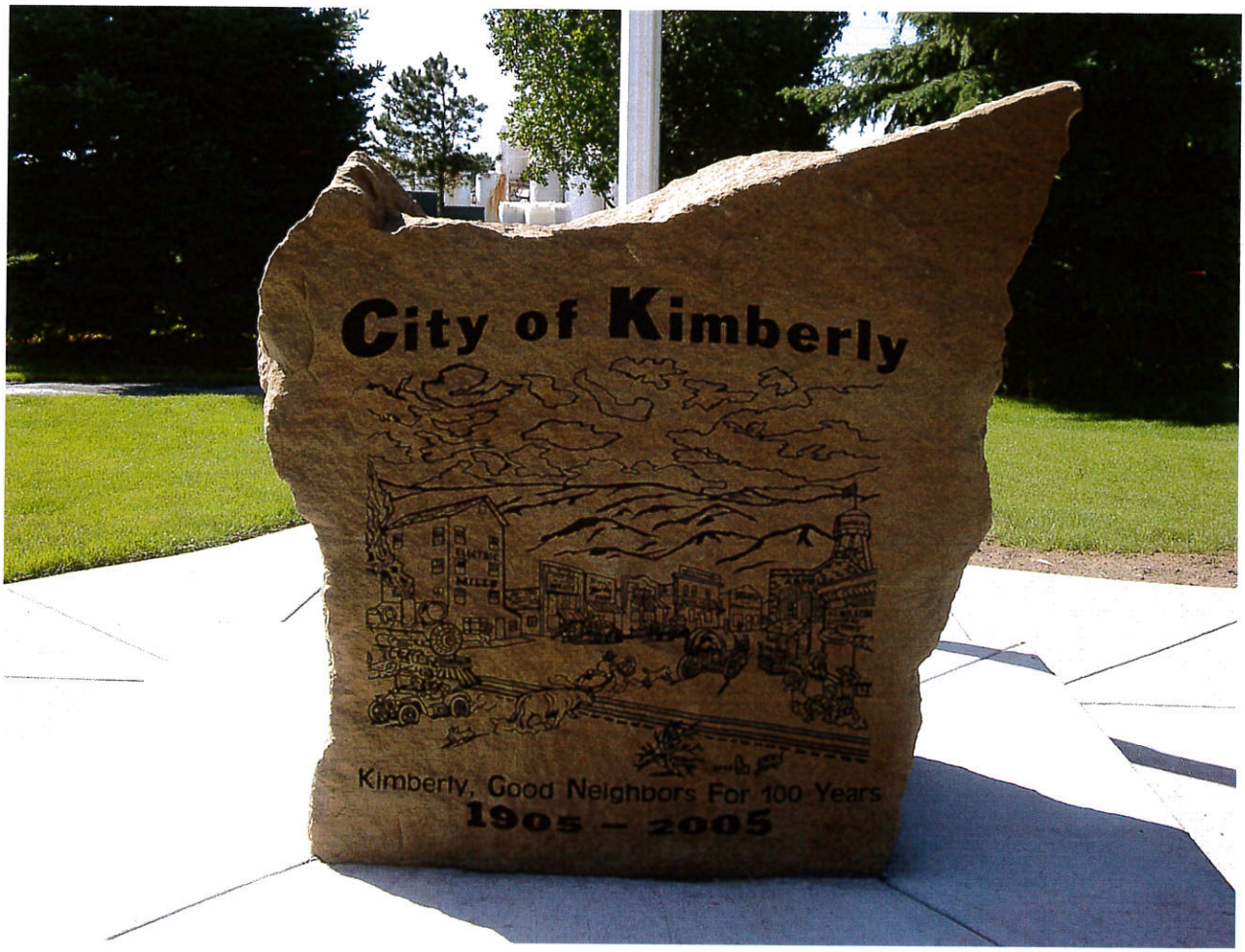
CITY OF KIMBERLY
Public Water System 5420033
DRINKING WATER PROTECTION PLAN



REVIEW AND UPDATE ANNUALLY

Date Reviewed	Reviewed By	Comments (attach additional document as needed)

Prepared by the Idaho Rural Water Association
With Technical Assistance From the
State of Idaho Department of Environmental Quality

ADDENDUM: SOURCE WATER PROTECTION PLAN UPDATE FOR

THE CITY OF KIMBERLY

Date updated: May 2013

The City of Kimberly completed a Source Water Protection Plan[1] in 2006. An update to that plan, including updates to the delineation of the source water area, potential contaminants, and scheduled protection strategies are included below (*DEQ, 2000)*. The 2006 Source Water Protection Plan will be referenced throughout this Addendum. A complete copy of the 2006 Plan can be found on the City website: www.cityofkimberly.org.

This Addendum will be submitted to the Idaho Department of Environmental Quality for state certification. The plan will be reviewed annually by the community planning team and updated every five years for state certification.

I. INTRODUCTION

The following steps have been completed as part of the City of Kimberly's efforts to update its Source Water Protection Plan:

1. Formation of a Source Water Protection planning team

2. Delineation of the land area to be protected

3. Identification and prioritization of potential contaminant sources

4. Development and implementation of a management plan for source water protection measures and activities

5. Preparation for the future through the development of a Contingency Plan

A. Pubic Water System: City of Kimberly ID5420033

B. Population: 3,264

C. Connections: 1,320

D. PWS Sources Protected by this Plan:

Source Water Name	Source
Well #1 Lake and Main	Groundwater
Well #2 Redwood Lane	Groundwater
Well #3 Irene and Maxine	Groundwater
Well #5 South Oak Street	Groundwater
Well #6 Main Street North	Groundwater
Well #7 Monroe Street East	Groundwater

1 The term "Source Water Protection" is synonymous with "Drinking Water Protection," "Wellhead Protection," and "Drinking Source Water Protection." Previous plans may have used any of these terms.

II. IMPLEMENTATION EFFORTS

Protection measures that have been implemented to date since the City of Kimberly's original SWPP include outreach to local residents. Letters were sent to each property owner within 100 feet of all City well sites asking them to refrain from using any chemicals within 50 feet of the well. Education has been the best option for protection, since the city cannot enforce voluntary implementation of best management practices on privately owned land.

III. COMMUNITY PLANNING TEAM

A. Planning Team Members

A planning team has been established to review, update, and implement this plan.

Name	Title	Phone Number	Email
Planning Team Coordinator: Kevan Hafer	Maintenance Foreman	731 - 4191	khafer@cityofkimberly.org
Melissa Williamson	GIS/Water and Wastewater Specialist	423-4151	mmccoy@cityofkimberly.org
Pat Bermingham	Chief of Police	423 - 4153	pbermingham@cityofkimberly.org
Rob Wright	Director of Public Works	423 - 4151	rwright@cityofkimberly.org

B. Planning Team Coordination

At a minimum, the planning team will meet on an annual basis, or additionally as deemed necessary throughout the year. Planning team meetings will be scheduled in advance to provide team members with sufficient notice. Scheduling of annual meetings is the responsibility of the team coordinator, Kevan Hafer.

Members of the community will be given the opportunity to participate in planning team meetings and outreach activities. Notices of the dates, times and locations of all future planning team meetings and outreach activities will be advertised using, but not limited to, the suggestions listed below:

1.Flyers of meeting dates, times and locations posted at public locations, city and county offices;

2. Announcements at city council meetings;

3. Announcement posted on the City website.

C. Goals and Objectives

The long-term goals and objectives of this SWPP are to:

1. Protect the aquifer that serves as Kimberly's source of drinking water. The SWPP has been developed as a long-term protection strategy for the aquifer that serves the City of Kimberly and its immediate surroundings.

2. Increase the level of public awareness through outreach and education on the potential impacts of irrigated agriculture on drinking water sources and ways to reduce these potential impacts.

Irrigated agriculture occupies greater than 50% of the land immediately surrounding the City of Kimberly (*DEQ, 2013*). It is an area of high chemical use, and increasing nitrate levels in the ground water is a concern.

3. Reduce the level of nitrates and synthetic organic compounds from entering ground water due to accidental spills, improper use, or improper disposal methods through public education and outreach.

5. Increase public awareness of proper disposal of hazardous wastes.

6. Increase public awareness of water use and its conservation in and around homes.

7. Increase public awareness and enforcement of backflow protection.

8. Improve recognition of setback distances around well heads.

9. Improve security around well heads and water storage tanks.

D. Community Involvement

Kimberly's SWPP will be made available to the public in the following ways:

1.Posted in its entirety on the City of Kimberly's website, www.cityofkimberly.org.

2.Informational pamphlets to be available at the Kimberly City Hall, the Kimberly Library, and on the city website.

For additional information, the public may contact:

- Mr. Kevan Hafer, Maintenance Foreman, at (208) 731 - 4191 or khafer@cityofkimberly.org

- Adrianna Hummer, Source Water Protection Specialist with Idaho Rural Water Association, at (208) 343 - 7001 or ahummer@idahoruralwater.com

IV. SOURCE WATER PROTECTION AREA

A. Source Water Protection Area Delineation

"Delineating" refers to the method used to establish the physical area around a well that will become the focal point of quality and protection measures. This area can be thought of as a "zone of contribution" where any water recharging groundwater within the delineated area is contributing to the drinking water sources of Kimberly. The delineation process is performed by the Idaho Department of Environmental Quality for every public drinking water system in Idaho.

DEQ uses a computer model that assimilates a variety of data, including the City of Kimberly well logs, other local area well logs, and various hydrogeological reports, to map the boundaries of the zone of contribution into groundwater time-of-travel (TOT) zones. These zones indicate the number of years necessary for a particle of water to reach a well. DEQ used a refined computer model approved by the EPA in determining the 3-year, 6-year, and 10-year TOT

zones. A complete description of the City of Kimberly's hydrogeology can be found in section 3.0 of the 2006 version of the *City of Kimberly Drinking Water Protection Plan.*

Delineations for Kimberly's wells 1, 2, 3, 5 and 6 were performed as part of Kimberly's 2001 Source Water Assessment (*DEQ, 2001*). These were the delineations shown in Kimberly's original SWPP. Kimberly has one newly acquired drinking water source that was not included in the 2006 *Drinking Water Protection Plan.* Well #7 was drilled in 2010 and now serves as an additional municipal drinking water source. The delineation for Well #7 is included in this plan, along with updated delineation maps for all of Kimberly's municipal wells (Appendix B). The most current delineations and Source Water Assessment can be viewed anytime at *http://www.deq.idaho.gov/water/swaOnline/.*

V. POTENTIAL SOURCES OF GROUNDWATER CONTAMINATION

A. Potential Contaminant Source Inventory

The potential contaminant source inventory, or PCI, is a two-phase process in which potential threats to each well are identified and ranked. The first phase is performed by DEQ using computer databases and GIS maps. DEQ performed an updated PCI for each of Kimberly's drinking water wells on March 15, 2013. This information is another component of the Source Water Assessment.

The second phase of the PCI involves an *enhanced* step in which the potential contaminant sources identified by DEQ are confirmed in the field, and additional potential sources of contamination are identified.

The enhanced inventory was conducted on April 16th and 17th, 2013 by Kevan Hafer and Melissa McCoy of the City of Kimberly. Assistance was provided by Adrianna Hummer of Idaho Rural Water Association and Irene Nautch of Idaho DEQ. The locations and/or businesses outlined have been selected as possible threats to the source water wells for the City of Kimberly. The planning team members have ranked the potential contaminant sources as *high*, *medium*, or *low* threats to the water system. The rankings were decided upon by taking into consideration the proximity of the site to the drinking water source, detection of any known contaminants or past spills at the site, and the type of risk the potential contaminant poses to the source. A more extensive list of potential contaminants is included in Appendix C of this report. For definitions of terms and abbreviations, see Appendix A.

Please note that a release may never occur from a potential source of contamination. Many potential sources of contamination are regulated at the federal or state level, or both, to reduce the risk of release. Therefore, when businesses, facilities, or properties are identified as potential contaminant sources, it does not mean that they are in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation.

Enhanced Potential Contaminant Inventory

Name	Description	Location	Potential Contaminants or Concern	Rank
Westway Feed Products LLC	CAMEO	Main St N and Tyler St	Site specific	Medium
Valley Agronomics/Agriliance	CAMEO	Jackson St between Oak and Pine	chemical use and storage onsite	Medium
City of Kimberly	Deep injection well	Madison St, between Main and Elm	IOC, VOC, SOC, Microbe	Low
Fastway 66 gas station	UST: 4 active Remediation site	111 Center St W	VOC, SOC, *past UST leak*	Medium
Maverick gas station	UST: 2 active And CAMEO	Main and Center	VOC, SOC	Medium
Kimberly School District transportation yard	UST: in closed 1990	Center St and Elm St	VOC, SOC	Medium
Private Owners	2 Feedlots	N 3550 E and 3600 E	IOC, Microbe	Low
Idaho Suds	Car Wash, drainage sump	Main St S	VOC, SOC Chemicals washing off cars	Medium
Low Line Canal, Perrine Coulee	Surface Waters	Various	IOC, VOC, SOC, Microbe	Medium
Rock Creek Growers	Nursery	Irene St and Maxine St	SOC, IOC	High
Eugene C. Widmere	3 USTs: closed, Remediation site	623 Main St N	VOC, SOC, *past UST leak*	Low

B. Contaminant Inventory Updates

Formal "on-the-ground" surveys of each source water protection area will be conducted every five years when the Source Water Protection Plan is updated. Surveys will also be conducted whenever a new development (residential or commercial) occurs so that potential contaminant sources are quickly identified and prioritized. Implementation efforts can be expanded to address new sources as they are identified.

The City's Maintenance Foreman, Kevan Hafer, will be responsible for heading the update of this SWPP and performing the surveys, or appointing staff to do so.

After the formal survey of each source water protection area is performed, any newly identified potential contaminant source should be added in the "comment section" of DEQ's online Source Water Assessment program. New potential contaminant sources identified can also be captured using the Potential Contaminant Inventory form in Appendix D. This will allow Kimberly's planning team to stay up to date on sources throughout the term of their SWPP.

VI. SOURCE WATER PROTECTION MANAGEMENT TOOLS

The planning team has developed a strategy to help protect the City of Kimberly's drinking water sources. Their strategy includes a variety of activities that will be carried out over the course of the next five years. The act of carrying out one of the activities is referred to as "implementation." Implementation is the key component to having an effective SWPP.

The yearly schedule below identifies:

- specific protection activities
- the date or month the activities will be completed
- who is responsible for completing each activity
- the specific task(s) related to that activity
- public involvement; this will help with planning and advertising

Protection Activity	Responsible Party	Task(s)	Public Participation? (Y/N)	Date to be Completed
Year 1: 2013				
Make SWPP available to public, and educate community on yearly Source Water Protection activities	Pat Bermingham and/or Melissa Williamson	Add "Source Water Protection" information to the "Drinking Water" page on Kimberly's website. Distribute literature at Library and City Hall.	No	August
Inform residents about Kimberly's SWP efforts	IRWA and Pat Bermingham	Develop SWPP summary brochure to be made available at City Hall, Library, and on website.	No	July
Increase awareness of Kimberly's source water protection area	Kevan Hafer	Install "Drinking Water Protection Area" signs near Kimberly's wells and sensitive areas.	No	Completed in May
Prepare for water supply/contaminant	Kevan Hafer and	Update Kimberly's Contingency Plan.	No	Completed in May

emergencies	Melissa Williamson			
Encourage proper disposal of pesticides and chemical containers	Kevan Hafer, Melissa Williamson, and IRWA	Work with Department of Agriculture to organize collection events in Kimberly. Collaborate with IRWA to advertise for the events.	Yes	September
Educate new businesses/residents on backflow prevention	Kevan Hafer, Melissa Williamson	Provide a list of local backflow testers to all residents that need backflow prevention devices checked. Distribute mailers for residents to submit proof of backflow assembly testing.	Yes	March
Educate local children about drinking water protection	IRWA and local educator	Host edible aquifer event in local elementary school.	Yes	Fall
Ensure unused wells are properly decommissioned	Kevan Hafer, Melissa Williamson	Investigate open test wells and work with IDWR to pursue proper shut down. IRWA to assist with grant writing if needed.	No	Throughout the year
Year 2: 2014				
Keep up-to-date on website maintenance	Kevan Hafer and Melissa Williamson	Meet with new staff member that will be in charge of the City website. Inform them of SWP efforts and upcoming plans.	No	Following Pat Bermingham's retirement
Inform residents about Kimberly's SWP efforts	New planning team member and IRWA	Update website with this year's public outreach events. Distribute literature as needed.	Yes	January
Increase public	Planning	Investigate hosting	Yes	July

awareness about water conservation and source protection	team and assistance from IRWA	a booth at Good Neighbor Day.		
Continue with enforcement of backflow ordinance	Kevan Hafer and Melissa Williamson	Provide a list of local backflow testers to residents/businesses that need backflow prevention devices checked. Enforce testing using mailers.	Yes	March
Continue to pursue decommissioning of unused wells	Kevan Hafer, Melissa Williamson	Work with IDWR to properly shut down unused wells.	No	Grant application period is in the fall
Improve security of well houses for the City of Kimberly's wells	Kevan Hafer, Melissa Williamson	Pursue funding for security fencing around Well #5. Grant assistance from IRWA if needed.	No	Grant application in the fall
Educate local children about drinking water protection	IRWA and local educator	Host edible aquifer event in local elementary school.	Yes	Fall
Encourage proper disposal of pesticides and chemical containers	Kevan Hafer, Melissa Williamson, and IRWA	Work with Department of Agriculture to organize collection events in Kimberly. Collaborate with IRWA to advertise for the events.	Yes	September
Year 3: 2015				
Inform residents about Kimberly's SWP efforts	New planning team member and IRWA	Update website with this year's public outreach events. Distribute literature as needed.	No	January
Increase public awareness about water conservation and source protection	Planning team and assistance from IRWA	Assess success of booth at Good Neighbor Day Event and possibly host another.	Yes	July

Continue with enforcement of backflow ordinance	Kevan Hafer and Melissa Williamson	Provide a list of local backflow testers to residents/businesses that need backflow prevention devices checked. Enforce testing using mailers.	Yes	March
Continue with security improvements for well houses	Kevan Hafer and Melissa Williamson	Complete security fencing project for Well #5.	No	Throughout the year
Encourage proper disposal of pesticides and chemical containers	Kevan Hafer, Melissa Williamson, and IRWA	Work with Department of Agriculture to organize collection events in Kimberly. Collaborate with IRWA to advertise for the events.	Yes	September
Educate local children about drinking water protection	IRWA and local educator	Assess success of past school events, and possibly host another edible aquifer event in local elementary school.	Yes	Fall
Year 4: 2016				
Inform residents about Kimberly's SWP efforts	New Planning Team Member and IRWA	Update website with this year's public outreach events. Distribute literature as needed.	No	January
Increase public awareness about water conservation and source protection	Planning team and assistance from IRWA	Assess success of booth at Good Neighbor Day Event and possibly host another.	Yes	July
Continue with enforcement of backflow ordinance	Kevan Hafer and Melissa Williamson	Provide a list of local backflow testers to residents/businesses that need backflow prevention devices checked. Enforce	Yes	March

		testing using mailers.		
Encourage proper disposal of pesticides and chemical containers	Kevan Hafer, Melissa Williamson, and IRWA	Work with Department of Agriculture to organize collection events in Kimberly. Collaborate with IRWA to advertise for the events.	Yes	September
Educate local children about drinking water protection	IRWA and local educator	Host edible aquifer event in local elementary school.	Yes	Fall
Stay current with system maintenance and security	Kevan Hafer and Melissa Williamson	Address system deficiencies identified in this year's Sanitary Survey.	No	Following completion of Sanitary Survey
Year 5: 2017				
Review and update SWPP, including potential contaminant inventory	Planning Team	Set meeting date. Publicize meeting date at City/County offices, Library, and on website. Create new implementation list based on success/failure of the last update.	Yes	January
Review and update Contingency Plan	Kevan Hafer and Melissa Williamson	Verify emergency numbers are still valid. Update capacity figures and system information as needed.	No	January

VII. PLANNING FOR EMERGENCIES

A. Contingency Plan

The City of Kimberly has updated their Contingency Plan as part of this Addendum. The full Contingency Plan is included in Appendix E. The Contingency Plan identifies:

- Potential emergencies

- Key contact personnel
- Alternate sources of drinking water

B. Contingency Plan Update

The City of Kimberly's Contingency Plan will be reviewed and updated annually by the planning team coordinator. This can be done at the same time as the annual SWPP update.

Copies of the Contingency Plan will be located in the City Hall, the public works shop, the fire station and the police station.

C. Planning for other Emergencies

The City of Kimberly has completed a Security Vulnerability Assessment (SVA) and an Emergency Response Plan (ERP). These two documents were updated in 2013. Copies of the ERP are located in City Hall and the City Shop. Copies of the ERP will also be provided to city council members and emergency first-responders. Due to matters of security, the SVA will not be available for public review. Parties interested in the aspects of Kimberly's ERP may contact Public Works Director Rob Wright.

VIII. FUTURE DRINKING WATER SOURCES

A. Delineations for New Sources

New drinking water sources will be delineated in a manner consistent with the process explained in section **IV A** of this Addendum. The delineations and PCI will be performed by DEQ if/when a new drinking water source comes online. If there are major changes to an existing source's construction, discharge rate, or pumping rate, then the existing delineation should be reviewed to ensure that it still represents the appropriate source water protection areas. The City of Kimberly will contact Idaho DEQ when they have a new source that needs to be assessed, or when changes have been made to an existing source.

B. Protection Strategies for New Sources

The City of Kimberly has installed a new well since the original SWPP was created in 2006. This groundwater well has placed Kimberly in a good position to provide drinking water in sufficient amounts to meet its future needs.

IX. PUBLIC PARTICIPATION

The planning team members distributed literature during the SWPP development phase to try and include members of the community. Public advertisement of Kimberly's SWPP will be accomplished through the development of a brochure to be made available at the public library and the City Hall, as well as on the City website. Upcoming planning team meetings will be advertised at the City Hall, public library, and on the website.

The public will be able to participate in a number of community outreach events throughout the year. The City of Kimberly can post public notices on their website regarding these events. Advertisements can also include flyers, mailers, and newspaper articles.

Public involvement will be encouraged when it is time to update this plan in 2017. Notices of meetings will be distributed using the methods mentioned above.

X. REFERENCES

1. *City of Kimberly PWS#ID5420033 Source Water Assessment Final Report*, Idaho Department of Environmental Quality, July 31, 2001.

2. *Source Water Assessment Summary Report: Kimberly, City of PWS#ID5420033,* Idaho Department of Environmental Quality, March 15, 2013.

3. *City of Kimberly PWS 5420033 Drinking Water Protection Plan*, 2006.

4. *Protecting Drinking Water Sources in Idaho*, Idaho Department of Environmental Quality, 2000.

XI. APPENDIXES

Appendix A: Glossary of terms and abbreviations

Appendix B: Delineation maps for Kimberly's drinking water wells

Appendix C: Detailed potential contaminant source inventory

Appendix D: Potential Contaminant Inventory Update Forms

Appendix E: 2013 Contingency Plan for the City of Kimberly

APPENDIX A
Glossary of Abbreviations and Terms

Taken from Idaho DEQ's SWA Online:
http://www.deq.idaho.gov/water/swaOnline/AcyronymsAndGlossary.aspx

Abbreviations and Acronyms

AST - aboveground storage tank

bgs - below ground surface

CERCLIS - Comprehensive Environmental Response Compensation and Liability Information System

EPA - U.S. Environmental Protection Agency

DEQ - Idaho Department of Environmental Quality

GIS - geographic information system

IDAPA - A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures act

IOC - inorganic chemical

LUST - leaking underground storage tank

MCL - maximum contaminant level

µg/L - micrograms per liter

mg/L - milligrams per liter

NPDES - National Pollutant Discharge Elimination System

PWS - public water system

RCRIS - Resource Conservation Recovery Information System

SARA Tier II - Superfund Amendments and Reauthorization Act Tier II facilities

SDWISS - Safe Drinking Water Information System, state version

SOC - synthetic organic chemical

TOT - time of travel

TRI - toxic release inventory

UST - underground storage tank

VOC - volatile organic chemical

Glossary

Aquifer – A geologic formation of permeable saturated material, such as rock, sand, gravel, etc., capable of yielding economically significant quantities of water to wells and springs.

CAMEO (Computer-Aided Management of Emergency Operations) Chemical Facility – A facility that stores or uses hazardous material and is included in the CAMEO Database, which is maintained by the Environmental Protection Agency and National Oceanic and Atmospheric Administration.

CERCLA (Comprehensive Environmental Response Compensation and Liability Act) Site – More commonly known as "Superfund," CERCLA is federal legislation passed in 1980 designed to clean up hazardous waste sites that are on the U.S. Environmental Protection Agency's National Priorities List. See http://www.epa.gov/superfund/policy/cercla.htm for more information on CERCLA.

CAFO (Confined Animal Feeding Operation) – CAFOs are agricultural operations where animals are kept and raised in confined situations. CAFOs congregate animals, feed, manure and urine, dead animals, and production operations on a small land area. Feed is brought to the animals rather than the animals grazing or otherwise seeking feed in pastures, fields, or on rangeland. See dairy and feedlot definitions.

Dairy– A place or premise where one or more milking cows, sheep, or goats are kept, and from which all or a portion of the milk produced is sold for human consumption. Dairies are regulated by the Idaho State Department of Agriculture.

Deep Injection Well – These sites may be indicated on the delineation and potential contaminant sources maps. An injection well is a well used as a means to dispose of or store fluids in the subsurface. Deep injection wells, generally used for disposing of storm water runoff or agricultural field drainage, are deeper than 18 feet below ground surface and are regulated by the Idaho Department of Water Resources.

Delineation (delineate) – The process of defining or mapping the boundary of the area that contributes water to a particular water source used as a public water supply.

Drain Location – Historical method of draining excess water resulting from flood irrigation on agricultural fields by digging a hole from the land surface to an underlying tunnel.

Enhanced Contaminant Inventory – See Potential contaminant inventory (PCI) for a definition.

Feedlot – A lot or facility where slaughter and feeder cattle or dairy heifers are confined and fed for a total of forty-five days or more during any twelve month period and crops, vegetation forage growth, or post harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

Floodplain – The flat or nearly flat land along a river or stream or in a tidal area that is covered by water during a flood. DEQ uses data from the Federal Emergency Management Agency to determine the 100 – year floodplain for any given area. The 100-year floodplain is the area likely to be inundated during a flood that has a 1% chance of being equaled or exceeded in any given year.

GIS (geographic information system) – A collection of computer hardware, software, geographic data, and interactive maps used to efficiently capture, store, update, analyze, and display the delineation and potential contaminant sources for source water assessments.

Groundwater – Any water which occurs beneath the surface of the earth in a saturated geologic formation of rock or soil..

Groundwater Flow – The movement of ground water through openings in sediment and rock that occurs in the zone of saturation. This flow is typically under the influence of gravity.

Ground water under the direct influence of surface water (GWUDI): Any water beneath the surface of the ground with (1) significant occurrence of insects or other macroorganisms, algae, or large diameter pathogens such as Giardia lamblia, or (2) significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions.

Hydrologic Sensitivity – Hydrologic sensitivity refers to the susceptibility of a public water system to contamination based on the hydrologic conditions at the source. A well's hydrologic sensitivity score depends on four factors: 1) the composition of surface soil, 2) the composition of material in the vadose zone, 3) the depth at which ground water is first encountered, and 4) the presence of a low permeable unit.

Infiltration – The penetration of water through the ground surface into subsurface soil.

IOC (Inorganic chemicals) – A chemical substance of mineral origin, without carbon in its atomic structure. Examples include nitrate and arsenic. IOCs can be present in drinking water including ground water and surface water.

Landfill – Areas of land or excavations in which wastes are placed for permanent disposal.

Leachable Contaminant – Water can collect contaminants as it migrates through wastes, pesticides, or fertilizers. Leachable contaminants can dissolve into water and filter through the soil in a process known as leaching. Leaching may occur in farming areas, dairies, feedlots, and landfills, and may result in hazardous substances entering surface water, ground water, or soil.

Maximum Contaminant Level (MCL) – The maximum permissible level of a contaminant in water delivered to any user of a public water system. MCLs are set by the U.S. Environmental Protection Agency and are enforceable standards.

Microbial contaminants – Contaminants that include viruses such as Hepatitis; protozoa such as Giardia; and bacteria such as coliform. Coliform is a bacteria found in the digestive tracts of mammals. Their presence in water can indicate fecal pollution. E. coli is one type of coliform bacteria.

mg/L – A unit of measurement referring to milligrams per liter.

Mine Site – A site where geologic materials are extracted from the earth.

Nitrate (NO3) – An inorganic compound containing nitrogen and oxygen. Excessive nitrate concentrations in water can cause severe illness in infants, elderly, and pregnant women. Nitrate is typically introduced to the environment by human activities including: septic systems, animal facilities, fertilizers, manure, industrial waste waters, and landfills. The Environmental Protection Agency MCL for nitrate is 10 mg/L.

Nitrate Priority Area – Area where greater than 25% of wells and/or springs that have been sampled have nitrate concentrations greater than or equal to 5 milligrams per liter.

NPDES (National Pollutant Discharge Elimination System Location) – These sites, which represent sites with NPDES permits, may be indicated on the delineation and potential contaminant sources map. The federal Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Compound –Any substance (produced by animals, plants, or humans) that contains mainly carbon, hydrogen, nitrogen, and oxygen in the cellular structure.

Permeability – Ability of a porous medium to transmit fluids under a hydraulic gradient. The property or capacity of a porous rock, sediment, or soil for transmitting a fluid; it is a measure of the relative ease of fluid flow under unequal pressure.

Pesticide Management Area – An area that is susceptible to pesticide contamination of ground water indicated by elevated pesticide detections in the ground water and requires additional restrictions on pesticide use as determined by the Idaho Sate Department of Agriculture.

Phosphate Mine – Sites where phosphate ore is extracted from the earth.

Potential Contaminant Source – Any facility or activity that stores, uses, or produces, as a product or by product, the contaminants regulated under the federal Safe Drinking Water Act, and have a sufficient likelihood of releasing the contaminants at levels that could potentially harm drinking water sources.

Potential Contaminant Inventory (PCI) – DEQ conducts a PCI to locate and describe facilities, land uses, and environmental conditions within the source water assessment delineation that are potential sources of contamination to ground water or surface water. The PCI is one of three factors used in the susceptibility analysis to evaluate the overall potential contamination risk to a drinking water supply. During the first phase of the PCI, known as the primary contaminant inventory, DEQ staff use computer databases and GIS maps created by DEQ to identify and document potential contaminant sources within the water system's source water assessment delineation. During the second phase of the PCI, known as the enhanced inventory, DEQ contacts the water system to review the list of potential contaminants identified in the first phase and add any additional potential contaminants not already identified.

Public Water System – A public water system (PWS) supplies drinking water to at least 25 people or has at least 15 service connections. Water systems not meeting one or both of these requirements are considered private systems and are not regulated by DEQ.

Recharge – The addition of water to the zone of saturation; also, the amount of water added. Sources of recharge may include, but is not limited to, precipitation, irrigation practices, seepage from creeks, streams and lakes, injection (including stormwater injection wells and agricultural drainage injection wells) and land application of wastewater. Recharge can be expressed as a rate (i.e., in/yr) or a volume.

Remediation Site – A site where the DEQ Waste and Remediation Program have initiated remediation actions, including Brownfields, above ground storage tanks, leaking UST, RCRA, mining, and emergency response sites.

RCRA site (Resource Conservation Recovery Act) –The Resource Conservation and Recovery Act (RCRA) establishes a federal program to manage hazardous wastes for its entire existence to ensure that hazardous waste is handled in a manner that protects human health and the environment. Facilities that receive hazardous wastes for treatment, storage, or disposal (TSDs)

are regulated by the Act, which serves as the basis for developing and issuing permits.

Road Salt Location – A location where the Idaho Department of Transportation stores road salt and sand.

Safe Drinking Water Act – The Safe Drinking Water Act was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law authorized the U.S Environmental Protection Agency and states to oversee public water systems and set standards for drinking water. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells.

Sanitary Survey –A routine, on-site inspection of a public water system's water sources, facilities, equipment, operation, and maintenance of a public water system to evaluate the adequacy of those elements for producing and distributing safe drinking water. The purpose of a sanitary survey is to protect public health by identifying system deficiencies and recommending possible solutions. Sanitary surveys in Idaho are conducted by a DEQ staff member or a representative of the local district health department. (DEQ contracts with Idaho's seven district health departments to assist the state in providing service to small public water systems.)

Shallow Injection Well – A well less than or equal to 18 feet deep in which fluids are injected as a means of disposal or for storage in the subsurface, such as stormwater, agricultural water, and facility heating/cooling water.

Source Water – Any aquifer, surface water body, or watercourse from which water is taken either periodically or continuously by a public water system for drinking or food processing purposes.

Source Water Assessment – A source water assessment provides information on the potential contaminant threats to public drinking water sources. Each source water assessment consists of a delineation of the water source area, a contaminant inventory, and a susceptibility analysis.

Surface Water(s) – All water which is open to the atmosphere and subject to surface runoff. Lakes, ponds, streams, rivers, and other water bodies which lie on the surface of the land. Surface waters may be partially or fully supplied by ground water.

Susceptibility Score – The susceptibility to potential contamination for each well, spring, or surface water intake in a public water system. Before analyzing susceptibility, DEQ defines the source water assessment delineation.

SOC (Synthetic Organic Chemical) –Any manmade organic compound. There are many SOCs, including pesticides, herbicides, and many chemicals with industrial uses. SOCs may be present in ground water and drinking water.

Time of Travel (TOT) –The number of years necessary for a particle of water to travel in the aquifer to reach a well.

Toxic Release Inventory (TRI) Site – These sites may be indicated on the delineation and potential contaminant sources maps. TRI sites indicate locations of potential contaminants identified on the federal Toxics Release Inventory, which is a database made available to public by the U.S. Environmental Protection Agency. The TRI contains information on toxic chemical releases and waste management activities reported annually by certain industries and federal facilities. The TRI list was developed as part of the federal Emergency Planning and Community Right to Know Act passed in 1986. This act requires the reporting of any release of a chemical found on the TRI list. Visit www.epa.gov/tri/trichemicals/ for a full list of chemicals on the TRI.

Tunnels – A drainage tunnel historically constructed to drain excess flood irrigation water from agricultural fields. A series of drains in the field empties the excess water into the tunnel.

µg/L – A unit of measurement referring to micrograms per liter.

UST (Underground Storage Tank) Site – While many types of storage tanks may be buried underground, the term "underground storage tank" refers specifically to certain types of tanks that are regulated under the federal Resource Conservation Recovery Act. These tanks are buried at least 10% underground and store either petroleum products (gasoline, diesel, kerosene, jet fuel) or certain hazardous substances. The underground piping connected to the tanks is also considered part of the UST. USTs are most often found at gas stations and other fueling facilities. For more information, see www.deq.idaho.gov/waste/prog_issues/ust_lust/index.cfm#whatisust.

VOC (Volatile Organic Chemical) –Any organic compound that easily evaporates at room temperature. VOCs are emitted by a wide array of products numbering in the thousands. Examples include paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions. VOCs may be present in ground water and drinking water.

Wastewater Lagoon – Manmade impoundments for the purpose of storing or treating wastewater.

Water Reuse Area – Areas where municipal or industrial wastewater is applied to land for the purpose of land treatment.

Well casing – The tube or pipe placed inside a well to protect the water from contamination and prevent the well from caving in.

Wellhead – The physical structure, facility, or device at the land surface from or through which ground water flows or is pumped from subsurface water-bearing formations.

APPENDIX B
Source Water Delineations

The following data is taken from the *City of Kimberly PWS 5420033 Amended Source Water Assessment*, DEQ, (March 15, 2013).

Figure 1. City of Kimberly Delineation Map for Well#1 and potential contaminant source locations.

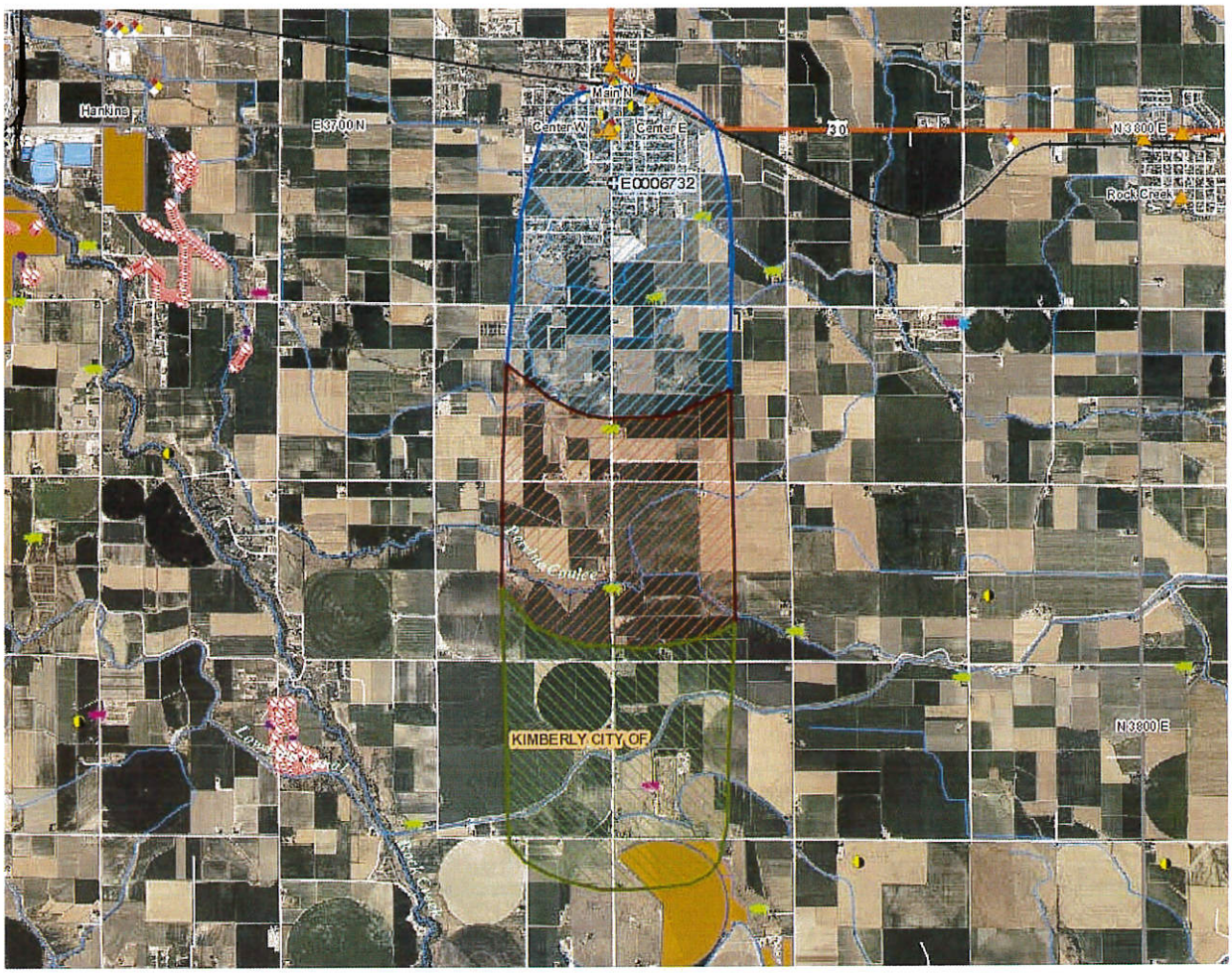
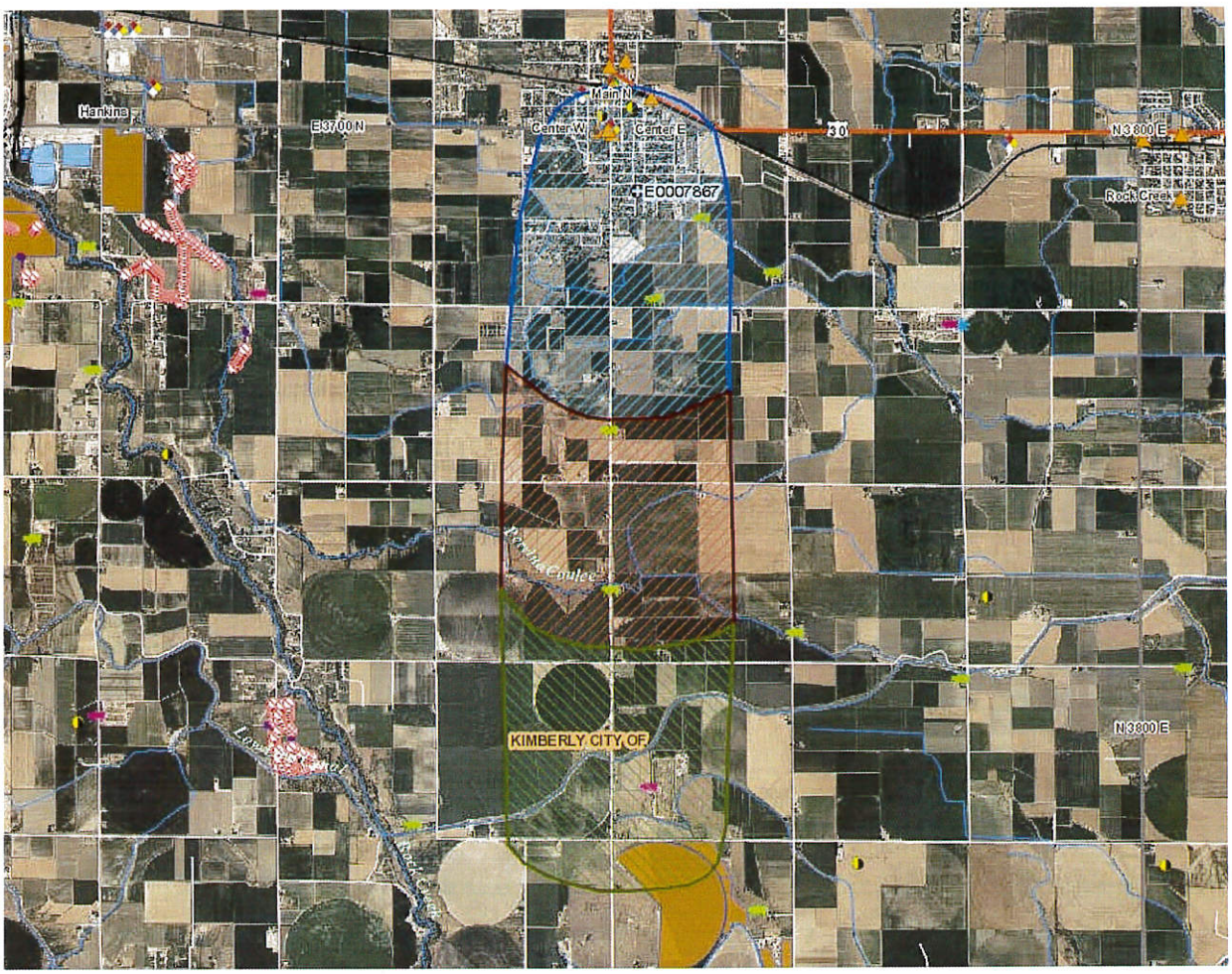


Figure 2. City of Kimberly Delineation Map for Well#2 and potential contaminant source locations.



Map Legend

- County Boundaries
- Source Location

Source Water Delineation Time of Travel (TOT)

- 0 - 3 Year TOT
- 3 - 6 Year TOT
- 6 - 10 Year TOT

Potential Contaminants Inventory Locations

- CERCLA Site
- Toxics Release Inventory Site
- Remediation Site
- UST Site
- Dairy
- Feedlot
- Shallow Injection Well
- Deep Injection Well
- NPDES Location
- RCRA Site
- Drain Location
- Road Salt Location
- Mine Site
- CAMEO Chemical Facility
- Tunnels And Drains
- Railroad
- Phosphate Mine
- Water Reuse Area
- Wastewater Lagoon
- Pesticide Management Area
- Landfill

Streets (100k)

Roads

- Highway
- Limited Access
- Local Road
- Major Road
- Other Road
- Ramp
- Trail
- 4WD

IDEQ GIS Dec 2010

0 0.74 miles

Figure 3. City of Kimberly Delineation Map for Well#3 and potential contaminant source locations.

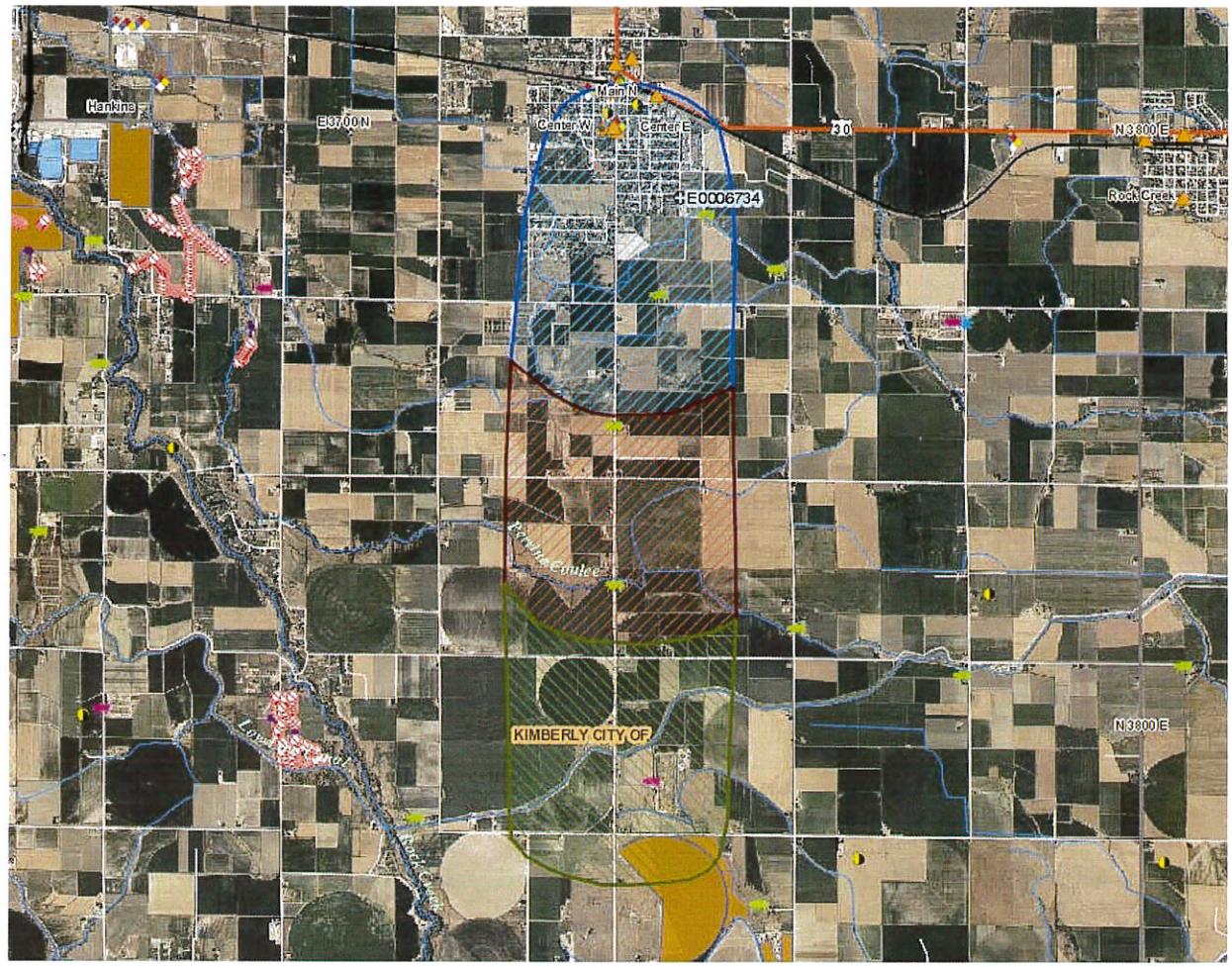


Figure 4. City of Kimberly Delineation Map for Well#5 and potential contaminant source locations.

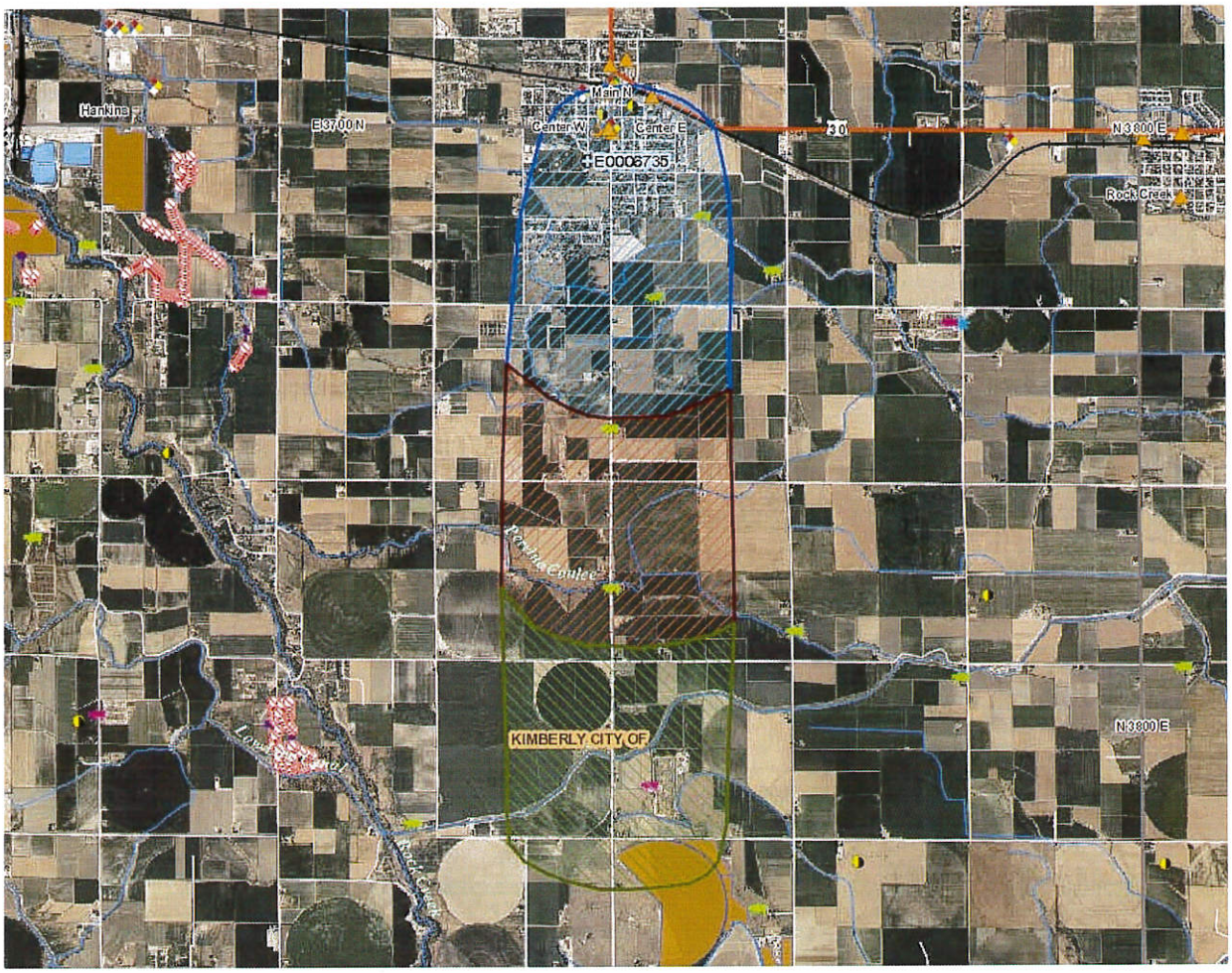
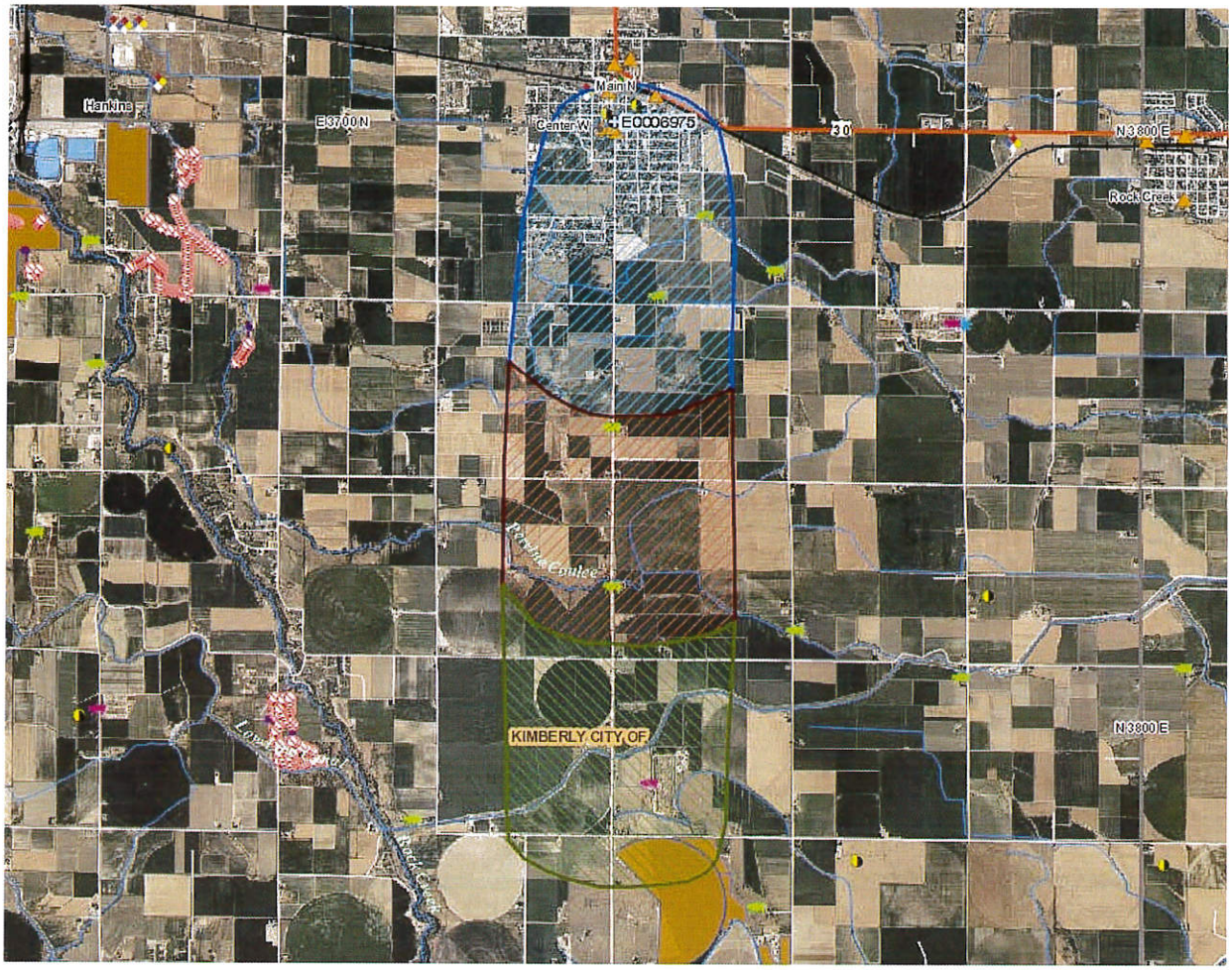


Figure 5. City of Kimberly Delineation Map for Well#6 and potential contaminant source locations.



Map Legend

- County Boundaries
- Source Location

Source Water Delineation Time of Travel (TOT)

- 0 - 3 Year TOT
- 3 - 6 Year TOT
- 6 - 10 Year TOT

Potential Contaminants Inventory Locations

- CERCLA Site
- Toxics Release Inventory Site
- Remediation Site
- UST Site
- Dairy
- Feedlot
- ShallowInjection Well
- Deep Injection Well
- NPDES Location
- RCRA Site
- Drain Location
- Road Salt Location
- Mine Site
- CAMEO Chemical Facility
- Tunnels And Drains
- Railroad
- Phosphate Mine
- Water Reuse Area
- Wastewater Lagoon
- Pesticide Management Area
- Landfill

Streets (100k)

Roads

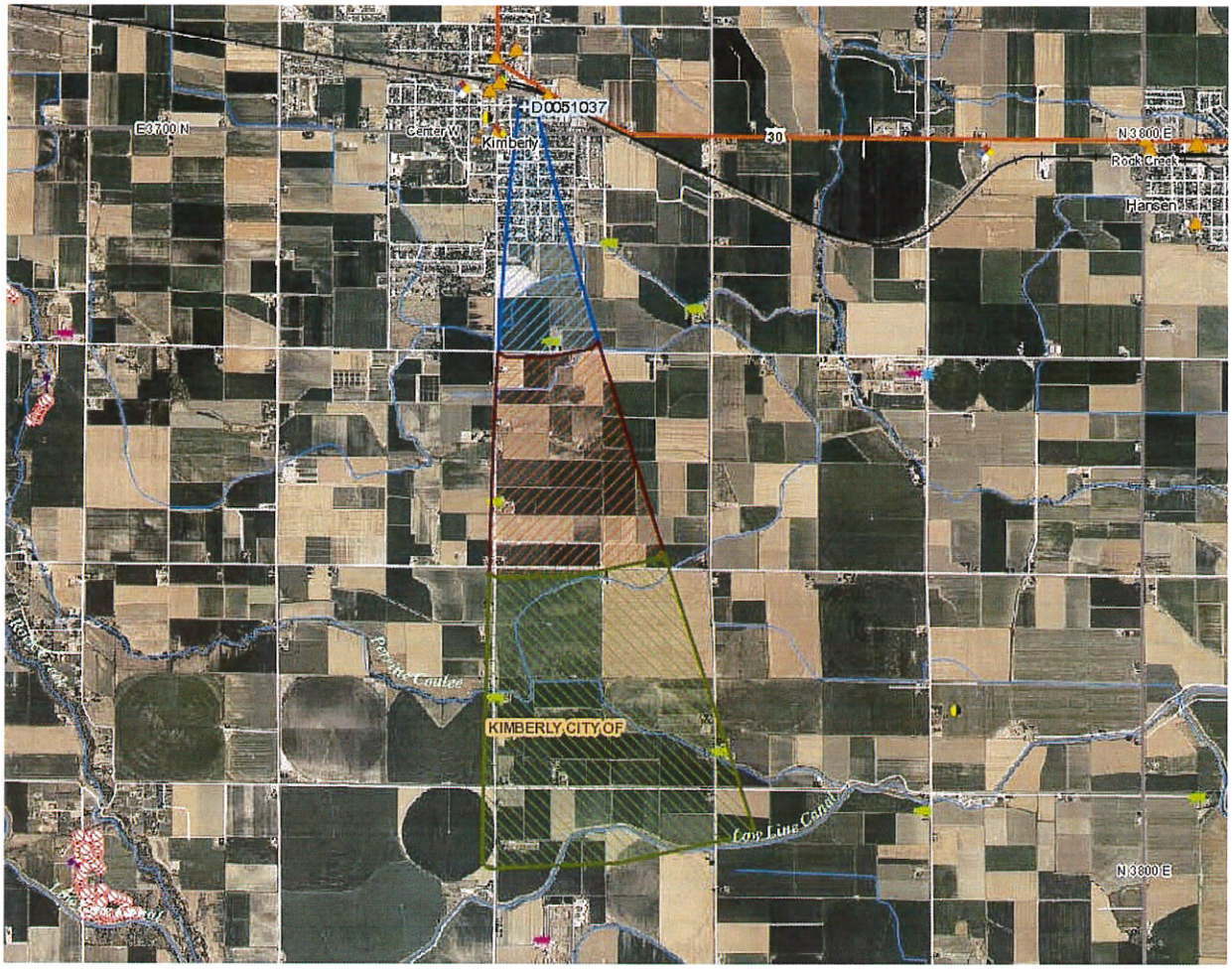
- Highway
- Limited Access
- Local Road
- Major Road
- Other Road
- Ramp
- Trail
- 4WD

0 0.74 miles

N

IDEQ GIS Dec 2010

Figure 6. City of Kimberly Delineation Map for Well#7 and potential contaminant source locations.



Map Legend

- County Boundaries
- Source Location

Source Water Delineation Time of Travel (TOT)

- 0 - 3 Year TOT
- 3 - 6 Year TOT
- 6 - 10 Year TOT

Potential Contaminants Inventory Locations

- CERCLA Site
- Toxics Release Inventory Site
- Remediation Site
- UST Site
- Dairy
- Feedlot
- Shallow Injection Well
- Deep Injection Well
- NPDES Location
- RCRA Site
- Drain Location
- Road Salt Location
- Mine Site
- CAMEO Chemical Facility
- Tunnels And Drains
- Railroad
- Phosphate Mine
- Water Reuse Area
- Wastewater Lagoon
- Pesticide Management Area
- Landfill

Streets (100k)

Roads

- Highway
- Limited Access
- Local Road
- Major Road
- Other Road
- Ramp
- Trail
- 4WD

IDEQ GIS Dec 2010

0 0.60 miles

APPENDIX C
Detailed Potential Contaminant Inventory

The GIS data sets used to identify the following potential contaminants are gathered from various agencies and are updated at different intervals.

The following abbreviations apply:

TOT : time of travel zone
IOC : inorganic chemical
VOC : volatile organic chemical
SOC : synthetic organic chemical

Detailed Potential Contaminant Inventory for the City of Kimberly Drinking Water Sources

TOT	DESCRIPTION OF SOURCE	POTENTIAL CONTAMINANTS	NAME
0-3 years	Deep Injection Well	IOC, VOC, SOC, Microbe	City of Kimberly
0-3 years	UST Site	VOC, SOC	Maverick Country Store
0-3 years	UST Site	VOC, SOC	Kimberly School Districtg
0-3 years	UST Site	VOC, SOC	FAST WAY 66
0-3 years	Deep Injection Well	IOC, VOC, SOC, Microbe	PM AG Products Inc
0-3 years	UST Site	VOC, SOC	SNAKE RIVER BEAN
0-3 years	UST Site	VOC, SOC	Intermountain Bean Co
0-3 years	Feedlot	IOC, Microbe	Feedlot
0-3 years	Feedlot	IOC, Microbe	Feedlot
0-3 years	Remediation Site	Site specific	Fast Way 66
0-3 years	Remediation Site	Site specific	Snake River Bean
0-3 years	Shallow Injection Well	IOC, VOC, SOC, Microbe	
0-3 years	CAMEO Chemical Facility	Site specific	Maverk Country Stores #204
0-3 years	CAMEO Chemical Facility	Site specific	Kimberly Community Dial Office
0-3 years	CAMEO Chemical Facility	Site specific	Valley Agronomics LLC
0-3 years	Railroad	IOC, VOC, SOC	Union Pacific Railroad
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Center St W
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Monroe St E
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Ash St S
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Birch St S
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Chestnut St S
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Main St S
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Oak St S
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Kennedy St W
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Madison St W
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	N 3500 E
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	N 3550 E
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Highway 30
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Us Hwy 30
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Main St N
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Wilson Rd
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Ash St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Elm St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Jackson St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Oak St

0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Pine St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Banning Dr
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Diamond Dr
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Gem Dr
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Monroe St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Agate
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Marble Dr
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Crystal St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Emerald St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Jade St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Topaz St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	N 3450 E
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	E 3600 N
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	N 3475 E
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Center St E
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Birchwood Cir N
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Birchwood Cir S
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Brentwood Dr
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Garnet Dr
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Jasper Dr
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Maxine Ln
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Redwood Ln
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Ruby Ln
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Adams St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Birch St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Chestnut St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Irene St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Jefferson St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Kennedy St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Lake St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Lincoln St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Locust St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Lucille St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Madison St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Opal St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Teater St
0-3 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	Washington St
0-3 years	Surface Water	Site specific	
3-6 years	Surface Water	Site specific	
3-6 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	N 3500 E

3-6 years	Surface Water	Site specific	Perrine Coulee
3-6 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	
3-6 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	E 3500 N
3-6 years	Feedlot	IOC, Microbe	Feedlot
3-6 years	Feedlot	IOC, Microbe	Feedlot
6-10 years	Water Reuse Area	IOC, Microbe	MVP, David Roper
6-10 years	Water Reuse Area	IOC, Microbe	MVP, David Roper
6-10 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	3400 North Rd
6-10 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	E 3300 N
6-10 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	E 3400 N
6-10 years	Dairy	IOC, Microbe	Dairy
6-10 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	N 3500 E
6-10 years	Major and Minor Roads	IOC, VOC, SOC, Microbe	N 3450 E
6-10 years	Surface Water	Site specific	Low Line Canal
6-10 years	Surface Water	Site specific	
6-10 years	Feedlot	IOC, Microbe	

APPENDIX D:
UPDATES TO THE POTENTIAL CONTAMINANT INVENTORY

Date of inventory update: _____
Inventory completed by: _____

Well#	Source Description	Potential Contaminants or concerns	Location	Priority Ranking

Date of inventory update: _____
Inventory completed by: _____

Well#	Source Description	Potential Contaminants or concerns	Location	Priority Ranking

APPENDIX E
Contingency Plan for the City of Kimberly, 2013