.4                                         |
| 04OS-250                                           | BE-74                                   | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 05OS-110                                           | BE-74                                   | -                               | < | 0.75                               | < | 1.5                               | < | 0.005                           | -                                                 | -                                               | 1.4                                 | 0.25                                        |
| 02OS-304                                           | BR-01 (prior to completion)             | -                               | < | 0.25                               |   | 0.9                               |   | -                               | -5.52                                             | -32.68                                          | 1.0                                 | 0.3                                         |
| 02OS-308                                           | BR-01 (prior to completion)             | -                               |   | -                                  |   | -                                 |   | -                               | -5.16                                             | -31.46                                          | -                                   | -                                           |
| 02OS-315                                           | BR-01 (prior to completion)             | -                               |   | -                                  |   | -                                 |   | -                               | -5.67                                             | -35.42                                          | 0.86                                | 0.24                                        |
| 04OS-246                                           | BR-01S                                  | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-406                                           | BR-01D                                  | -                               | < | 0.15                               | < | 0.5                               |   | -                               | -5.93                                             | -                                               | -                                   | -                                           |
| 02OS-503                                           | BR-01D                                  | -                               |   | -                                  |   | -                                 |   | 0.33                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-137                                           | BR-01D                                  | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-215                                           | BR-01D                                  | -                               | < | 0.52                               |   | 0.05                              | < | 0.01                            | -                                                 | -                                               | -                                   | -                                           |
| 04OS-241                                           | BR-01D                                  | -                               | < | 0.05                               | < | 0.05                              | < | 0.005                           | -6.20                                             | -                                               | -                                   | -                                           |
| 05OS-103                                           | BR-01D                                  | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-312                                           | BR-02 (prior to completion)             | -                               |   | -                                  |   | -                                 |   | -                               | -5.72                                             | -34.11                                          | -                                   | -                                           |
| 02OS-313                                           | BR-02 (prior to completion)             | -                               | < | 0.1                                |   | 0.04                              | < | 0.11                            | -5.70                                             | -35.07                                          | 1.7                                 | 0.3                                         |
| 02OS-335                                           | BR-02D                                  | -                               | < | 0.1                                | < | 0.02                              |   | 0.34                            | -5.07                                             | -30.49                                          | 3.18                                | 0.26                                        |
| 02OS-404                                           | BR-02D                                  | -                               | < | 0.15                               | < | 0.02                              |   | -                               | -6.04                                             | -                                               | -                                   | -                                           |
| 02OS-502                                           | BR-02D                                  | -                               |   | -                                  |   | -                                 | < | 0.11                            | -                                                 | -                                               | -                                   | -                                           |
| 03OS-138                                           | BR-02D                                  | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 03OS-214                                           | BR-02D                                  | -                               | < | 0.17                               |   | 0.08                              | n | 0.007                           | -                                                 | -                                               | -                                   | -                                           |
| 04OS-243                                           | BR-02D                                  | -                               | < | 0.25                               | < | 0.25                              |   | 0.095                           | -6.09                                             | -                                               | -                                   | -                                           |
| 05OS-101                                           | BR-02D                                  | -                               | < | 0.25                               | < | 0.5                               |   | 0.014                           | -                                                 | -                                               | -                                   | -                                           |
| <b>Site B; surface waters and reinjection tank</b> |                                         |                                 |   |                                    |   |                                   |   |                                 |                                                   |                                                 |                                     |                                             |
| 01OS-113                                           | small pool, near abandoned tank battery | -                               | < | 0.25                               | < | 1.0                               |   | -                               | -5.23                                             | -31.50                                          | -                                   | -                                           |
| 02OS-301                                           | small pool, near abandoned tank battery | -                               |   | -                                  |   | -                                 |   | -                               | -1.38                                             | -4.73                                           | -                                   | -                                           |
| 01OS-114                                           | large pool, nr BA-01 well               | -                               | < | 0.1                                | < | 0.4                               |   | -                               | -5.83                                             | -32.41                                          | -                                   | -                                           |
| 01OS-201                                           | EPA-1 "hand dug" hole                   | -                               | < | 0.2                                | < | 0.1                               |   | -                               | -3.54                                             | -21.25                                          | -                                   | -                                           |
| 02OS-311                                           | creek, near BA-01 well                  | -                               |   | -                                  |   | -                                 |   | -                               | -5.79                                             | -37.70                                          | -                                   | -                                           |
| 01OS-202                                           | injection pit                           | -                               | < | 0.1                                | < | 0.05                              |   | -                               | -1.47                                             | -13.79                                          | -                                   | -                                           |
| 02OS-316                                           | injection pit                           | -                               |   | -                                  |   | -                                 |   | -                               | -2.44                                             | -26.45                                          | -                                   | -                                           |
| 02OS-317                                           | main pit                                | -                               | < | 0.1                                |   | 0.06                              | < | 0.11                            | -4.30                                             | -26.66                                          | 3.11                                | 0.12                                        |
| 02OS-510                                           | main pit                                | -                               |   | -                                  |   | -                                 |   | -                               | -                                                 | -                                               | -                                   | -                                           |
| 02OS-314                                           | reinjection tank, produced water        | -                               | < | 0.25                               | < | 0.1                               |   | 0.88                            | -3.07                                             | -17.23                                          | 1.3                                 | 0.3                                         |