

# COMMUNITY SOURCE WATER PROTECTION PLAN FOR PUBLIC WATER SYSTEMS IN NYE COUNTY, NEVADA May 2012

# **PREPARED BY:**

# The Nye County Community Source Water Protection Team

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Town of Tonopah	(775) 482-6336
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# **ACRONYMS**

- AB Assembly Bill
- AFA Acre Feet Annually
- AFR Arbitrary Fixed Radius
- AMSL Above Mean Sea Level
- AST Aboveground Storage Tank
- AVSTP Amargosa Valley Science and Technology Park
- BCA Bureau of Corrective Actions
- BGS Below Ground Surface
- BLM Bureau of Land Management
- BoCC Board of County Commissioners
- BSDW Bureau of Safe Drinking Water
- BWPC Bureau of Water Pollution Control
- C Community (Public Water System)
- CERCLIS Comprehensive Environmental Response, Compensation, and Liability Information System
- CFR Calculated Fixed Radius
- CSI Contaminant Source Inventory
- CSWP Community Source Water Protection
  - CSWP Plan Community Source Water Protection Plan
  - CSWP Team Community Source Water Protection Team
- ECHO Enforcement & Compliance History Online
- EPA United States Environmental Protection Agency
- FAQs Frequently Asked Questions
- FOA Funding Opportunity Announcement
- FRS Facility Registry System
- GID General Improvement District
- GIS Geographic Information System
- GPD Gallons per Day
- GPM Gallons per Minute
- GPS Global Positioning System
- HHW Household Hazardous Waste

- IDEA Integrated Data for Enforcement Analysis
- ISWPP -- Integrated Source Water Protection Program
- LUST Leaking Underground Storage Tank
- MHP Mobile Home Park
- NAC Nevada Administrative Code
- NC Non-community (Public Water System)
- NCWD Nye County Water District
- NCWDGB Nye County Water District Governing Board
- NCWRP Nye County Water Resources Plan
- NDEP Nevada Division of Environmental Protection
- NDOM Nevada Division of Minerals
- NDOT Nevada Department of Transportation
- NDWR Nevada Division of Water Resources
- NEPA National Environmental Policy Act
- NOAA National Oceanic and Atmospheric Administration
- NNSS Nevada National Security Site
- NRS Nevada Revised Statutes
- NSBDC Nevada Small Business Development Center
- NSWP Nevada State Water Plan
- NTNC Non-Transient Non-Community (Public Water System)
- NWEAB Nuclear Waste and Environmental Advisory Board
- NWRPO Nuclear Waste Repository Project Office
- NvRWA Nevada Rural Water Association
- PCS Potential Contaminant Source
- PPB Parts per Billion
- PWS Public Water System
- RCRA Resource Conservation and Recovery Act
- SDWA Safe Drinking Water Act
- SDWIS Safe Drinking Water Information System
- SOC Synthetic Organic Compound
- SWAP Source Water Assessment Program

SWPA - Source Water Protection Area

TOT – Time of Travel

TRI – Toxic Release Inventory

UNLV - University of Nevada, Las Vegas

USDA - United States Department of Agriculture

USGS - United States Geological Survey

UST – Underground Storage Tank

VAP - Vulnerability Assessment Program

VOC - Volatile Organic Compound

WHP - Wellhead Protection

WHPA – Wellhead Protection Area

# EXECUTIVE SUMMARY

Public water systems (PWSs) throughout Nye County have volunteered to take part in the development of this comprehensive and coordinated Community Source Water Protection (CSWP) Plan. This Plan has been developed to protect PWS drinking water resources and ensure a sustainable water supply for communities throughout Nye County. Within this Plan, the term "Community" collectively refers to participating PWSs, local residents served by PWSs, and local governments that manage the PWSs located within four areas of Nye County: 1) Amargosa Valley; 2) Beatty; 3) Pahrump; and 4) Tonopah and Northern Nye County.

A PWS is defined by Nevada Revised Statutes (NRS) as any system which regularly serves 25 customers or more or has 15 or more connections. Wells, such as those used for individual households, do not meet the definition of a PWS and are not included for evaluation in this CSWP Plan. There are 80 PWSs included in this Plan, which encompasses one spring and 128 wells. Appendix C includes an inventory of PWSs in Nye County. This CSWP Plan was developed in coordination with the Nevada Integrated Source Water Protection Program (ISWPP) to receive State endorsement as outlined in the "Nevada ISWPP Draft Update: March 2010." Additionally, this Plan consolidates pertinent information from previously endorsed wellhead protection (WHP) plans throughout the County. Historical planning information and data results from the previous plans have been incorporated to build upon prior work done by the communities. Since Nye County is unique in its geographic extent and diversity between communities and ground water systems serving those communities, this Plan may serve as a model for addressing similar challenges in other Nevada communities.

The CSWP Plan has been developed in coordination with existing Community documents, including the Nye County Water Resources Plan, the Nye County Comprehensive Plan, the Amargosa Area Plan, the Beatty Area Plan, and the Pahrump Regional Planning District Master Plan. The Pahrump Regional Planning District Master Plan is in the process of being updated as of the completion of this Plan, and the CSWP Team will be providing recommendations to the Master Plan Steering Committee on how elements of this Plan can be incorporated into the Pahrump Regional Planning District Master Plan.

The Nevada Division of Environmental Protection (NDEP) presented the ISWPP opportunity to the Nye County Water District Governing Board (NCWDGB) on February 22, 2010, explaining how the Program works to protect community drinking water sources. The NCWDGB agreed to participate in the ISWPP, submitted a letter to NDEP requesting participation in the Program, and subsequently directed staff to support the development of the Plan.

Representative stakeholders throughout the Community participated in a series of meetings culminating in two workshops and ultimately the development of the local planning Team. Workshop participants identified Team members, roles and responsibilities, planning goals, and a schedule for Plan development and implementation. Documentation pertaining to the NCWDGB meeting, pre-workshop, workshop, and Team meetings is included in Appendix B.

A comprehensive review of pertinent geologic, hydrogeologic, and water supply data for the PWSs within Nye County was completed. This information was used to update previous WHP Plan information and to develop SWPAs for drinking water sources included in this Plan. This information is detailed in the Delineation Summary Report in Appendix D.

Source Water Protection Areas (SWPAs) are comprised of the land surface surrounding a water supply source (ground water, surface water, or spring) in which activities and land uses are managed in order to protect the water supply. Wellhead protection areas (WHPAs) are those that specifically surround a well and are a subset of SWPAs; however, these terms can be used interchangeably. While previously

established protection areas may have been referred to as WHPAs, for consistency, all protection areas will be designated as SWPAs from this point forward. SWPAs are delineated to enable communities to plan for and respond to situations in which contamination may adversely impact a public drinking water system. SWPAs have been delineated for 80 PWSs in Nye County. SWPA maps are included in Appendix A.

A contaminant source inventory (CSI) was performed to identify potential hazards to the quality of each PWS's drinking water supply. The CSI conducted for Nye County involved conducting a survey of the SWPAs and obtaining basic information to be used in developing management tools aimed to prevent future contamination. New water sources developed by participating PWSs will also be protected under this Plan. At a minimum, SWPAs will be delineated and a contaminant source inventory performed for each new source (well). This will be the responsibility of \_\_\_\_\_\_.

Many types of industry, businesses, land uses, and activities can have an impact on ground water quality.

Appendix E provides the methodology used to develop the CSI and a table with the detailed CSI information available as of publication of this CSWP Plan. A total of 244 potential contaminant sources (PCSs) were identified and classified as follows:

- 69 Miscellaneous (28%)
  - o 24 Golf courses, parks, or nurseries
  - o 17 Mining
  - o 13 Transportation
  - o 4 Airports
  - o 4 Business
  - o 2 Cemeteries
  - o 2 Other
  - o 1 Construction area
  - o 1 Surface water impoundments
  - o 1 Unplugged abandoned well
- 56 Automotive (23%)
- 32 Residential (13%)
- 25 Medical/Educational (10%)
- 25 Storage (10%)
- 12 Industrial (5%)
- 11 Agricultural (5%)
- 11 Municipal Waste (5%)
- 3 Commercial (1%)

The Team reviewed the results of the CSI to identify prevalent and potentially high-risk PCSs in the communities, and discussed how those potential risks could be mitigated through PCS management strategies, both regulatory and non-regulatory. Though septic systems and personal storage yards occur in communities throughout Nye County, the Team decided public education would be the best way to balance the need for drinking water protection with personal property rights, which is reflected in the management strategies. In order to address more commercial PCSs, the Team will recommend to the Planning Department that during the Site Development Review process for projects within the Pahrump Regional Planning District, a review be completed that considers the proximity of the proposed development to PWS drinking water sources and SWPAs in conjunction with the type of development and potential risk factor. Nye County staff can then recommend appropriate conditions for approval, if necessary.

Similarly, businesses not requiring a Site Development Review process, such as a business moving into an existing building, are required to go through the less-rigorous Zoning Review process with the Nye County Planning Department. This process may also be an opportunity for the Planning Department staff to review the type of business, its status as a PCS, and evaluate the proximity of the business in relation to PWS drinking water sources. This review could result in special conditions of approval related to the development. Currently, every proposed new development within the Pahrump Regional Planning District is reviewed and both standard and special conditions of approval are recommended by staff. Project proponents can request any standard or special conditions of approval be waived.

Specific action items were compiled from previous work plans and Team discussions and were incorporated into the Work Plan (Appendix F). The strategies were developed in accordance with the goals and objectives outlined in the Plan and to ensure regular Plan updates. Each strategy is presented in order of priority. Strategies were prioritized considering current need, staffing resources, and available budget. Action items are as follows, and are detailed in the Work Plan:

- Continued PCS identification and ranking;
- Leaking Underground Storage Tank (LUST) identification and reduction;
- Implementation of production facility security standards;
- Review of inactive PWS wells;
- Inventory of orphaned wells with priorities for future abandonment;
- Consideration of SWPAs in site development review (within the PRPD);
- Public education efforts;
- Contingency Plan development;
- Ground water monitoring;
- Notification from the State for new drilling permits;
- Notification from the State for mine dewatering permits;
- Publicity and expansion of the household hazardous waste program;
- Acquisition of sensitive properties through nonpayment of taxes; and
- Coordination with first responders.

Identifying funding streams for community water projects is likely the primary hurdle PWSs will face in the current economic climate. Applying for loans and grants through federal and State programs may be the best option for leveraging the County's resources in order to bring projects to fruition.

Once the State has endorsed the CSWP Plan, communities are eligible to apply for implementation funding from NDEP. This funding may be used to help with Plan implementation. Communities within Nye County may choose to apply for funding individually, as a coalition with other communities, or on a County-wide basis.

The Public Education Plan (Appendix H), referenced in Section 5 of this Plan, is an organized and strategic approach to gaining understanding of source water/wellhead protection. The intent is to motivate communities served by public water purveyors to take action. In this case, action entails changing practices and personal behavior to prevent contamination of source water, according to the drinking water protection goals outlined in this Plan.

The CSWP Plan should be considered dynamic in the sense that the Team can amend or update it as needed to reflect the growth and changes in the communities. Regularly scheduled reviews of this CSWP Plan by the Team will ensure the document is current and addresses the needs of the Community. Templates to assist the Team in updating this Plan are included in Appendix G. Appendix I will be populated with updates and additions to the Plan.

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Nye County Water District Governing Board

**Pre-Workshop** 

Workshop

**Team Meetings** 

- Appendix C Inventory of Water Sources for Active Public Water Systems
- **Appendix D Delineation Summary**
- **Appendix E Contaminant Source Inventory**
- Appendix F Work Plan for the Community Source Water Protection Plan Implementation
- **Appendix G Community Source Water Protection Planning Templates**
- **Appendix H Public Education Plan**
- Appendix I Updates and Additions to the Community Source Water Protection Plan

# **SECTION 1: INTRODUCTION**

#### 1.1 Overview

The Nye County Community Source Water Protection (CSWP) Plan is divided into the following sections:

- Section 1 presents the participants, the background, and purpose of this CSWP Plan.
- Section 2 describes the formation of, and activities completed by, the Team to develop the CSWP Plan.
- Section 3 discusses the CSWP Plan development and includes potential contaminant source (PCS) management strategies aimed at protecting public drinking water sources/supplies.
- Section 4 describes the means to implement this CSWP Plan in Nye County communities and establishes a schedule for updating and maintaining the CSWP Plan.
- Section 5 presents the Public Education Plan, with the primary goal of developing community support of this CSWP Plan.
- Appendix A presents the SWPAs for drinking water sources by geographic area.
- **Appendix B** includes the agendas and summaries for the NCWDGB pre-workshop, workshop, and CSWP Team meetings. Additionally, the signed ISWPP participation letter is presented in appendix B.
- Appendix C presents all PWS systems included in the Plan.
- **Appendix D** describes the physiography, geology and hydrology of each region included in the Plan, and discusses the delineation methods.
- Appendix E presents an inventory of PCSs identified during the desktop and field survey, and a risk ranking for each PCS.
- Appendix F discusses suggested actions to implement the CSWP plan and protect drinking water sources.
- Appendix G includes blank forms, templates, and sheets for future use by the Team.
- Appendix H presents the Public Education Plan.
- Appendix I is reserved for future additions or updates to the Plan.

#### 1.2 Background

Public water system (PWS) operators throughout Nye County have volunteered to take part in the development of this comprehensive and coordinated CSWP Plan in order to protect their drinking water

resources and to ensure a sustainable water supply for communities throughout Nye County. Within this Plan, the term "Community" collectively refers to participating PWSs, local residents served by PWSs, and local governments that manage the PWSs located within four areas of Nye County: 1) Amargosa Valley; 2) Beatty; 3) Pahrump; and 4) Tonopah and Northern Nye County. PWSs located on the Nevada National Security Site (NNSS), formerly the Nevada Test Site, are not included in the scope of this Plan, as access to the NNSS is restricted. Water haulers are also not included in this Plan.

A PWS is defined by Nevada Revised Statutes (NRS) 445A.235 as any system which regularly serves 25 customers or more or has 15 or more connections. The 80 active PWSs located in Nye County (excluding those listed above) are listed in Table 1. The NRS classifies PWSs according to the following definitions:

- Community (C) Water System "Community water system" means a public water system that has at least 15 service connections used by year-round residents of the area served by the system or regularly serves at least 25 year-round residents of the area served by the system, (NRS 445A.808). Examples of community water systems include municipal water systems managed by incorporated cities, towns, special districts, private utilities, mobile home parks (MHPs), etc.
- Non-Community (NC) Water System "Non-community water system" means a public water system that is not a community water system, (NRS 445A.828). NC systems include those systems defined as transient non-community water systems. "Transient water system" means a non-community water system that does not regularly serve at least 25 of the same persons for more than 6 months per year, (NRS 445A.848). Examples of NC water systems include restaurants, motels, state parks, etc.
- Non-Transient Non-Community (NTNC) Water System- "Non-Transient water system" means a non-community water system that regularly serves at least 25 of the same persons for more than 6 months per year, (NRS 445A.829). Examples of NTNCs include schools, churches, businesses, etc.

Table 1 (on Page 3) lists the classification for each PWS included in this Plan.

The six existing wellhead protection (WHP) plans covered 38 active PWSs. There are 80 PWSs included in this CSWP Plan, which encompasses one spring and 128 wells. This Plan was developed to consolidate pertinent information from each of the previous WHP plans, to develop a congruent approach (where applicable) for developing strategies to prevent water supply contamination, and to encourage public education for source water protection. Historical water system and community information and data from the previous plans have been incorporated into this Plan in order to build upon prior work done by the communities.

This CSWP Plan was developed in coordination with the Nevada Integrated Source Water Protection Program (ISWPP). This Plan was developed to receive State endorsement as outlined in the "Nevada ISWPP Draft Update: March 2010". Since Nye County represents an extreme example in its geographic extent and diversity between communities and ground water systems serving those communities, this Plan can serve as an example in addressing similar challenges in other Nevada communities.

# 1.3 Purpose

The purpose of this Plan is to develop a framework for protecting community drinking water sources, following the ISWPP, with the support of local governments and stakeholders.

Public Water System	Туре	Classification	Previous WHP Plan	
Amargosa Desert				
Amargosa Elementary School	School	NTNC	Wellhead Protection Plan for Nye County Operated Systems in Amargosa Valley; March 2006	
Amargosa Park	Other Transient Area	NC	None	
Amargosa Senior Center	Other Transient Area	NTNC	Wellhead Protection Plan for Nye County Operated Systems in Amargosa Valley; March 2006	
Amargosa Town Complex	Municipality	NTNC	Wellhead Protection Plan for Nye County Operated Systems in Amargosa Valley; March 2006	
Amargosa Valley Resort INC	Other Transient Area	NC	None	
Amargosa Valley VFW Post 6826	Restaurant	NC	None	
Amargosa Water Company	HOA	C	None	
AVSTP 4PD – Future	Other Transient Area		None	
Cherry Patch Love Ranch	Brothel, Other Transient Area	NC	None	
Crystal Park Nye County Park	Recreation Area	NC	None	
Fort Amargosa RV Park	Recreation Area	NC	None	
Horizon Academy	School	NTNC	None	
Longstreet Inn and Casino	Casino, Other Transient Area	NTNC	None	
Mabel's Far East Bar	Brothel, Other Transient Area	NC	None	
NDOT Lathrop Wells Roadside Park RP801NY	Highway Rest Area	NC	None	
Patch of Heaven	Youth Camp	NC	None	
Short Branch	Restaurant	NC	None	
Beatty				
Baileys Hot Springs	Other Transient Area	NC	None	
Beatty RV Park	Other Transient Area	NC	None	
Beatty Water and Sanitation District	Residential	С	Beatty Water and Sanitation District Wellhead Protection Program; August 2001	

# Table 1. Active Public Water Systems within Nye County (Excluding those on the Nevada National Security Site and Non-Potable Systems. Note: water haulers are non-potable systems)

<u>Big Smoky Valley – Northern</u>			
Carvers Café	Restaurant	NC	None
Carvers Smoky Valley RV and MHP	МНР	С	None
NDOT Big Smoky Roadside Park RP807NY	Highway Rest Area	NC	None
Round Mountain PUC	Residential	С	None
Shoshone Estates Water Company	Residential	С	None
Smoky Valley Mine	Industrial/Agricultural	NTNC	None
Big Smoky Valley - Tonopah Flat			
Manhattan Town Water	Residential	С	Manhattan Wellhead Protection Plan; July 2007
Gabbs			
Gabbs Water System	Residential	С	Gabbs Wellhead Protection Program; December 2005
Ione Valley			
Berlin Ichthyosaur State Park	Recreation Area	NC	None
Ione Water System	Residential	NC	None
<u>Pahrump</u>			
Anchor Inn MHP	МНР	С	Town of Pahrump Wellhead Protection Plan; March 2006
Big Five Park	МНР	С	Town of Pahrump Wellhead Protection Plan; March 2006
Big Valley MHP	МНР	С	Town of Pahrump Wellhead Protection Plan; March 2006
C Valley MHP	МНР	С	Town of Pahrump Wellhead Protection Plan; March 2006
Calvada Meadows UICN	Residential	С	None
Carberry Square	Retail Employees, Restaurant	NC	None
Champions	Restaurant	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Chicken Ranch	Brothel, Other Transient Area	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Chipmunk Retreat	Other Transient Area	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Country View Estates UICN	Residential	С	Town of Pahrump Wellhead Protection Plan; March 2006
Coyote Corner III	Retail Employees, Restaurant	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Coyote Corner Market	Restaurant	NC	None
Desert Center Plaza	Retail Employees, Other Transient Area	NC	None

Desert Mirage Homeowners Association	Residential	С	Town of Pahrump Wellhead Protection Plan; March 2006
Desert Utilities	Residential	С	Town of Pahrump Wellhead Protection Plan; March 2006
Elks Lodge Pahrump	Other Transient Area	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Escapee CO OP of Nevada	НОА	С	Town of Pahrump Wellhead Protection Plan; March 2006
Horizon Market III	Retail Employees, Restaurant	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Just Country Bar	Other Transient Area	NC	None
LDS Church Pahrump Ward	Other Transient Area	NTNC	Town of Pahrump Wellhead Protection Plan; March 2006
LJ's Market	Service Station	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Low Low Liquor Cigarettes and Goodies	Retail Employees	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Moose Lodge 808	Restaurant	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Mountain Falls Water System UICN	Residential	С	None
Mountain View MHP UICN	МНР	С	Town of Pahrump Wellhead Protection Plan; March 2006
Nye County Complex	Other Transient Area	NTNC	None
Our Bar	Restaurant	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Pahrump Café	Restaurant	NC	None
Pahrump RV Park	Other Transient Area	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Pahrump Senior Center Inc,	Other Non-Transient Area	NTNC	Town of Pahrump Wellhead Protection Plan; March 2006
Pahrump Utility Company, Inc. (Hefen Ranch Estates)	School, Residential	С	Town of Pahrump Wellhead Protection Plan; March 2006
Pleasant Valley	Residential	С	None
Quick Save Market	Restaurant	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Sanders Winery	Restaurant	NC	None
Sheri's Ranch	Brothel, Other Transient Area	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Spring Mountain Motor Sports Ranch	Recreation	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Stagestop Restaurant	Restaurant	NC	None
Sunset MHP	MHP	С	None

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Terribles Ranch Casino and RV Park	Restaurant	NTNC	Town of Pahrump Wellhead Protection Plan; March 2006
The Maverick	Restaurant	NC	None
Town Hall Bar	Restaurant	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Tumble Weed Tavern	Restaurant	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Utilities Inc. of Central Nevada	Residential	С	Town of Pahrump Wellhead Protection Plan; March 2006
Valley Bar	Restaurant	NC	Town of Pahrump Wellhead Protection Plan; March 2006
VFW Pahrump Post 10054	Restaurant	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Villa Locale	Other Transient Area	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Whos Dunes	Restaurant	NC	Town of Pahrump Wellhead Protection Plan; March 2006
Ralston Valley			
Tonopah Public Utilities	Residential	С	Town of Tonopah Wellhead Protection Program; May 2005
Sarcobatus Flat			
Shady Lady Ranch	Brothel, Other Transient Area	NC	None
White River Valley			
NDOT Sunnyside Roadside Park RP810NY	Highway Rest Area	NC	None

### **1.4** Location and Description

The vicinity map of Nye County is presented in Figure 1 (page 9). Nye County is the third largest County in area in the lower 48 states and spans approximately 18,159 square miles. For the purposes of this Plan, the County has been divided into communities as follows:

#### **Amargosa Valley**

Amargosa Valley is an unincorporated town located in southern Nye County, approximately 88 miles northwest of Las Vegas, Nevada, and immediately northwest of Pahrump in Nye County. The Town of Amargosa Valley includes the Amargosa Farms area and the area known as Lathrop Wells. Although outside the Town boundaries, the community of Crystal has been included in Amargosa Valley for the purposes of this Plan, as it is located within the same hydrographic basin. The Amargosa Desert Hydrographic Basin extends from the NNSS to the north and into California to the south. The majority of the population in Amargosa Valley is spread over the Amargosa Farm area, which is bounded on the north by U.S. Highway 95 and on the south by the California border. Amargosa Valley is also home to two Areas of Critical Environmental Concern: Ash Meadows National Wildlife Refuge and Big Dune. There are 17 active PWSs in Amargosa Valley, three of which were included in the "Wellhead Protection Plan for Nye county Operated Systems in Amargosa Valley" (March 2006), which was endorsed by NDEP. PWSs located in Amargosa Valley serve approximately 600 of Amargosa Valley's 1,400 residents, according to current NDEP records.

#### Beatty

The Town of Beatty is an unincorporated town located in southern Nye County, along U.S. Highway 95, approximately 120 miles northwest of Las Vegas, Nevada. It is immediately northwest of Amargosa Valley, within the Oasis Valley Hydrographic Basin. The Beatty Water and Sanitation District serves the majority of the Town with drinking water and sanitary sewer service. There are four public water systems in Beatty, one of which was included in the Beatty Water and Sanitation District Wellhead Protection Program" (August 2001), which was endorsed by NDEP. PWSs located in Beatty serve nearly all of Beatty's 1,033 residents, according to current NDEP records.

#### Gabbs

The Town of Gabbs is an unincorporated town located in the northwest corner of Nye County, approximately 75 miles northwest of Tonopah, Nevada. The Town of Gabbs is located in the Gabbs Valley Hydrographic Basin, which also extends into Churchill and Mineral Counties. The single public water system in Gabbs (operated by Nye County) supplies water to almost all of Gabbs' 390 residents, according to current NDEP records. The "Gabbs Wellhead Protection Program" was completed for the single PWS in 2005, which was endorsed by NDEP.

#### Manhattan

The Town of Manhattan is an unincorporated town located in the western foothills of the Toquima range in Big Smoky Valley, approximately 50 miles north of Tonopah, Nevada. The Town of Manhattan is located in the high elevations of the Big Smoky Valley Tonopah Flat Hydrographic Basin. According to current NDEP records, the single public water system in Manhattan (operated by Nye County) supplies water to almost all of Manhattan's 124 residents. The "Manhattan Wellhead Protection Plan" was completed for the single PWS in 2007, which was endorsed by NDEP, but a new drinking water source well has been put into production since that WHP Plan was completed.

# Pahrump

The Town of Pahrump is an unincorporated town located in southern Nye County, approximately 60 miles west of Las Vegas, Nevada. The Pahrump area consists of the area that is within the Pahrump Valley in Nye County. Though this area includes a portion of the community of Johnnie as well as the Town of Pahrump, there are no public water systems in Johnnie. The Pahrump Valley Hydrographic Basin consists of areas of Clark and Nye Counties in Nevada, as well as Inyo County, California. The majority of the population within Pahrump Valley is located in the Nye County portion. There are 47 active (or potentially active) PWSs in Pahrump Valley, 34 of which were included in the "Town of Pahrump Wellhead Protection Plan" (March 2006), which was endorsed by NDEP. PWSs located in Pahrump serve approximately 11,770 of Pahrump's over 38,000 residents, according to current NDEP records.

#### **Smoky Valley**

Smoky Valley is an area north of Tonopah which includes the communities of Round Mountain, Hadley, and Carvers (the Town of Manhattan is also sometimes included in Smoky Valley for population purposes, but is not included here). PWS water supply wells for these communities are located within the Big Smoky Valley Northern Part Hydrographic Basin. The three community PWSs in these communities serve most of Smoky Valley's approximately 1,650 residents, according to current NDEP records. No communities within Smoky Valley have an NDEP-endorsed WHP plan.

#### Tonopah

The Town of Tonopah, the County seat of Nye County, is an unincorporated town located in northern Nye County, at the junction of U.S. Highway 95 and U.S. Highway 6, approximately midway between Las Vegas and Reno, Nevada. Public water supply wells for the Town of Tonopah are located at Rye Patch well field, approximately 12 to 14 miles northeast of the Town, within the Ralston Valley Hydrographic Basin. Tonopah Public Utilities serves the Town with drinking water and sanitary sewer service. There is one public water system in Tonopah, which was included in the "Town of Tonopah Wellhead Protection Program" (May 2005), which was endorsed by NDEP. Tonopah Public Utilities serves nearly all of Tonopah's approximately 2,800 residents, according to current NDEP records.

#### Other

There are four PWSs within the scope of the CSWP Plan in Nye County but outside of the communities already discussed: 1) Berlin Ichthyosaur State Park, a non-community water system (NC) serving a recreation area (population served: 67) located in the Ione Valley Hydrographic Basin; 2) Ione Water System, a non-community water system (NC) serving a restaurant (population served: 25) located in the Ione Valley Hydrographic Basin; 3) Nevada Department of Transportation (NDOT) Sunnyside Roadside Park, a non-community water system (NC) serving a highway rest area (population served: 25) located in the White River Valley Hydrographic Basin and; 4) Shady Lady Water System, a non-community water system (NC) serving a brothel (population served: 25) located in the Sarcobatus Flat Hydrographic Basin. These four systems have not been included in any previous WHP plans submitted to NDEP.

#### **1.5** Coordination with Other Community Plans

This Plan has been developed in coordination with existing Community documents, including the Nye County Water Resources Plan, the Nye County Comprehensive Plan, the Amargosa Area Plan, the Beatty Area Plan, and the Pahrump Regional Planning District Master Plan. The Pahrump Regional Planning District Master Plan is in the process of being updated as of the completion of this Plan, and the Team will be providing recommendations to the Master Plan Steering Committee on how elements of this Plan can be incorporated into the Pahrump Regional Planning District Master Plan.



Figure 1. Vicinity Map

# **SECTION 2: TEAM FORMATION**

In order to develop the Plan, representative stakeholders throughout the Community participated in a series of meetings that culminated in two workshops. Workshop participants identified members for Teams responsible for developing and implementing the CSWP Plan. Subsequent sections document the series of events leading to the formation of the Teams and Sub Teams and summarize their activities.

## 2.1 Request to Participate in the Nevada Integrated Source Water Protection Program

On February 22, 2010, NDEP presented the ISWPP opportunity to the Nye County Water District Governing Board (NCWDGB), explaining the purpose and benefits of the ISWPP, including how the Program works to protect the Community's drinking water sources. The NCWDGB agreed to participate in the ISWPP, submitted a letter to NDEP requesting participation in the Program, and subsequently directed staff to support the development of the CSWP Plan. Copies of the NCWDGB agenda, meeting minutes, and letter to NDEP are provided in Appendix B.

#### 2.2 Pre-Workshop

A pre-workshop meeting was conducted at a regular NCWDGB meeting on March 22, 2010, to review the proposed workshop agenda and the list of invited entities. A preferred format, date, and venue for the workshop(s) were also selected. The NCWDGB determined, due to the geographic extent of Nye County, there would be two workshops held: one in Pahrump and one in Tonopah. Copies of the NCWDGB agenda and minutes are included in Appendix B.

#### 2.3 Workshop

On April 26, 2010, NDEP hosted a public workshop in Pahrump, Nevada, at the Pahrump Community Library and on May 24, 2010, at the Tonopah Convention Center in Tonopah, Nevada. The purpose of the workshops was to introduce the ISWPP to community stakeholders, provide an overview of the water resources within Nye County, identify the Community's goals and objectives for protecting their drinking water sources, and nominate members for the CSWP Teams. Workshop participants determined that there should be two Teams in Nye County: a Pahrump Team and a Northern Team for all other communities in Nye County. The Teams would meet separately on a monthly basis then together every third month. Attendees suggested Team meetings should be held in conjunction with regularly scheduled NCWDGB meetings, when possible, in order to minimize travel requirements for Team members and potential conflicts with other regularly scheduled meetings of the local government entities. (During the first joint Team meeting, participants from both the Northern and Pahrump Teams agreed to meet as a single Team, rather than separately, and subsequent Team meetings were not separate.) The workshop agendas and meeting summaries are included in Appendix B.

#### 2.4 Community Source Water Protection Team Meetings

Team meetings were held on the dates listed below in order to develop the CSWP Plan:

- August 4, 2010 Northern Team
- August 5, 2010 Pahrump Team
- October 27, 2010 Northern and Pahrump Teams
- March 14, 2011 Northern and Pahrump Teams
- June 30, 2011 Public Education and Outreach Sub Team

- August 3, 2011 Northern and Pahrump Teams
- September 23, 2011 Northern and Pahrump Teams
- October 21, 2011 Northern and Pahrump Teams
- December 7, 2011 Northern and Pahrump Teams
- January 25, 2012 Northern and Pahrump Teams
- May 4, 2012 Northern and Pahrump Teams
- May 24, 2012 Northern and Pahrump Teams

At the initial meetings of the Team, members were nominated for specific roles and the structure of the Team was established to include Sub Teams responsible for developing specific elements of the Program. Table 2 summarizes the roles and structure of the Team.

Role	Team Members		
Kole	Northern	Pahrump	
Lead	James Eason, NCWDGB, Tonopah Town Manager	Cheryl Beeman, Nye County Nuclear Waste Repository Project Office (NWRPO), Pahrump NWEAB	
Secretary	Nye County NWRPO	Nye County NWRPO	
Technical Support Sub Team	Oz Wichman, Nye County Public Works Kim Borgzinner, NDEP Rachel Kryder, BEC Environmental, Inc.	Tom Vehe, Water Rock Environmental George Sausman, Pahrump Nuclear Waste and Environmental Advisory Board (NWEAB), Anchor Inn MHP Roger McRae, Nye County NWRPO Kim Borgzinner, NDEP Rachel Kryder, BEC Environmental	
Education and Outreach Sub Team	Jan Cameron, Amargosa Valley Resident	George Sausman, Pahrump NWEAB, Anchor Inn MHP John Pawlack , Pahrump NWEAB, Amargosa Conservancy Cheryl Beeman, Nye County NWRPO, Pahrump NWEAB Levi Kryder, Nye County NWRPO, Nye County Natural Resources Donna Lamm, NCWDGB, Amargosa Conservancy	
Regulatory Compliance Sub Team	Darrell Lacy, Nye County NWRPO, Nye County Community Development, NCWDGB Director	Cheryl Beeman, Nye County NWRPO, Pahrump NWEAB Tim McCall, NCWDGB	
Mapping and Database Sub Team	Ken Plewe, Nye County Public Works Levi Kryder, Nye County NWRPO, Nye County Natural Resources	Ken Plewe, Nye County Public Works Levi Kryder, Nye County NWRPO, Nye County Natural Resources	
Plan Development and Review Sub Team	Jan Cameron, Amargosa Valley Resident Kim Borgzinner, NDEP Rachel Kryder, BEC Environmental, Inc.	Cheryl Beeman, Nye County NWRPO, Pahrump NWEAB Kim Borgzinner, NDEP Rachel Kryder, BEC Environmental, Inc.	

# Table 2. Community Source Water Protection Team Members

Government Liaison Sub Team	James Eason, NCWDGB, Tonopah Town Manager Kim Borgzinner, NDEP Rachel Kryder, BEC Environmental, Inc.	Cheryl Beeman, Nye County NWRPO, Pahrump NWEAB Kim Borgzinner, NDEP Rachel Kryder, BEC Environmental, Inc.
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The Teams approved the Community's goals and objectives for the Plan at the first meeting of the Northern and Pahrump Teams. Subsequent meetings focused on addressing each element required by the ISWPP. Whenever possible, multiple elements were addressed simultaneously at the Team meetings. Throughout this series of meetings, the Team continued to build on their efforts until the five ISWPP elements were addressed. At each opportunity, the Team provided direction on how the Program should be developed and implemented. Copies of agendas, sign-in sheets, and minutes from each Team meeting are provided in Appendix B. Sub Team meetings were held on an as-needed basis to address specific elements of the ISWPP. NDEP worked closely with the Community, providing technical assistance to the Team as needed.

#### 2.5 Community Goals and Objectives

The Team identified the following goals and objectives for protecting their drinking water supplies:

**Goal 1:** Develop a CSWP Plan to protect the quality of drinking water resources in Nye County, which can be sustained by the Community.

#### **Objectives:**

- i. Prepare a CSWP Plan to document how the Community will address the ISWPP elements and identify management strategies.
- ii. Address each community within the County individually.
- iii. Review and assess existing NDEP-endorsed WHP plans.
- iv. Integrate data from multiple sources.
- v. Identify and consider PCSs that may not be included in existing databases (abandoned mines, historic dumps, orphan wells).
- vi. Establish a mechanism for review of proposed development outside of the Pahrump Regional Planning District.
- vii. Establish greater security for source wells.
- viii.Include individual WHP Plans as part of this CSWP Plan.
- ix. Incorporate all PWSs (as described in Section 1) into this CSWP Plan.
- x. Continue implementation of land use planning and/or zoning as it relates to source water protection areas (SWPAs).

**Goal 2:** Raise community leaders and members' awareness of source water protection and how they can help protect their drinking water.

## **Objectives:**

- i. Provide public education on topics including storm drains, mine shafts, and desert dumping, as related to source water protection.
- ii. Provide public education on source water protection and its importance.
- iii. Stress concepts of ground water flow in public education efforts to make the public aware of the potential for contamination.
- iv. Educate the public regarding the relationship between public and private wells.
- v. Coordinate the Public Education Plan with the Nye County Water District (NCWD) and other existing groups and agencies.

**Goal 3:** Leverage other programs for possible funding in support of source water protection in Nye County.

#### **Objective:**

i. Identify potential funding sources.

# SECTION 3: PLAN DEVELOPMENT

#### 3.1. County-Wide

The following information is intended to provide an overview of elements common to most communities in Nye County. Discussion specific to individual communities follows the county-wide discussion.

#### 3.1.1 Water Source Supply Inventory and Planning

Sources for the PWSs in Nye County have been summarized in Appendix C. Ground water serves as the principal supply of drinking water for these systems. The evolution and development of these water supplies is reviewed in the subsequent sections.

#### **3.1.1.1 Current Water Sources and Conditions**

The Nevada State Water Plan (NSWP) and the Nye County Water Resources Plan (NCWRP) estimated the total water use of Nye County in 2000 was approximately 101,000 acre feet annually (AFA), approximately 13% higher than the 1995 estimate. PWSs in Nye County supplied 68% of the population with an average use rate of 347.7 gallons per day per person in 1995, which totaled 6,127 AFA. Based on data from the State Demographer, PWS water consumption was believed to have risen to approximately 10,500 AFA by 2000, according to the NSWP. While some communities rely almost entirely on PWSs for their drinking water, other communities are supplied by a combination of PWSs and domestic wells.

Other than PWSs, there are four other primary users of water in the County: agriculture, mining, domestic wells, and federal agencies. According to the NCWRP, agriculture was the single largest consumer of water resources in the County as of 1995, with an estimated usage of 60,000 AFA, 48,000 of which was from ground water. The next largest consumer was the mining industry, which had an estimated demand of 8,000 AFA in 1995. While the mining industry is inherently unstable, the opening of new mines is expected to keep pace with mine closures and the 8,000 AFA is expected to hold true for the foreseeable future. Domestic water uses were estimated to account for 6.8% of the water consumption in the County in 1995 or about 5,000 AFA. The total number of domestic wells and their associated pumping rates are not known; however, it is estimated over 9,000 domestic wells existed in 2004 throughout the County, with pumping rates estimated between 542 gpd (NSWP) and 893 gpd (Nevada Division of Water Resources-NDWR). This results in a range of 5,500 to 9,000 AFA of consumption through small domestic wells. Finally, the federal government, which is estimated to consume less than 4,000 AFA by the NCWRP, holds the rights to over 17,000 AFA in the County, 12,573 AFA of which is used as a buffer for the Devils Hole system in the Amargosa basin and goes unused each year.

The source water assessment program/vulnerability assessment program (SWAP/VAP) reports provide an inventory of the water sources supplying each system and document PCS. The most recent updates to these reports occurred in 2003; however, NDEP's Bureau of Safe Drinking Water (BSDW) is currently in the process of again updating the SWAP/VAP reports. Development of this Plan included reviewing the SWAP/VAP

reports and coordinating with BSDW to ensure the most current data from the SWAP/VAP reports is incorporated into this Plan.

# 3.1.1.2 Future Water Sources and Conditions

Forecasts developed for the NCWRP project total yearly demand in the County will rise to an estimated 166,000 acre feet by the year 2020 and could reach as high as 252,000 AFA by 2050. This increase is driven primarily by the population growth and its attendant demand on PWSs and domestic wells. Total municipal and industrial water use is expected to climb to as much as 33,000 AFA by 2050 according to the NCWRP and only 13,000 AFA in the NSWP with differences driven by a considerable contrast in population estimates between the two plans. Similarly, by 2050 the NCWRP estimates the total demand for domestic self served water to be between 17,000 and 28,000 AFA (The NSWP does not provide a projection of domestic self served water in Nye County). Of all the major water users in the County, future projections of agriculture and agribusiness are the most uncertain, with the NSWP predicting agricultural use of 77,000 AFA by 2020 and declining by 2050, while the NCWRP predicts a steady increase to over 100,000 AFA by 2050. Water use by the mining industry and federal government are expected to remain constant through 2050, with only minor changes as mines are opened or taken off line, which should average out over time.

# 3.1.2 Source Water Protection and Delineation

In order to update the information and results presented in the previous WHP plans and establish a source water protection area (SWPA) for PWSs for which a WHP Plan had not previously been prepared, a comprehensive review of pertinent geologic, hydrogeologic, and water supply data for the PWSs within Nye County was completed. This information is detailed in the Delineation Summary Report in Appendix D.

SWPAs are comprised of the land surface surrounding, and area beneath, a water supply source (ground water, surface water, or spring) in which activities and land uses must be managed in order to protect the water supply. Wellhead protection areas (WHPAs) are those that specifically surround a well and are a subset of SWPAs; however, these terms can be used interchangeably. While previously established protection areas may have been referred to as WHPAs, for consistency, all protection areas will be designated as SWPAs from this point forward. The protection area is generally represented on the land surface as a circular or elliptical shape around the water supply source. The areas are typically computer generated models that outline the anticipated distance traveled by a particle of water entering the water supply over a fixed period of time (Time of Travel or TOT). SWPAs are prepared to allow communities to plan for and respond to situations in which contamination occurs.

The Technical Team worked to delineate the SWPA boundaries around each well, based on a computer generated analytical model, thereby creating SWPAs that designated three main TOTs. The TOTs were estimated at two, five and ten years. For example, this means that (theoretically) contaminants entering the aquifer in the five year TOT region of the SWPA are estimated to take between two and five years to reach the well or water source before they could contaminate the drinking water. Figure 2 (page 17) provides a conceptual drawing of the SWPA for a well. The updated and newly established protective areas for the current drinking water sources supplying PWSs throughout Nye County are presented in Appendix A.

The shapes of the SWPAs for different wells or between different systems can vary widely, depending on the model used and the specific hydrogeologic characteristics associated with the area. The Arbitrary Fixed Radius (AFR) method has been chosen for the two future drinking water source wells because there is insufficient information to use another modeling method approved by NDEP because the wells do not have screened intervals, completed diameters, or maximum pumping rates established, as they are not yet physically completed and fully developed as of the date of this Plan. The current SWPAs for wells in Gabbs were delineated using an analytical method under the previous state-endorsed WHP Plan. The Team at that time elected to adopt 3,000-foot AFR SWPAs instead of analytically determined SWPAs. This Plan has incorporated the approved 3,000-foot radius SWPAs for Gabbs, as they were supported by the community of Gabbs and NDEP. Two wells outside of Beatty have been modeled using the AFR method due to a combination of the lack of data for the wells and the complex geology in the area. A modified version of this method that incorporates the local topography was utilized for the wells in Manhattan.

The AFR establishes a circle with a specified radius around the well; the distance of the radius is based on established set back requirements for specific contaminant sources from ground water wells. NDEP uses a 3,000-foot fixed radius as a minimum for all SWPAs at the State level in performing vulnerability surveys around existing public water supply wells. NDEP also utilizes the 3,000-foot fixed radius for consideration in various permitting activities and to meet contaminant survey requirements for the development of new public drinking water wells funded through NDEP grant and loan programs.

The Calculated Fixed Radius (CFR) method is typically used when minimal information is available and uses a simple mathematical relationship between pumping rate, aquifer porosity, length of well screen and TOT to establish a radius around the well. These radii represent the estimated maximum time required for contaminants to reach the well in question. The CFR method was also used for many low pumping rate non-community wells throughout the County in order to most effectively utilize the project budget available and maximize the number of drinking water sources that could be modeled. The Team supported this strategy in part because SWPAs delineated by using the CFR method are generally more conservative than corresponding analytically modeled SWPAs. Examples of this method can be observed for most noncommunity wells throughout Nye County.

Analytical modeling requires the most geological and hydrologic information and is the preferred method for SWPA delineation due to its relative accuracy in reflecting ground water and contaminant movement through the subsurface. Variations of shapes developed using this method can be attributed mainly to the modeling program used and sub-surface geologic influences. Additional information relevant to analytical modeling and the other modeling methods described above is provided in Appendix D.

**Figure 2.** Conceptual Drawing of the Source Water Protection Areas for Nye County Water Supply Sources (modified from Nevada Bureau of Water Quality Planning Guidance Document, 2000)



# 3.1.3 Contaminant Source Inventory

A contaminant source inventory (CSI) was performed to identify potential hazards to the quality of each PWS's drinking water supply. The CSI conducted for Nye County assisted the Team in obtaining basic information used in developing management tools to prevent future contamination. Many types of industry, businesses, land uses, and activities may have an impact on ground water quality.

Appendix E provides the methodology used to develop the CSI and a table with the detailed CSI information available as of publication of this CSWP Plan. A total of 244 PCSs were identified and classified as follows:

- 69 Miscellaneous (28%)
  - o 24 Golf Courses, parks, or nurseries
  - o 17 Mining
  - o 13 Transportation
  - o 4 Airports

- o 4 Business
- o 2 Cemeteries
- o 2 Other
- o 1 Construction area
- o 1 Surface water impoundments
- 1 Unplugged abandoned well
- 56 Automotive (23%)
- 32 Residential (13%)
- 25 Medical/Educational (10%)
- 25 Storage (10%)
- 12 Industrial (5%)
- 11 Agricultural (5%)
- 11 Municipal Waste (5%)
- 3 Commercial (1%)

Those PCSs within and adjacent to SWPAs are depicted on the figures in Appendix A. The numbers for the PCSs shown on these maps correspond to the unique index number for individual PCSs, as listed in Table E-1 in Appendix E.

SWPAs for the PWSs of Tonopah, Gabbs, Ione, the Shady Lady, and the NDOT Sunnyside rest stop were located in isolated areas with few or no associated PCSs. SWPAs in Amargosa Valley, Beatty, Carvers, Crystal, Manhattan, Pahrump, and Round Mountain were located in or near populated areas and in general had a higher number of associated PCSs.

Communities within Nye County have widespread personal storage yards and many communities also have septic systems. Private storage yards identified in the CSI were either large or were identified as having PCSs on site. Private storage yards have been designated as a high risk in most communities due to the high level of uncertainty and potential variety of PCSs on site. Team members wished to categorize personal storage yards as low risk in the community of Manhattan due to the relatively deep water level and the strong self regulation in the community. Community members generally know most people in Manhattan and keep an eye out for any issues that could affect the community or the community's drinking water source. Some communities in Nye County have municipal waste water collection and treatment, some rely on septic systems, and some have a mix of municipal wastewater collection and septic systems.

# 3.1.3.1 Desktop Research

A review of the SWPAs versus PCS locations was performed by the CSWP Team for each community in Nye County as part of the CSI. This process entailed a desktop review of existing regulatory databases, previously endorsed WHP Plans, NDEP SWAP files, and aerial photography (Google Earth and the Nye County Geographic Information System (GIS) web application).

#### 3.1.3.2 Field Surveys

Field surveys were conducted during late September and early October 2011 to supplement the data from the desktop survey. Surveys utilized handheld Global Positioning System (GPS) receivers (Garmin GPS eTrex Vista HcX) to ensure accuracy and to identify PCSs within and adjacent to SWPAs in Nye County. GPS data points were cross-referenced against locations gathered during the desktop survey to provide data quality verification. In the case of a discrepancy between the location found during the desktop and field survey, the field survey location was assumed to be the more accurate of the two, and is included in this Plan. The University of Nevada, Las Vegas (UNLV) conducted a field survey of potential contaminant sources in Nye County as part of NDEP's SWAP/VAP in 2011, and the data has been incorporated as of the completion of this Plan. Additional detail regarding the inventory process and specific findings is provided in Appendix E, and PCS locations are provided in maps in Appendix A.

# 3.1.3.3 Risk Rankings

The SWPAs in Nye County contain numerous PCSs with strict to no control. In addition, areas and features adjacent to, and in some cases up-gradient, of these SWPAs also contain potential sources of contamination. No PCSs were identified as posing an immediate threat to any drinking water sources. If secondary containment or some other control measures were not readily apparent during field investigation, the PCS has been classified as "not adequately controlled", which does not necessarily denote a hazardous condition or one of immediate concern. Additional categories have been added to the risk ranking table (Appendix G) in order to encompass otherwise uncategorized PCS types. Risk rankings for specific classes or PCSs were modified based on input from the Team, and the individual circumstances of each PCS and community. Risk rankings for each community are discussed in those sections of this Plan. A complete list of all PCSs has been included in Appendix E.

# 3.1.3.3.1 Automotive

Automotive PCSs are the most common found in SWPAs in the surveyed areas of the County, and consequently have been given the most significant risk ranking. Some PCSs include gasoline, diesel fuel, motor oil and other volatile organic compounds (VOCs). Underground storage tanks associated with automotive facilities (gas stations) have been classified as automotive, rather than USTs. The persistent nature of these contaminants, combined with the historic inadequacy of underground storage tanks associated with this industry, has made the effective management of automotive facilities and activities within SWPAs a high priority.

# 3.1.3.3.2 Miscellaneous

A large portion of PCSs were classified as miscellaneous. The most common PCSs associated with the miscellaneous class were golf courses, parks, and nurseries (grass fields), airports, mining activities, transportation (major roadways), and a variety of PCSs not specifically listed in the risk rankings table. PCSs classified as miscellaneous had a low to high risk ranking.

# 3.1.3.3.3 Septic Systems

While septic systems are not found within every SWPA in Nye County, in regions where these systems occur, they are numerous and often found in high densities. According to the ISWPP draft update March 2010, septic systems are given a risk ranking of moderate to high. This variance in risk rating is based on the wide variety of contaminants which could potentially escape from a septic system, including: synthetic organic compounds (SOCs), inorganic compounds, and microbial agents. In some locations, residential neighborhoods lacking municipal utilities have resulted in a high density of septic tanks. Numerous septic systems in close proximity to sources of drinking water can pose a significant risk of contamination. Areas with high septic tank densities occur in Pahrump.

# 3.1.3.3.4 Aboveground Storage Tanks

Numerous Aboveground Storage Tanks (ASTs) are utilized throughout Nye County, many of which are located in rural areas where they are used as gravity fed fuel stations. ASTs are commonly used by ranchers as a short-term storage solution for kerosene, gasoline and diesel fuel. Because these tanks are often found in open, unpaved areas, fuel spills can lead directly to soil and aquifer contamination. ASTs are also commonly used in rural areas for firefighting water, but those ASTs have not been included as PCSs.

# 3.1.3.3.5 Underground Storage Tanks

Several underground storage tanks (USTs) are found within SWPAs in Nye County and are generally associated with gas stations. USTs in Nye County are typically used for the storage of VOCs such as diesel fuel or gasoline. USTs represent a direct threat to ground water because they have been partially or entirely buried and leaking material may be released directly into the vadose zone (in general, this zone extends downward, from land surface to the ground water table). However, regulations require USTs to be registered and undergo rigorous monitoring, which helps to mitigate the associated risk. Relevant regulations include but are not limited to: Section 9002 of the Resource Conservation and Recovery Act (RCRA) and Title 40 CFR Part 280. Regardless of regulations elsewhere, USTs must be properly inspected and managed to prevent accidental release and long-term damage to the aquifer. Some locations in Nye County communities are known to have had USTs, though some sites lack closure documentation, so the removal or closure activities related to the historic USTs are unknown. For consistency, USTs associated with gas stations have been classified under the automotive category.

# 3.1.3.3.6 Private Wells

The historic rural nature of portions of Nye County and associated lack of municipal water and waste water infrastructure has led to the development of a great number of domestic water wells that serve individual homes. Areas of high well density include Amargosa Valley, the Carvers area in Smoky Valley, and Pahrump. Although domestic wells are generally small in both diameter and pumping capacity, they share the same aquifer as PWS wells and can provide a direct conduit for contamination to enter the ground water system if they have not been properly installed, maintained or abandoned. The location of every private well in the County is beyond the scope of this program; however, the office of the State Engineer and the BSDW can be contacted for additional information relevant to specific locations. Nye County recognizes private wells are a concern and strongly encourages private well owners to implement protective management strategies near their wells similar to the ones recommended in this CSWP Plan for PWS wells.

# **3.1.3.4 Future Potential Concerns**

There were six potential future concerns identified by the Team: 1) storm water runoff; 2) sanitary sewer infrastructure failure; 3) methamphetamine production facilities; 4) orphaned wells; 5) oil, gas, geothermal, and water well drilling; and 6) mine dewatering.

Storm water runoff and flooding can act as a method of transport for surface contamination, which can lead to the spread or dispersion of contaminants, resulting in a high potential for surface water contamination. Storm water runoff also poses a threat to ground water for wells which are located in flood zones and are not adequately protected against flooding. Areas within the Pahrump Valley and other parts of Nye County are within special flood hazard areas (flood zones), as designated by the Federal Emergency Management Agency (FEMA). Though this has been identified as a future potential concern, no management strategies are proposed to address it at this time, but the issue may be considered during future Plan updates.

Sanitary sewer infrastructure such as sewer collection mains, lift stations, and waste water treatment plants pose a potential threat if failure occurs. Sanitary sewer infrastructure failure can affect small to large areas and release various PCSs, depending on the duration, scale, and location of the failure event.

The chemicals and waste associated with methamphetamine production and large-scale marijuana growing are considered PCSs. These facilities do not generally adhere to accepted disposal practices, given their illicit nature. There have been numerous meth labs and marijuana grow-houses located and shut down in Pahrump in the last year, including a meth lab in January 2012 and at least six marijuana growing operations. Often, these facilities go undetected for some time before being discovered. Locations known to have formerly been used for methamphetamine or marijuana production also pose a threat if not properly remediated

Almost all public drinking water sources in Nye County communities consist of well systems. Active wells that may not be adequately secured and/or improperly abandoned wells may act as direct pathways for contaminant migration to ground water. The NCWDGB is in the process of establishing a program to identify and inventory orphaned wells, and the CSWP Team should continue to coordinate with the NCWD to further this effort.

Team members also expressed concern regarding the drilling fluids used and procedures followed by drilling companies, when drilling oil, gas, geothermal, water, or other wells.

In addition, some mining operations pump large quantities of water during active production, which is referred to as dewatering. The volume of water produced can be enough to change the local ground water flow pattern, availability of ground water, and associated water quality surrounding the dewatering operation.

# 3.1.4 Contaminant Management Strategies

The Team reviewed the results of the CSI to identify prevalent and potentially high-risk PCSs in the communities, and discussed how those potential risks could be mitigated through PCS management strategies, both regulatory and non-regulatory. Though septic systems and personal storage yards occur in communities throughout Nye County, the Team decided public education would be the best way to balance the need for drinking water protection with personal property rights, which is reflected in the management strategies. In order to address more commercial PCSs, the Team will recommend to the Planning Department that during the site development review process, for projects within the Pahrump Regional Planning District, a review be completed that considers the proximity of the proposed development to PWS drinking water sources in conjunction with the type of development and potential risk factors. Nye County staff can then recommend appropriate conditions of approval, if necessary. Similarly, businesses not requiring a Site Development Review process, such as a business moving into an existing building, are required to go through the less-rigorous zoning review process with Nye County Planning. The zoning review process provides an opportunity to identify if a business qualifies as a PCS and if they pose a threat to PWS drinking waters sources due to close proximity.

This review process would only be possible for proposed projects within the Pahrump Regional Planning District, and would not apply to other areas in the County. One objective identified by northern CSWP Team members was to establish a mechanism for development review outside of the Pahrump Regional Planning District. Currently, Nye County only requires a flood hazard certificate and approval from the State Fire Marshal for new construction outside of the Pahrump Regional Planning District.

Though the Team discussed septic systems and personal storage yards as PCSs, the Team chose to stress public education and outreach as a management strategy in order to balance the need for protection of drinking water resources with the desire to protect personal property rights.

Nye County Emergency Services currently inspects and permits facilities that use or store hazardous materials, though at this time there is not a communication mechanism between that process and PWS operators.

Table 3 (page 24-26) discusses regulatory and non-regulatory management strategies for use throughout the County, to address general threats associated with local contamination. For some strategies included in Table 3, the discussion of applicability is split out for Pahrump, and areas outside Pahrump, as there is additional regulatory framework in place within the Pahrump Regional Planning District. Possible management approaches for specific types of PCSs are provided in Table 4 (page 27).

It is important to distinguish that the management strategies presented here were developed as a decision-making tool to identify action items that would be appropriate in communities in Nye County, and do not represent recommended action. This Plan does not recommend taking action on all of these potential management strategies. The Work Plan, found in Appendix F, was

developed based on these management strategies, and details actions that can be taken to support source water protection in Nye County. A summary of Work Plan elements is presented below:

- A. <u>Potential Contaminant Source Identification and Ranking</u>: Public water system (PWS) utility workers may be trained to locate and establish an associated risk for contaminant sources within their service areas.
- B. <u>Leaking Underground Storage Tanks</u>: Water purveyors may consider developing a LUST Identification and Reduction Plan in cooperation with NDEP.
- C. <u>Production Facilities</u>: A minimum security standard should be set for every public drinking water well (and any associated water treatment systems and storage tanks) in Nye County.
- D. <u>Review of Inactive Wells:</u> This task entails evaluation of inactive wells to determine their value as potential future source or back-up wells versus their status as potential sources of contamination.
- E. <u>Improperly Abandoned and Orphaned Wells</u>: Improperly abandoned and orphaned wells throughout the County will continue to be inventoried and prioritized for future abandonment depending on funding availability.
- F. <u>Zoning and Subdivision Ordinances and Site Plan Review (Within the PRPD only)</u>: Development review procedures will be established to direct development in the SWPAs in order to minimize incompatible land use.
- G. <u>Public Education</u>: Information designed to present source water issues and protection efforts will be furnished, while opening a channel for communication between agencies/entities, water purveyors, residents and business owners.
- H. <u>Contingency Planning</u>: Develop a more comprehensive contingency plan for PWSs in Nye County.
- I. <u>Ground Water Monitoring</u>: Water sampling and testing is performed by PWS operators on a regular basis in accordance with State requirements. The results of this testing is publicly available information.
- J. <u>Well Drilling</u>: Nye County will coordinate with NDEP and the Nevada Division of Minerals (NDOM) to be notified of new drilling permits within the County.
- K. <u>Mine Dewatering</u>: Coordinate with NDEP and NDOM to receive notifications of any permit applications for mine dewatering operations near PWSs in Nye County.
- L. <u>Household Hazardous Waste:</u> Coordinate with departments and organizations within Nye County and Nye County communities to increase participation in and awareness of existing programs, such as Nye County's Recycling and Household Hazardous Waste (HHW) disposal program currently available to Nye County residents.
- M. <u>Property Acquisition</u>: Identify high priority sites within or adjacent to SWPAs that Nye County may acquire through tax default, and remove those properties from the tax rolls for the purpose of land management to protect source water.
- N. <u>First Responders:</u> Coordinate with first responders (police, medical, fire, hazmat) in each community to encourage their communication with the Team and local PWSs in the case of incidents that have the potential to contaminate drinking water.
| Regulatory<br>Options      | Management Tools   | Applicability to the Nye County CSWP Plan  |
|----------------------------|--|--|
| Sanitary<br>Ordinances     | An umbrella of regulations pertaining to<br>wastewater collection and treatment as well as<br>water distribution.  | Regulations limiting discharge from utility companies and especially septic<br>systems could improve ground water quality in SWPAs. Regulations are<br>already in place which regulate minimum lot size for new individual sewage<br>disposal systems, per Nevada Administrative Code (NAC) 444.790.<br>Residents can be urged, through public outreach and education to properly<br>maintain their septic systems, in accordance with the spirit of these<br>regulations. This outreach can include an estimate of the cost of routine<br>septic maintenance versus emergency maintenance.  |
| Land Use<br>Ordinances     | Comprehensive land use requirements designed<br>to direct the development of an area where certain<br>land uses may be restricted or regulated in<br>SWPAs. One of the most powerful tools for<br>managing future contamination events that could<br>impact underground sources of drinking water. | Outside of Pahrump - The support of Nye County and the local communities<br>is critical to the success of the CSWP Plan. A major objective is to have the<br>CSWP Plan included in the development of land use regulations in master<br>plans for the region. There are currently no zoning regulations outside of<br>the Pahrump Regional Planning District, but land use planning is underway<br>or has recently been completed in several central and northern Nye<br>communities. WHP planning measures can be readily incorporated by<br>reference into these land use planning documents in advance of ordinance<br>development, should these communities determine such ordinances are<br>appropriate.<br>Pahrump - Zoning regulations are already in place within the Pahrump<br>Regional Planning District, which encompasses all of Pahrump. New<br>development must go through the site development process with Nye<br>County Planning and Public Works. A review of the potential risk of<br>proposed new developments to public drinking water sources could be<br>incorporated into the site development process. |
| Source<br>Prohibitions     | Regulations that prohibit the presence or use of<br>chemicals or hazardous activities within a given<br>area. Local governments can place restrictions on<br>the storage or handling of large quantities of<br>hazardous materials within a SWPA to reduce the<br>threat of contamination.         | Local governments can use restrictions on the storage or handling of large<br>quantities of hazardous material within a SWPA to reduce or eliminate the<br>threat of contamination. Nye County currently has no source prohibitions<br>above those already enforced by the State and federal governments. Nye<br>County or the towns of Amargosa Valley, Pahrump, Round Mountain, and<br>Tonopah could enact ordinances restricting the storage or handling of<br>hazardous substances within SWPAs. Jurisdiction for the enforcement of<br>this management strategy would have to be determined.  |
| Conditional Use<br>Permits | Regulations which provide for specific exceptions to general land use ordinances.  | <u>Outside of Pahrump</u> - As with land use ordinances, conditional use permits<br>could be required, should the local residents support the option. Planning<br>functions within communities in Nye County are currently the jurisdiction<br>of Nye County, so this regulation would likely be a Nye County Planning<br>function. The Team identified as a goal of the CSWP Plan to establish a<br>mechanism for development review outside of the Pahrump Regional<br>Planning District, and a process for special use permits may be one way to<br>accomplish this goal.   |
|                            |  | <u>Pahrump</u> - Conditional use permits are required in Pahrump for some uses,<br>depending upon the zoning designation of the individual property. A review<br>of the potential risk of proposed new developments to public drinking water<br>sources could be incorporated into the conditional use permit process.   |

# Table 3. Management Tools and Strategies

Division of Land Ordinances	Community adopted subdivision rules and regulations to regulate road drainage/runoff in subdivisions within SWPAs. Used to ensure subdivision road drainage is directed outside of SWPAs.	Outside Pahrump - The review of proposed subdivisions is currently done within the context of ensuring adequate public facilities are provided for the proposed subdivision and not in the context of source water protection. Any plans for public improvements associated with a subdivision (such as roads) require the review of Nye County Public Works. Review of how the proposed improvements could impact SWPAs in the area could be incorporated into this review process.         Pahrump - Proposed subdivisions within the Pahrump Regional Planning District (PRPD) are subject to review by Nye County Planning and Public Works. A review of the potential risk of proposed new subdivisions (and associated improvements) to public drinking water sources could be incorporated into the subdivision review and approval process.
Operating Standards	Regulations that apply to ongoing land use activities to promote safety or environmental protection. Such standards can minimize the threat to the SWPA from ongoing activities such as the application of agricultural pesticides or the storage and use of hazardous substances.	Can be used to control handling of pollutants by, and operation and security of PWSs at the wellhead. Should any large developments (such as proposed renewable energy generation facilities) enter into development agreements with Nye County or any Towns within Nye County, operating standards can be included in the development agreement pertinent to source water protection.
Non- Regulatory Options	Management Tools	Applicability to the Nye County CSWP Plan
Land Acquisition	The community or utility can acquire land within a SWPA through donation, purchase or trade development rights, and/or conservation easements restricting use of land.	Land may be purchased from land owners in the immediate vicinity of the PWS wells to preserve the SWPAs, as mutually agreeable to buyer and seller, if financial assistance can be obtained. Due to the large number of SWPAs in Nye County, particularly sensitive SWPAs could be identified for prioritization of land acquisition. Nye County may consider removing sensitive properties from the tax roll, when properties are acquired by the County through non-payment of property taxes. For drinking water sources surrounded by Bureau of Land Management (BLM) managed land, the applicable PWS operators should coordinate with the BLM to monitor any applications for lease, disposal, or other use on the BLM land in and near their SWPAs.
Local Business Owner Education	Encourage local business owners to take advantage of the Business Environmental Program offered by Nevada Small Business Development Center (NSBDC).	Having local business owners as supporters of the Plan is a valuable tool to work toward educating the rest of the community and gaining community support. Business licenses are not required in communities other than Pahrump, so business owners would have to first be identified then targeted for education and support of the Plan. Outreach and education may be accomplished through local chambers of commerce or utility bill inserts.
Household Hazardous Waste (HHW) Collection	A good management tool to reduce the amount of hazardous waste going to the landfill or septic systems. Coordinate with local government to implement a HHW Collection Day. Funding is available through NDEP's Solid Waste Program. This option helps to educate the public about the types of household products which are toxic or hazardous. It encourages public involvement. Educate the citizens in your community by distributing NDEP's flyer about safer alternatives to hazardous household products.	Nye County Public Works maintains a used motor oil collection program with drop-off locations in Amargosa Valley, Beatty, Pahrump, and Tonopah. The Team can coordinate with the Nye County Sherriff's Office for prescription drug collection events. Increased community awareness of both programs could be achieved through public education and outreach, consistent with the County's approved "Solid Waste Minimization and Household Hazardous Waste Management Plan". Additionally, the web page for the Nye County CSWP Plan could be cross-referenced with the web page for the Solid Waste Plan. More comprehensive HHW collection could be implemented based on available funding and potential funding opportunities.

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Illegal Dumping	Monitor SWPAs to detect illegal dumping. Use Nevada's Recycling Hotline (1-800-597-5865) to report illegal dumping.	Illegal dumping is a challenge throughout Nevada, especially in rural areas surrounded by government-managed land. Education and outreach materials, combined with enforcement of nuisance ordinances generally assist in preventing this practice. Providing local residents with information on who to contact when illegal dumping is found may be a useful enforcement tool.
WHP Signs	Place signs on perimeters of SWPAs. They serve as notification in case of an accidental spill of a potential contaminant. Signs help to educate the public.	Locating signs can be at the discretion of individual communities and PWSs, as security concerns should be considered.
Interagency Coordination	Active coordination and information sharing with other governmental organizations and tribes.	The CSWP Plan can be shared with any other agencies that manage land in and around SWPAs or other groups that may have an interest in the CSWP Plan, including but not limited to: BLM, United States Forest Service, National Park Service, Duckwater, Timbisha, and Yomba Shoshone Tribes, representatives from the Tonopah Test Range and the NNSS.
Public Education	Public education efforts are important in building public support for regulatory changes and local funding. Numerous organizations conduct workshops and other outreach activities to educate small communities, as reference in the Public Education Plan (Appendix H) Encourage citizens in your community to participate in such educational opportunities.	Public education is a key aspect of almost all components of any CSWP Plan in all communities. Public education and outreach efforts can be coordinated with the NCWD for maximum benefit. Community venues and events that may be utilized include: community centers, senior centers, community newsletters, County and community web sites, and other media.

Table 4. Management Approaches for Potential Sources of Contamination						
Contaminant Sources	Suggested Management Approach	Applicability to the CSWP Plan				
Private Storage Yards	Automotive fluids should be properly collected, contained and disposed of according to local regulations. Monitor activities near SWPAs to detect violations. Encourage recycling and take advantage of NDEP's recycling program by calling Nevada Recycling Hotline (1-800-597-5865).	Private storage yards are located within SWPAs in many communities in Nye County. Property owners may need specific information to manage the materials they store. Nye County Public Works maintains a used motor oil collection program in various locations, and maintains a recycling and HHW program website.				
Abandoned/Orphaned Water Wells	Poorly constructed wells and improperly abandoned wells can act as a 'direct route' for ground water contamination. State regulations require proper plugging of water wells. Educate the citizens in your community by distributing NDEP's Abandoning Unused Water Wells fact sheets.	Conducting an inventory of orphaned wells has been identified by the NCWDGB as a priority. The CSWP Team can work with the NCWDGB to assist in identification of these wells as a goal of this CSWP Plan. Public outreach to educate the public on the difference between abandoned and orphaned wells may be a useful tool.				
Illegal Dumping	Monitor SWPAs to detect illegal dumping. Use Nevada's Recycling Hotline (1-800-597-5865) to report illegal dumping.	Illegal dumping is a challenge throughout Nevada, especially in rural areas surrounded by government- managed land. Education and outreach materials, combined with enforcement of nuisance ordinances, generally assist in preventing this practice. Providing information to local residents on who to contact when illegal dumping is found may be a useful enforcement tool.				
Accidental Spills	Monitor SWPAs for accidental spills. Have an emergency response/contingency plan ready if an accidental event threatens the water supply.	Coordinate with Nye County Emergency Services and local fire departments to provide them with the CSWP Plan, SWPA maps, and updates. Coordinate with NDEP and the Bureau of Corrective Actions (BCA) spill hotline in the case of a spill. Work with Nye County Emergency Services to update the Hazard Mitigation Plan to include contamination of water supplies, as funding permits.				
USTs / Home Heating Oil Tanks	All USTs and home heating oil tanks should be monitored and tested according to the requirements of NDEP. Leaking tanks should be removed as soon as possible and corrective actions should be taken for site remediation. Coordinate with NDEP for financial assistance from the State Petroleum Fund. Educate the citizens in the community by distributing NDEP's Home Heating Oil Tanks fact sheets.	This approach is appropriate and should be implemented when funding can be obtained. Home heating oil tanks were not found to be prevalent near SWPAs in Nye County. Public education efforts can be coordinated with home heating oil companies to distribute materials, where applicable.				
ASTs	Coordinate with local Fire Departments and utility purveyors about siting and construction of ASTs, and reporting spills to appropriate first responders and PWS representatives.	This approach is appropriate and should be implemented when funding can be obtained. Public education should be targeted toward businesses that have ASTs, such as fire water tanks or propane tanks. Public education efforts can be coordinated with propane companies to distribute materials.				
Septic Systems	Proper design, construction and maintenance of septic systems are vital for your water quality. It is important not to dispose of common household hazardous materials into your septic system. Educate the citizens in your community by distributing NDEP's Domestic Septic Systems fact sheets.	The issue of septic systems (and domestic wells) is a sensitive one in Nye County, and care should be taken to communicate clearly the CSWP Plan does not advocate for removal of existing individual septic systems. Focus should be placed on education targeted toward best management practices and regular system maintenance for residents who use septic tanks.				
Chemical Storage Facilities	Avoid storage or use of chemicals/hazardous materials within SWPAs. Storage and transportation of chemicals/hazardous materials should comply with all applicable National Fire Protection Association (NFPA) and Department of Transportation (DOT) regulations.	At a minimum, education efforts aimed at business owners and residents within SWPAs should be conducted.				

## 3.1.5 Contingency Plan

Contingency plans differ from emergency response plans required by the BSDW for PWS operators, as they are intended to provide a course of action in the event the drinking water resource for a community becomes contaminated. Contingency plans are provided in each of the six approved WHP Plans previously developed for PWS in Nye County, referenced in Table 1 (page 3) of this CSWP Plan, and included in Section 6.

Because communities and PWSs in Nye County are often separated and are not interrelated, it may not be practical to establish a contingency plan that broadly encompasses all PWSs and is detailed. The development of a more comprehensive Contingency Plan and incorporation of water contamination into emergency response plans is included as an action item in the Work Plan.

Emergency response plans are typically short-term solutions in response to an immediate shut-down of a water supply, either related to mechanical issues, water quantity problems, or in response to a contamination threat or natural disaster. However, emergency response plans do not address the longer term problems associated with contaminated aquifers.

Contingency plans, within the context of the ISWPP, are built upon emergency response plans and provide guidance and direction to the local community and PWSs in the event the aquifer or main source of drinking water is significantly contaminated. The contingency plan should demonstrate the community's planning capacity to address a long-term emergency situation. Some considerations include assessing the time-frame needed for the community to switch to an alternate source, the capacity and quality of water alternate sources may provide, and what local resources are currently available to implement the use of an alternate source. Contingency plans could also include conservation measures intended to prolong the use and availability of water supplies (e.g., during periods of interim decision making, remediation, or new source development).

The contingency plan reviews potential contaminant scenarios and measures to address that contamination, either through treatment or the development of a new water source. Information in the contingency plan can include, but is not limited to:

- Emergency contact list;
- List of individuals and their responsibilities;
- Description of possible primary contingencies and emergencies;
- Short and long-term water treatment options;
- Emergency drinking water replacement sources;
- Long term drinking water source replacement, augmentation or remediation; and
- Cost/Benefit analysis for possible actions.

## 3.1.5.1 Short-Term Emergencies

Short term emergencies are transient events which prevent the availability of drinking water in a community for a limited period of time and are described in the existing emergency response, water conservation and emergency management plans for the respective PWSs or communities. A list of potential alternate supply options is included

below; however, the emergency water supply options listed here are not intended to provide permanent solutions for the affected community.

Existing System Sources: Few of the two-year TOTs in the County overlap, which suggests that a contamination event for one well may allow for isolation of other wells within the same system. These wells may provide a temporary backup source of drinking water for users in the system, depending on the extent of contamination. However, many PWSs in the County contain only one drinking water source.

<u>Stored Water Reserves:</u> Individual PWSs maintain varying quantities of drinking water in storage tanks (when present). Some PWSs have very small or no water storage tanks.

<u>Boil Order</u>: A boil order may be issued at the discretion of the PWS operators or as directed by the BSDW.

<u>Bottled Water:</u> Bottled water is sold in the region at numerous local outlets and can be trucked in from outside regions as part of a relief effort.

<u>Potable Water Trucks:</u> Similarly to bottled water, potable water trucks may be brought in from unaffected nearby communities. Due to the distance between communities in much of Nye County, it would take several hours or more to mobilize and deliver water to some communities with this method.

<u>Conservation</u>: Conservation measures are long-term steps taken when demand may exceed availability. For example, limiting the watering of lawns during a period of severe drought would be a conservation measure. Ration orders may be given if demand cannot be met by some other means.

<u>Local Emergency Agreements</u>: The development of emergency agreements between PWSs may be an important component of short-term contingency plans. There are no known interties between systems in Nye County, but it may be worth exploring the feasibility of emergency interties in some systems in Pahrump, where geographic proximity would allow.

## 3.1.5.2 Long-Term Contingencies

In the event of significant contamination of a drinking water source, communities may find themselves subject to long-term deficits in their water supply, which will have to be supplemented by either a new source or an agreement with another water system(s). In the case of many communities in Nye County, the distance between communities prevents an intertie with other communities, and a more local solution would have to be found. These same communities also have relatively small populations that would have difficulty bearing the expense of rigorous water treatment.

#### 3.1.6 New Sources

All new drinking water sources and related drilling activities are regulated by the Nevada Division of Water Resources (NDWR) as specified in NAC 534.010-534.450. Prior to the initiation of drilling, a notice of intent must be on file with the NDWR, and a permit must be obtained to drill or replace a water well. Water quality studies must also be performed to

determine if the parameters are below the maximum contaminant levels for drinking water established by the United States Environmental Protection Agency (EPA) and the State of Nevada.

According to the BSDW, the horizontal distance between a supply of water and any potential source of pollution must be "as great as is practical, but no less than one hundred feet". While this statute is supportive of the CSWP Plan, a distance of 100 feet is generally inadequate for source water protection and does not change the necessity of SWPA delineations for new sources under this Plan. A preliminary CSI should be conducted covering a 1,000 foot radius for proposed or new drinking water sources.

Should Nye County or any of the associated PWSs choose to develop or acquire a new public water supply source, the proposed source can be evaluated by the CSWP Team with respect to the guidelines outlined in this document for all the CSWP Plan elements then incorporated into the Plan. A SWPA can be delineated for the proposed water source and can then be inventoried for PCSs before construction or incorporation of the new source. The SWPA can be managed in accordance with the goals stated in this CSWP Plan; however, management strategies may be modified for the new source or implemented in their current state, where appropriate. This in no way implies the CSWP Team has any regulatory authority over PWSs or new drinking water sources. Specific source acquisition and development strategies are up to the individual PWS operators, and the inclusion of new drinking water sources under this Plan is intended to enhance the source water protection for included sources.

Table 5 (page 31) discusses the processes for the development on new water supply wells.

Element	Considerations	Potential Application		
Identify Undeveloped Water Sources	Suitable sites exist for future water supply well.	There are suitable areas for additional water supply wells in communities throughout Nye County, though locating drinking water that meets all applicable standards has been challenging in Gabbs, Manhattan, and Tonopah in the past. This difficulty reinforces the importance in protecting existing drinking water resources. Individual PWSs are responsible for identification and procurement of suitable sites.		
Examine Steps Required to Obtain Water Rights	The systems have adequate water rights to provide for anticipated future demand.	Application(s) for a change in the point of diversion would have to be filed with NDWR after final well site selection.		
Define SWPAs for New Well Sites	Site-specific data may not be available but existing data for region as a whole will be used in conjunction with any well completion design, with weight given to data from existing wells in close proximity to the proposed well site.	Deferred to final well location selection. Adequate information already exists for delineation of preliminary SWPA through AFR, such as for the Amargosa Valley Science and Technology Park(AVSTP) well. Final delineation will be based on results of well pump tests in conjunction with actual design pumping rate.		
Identify PCSs	Contaminant inventories for proposed new wells should be completed prior to siting the well to promote advanced planning for the protection of these water supplies.	The PWS should not site wells within a 3,000 foot radius of areas with high concentrations of uncontrolled or high risk PCSs or in areas with known contamination issues.		
Select Management Strategies and Options	Source reviews have been identified for SWPAs to be implemented during the design/plan review process.	The Board of County Commissioners (BoCC) and NCWDGB approvals are needed prior to the adoption of any potential contaminant management strategies. No actual regulations or management strategies will be enacted by endorsing this Plan, but the endorsement indicates the BoCC and NCWDGB support the management strategies and Work Plan included as part of this Plan, and will support the implementation of the Work Plan, as budget and staff availability allow.		
Perform Compliance Studies	Obtain permits and access and file environmental documentation. Can cost \$5K to \$50K depending on location and National Environmental Policy Act (NEPA) requirements. Sample water and test for chemical constituents to demonstrate compliance with Safe Drinking Water Act (SDWA). Costs can approach \$5K per source for sampling, analyses, reporting, and contractor fees. Conduct aquifer test of new source well.	Permitting, rights-of-way and NEPA documentation initiated after funds secured. Sampling is typically done following well completion and development or during drilling of a pilot borehole. Will include SDWA parameters for chemistry. Aquifer (pump) test needed for final SWPA delineation; to be done at time of well completion.		
Evaluate Financial Needs and Procure Funding	Priority needs are evaluation of existing sources to determine their potential for future use as potable water source wells. Second priority is development of new ground water source or sources (\$200K+).	Potential funding sources identified for monitoring wells and grant proposals will be prepared. Funding sources for new supply wells will be sought.		

#### Table 5. Source Development Plan Elements for New Water Supply Wells

## **3.1.6.1** Projected Supply Required

Determining the projected supply required from a new source or sources will greatly aid in determining the possible location of those sources.

#### **3.1.6.2** Protection Areas

## **3.1.6.2.1** Contaminant Source Inventory

A supplemental CSI should be conducted prior to construction of a new well or water source to avoid construction in a contaminated area or an area which may become contaminated within a short time frame. The supplemental CSI should encompass a radius of not less than 3000 feet in accordance with standard BSDW practices.

#### 3.1.6.2.2 Contaminant Management Strategy Development

The preparation of the CSI will facilitate early development of a strategy for managing contaminants in the area of the new source.

#### 3.2 Amargosa Valley

## 3.2.1 Water Supply Source Inventory and Planning

Water sources for PWSs in Amargosa Valley have been summarized in Table 6 (page 33). Ground water serves as the only supply of drinking water for these systems. The development of these water supplies is reviewed in the subsequent sections. Note that although the community of Crystal is just outside the boundaries of the Town of Amargosa Valley, it has been included in this section and is within the same hydrographic basin as Amargosa Valley.

## 3.2.1.1 Historical Water Sources and Conditions

Water use in Amargosa Valley has traditionally been focused on a distributed system of low yield wells, without any large utility-scale water systems. Water development began here with the discovery of borax and other minerals in 1905, and continued to slowly grow until the 1950s. The arrival of power utilities in the 1960s sparked a major increase in agricultural development; however, domestic growth stayed low until the population explosion of the Las Vegas Valley during the early 1990s. This resulted in considerable expansion in Amargosa Valley and the construction of many new wells.

Because of its many natural springs and seeps, Amargosa Valley has a long history of agricultural use. Native American communities have occupied and farmed the region for thousands of years. Corn, squash, beans and sunflowers were grown on the land adjacent to spring pools in Ash Meadows, and irrigated with gravity fed ditches. Once European settlers arrived in the region, they were quick to take advantage of the available water. Agriculture in the region continued to grow until it peaked in the 1960s and by the 1970s, increasing agriculture and development had dramatically decreased the water level of the spring system.

On June 18, 1984, the Ash Meadows National Wildlife Refuge was created to protect several of the regions unique species, which were listed as endangered over the preceding decade. The United States Fish and Wildlife Service (FWS) responded to the measureable drawdown in Ash Meadows by acquiring water rights for 12,600 AFA of spring discharge over the last two decades to act as a buffer on the ground water system.

## 3.2.1.2 Current Water Sources and Conditions

Amargosa Valley currently has 16 active PWSs. Of these 16, only one is classified as a community water system (C), ten are classified as non-community water systems (NC), and the remaining five systems are non-transient, non-community water systems (NTNC). The majority of the PWSs (11 in total) consist of only one water source, while the remaining five systems consist of two sources.

There are currently 21 water sources within the active PWSs in Amargosa Valley, all of which are ground water wells. While the status of most of the wells is currently active, one is listed as inactive, two are abandoned, and one well is listed as an emergency backup as listed in the Safe Drinking Water Information System (SDWIS) database.

Ground water supplies for three PWSs in Amargosa Valley have been studied by the Wellhead Protection Plan for Nye County Operated Systems in Armargosa Valley which received endorsement from NDEP, and are listed in Table 1. The status of each source (active, backup, etc.) and pumping rates referenced in the WHP Plan has been summarized in Table 6 (page 33). According to the previous WHP plans for these PWSs, there were no documented concerns regarding the quality of the ground water supplying each system.

The remaining 13 PWSs do not have a previous WHP plan established, but these systems are subject to federal and State drinking water regulations for water quality.

Another State program, the SWAP/VAP, conducted activities related to source water protection for PWSs. The SWAP/VAP reports provide an inventory of the water sources supplying each system and document PCS. The most recent updates to these reports occurred in 2003; however, BSDW completed the field survey in 2011 and is currently in the process of updating the SWAP/VAP reports. Development of this Plan included reviewing all available SWAP/VAP reports, and coordinating with BSDW to ensure the most current data from the SWAP/VAP reports was incorporated into this Plan.

According to the NCWRP, ground water rights in 2000 exceed the published perennial yield of 24,000 AFA by 4,600 AFA; however, actual ground water withdrawal was not believed to have exceeded 16,000 AFA. Major users/owners of ground water in the Amargosa Valley are domestic wells, agriculture and federal agencies. The NDWR estimated there were 400 domestic wells in operation within the basin, each drawing approximately one AFA. It can be assumed that most, if not all, domestic wells are paired with a domestic septic system. As of 1998, approximately 12,000 AFA of ground water was being withdrawn to irrigate an area of nearly 3,000 acres of farmland. The FWS own the water rights for 12,573 AFA in the Amargosa Desert, making them the largest single owner of water rights in the basin. These water rights go unused in an effort to constrain ground water withdrawals to a level under the perennial yield of the basin and to stabilize water levels in Ash Meadows.

		Previou	ıs WHP Plan	Current CSWP Plan		
Public Water System	Source	Well Status	Pump Rate (gpm)	Well Status	Pump Rate (gpm)	Max Pump Rate (gpm)
Amargosa Elementary School	Well 1	Active	5	Active	150	150
Amargosa Park	Amargosa Park Well	N/A	N/A	Active	150	150
Amorago Saniar Contar	Well 1	Active	2.5	Active	2	20
Amargosa Semor Center	Well 2	N/A	N/A	Inactive	N/A	
Amargosa Town Complex	Well 1	Active	5	Active	5	140
Amargosa Valley Resort, Inc.	Well 1	N/A	N/A	Active	3	50
Amargosa Valley VFW Post 6826	Well 1	N/A	N/A	Active	7	20
American Water Company	Well 1	N/A	N/A	Active	5	10
Amargosa water Company	Well 2	N/A	N/A	Active	5	10
AVSTP 4PD	4PD	N/A	N/A	Future	N/A	
	Main Well	N/A	N/A	Active	1	50
Cherry Patch Love Ranch	Backup Well	N/A	N/A	Inactive	N/A	50
Crystal Park Nye County Park	Well 1	N/A	N/A	Active	2	30
Fort Amargosa RV Park	Well 1	N/A	N/A	Active	60	80
Horizon Academy	Well 1 Main	N/A	N/A	Active	3	100
	Well 2 Fire	N/A	N/A	Inactive	3	100
Longstreet Inn and Cacino	Well 1 RV Park	N/A	N/A	Inactive	10	70
Longstreet nin and Cashio	Well 2 Hotel	N/A	N/A	Active	10	70
Mabel's Far East Bar	Well 1	N/A	N/A	Active	2	50
NDOT Lathrop Wells Roadside Park RP801NY	Well 1	N/A	N/A	Active	1	80
Patch of Heaven	Well 1	N/A	N/A	Active	N/A	50
Short Branch	Well 1	N/A	N/A	Active	7	50

#### Table 6. Inventory of Water Sources for Active Public Water Systems in Amargosa Valley

#### 3.2.1.3 Future Water Sources and Conditions

Additional withdrawals from the ground water system will be required to provide for future increases in agricultural production and predicted population growth in the basin. Were lands already privately owned and up for disposal by the BLM to be fully developed, the total demand could increase to as much as 28,000 AFA. Ground water withdrawals for agricultural purposes are expected to increase as well but should be no more than 15,000 AFA, or a 50 percent increase over current demand by 2050. Taken together, the total projected demand for quasi-municipal and agricultural purposes is 43,000 AFA, well above the published perennial yield for the basin. These estimates emphasize the need to maintain and protect existing drinking water resources.

Existing water sources are considered adequate for the anticipated growth over the next 50 years; however, ground water withdrawals of this magnitude will not be possible unless the NDWR establishes a higher perennial yield or additional water can be

imported into the basin. Nye County has recently begun an evapotranspiration study in Amargosa Valley, which may result in a revaluation of the perennial yield.

There is considerable current interest in Amargosa Valley for solar energy development, including the filing of numerous right-of-way applications with the BLM for solar development. Solar Millennium was granted a BLM right-of-way on 4,350 acres in Amargosa Valley in 2010. The community and County have proven to be very aware of limitations of water availability for these developments and should continue to work with developers to encourage the most efficient technologies to reduce water use.

#### **3.2.2** Source Water Protection and Delineation

#### **3.2.2.1 Delineation Method**

SWPAs for the active water sources for the active PWSs in Amargosa Valley were established using the following methodology and are depicted in Appendix A:

- Three PWS wells were previously modeled analytically in the prior WHP Plan endorsed by NDEP. The initial re-modeling criterion was if the current maximum pumping did not exceed the previous maximum pumping rate, then the previously established SWPA for a well was deemed acceptable for incorporation into this Plan. As a result of changing pumping conditions and well abandonment, only one of the three was still considered valid and was originally not re-modeled. Upon review and discussion by the Team, the remaining SWPA was remodeled, as the Team was not comfortable with the very narrow and long shape of the originally modeled SWPA and felt it did not accurately represent ground water flow conditions.
- Remote PWSs that are either isolated from other development, such as those surrounded by federally managed lands, or for which there was insufficient information for analytical modeling, are recommended to be modeled through the CFR methodology. In Amargosa Valley, all existing water sources were eventually recommended for modeling using the CFR method.
- The method used to establish SWPAs for each PWS well is indicated in Table 3 and additional explanations are provided in the following sections for pertinent PWSs. Detailed inputs for the WhAEM2000 model and modeling results are provided in Appendix D.
- In cases where SWPAs overlapped, the areas were combined by using the convex hull method/algorithm.

## 3.2.3 Contaminant Source Inventory

#### 3.2.3.1 Desktop Research

Desktop research for the CSI in Amargosa Valley was conducted as described in the County-wide section of this Plan.

## 3.2.3.2 Field Surveys

Field surveys in Amargosa Valley were conducted on October 5, 2011, to locate and confirm the PCSs identified through the desktop survey and identify additional PCSs. A total of 32 PCSs were found in and near SWPAs in Amargosa Valley. Both residential and miscellaneous PCSs were the most commonly occurring (28 percent each).

## 3.2.3.3 Risk Rankings

In Amargosa Valley, the highest risk PCSs found in and near SWPAs were gas stations, ASTs, private storage yards, a dairy, and industrial facilities. These PCSs were not found in high concentrations, but were distributed throughout the SWPAs.

#### 3.2.4 Contaminant Management Strategy Development

The implementation of the PCS management strategies presented in Table 3, Management Tools and Strategies (pages 23-25) is contingent upon local resident support and outside financial assistance. The tools most likely applicable to Armargosa Valley are: land use ordinances, source prohibitions, conditional use permits, division of land ordinances, local business owner education, HHW waste collection, and public education.

#### 3.2.5 Contingency Plan

The contingency plan for Amargosa Valley was developed as part of the Wellhead Protection Plan for Nye County Operated Systems in Armargosa Valley, endorsed by NDEP in 2006. The 2006 Plan identifies Nye County Emergency Services as the point of contact for emergency response. Due to the varied ownership of PWSs in Amargosa Valley, each individual PWS is responsible for their own contingency plan, which is already required by the BSDW to be completed and on file with NDEP. Maintaining up to date contingency and emergency response plans is important for the protection of drinking water sources and the health of PWS users and has been identified as an implementation measure.

#### 3.2.6 New Sources

Only one future drinking water source is known in Amargosa Valley at this time. The AVSTP in the Lathrop Wells area is currently under development, and will require a PWS to serve the development. A well is currently being developed as a PWS drinking water source for the AVSTP. This system will be owned and operated by Nye County. Because Amargosa Valley does not have centralized water service, if any restaurants or other businesses serving drinking water to the public are developed, an associated PWS would be required, so it is likely there will be additional new drinking water

sources, but the location and nature of those is impossible to predict at this time. Identification and incorporation of new PWS drinking water sources will be a component of future Plan updates.

## 3.2.6.1 Projected Supply Required

The projected supply for all other PWSs in Amargosa Valley is adequate for their known future needs.

## **3.2.6.2** Protection Areas

The SWPA for the AVSTP well was completed using the AFR method, as the maximum pumping rate and other well characteristics are not yet determined.

## 3.2.6.2.1 Contaminant Source Inventory

A CSI was completed for the SWPA associated with the AVSTP well. No PCSs were found within the SWPA at the time of the CSI.

## 3.2.6.2.2 Contaminant Management Strategy Development

PCS management strategies are the same as for Amargosa Valley in general.

## 3.3 Beatty

## 3.3.1 Water Supply Source Inventory and Planning

Water sources for the PWSs in the Beatty area have been summarized in Table 7 (page 38). Ground water serves as the only supply of drinking water for these systems. The development of these water supplies is reviewed in the subsequent sections

## 3.3.1.1 Historical Water Sources and Conditions

Water development and land use near the Town of Beatty has been tightly intertwined with the mining industry throughout its history. Beatty began with the 1904 gold rush in the Bullfrog Mining District, just west of modern Beatty. After these early mines went bust, Beatty existed for several decades as the economic center for the large, sparsely populated region surrounding it, its population slowly changing from 169 to only 485 between 1929 and 1950. This changed in 1988, when Bond Gold built a large open pit mine about four miles west of town. Shortly after its construction the land was sold to LAC Minerals, who opened an additional underground mine before being acquired by Barrick Gold in 1994. The mine became known as the Barrick Bullfrog Mine and was in operation until the end of 1998. During this time, Beatty experienced substantial growth and reached a population of nearly 2,000 by the end of 1990 but has since declined to a population of 1,010 according to the 2010 census.

Tritium has been found in the upper aquifer by U.S. Ecology, the waste disposal site 17 miles south of the relevant water systems. The site was used for radiogenic materials, between 1962 and 1992, during which time a total of 715,000 curies of material were disposed of there. Hazardous waste was first accepted for burial at the site in 1970 and

waste continues to be disposed of there at the time this Plan was developed. Operations were suspended between 1976 and 1979, when the operator's license was revoked due to improper handling and disposal. Tritium has been detected in onsite monitoring wells beginning in 1973 and maximum levels were detected in the early 1980s, but have since decreased significantly.

## 3.3.1.2 Current Water Sources and Conditions

Within the Beatty area, there are currently four active PWSs. One of these systems is classified as a community water system (C), and the remaining two systems are non-community water systems (NC). Two of the PWSs contain only one water source, while the Beatty Water and Sanitation District contains seven water sources.

There are currently nine water sources within the three active PWSs in the Beatty area, eight of which are ground water wells, and one of which is a spring serving Bailey's Hot Springs. Of the ground water wells, four are listed as currently active, while the remaining four are listed as inactive.

One PWS in the Beatty area has been included in the "Beatty Water and Sanitation District Wellhead Protection Program", which received endorsement from NDEP, as listed in Table 1 (page 3). The status of each source (active, backup, etc.) and pumping rates referenced from these plans have been summarized in Table 8 (page 41). According to the 1996 vulnerability assessment performed by the Nevada Bureau of Health Protection Services, there were no documented PCSs near the drinking water sources at that time.

Naturally occurring fluoride and arsenic concentrations are a significant concern in Beatty and the Oasis Valley, especially following the 2001 change in EPA drinking water standards, which lowered the allowable arsenic concentration from 50 parts per billion to 10 parts per billion.

Beatty Water and Sanitation District acquired Well EW-4 and associated water rights from Barrick Bullfrog, the operators of Bullfrog Mine, in December 2001. Although it was not yet officially a part of the water system at the time, Well EW-4 was incorporated into the previous WHP Plan in 2001 and is now part of their water system.

		Previou	s WHP Plan	Current CSWP Plan			
Public Water System	Source Name	Well Status	Pump Rate (gpm)	Well Status	Pump Rate (gpm)	Max Pump Rate (gpm)	
Bailey's Hot Springs	Baily's Hot Springs	N/A	N/A	Active	N/A	20	
Beatty RV Park	Well 1	N/A	N/A	Active	1	N/A	
	Well 1 Inactive	Active	30	Inactive	24	30	
	Well 2 Inactive	Inactive	90	Inactive	90	90	
	Well 3 Inactive	Inactive	180	Inactive	130	180	
Beatty Water and Sanitation	Indian Springs Well	Active	110	Active	75	110	
District	Middle Well Inactive	Inactive	75	Inactive	75	75	
	Summit Well	Active	80	Active	40	80	
	Well EW4	Active	900	Active	500	900	

#### Table 7. Inventory of Water Sources for Active Public Water Systems in the Beatty Area

#### **3.3.1.3** Future Water Sources and Conditions

Adequate water rights and water sources are currently available to meet the projected future demands of the Beatty Water and Sanitation District. Future water supply developments, should they become necessary, are likely to be constrained by the presence of several endangered species such as the Amargosa Toad and Oasis Valley Speckled Dace. During the implementation of the NCWRP, residents of Beatty expressed concerns about the effects of the impacts of invasive species and possible leakage of contaminants from the NNSS on ground water quality.

## **3.3.2** Source Water Protection and Delineation

In order to update the information and results presented in the previous WHP Plan and to establish a source water protection plan for PWSs that were not included in the previous Plan, a comprehensive review of pertinent geological, hydrogeologic, and water supply information was completed for the PWSs in the Beatty area and is presented in detail in Appendix D.

## **3.3.2.1 Delineation Method**

SWPAs for the water sources for the active PWSs in Beatty were established using the following methodology, and are depicted in Appendix A:

- All water sources within the Beatty Water and Sanitation District have been modeled analytically in the previous State approved WHP Plan. If the current maximum pumping rate did not exceed the previous maximum pumping rate, then the previously established SWPA for a well was deemed acceptable for incorporation into this Plan. All seven previously modeled wells in Beatty have undergone a decrease in pumping rate and did not require remodeling.
- The remaining two sources in the Beatty Area were modeled using the AFR method, as the geology in the Oasis Valley area is very complex, and a hydrogeologic analysis would be very complex.
- Detailed inputs for the WhAEM2000 model and modeling results are provided in Appendix D.

## 3.3.3 Contaminant Source Inventory

#### 3.3.3.1 Desktop Research

Desktop research for the CSI in Beatty was conducted as described in the County-wide section of this Plan.

#### 3.3.3.2 Field Surveys

Field surveys in Beatty were conducted on October 6, 2011. During the field survey, additional PCSs were observed and PCSs identified during the desktop survey were verified. A total of 20 PCSs were found in and near SWPAs in Beatty. The most commonly occurring PCSs were grass fields, mines, cemeteries and major road ways, classified together as miscellaneous (45 percent). The second most common PCS class was automotive (25 percent).

#### 3.3.3.3 Risk Rankings

In Beatty, the PCSs of greatest concern, based on the level of risk and proximity to drinking water sources are grass fields (parks) and automotive-related facilities. Both fields and automotive-related facilitates are ranked as a high risk.

#### 3.3.4 Contaminant Management Strategy Development

The implementation of the PCS management strategies presented in Table 3, Management Tools and Strategies (page 24), is contingent upon local resident support and outside financial assistance. The tools most likely applicable to Beatty are: land use ordinances, source prohibitions, conditional use permits, division of land ordinances, land acquisition, local business owner education, HHW collection, and public education.

## 3.3.5 Contingency Plan

The contingency plan for the Beatty Water and Sanitation District was developed as part of their WHP Plan, endorsed by NDEP in 2001. The 2001 Plan identifies documents related to the contingency plan, which were on file with the Beatty Water and Sanitation District. The 2001 contingency plan also identifies contingency measures, emergency water supply options, and a notification roster with contact information. Maintaining up-to-date contingency and emergency response plans is important for the protection of drinking water sources and the health of PWS user, and has been identified as an implementation measure.

#### 3.3.6 New Sources

No future drinking water sources are known to be planned in the Beatty area at the time of this Plan.

#### 3.3.6.1 Projected Supply Required

The projected supply for all current PWSs in Beatty is adequate for their known future needs.

#### 3.4 Pahrump Valley

#### 3.4.1 Water Supply Source Inventory and Planning

Water sources for the PWSs in Pahrump have been summarized in Table 8 (page 41). Ground water serves as the only supply of drinking water for these systems. The history of development of these water supplies is reviewed in the subsequent sections.

#### 3.4.1.1 Historical Water Sources and Conditions

Water use in the Pahrump Valley began slowly as it was inhabited by settlers in the late nineteenth and early twentieth century and increased in pace all the way to the present. Early settlers arrived to take advantage of the abundant springs and artesian wells which then existed in the valley. This water was utilized for ranching and agriculture on large holdings, typically in excess of 1,000 acres. Agriculture continued to increase, but change was slow in the valley until the growth of nearby Las Vegas in the 1960s, when construction was completed on a paved highway to the Town. After that time, the population exploded in Pahrump, from less than 2,000 residents in 1980 to well over 36,441 by the 2010 Census. After peaking in the late 1960s, agriculture has almost completely disappeared from the valley as land was converted to residential use.

Ground water overdraft and its effects have been well documented in Pahrump Valley for several decades. Overdraft first became significant during the period between 1940 and 1970, during which ground water withdrawals rose from 10,000 AFA to a peak of 47,000 AFA in 1968. As withdrawals increased, static water levels dropped by nearly 100 feet and discharge from seeps and springs were reduced dramatically. From 1962 to 1975, ground water depletion resulted in over two feet of subsidence over an area of eight square miles and one foot of subsidence in over 40 square miles, according to the NCWRP. Following the peak in 1968, water usage declined from 47,000 AFA to less than 20,000 AFA in 1988. Increased urbanization in the 1990s resulted in withdrawals above the perennial yield of 13,000 AFA; however, water use in 2000 was back down to approximately 23,000 AFA, according to the NCWRP.

## 3.4.1.2 Current Water Sources and Conditions

Within Pahrump, there are currently 47 active PWSs. Of these, 15 are classified as community water systems (C), 28 are classified as non-community water systems (NC) and the remaining four systems are non-transient, non-community water systems (NTNC). Over half of the PWSs (32 in total) consist of only one water source. Of the remaining 15, ten have two sources, and five have three or more sources.

There are currently 73 water sources within the 47 active PWSs in Pahrump, all of which are ground water wells. While most of the wells are currently active, eight are listed as inactive.

Thirty-one currently active PWSs in Pahrump were included in the "Town of Pahrump Wellhead Protection Plan", which received endorsement from NDEP, as listed in Table 1 (page 3). Note that some PWSs that were active at the time of the previous WHP Plan are no longer active and are not included here. The status of each currently active source (active, backup, etc.) and pumping rates referenced from the WHP Plan has been

summarized in Table 8. According to the previous WHP Plan for these PWSs, there were no documented concerns regarding the quality of the ground water supplying each system.

The remaining 16 PWSs were not included in the previous WHP Plan, but these systems are subject to federal and state drinking water regulations.

While it has declined significantly from its peak, agriculture continues to have a presence in Pahrump. In 1995, approximately 15,000 AFA was withdrawn to cultivate 3,000 acres of irrigated land in the valley. Much of this land was purchased for subdivisions in the late 1990's, leaving as little as 1,000 acres in production today. As of 2004, water use was approximately 23,000 AFA, the lowest demand seen in the Valley since 1993.

# Table 8. Inventory of Water Sources for Active Public Water Systems in Pahrump

		Previou	Previous WHP Plan		Current CSWP Plan		
Public Water System	Source Name	Well Status	Pump Rate (gpm)	Well Status	Pump Rate (gpm)	Max Pump Rate (gpm)	
Anchor Inn MHP	Well 1	Active	7	Active	7	45	
Big Five Park	Well 1	Active	5	Active	5	10	
Big Valley MHD	Well 1	Active	5	Active	5	N/A	
	Well 2 Back Up	Active	N/A	Active	N/A	N/A	
C Valley MHD	Well 1	Active	5	Active	5	5	
C valley with	Well 2	Active	5	Active	5	43	
Calvada Meadows UICN	Well	Active	N/A	Active	N/A	N/A	
Carberry Square	Well	N/A	N/A	Active	N/A	50	
Champions	The Well	Active	3	Active	3	N/A	
Chielton Danah	Back Well	Active	5	Active	5	5	
Chicken Kalch	Front Well	Active	5	Active	5	5	
Chipmunk Retreat	Well 1	Active	12	Active	12	12	
Coyote Corner Market	Well 1 Inactive	N/A	N/A	Inactive	N/A	N/A	
	Well 2	N/A	N/A	Active	N/A	50	
Coyote Corner III	Well	N/A	N/A	Active	30	30	
	Well 48	Active	50	Active	50	156	
Country View Estates UICN	Well #48 A	Active	45	Active	45	320	
	Calvada North Well	N/A	15	Active	15	318	
Desert Center Plaza	Well	N/A	N/A	Active	50	50	
Desert Minere Henry and Association	Well 1	Active	5	Active	5	130	
Desert Mirage Homeowners Association	Well 2	Active	5	Active	5	130	
	Well 1	Active	42	Active	42	550	
	Well 2	Active	200	Active	200	800	
Desert Utilities	Well 3 Inactive	Active	N/A	Inactive	N/A	600	
	Well 4 Inactive	Active	150	Inactive	150	650	
	Well 5 Inactive	Active	N/A	Inactive	N/A	1000	
Elks Lodge Pahrump	The Well	Active	1	Active	1	1	
	Well 1	Active	10	Active	N/A	10	
Escapee CO OP of Nevada	Well 2 Abandoned	Active	10	Inactive	10	15	
	Well 3 New	N/A	N/A	Active	N/A	15	
Horizon Market III	W01	Active	10	Active	10	30	
Just Country Bar	Well	N/A	N/A	Active	20	20	
LDS Church Pahrump Ward	Well	Active	33	Active	33	37	

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LJ's Market	Well 1	N/A	N/A	Active	10	30
Low Low Liquor Cigarettes and Goodies	Well W01	Active	20	Active	20	20
Moose Lodge 808	Well	Active	3	Active	N/A	N/A
	Well #1	N/A	N/A	Active	15	1500
Mountain Fails water System UICN	Well #2	N/A	N/A	Active	15	1500
Mountain View MHP UICN	Well 1	Active	2	Active	2	5
New County Countin	Well 1	N/A	N/A	Active	5	350
Nye County Complex	Well 2	N/A	N/A	Active	150	150
Our Bar	Well	Active	12	Active	N/A	12
Pahrump Café	Well	N/A	N/A	Active	N/A	25
Pahrump RV Park	The Well	Active	3	Active	3	74
Pahrump Senior Center Inc.	Geezer Well	Active	20	Active	20	20
	Well 1 Abandoned	Active	325	Inactive	325	N/A
	Well 2 Bridger St.	Active	325	Active	325	325
Pahrump Utility Company, Inc. (Hefen Ranch	Well 3 Manse Rd.	N/A	N/A	Active	N/A	670
Estates)	Well 4 Fox Ave.	N/A	N/A	Active	670	670
	Hefen Well #5 Heritage Dr.	N/A	N/A	Inactive	670	670
	Concordia East Well 1	N/A	N/A	Active	500	500
Pleasant Valley	Concordia West Well 2	N/A	N/A	Active	500	500
Quick Save Market	Well W01	Active	9	Active	20	20
Sanders Winery	Well	N/A	N/A	Active	N/A	N/A
Chardle David	Well 1	Active	2	Active	2	N/A
Sheri s Kanch	Well 2	Active	5	Active	5	100
Spring Mountain Motor Sports Ranch	Well	N/A	N/A	Active	N/A	40
Stagestop Restaurant	Well 1	N/A	N/A	Active	10	40
Surrent MIID	Well 1	N/A	N/A	Active	125	150
Sunset MHP	Well 2	N/A	N/A	Active	N/A	150
Terribles Ranch Casino and RV Park	Well W01	Active	35	Active	35	35
The Maverick	Well	N/A	N/A	Active	20	80
Town Hall Bar	Well W01	Active	10	Active	25	50
Tumbleweed Tavern	Well W01	Active	10	Active	10	30
	Well 1	Active	861	Active	861	N/A
	Well 2	Active	1000	Active	1000	N/A
Utilities Inc. of Central Nevada	Well 8	Active	570	Active	570	N/A
	Well 11	Active	141	Active	141	N/A
	Well 9	Active	1050	Active	1050	N/A
Valley Bar	Well	Active	12	Active	12	12
Villa Locale	Well	Active	3.5	Inactive	12	12
VFW Pahrump Post 10054	Well	Active	7	Active	7	23
Whos Dunes	The Well	Active	2	Active	2	4

## 3.4.1.3 Future Water Sources and Conditions

The increase in the urbanization of Pahrump Valley is expected to drive changes in the ground water system over the coming decades. Agricultural land is predicted to all but disappear in the valley, replaced by subdivisions and other types of urban land use.

As Pahrump continues to grow, its projected total water use is predicted to increase to near 80,000 AFA by 2050, well over the sustainable yield of 26,000 AFA. Pumping at a more conservative 42,000 AFA over this period could result in a static water level decline

of 30 feet in the center of the valley and as much as 50 feet near the alluvial fans to the west, according to the 2004 NCWRP. Pumping at the predicted 80,000 acre-ft/year could produce even more significant water level decline and result in increased subsidence across the valley. It is worth noting the population projections and corresponding water use projections from the 2004 NCWRP may no longer be valid, as the economic recession that began in 2008 has had a significant impact on the actual population growth rate in Pahrump.

In order to manage the predicted future demands on ground water in the Pahrump Valley, the NCWRP suggests a number of options to consider, including: continued overdraft of the alluvial aquifer, which will result in additional subsidence; increased pumping and drilling costs and degradation of water quality as water is mined from the system; development of new supply wells in the underlying carbonate aquifer; importation of water into the valley from other basins; institution of severe conservation measures to reduce per capita water use; or, limit growth and development through administrative ordinances and other measures.

## 3.4.2 Source Water Protection and Delineation

In order to update the information and results presented in the previous WHP Plans and establish a source water protection program for PWSs that were not included in the previous Plan, a comprehensive review of pertinent geological, hydrogeologic, and water supply information was completed for the PWSs within Pahrump, and is presented in detail in Appendix D.

#### 3.4.2.1 Delineation Method

These SWPAs for the water sources for active PWSs in Pahrump were established using the following methodology:

- Water sources from 30 PWSs in the Pahrump Area have been modeled analytically for the previous State approved WHP Plan. If the current pumping rate did not exceed the previously modeled pumping rate, then the previously established SWPA for a well was deemed acceptable for incorporation into this Plan. Based upon this criterion, 20 previously modeled SWPAs from the Pahrump area are incorporated into this Plan. Community PWSs without previous SWPAs and with sufficient data available were modeled using the analytical method, utilizing the EPA's WhAEM 2000 software. Seventeen separate wells were modeled in this fashion. Five of these wells were modeled in the previous WHP plan and are being remodeled due to an increase in pumping rate. Twenty-three water sources had no previous SWPAs and were newly established in this Plan.
- The Escapee Coop PWS Well 3 was originally modeled using the analytical method, but the Team was not comfortable with the modeled SWPA, as the direction of flow appeared to be in opposition to the overall ground water flow direction in the valley. This discrepancy was due to a lack of ground water elevation data near the subject well. The Team elected to model the well using the CFR method as long as the resulting SWPA was at least as conservative as the analytical method SWPA.

- Non-community (NC) and non-transient non-community (NTNC) PWSs in Pahrump which were not previously modeled and have relatively small maximum pumping rates (50 gpm or less for all but one) are recommended to be modeled through CFR modeling. Some SWPAs which were originally not recommended for update were identified by the Team as needing to be updated, as the Team was not comfortable with the very long and narrow shape of some previously delineated SWPAs. In the Pahrump Community, there are 32 water sources modeled using the CFR method.
- Detailed inputs for the WhAEM2000 model and modeling results are provided in Appendix D.

#### 3.4.3 Contaminant Source Inventory

#### 3.4.3.1 Desktop Research

Desktop research for the CSI in Pahrump was conducted as described in the County-wide section of this Plan.

#### 3.4.3.2 Field Surveys

Field surveys in Pahrump were conducted from September 29 through October 4, 2011. During the field survey, additional PCSs in Pahrump were observed and PCSs identified during the desktop survey were verified. A total of 124 PCSs were identified in or near SWPAs in Pahrump. The most commonly occurring PCSs were Automotive (36 percent), which includes gas stations and repair facilities. Other types of potential contaminant sources found include: miscellaneous (17 percent), medical/educational (15 percent), and storage (11 percent).

## 3.4.3.3 Risk Rankings

In Pahrump, the PCSs of greatest concern, based on the level of risk and proximity to drinking water sources, are automotive-related. Not only are automotive facilities the most common PCS found, they are also rated as a high risk, due to the potential contamination from diesel fuel, gasoline, and other automotive-related liquids and solvents. The PCSs classified as miscellaneous are the second-most abundant and have rankings from low to high risk. Medical/educational facilities were the next most abundant and are ranked low or moderate. Other high risk PCSs are categorized as sewer treatment facilities, private storage yards, industrial and commercial.

## 3.4.4 Contaminant Management Strategy Development

The implementation of the PCS management strategies presented in Table 3 (page 23) is contingent upon local resident support and outside financial assistance. The tools most likely applicable to Pahrump are: land use ordinances, source prohibitions, conditional use permits, division of land ordinances, land acquisition, local business owner education, HHW collection, and public education.

## 3.4.5 Contingency Plan

The contingency plan for Pahrump was developed as part of the "Town of Pahrump Wellhead Protection Plan" (March 2006), endorsed by NDEP in 2006. The 2006 Plan identifies Nye County Emergency Services as the point of contact for emergency response. Most PWSs operated by one of the three utility providers in the area are served by multiple wells which are in most cases geographically separated. Should a contamination event occur affecting one of these wells, the PWS may be able to replace the production from the contaminated well with increased production at their other wells. Should contamination occur at a smaller, non-community system, the water supply may be more difficult to replace with a backup source, but resources exist to supply the system with drinking water temporarily (bottled water, water trucks, etc.). Due to the varied ownership of PWSs in Pahrump, each individual PWS is responsible for their own contingency plan, which is already required by the BSDW to be completed and on file with NDEP. Maintaining up-to-date contingency and emergency response plans is important for the protection of drinking water sources and the health of PWS users, and has been identified as an implementation measure.

#### 3.4.6 New Sources

No new drinking water sources are identified in Pahrump at this time due largely to stalled growth. Due to the nature of the lack of central water service to many parts of the community, it is likely that new non-community (NC) systems will become active, but it is impossible to predict what or where those systems will be. In order to partially address this issue, the Team chose to include any non-community (NC) systems in this Plan which were included in the 2006 Plan and are currently inactive but may again become active. Only one PWS fell into this category, Villa Locale, a PWS that has been a number of different restaurants since it originally became a PWS. Including any new PWSs in this Plan will be an important component of Plan updates.

## 3.4.6.1 Projected Supply Required

The projected supply for all PWSs in Pahrump are adequate for their known future needs.

## 3.5 Northern Communities

## 3.5.1 Water Supply Source Inventory and Planning

Water sources for PWSs in Tonopah and northern communities have been summarized in Table 9. Ground water serves as the only supply of drinking water for these systems. The development of these water supplies is reviewed in the subsequent sections.

## 3.5.1.1 Historical Water Sources and Conditions

Historically, Nye County has consistently had the lowest population density of any county in the nation; this is even more striking when one considers that most of the County's residents live in its extreme southern portion. Several major silver and copper deposits were discovered in Nye County, including Nevada's last great silver ore body near Tonopah. Nearly every town in northern Nye began as a mining camp. Most of the early ore bodies were quickly played out, and many of the original camps have since been abandoned.

In later years, northern Nye County continued to develop its mining operations, opening several new mines in the old mining districts as technology and market variables allowed for the development of lower grade ores. A variety of materials are mined here, including: copper, silver, gold, tungsten, molybdenum, mercury and magnesite. While mining has consistently been an important component of the local economy, this was supplemented by ranching and some tourism.

#### <u>Tonopah</u>

Tonopah, typical of communities in northern Nye County, has its origins in the mining industry. The Town of Tonopah was founded in 1900 after the discovery of the second biggest silver lode in Nevada's history. The ore was played out within a few decades but not until some five million tons of ore were recovered. After 1957, the Tonopah Test Range and Nye County became the primary employers for the area, supplemented by ranching and highway-related businesses.

## 3.5.1.2 Current Water Sources and Conditions

Within Tonopah and the northern communities of Nye County, there are currently 12 active PWSs. Of these 12, six are classified as community water systems (C), five are classed as non-community water systems (NC) and the remaining water system is a non-transient, non-community water system (NTNC). Four systems contain only one water source, six have two sources, one has three sources and the final system has eight sources.

There are currently 27 water sources within the 12 active PWSs in Tonopah and the northern communities, all of which are ground water wells. Twenty-three of the sources are listed as active and four are listed as inactive.

Ground water supplies for three PWSs in Tonopah and northern Nye County communities have been studied in the "Manhattan Wellhead Protection Plan" (July 2007) and "Tonopah Wellhead Protection Program" (May 2005), which received endorsement from NDEP, as listed in Table 1(page 3). The status of each source (active, backup, etc.) and pumping rates referenced from these plans have been summarized in Table 9. The remaining nine PWSs were not included in any state sponsored WHP plan, but these systems are subject to federal and state drinking water regulations for water quality.

## Tonopah

All of Tonopah Public Utilities' wells are found in a well field 15 miles northeast of Tonopah in Ralston Valley, and drinking water is pumped the same distance back into town for storage and distribution. Wells are located this distance from town to avoid heavily mineralized volcanic bedrock beneath Tonopah and the associated aquifer. The Ralston Valley well field is not without its own contamination risks however, as the well site is in a shallow alluvial aquifer, which is susceptible to contamination from nearby surface activity. Should the field become contaminated, there is presently no other source of potable water available for the town, despite nearly a century of efforts to develop additional drinking water sources.

#### **Big Smoky Valley**

Communities within the Big Smoky Valley include Manhattan, Round Mountain (Hadley), and Carvers. Current supplies are considered adequate to meet the present

demand for water in the basin, with demand equal to approximately 101,000 AFA. While water use is primarily for irrigation, dewatering and other mine operations are the second-largest consumer, followed by municipal and domestic use.

#### Gabbs and Ione Valley

The community of Gabbs is served by a single water system, which is owned and operated by Nye County. Current water allocation in Gabbs Valley is nearly 19,000 AFA, well above the yield of 5,000 AFA listed by the State Engineer. Major manners of use for the allocated water rights are mining and irrigation, with municipal, commercial, and stock watering uses making up a much smaller fraction of the allocated water rights.

In Ione Valley, home to the communities of Ione and Berlin, less than 200 AFA of water rights are allocated of the 2,500 AFA basin yield. Predominant manners of use include irrigation, quasi-municipal, and stock watering, with lesser use for mining and recreation.

#### White River Valley

The White River Valley contains a single PWS within Nye County, the NDOT Sunnyside rest stop, which is owned and operated by NDOT, and is surrounded by BLM-managed land.

#### Sarcobatus Flat

Sarcobatus Flat contains a single PWS, the Shady Lady Brothel, which is privately owned and operated, and is surrounded by BLM-managed land.

# Table 9. Inventory of Water Sources for Active Public Water Systems in Tonopah and Northern Communities

		Previou	is WHP Plan	Current CSWP Plan		
Public Water System	Source	Status	Pump Rate (gmp)	Status	Pump Rate (gpm)	Max Pump Rate (gpm)
Big Smoky Valley - Northern						
Carver's Café	Well 1	N/A	N/A	Active	2	50
Company's Smalley Vallay DV and MUD	Well 1	N/A	N/A	Active	50	60
Carver's Sinoky valley KV and MHP	Well 2	N/A	N/A	Inactive	20	30
NDOT Big Smoky Roadside Park RP807NY	Well	N/A	N/A	Active	3	50
Round Mountain PUC	Well HW 1	N/A	N/A	Active	1200	1500
	Well HW 2	N/A	N/A	Active	1200	1500
	Well 1	N/A	N/A	Active	42	135
Shoshone Estates water Company	Well 2	N/A	N/A	Active	12	80
	West Well 1	N/A	N/A	Active	432	700
Smoky Valley Mine	East Well 1	N/A	N/A	Active	1500	1500
	East Well 2	N/A	N/A	Active	1334	2500
Big Smoky Valley - Tonopah Flat						
	Well 1	Active	N/A	Inactive	35	35
Manhattan Town Water	Well 2 Pipe Springs Well	N/A	N/A	Active	50	50
Gabbs	•	•	•		•	•
Gabbs Water System	Well 1	Active	155	Active	64	420

	Emergency Well 2	Active	400	Inactive	Not listed	Not listed
	New Well	N/A	N/A	Future	N/A	N/A
Ione Valley						•
Ione Water System	Well 1	N/A	N/A	Active	N/A	325
Ione water System	Well 2	N/A	N/A	Inactive	N/A	350
Berlin Ichthyosaur State Park	Well 1	N/A	N/A	Active	40	50
Ralson Valley						•
	Well 1	Active	175	Active	175	175
	Well 2	Active	200	Active	165	165
	Well 3	Active	180	Active	180	180
Toward Dablis Hillia	Well 4	Active	200	Active	200	200
Tonopan Public Utilities	Well 5	Active	200	Active	200	200
	Well 6	Active	100	Active	100	100
	Well 7	Active	100	Active	N/A	200
	Well 8	Active	250	Active	250	250
Sarcobatus Flat	•					•
Shady Lady Ranch	Well 01	n/a	n/a	Active	1	1
White River Valley						
NDOT Sunnyside Roadside Park RP810NY	Well 1 Sunnyside	N/A	N/A	Active	1	30

#### 3.5.1.3 Future Water Sources and Conditions

It is expected there will be limited or no increase in the water demand for PWSs in Sarcobatus Flat and White River Valley Hydrographic Basins. For this reason, these PWSs are not discussed in detail in this section.

#### <u>Tonopah</u>

Current water rights are considered adequate to support future residential growth in the community, according to the 2004 Nye County Water Resources Plan. In the NCWRP, residents expressed their concern over the potential water development of a large mine proposed a short distance from the well field and the well field's 11 ppb average arsenic concentrations, which may require additional treatment. Future industrial development at the Tonopah Airport may necessitate additional supplies, although the possible location of such sites and their proposed water use is still unclear. Mining and solar power generation activities near Tonopah have recently become very active, so water use for those developments may be a consideration in the future.

## Big Smoky Valley

The future of PWSs in the Big Smoky Valley is currently uncertain because of two primary issues, elevated arsenic concentrations in some wells and the unstable nature of a major user of water in the basin, the mining industry. The "boom and bust" nature of the mining industry makes any predictions about future water requirements in the Big Smoky Valley uncertain. As mining operations begin or close down, it changes the water demand on the valley dramatically, by as much as 1,000 AFA per mining operation, and their usage cannot be predicted in the long term. In light of this uncertainty, residents of the valley have expressed sincere concern that no water should be exported from the valley.

#### Gabbs and the Ione Valley

As with many communities in northern Nye County (and rural Nevada in general), the population in Gabbs is tied directly to mining activities in the area. Future water use will likely also be heavily tied to the mining industry in that area. The Ione Valley is very remote, and no major water users are known for future water use planning.

## 3.5.2 Source Water Protection and Delineation

#### **3.5.2.1 Delineation Method**

SWPAs for the water sources for active PWSs in Tonopah and northern communities were established using the following methodology:

- Twelve PWS wells were previously modeled in the State-endorsed WHP Plans. If the current pumping did not exceed the previously modeled pumping rate, then the previously established SWPA for a well was deemed acceptable for incorporation into this Plan. Because the pumping rate had not increased over the level of the previous WHP Plan, the prior delineations for the 12 sources were incorporated into this Plan.
- Community PWSs without previous SWPAs and with sufficient data available were modeled using the analytical method, utilizing the EPA's WhAEM 2000 software. Five separate wells were modeled in this fashion.
- Remote PWSs that are either isolated from other development, such as those surrounded by federally-managed lands, or for which there was insufficient information for analytical modeling were recommended to be modeled through the CFR methodology. SWPAs in the Ione Valley and Carvers were delineated using this method. While some of the drinking water sources in Carvers have sufficient data for analytical delineation, the Team felt more comfortable with the more conservative CFR SWPAs, as they would be much easier to explain to the community, and the Team felt the potential for community support was greater with this method. In Carvers and the Ione Valley, nine sources were modeled using the CFR method.
- A future water source in Gabbs was modeled using the AFR method, as the well had not been completed, and the maximum pumping rate was unknown.
- Detailed inputs for the WhAEM2000 model and modeling results are provided in Appendix D.

#### 3.5.3 Contaminant Source Inventory

#### 3.5.3.1 Desktop Research

Desktop research for the CSI in Tonopah, Smoky Valley, Gabbs, and the Ione Valley were conducted as described in the County-wide section of this Plan.

## 3.5.3.2 Field Surveys

Field surveys in northern Nye County communities were conducted from October 17 to October 20, 2011. A total of 68 PCSs were found in and near SWPAs in these communities. The most commonly occurring PCSs varied by community. In Ralston Valley (where Tonopah wells are located), the only PCS identified was a single mining operation. Manhattan had 18 PCSs, the majority being mining (tailings, pits, and mill sites) or transportation related sites classified as miscellaneous (56 percent). PCSs classified as residential or storage each accounted for 17 percent of the total PCS in Manhattan. Carvers had 19 PCSs, the majority were private storage yards classified as residential (37 percent) and storage (17 percent). The Hadley subdivision had 16 PCS, the majority of which were grass fields classified as miscellaneous (67 percent). Ione Valley had five PCSs varying in class, and Gabbs had three PCSs, also varying in class.

## 3.5.3.3 Risk Rankings

In northern communities, the PCSs of greatest concern vary by community. In Manhattan and Tonopah, the most abundant PCSs were mining-related, while the PCSs of greatest concern were personal storage yards and automotive facilities. In most northern communities, the highway through or near the community was identified as the greatest risk, in the case of a major hazardous spill.

## 3.5.4 Contaminant Management Strategy Development

The implementation of the PCS management strategies presented in Table 3 (page 23) is contingent upon local resident support and outside financial assistance. The tools most likely applicable to northern Nye County are: land use ordinances, source prohibitions, conditional use permits, division of land ordinances, land acquisition, local business owner education, HHW collection, and public education.

# 3.5.5 Contingency Plan

Contingency plans were included in the previous WHP Plans for Tonopah, Manhattan, and Gabbs. The contingency plans for Tonopah and Gabbs include emergency response contact lists, and the Manhattan contingency plan identifies the Director of Emergency Response (Nye County Emergency Services) as the contact in case of emergency. Each individual PWS is responsible for their own contingency plan, which is already required by the BSDW to be completed and on file with NDEP. Maintaining up-to-date contingency and emergency response plans is important for the protection of drinking water sources and the health of PWS users and has been identified as an implementation measure. The importance of contingency planning is especially important in northern Nye County communities, as there is a great geographic distance between communities, which would make hauling water from other communities very expensive, and eliminates the option of cross-connections with other PWSs. All community systems in northern communities have multiple drinking water sources, so if contamination were to occur at one well, it may be possible to utilize other wells in the system until other arrangements can be made for new source development, water treatment, or other measures.

## 3.5.6 New Sources

A new drinking water well is currently being developed to serve the community of Gabbs and would replace the current Well 2, water from which does not currently meet drinking water standards. Development of new drinking water sources in the Gabbs area has proven challenging due to naturally occurring contamination as well as the presence of hot water in some wells.

Tonopah Public Utilities is in the process of developing two new drinking water wells in Ralston Valley, approximately four miles north of the northernmost current well. Though the current Tonopah Public Utilities wells provide an adequate supply of drinking water for Tonopah, arsenic levels in some existing wells exceed current drinking water standards.

## 3.5.6.1 Projected Supply Required

The projected supply for all of the PWSs in northern communities is adequate for their known future needs.

#### **3.5.6.2** Protection Areas

A new SWPA was delineated for the new Gabbs well, utilizing the AFR method, as the maximum pumping rate and other well characteristics were not yet determined.

The existing SWPA for Tonopah Public Utilities wells encompasses all of Ralston Valley north of the existing well field, so the proposed new wells will be within the existing SWPA.

#### **3.5.6.2.1** Contaminant Source Inventory

A CSI was completed for the proposed new wells in Tonopah and Gabbs in conjunction with the CSI for currently active wells, and identified one PCS within the SWPA for Tonopah wells.

## 3.5.6.2.2 Contaminant Management Strategy Development

PCS management strategies for new water sources are the same as for northern Nye County communities in general.

# SECTION 4: PLAN IMPLEMENTATION

## 4.1 Management Plans

Management Plans (management strategies, new water supply process, and contingency plan) should be put into effect at once.

## 4.2 Master Planning Goals

In June 2011 the Nye County Board of County Commissioners adopted the Nye County Comprehensive Master Plan, which included (by reference) the 2003 Nye County Water Resource Plan, the 2003 Master Plan Update for the Pahrump Regional Planning District, and the Amargosa Valley Area Plan. The Nye County Comprehensive Master Plan was established to: 1) conserve and promote public health, safety, and general welfare; 2) enhance economic opportunities and preserve the quality of life for the citizens of Nye County; 3) guide growth; 4) manage natural resources; and 5) economically provide necessary public services and facilities. Additional planning District and planning efforts for the 2003 Master Plan Update for the Pahrump Regional Planning District and planning efforts for the Town of Beatty. Overarching goals of these planning documents include preserving the rural nature of communities while encouraging economic development and planning for future growth. These plans also consider water resources in the goals, policies and implementation strategies.

## 4.3 Identified Projects

Appendix F summarizes specific action items compiled from previous work plans and new information provided during CSWP Team meetings. The strategies were developed to meet the objectives of the CSWP Plan and to keep the CSWP Plan up-to-date. Each strategy is provided in order of priority, and prioritization of the strategies is based on current need, available staff, and available budget.

#### 4.4 Funding Opportunities

Identifying funding streams for community water projects may be one of the primary hurdles PWSs face. In the current economic climate, applying for loans and grants through federal and State programs may be the best option for leveraging the County's resources in order to bring projects to fruition.

Once the State has endorsed the CSWP, communities can apply for implementation funding from NDEP. This funding can be used to help with the management and maintenance costs of the plan. Communities within Nye County may choose to apply for funding individually, as a coalition with other communities, or on a County-wide basis.

Potential funding sources specific to water projects may include: the Bureau of Reclamation's Water and Energy Efficiency, Rural Water Supply, Water for America, and System Optimization Review programs; the EPA's Advancing Public Health Protection through Water Infrastructure Sustainability, Clean Water State Revolving Fund, and Drinking Water State Revolving Fund programs; United States Department of Agriculture's (USDA's) Water and Waste Disposal and Water, Sewer, and Solid Waste Disposal Management programs; FEMA's Flood Mitigation Assistance; and the State of Nevada's Assembly Bill (AB) 198 Grants. However, as of the date of this Plan, AB 198 Grants were not available due to State bonding issues.

Nye County and communities within Nye County may identify viable funding sources, or combinations of funding sources necessary to support the project activities, through the programs listed above;

however, the County may also wish to identify funding sources that may not be specific to water projects but align closely with the proposed activities. Additionally, projects may need to be divided into several phases in order to find appropriate funding mechanisms. Examples of other potentially applicable funding sources include the USDA's Community Facilities Loan and Grant Program and U.S. Department of Housing and Urban Development's Community Development Block Grants. Recognizing project plans may have to be malleable is a major component of ensuring the potential applicability of a variety of funding sources.

Researching funding opportunities can be completed in several different ways. The website www.grants.gov is the premier site for federal funding research. Additionally, state and federal agency websites provide a wealth of information on their specific programs. Private foundations may also be a source of funding, and the Philanthropy News Digest maintains a database of private, philanthropic opportunities which may be applicable to proposed projects.

Another key component of identifying and obtaining funding is building relationships and leveraging resources. Many grants require a cash or in-kind match as well as demonstration of diverse stakeholder involvement. The Nye County CSWP Team is a prime example of stakeholder commitment, and the relationships developed throughout this process may be beneficial in future funding applications. Matching and community involvement requirements differ widely between each opportunity. Reviewing program guidance, such as funding opportunity announcements (FOAs), Federal Register notices, and frequently asked questions (FAQs), as well as direct communications with the funding agency will prove vital to the success of a grant application.

## 4.5 Updates

The CSWP Plan should be considered dynamic in the sense that the Team can amend or update it as needed to reflect the growth and changes in the communities. Regularly scheduled reviews of this CSWP Plan by the Team will ensure the document is current and addresses the needs of the communities. Based on the review, the Team may decide to update or amend either a portion of this CSWP Plan or the entire Plan as they see fit. For example, a community's water supply will be exposed to either new or different types of potential contaminants as the community changes. Often, changes in the PCSs will occur more frequently than changes to the SWPAs, contingency plans, or emergency response plans. Therefore, the Team may determine an update to just the CSI and contaminant source management strategy sections of the CSWP Plan is warranted. Alternatively, changes in other community planning documents, procedures, or ordinances may warrant updating or amending the entire CSWP Plan.

The Nye County Community Team agreed to review this CSWP Plan biennially and provide a recommendation of which section(s) of the CSWP Plan require amending or updating. A template for the Team to use in making its recommendation is provided in Appendix G. Appendix G also contains templates to guide Team members on inventorying PCSs within their community. Copies of the recommendation signed by the Team Lead will be attached to this CSWP Plan in Appendix I, distributed to other Team members, and submitted to NDEP no later than December 31, for a given year.

# 4.6 Regular Meetings of the CSWP Team

The CSWP Team should meet periodically, or on a recurring basis, to discuss changes and monitor progress. As members of the Team leave, others should be invited to participate in their place.

## 4.7 Event Log

Significant incidents and/or actions taken in regard to the CSWP Plan may be summarized and chronicled on the events log. Events to be logged may include implementation activities, documentation of new wells, an emergency, training, and other activities related to the CSWP Plan. The team member responsible for the annual maintenance of the Plan may then disseminate this updated information annually. A special event log template is included in Appendix G.

# SECTION 5: PUBLIC PARTICIPATION

This Public Education Plan (Appendix H) is an organized and strategic approach to gain understanding of source water and WHP issues. The intent is to motivate communities served by public water purveyors to take action. In this case, action entails changing practices and personal behavior to prevent contamination of source water, per the drinking water protection goals outlined in the "Community Source Water Protection Plan for Public Water Systems in Nye County, Nevada" (February 2012).

The Public Education Plan is organized into three main components: messages, tactics, and measurement techniques. The Public Education Plan is designed for two audiences: 1) governing and advisory boards and community leaders and 2) public water system operators and users. The message component provides answers to three important questions for source water protection:

- 1. What is source water protection?
- 2. Why should water be protected at the source?
- 3. What contaminates the water we drink?

The tactics section makes up the bulk of the Public Education Plan and presents a list of possible methods to disseminate information. Proposed methods for educating the primary audience (boards and community leaders) range from PowerPoint presentations to public meetings and community events. For the secondary audience (PWS operators and users), proposed methods include inserts in water bills, press releases, and other tactics.

The final component of the Public Education Plan is a system for evaluation of the effectiveness of outreach efforts. Effectiveness of primary audience outreach will be measured through the CSWP Plan usage or consideration when community projects, events, or emergencies may impact water quality as well as the incorporation of the CSWP Plan into community planning documents and initiatives, either directly or by reference. Because effective evaluation is key to determining how any message or tactic is received, instructions for both quantitative and qualitative measuring instruments are included in the Public Education Plan located in Appendix H.

#### SECTION 6: REFERENCES

Eakin, T. E., 1966, *A Regional Interbasin Groundwater System in the White River Area, Southeastern Nevada*, United States Geological Survey.

Eakin, T.E., 1969, *Groundwater Resources – Reconnaissance Series Report 9 – Groundwater Appraisal of Gabbs Valley, Mineral and Nye Counties, Nevada,* United States Geological Survey and the United States Department of the Interior.

ECO:Logic Engineering, Town of Tonopah Wellhead Protection Program, May 2005.

Everret, F. and Rush, E., 1964, *Groundwater Appraisal of Smith Creek and Ione Valleys, Lander and Nye Counties, Nevada*, United States Geological Survey and the United States Department of the Interior.

Farr West Engineering and the Nevada Rural Water Association, *Beatty Water and Sanitation District Wellhead Protection Program*. August 2001.

Handman, E.H. and Kilroy, K.C., 1997, *Ground-Water Resources of Northern Big Smoky Valley, Lander and Nye Counties, Central Nevada*, United States Geological Survey Water-Resources Investigations Report 96-4311.

Kleinhampl, F. J and Ziony, J.I, 1985, *Geology of Nye County, Nevada*, Nevada Bureau of Mines and Geology & University of Nevada, Reno.

Naff, R. G., Maxey, G.B., and Kaufmann, R.F., 1974, *Interbasin Ground-Water Flow in Southern Nevada*, Nevada Bureau of Mines and Geology, Report 20.

Nevada Division of Environmental Protection, *Nevada Integrated Source Water Protection Program*. Draft Update March 2010.

Nevada State Engineer's Office, Nevada Department of Conservation and Natural Resources, *Water for Nevada, Report No. 3, Nevada's Water Resources*, October 1971.

Nye County Department of Planning, Nye County Population Estimates Through the Second Quarter, 2010. August 12, 2010.

Thomas S. Buqo, Consulting Hydrogeologist, Inc., *Wellhead Protection Plan for Nye County Operated Systems in Amargosa Valley*. March 2006.

Thomas S. Buqo, Consulting Hydrogeologist, Inc., *Town of Pahrump Wellhead Protection Plan*. March 2006.

Thomas S. Buqo, Consulting Hydrogeologist, Inc., Manhattan Wellhead Protection Plan. July 2007.

Town of Gabbs and the Nevada Rural Water Association, *Gabbs Wellhead Protection Program*. December 2005.

Appendix A Source Water Protection Area Maps for Individual Public Water Systems










TSG-12066







TSG-12062













Community Source Water Protection Plan for Public Water Systems in Nye County, Nevada May 2012

# Appendix B Meeting Documentation

Nye County Water District Governing Board Pre-Workshop Workshop Team Meetings Area 1 – Midge Carver – Chair Area 2 – James Eason Area 3 – Robert Revert Area 4 – Position 1, Dan Harris Area 4 – Position 2, Donna Lamm Area 4 – Position 3, Timothy J. McCall At Large–Robert Cameron –Vice Chair Pam Webster—Secretary-Treasurer



Address all correspondence to: Nye County Water District 2101 E. Calvada Blvd., Suite 101 Pahrump, NV 89048 Phone: (775) 727-7727 Fax: (775) 727-7919

# NYE COUNTY WATER DISTRICT GOVERNING BOARD REGULAR MEETING AGENDA

# February 22, 2010 – 9:00 AM

# YUCCA MOUNTAIN INFORMATION CENTER 2341 POSTAL ROAD, PAHRUMP, NEVADA

Pursuant to NRS 241.020, the agenda of the Nye County Water District has been properly posted at the following locations: Tonopah Convention Center, 301 Brougher Avenue, Tonopah, NV; U.S. Post Office, 201 Erie Main Street, Tonopah, NV; Commissioners' Meeting Room, 101 Radar Road, Tonopah, NV; Beatty Community Center, 100 South A Avenue, Beatty, NV; U.S. Post Office, 600 East Highway 95, Beatty, NV; Beatty Library, 400 North 4<sup>th</sup> Street, Beatty, NV; Amargosa Community Center, Amargosa Post Office, Amargosa Library, Amargosa Clinic; Nye County Courthouse, Pahrump, NV, 1520 E. Basin Rd; Nye County Administration, Pahrump, NV, 2101 East Calvada Blvd.; Bob Ruud Community Center, 150 N. Highway 160, Pahrump, NV; Nye County Complex, 250 North Highway 160, Pahrump, NV; Pahrump Town Office, 400 North Highway 160, Pahrump, NV; Pahrump Valley Times Office, 2160 East Calvada Boulevard, Pahrump, NV, Website: <a href="http://www.nyecounty.net">http://www.nyecounty.net</a>

Support documentation for the items on the agenda, provided to the Governing Board of the Nye County Water District is available to members of the public at the Nuclear waste Repository Project Office (2101 E. Calvada Blvd., Suite 100, Pahrump NV) and on the County's website.

# WEBSITE: WWW.NYECOUNTY.NET

There may be a quorum of the Nye County Board of County Commissioners present but no deliberations shall occur, and no action shall be taken. Any person with an action item on the Agenda must be represented at this meeting to answer any questions that might arise or that item may be tabled.

With advance notice we will make reasonable accommodations for members of the public who are disabled and wish to attend the meeting. If special arrangements for the meeting are necessary, please notify the Nuclear Waste Repository Project Office in writing at the above address, or call (775) 727-7727.

#### **MEETING PROTOCOL:**

Agenda Order: any items listed on this agenda may be taken out of order if so requested by the applicant, staff or Water District members with the approval of the Chairperson.

<u>All Agenda Items</u> are considered to be final action or unless otherwise stated on the Agenda or announced. Items appealed to the BOCC may result in a different decision or additional conditions/stipulations or limitations.

**Speakers** must come forward to the microphone, begin testimony by clearly stating your name, direct all questions and comments to the Chairperson, and the Chair will direct the questions to the appropriate individual. Please avoid repeating testimony that has already been provided and be brief and to the point.

Discussions on an item will be closed if discussions become long-winded, repetitious, or if members in support or opposition become rude. As a courtesy to all persons, please turn-off or set to a silent mode all cell-phones or pagers.

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# 1. Call to Order - Pledge of Allegiance

#### 2. <u>Approval of Minutes</u> a. January 11, 2010

**3.** <u>Approval of/Modifications to the Agenda</u>: Approval of the Agenda after Considering Requests to Rearrange, Hold or Remove items.

## 4. <u>Correspondence and Announcements</u>

### 5. <u>Public Comment</u>

This time is devoted to comments by the general public, pursuant to NRS 241.0200(c)(3). No action will be taken on matters raised under public comment until the matter itself has been included on an agenda as an action item.

- 6. <u>Board Member Reports/Comments</u>: Board members and the General Manager can make announcements, request information and discuss topics for future agendas.
- 7. <u>Ex Parte Communications and Conflict of Interest Disclosure Statements</u>
- 8. <u>Action Presentation, Discussion, Direction and Possible Decision concerning NDEP's Technical</u> <u>Assistance and Funding Opportunities of the Drinking Water State Revolving Fund – Adele</u> <u>Basham.</u>
- 9. <u>Action Discussion, Direction and Possible Decision Concerning Nye County Water District's</u> <u>Participation in NDEP's Integrated Source Water Protection Program (ISWPP) – Eileen</u> <u>Christensen.</u>
- 10. <u>Action Presentation, Discussion, regarding Concentrating Solar Power Plant Design by Dave</u> Ochenreider – Abengoa Solar.
- 11. <u>Review, Discussion, Direction and Possible Decision regarding Development of a Priority Plan of</u> <u>Action Based on the Joint Workshop with the BOCC.</u>
- 12. <u>Action Discussion, Direction and Possible Decision regarding submitting comments on the Las</u> Vegas Resource Management Plan Update and Revision.

# 13. <u>District Reports</u>

- a. <u>Financial Reports and Monthly Expenditures</u>
- **b.** Report from other departments, individuals, groups and or agencies regarding water-related issues for informational purposes only
- c. <u>Discussion concerning Proposed Renewable Energy Developments in Nye County</u>.

"To develop and implement a long term plan for the management, conservation and sustainability of our water resources to support the long term economic development of Nye County."

# 14. <u>Action – Discussion, Direction and Possible Decision Concerning Items for Future</u> <u>Meetings/Workshops.</u>

- **a.** Reminder of the following conferences and workshops:
  - i. Water Law Institute Nevada Water Law conference March 18-19, Reno, NV
  - ii. Water Rights in Nevada Classes March 1 & 2, Las Vegas, NV
  - iii. NWRA 2010 conference March 2 4, Las Vegas, NV
- **b.** Set meeting date, time & place for April, May & June Water District meetings.
  - i. Staff recommends the following dates: April 26, May 24 & June 28

# 15. Adjournment

NYE COUNTY WATER DISTRICT FEBRUARY 22, 2010 PAGE 4

# **AFFIDAVIT OF POSTING**

STATE OF NEVADA

COUNTY OF NYE

The undersigned, being duly sworn according to law, deposes an says: That they are over the age of 21 years; that they posted or caused same to be posted, at the places below mentioned, the Agenda for the Nye County Water District Meeting of February 22nd 2010 no later than 9:00 a.m. on February 17th, 2010. The undersigned further deposes and says; That on or before, February 17th, 2010 he/she delivered or caused to be delivered the notice of the Agenda to the above meeting to the Pahrump office of the United States Postal Service not later than 9:00 a.m.

Name, position title

Subscribed and sworn to before me This 17<sup>th</sup> day of February, 2010.

Name, Title, Notary Public

POSTED:

Tonopah Convention Center, 301 Brougher Avenue, U.S. Post Office, 201 Erie Main Street, Commissioners' Meeting Room, 101 Radar Road, Beatty Community Center, 100 South A Avenue, Beatty U.S. Post Office, 600 East Highway 95, Beatty Library, 400 North 4<sup>th</sup> Street, Amargosa Community Center, 821 E. Farm Road Amargosa U. S. Post Office, S. Hwy 372 Amargosa Library, 829 E. Farm Road Amargosa Clinic, 845 E. Farm Road Nye County Administration, 2101 E. Calvada Blvd. Nye County Courthouse (Pahrump), 1520 E. Basin Bob Ruud Community Center, 150 N. Hwy 160 Nye County Complex, 250 N. Hwy 160 Pahrump Town Office, 400 N. Hwy 160 Pahrump Valley Times Office, 2160 E. Calvada Blvd. Website: www.nyecounty.net

> "To develop and implement a long term plan for the management, conservation and sustainability of our water resources to support the long term economic development of Nye County."



# Nye County Water District Governing Board 2101 E. Calvada Bivd., Ste. #100 · Pahrump, Nevada 89048

(775) 727-7727 · Fax (775) 727-7919

March 2, 2010

Integrated Source Water Protection Program NDEP Bureau of Water Pollution Control 901 Stewart Street, Suite 4001 Carson City, Nevada 89701 Attention: Kim Borgzinner, Coordinator

# Subject: Nye County Water District Participation in the State of Nevada's Integrated Source Water Protection Program

Dear Ms. Borgzinner:

The Nye County Water District requests participation in the State of Nevada's Integrated Source Water Protection Program (ISWPP).

We, the Nye County Water District Governing Board, consider the quality of the District's drinking water supply a critical consideration in its future. Drinking water free from contamination is a resource that must be preserved and protected in order to ensure the future sustainability of each of our communities. We understand that the Nevada Division of Environmental Protection's Bureau of Water Pollution Control (NDEP) administers the ISWPP for the purpose of providing assistance to both the District and its communities on drinking water protection and preservation.

Further, we understand that the development and implementation of Community Source Water Protection (CSWP) Plans within the County are an integral part of the District's participation in the ISWPP. The Nye County Water District Governing Board supports development of community-specific CSWP Plans that promote local knowledge and understanding of drinking water resources, and local control over how these resources are best managed and protected.

The Board believes that the effort to develop CSWP Plans throughout Nye County will entail a long-term commitment from the Board and all of the communities within the County. Therefore, the Board intends to designate a Liaison Board Member to facilitate future District involvement in the State's ISWPP and the development of CSWP Plans within the County. Further, the Board directs staff to provide support to the Liaison Board Member by working with both NDEP and community representatives toward successful completion of CSWP Plans throughout Nye County.

Sincerely,

Brokenne FOR: Kobertal. Carner

Roberta L. Carver, Chair Nye County Water District Governing Board Area 1 – Midge Carver – Chair Area 2 – James Eason Area 3 – Robert Revert Area 4 – Position 1, Dan Harris Area 4 – Position 2, Donna Lamm Area 4 – Position 3, Timothy J. McCall At Large–Robert Cameron –Vice Chair Pam Webster—Secretary-Treasurer



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# TIMED AGENDA ITEMS:

10:30 A.M.

Action – Discussion, Direction and Possible Decision on the Community Source Water Protection Program's Pre-workshop Goals and Objectives, Invitees, Format, Venue, Date, and Related Topics – Kim Borgzinner, NDEP and Eileen Christensen.

<u>Action – Discussion, Direction and Possible Decision on appointment of a Water District Board</u> Member and possibly a staff support member to represent the District at future Community Source Water Protection Team meetings.

- 1. <u>Call to Order Pledge of Allegiance</u>
- **Approval of Minutes a.** January 11, 2010, February 22, 2010 and March 1, 2010
- **3.** <u>Approval of/Modifications to the Agenda</u>: Approval of the Agenda after Considering Requests to Rearrange, Hold or Remove items.

# 4. <u>Correspondence and Announcements</u>

# 5. <u>Public Comment</u>

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- 6. <u>Board Member Reports/Comments</u>: Board members and the General Manager can make announcements, request information and discuss topics for future agendas.
  - **a.** Report from Rick Osborne, Nye County County Manager regarding his meeting with Kay Brothers of the Southern Nevada Water Authority (SNWA)
  - **b.** Report from attendees on the following conferences and workshops:
    - i. Water Law Institute Nevada Water Law conference March 18-19, Reno, NV
    - ii. Water Rights in Nevada Classes March 1 & 2, Las Vegas, NV
    - iii. NWRA 2010 conference March 2 4, Las Vegas, NV

# 7. <u>Ex Parte Communications and Conflict of Interest Disclosure Statements</u>

# 8. <u>Action – Presentation and Discussion concerning Water Conservation Plans required to be</u> <u>submitted by all public utility companies – Gregory Hafen II.</u>

9. <u>Review, Discussion, Direction and Possible Decision regarding Development of a Priority Plan of</u> <u>Action and Identification and Implementation of Possible Funding Sources Based on the Joint</u> <u>Workshop with the BOCC.</u>

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# 10. <u>Action – discussion, Direction and Possible Decision on Appointing Darrell Lacy as part-Time</u> <u>Interim Director of the Nye County Water District, discussion shall include possible salary for this</u> <u>appointment.</u>

# 11. District Reports

- a. Financial Reports and Monthly Expenditures
- **b.** Report from other departments, individuals, groups and or agencies regarding water-related issues for informational purposes only
- c. Discussion concerning Proposed Renewable Energy Developments in Nye County.

# 12. <u>Action – Discussion, Direction and Possible Decision Concerning Items for Future</u> <u>Meetings/Workshops.</u>

- **a.** April 26, Water Board Change of Venue from Tonopah to Pahrump
- **b.** May 24, Water Board Change of Venue from Pahrump to Tonopah
- **c.** Development of topics list for discussion with Steve Bradhurst at the April 26<sup>th</sup> Water District Meeting.
- **d.** Membership Robert Cameron, Tim McCall, James Eason and Donna Lamm's terms set to expire July 1, 2010.

# 13. Adjournment

NYE COUNTY WATER DISTRICT MARCH 22, 2010 PAGE 4

# **AFFIDAVIT OF POSTING**

STATE OF NEVADA

COUNTY OF NYE

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### Nye County Community Source Water Protection Plan

## **Pre-Workshop Discussion**

#### Nye county Water District Governing Board Meeting

#### March 22, 2010

- I. Workshop Goals and Objectives
  - A. Review of preliminary workshop agenda
- II. Workshop Invitees, Format, and Venue
  - A. Attendees identified to date (comments/recommendations)
  - B. Workshop format (number of days and hours per session)
  - C. Venues identified to date (recommendations based upon proposed format)
- III. Workshop date and schedule
- **IV.** Format and Coordination for Invitations

# I. Workshop Goal and Objectives

Goal: To build consensus amongst communities and stakeholders in Nye County for developing and implementing a Community Source Water Protection Plan (CSWPP)

Objective 1: Provide some general education on source water protection in Nevada

- Ice breaker
- What is Source Water Protection?
- Lessons learned
  - National incidents leading to SWP legislation and action
  - Nevada communities: Nitrates, PCE, stormwater, etc.
  - Nye County: Where are we, and what should we be paying attention to?
- How does NDEP coordinate SWP at the State and Local level?
- Group activity
- What is a community's role in protecting its drinking water source?

**Objective 2:** Review SWP/WHP work done to date, lessons learned, and data gaps

- Public water systems relationships and shared aquifers
- Existing plans, number and types of public water systems in Nye County
- Data gaps
- Successes and Constraints

**Objective 3:** Provide an overview of the CSWPP development process and benefits for Nye County

- Integrated Source Water Protection Program (ISWPP) NDEP's role, funding, and timeline
- Development of the CSWPP
  - o Element 1: Team formation
  - Element 2: Identify water protection areas
  - Element 3: Identify potential sources of contamination
  - Element 4: Develop contaminant source management strategies
  - Element 5: Manage, share, and integrate SWP information
- Requirements for State endorsement of a CSWPP
- Community Source Water Protection Plan (CSWPP) BEC Environmental's role: technical assistance and facilitation for the community planning effort

**Objective 4:** Identify potential planning team members and outline member involvement

- Group activity
- Sub-teams (technical, educational, and planning)
- Roles and responsibilities of team members and sub-teams

**Objective 5:** Schedule next Team meeting to identify planning goals and develop a schedule (milestones and timelines) to implement the plan.

- Independent meeting schedule, or held in conjunction with other regular meetings?
- Format for meetings
- Venue for meetings

# II. Workshop Invitees, Format, and Venue

Table 1: Nye County Community Source Water Protection Plan Workshop Potential Invitees

Invitee	Planning Effort Role
Nye County Water District Governing Board	Overall support and direction to team leads
NDEP/BEC	Facilitate/Moderate
Federal	
USGS	Data sharing, technical support
Nevada Test Site Systems (3 systems – Areas 23,	Public Water System
6, 12, & 25)	
Tolicha Peak Electronic Combat Range	Public Water System
Tonopah Conservation Camp	Public Water System
Tonopah Electronic Combat Range O and M	Public Water System
Tonopah Test Range Area 10 Industrial	Public Water System
Tonopah Test Range Mancamp	Public Water System
Tonopah Test Range Site 6	Public Water System
State	
NDOT (Rest Stops -3)	Public Water System
Nevada Rural Water Authority	Water Education and Technical Assistance
NDEP Project Wet	Education
Berlin Ichthyosaur State Park	Public Water System/ State Parks
Nye County	3.5
Nye County Planning and Code Compliance	Insight for planning and management strategies
Nye County Public Works	Insight for management strategies
Nye County Manager or Staff	Planning insights
Pahrump Regional Planning Commission	Insight for planning and management strategies

Nye County School District Representative or	Education Team Lead
Board Liaison	
Nye County Emergency Services	Spill Emergency Response Coordination
Nye County District Attorney	Insight for management strategies
Pahrump	
Town of Pahrump	Community Support
Pahrump Valley Fire and Rescue	Spill Emergency Response Coordination
Utilities, Inc. of Central Nevada	Public Water System
Desert Utilities, Inc.	Public Water System
Pahrump Utility Company	Public Water System
Anchor Inn MHP	Public Water System
Big Five Park	Public Water System
Big Valley MHP	Public Water System
C Valley MHP	Public Water System
Desert Mirage Homeowners Association	Public Water System
Escapee Co op of Nevada	Public Water System
Sunset MHP	Public Water System
Carberry Square	Public Water System
Champion's	Public Water System
Chicken Ranch	Public Water System
Chipmunk Retreat	Public Water System
Coyote Corner Market	Public Water System
Desert Center Plaza	Public Water System
Elk's Lodge Pahrump	Public Water System
Freddy's	Public Water System
Horizon Markets I & III	Public Water System
Just Country Bar	Public Water System
LDS Church Pahrump Ward	Public Water System
Low Low Liquor Cigarettes and Goodies	Public Water System
Moose Lodge 808	Public Water System
Our Bar	Public Water System
Pahrump Café	Public Water System
Pahrump RV Park	Public Water System
Pahrump Senior Center	Public Water System
Quick Save Market	Public Water System
Sheri's Ranch	Public Water System
Stagestop Restaurant	Public Water System
Terrible's Ranch Casino and RV Park	Public Water System
The Maverick	Public Water System
Town Hall Bar	Public Water System
Tumbleweed Tavern	Public Water System
Valley Bar	Public Water System
VFW Pahrump Post	Public Water System
Whos Dunes	Public Water System

Amargosa Valley (& Crystal)	
Amargosa Valley Town Advisory Board	Community Support
Amargosa Water Company	Public Water System
Amargosa Valley Resort, Inc.	Public Water System
Amargosa Valley VFW	Public Water System
Crystal Springs Bar Restaurant (Crystal?)	Public Water System
Far East Bar (Crystal?)	Public Water System
Fort Amargosa RV Park	Public Water System
Horizon Academy	Public Water System
Longstreet Inn and Casino	Public Water System
Short Branch (Crystal)	Public Water System
Beatty	
Town of Beatty	Community Support
Beatty Water and Sanitation District	Public Water System
Bailey's Hot Springs	Public Water System
Beatty RV Park	Public Water System
Shady Lady Ranch	Public Water System
Tonopah	
Town of Tonopah	Community Support
Tonopah Public Utilities	Public Water System
Smoky Valley	
Town of Manhattan	Community Support
Round Mountain	Community Support
Manhattan Town Water	Public Water System
Round Mountain PUC	Public Water System
Carver's Smoky Valley RV and MHP (Smoky	Public Water System
Valley)	
Shoshone Estates Water Company (Round	Public Water System
	Dublic Motor Custors
Carver's Cafe (Smoky Valley)	Public Water System
Smoky valley wine (Smoky valley)	
Gabbs	
Gabhs	Community Support
Gabbs Water System	Public Water System
Canno tracer oyocom	
Misc.	
Duckwater Tribe	Community Support
lone Water System	Public Water System
Southern Nevada Conservation District	Education

Solicit input for other potential attendees.

# Format of the Workshop

**One 4 hour public workshop:** Objectives 1 & 2; 15 min. break; Objectives 3, 4 and 5. Schedule CSWPP Team kick off meeting for a later date.

OR

**Two 4 hour public workshops**: First day: Objectives 1, 2, and 3 (target 4 hours with time for Q&A session); 15 min.; Second Day: Objectives 4 and 5 (target 2 hours with time for Q&A session and conclude with a CSWPP Team kick off meeting and goal setting session).

OR

**One 8 hour public workshop**: Morning: Objectives 1, 2, and 3 (target 4 hours with time for Q&A session); 1 hour lunch; Afternoon: Objectives 4 and 5 (target 2 hours with time for Q&A session and conclude with a CSWPP Team kick off meeting and goal setting session).

OR

**Two 4 or 8 hour public workshops:** One 4 or 8 hour workshop, as outlined above, in two different locations.

### Possible Workshop Venues

Bob Ruud Community Center, Pahrump Yucca Mountain Info Center, Pahrump New Nye County Administration Building/Commissioner's Chambers, Pahrump Pahrump Nugget Convention Center, Pahrump Locations in Amargosa Valley, Beatty or Tonopah? Recommendations for Other Venues?

#### III. Workshop Date and Schedule

Determine the date and time for workshop

# IV. Format for Invitations

- Will the invitations be sent from Nye County Water District Governing Board?
- How will the invitations be sent? (via e-mail, mail, or both)
- Who will follow-up with invitees and receive RSVPs?
- Will the workshop be publicly noticed?
- Will the workshop be advertised in newspapers, radio, and television?

# Workshop Agenda April 26, 2010 1:00 pm to 5:00 pm

- 1:00 Source Water Protection (SWP) Kim Borgzinner, NDEP; Kathleen Johnson, BEC Environmental, Inc. (BEC)
- 2:00 General Groundwater Overview in Nye County Brian Loffman, BEC
- 2:20 Review of Current Wellhead Protection in Nye County Eileen Christensen & Rachel Kryder, BEC
- 3:30 Community Source Water Protection Plan (CSWPP) Kathleen Johnson, BEC
- 4:00 The Planning Team Kathleen Johnson, BEC
- 4:30 Team Meeting Schedule and Conclude Kathleen Johnson, BEC; Kim Borgzinner, NDEP

# Nye County Community Source Water Protection Plan Workshop Pahrump Community Library, Pahrump, Nevada April 26, 2010 1:00 – 4:30

#### Summary Notes

Workshop Participants:

Nye County Water District
Nye County Water District
Nye County Nuclear Waste Repository Project Office (NWRPO)
Nye County Nuclear Waste Repository Project Office (NWRPO)
Nye County Nuclear Waste Repository Project Office (NWRPO)
Nye County Planning
Amargosa Valley Town Advisory Board
Pahrump Valley Fire and Rescue
Utilities, Inc. of Central Nevada
Desert Utilities, Inc.
Pahrump Utility Company, Inc.
Water Rock Environmental, Inc.
Anchor Inn MHP/ Great Basin College
Resident, Crystal/ Retired LVVWD, SNWA
Southern Nye County Conservation District
Pahrump Valley Times (Press)
Nevada Division of Environmental Protection
BEC Environmental, Inc. (BEC)
BEC Environmental, Inc.
BEC Environmental, Inc.
BEC Environmental, Inc.

Rachel Kryder (BEC) started the workshop by welcoming the attendees, providing a facility overview, and facilitating introductions. Kryder moderated the workshop and introduced the presenters.

#### 1) Source Water Protection

Kim Borgzinner (Nevada Division of Environmental Protection) started the workshop by presenting an overview of the Integrated Source Water Protection Program (ISWPP). Borgzinner included examples of source water contamination incidents nationwide and specific to Nevada to stress the importance of protecting ground water, rather than being faced with cleanup. Borgzinner identified the four elements to implementing an effective ISWPP:

- 1. Encourage, motivate and support local source water protection activities;
- 2. Manage, share and integrate source water protection information;
- 3. Develop federal, state and local source water protection partnerships; and

4. Integrate and implement source water protection at the state level. Borgzinner stressed that the program will be spear-headed by the Community Source Water Protection (CSWP) Team, and reviewed the role of the State's Technical Consultants, BEC Environmental, Inc., with respect to the CSWP Team.

- Group discussion followed Borgzinner's presentation, with Ron Diemoz (Pahrump Utility Company, Inc.) asking about the process for reporting potential spills. Borgzinner answered that potential spills should be reported to the Bureau of Corrective Actions spill hotline: 1-888-331-6337 or 775-687-9368. Scott Lewis (Pahrump Valley Fire and Rescue) added that people can also call Pahrump Valley Fire and Rescue to report suspected spills.
- Daniel LeVar (Resident, Crystal) inquired whether underground storage tanks might pose a threat to groundwater quality. Borgzinner replied that the location and status of underground storage tanks is tracked by NDEP.
- Tom Vehe (Water Rock Environmental, Inc.) added that in water sampling that he conducts for multiple water systems, he rarely sees any indication of volatile components related to gasoline.
- LeVar also expressed concern regarding members of the general public not being informed about the importance of source water protection and engaging in potentially dangerous acts, such as dumping waste oil on the ground.
- LeVar added that the local newspapers often present stories regarding wells and groundwater, but do not often follow up on the initial story, which can cause public confusion or misconception.
- LeVar expressed that one of the issues he saw repeatedly when he was at the Southern Nevada Water Authority (SNWA) was that after an issue was referred to the Bureau of Corrective Actions, they rarely heard back regarding the resolution of the problem.
- George Sausman (Anchor Inn MHP/ Great Basin College) explained that as a public water system operator, he is responsible for regular water sampling and testing, but that the results of such testing are not shared between different public water system operators within Pahrump Valley.
- Jan Cameron (Amargosa Valley Town Advisory Board) asked about the definition of a public water system. Borgzinner explained that a public water system is one that is regulated by the State, and the threshold is that the system must have 15 or more connections, or serve at least 25 people on a regular basis. This definition includes community (C), non-community (NC), and non-transient non-community (NTNC) systems.
- Michael Johnson (Desert Utilities, Inc.) expressed concern over the lack of regulation of private domestic wells.

Rachel Kryder (BEC) introduced Brian Loffman (BEC) to present an overview of ground water hydrogeology within Nye County.

# 2) General Ground Water Overview in Nye County

Loffman presented a general overview of groundwater in Nye County, including the delineated hydrographic basins and hydrographic regions in Nye County, as determined by the Nevada Division of Water Resources. Loffman presented a conceptual hydrogeologic model depicting the relation between recharge areas, surface water, and spring flow for typical basin and range areas. Loffman outlined the basic types of aquifers present within Nye County (valley fill, volcanic, and regional carbonate) and presented issues that have been identified with respect to Nye County's water resources (water quality; groundwater overdraft; subsidence; projected future demands). Materials presented in the General Groundwater Overview in Nye County are from the Nye County Water Resources Plan (Buqo, 2004), which can be viewed or downloaded at: <a href="http://www.nyecounty.net/DocumentView.aspx?DID=145">http://www.nyecounty.net/DocumentView.aspx?DID=145</a> . Additional information can also be found from the Nevada Division of Water Resources, at: <a href="http://www.water.nv.gov">www.water.nv.gov</a> .

# 3) Review of Current Wellhead Protection in Nye County

Kryder presented an overview of the existing wellhead protection plans in Nye County, including the year each was completed and what population was represented by each system at the time of the report. Current state endorsed wellhead protection plans in Nye County include 1) Pahrump Valley, 2006; 2) Amargosa Valley, 2006; 3) Beatty Water and Sanitation District, 2001; 4) Tonopah, 2005; 5) Manhattan, 2007; and 6) Gabbs, 2005. Also highlighted was the fact that there are currently 35 public water systems in Nye County that are not covered by state endorsed wellhead protection plans (excluding federal facilities). Kryder presented questions to the participants in order for them to start considering what community members know about their water systems and existing wellhead protection plans, in order to start formulating Team goals.

Kryder also highlighted changes in the communities of Pahrump, Amargosa Valley, and Manhattan that have occurred since the existing plans were written. In Pahrump, large residential developments have been constructed such as Mountain Falls and Pleasant Valley, which are not currently covered under the existing Pahrump Wellhead Protection Plan. In Manhattan, there is a new water supply well ready to be put into service.

# 4) Possible Goals/Objectives of the Community Source Water Protection Plan (CSWPP) in Nye County.

Kathleen Johnson (BEC) facilitated a group activity to identify a draft list of source water protection goals and objectives, as identified by workshop participants. She explained that the recommendations developed in this workshop would be combined with those from the Tonopah Workshop planned for May 24, 2010. Workshop participants identified the following:

- Address each community within the County individually (each is unique);
- Review existing Wellhead Protection Plans (WHPPs);
- Include individual WHPPs as part of an overall Plan;

- Incorporate all public water systems into WHPP;
- Public education;
- Water quality data planning;
- Continued implementation regarding land use planning (zoning) as it relates to source water protection areas;
- Identification of meth labs as potential contaminant sources;
- Stress concepts of ground water flow in public education efforts;
- Include water quality results from various public water systems on the Nye County Water District website;
- Develop some way of monitoring or being informed of proposed land development/land use/potential contaminant sources outside of the Pahrump Regional Planning District; and
- Leverage other programs for possible funding.

# 5) Development and Implementation of the Community Source Water Protection Program

After a brief break, Kathleen Johnson presented the five elements of a State endorsed wellhead protection plan, which include:

- 1. Team Formation
- 2. Identify water protection areas
- 3. Identify potential sources of contamination
- 4. Develop contaminant source management strategies
- 5. Manage, share, and integrate SWP information

The presentation included an overview of typical CSWPP team members.

6) Identification of Community Source Water Protection Team Members

Kathleen Johnson facilitated the second group activity to conclude the workshop. Additional discussion points raised during this group activity include:

- Kyle Walton (Nye County) expressing concern that new development and current zoning in Pahrump may not be consistent with wellhead protection areas established in the Pahrump Wellhead Protection Plan.
- Borgzinner stated that the program is intended to be tailored to the specific needs of each community, and is not a "one size fits all" approach.
- Jan Cameron expressed her concern that new programs may seem to indicate new or additional regulation of water systems.
- Michael Johnson expressed similar concern that the utilities are already highly regulated, and was concerned that the program may not provide additional benefits to the utilities. Kathleen Johnson reiterated that the CSWP is a voluntary program, and the goal is the protection of existing and future water supplies,

which could potentially benefit the utilities' investments in current and future water supplies.

- Vehe stated that the additional documentation required to develop the program and implement it would have to be minimized in order increase participation on the part of water system operators. Christensen and Borgzinner stated that the technical consultant would be capable of supporting the community to minimize the documentation requirements and requests made from the community's resources.
- Jan Cameron expressed concern that communities in the County, other than Pahrump, have no mechanism in place for review of commercial or other proposed uses prior to development. This leaves the communities without a way to protect the wellhead protection areas through planning review. Pahrump is the only community in the County that has a Planning District.
- Kathleen Johnson stressed that participation in the program, and eventual endorsement of the CSWP Plan by the State can lead to possible funding opportunities.
- Eileen Christensen expanded on this topic by adding that additional funding may also be leveraged through other programs, such as Brownfields.
- Michael Johnson expressed concern over the success of implementing the program relative to the goals and objectives expressed during the workshop. Christensen explained how the development of a Plan and incorporating it into the existing review process can benefit the development and growth of the community. For example, a gasoline station approached BEC and requested information on where wellhead protection areas are located so that they could site their project outside of a wellhead protection area. Having this information readily available is attractive to businesses and ensures the longevity of existing businesses within the community.

# 7) The CSWP Team

Workshop participants identified themselves and others not present that should be included on the CSWP Team. Team members that were present, and volunteered to participate included:

- Scott Lewis, Pahrump Valley Fire and Rescue;
- Kyle Walton, Nye County Planning;
- Michael Johnson, Desert Utilities (will coordinate with representatives from Utilities, Inc. and Pahrump Utilities);
- Cheryl Beeman/ Darrell Lacy, Nye County NWRPO;
- Tim McCall (Donna Lamm as alternate), Nye County Water District;
- Jan Cameron (or other Amargosa Valley representative), Amargosa Valley Town Advisory Board;
- George Sausman, Great Basin College/Anchor Inn MHP;
- Tom Vehe, Water Rock Environmental; and
• Daniel LeVar, Resident, Crystal.

Additional team members suggested by participants but not present at the time of this portion of the workshop included:

- Dave Fanning (or designated representative), Nye County Public Works;
- Brent Jones (or designated representative), Nye County Emergency Services;
- Beatty Water and Sanitation District Representative; and
- Science Teacher from PVHS, Nye County School District.

#### 8) Team Meeting Schedule

With the preliminary establishment of the Team, those present elected to wait until after the workshop in Tonopah on May 24, 2010, to set the meeting schedule. Jan Cameron inquired whether there will be separate CSWP Teams for northern and southern Nye County. There was consensus among the group that separate teams may be appropriate, but that this decision is one that will be made cooperatively with input from participants at the workshop in Tonopah on May 24<sup>th</sup>. Meeting frequency of once per month in coordination with the meetings of the Nye County Water District Governing Board was suggested by the workshop participants.

### Action Item:

BEC will schedule the first Team meeting(s) to correspond with the June meeting of the Nye County Water District Governing Board. This schedule will be finalized following the workshop in Tonopah, which is scheduled for May 24, 2010. BEC will work with Nye County to coordinate logistics, prepare and distribute the meeting agenda (BEC).

Workshop Agenda May 24, 2010 1:00 pm to 5:00 pm

- 1:00 Source Water Protection (SWP) Program Overview and the Community's Role Kim Borgzinner, NDEP; Rachel Kryder, BEC Environmental, Inc. (BEC)
- 2:00 General Groundwater Overview in Nye County Brian Loffman, BEC
- 2:20 Review of Current Wellhead Protection in Nye County Work Completed to Date, Lessons Learned, and Data Gaps Rachel Kryder and Eileen Christensen, BEC
- 3:15 3:30 Break
- 3:30 Community Source Water Protection Plan (CSWPP) Program Development Overview Rachel Kryder, BEC
- 4:00 The Planning Team Roles and Responsibilities; Opportunities for Involvement Rachel Kryder, BEC
- 4:30 Team Meeting Schedule and Conclude Kathleen Johnson, BEC; Kim Borgzinner, NDEP

#### Nye County Community Source Water Protection Plan Workshop Tonopah Convention Center May 24, 2010 1:00 – 4:10

#### Summary Notes

Workshop Participants:

James Eason	Nye County Water District Governing Board, Town of Tonopah
Midge Carver	Nye County Water District Governing Board
Robert Cameron	Nye County Water District Governing Board
Darrell Lacy	Nye County
Cheryl Beeman	Nye County Nuclear Waste Repository Project Office
Beth McGhee	Nye County Nuclear Waste Repository Project Office
Oz Wichman	Nye County Public Works
Ken Plewe	Nye County Public Works
Jeff Donahue	Nye County Public Works, Gabbs
Ray Dummar	Gabbs
Dan Sweeney	Town of Round Mountain
Sara Keehfuss	Round Mountain Gold Corp.
Jack Osburn	Tonopah Public Utilities
Frederick Willis	Beatty Water and Sanitation District
Jan Cameron	Amargosa Valley Town Advisory Board
Matt Luis	Town of Pahrump
Kim Borgzinner	Nevada Division of Environmental Protection (NDEP)
Eileen Christensen	BEC Environmental, Inc. (BEC)
Rachel Kryder	BEC Environmental, Inc. (BEC)
Brian Loffman	BEC Environmental, Inc. (BEC)

Rachel Kryder (BEC) started the workshop by welcoming the attendees, providing a facility overview, and facilitating introductions. Kryder moderated the workshop and introduced the presenters.

#### 1) Source Water Protection

Kim Borgzinner (NDEP) started the workshop by presenting an overview of the Integrated Source Water Protection Program (ISWPP). Borgzinner included examples of source water contamination incidents nationwide and specific to Nevada to stress the importance of protecting ground water, rather than communities being faced with costly cleanup. Borgzinner identified the four elements to implementing an effective ISWPP:

- 1. Encourage, motivate and support local source water protection activities;
- 2. Manage, share and integrate source water protection information;
- 3. Develop federal, state and local source water protection partnerships; and
- 4. Integrate and implement source water protection at the state level.

Borgzinner stressed that the program will be spear-headed by the Community Source Water Protection (CSWP) Team, and reviewed the role of the State's Technical Consultants, BEC Environmental, Inc., with respect to the CSWP Team.

- Group discussion followed Borgzinner's presentation, with Oz Wichman (Nye County Public Works) inquiring if there are any simple rules of thumb that can be applied relative to potential contaminant sources, and what risk they might pose to ground water quality, including issues such as transport time. Borgzinner and Christensen explained that each case is different, taking into consideration such things as lithology, specific contaminant characteristics, and quantities. Kryder added that a potential contaminant risk assessment will be completed as part of the development of Contaminant Source Management Strategies.
- Oz Wichman brought up the issue of arsenic contamination in groundwater in the area. James Eason (Town of Tonopah) asked Sara Keehfuss (Round Mountain Gold Corp.) if the mine monitors the arsenic levels in the water that they are dewatering and discharging. Keehfuss said that they do, but she did not have the numbers right off-hand. She added that the mine does not do any kind of water treatment. Dan Sweeney (Town of Round Mountain) offered that the arsenic levels in wells in Round Mountain are in the range of 50 ppb.

Rachel Kryder (BEC) introduced Brian Loffman (BEC), who presented an overview of ground water hydrogeology within Nye County.

# 2) General Ground Water Overview in Nye County

Loffman presented a general overview of groundwater in Nye County, including the delineated hydrographic basins and hydrographic regions in Nye County, as determined by the Nevada Division of Water Resources. Loffman presented a conceptual hydrogeologic model depicting the relation between recharge areas, surface water, and spring flow for typical basin and range areas. Loffman outlined the basic types of aquifers present within Nye County (valley fill, volcanic, and regional carbonate) and presented issues that have been identified with respect to Nye County's water resources (water quality; groundwater overdraft; subsidence; projected future demands). Materials presented in the General Groundwater Overview in Nye County are from the Nye County Water Resources Plan (Buqo, 2004), which can be viewed or downloaded at: <a href="http://www.nyecounty.net/DocumentView.aspx?DID=145">http://www.nyecounty.net/DocumentView.aspx?DID=145</a> . Additional information can also be found from the Nevada Division of Water Resources at: <a href="http://www.water.nv.gov">www.water.nv.gov</a> .

#### 3) Review of Current Wellhead Protection in Nye County

Kryder presented an overview of the existing wellhead protection plans in Nye County, including the year each was completed and what population was represented by each system at the time of the report. Current state endorsed wellhead protection plans in Nye County include 1) Pahrump Valley, 2006; 2) Amargosa Valley, 2006; 3) Beatty Water and Sanitation District, 2001; 4) Tonopah, 2005; 5) Manhattan, 2007; and 6) Gabbs, 2005. Also highlighted was the fact that there are currently 35 public water systems in Nye County that are not covered by state endorsed wellhead protection plans (excluding

federal facilities). Kryder presented questions to the participants, for them to start considering what community members know about their water systems and existing wellhead protection plans, in order to start formulating Team goals.

Kryder also highlighted that changes in the water source for the community of Manhattan have occurred since the existing plan was written. In Manhattan, there is a new water supply well that is currently being put into service.

### 4) Possible Goals/Objectives of the Community Source Water Protection Plan (CSWPP) in Nye County.

Eileen Christensen (BEC) facilitated a group activity to develop a draft list of source water protection goals and objectives, as identified by workshop participants. She explained that the recommendations developed in this workshop are preliminary goals that will be further defined once the Team is formed. Workshop participants identified the following:

- Educate the public regarding source water protection;
- Integrate data from multiple sources;
- Review and assess current Wellhead Protection Plans;
- Consider communities individually;
- Develop a mechanism for some development review (outside of the Pahrump Regional Planning District);
- Backflow prevention evaluation (Kim Borgzinner clarified that this is outside of the scope of the program);
- Public education related to storm drains, mine shafts, and dumping as related to source water protection;
- Identify abandoned mines;
- Identify historic dumps; and
- Identify orphan wells.
- 5) Development and Implementation of the Community Source Water Protection Program

After a brief break, Rachel Kryder presented the five elements of a State endorsed wellhead protection plan, which include:

- 1. Team Formation;
- 2. Identify water protection areas;
- 3. Identify potential sources of contamination;
- 4. Develop contaminant source management strategies; and
- 5. Manage, share, and integrate SWP information.

The presentation included an overview of typical CSWPP team members.

6) Identification of Community Source Water Protection Team Members Eileen Christensen facilitated the second group activity to conclude the workshop. Additional discussion points raised during the workshop included:

- Christensen explained that there is a possible partnering opportunity with Douglas County regarding GIS capability;
- Dan Sweeney (Town of Round Mountain) said that some GIS data may be available for Tonopah and Gabbs, as GPS locations for all connections in both communities have been recorded as part of a federal grant;
- Sweeney also offered that the Town of Round Mountain has a Wellhead Protection Plan, but it was never submitted to the State for review and endorsement. BEC requested to get a copy of the plan, as there is likely valuable wellhead protection information included that can be used for the current program;
- Oz Wichman stated that he and Ken Plewe (Nye County Public Works) have put together a map of all wells owned and operated by Nye County;
- James Eason expressed concern over the large quantities of hazardous materials related to mining operations that travel along the local highways and pass through communities such as Tonopah and Round Mountain. Wichman added that truck loads of cyanide travel through Austin and Round Mountain regularly;
- Jan Cameron (Amargosa Valley) stated that the Ponderosa Dairy in Amargosa Valley has been ordered to put in five monitoring wells in the immediate future;
- Wichman expressed concern about ensuring that the Plan is implemented after it is developed. Christensen explained that the Plan is developed by the Team with community input to address specific needs and that all community members are stewards of the program as taxpayers, and that the intent of the program is for the Plan to be put to use by the community;
- Kim Borgzinner explained that the ISWPP cannot cover every well in Nye County, especially residential wells. It is meant to cover only water sources that are part of public water systems;
- Eason expressed that he would like to see representation on the Team from each community in Nye County;
- Christensen reinforced that there will be measurable progress at every Team meeting; and
- Wichman asked who the point of contact will be for the program in Nye County, and Christensen stated that Rachel Kryder is the point of contact for the Nye County program.

#### 7) The CSWP Team

Workshop participants identified themselves and others not present that should be included on the CSWP Team. Team members that were present, and volunteered to participate included:

- James Eason, Nye County Water District Governing Board, Town of Tonopah;
- Jan Cameron, Town of Amargosa Valley;
- Robert Cameron, Nye County Water District Governing Board;
- Oz Wichman (or other representative), Nye County Public Works;
- Dan Sweeney, Town of Round Mountain;
- Ray Dummar/Jeff Donahue, Gabbs;
- Fred Willis, Beatty Water and Sanitation District;
- Sara Keehfuss, Round Mountain Gold Corp.;
- Jack Osburn, Tonopah Public Utilities; and
- Matt Luis, Town of Pahrump (will participate on Pahrump Team).

Additional team members suggested by participants but not present at the time of this portion of the workshop included:

- Brent Jones (or designee), Nye County Emergency Services;
- Beatty High School Science teacher; and
- Nick Perchetti, Nye County School District.

#### 8) Team Meeting Schedule

With the preliminary establishment of the Team, those present elected to hold Team meetings on a monthly basis and to coordinate the meetings with the Nye County Water District Governing Board meetings, when possible. There was consensus among the group that separate teams within Nye County will be the most effective way to move the program forward, but with coordination between the Teams. One Team will be composed of representatives from the Pahrump area in Nye County, and the other Team will be composed of representatives from the northern portion of Nye County, including the communities of Amargosa Valley, Beatty, Tonopah, Round Mountain, Manhattan, Smokey Valley, and Gabbs. This is consistent with the approach that participants at the Pahrump workshop supported. Further, workshop participants suggested that the two Teams meet individually on a monthly basis, but come together quarterly for a joint meeting in Beatty. Additionally, correspondence related to source water protection and Team activities will be distributed to all Team members, both North and South, so that all members are kept apprised of activities as the Program progresses. The first Northern Team meeting will be held in Beatty on June 28, 2010, from 2:00 to 4:00 pm.

#### **Action Items:**

- BEC will schedule the first Team meeting for the Northern Team to correspond with the June meeting of the Nye County Water District Governing Board. The meeting will be held in Beatty on June 28, 2010, from 2:00 to 4:00 pm;
- BEC will obtain the schedule and locations for the Nye County Water District Governing Board meetings and will draft and distribute a preliminary schedule for Team meetings; and
- BEC will draft and distribute an agenda for the first Team meeting prior to the Team meeting.

Nye County Community Source Water Protection Plan

CSWP Team Meeting Agenda August 4, 2010 1:00 PM – 3:00 PM Tonopah Convention Center, Tonopah, NV

- I. Introductions
- II. Moving forward with Community Source Water Protection in Nye County
  - a. Partnering with Nevada Rural Water Association (NvRWA)
    - i. Capabilities
    - ii. Applicability in Nye County
  - b. Suggested modifications to the meeting schedule
  - c. Technical data gathering

#### III. Review, approve, and prioritize Goals and Objectives identified at 5/24/10 Workshop

- Goal 1: Develop a Community Source Water Protection Program to protect the quality of drinking water resources in Nye County that is sustainable by the Community. Anticipated Completion Date: \_\_\_\_\_\_
  - i. **Objective**: Prepare a Community Source Water Protection Plan to document the elements of the Community's Program and identify management strategies.
  - ii. **Objective**: Address each community within the County individually.
  - iii. **Objective**: Review and assess current Wellhead Protection Plans.
  - iv. **Objective**: Integrate data from multiple sources.
  - v. **Objective**: Identify and consider potential contaminant sources that may not be included in existing databases (abandoned mines, historic dumps, orphan wells).
  - vi. **Objective:** Establish a mechanism for development review outside of the Pahrump Regional Planning District.

- vii. **Objective**: Establish greater security for source wells (goal identified subsequent to the workshop by Fred Willis, Beatty Water and Sanitation).
- b. Goal 2: To raise community members' awareness of source water protection, and how they can help protect their drinking water. Anticipated Completion Date: \_\_\_\_\_\_
  - i. **Objective**: Provide public education on topics including storm drains, mine shafts, and desert dumping, as related to source water protection.

#### **IV. Elect Team Roles/Establish Sub Teams**

#### V. Recap Action Items for next Team meeting

VI. Schedule next Team meeting

# Nye County Community Source Water Protection Plan Team Meeting Tonopah Convention Center, Tonopah, NV August 4, 2010 1:00 – 4:15 p.m.

### Summary Notes

Meeting Participants:

Darrell Lacy	Nye County
James Eason	Town of Tonopah, Nye County Water District Governing Board
Jan Cameron	Resident, Amargosa Valley
Sara Keehfuss	Round Mountain Gold Corp.
Kim Borgzinner	Nevada Division of Environmental Protection (NDEP)
Rachel Kryder	BEC Environmental, Inc. (BEC)

#### I. Introductions

Team members introduced themselves and their respective organizations. The purposes for this first Team meeting are to: 1) discuss the possible partnership with Nevada Rural Water Association (NvRWA), 2) refine the goals and objectives identified during the May 24 workshop, as needed, 3) nominate Team members for specific roles; and 4) schedule the next Community Source Water Protection (CSWP) Team meeting.

# II. Moving Forward with Community Source Water Protection in Nye County

Eason stated that Jack Osbourne, who was formerly at Tonopah Public Utilities has been hired by Nye County, and will be managing County water systems. Jan Cameron (Amargosa Valley) added that Kenny Delvega will be operating the water system in Round Mountain.

Borgzinner summarized that NvRWA has a contract through NDEP to do capacity development. Nye County, NDEP, and BEC met with Bob Foerster (NvRWA) on July 22, 2010, to discuss partnering with NvRWA for collecting the preliminary data that will feed into the CSWP Program in Nye County, especially for small public water systems. Borgzinner stated that NvRWA may be able to assist with public education as well, but that NvRWA has ownership of their educational materials, so those materials would have to be clearly depicted as being developed by NvRWA.

Eason asked what data will be collected, and Kryder stated that the data needed includes location, depth, screened interval, diameter, and pumping rate for wells within each system. Kryder stated that much of the data is available through NDEP's database, but some data is missing, especially the well diameter and screened interval. Borgzinner added that most of the data and associated reports are likely already available from public water system operators. Borgzinner suggested that

NvRWA could put this data together, and submit the data to BEC. Kryder added that NvRWA can assist the operators in finding data that may be missing from their records. NvRWA will not be actually collecting the data for the operators.

Kryder stated that well driller's logs contain a lot of the necessary data for source water protection area delineation. Kryder also added that it is not expected that small systems will have hydrology reports, but that the larger systems may. Borgzinner stated that NvRWA can assist the smaller systems to go through the reports and documents that they may have to determine what might be valuable to the CSWP Team.

Eason stated that Tonopah Public Utilities (TPU) is currently going through their Preliminary Engineering Report process, and has been able to determine which zones within their wells produce water that is higher in arsenic. Eason added that wells in Manhattan and Smoky Valley have a similar problem with individual zones that are higher in arsenic than others, and that the operators will have to determine if it would be more cost effective to recomplete the wells or perform arsenic treatment. Lacy stated that the Nye County Water District could support public water systems in the process of siting new wells in order to look at a wider area for the location of new sources.

Cameron asked if NvRWA will be contacting the water systems on their own, or working through CSWP Team members. Kryder stated that they will be contacting public water system operators directly, and will feed information back to the Team. Borgzinner added that NvRWA will be approaching the water systems from a capacity development standpoint. Kryder suggested that, should questions arise, Team members may be able to act as liaisons between the operators and NvRWA.

Kryder proposed that the initial CSWP Team meetings be conducted quarterly to allow time for NvRWA to conduct their work in Nye County. Borgzinner suggested that meetings could occur more frequently, if desired, and the goal of modifying the schedule is so that there will be progress at every meeting and between meetings. Borgzinner stressed that NvRWA and BEC will be working during the time between this meeting and the next to complete the action items identified during the Team meetings and to move the Program forward in Nye County. Lacy suggested perhaps Foerster can present to the Nye County Water District Governing Board at some point in the future.

Eason asked if we are just identifying public water systems that are regulated by NDEP, and Kryder stated that is the case, and she will provide the list of public water systems in Nye County to Team members. Eason suggested that if the Team members have maps of where all of the water systems are located, they could assist in collecting the data and visiting the systems. Eason also asked how many public water systems there are in Nye County. Kryder stated that there are 85 active public water systems in Nye County, but that includes some systems on the Nevada

National Security Site (formerly known as the Nevada Test Site), that are not included in the Program. Kryder added that there are also three systems that are remote, and it would be up to the Team whether they want to include those systems. The remote systems are the Ione system, the Berlin Ichthyosaur State Park, and the NDOT Sunnyside Roadside Park. Eason stated that if he can get the information for those systems, he will be traveling to those areas within the next couple months, and could complete some of the work.

Borgzinner stated that contaminant source inventory sheets could be provided to Team members if they are going to visit some of the systems. Eason added that pinon and juniper is currently being thinned in the Berlin area, and that there is a historic cinnabar (mercury) mine near Berlin. Borgzinner confirmed that is the type of information we are looking for in the potential contaminant source inventory.

Eason stated that he does not have a GPS receiver, and Kryder inquired whether there could be some resource sharing opportunities with Nye County Public Works or the Nuclear Waste Repository Project Office for GPS units and training. Borgzinner pointed out that it is important that everyone within the CSWP Team be using the same data collection methodology. Eason asked if he should be looking upgradient for additional contaminants, and Kryder stated that would be beneficial, especially in areas where the groundwater flow direction can be easily estimated. Borgzinner added that potential contaminant sources adjacent to source water protection areas can be identified as well, not just those within the source water protection areas. Eason asked if there is a list that shows what is considered a potential contaminant source. Borgzinner stated that it is in the Integrated Source Water Protection Program (ISWPP) Guidance Document, which can be accessed on the website, a link for which will also be sent out with the meeting minutes. Kryder stated the same meeting will be held in Pahrump tomorrow and will be a good opportunity to speak with Levi Kryder (Nye County) and Ken Plewe (Nye County) about sharing resources.

Borgzinner pointed out that the Team will need to decide which entity they would like to manage all of the data. For example, in Douglas County there is a centralized County department, the Multi-Agency Geographical Information Center (MAGIC), that maintains data collected from the local communities. Kryder offered that a similar approach in Nye County could help streamline data management efforts into one organization. Borgzinner stated it would be possible to bring in Douglas County to assist Nye County in organizing the data collection, if desired.

Eason asked who was responsible for the GIS system, and Cameron stated that Dave Fanning (Public Works) supervises the GIS Administrator. Eason stated that funding for the GIS program is derived through the E911 general funding. Kryder questioned if the Nye County Sheriff's office was integrated into the same GIS system. Borgzinner let Eason know that NDEP is willing to assist Nye County in organizing their data, which could include having Douglas County GIS staff provide insight and help with the process. Eason expressed concern related to data access and homeland security. Borgzinner stated that as far as the ISWPP is concerned, decisions regarding who has access to specific data will be made by the CSWP Team in conjunction with the appropriate departments and stakeholders. BEC will assist in collecting the necessary data that will be used in support of the Plan. Borgzinner added that once BEC has collected the data, the Team should meet and make decisions about how the data will be housed, including security considerations.

# Action Items:

- Provide a contact list to Bob Foerster (NvRWA) for all CSWP Team members (BEC);
- Provide a list of public water systems in Nye County to Team members (BEC);
- Send link to the ISWPP guidance document (BEC);
- Coordinate with Cheryl Beeman or Beth McGhee (Nye County) for printing and sending hard copies of the guidance document to Team members (BEC, Nye County);
- Provide a map of the Nye County Water District boundaries at the next Team meeting (BEC); and
- Provide a map depicting public water systems and hydrographic basins in Nye County at the next Team meeting (BEC, Nye County).

#### III. Review, approve, and prioritize Goals and Objectives identified at 5/24 Workshop

The team considered each of the objectives in support of the following goals:

a. Goal 1: Develop a Community Source Water Protection Program to protect the quality of drinking water resources in Nye County that is sustainable by the Community.

# i. Objective: Prepare a Community Source Water Protection Plan to document the elements of the Community's Program and identify management strategies.

The Team chose to manage the elements by districts or by hydrographic basins. Kryder was concerned that if the Plan considers hydrographic basins separately, that the Beatty water system may be complicated, as it may be producing water from multiple hydrographic basins.

# ii. Objective: Address each community within the County individually.

Eason proposed that Pahrump, Amargosa Valley, and Beatty could be considered individual communities, while Tonopah, Smoky Valley, Round Mountain, Manhattan, Gabbs and any other miscellaneous systems in the northern part of the County could be considered together.

# Action Item:

• Define what a "community" is, with respect to objective in support of Goal 1 (BEC, Team members);

iii. Objective: Review and assess current Wellhead Protection Plans. The Team discussed what a reasonable completion date would be, and Eason asked how much time NDEP will be involved in the community. Borgzinner stated that the ISWPP allows for two years in each County. Eason requested a copy of Douglas County's timeline, for consideration. Borgzinner pointed out that Douglas County is significantly smaller than Nye County and has fewer public water systems, which will make a difference in their completion date.

# Action Items:

- Provide the Team with Douglas County's timeline with goals to compare Nye County's goals and see how they can improve their own (BEC);
- Determine the anticipated completion dates for the Goals at the next Team meeting (Team members, BEC); and
- Obtain the Round Mountain wellhead protection plan from Dan Sweeney (BEC, Sweeney).

# iv. Objective: Integrate data from multiple sources.

The Team determined that it would be beneficial if they worked together with other Nye County programs such as Nye County Public Works or the Nuclear Waste Repository Project Office to share data and resources, such as GPS units and training.

### v. Objective: Identify and consider potential contaminant sources that may not be included in existing databases (abandoned mines, historic dumps, orphan wells).

The Team discussed that there are a number of water systems that have not been identified by NDEP as public water systems that likely meet the criteria for a public water system. Borgzinner stated that if the Team would like to include additional water systems not currently identified by the State, the Team will have to go out and collect much of the data that the State already has for existing public water systems. Kryder stated the Team could work with the Water District for identification of orphan wells, as the Water District has stated that the identification of orphan wells is one of their goals.

# vi. Objective: Establish a mechanism for development review outside of the Pahrump Regional Planning District.

Kryder stated this was brought up by Jan Cameron at the workshop and it will be a challenge to establish this process outside of Pahrump. Lacy suggested the Team

look at what kind of regulations and ordinances the Water District could put in place.

#### vii. Objective: Establish greater security for source wells.

After the last Beatty workshop, Fred Willis (Beatty Water and Sanitation) was concerned about better security, since a number of their source wells are remote. Borgzinner stated the security for the wellhead itself is already a requirement under the Safe Drinking Water Bureau.

# b. Goal 2: To raise community members' awareness of source water protection, and how they can help protect their drinking water.

# i. Objective: Provide public education on topics including storm drains, mine shafts, and desert dumping, as related to source water protection.

Cameron brought up that Nye County is currently forming a Recycling and Household Hazardous Waste Program, and suggested that the CSWP Team could coordinate with the Recycling and Household Hazardous Waste Advisory Team to share resources to provide public education.

#### Action Item:

• Coordinate with Nye County and Household Hazardous Waste Program for public education purposes (Cameron, BEC).

# IV. Elect Team Roles/Establish Sub Teams

Nominations for each of the Team and Sub Team roles are summarized in Table 1. The Team Lead for each Sub Team is to be determined.

Role	Team Member	
Technical Support Sub Team	Oz Wichman (nominated by James Eason) individual community representatives Kim Borgzinner Rachel Kryder	
Education and Outreach Sub Team	Jan Cameron	
Regulatory Compliance	Darrell Lacy	
Mapping/Database Sub Team	Ken Plewe (nominated by James Eason)	
Plan Development & Review Sub Team	Jan Cameron individual community representatives Kim Borgzinner	

Table 1. Nominated Members of the CSWP Team

	Rachel Kryder
Government Liaison Sub Team	James Eason
Secretary	TBD
Lead	TBD

Eason suggested that the Secretary and Team Lead positions be coordinated with the Nye County Water District Governing Board.

#### Action Items:

• Coordinate the Secretary and Lead positions with the Nye County Water District Governing Board (Eason, Lacy)

#### V. Recap Action Items for next Team meeting

Action items not previously identified:

- Contact representatives from the Duckwater and Yomba Tribes to see if they would like to participate in the CSWP effort in Nye County (BEC)
- Draft a list of water systems that have not been identified by NDEP as regulated Public Water Systems, but that likely meet NDEP's criteria of 15 service connections, or 25 people served (Team members)

# VI. Schedule next Team meeting

The Team determined that the next Team meeting should be in conjunction with the Pahrump Team, and will be held in Pahrump on Monday, October 25<sup>th</sup>, 2010, following the Nye County Water District Governing Board meeting.

Nye County Community Source Water Protection Plan

#### CSWP Team Meeting Agenda August 5, 2010 1:00 PM – 3:00 PM Bob Ruud Community Center Room B, Pahrump, NV

- I. Introductions
- II. Moving forward with Community Source Water Protection in Nye County
  - a. Partnering with Nevada Rural Water Association (NvRWA)
    - i. Capabilities
    - ii. Applicability in Nye County
  - b. Suggested modifications to the meeting schedule
  - c. Technical data gathering

#### III. Review, approve, and prioritize Goals and Objectives identified at 4/26/10 Workshop

- Goal 1: Develop a Community Source Water Protection Program to protect the quality of drinking water resources in Nye County that is sustainable by the Community. Anticipated Completion Date: \_\_\_\_\_\_
  - i. **Objective:** Prepare a Community Source Water Protection Plan to document the elements of the Community's Program and identify management strategies.
  - ii. **Objective:** Review existing Wellhead Protection Plans (WHPPs).
  - iii. **Objective:** Address each community within the County individually.
  - iv. **Objective:** Include individual WHPPs as part of an overall Plan.
  - v. **Objective:** Incorporate all public water systems into WHPP.
  - vi. **Objective:** Continue implementation regarding land use planning and/or zoning as it relates to source water protection areas.
  - vii. **Objective:** Develop a mechanism for monitoring or being informed of proposed land development/land use/potential contaminant sources

outside of the Pahrump Regional Planning District. (move to Nye Northern).

- viii. **Objective:** Incorporate water quality data in planning efforts.
- ix. **Objective:** Identify meth labs as potential contaminant sources.
- **b.** Goal 2: Raise community members' awareness of source water protection, and how they can help protect their drinking water. Anticipated Completion Date:
  - **i. Objective:** Provide public education on the importance of well head protection.
  - ii. **Objective:** Stress concepts of ground water flow in public education efforts to make students aware of the potential for contamination.
  - iii. **Objective:** Include water quality results from various public water systems on the Nye County Water District website.
- c. Goal 3: To leverage other programs for possible funding. Anticipated Completion Date: \_\_\_\_\_

#### **IV. Elect Team Roles/Establish Sub Teams**

Technical Support	
Education and Outreach	
Coordinator	
Regulatory Compliance	
Mapping/Database	
Plan Development &	
Review	
Government Liaison	
Secretary	
Lead	

# V. Recap Action Items for next Team meeting

VI. Schedule next Team meeting

# Nye County Community Source Water Protection Plan Team Meeting Bob Ruud Community Center, Pahrump, NV August 5, 2010 1:00 – 3:15 p.m.

#### Summary Notes

Meeting Participants:

Tim McCall	Nye County Water District Governing Board	
Levi Kryder	Nye County Nuclear Waste Repository Project Office, Nye	
County Natural Resources		
Cheryl Beeman	Nye County Nuclear Waste Repository Project Office (NWRPO)	
Roger McRae	Nye County Nuclear Waste Repository Project Office	
Ken Plewe	Nye County Public Works	
George Sausman	Anchor Inn MHP	
Mark Windholz	Utilities, Inc. of Central Nevada	
Bill Loates	Utilities, Inc. of Central Nevada	
John Pawlak	Pahrump Nuclear Waste and Environmental Advisory Board	
Tom Vehe	Water Rock Environmental	
Kim Borgzinner	Nevada Division of Environmental Protection (NDEP)	
Rachel Kryder	BEC Environmental, Inc. (BEC)	

#### I. Introductions

Team members introduced themselves and their respective organizations. The purposes for this first Team meeting are to: 1) discuss the partnership with Nevada Rural Water Association (NvRWA), 2) refine the goals and objectives identified during the April 26 workshop, as needed, 3) nominate Team members for specific roles; and 4) schedule the next Community Source Water Protection Team meeting. Rachel Kryder (BEC) also summarized that at the second workshop in Nye County on May 24, 2010, Amargosa Valley and Beatty elected to participate in the Nye Northern Team, rather than a Southern Team.

# II. Moving Forward with Community Source Water Protection in Nye County

Rachel Kryder summarized that NvRWA has a contract through NDEP to do capacity development. Nye County, NDEP, and BEC met with Bob Foerster (NvRWA) on July 22, 2010, to discuss partnering with NvRWA to have them do some of the preliminary data collection that will feed into the CSWP Program in Nye County. Rachel Kryder stated that NvRWA will be doing a lot of the data collection with the small public water systems, which will be especially helpful in Pahrump and Amargosa Valley. Borgzinner stated that NvRWA receives funding through the State revolving fund to perform capacity development activities. Borgzinner added that coordination with NvRWA will be important to minimize duplication of efforts, while still accomplishing each entity's goals. Plewe (Nye County) asked how NvRWA keeps the data that they collect, and Rachel Kryder answered that it is unknown, but they can find out. Rachel Kryder summarized that NDEP's database has a lot of the data available, but is missing some key data for modeling purposes, such as well diameters and screened interval.

Rachel Kryder added that Team members may be valuable as liaisons with public water system operators if those operators are unresponsive or would like additional information about the program. McCall asked if the data that NvRWA will be collecting will be available to the Team members prior to the next meeting. Rachel Kryder answered that they will try to make the data available as they get it from NvRWA, and will provide existing data to Team members. Rachel Kryder stated that they will make an effort to send information to Team members well ahead of future meetings.

Sausman added that it would be useful to provide education to the public and to the operators of small public water systems such as mobile home parks. Sausman suggested that ads in the newspaper or on local television would be helpful. Levi Kryder (Nye County) suggested putting together a website, and Rachel Kryder answered that NDEP does have a website, which is listed on the ISWPP fact sheets, which she distributed to Team members. Vehe (Water Rock Environmental) asked if the modeling that will be done is to characterize the drawdown of each well. Rachel Kryder answered that it is not to model the drawdown or water levels, but to model the capture zones of each well.

Rachel Kryder stated that she is glad to have Plewe on board to do some of the GIS work that will be involved in the CSWP effort, and Plewe stated that the NWRPO office has a database and GIS as well, and that it doesn't make sense to have those databases separate. The Team agreed that the best solution would be to have the resources shared within the County, and not segmented or duplicated. It will be up to the Team to decide how to structure their resource sharing. Borgzinner stated that the Douglas County GIS department has a robust and integrated system, and that they are working on putting together a standard system for source water protection data, and that they may try to provide that as a service to communities that don't have GIS capability.

# Action Items:

- Provide a contact list to Bob Foerster (NvRWA) for all CSWP Team members (BEC);
- Find out how NvRWA stores the data that they collect (BEC, NDEP);
- Provide a list of public water systems in Nye County to Team members (BEC); and
- Send link to the ISWPP guidance document (BEC).

#### III. Review, approve, and prioritize Goals and Objectives identified at 4/26 Workshop

The team considered each of the objectives in support of the following goals:

a. **Goal 1:** Develop a Community Source Water Protection Program to protect the quality of drinking water resources in Nye County that is sustainable by the Community.

Beeman asked if part of Goal 1 would be protecting the quantity of water as well as the quality. Rachel Kryder stated that this program is only to address water quality. Rachel Kryder stressed that an important part of the goal is that the program is sustainable by the community, which is one of the reasons why the program is sponsored by the Nye County Water District, as the District will exist even as members change, and the program is something that the District can continue be responsible for into the future.

i. **Objective:** Prepare a Community Source Water Protection Plan to document the elements of the Community's Program and identify management strategies.

Team approved the objective without further discussion.

ii. **Objective:** Review existing Wellhead Protection Plans (WHPPs).

Team approved the objective without further discussion.

**iii. Objective:** Address each community within the County individually.

Rachel Kryder stated that at the meeting in Tonopah on 8/4/10, there was discussion about what would be considered a "community" with respect to this objective, and that it was suggested at the Tonopah meeting that the communities in Nye County would be broken down as follows: 1) Pahrump, 2) Amargosa Valley, 3) Beatty, and 4) Tonopah, Gabbs, Manhattan, Round Mountain, Smoky Valley, and all other northern communities. Pawlak asked if Stewart Valley was considered with Pahrump, and Rachel Kryder stated that there are not any public water systems in Stewart Valley, so they don't have to be considered. McCall asked if Johnnie would be considered in Pahrump, and Rachel Kryder responded that there are no public water systems regulated by NDEP in Johnnie, but that it would be included in Pahrump because it is within the Pahrump Regional Planning District.

iv. **Objective:** Include individual WHPPs as part of an overall Plan.

Levi Kryder asked if there is a strategy in dealing with wellhead protection plans that don't have the same approach. Rachel Kryder responded that portions of the Plans can move forward, and that some strategies can be identified for only portions of the County, and don't have to be applicable to all communities. Borgzinner added that many of the management strategies and recommendations are in line with the State guidance and are usually pretty broad in scope, rather than specific enough to implement easily. Rachel Kryder added that identifying implementation strategies can open doors to additional funding opportunities, such as the Recycling and Household Hazardous Waste program currently underway in Nye County. Borgzinner encouraged the Team to leave the possibilities open for future funding, and Rachel Kryder added that language included in the implementation strategies in a number of the existing wellhead protection plans is "resource permitting"

v. **Objective:** Incorporate all public water systems into WHPP.

Team approved the objective without further discussion.

vi. **Objective:** Continue implementation regarding land use planning and/or zoning as it relates to source water protection areas.

Team approved the objective without further discussion.

vii. **Objective:** Develop a mechanism for monitoring or being informed of proposed land development/land use/potential contaminant sources outside of the Pahrump Regional Planning District (move to Nye Northern).

This objective will be removed from the Goals and Objectives of the Pahrump Team, as it applies only outside of the Pahrump Regional Planning District. This objective is still valid for the Nye Northern Team.

viii. **Objective:** Incorporate water quality data in planning efforts.

Team approved the objective without further discussion.

ix. **Objective:** Identify meth labs as potential contaminant sources.

This objective will be modified to read: "Add former meth labs to the list of potential contaminant sources." Also, there was discussion that this item is something that will likely be included in research activities related to the contaminant source inventory, rather than any sort of field inventory. The information may be obtained from a number of sources, such as the Sherriff's Department, the Fire Department, or Emergency Services.

Vehe asked if other chemical spills or incidents would be considered potential contaminant sources as well, and Rachel Kryder answered that they would, and most incidents of those types would be included in databases already maintained by agencies such as NDEP or the Environmental Protection Agency (EPA). Borgzinner

added that kind of desk top research will be part of the contaminant source inventory.

Beeman asked if the Team members would be establishing roles to include conducting the contaminant source inventory. Rachel Kryder also stated that potential partnering opportunities may exist in the future to partner with UNLV, as they are performing some contaminant source inventories for a different program through NDEP. McCall raised the question of whether junk automobiles and other materials on private properties are considered a contaminant source, and Borgzinner stated they are. Plewe stated that old mill sites (ore processing) will show up in historical data (Geo-communicator), and they may be potential contaminant sources.

# Action Items:

- Contact Beeman (<u>cbeeman@co.nye.nv.us</u>) for a hard copy of the ISWPP Guidance Document (Team);
- **b. Goal 2:** Raise community members' awareness of source water protection, and how they can help protect their drinking water.

Sausman suggested that there be public education efforts with respect to educating community members that are private well owners as to what source water protection is and the importance of source water protection. The concept of there being a relationship between public and private wells could be included in public education. Pawlak suggested that the Pahrump Fair and Festival would be a good opportunity for outreach, and the surface and ground water models could be demonstrated in conjunction with the Pahrump Nuclear Waste and Environmental Advisory Board's booth.

**i. Objective:** Provide public education on the importance of well head protection.

Borgzinner stated that the wording of this objective should be modified to depict that public education should include what wellhead protection is, as well as its importance.

**ii. Objective:** Stress concepts of ground water flow in public education efforts to make students aware of the potential for contamination.

McCall suggested that the wording should be changed to replace "students" with "the public".

**iii. Objective:** Include water quality results from various public water systems on the Nye County Water District website.

Team approved the objective without further discussion.

# Action Items:

- Add objective: "Educate the public regarding the relationship between public and private wells" (BEC);
- Add objective: "Coordinate the public education plan with the Nye County Water District" (BEC);
- Coordinate with the Pahrump Nuclear Waste and Environmental Advisory Board for ground and surface water demonstrations at the Pahrump Fair and Festival (BEC, Pawlak); and
- Add objective: "Coordinate with existing groups and agencies for public education".
- c. Goal 3: To leverage other programs for possible funding.

Levi Kryder asked what funding sources are available, and Borgzinner replied that there are a number of programs, and it is important to leave the possibilities open for future funding, rather than formulating the Plan to fit into a specific funding opportunity, as it can limit possibilities later.

# Action Item:

• Add objective: "Identify potential funding sources" (BEC).

# IV. Elect Team Roles/Establish Sub Teams

Nominations for each of the Team and Sub Team roles are summarized in Table 1. The Team Lead for each Sub Team is to be determined.

Role	Team Member	
Technical Support Sub Team	Tom Vehe George Sausman Roger McRae Kim Borgzinner Rachel Kryder	
Education and Outreach Sub Team	George Sausman John Pawlak Cheryl Beeman Levi Kryder Donna Lamm	
Regulatory Compliance	Cheryl Beeman Tim McCall	
Mapping/Database Sub Team	Ken Plewe Levi Kryder	

 Table 1. Nominated Members of the CSWP Team

# CSWP Team Meeting Summary 8/5/2010

Plan Development & Review Sub Team	Cheryl Beeman Kim Borgzinner Rachel Kryder
Government Liaison Sub Team	Cheryl Beeman Kim Borgzinner Rachel Kryder
Secretary	TBD
Lead	TBD

Beeman suggested that the Secretary role might be coordinated with the Nye County Water District Governing Board. Kryder suggested that the Lead position also be coordinated with the Nye County Water District Governing Board, which is in line with what the Nye Northern Team determined at their Team meeting on 8/4/10.

# V. Recap Action Items for next Team meeting

Action items identified at the Nye Northern Team Meeting are identified here, in addition to items identified by the Nye Pahrump Team. Action items not previously identified:

- Provide a map of the Nye County Water District boundaries at the next Team meeting (Mapping/Database Sub Team);
- Provide a map depicting public water systems and hydrographic basins in Nye County at the next Team meeting (Mapping/Database Sub Team, BEC);
- Provide Data Gap Analysis to Team members (BEC);
- Contact representatives from the Duckwater and Yomba Tribes to see if they would like to participate in the CSWP effort in Nye County (BEC);
- Obtain the Round Mountain wellhead protection plan from Dan Sweeney (BEC, Sweeney);
- Determine the anticipated completion dates for the Goals at the next Team meeting (Team members);
- Better define the Secretary and Lead positions at the next Team meeting (Team members).
- Provide a status update of Douglas and White Pine Counties' CSWP program, including their timelines at the next Team meeting (BEC); and
- Provide the CSWP Plan outline from Douglas County to Team members as an example and reference (BEC).

# VI. Schedule next Team meeting

The Team agreed that the next Team meeting will be held in Pahrump on Monday, October 25<sup>th</sup>, 2010, following the Nye County Water District Governing Board meeting. This schedule was proposed at the Nye Northern Team meeting on 8/4/10. The meeting will be a joint meeting with both the Nye Northern and Nye Pahrump Teams. It was suggested that the Team may be able to use the new Board of County Commissioners' chambers in Pahrump, where there is video conferencing capabilities for Team members that may not be able to attend from other locations. Nye County Community Source Water Protection Plan

CSWP Team Meeting Agenda October 27, 2010 1:00 PM – 3:00 PM Beatty Community Center, Beatty, NV

#### Overview

- I. Proposed Meeting Schedule
- II. Determine Team Lead and Secretary for Each Team
- **III.** Determine Anticipated Completion Dates for Goals and Objectives
- IV. Review Plan Outline, First Sections of the Plan, and Mapping
- V. Review Inventory of Drinking Water Sources
- VI. Options for Well Delineation Criteria
- VII. Data to be Collected
- VIII. Presentations to Community Boards
- IX. Status Update CSWP in Douglas and White Pine Counties
- X. Recap Action Items for next Team meeting
- XI. Schedule next Team meeting

# Agenda

# I. Proposed Meeting Schedule and Timeline

a. Preliminary program schedule – See attached

# II. Determine Team Lead and Secretary for the Pahrump and Northern Teams

	Team N	lembers
Role	Northern	Pahrump
Secretary		
Lead		
Technical Support Sub Team	Oz Wichman Kim Borgzinner BEC Environmental	Tom Vehe George Sausman Roger McRae Kim Borgzinner BEC Environmental
Education and Outreach Sub Team	Jan Cameron	George Sausman John Pawlack Cheryl Beeman Levi Kryder Donna Lamm
Regulatory Compliance Sub Team	Darrell Lacy	Cheryl Beeman Tim McCall
Mapping and Database Sub Team	Ken Plewe Levi Kryder	Ken Plewe Levi Kryder
Plan Development and Review Sub Team	Jan Cameron Kim Borgzinner BEC Environmental	Cheryl Beeman Kim Borgzinner BEC Environmental
Government Liaison Sub Team	James Eason Kim Borgzinner BEC Environmental	Cheryl Beeman Kim Borgzinner BEC Environmental
Lead	TBD	TBD

#### III. Determine Anticipated Completion Dates for Goals and Objectives

The following are the goals and objectives established during the workshops and revised at the first Team meetings. We will be establishing the anticipated completion dates for the goals already identified, as listed below.

a. Goal 1: Develop a Community Source Water Protection Program to protect the quality of drinking water resources in Nye County that is sustainable by the Community. Anticipated Completion Date: \_\_\_\_\_

#### **Common Team Objectives:**

- i. Prepare a Community Source Water Protection Plan to document the elements of the Community's Program and identify management strategies.
- ii. Address each community within the County individually.
- iii. Review and assess current Wellhead Protection Plans.

#### Northern Team

#### Common Team Objectives and:

- i. Integrate data from multiple sources.
- ii. Identify and consider potential contaminant sources that may not be included in existing databases (abandoned mines, historic dumps, orphan wells).
- iii. Establish a mechanism for development review outside of the Pahrump Regional Planning District.
- iv. Establish greater security for source wells.

#### Pahrump Team

#### **Common Team Objectives and:**

- i. Include individual WHPPs as part of an overall Plan.
- ii. Incorporate all public water systems into WHPP.
- iii. Continue implementation regarding land use planning and/or zoning as it relates to source water protection areas.

- iv. Incorporate water quality data in planning efforts.
- v. Add former meth labs to the list of potential contaminant sources.
- **b.** Goal 2: To raise community members' awareness of source water protection, and how they can help protect their drinking water. Anticipated Completion Date: \_\_\_\_\_\_

#### Northern Team Objectives:

i. Provide public education on topics including storm drains, mine shafts, and desert dumping, as related to source water protection.

#### Pahrump Team Objectives:

- i. Provide public education on what well head protection is, and its importance.
- ii. Stress concepts of ground water flow in public education efforts to make the public aware of the potential for contamination.
- iii. Include water quality results from various public water systems on the Nye County Water District website.
- iv. Educate the public regarding the relationship between public and private wells.
- v. Coordinate the public education plan with the Nye County Water District.
- vi. Coordinate with existing groups and agencies for public education.

#### Pahrump Team Goal:

- c. Goal 3: To leverage other programs for possible funding. Anticipated Completion Date: \_\_\_\_\_
  - i. Identify potential funding sources.

#### IV. Review Plan Outline, First Sections of the Plan, and Mapping

#### a. Plan Outline

See attached. Two outlines were presented to the Document Development and Review Sub Team for review and comment. Changes were made based on comments from the Sub Team. The preferred outline was then distributed to the Team via e-mail on 10/7/10. Thank you to Jan Cameron and Cheryl Beeman.

#### b. Sections 1 and 2 of the Plan

Sections 1 and 2 cover the Introduction and Team Formation. Section 1 and 2 will have been reviewed by the Document Development and Review Sub Team prior to the Team meeting.

#### c. Maps

Maps developed by the Mapping and Database Sub Team. Thank you to Levi Kryder and Ken Plewe.

- i. Map of the Nye County Water District, showing representatives' areas and hydrographic basins.
- ii. Public water system supply locations.

#### V. Review Inventory of Drinking Water Sources

See attached Drinking water source inventory. This inventory was created from data included in existing State endorsed wellhead protection plans as well as from the Nevada Division of Environmental Protection's (NDEP's) Safe Drinking Water Information System (SDWIS) database. The purpose of this inventory is to compare the status and pumping rate of each drinking water well from what was included in existing wellhead protection plans to what is currently on file with NDEP, in order to identify which source water protection areas need to be delineated and/or updated.

#### VI. Options for Well Delineation Criteria

a. Arbitrary Fixed Radius – This method uses the criterion of distance to define a circle of a specified radius around a well. The threshold distance, for the radius, should be selected based on typical aquifer and pumping conditions, which

would result in a distance corresponding to a reasonable time-of-travel based on practical experience.

- b. Calculated Fixed Radius This method uses a specified time of travel threshold to define a radius around a well. A volumetric flow equation is used to calculate the radius of the circle on the ground surface representing the ground water contributing to the well over a period of time.
- c. Analytical This method uses a set of equations to define a steady state capture zone of an infinite time period in unconsolidated and non-fracture flow aquifers where ground water is under a gradient. The equations consider hydrologic conditions for the area around the well, specifically hydraulic conductivity, porosity, hydraulic gradient, saturated thickness and pumping rate. The analytical method calculates the width and down gradient extent of a pumping well's capture zone by utilizing two equations derived from the Uniform Flow Equation.

#### VII. Data to be Collected

- a. Timeline
- b. Who will collect the data?

#### VIII. Presentations to Community Boards

#### IX. Status Update – CSWP in Douglas and White Pine Counties

- a. Douglas County The Douglas County Team has finalized well delineation criteria and is currently finalizing their conceptual model, prior to modeling the source water protection areas.
- **b.** White Pine County The White Pine County Team is currently finalizing their Team and Sub Teams, and will be evaluating data collection criteria to work toward drafting the conceptual model.

#### X. Recap Action Items for next Team meeting

XI. Schedule next Team meeting

# Nye County Community Source Water Protection Plan Team Meeting Beatty Community Center, Beatty, NV October 27, 2010 1:00 – 3:15 p.m.

#### Summary Notes

Meeting Participants:

Tim McCall	Nye County Water District Governing Board (NCWDGB)
Cheryl Beeman	Nye County Nuclear Waste Repository Project Office (NWRPO)
Levi Kryder	NWRPO, Nye County Natural Resources
Ken Plewe	Nye County Public WorksRoger McRae NWRPO
Zoie Choate	NWRPO
James Eason	Tonopah Town Manager, NCWDGB
Dave Hall	Resident, Amargosa Valley
Jan Cameron	Resident, Amargosa Valley
Fred Willis	Beatty Water and Sanitation
Matt Luis	Town of Pahrump
John MacLaughlin	Resident, Pahrump
George Sausman	Anchor Inn MHP, Great Basin College
Kim Borgzinner	Nevada Division of Environmental Protection (NDEP)
Rachel Kryder	BEC Environmental, Inc. (BEC)

# I. Proposed Meeting Schedule

Rachel Kryder began by reminding team members that the meeting schedule is subject to change, and asked if there are any questions. Jan Cameron asked about education outreach and involving the town boards in the schedule. Rachel Kryder stated that the education will be done throughout the entire schedule, and discussion regarding town boards is a topic on the agenda under item 8.

# II. Determine Team Lead & Secretary for Each Team

Cheryl Beeman asked what the time commitment will be. The time commitment was not discussed. Rachel Kryder stated that the team lead will coordinate, support and present to various groups. James Eason was volunteered for the Northern Team, Cheryl Beeman volunteered for the Southern Team. Cheryl Beeman committed Beth McGhee (Nye County) as the Secretary.

# III. Determine Anticipated Completion Dates for Goals and Objectives

Rachel Kryder stated that the target date is February 2012 for completion and official endorsement from the state. Jan Cameron stated that education part needs to be done prior to approvals starting. Rachel Kryder stated that outreach and public education will occur throughout the program. Jan Cameron suggested that the education component should be completed in August, 2011. Jan Cameron stated that the Town and other Advisory Boards should be provided with a draft of the Plan long before being approved. Kim Borgzinner stated that maps of the areas will

be provided and that team members should go to the boards. Tim McCall stated that the boards do not have a good retention span. Jan Cameron stated that the plan will have to be on agendas again and again, but if the maps are included there will be more interest. Fred Willis stated that board members change all the time, and that needs to be kept in mind. Kim Borgzinner asked if there were any elections currently. Jan Cameron stated that four Amargosa Town Advisory Board members resigned recently, but that is the exception rather than the rule. Rachel Kryder stated that the Pahrump Town Board has four year terms, and three Board members are currently up for re-election.

# IV. Review Plan Outline, First Sections of the Plan, and Mapping

Rachel Kryder stated that the plan outline has been reviewed by the Plan Development and Review sub-team. There was discussion regarding the format section 3 being somewhat redundant, due to the fact that each community within the County will need to be discussed separately for topics such as hydrogeology.. The team reviewed the preliminary map and made suggestions for changes. During discussion while reviewing mapping provided by Levi Kryder, Kim Borgzinner suggested that the Team may want to list inactive systems in the Plan, as it may be relevant with respect to potential contaminant sources, possible future updates, and future implementation strategies.

# V. Review Inventory of Drinking Water Sources

James Eason asked if the Blue Jay NDOT rest stop was included as a public water system. Rachel Kryder stated that it is not. Historic nuclear testing in Nye County was discussed, and Rachel Kryder stated that past nuclear testing could be listed as a potential contaminate source, and be included in the Plan, if it is near a public water system.

# VI. Options for Well Delineation Criteria

The Team agreed that thresholds for re-delineation of capture zones will be reviewed by the Technical Support Sub Team. There was discussion on whether an analytical model will be done for all systems, or whether the arbitrary or calculated fixed radius methods can be utilized. Kim Borgzinner stated that the modeling method is dictated by the data availability, rather than by the Technical Support Sub Team; the analytical method should be used unless there is not sufficient data.

# VII. Data to be Collected

Levi Kryder asked what the modeling resolution would be, and neither Kim Borgzinner nor Rachel Kryder had an immediate answer, but stated that they would forward a link to the WhAEM 2000 software to all Team members.. Fred Willis stated he will start going through his files to find pumping tests. Rachel Kryder stated there will be a master spreadsheet containing modeling parameters for each system, and the operators for each system will be sent the information specific to their system(s) for verification and completion. James Eason stated new information will not be available until March for Tonopah Public Utilities. Cheryl Beeman
suggested getting the old information and then updating in March. Rachel Kryder stated that Tonopah was originally delineated in 2005, and the pumping rates have remained the same, so those wells will likely not be re-delineated. Rachel Kryder stated that the pumping rates for the wells within the Beatty Water and Sanitation District have changed from when they were originally delineated, and she will work with Fred Willis to get the correct information.

## VIII. Presentations to Community Boards

There was discussion on talking to Town and other Advisory Boards sooner rather than later. Levi Kryder suggested hosting informational workshops. Kim Borgzinner suggested using flyers from the EPA's website called "Your Water Your Choice". Rachel Kryder stated she will send out the information to the education sub team. Ken Plewe also suggested doing some public service announcements and providing information to the Pahrump Valley Times.

## IX. Status Update – CSWP in Douglas and White Pine Counties

No discussion.

## X. Recap Action Items for Next Team Meeting

The next team meeting will be in January 2011, and a Technical Support Sub Team meeting will be scheduled for November to review the modeling parameters. A Public Education and Outreach Sub Team meeting will be scheduled for November or December. The goal for the January Team meeting is to have the majority of the data collected and maps drafted.

## XI. Schedule Next Team Meeting

Next meeting will be on January 13, 2011 at 1:00pm in Beatty, Nevada.

#### Nye County Community Source Water Protection Plan

CSWP Team Meeting Agenda March 14, 2010 10:30 AM – 12:30 PM Beatty Community Center, Beatty, NV

#### Overview

- I. Current Program Status Update
- II. Mapping Overview
- **III. Remaining Data Gaps**
- **IV. Identification of New Water Sources**
- V. Housing CSWP Data
- VI. Next Program Steps
- **VII. Outreach Opportunities**
- VIII. Recap Action Items for next Team Meeting
- IX. Schedule next Team Meeting
- X. Schedule Sub Team Meeting(s)

# Agenda

# I. Current Program Status Update

- a. Data collection
- b. Mapping

## II. Modeling and Mapping Overview

a. Modeling summary

System	Modeling Method	Delineation Status		
Amargosa Desert				
Amargosa Elementary School	Calculated Fixed Radius (CFR)	New		
Amargosa Park	Calculated Fixed Radius	New		
Amargosa Senior Center	Calculated Fixed Radius	New		
Amargosa Town Complex	Analytical	Existing		
Amargosa Valley Resort INC	Calculated Fixed Radius	New		
Amargosa Valley VFW Post 6826	Calculated Fixed Radius	New		
Amargosa Water Company	Calculated Fixed Radius	New		
Crystal Park Nye County Park	Calculated Fixed Radius	New		
Crystal Springs Bar Restaurant	Calculated Fixed Radius	New		
Far East Bar	Calculated Fixed Radius	New		
Fort Amargosa RV Park	Calculated Fixed Radius	New		
Horizon Academy	Calculated Fixed Radius	New		
ongstreet Inn and Casino Calculated Fixed Radius		New		
NDOT Lathrop Wells Roadside Park RP801NY	Calculated Fixed Radius	New		
Patch of Heaven	Calculated Fixed Radius	New		
Short Branch	Calculated Fixed Radius	New		
Big Smoky Valley - Tonopah Flat				
Manhattan Town Water	Modified Arbitrary Fixed Radius	Existing		
Big Smoky Valley - Northern				
Carvers Café	Calculated Fixed Radius	New		
Carvers Smokey Valley RV and MHP	Calculated Fixed Radius	New		
NDOT Big Smokey Roadside Park RP807NY	Calculated Fixed Radius	New		
Round Mountain PUC	Analytical	New		
Shoshone Estates Water Company	Calculated Fixed Radius	New		
Smoky Valley Mine	Analytical	New		
White River Valley		ng pengengan pengenakan sebengkan sebengkan sebengkan sebengkan sebengkan sebengkan sebengkan sebengkan sebeng Sebengkan sebengkan se		
NDOT Sunnyside Roadside Park RP810NY	Calculated Fixed Radius	New		
Ralston Valley				

Tonopah Public Utilities	Analytical	Existing		
Ione Valley				
Berlin Icthyosaur State Park	Calculated Fixed Radius	New		
Ione Water System	Calculated Fixed Radius New			
Gabbs Valley		lan an an an Anna Anna Anna Anna Anna An		
Gabbs Water System	Arbitrary Fixed Radius	Existing		
Sarcobatus Flat				
Shady Lady	Calculated Fixed Radius	New		

#### Summary:

Sources with existing delineations:	14
Sources with new CFR delineations:	30
Sources with new analytical delineations:	5

## **b.** Mapping presented by Levi Kryder (Nye County)

## III. Remaining Data Gaps

System	Data Needed
lone	
Ione Water System	Correct well driller's log
Beatty	
Beatty Water and Sanitation District	Updated pumping rates and status for all wells; location data and well driller's log for Well 3
Pahrump	
Carberry Square	Current pumping rate
Coyote Corner Market	Current pumping rate
Desert Utilities	Well driller's logs, new pumping rates
Escapee Coop	Current pumping rate for the newest well
Just Country Bar	Location data, well driller's log
Mountain Falls Water System (UICN)	Well driller's logs
Pahrump Utility Company	Well 3 pumping rate and location information, well driller's logs for Wells 1 and 3

## IV. Identification of New Water Sources

## V. Housing CSWP Data

- a. What organization(s) will be responsible for housing data?
- **b.** What security precautions should be taken?

#### VI. Next Program Steps

**a.** Please refer to the Plan Completion Matrix

## VII. Outreach Opportunities

- **a.** Earth Day in Pahrump April 23, 2011
- **b.** Other upcoming opportunities?
- VIII. Recap Action Items for Next Meeting
  - IX. Schedule Next Team Meeting
  - X. Schedule Sub Team Meeting(s)

## March 3, 2011, CSWP Meeting Minutes

The meeting minutes for the March 3, 2011, CSWP Team meeting are unavailable due to a change of responsibilities within the Team. The topics discussed during the March 3, 2011, CSWP Team meeting are available in the March 3 2011, Team Meeting Agenda.

## Nye County Community Source Water Protection Plan

CSWP Team Meeting Agenda Wednesday, August 3, 2011 - 10:00 AM 2100 E. Walt Williams Drive BoCC Chambers Pahrump, NV 89048

Videoconference locations accessible to the public: Beatty, Nevada: Beatty Justice Center, 426 C. Avenue South Pahrump, Nevada: Board of Commissioners Chambers, 2100 Walt Williams Dr. Tonopah, Nevada: Board of Commissioners Chambers, 101 Radar Road

There may be a quorum of the Nye County Water District Governing Board, and/or Pahrump Nuclear Waste and Environmental Advisory Board present but no deliberations shall occur, and no action shall be taken.

All agenda items are for presentation and discussion only.

- 1. Public Comment
- 2. Current Program Status Update
- 3. Draft Source Water Protection Area Review
- 4. Next Program Steps
- 5. Public Education and Outreach Sub Team Meeting Summary
- 6. Recap Action Items for next Team Meeting
- 7. Schedule next Team Meeting
- 8. Schedule Sub Team Meeting(s)
- 9. Public Comment

Nye County Community Source Water Protection Plan August 3, 2011 Page 2

The goals of the Community Source Water Protection Program in Nye County, as identified by the Team are:

**Goal 1:** Develop a Community Source Water Protection Program to protect the quality of drinking water resources in Nye County, which is sustainable by the Community.

**Goal 2:** Raise community members' awareness of source water protection, and how they can help protect their drinking water.

**Goal 3:** To leverage other programs for possible funding in support of source water protection in Nye County.

## Nye County Community Source Water Protection Team Meeting

Pahrump Board of County Commissioners (BoCC) Chambers, Tonopah BoCC Chambers (via video conference) Beatty Justice Court (via video conference) 10:00 a.m.-1:00 p.m. August 03, 2011

## Meeting Participants

*Participating from Pahrump:* Tim McCall (Nye County Water District Governing Board) Levi Kryder (Nye County Nuclear Waste Repository Project Office (NWRPO), Natural Resources) Cheryl Beeman (Nye County NWRPO, Pahrump Nuclear Waste and Environmental Advisory Board (PNWEAB)) Roger McRae (Nye County NWRPO) Liz Enriquez (Nye County NWRPO) Walt Kuver (Consultant for Nye County Water District) Scott Lewis (Pahrump Valley Fire Rescue) Jose Nunez (Utilities, Inc. of Central Nevada) George Sausman (Anchor Inn MH, PNWEAB) John Pawlak (PNWEAB) Kim Borgzinner (NDEP) Rachel Kryder (BEC Environmental, Inc. (BEC)) John Yvon (BEC)

*Participating from Beatty:* Fred Willis (Beatty Water and Sanitation District)

Participating from Tonopah:

James Eason (Tonopah Town Manager, Nye County Water District Governing Board) Ray Dummar (Town of Gabbs) Sara Keehfuss (Round Mountain Gold Corp., Manhattan Resident)

## <u>Summary</u>

R. Kryder began the meeting by calling for public comment, but no members of the public were present to comment. R. Kryder then summarized the current status of the program and presented the following timeline for completion of the draft Community Source Water Protection (CSWP) Plan (Plan) in Nye County, stressing the importance of adhering to the schedule as closely as

possible for success, and she added the schedule allows for one round of revisions to the source water protection area (SWPA) mapping.

## Project Timeline

August 3, 2011	Modeling/SWPA maps submitted to NDEP and the Team for review and
	comment
August 24, 2011	Modeling/SWPA map comments back to BEC
September 2, 2011	Revised models due
September 9, 2011	Revised maps due
September 14, 2011	Team meeting – review revised SWPAs
September 19-	
October 14, 2011	Contaminant Source Inventory (CSI) field work
October 27, 2011	CSI mapping due
November 2, 2011	Team meeting (date tentative) – review CSI, discuss management strategies
November 7-22,	Prepare draft CSWP Plan document
2011	
November 23, 2011	Draft CSWP Plan document due to NDEP and the Team for review
December 14, 2011	Team meeting (date tentative) – review document
December 16, 2011	Draft document comments due back to BEC
January 13, 2012	Final draft plan due to NDEP and Team

The Team then began discussing the source water protection areas for individual communities. The discussion is presented organized by community:

## Gabbs

One public water system was included in Gabbs, which is the Gabbs Town Water system, owned and operated by Nye County. Borgzinner pointed out the location for well W01 and the SWPA need to be verified and corrected if necessary, as there appeared to be a shift in the mapped previously-delineated capture area. R. Kryder brought up there is a new well in Gabbs, which was not yet completed and in production. The location was not yet mapped, and the modeling method had not been determined, and there was not sufficient data for analytical modeling yet. Dummar stated the new well would not be completed for about two years. Borgzinner agreed an arbitrary fixed radius (AFR) model would be acceptable for the time being, but the SWPA should be remolded when the well is put into production. Dummar added well 2 is currently used as a non-potable water source, and Borgzinner stated until well 2 is physically disconnected from the potable water system, its SWPA should remain on the map.

#### Berlin & Ione

There are two non-community public water systems in the Ione Valley. R. Kryder stated the calculated fixed radius (CFR) method using the maximum pumping rate was used to model all wells in both systems and the delineations contain zones representing 6 month, 2 year, 5 year, and 10 year times of travel. There was some discussion regarding delineating protection zones based on drainage basins that contribute runoff toward each well location, similar to the previous delineations for Town of Manhattan wells, but Dummar stated there are (literally) only a few people living in Ione. R. Kryder added surface drainage is not necessarily indicative of subsurface flow direction. Bearing these things in mind, Borgzinner and the Team agreed from a cost effective standpoint, the current CFR models are sufficient.

## Smoky Valley

There are a number of community and non-community systems in Smoky Valley, including the Town of Round Mountain and the Smoky Valley Mine. R. Kryder stated all wells were modeled using their maximum pumping rate. Carvers Café W01, Nevada Division of Transportation (NDOT) W01, Carvers RV and Mobile Home Park (MHP) W01 and W02, and Shoshone Estates Water Company W01 and W02 were modeled using the CFR method. Smoky Valley Mine W01, W02 and W03 as well as Round Mountain W01 and W02 were analytically modeled. All SWPAs are new delineations. There was some discussion regarding the modeling method for Shoshone Estates and Carver's Smoky Valley RV and MHP wells, as they are both community systems. R. Kryder stated Shoshone Estates wells had sufficient available data to be modeled using the analytical method; however, Carver's Smoky Valley RV and MHP wells do not. One option available was to model both systems using the transmissivity, ground water flow direction, and hydraulic gradient from Shoshone Estates wells. There were no opinions from Team members regarding the modeling method for the two systems. BEC recommended utilizing the CFR method, as it may be much easier to explain to residents in the area, relative to management strategies, and would be a more conservative area than an analytical model. McRae stated he recalled the location of the NDOT Big Smoky Roadside Park's well being on the other side of the highway from where it was depicted on the map, and suggested verification. R. Kryder pointed out the ground water flow direction indicated by the modeled SWPAs for the Smoky Valley Mine and Town of Round Mountain wells were based on the pumping center the wells would create at their maximum pumping rate.

## Tonopah (Ralston Valley)

The Town of Tonopah is served by Tonopah Public Utilities, which is the only public water system within the scope of the CSWP Program in the Ralston Valley hydrographic basin. Drinking water wells for the system are located approximately 14 miles east of the Town of

Tonopah. Tonopah Public Utilities is a community system owned and operated by the Town of Tonopah. R. Kryder stated the water system for the Town of Tonopah has a previously endorsed Wellhead Protection Plan, and the existing SWPA is not recommended for updating, as it encompasses the entire hydrographic basin north of the Tonopah Public Utility wells. Eason stated Tonopah Public Utilities was in the process of adding an additional two wells approximately four miles north of the existing Tonopah Public Utilities northernmost well. The exact locations of the two new wells had not yet been decided, but would still be well within the existing SWPA.

## Manhattan

The Town of Manhattan is served by a public water system owned and operated by Nye County. R. Kryder stated the Town of Manhattan water system has a previously endorsed Wellhead Protection Plan, and the shape files for the SWPAs for Manhattan wells are still needed from NDEP. The Manhattan Town Water Wells were modeled using the modified AFR method. No new delineations were planned, as the active well and possible future backup well were both included in the previous Plan.

## Shady Lady Water System

The Shady Lady water system is a non-community system serving a brothel located in the Sarcobatus Flat hydrographic basin. R. Kryder stated the well was modeled using the CFR method and maximum pumping rate. Team members provided no comments on the SWPA delineation.

## Beatty

The Beatty area contains three public water systems; one community system and two noncommunity systems. R. Kryder stated the Beatty RV Park system well was modeled using the AFR method (3,000 ft radius). The area's geology is complex and there was insufficient data for CFR or analytical modeling. Bailey's Hot Springs' well will be modeled using the AFR method. The Beatty Water and Sanitation District had a previously endorsed Wellhead Protection Plan, and SWPAs are not recommended for update, as none of the pumping rates had increased over the modeled rates used in the previously endorsed Plan. The previous SWPA for one former Barrick Well (south of Beatty) would be removed; as it was not included in Beatty Water and Sanitation's system (another well donated by Barrick was still part of the system). Shape files were needed from NDEP for Beatty Water and Sanitation District wells W02, W03, and W05. Willis stated Beatty Water and Sanitation District wells W01, W02, and W03 were backup wells, and well W05 was not currently in production, but may be put back into production in the fall. All of the wells were still connected to the system, so their SWPAs would remain included in the Plan.

## Crystal

There are four non-community public water systems in Crystal, which is a community located within the Amargosa Hydrographic basin. R. Kryder stated all systems in Crystal were modeled using the CFR method, and a pumping rate of fifty gallons per minute (50 gpm) was assumed for some systems where no pumping rate data was available. All SWPAs were new delineations.

## Amargosa Valley

Amargosa Valley contains numerous public water systems, both community and noncommunity. Although a Wellhead Protection Plan was completed for Amargosa Valley in 2006, the Plan only covered three systems, and only one of those was not recommended for remodeling. All other SWPAs for Amargosa Valley were new delineations modeled using the CFR method and the maximum pumping rate. Borgzinner stated previous SWPAs for the Amargosa Senior Center well W02, Amargosa Elementary School well W01 and Amargosa Town Complex well W01 were modeled using now unknown variables. L. Kryder added that long skinny SWPAs (such as the previously-delineated SWPAs) imply there is a large hydraulic gradient or preferential flow direction, and that assumption can't be made without more data. Borgzinner stated the delineation method was up to the Team to decide, and NDEP was also not comfortable with long skinny SWPAs. Borgzinner suggested the previous SWPAs may be left in the Plan as historic SWPAs, or included in an Appendix. L. Kryder suggested considering the capture zones for the dairy in Amargosa Valley, and agreed to try to obtain data for the dairy wells. These wells may cause a cone of depression that could affect surrounding wells. The dairy wells were privately modeled and that data may provide information on ground water flow. McRae also suggested including the well that may eventually serve the Amargosa Valley Science and Technology Park as a future source.

## Pahrump

There are numerous community and non-community public water systems in Pahrump. R. Kryder stated many wells in Pahrump have previously endorsed SWPAs but the SWPA shape files obtained from NDEP do not align properly with current well locations for some wells, and several shape files were still needed from NDEP. This problem would need to be corrected. L. Kryder agreed to work with NDEP to correct the problem. The Team discussed the modeled SWPAs for Desert Utilities wells (W01-W05), which were analytically modeled using the maximum pumping rate. There was some concern the apparent flow directions may not be accurate for those wells. Some Team members speculated the flow results may be a result of the

wells being modeled together (rather than separately), as well as a lack of available water level data for wells surrounding the system. How these wells should be modeled will be based on comments made by the CSWP Team. Several options suggested during the meeting were:

- Model the five wells cycling one as inactive then combine the models into one.
- Model each well individually then combine them to form one model.
- Join the boundaries of the current capture zones to form one model.
- Create one model using combinations of some or all options listed above.

Nunez stated the Country View Estates well W03 had been abandoned, and the locations of the Country View Estates wells may not be accurate, as depicted in the maps presented in the meeting. Nunez agreed to review his records and provide the information to BEC. R. Kryder stated Pahrump Utility Company, Inc (PUCI) well W01 (south of PUCI W02) had been redrilled but was not yet completed, and if PUCI completed the work and could get the necessary information before the Plan was finalized, PUCI well W01 could be included in the Plan. Borgzinner suggested leaving the previous delineation in the Plan for PUCI well W01 in the mean time. The Team agreed overlapping SWPAs should be combined, including combining SWPAs for Mountain Falls Water System UICN W01, Mountain Falls Water System UICN W02, and PUC W03 into a single model, and combining SWPAs for PUCI W04 and W05 into a single model. The models for Carberry Square W01 and LJ's Market W01 would be combined into a single model. Borgzinner suggested the well location symbol could be made smaller so wells with small SWPAs could be seen more clearly on the maps. McCall stated the newly reopened convenience store that was formerly the Eagle's Nest should now be an active public water system. R. Kryder agreed to look at the Safe Drinking Water Information System (SDWIS) database to find out if the system was active. Borgzinner suggested wells currently inactive but previously delineated should be included in the Plan, but if a well was inactive and had not been previously delineated it should not be included. Borgzinner added the process for adding wells to the CSWP Plan should be addressed in the management portion of the Plan.

Below is a summary of the modeling method used for new delineations in Pahrump. Wells not listed may have a previous SWPA, but were not remodeled as of this meeting.

Calculated Fixed Radius (CFR)	Analytical
Just County Bar W01	Desert Utilities W01, W02, W03, W04, W05
Pahrump Café W01	Calvada Meadows UICN W01
Desert Center Plaza W01	Sunset MHP W01 and W02
The Maverick W01	Nye County Complex W01, W02
Stagestop Restaurant W01	Pleasant Valley W01, W02
Town Hall Bar W01	Pahrump Utility Company Inc. W03, W04,
	W05
Coyote Corner Market W02	Mountain Falls Water System UICN W01,

Well Modeling Method

Quick Save Market W01 Carberry Square W01 LJ's Market W01 Spring Mountain Motor Sports Ranch W01 Sanders Winery W01

## NDOT Sunnyside Water System

R. Kryder stated the NDOT Sunnyside system consists of a single well serving an NDOT rest stop in White River Valley, and was modeled using the CFR method and the maximum pumping rate. There were no Team comments regarding this SWPA.

## Public Education and Outreach Sub Team Meeting Summary

R. Kryder summarized the Public Education and Outreach meeting, which took place in Pahrump on June 30, 2011. The Sub-team decided the primary and secondary audiences should be revised. The primary audience was changed to government bodies (from public water systems and the general public). The secondary audience was changed to public water system users (from county students). The Sub-team also decided the draft Plan (once available) should be incorporated into public forums and be open for public comment.

## Next Team Meeting

Team members agreed the next Team meeting would take place on Wednesday September 14<sup>th</sup>, 2011, at 10:00 am at the Pahrump BoCC chambers, and via video conference at the Tonopah BoCC chambers and the Beatty Justice Court.

R. Kryder concluded the meeting by calling for public comment, but no members of the public were present to comment.

#### Nye County Community Source Water Protection Plan

## CSWP Team Meeting Agenda Friday, September 23, 2011 - 10:00 AM 2100 E. Walt Williams Drive BoCC Chambers Pahrump, NV 89048

Videoconference/teleconference locations accessible to the public: Beatty, Nevada: Beatty Justice Center, 426 C. Avenue South Pahrump, Nevada: Board of Commissioners Chambers, 2100 Walt Williams Dr. Tonopah, Nevada: Administration Conference Room, 101 Radar Road

There may be a quorum of the Nye County Water District Governing Board, and/or Pahrump Nuclear Waste and Environmental Advisory Board present but no deliberations shall occur, and no action shall be taken.

All agenda items are for presentation and discussion only.

- 1. Public Comment
- 2. Current Program Status Update
- 3. Revised Source Water Protection Area Review
- 4. Review Next Program Steps
- 5. Discuss Potential Contaminant Source Management Strategies
- 6. Recap Action Items for next Team Meeting
- 7. Schedule next Team Meeting
- 8. Schedule Sub Team Meeting(s)
- 9. Public Comment

Nye County Community Source Water Protection Plan September 23, 2011 Page 2

# The goals of the Community Source Water Protection Program in Nye County, as identified by the Team are:

**Goal 1:** Develop a Community Source Water Protection Program to protect the quality of drinking water resources in Nye County, which is sustainable by the Community.

**Goal 2:** Raise community members' awareness of source water protection, and how they can help protect their drinking water.

**Goal 3:** To leverage other programs for possible funding in support of source water protection in Nye County.



## Environmental Consulting

## Nye County Community Source Water Protection Team Meeting September 23, 2011 Meeting Summary 10:00 a.m. to 12:40 p.m.

## Attendees:

Participating from Pahrump: Tim McCall, Nye County Water District Governing Board (NCWDGB) John MacLaughlin, Citizen, NCWDGB Levi Kryder, Nye county Nuclear Waste Repository Project Office (NWRPO), Nye County Natural Resources Cheryl Beeman, Nye County NWRPO, Pahrump Nuclear Waste and Environmental Advisory Board (PNWEAB) Elizabeth Enriquez, Nye County NWRPO George Sausman, Anchor Inn MHP, PNWEAB John Pawlak, PNWEAB David Brickey, Terraspectra Geomatics (consultant to Nye County) Kim Borgzinner, NDEP Rachel Kryder, BEC Environmental, Inc. (BEC) John Yvon, BEC

*Participating from Tonopah:* Clay Self, Round Mountain Gold

*Participating from Beatty:* None

## Agenda Focus/Meeting Purpose:

This was the sixth Nye County Community Source Water Protection (CSWP) Team meeting. The purpose of the meeting was to review the revisions to the source water protection area (SWPA) maps in preparation for their finalization.

## SWPA Map Review:

Gabbs

During the Team's August 3, 2011, review of SWPA maps for the Gabbs area, members noted the SWPAs from the 2006 Gabbs Wellhead Protection Plan and their associated well locations were not aligned. Additionally, the Team recommended combining overlapping SWPAs.



The locations for Gabbs Wells 1 and 2 were subsequently corrected, which had the affect of properly aligning them with the existing SWPAs. The future supply well was included with an arbitrary fixed radius (AFR) SWPA. Overlapping SWPAs were combined, per the Team's suggestion. Team members had no additional comments after reviewing the revised Gabbs SWPA maps.

## Smoky Valley

The locations for the NDOT rest stop in the Carvers area and the Carvers Smoky Valley mobile home park wells were corrected, based on Team member information presented at the August Team meeting and information from Nye County's GIS web application, the Nye County Assessor's web page, and Google Earth. The SWPAs for the NDOT rest stop and Carvers Smoky Valley MHP well were combined, as they overlapped. However, Borgzinner suggested the outer-most areas be joined for four wells, as there was a small area between them not included in a SWPA. No changes were made to the Round Mountain and Smoky Valley Mine system delineations. The SWPAs still needed to be combined. In answer to a question previously raised during the August meeting, R. Kryder stated the wells in the Round Mountain and Smoky Valley Mine systems were modeled together, rather than separately.

## Tonopah

No changes were made to the Tonopah wells or SWPA. R. Kryder pointed out there may still have been some shape file shifting issues, as the SWPA appeared to extend beyond some ridge lines that define the boundaries of Ralston Valley. Team members had no comments regarding the delineation.

## Manhattan

The SWPA shown on the Manhattan map was a portion of the SWPA for Ralston Valley. R. Kryder stated it probably should not cover Manhattan. The previously endorsed SWPAs will be used for the Manhattan wells. L. Kryder was working with NDEP to obtain the correct shape files for Manhattan SWPAs. Team members had no comments regarding the delineations.

## Shady Lady Ranch

The Shady Lady Ranch well was modeled using the calculated fixed radius (CFR) modeling method. The well had a pumping rate of only one gallon per minute (gpm). No changes were made to the SWPA for the Shady Lady well, and Team members had no comments regarding the delineation.

## Beatty

The Bailey's spring system was modeled using the arbitrary fixed radius (AFR) method because there was insufficient data for another modeling approach. The geology around Bailey's spring is very complex and would require an extensive analysis in order to obtain data. Shape files for three Beatty Water and Sanitation District wells and their associated SWPA time of travel boundaries were still needed from NDEP, as only the outermost boundaries were shown. One



SWPA south of Beatty needed to be removed, as there was no well associated with it. Team members had no additional comments regarding the SWPA delineations in Beatty.

## Crystal

The Crystal SWPAs were combined, per discussion at the August CSWP meeting, and the Mabel's Far East Bar well location was corrected. Team members had no comments regarding the SWPA delineations in Crystal.

#### Armargosa Valley

The NC-EWDP-4PD well was being changed from a monitoring well to a production well to serve the future Amargosa Valley Science and Technology Park, and had been identified as a future drinking water source. An AFR SWPA for the well was added, as there was insufficient data for an alternative modeling method. The locations for the Armargosa VFW well and Armargosa Water Company wells were corrected, and their respective SWPAs shifted. Team members had no comments regarding the SWPA delineations in Amargosa Valley.

#### NDOT Sunnyside Rest Stop

The NDOT Sunnyside Rest Stop well was modeled using the CFR modeling method, and was not updated after the Team meeting in August. Team members had no comments regarding the SWPA delineation for the NDOT Sunnyside Rest Stop.

## Pahrump

The locations for Country View Estates system wells were corrected, but R. Kryder stated the locations still needed to be verified in the field. Country View Estates wells 48 and 48A were plotted on top of each other since they were in very close proximity to one another. The SWPA shifting issues were still being corrected. In response to a question that arose at the last meeting, R. Kryder clarified wells in close proximity to one another were modeled together. Borgzinner asked why the outline for some analytically modeled SWPAs did not appear to be smooth. R. Kryder stated the SWPA boundaries were hand-drawn based on the particle paths. L. Kryder added the particle paths have been provided to Nye County, but were not shown on the maps.

R. Kryder stated the five Desert Utilities wells were modeled together using their maximum pumping rate. R. Kryder stated there were a number of corrections made to well locations. The Nye County Complex wells were remodeled as a result of the spatial change caused by well location corrections. Wells whose SWPAs overlapped and were modeled using the CFR method have had their SWPAs joined. Wells in close proximity to one another, and modeled analytically, had a polygon drawn showing approximately the outer boundary of their combined SWPAs. R. Kryder asked the Team if hand drawn SWPAs should be used, or if Team members had another preference. McCall agreed with using the hand drawn SWPAs. Borgzinner asked if commercial and industrial areas should also be highlighted on the map, so when there is new development in those areas, precautions can be taken. L. Kryder stated wells on the valley floor were better modeled as a fixed radius shape, due to valley floor's general hydrogeologic properties. Brickey suggested a function in GIS could be used to join SWPAs.

McCall said an additional Utilities Inc. well in the vicinity of wells 9 and 11 was not depicted on the map. The Team discussed the potential for considering utility wells not currently connected to distribution systems as potential contaminant sources (PCSs), as the wells could provide a direct conduit to the aquifer. L. Kryder stated, after several map iterations, many SWPAs and wells did not match up and the original modeling parameters are not known. L. Kryder stated that for certain wells he would not be comfortable using the previous SWPA without the data used to delineate that SWPA. Borgzinner suggested the existing SWPAs should be used where practicable and wells should be remodeled only as needed. McCall said for larger utility wells, additional modeling or data collection should hold priority. Borgzinner stated the plan should move forward having this as a goal, and as a last resort wells can be modeled using AFR. Borgzinner suggested showing both the combined and uncombined SWPAs for those systems where analytically delineated SWPAs have been combined, similar to those shown on the maps.

## Next Steps:

- Complete desktop contaminant source inventory
- Complete contaminant source inventory field survey

## Action Items:

- L. Kryder will finalize mapping.
- The contaminant source inventory (CSI) will get underway.
- R. Kryder, with the help of Jose Nunez (Utilities, Inc. of Central Nevada), will verify the location of the Utilities, Inc. of Central Nevada wells.
- L. Kryder will work with NDEP to obtain remaining shape files.
- R. Kryder will forward a list of PCSs and the classification table to the Team.
- R. Kryder will forward L. Kryder, Eric Schmidt's (Douglas County) contact information.
- With the next meeting in mind, the Team will begin reviewing potential management strategies, and their applicability to Nye County.
- The Team will review the goals and objectives at the next Team meeting.
- BEC will contact Team members to improve attendance at the next Team meeting.

## Next Meeting:

The next meeting will be held on October 21, 2011, from 10:00 am to 12:00 pm and 1:00 pm to 3:00 pm.

Respectfully submitted,

John Yvon Resource Specialist Date: October 25, 2011 Project: NDEP Task Order 24 Project No. 018.10.24B

## Nye County Community Source Water Protection Plan

## CSWP Team Meeting Agenda Friday, October 21, 2011 - 10:00 AM 2100 E. Walt Williams Drive BoCC Chambers Pahrump, NV 89048

Videoconference/teleconference locations accessible to the public: Pahrump, Nevada: Board of County Commissioners Chambers, 2100 E. Walt Williams Dr. (Host Location) Beatty, Nevada: Beatty Justice Center, 426 C. Avenue South Tonopah, Nevada: Board of County Commissioners Chambers, 101 Radar Road

There may be a quorum of the Nye County Water District Governing Board and/or Pahrump Nuclear Waste and Environmental Advisory Board present; however, no deliberations shall occur, and no action shall be taken.

All agenda items are for presentation and discussion only.

- 1. Public Comment
- 2. Review Contaminant Source Inventory
  - a. Completed and Pending Inventories
  - b. Identified Potential Contaminant Sources
- 3. Overview of Development Process in Pahrump
- 4. Review Goals and Objectives
- 5. Discuss Potential Contaminant Source Management Strategies
- 6. Confirm Action Items for next Team Meeting
- 7. Schedule next Team Meeting
- 8. Public Comment

Nye County Community Source Water Protection Plan October 21, 2011 Page 2 of 6

#### 1. Public Comment

- 2. Review Contaminant Source Inventory
  - a. Completed and Pending Inventories
  - b. Identified Potential Contaminant Sources

## **Possible Potential Contaminant Sources**

PCS CODE	CLASS	SOURCE	CA	CATEGORY			RISK RANKING	
CODE			Α	В	С	D	Е	KAIMIII
1		Animal burial areas			Х	Х		High
2		Animal feedlots		х	х	х		Moderate to High
3		Chemical application (e.g. pesticides, fungicides, & fertilizers)		х	x			High
4	Agricultural	Chemical mixing & storage areas (including rural airports)	х	х	х			High
5		Irrigated fields		Х				Moderate
5		Irrigation ditches			Х			High
6		Manure spreading & pits	Х		Х			Moderate
7		Unsealed irrigation wells	Х		Х			High
8		Chemical manufacturers,	x	x	x			High
0		warehousing/distribution activities	~	~	~			
9		Electroplaters & fabricators			Х			High
10	Industrial	Electrical products & manufacturing			Х			High
11	maastnar	Machine & metalworking shops	Х					High
12		Manufacturing sites	Х	Х	Х			High
13		Petroleum products production, storage & distribution centers	х					High
14		Dry cleaning establishments	Х					High
15		Furniture & wood stripper & refinishers	Х					High
16	– Commercial	Jewelry & metal plating			Х			High
17		Laundromats						Low
18		Paint shops	Х					High
19		Photography establishments & printers			Х			High
20		Auto repair shops	Х					High
21	Automotive	Car washes	Х		Х	Х		Moderate
22	7	Gas stations	Х					High

## Nye County Community Source Water Protection Plan October 21, 2011 Page 3 of 6

\_\_\_\_\_

PCS CODE	CLASS	SOURCE	CA	CATEGORY			RISK RANKING	
			А	B	С	D	Е	
23		Road deicing operations: storage & application areas (e.g. road salt)			х			Moderate
24		Road maintenance depots	Х		Х			High
25		Household hazardous products	Х	Х	Х			Moderate
26	Destals a tisk	Private wells	Х	Х	Х	Х		Moderate
27	Residential	Septic systems, cesspools		х	х	х		Moderate to High
28	Medical /	Educational institutions (labs, lawns, & chemical storage areas)		х	х			Moderate
29	Educational	Medical institutions (medical, dental, vet offices)				Х		Low
30		Research laboratories	Х	Х	Х	Х		High
31		Aboveground storage tanks	Х					High
32	Storage	Underground storage tanks	Х					High
33	Storage	Public storage	Х					Low
34		Radioactive materials storage					Х	High
35		Dumps and landfills (historical/active)	Х	Х	Х	Х	Х	High
36		Municipal incinerators		Х	Х	Х		Moderate
37	Municipal	Recycling & reduction facilities			Х			High
38	Waste	Scrap & junkyards	Х		Х			High
39		Septage Lagoons, wastewater treatment plants		Х	Х	Х		High
40		Sewer Transfer Stations		Х	Х	Х		High
41		Airports	Х					High
42		Asphalt plants	Х					High
43		Boat yards	Х					High
44		Cemeteries				Х		Moderate
45		Construction areas	Х					Moderate
46		Dry wells	Х			Х		High
47		Fuel storage systems	Х					High
48		Golf courses, parks & nurseries (chemical application)		х	х			High
49	Miscellaneous	Mining (surface & underground)	Х		Х			High
50		Pipelines (oil, gas, coal slurry)	Х					High
51		Railroad tracks, yards & maintenance	Х	Х	Х	Х		High
52		Surface water impoundments, streams/ditches				Х		High
53		Stormwater drains & retention basins	Х	Х	Х	Х		High
54	1	Unplugged abandoned well	Х	Х	Х	Х		High
55		Well: operating	Х	Х	Х	Х		High – Low
56		Other	Х	Х	Х	Х	Х	High – Low
57	1	Business	Х	Х	Х	Х	Х	High – Low

## Nye County Community Source Water Protection Plan October 21, 2011 Page 4 of 6

PCS CODE	CLASS	SOURCE	CA A	ATE B	GOI C	RY D	E	RISK RANKING
58		Transportation	Х	Х	Х	Х	Х	High – Low
59		Construction Company	Х	Х	Х	Х	Х	High – Low
60		Governmental, Municipal Works	Х	Х	Х	Х	Х	High – Low

## **Contaminant Categories:**

- A = VOLATILE ORGANIC COMPOUND (VOC)
- B = SYNTHETIC ORGANIC COMPOUND (SOC)
- C = INORGANIC CONTAMINANT (IOC)
- D = MICROBIOLOGICAL
- E = RADIONUCLIDES

Note: PCS Codes 56-60 were added by Douglas County for use in their Plan, and were to be used only if a PCS did not fit into another category.

#### 3. Overview of Development Process in Pahrump

#### 4. Review Goals and Objectives

- Goal 1: Develop a Community Source Water Protection Program to protect the quality of drinking water resources in Nye County that is sustainable by the Community. Anticipated Completion Date: \_\_\_\_\_\_
  - i. **Objective**: Prepare a Community Source Water Protection Plan to document the elements of the Community's Program and identify management strategies.
  - ii. **Objective**: Address each community within the County individually.
  - iii. **Objective**: Review and assess current Wellhead Protection Plans.

#### Northern Team Objectives:

- iv. **Objective**: Integrate data from multiple sources.
- v. **Objective**: Identify and consider potential contaminant sources that may not be included in existing databases (abandoned mines, historic dumps, orphan wells).
- vi. **Objective:** Establish a mechanism for development review outside of the Pahrump Regional Planning District.

Nye County Community Source Water Protection Plan October 21, 2011 Page 5 of 6

vii. **Objective**: Establish greater security for source wells.

#### Pahrump Team Objectives:

- viii. **Objective:** Include individual WHPPs as part of an overall Plan.
- ix. **Objective:** Incorporate all public water systems into WHPP.
- x. **Objective:** Continue implementation regarding land use planning and/or zoning as it relates to source water protection areas.
- xi. **Objective:** Incorporate water quality data in planning efforts.
- xii. **Objective:** Add former meth labs to the list of potential contaminant sources.
- **b.** Goal 2: To raise community members' awareness of source water protection, and how they can help protect their drinking water. Anticipated Completion Date: \_\_\_\_\_\_

#### Northern Team Objectives:

i. **Objective**: Provide public education on topics including storm drains, mine shafts, and desert dumping, as related to source water protection.

#### Pahrump Team Objectives:

- **ii. Objective:** Provide public education on what well head protection is, and its importance.
- iii. **Objective:** Stress concepts of ground water flow in public education efforts to make the public aware of the potential for contamination.
- iv. **Objective:** Include water quality results from various public water systems on the Nye County Water District website.
- v. **Objective:** Educate the public regarding the relationship between public and private wells.
- vi. **Objective:** Coordinate the public education plan with the Nye County Water District.
- vii. **Objective:** Coordinate with existing groups and agencies for public education.

Nye County Community Source Water Protection Plan October 21, 2011 Page 6 of 6

## Pahrump Team Goal:

- c. Goal 3: To leverage other programs for possible funding. Anticipated Completion Date: \_\_\_\_\_
  - i. **Objective:** Identify potential funding sources.

#### 5. Discuss Potential Contaminant Source Management Strategies

See attached.

- 6. Confirm Action Items for next Team Meeting
- 7. Schedule next Team Meeting
- 8. Public Comment

## Environmental Consulting

## Nye County Community Source Water Protection Team Meeting October 21, 2011 Meeting Summary 10:00 a.m. to 12:15 p.m. and 1:30 p.m. to 3:15 p.m.

## Attendees/Presenters:

Tim McCall, Nye County Water District Governing Board John MacLaughlin, Nye County Water District Governing Board Levi Kryder, Nye County Nuclear Waste Repository Project Office (NWRPO), Natural Resources Cheryl Beeman, Nye County NWRPO, Pahrump Nuclear Waste and Environmental Advisory Board (PNWEAB) Mark Kimball, Nye County Administration Bill Browning, Pahrump Building and Safety Elizabeth Enriquez, Nye County NWRPO Bill Coates, Utilities, Inc. of Central Nevada George Sausman, PNWEAB, Anchor In MHP John Pawlak, PNWEAB Kim Borgzinner, NDEP Rachel Kryder, BEC Environmental, Inc. (BEC) John Yvon, BEC

## Agenda Focus/Meeting Purpose:

This was the seventh Nye County Community Source Water Protection (CSWP) Team meeting. The purpose of this meeting was to review the revisions made to the source water protection area (SWPA) maps, to review the potential contaminant source (PCS) inventory, and to begin discussing PCS management strategies. As of this meeting, the field contaminant source inventory (CSI) was completed (with the exception of the NDOT Sunnyside rest stop), but only data for Crystal, Amargosa Valley, and Pahrump were shown on the maps. Field CSI data for Beatty, Tonopah, Manhattan, Round Mountain (Hadley), Carvers, Gabbs, and Ione had been gathered recently, and were not yet mapped. PCSs identified through the desktop survey were included on the maps for all areas.

## SWPA Map Review:

The meeting began with McCall providing information relative to PCSs, including the location of an old gas station at the northeast corner of Highway 160 and Simkins Road in Pahrump. McCall added the Nye County Water District was working on mapping septic system locations in Pahrump, and L. Kryder had access to the mapping data. Borgzinner suggested areas containing a large number of septic systems could be shown with hatching on maps, rather than plotting each individual septic system location. R. Kryder added that Gabbs, Beatty, Tonopah,

and the Hadley area all use municipal sewer systems, rather than widespread septic systems. R. Kryder added she would verify whether Manhattan also had a municipal sewer system.

The following sections are organized by the area shown on maps reviewed and discussed by the Team.

#### Gabbs

On the map of Gabbs, the SWPAs for the future drinking water source well and Well 1 were combined, as they overlapped. PCSs found during the desktop CSI survey were also shown on the map. Team members had no additional comments after reviewing the revised Gabbs map.

#### Ione Valley

No technical changes were made to the Ione Valley map since September's Team meeting. The map showed there were no PCSs found during the desktop CSI survey, though Yvon stated there were a number of vault toilets at the Berlin Ichthyosaur State Park identified during the field CSI survey, which would be included in the next map revisions. Team members had no additional comments after reviewing the revised Ione/Berlin map.

#### Tonopah

No revisions were made to the Tonopah SWPA, and the desktop CSI survey yielded one PCS, which was shown on the map. PCSs identified during the CSI field survey were not yet shown. Team members had no additional comments after reviewing the Tonopah map.

## Big Smoky Valley

The Smoky Valley map included the communities of Carvers and Round Mountain (Hadley). Per Team preference as discussed during the previous Team meeting, overlapping SWPAs for wells in close proximity to one another were joined. L. Kryder explained the SWPAs were joined using the convex hull method, and gave a basic explanation of how the convex hull method works. Borgzinner asked about the color scheme for the SWPAs on the maps, and R. Kryder explained each map contained a legend with color coding based on the modeling method and the SWPA combination method used. Borgzinner requested the color fill for the SWPAs be made more transparent, and L. Kryder stated the opacity of the SWPAs would be changed during the next iteration, so the base map can be seen through the SWPAs.

#### Manhattan

The map of the Manhattan area was revised to show PCSs found during the CSI desktop survey. The majority of the PCSs were mining related, though more specific PCS information was not yet available. Yvon stated the desktop CSI survey was completed using several databases, most of which contained limited information. Borgzinner asked which databases were used, and Yvon said one was associated with NDEP and the other with the Environmental Protection Agency (EPA); however, he was unsure of the actual database names at that time. R. Kryder pointed out

the PCS information still required Team input and quality control; for example, the desktop CSI survey showed a dry cleaner in Manhattan, and all Team members agreed that was highly unlikely, and was probably an error. Yvon stated, during the field survey no dry cleaner was found and the data point would be removed during the next map iteration. McCall asked what ore processing methods were used in the Manhattan area, and the Team discussed how different ore processing methods might result in different levels of risk to drinking water sources. Borgzinner suggested researching what historic method was used in general in the area, to determine the potential risk, and R. Kryder stated the topic could be discussed in the CSWP Plan.

## Beatty

As the Team began reviewing the Beatty map, Borgzinner asked who was managing the Beatty water system, and Team members replied Fred Willis was the manager for the Beatty Water and Sanitation District, and he was a Team member not present at the meeting. Revisions to the Beatty map included delineation of the different protection areas within previously delineated SWPAs, inclusion of PCSs from the desktop CSI survey, and the removal of one SWPA that did not correspond to a drinking water source. L. Kryder stated he thought the location for PCS #11, a dumpsite, was not correct, as it appeared to be in the bottom of a valley, some distance away from Beatty and Highway 95. Yvon said he would verify PCS #11 and make corrections if necessary. Team members had no additional comments after reviewing the revised Beatty map.

## Amargosa Valley

Browning asked if the soil type was taken into consideration when modeling the SWPAs for wells in Amargosa Valley. R. Kryder stated characteristics specific to the soil such as porosity and transmissivity were considered in modeling, so different soil types would result in different delineations. The Team discussed how the soil properties and other local characteristics such as the depth to groundwater might affect the risk of contamination from various PCSs. L. Kryder summarized the status of the NC-EWDP-4PD well, which was planned as a future drinking water source for the Amargosa Valley Science and Technology Park, and was in the process of being converted from a monitoring well to a drinking water well. L. Kryder also explained how he shifted the SWPAs from the previous Wellhead Protection Plan to the locations where they appeared to belong, based on the locations of the drinking water sources. Additionally, overlapping SWPAs were joined where appropriate. L. Kryder asked what should be done with the Amargosa Complex SWPA, which was very narrow and long (pencil-shaped); he thought it did not realistically represent the groundwater flow conditions in Amargosa Valley. Team members agreed a CFR model, like the surrounding wells, would be more realistic. As such, the SWPA from the previous plan will be removed and a CFR model completed. Beeman stated the Solar Millennium project location is directly north of the Amargosa Town complex, and R. Kryder stated that information could be included in the Plan.

## NDOT Sunnyside

No changes were made to the map for the NDOT Sunnyside rest area, other than the addition of two PCSs, which were found during the desktop CSI survey. Team members had no comments after reviewing the revised NDOT Sunnyside map.

## Shady Lady

No changes were made to the Shady Lady map, and no PCSs in the area were found during the desktop CSI survey. Team members had no comments after reviewing the map of the Shady Lady area.

Note: due to scheduling conflicts, the review of the SWPA maps was interrupted so PCS management strategies could be discussed. The remainder of the map review was completed following discussion of the PCS management strategies, and is presented following that section.

## Management Strategies:

Kimball was invited to participate in the Team meeting to present an overview of the development process in Pahrump, so the Team could see how PCS management strategies could fit into or affect the development process. Kimball posed the question to the Team: "Should we do anything with local regulation and water contamination?" According to Kimball, Nye County did not have a formal process or policy to address water contamination or protection through the established development process. There was some discussion by the Team regarding water quantity considerations, which are regulated by the State Engineer (Division of Water Resources), including potential affects from Assembly Bill (AB) 419, which allows the State Engineer the ability to apply restrictions to water usage (including domestic usage) in designated critical basins. PCSs the Team spoke about included the Nevada National Security Site (formerly the Nevada Test Site), flooding, septic systems, and industrial and commercial zones. Pawlack and L. Kryder clarified groundwater contamination on the Nevada National Security Site had no connection to groundwater in Pahrump, and the topic should be carefully discussed, so the public receives only factual information.

Kimball stated the development and adoption of regulations and ordinances could be challenging in Pahrump and Nye County, and may make it difficult for the Nye County CSWP Plan to be accepted by the community. Instead, a public education and outreach process could be developed that includes providing information to staff working with development, such as in the Nye County Planning and Public Works departments. Kimball suggested an important part of the process should be to inform developers if they are near or within a SWPA early in the development process. Kimball stated having the SWPA maps and information available to development staff and developers would be a valuable tool, and Borgzinner agreed.

The Team discussed two topics concerning residential areas: whether residential areas should be considered areas where many PCSs would be found; and that some areas currently used for residential were zoned commercial or industrial, and future commercial or industrial development was possible. Widespread septic system use in residential areas was also discussed as a PCS. L. Kryder asked how deep a typical septic leach field is, and Browning stated they were typically up to seven feet deep, and in his opinion, they are more evaporative than percolating. Browning added the majority of septic tanks in Pahrump were installed between 2002 and 2008. McCall added there were areas with naturally-occurring nitrates not associated with septic systems. L. Kryder stated Nye County was working with the United States

Geological Survey (USGS) to investigate the source of nitrates in groundwater in Pahrump, which could provide insight into how much of the nitrate in groundwater was naturally occurring and how much may be related to septic systems or other man-made causes.

The Team discussed storm drainage in the Pahrump Valley, and McCall stated many PWS wells were down gradient of industrial areas in Pahrump, as the alluvial fan area on the east side of the valley is home to the majority of industrially zoned areas. During localized or widespread flooding, runoff from these facilities could enter SWPAs.

During the previous Team meeting, McCall asked about Utilities Inc, of Central Nevada (UICN) Well 10 and why it was not included in the SWPA maps. R. Kryder stated she met with Jose Nunez (UICN), and he stated Well 10 was an irrigation well for the Willow Creek Golf Course, which was not connected to the UICN potable water system.

McCall stated that east of the Desert Utilities main supply wells (Wells 1 and 2), a new project has been approved for a cement, asphalt, and gravel plant, as well as a scrap metal storage yard. R. Kryder responded the project was an example of how the Plan and associated maps could be used as a tool for developers, staff, and the public. Kimball stated he thought it was important for the Team to provide recommendations to the Master Plan Steering Committee. Borgzinner asked how specific recommendations should be, and Kimball stated the recommendations should be as specific as possible, but shouldn't include how the recommendations should be implemented (i.e. specific departmental procedures). McCall stated having someone concerned with water issues participating at pre-development meetings would be beneficial. L. Kryder asked what development considerations were reviewed by the Planning and Public Works departments during the development process, and Kimball stated standards and regulations established by ordinances were included, as well as other project-specific considerations. Kimball stated he would work toward getting a procedure in place that could address water issues in the development process in the Pahrump Regional Planning District.

Borgzinner suggested SWPA maps include zoning, where zoning is present, in order to identify commercial and industrial areas within and near SWPAs.

## SWPA Map Review (Continued):

Following the PCS management strategies discussion, the Team resumed review of the revised SWPA maps.

## Pahrump

The Team reviewed the Pahrump map, identifying a number of additional historic and current PCSs that should be included in the CSI, and provided additional information for considering the risk associated with specific PCSs. The following are specific items that were identified by Team members:

- Country Place Market used to sell gas (USTs);
- The ground source heat pump at (new) Manse Elementary extended approximately 300 feet in depth;

- Stagecoach Manufacturing (shown as PCS #67) produced recoil pads and related items, and may not pose a significant risk as a PCS;
- The mapped location of Service Rock Products (PCS #68) was questioned;
- No one was aware of Terrible Herbst #187 (PCS #60) ever existing in the location shown;
- The location for High Tech Muffler (PCS #61) should be moved;
- The public health nurse's office should be shown as a PCS;
- The septic system that served the restroom near the Bob Ruud Community Center may be of particular concern as a PCS, as there was a vagrant population at Petrack Park that likely uses the restroom, and the presence of drugs may be a concern;
- There were a number of additional medical-related PCSs around the Calvada Eye that should be identified; and
- There were some PCSs that should be identified near Ahern Rentals, such as Lewis Equipment.

R. Kryder explained the modeled SWPA for Escapee Co-op Well 3 appeared to indicate groundwater flow opposing the overall groundwater flow direction in Pahrump, which suggested there was a problem with the modeling data used. R. Kryder stated she spoke with Ninyo & Moore (the contractor performing the analytical modeling) and they stated the discrepancy was due to a lack of groundwater data west of the subject well. R. Kryder suggested using the CFR method for the well, and Borgzinner agreed that would be acceptable as long as the CFR SWPA encompassed the analytically modeled SWPA. L. Kryder expressed concern regarding several long and narrow SWPAs established in the 2006 Pahrump Wellhead Protection Plan, and provided the example that the Terrible's Ranch SWPA was narrow and over two miles long. Borgzinner stated NDEP was not comfortable with long and narrow SWPAs either, and CFR models could be completed for those wells whose previous SWPAs were long and narrow.

McCall informed the Team the Nye County Water District would be holding public forums and asked if the CSWP Program should be represented at the forums. Borgzinner and R. Kryder stated it would depend on the timing of the public forums, and participation would be determined when the schedule for the public meetings was determined.

Borgzinner expressed concern that participation from Northern Nye County Team members was minimal, and it was important to have their participation and input into the Plan. Borgzinner suggested R. Kryder and she could work to improve participation, which may include individual meetings with northern Team members.

R. Kryder agreed to complete the draft CSWP Plan for the next team meeting, and Borgzinner stated she would work with R. Kryder to present specific recommendations for PCS management strategies to the Team. R. Kryder stated she would provide the PCS management strategies to the Team prior to the next Team meeting.

## Next Steps:

- Complete the draft CSWP Plan (BEC).
- Complete data quality control review for the Nye County CSI and provide the data to L. Kryder for mapping (BEC).

## Action Items:

- Verify whether the Town of Manhattan has municipal sewer service, or if individual septic systems were used (R. Kryder).
- Change the opacity of the SWPAs on the maps (L. Kryder).
- Include areas with septic systems on the SWPA maps as PCSs (L. Kryder).
- Discuss ideas concerning water contamination and how it relates to development in Pahrump before the next developers meeting (McCall and Kimball).
- PCSs discussed will be added, verified and corrected if necessary (Yvon).

## Next Meeting:

The next Team meeting will be held on November 30, 2011, from 10:00 am to 12:00 pm and 1:00 pm to 3:00 pm.

Respectfully submitted,

Name: John Yvon Title: Resource Specialist Date: December 8, 2011 Project: NDEP Wellhead Protection Project No. 018.08.24B

## Nye County Community Source Water Protection Plan

## CSWP Team Meeting Agenda Wednesday, December 7, 2011 - 10:00 AM 2100 E. Walt Williams Drive BoCC Chambers Pahrump, NV 89048

Videoconference/teleconference locations accessible to the public: Pahrump, Nevada: Board of County Commissioners Chambers, 2100 E. Walt Williams Dr. (Host Location) Beatty, Nevada: Beatty Justice Center, 426 C. Avenue South Tonopah, Nevada: Board of County Commissioners Chambers, 101 Radar Road

There may be a quorum of the Nye County Water District Governing Board and/or Pahrump Nuclear Waste and Environmental Advisory Board present; however, no deliberations shall occur, and no action shall be taken.

All agenda items are for presentation and discussion only.

- 1. Public Comment
- 2. Review Contaminant Source Inventory
- 3. Review Goals and Objectives
- 4. Discuss Potential Contaminant Source Management Strategies
- 5. Beatty Area Plan
- 6. Confirm Action Items for next Team Meeting
- 7. Schedule next Team Meeting
- 8. Public Comment

Nye County Community Source Water Protection Plan December 7, 2011 Page 2 of 4

## 1. Public Comment

2. Review Contaminant Source Inventory

See attached.

#### 3. Review Goals and Objectives

- a. Goal 1: Develop a Community Source Water Protection Program to protect the quality of drinking water resources in Nye County that is sustainable by the Community.
  - i. **Objective**: Prepare a Community Source Water Protection Plan to document the elements of the Community's Program and identify management strategies.
  - ii. **Objective**: Address each community within the County individually.
  - iii. **Objective**: Review and assess current Wellhead Protection Plans.

## Northern Team Objectives:

- iv. **Objective**: Integrate data from multiple sources.
- v. **Objective**: Identify and consider potential contaminant sources that may not be included in existing databases (abandoned mines, historic dumps, orphan wells).
- vi. **Objective:** Establish a mechanism for development review outside of the Pahrump Regional Planning District.
- vii. **Objective**: Establish greater security for source wells.

## Pahrump Team Objectives:

- viii. **Objective:** Include individual WHPPs as part of an overall Plan.
- ix. **Objective:** Incorporate all public water systems into WHPP.
- x. **Objective:** Continue implementation regarding land use planning and/or zoning as it relates to source water protection areas.
- xi. **Objective:** Incorporate water quality data in planning efforts.
Nye County Community Source Water Protection Plan December 7, 2011 Page 3 of 4

- xii. **Objective:** Add former meth labs to the list of potential contaminant sources.
- **b. Goal 2:** To raise community members' awareness of source water protection, and how they can help protect their drinking water.

### Northern Team Objectives:

i. **Objective**: Provide public education on topics including storm drains, mine shafts, and desert dumping, as related to source water protection.

#### Pahrump Team Objectives:

- **ii. Objective:** Provide public education on what well head protection is, and its importance.
- iii. **Objective:** Stress concepts of ground water flow in public education efforts to make the public aware of the potential for contamination.
- iv. **Objective:** Include water quality results from various public water systems on the Nye County Water District website.
- v. **Objective:** Educate the public regarding the relationship between public and private wells.
- vi. **Objective:** Coordinate the public education plan with the Nye County Water District.
- vii. **Objective:** Coordinate with existing groups and agencies for public education.

#### Pahrump Team Goal:

- c. Goal 3: To leverage other programs for possible funding.
  - i. **Objective:** Identify potential funding sources.

#### 4. Discuss Potential Contaminant Source Management Strategies

See attached.

#### 5. Beatty Area Plan

a. How the Beatty Area Plan relates to the CSWP Plan, presented by Cheryl Beeman

Nye County Community Source Water Protection Plan December 7, 2011 Page 4 of 4

## 6. Confirm Action Items for next Team Meeting

- 7. Schedule next Team Meeting
- 8. Public Comment

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# Nye County Community Source Water Protection Team Meeting December 7, 2011 Meeting Summary 10:00 a.m. to 12:30 p.m. and 1:40 p.m. to 3:20 p.m.

# Meeting Participants:

Participating from Pahrump:
Tim McCall, Nye County Water District Governing Board (NCWDGB)
John MacLaughlin, NCWDGB
Levi Kryder, Nye County Nuclear Waste Repository Project Office (NWRPO), Nye County Natural Resources
Cheryl Beeman, Nye County NWRPO, Pahrump Nuclear Waste and Environmental Advisory Board (PNWEAB)
Roger McRae, Nye County NWRPO
Ken Plewe, Nye County Public Works
Jack Osburn, Nye County Public Works
Elizabeth Enriquez, Nye County NWRPO
George Sausman, PNWEAB, Anchor Inn Mobile Home Park (MHP)
Kim Borgzinner, NDEP
Rachel Kryder, BEC Environmental, Inc. (BEC)
John Yvon, BEC

*Participating from Beatty:* There were no meeting participants in Beatty

*Participating from Tonopah:* Sara Keehfuss, Round Mountain Gold Corp.

# Agenda Focus/Meeting Purpose:

This was the eighth Nye County Community Source Water Protection (CSWP) Team meeting. The purpose of this meeting was to review the potential contaminant source (PCS) inventory, and discuss PCS management strategies. As of this meeting, the field contaminant source inventory (CSI) was completed (with the exception of the NDOT Sunnyside rest stop).

# Summary:

R. Kryder began by introducing the various aspects of the CSI and emphasized the need for the Team to review the risk rankings and classes. R. Kryder explained the risk ranking for each PCS was determined based on guidance from the EPA risk table. The table contained a listing of various PCS classes, sources, categories, and associated risk rankings. McCall asked whether a particular PCS was being considered at the actual location or whether the potential contaminant was considered at the associated waste water treatment facility. R. Kryder stated the PCS listed

referred to the actual facility location and not the waste water treatment facility, though waste water treatment facilities were considered PCSs themselves. Osburn asked why Quest Diagnostics would be considered a PCS, since it is a small lab. R. Kryder said medical labs were classified as medical facilities and were considered to be PCSs. Borgzinner clarified a small medical lab was generally a much lower risk than a facility like a large hospital, and risk rankings could vary accordingly. Borgzinner stated risk rankings may be adjusted by the Team to better suit individual PCSs, but any reduction in risk should be adequately explained in the CSWP Plan.

Osburn presented two additional PCS considerations: 1) highways with commercial and industrial traffic and 2) the condition of storage tanks. Storage tank conditions to be considered included whether tanks were single or double-walled and whether there was secondary containment. McCall stated many storage tanks in Nye County were fairly old and were most likely single-walled.

Borgzinner stated the purpose and scope of the UNLV and CSWP CSI were different, which led to slightly different results. The scope of the CSWP CSI was to identify PCSs within or adjacent to SWPAs. The UNLV CSI identified PCSs within a 3,000 foot radius of PWS wells. Yvon stated a quick comparison of the UNLV and CSWP CSIs verified the majority of the PCSs for both studies were the same, but four PCSs identified by UNLV would be added to the CSWP CSI.

Plewe asked why the Walmart between the LDS Church well and the Nye County Complex well was not included. R. Kryder responded a portion of the Albertson's shopping center was included since there were PCSs in or adjacent to the Nye County Well 2 SWPA, but the Walmart shopping center was not within any SWPAs. Both McCall and Sausman agreed the Walmart shopping center should be considered a PCS. Sausman stated the shopping center contains many PCSs, and during a storm event, the runoff could be considered a PCS. Several Team members spoke about the relationship between potential contamination and runoff. Borgzinner explained Douglas County extended their SWPAs to include directly adjacent or overlapping commercial and industrial zones to address runoff and future development. The Team decided runoff and future development should be noted as a possible future problem. McCall stated a mobile home park behind the Walmart was once considered a public water system (PWS). The Team was unaware of the system's status. R. Kryder stated it was not an active system, but may have been in the past. Plewe asked for information on the Round Mountain Old Dump Site (ID # 188) PCS. Yvon replied he did not know the specific site details, but the site was listed because it had a violation or infraction in the past. Upon discussion, the Team decided it was not the current landfill, but may have been a former desert dumping site.

Borgzinner asked if wells in flood zones had been identified. L. Kryder advised flood zone information had not been included, but it could be incorporated by applying another layer in GIS. Plewe said flood zones could be viewed through the Nye County GIS or Federal Emergency Management Agency (FEMA) websites. R. Kryder stated PWSs were required to go through a review and permitting process with NDEP, and one of the requirements was the wellhead had to have a minimum four foot by four foot concrete pad surrounding and sloping away from the wellhead. Osburn stated Municipal utility systems were required to have a minimum eight foot

by eight foot concrete pad surrounding and sloping away from the wellhead, and the casing had to be at least18 inches above the concrete. The Team believed the four foot by four foot concrete pad was most likely the requirement for the non utility PWSs. R. Kryder said she would verify the flood requirements for wells and inform the Team at the next meeting. Plewe said wells were also required to have a 50 foot seal; however, older wells in Nye County could have a minimum of a ten foot seal. R. Kryder stated well completion data obtained for PWSs suggested their seals were nearly all 50 feet or greater.

R. Kryder explained personal junk/scrap yards were renamed private storage yards and categorized as a low risk ranking. Several Team members spoke of their personal experiences concerning private storage yards and the various PCSs they had seen in private storage yards. The Team concluded private storage yards had the potential for a large variety of PCSs and as a precaution, should have a high risk ranking. Keehfuss stated auto shops should also have a high risk ranking since they are known to contain PCSs. Borgzinner stated auto shops should be ranked as high risk according to the EPA risk table. R. Kryder stated the risk ranking for auto shops would be verified for those listed in the CSI.

Borgzinner asked if Nye County had storm water drains or detention basins. R. Kryder advised storm water drains and detention basins were not widespread in Pahrump or elsewhere; however, McCall stated parts of the Walmart shopping center were designed to act as detention basins.

Borgzinner asked if the Team planned to address sewer system operational failures. Sausman stated all PWSs were required to have an emergency response plan which takes into account the loss of potable water. The Team concluded sewer systems and waste water treatment facilities would be addressed in the Plan as a potential future problem. Borgzinner suggested public utilities be provided with the final Plan as a tool to identify the location of their infrastructure with respect to SWPAs.

McRae asked if the Environmental Data Resources (EDR) database was used when completing the desktop CSI. Yvon replied he was not sure and would verify if it was one of the databases used.

The Team discussed the Beatty Area Plan. Beeman informed the Team about the goals and objectives of the Beatty Area Plan. Beeman stated the Beatty Area Plan encompassed 728 square miles, would be assigning specific land uses to various areas, and included concerns about the Amargosa River as a contamination source. The Beatty Area Plan intended to use the Nye County CSWP Plan to identify strategies/directives. Mapping for the Beatty Area Plan was expected to begin in early 2012 (probably starting in January). Borgzinner asked if the Beatty Area Plan would be referencing the CSWP Plan, and Beeman said it would.

The Team next reviewed the CSWP Team goals and objectives, and concluded the goals and objectives for both the Northern Nye County and Pahrump Team could be joined into a single list. Several objectives were removed, as they were deemed no longer necessary or outside the scope of the Plan. The objectives listed below were removed:

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- Pahrump Team Objective xi (Goal 1): Incorporate water quality data in planning efforts.
  - Reason: The Plan would not include a review of water quality or related enforcement measures. This objective was outside the scope of the CSWP Plan, and would be too labor and time-intensive to include. Instead drinking water standards and regulations would be referenced in the Plan.
- Pahrump Team Objective xii (Goal 1): Add former meth labs to the list of potential contaminant sources.
  - Reason: There was a lack of information available on these types of sites in Nye County. The Team decided methamphetamine labs and other similar locations would be noted as a potential future risk.
- Pahrump Team Objectives iv (Goal 2): Include water quality results from various public water systems on the Nye County Water District (NCWD) website.
  - Reason: This objective was outside the scope of the CSWP Plan. McCall stated NCWD was currently developing a public records page as part of their website, which would contain the monthly water quality reports for the utilities in various communities.

L. Kryder stated integrating the CSWP Plan into the development process communitywide should be an objective. Borgzinner agreed and stated one purpose of the program was to provide tools and information to be used in development and community planning processes. McCall stated having a water liaison involved in County planning was discussed during a meeting he participated in on December 6, 2011.

Borgzinner asked if hatched areas, similar to those discussed for designating areas of septic system use, were going to be used for designating areas with private wells on the SWPA and PCS maps. L. Kryder and R. Kryder both said there had been no discussion concerning the use of hatching for designating areas with private wells so it was not included in mapping. Borgzinner stated the problem was not private active wells but private non-active wells. McCall stated NCWD was currently working to identify orphaned wells.

McCall asked how septic systems were going to be addressed in the Plan. L. Kryder asked if the Team was going to look at septics as a PCS to be identified in the CSI. Borgzinner replied the state views septics as a PCS; however, the areas of most concern are those which contain a high density of septic systems. R. Kryder stated the Team decided areas containing septics would be hatched instead of plotting individual systems due to the high concentration of systems in certain areas.

R. Kryder introduced the current Management Tools and Strategies tables for Nye County. There were five separate tables: the County-wide, Amargosa Valley, Beatty, Pahrump, and Northern Communities tables. Each table included regulatory and non-regulatory options. The Team began by discussing the County-wide management tools and strategies.

- R. Kryder suggested the phrasing of the strategies should be kept passive in order to convey them as suggestions and not regulations. McCall agreed keeping the language passive would help the Plan be accepted.
- Both Borgzinner and Beeman agreed the land acquisition non-regulatory option did not appropriately describe the land acquisition process and should be reworded to ensure

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there was not a perception the option was suggesting land acquisition by means of imminent domain.

- R. Kryder stated the term "special use permit" would be changed to "conditional use permit," where necessary.
- Beeman suggested the subdivision ordinances be called division of land ordinances since they are applicable to parceling, and not just subdivisions. Borgzinner asked if the Nye County Planning and Public Works departments reviewed proposed developments in the County. R. Kryder stated only developments within Pahrump were subject to review, but advised Planning and Public Works review all divisions of land (parcel maps and subdivisions).
- L. Kryder said the groundwater monitoring non-regulatory option was not worded correctly. The Nye County NWRPO takes water level measurements and samples from monitoring wells, which were used for water science, not regulation purposes. L. Kryder said the NWRPO has a monitoring network which at that time was being expanded in the north but its primary purpose was not to monitor for contaminants. The Team decided groundwater monitoring may not be an appropriate management strategy, and would be removed from the table, but mentioned in the Plan. Sausman stated there should be a section which mentions PWSs conduct water quality monitoring. Sausman noted the information was available to the public.
- During the public education non-regulatory option discussion, Borgzinner asked if the Nye County School District (NCSD) had provided any input. R. Kryder advised NCSD representatives had not been involved. Sausman stated the stringent process to alter class curriculum and the NCSD's budget challenges had made enacting changes difficult. R. Kryder reminded the Team the primary audience for the public education plan were community leaders and Boards, while the secondary audience was residents and PWS users, not school children. Borgzinner stated the large size of Nye County also offers a challenge when teaching and training individual communities. Borgzinner stated the NDEP Water Education for Teachers (WET) program was available to train teachers. The program was voluntary and consisted of an NDEP representative going to communities and training science teachers about water and wells so they could incorporate the information into their classroom curriculum. The WET program already had a curriculum which could be provided to teachers. Borgzinner stated the WET program could be included in the Plan as a possible tool.

McCall said the NCWD has approved funding for public education, but does not have a curriculum. Borgzinner suggested NCWD and NDEP work cooperatively to avoid redundancy. L. Kryder stated this would be a good approach since the County already has funds allocated but lacks the expertise and curriculum. R. Kryder stated Douglas County developed a very specific curriculum for sixth graders as part of their outreach program, and Borgzinner added the Douglas County curriculum was unique and would not necessarily be appropriate for Nye County. Borgzinner said her long term goal was to train individuals from public utilities so they could present to schools about the community's water. The Team decided school outreach would be a future goal and would be coordinated with the NCWD, NDEP, and the CSWP Team, as appropriate.

Borgzinner asked if all the strategies presented in the table were going to be part of the action plan. R. Kryder said specific options would be presented to communities, as Mark Kimball (Nye County) suggested during the October 2011 Team meeting. Borgzinner stated NDEP funding for CSWP projects would require communities to present goals and strategies from the CSWP Plan in funding proposals. Borgzinner stated Douglas County used broad County-wide strategies which each water system could choose from in order to apply for funding. Sausman suggested a similar method be used in Nye County. R. Kryder asked who should or has the authority in each community to review management strategies. Borgzinner said if a strategy is not included in the Plan; it cannot be funded by NDEP. With this idea in mind, it may be better to have more strategies rather than less even if they may not currently be applicable to every community. L. Kryder agreed a single County-wide Plan would simplify the process. L. Kryder suggested a column be added to the management strategies table where Team members or community leaders from each community could select management strategies appropriate for their community. Furthermore, several blank rows could be added to the table for additional suggestions. The Team agreed making a single table which could be added to and reviewed by the appropriate representatives would be the most productive approach to developing the final management strategies. Borgzinner stated when the management strategies are sent for review by Team members and community leaders, there should be a clear statement saying management strategies are being finalized, and that would be the final opportunity to voice opinions.

The Team discussed current septic system regulations and clarified the language included in the management strategies.

R. Kryder stated the land acquisition strategy changed from community to community. Beeman stated one possible land acquisition strategy was to remove properties in SWPAs from the tax rolls. The subject of ground water monitoring was discussed again for Pahrump. R. Kryder inquired about the NCWD nitrate tests. L. Kryder clarified nitrate testing was not done for the purpose of monitoring water contamination; as such, the Team decided not to include the nitrate testing in the Plan. Borgzinner suggested the Plan be forwarded to the BLM so the BLM would be aware of SWPAs encompassing BLM-managed land.

The Team discussed the Amargosa Valley management strategies after the general management strategies. McCall stated a new Amargosa Valley Town Board was recently formed and had the power to enact ordinances.

The Team agreed several Northern Nye County representatives should review the Plan and management strategies. R. Kryder asked the Team for suggestions on how to obtain Northern Nye County participation. Keehfuss suggested a meeting be held in northern Nye County (either Tonopah or Beatty) and meetings be held either Wednesday or Thursday. Keehfuss suggested participants have the option of joining the meeting via teleconference and the Team agreed. The Team agreed the next meeting should take place after the holidays, in mid-January.

### Action Items:

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- Revise and combine Management Tools and Strategies Tables/sections (BEC).
- Northern Nye County representatives will be forwarded the completed management tools and strategies for review (BEC).
- Verify well flood protection requirements for PWS wellheads (BEC).
- Verify the risk ranking for auto shops (BEC).

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- Verify if the EDR database was used when collecting PCS data (BEC).
- Apply a flood zone and septic system layer to the Plan maps (L. Kryder).
- Research and obtain septic system regulations reference (BEC).
- Arrange for teleconference capability for Team meetings (BEC).
- Verify specific information for the Round Mountain Dumpsite PCS (BEC)

### Next Steps:

- Complete the draft CSWP Plan (BEC).
- Complete data quality control review for the Nye County CSI and provide the data to L. Kryder for mapping (BEC).

### Next Meeting:

The next Team meeting is tentatively scheduled for mid-January 2012. The meeting is expected to be held in Tonopah, Nevada.

Respectfully submitted,

Name: John Yvon Title: Resource Specialist Date: January 24, 2012 Project: Nye Community Source Water Protection Project No. 018.08.24B

## Nye County Community Source Water Protection Plan

# CSWP Team Meeting Agenda Wednesday, January 25, 2012 – 9:30 AM 101 Radar Road BoCC Chambers Tonopah, NV

Videoconference/teleconference locations accessible to the public: Tonopah, Nevada: Board of County Commissioners Chambers, 101 Radar Road (Host Location) Pahrump, Nevada: Board of County Commissioners Chambers, 2100 E. Walt Williams Dr. Beatty, Nevada: Beatty Justice Center, 426 C. Avenue South

There may be a quorum of the Nye County Water District Governing Board and/or Pahrump Nuclear Waste and Environmental Advisory Board present; however, no deliberations shall occur, and no action shall be taken.

All agenda items are for presentation and discussion only.

- 1. Public Comment
- 2. Discuss Potential Contaminant Source Management Strategies
- 3. Discuss Implementation Measures/Work Plan
- 4. Confirm Action Items for next Team Meeting
- 5. Schedule next Team Meeting
- 6. Public Comment

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# Nye County Community Source Water Protection Team Meeting January 25, 2011 Meeting Summary 9:00 a.m. to 11:30 am

## Meeting Participants:

Participating from Pahrump:
Gary Hollis, Commissioner, Nye County Board of County Commissioners (BoCC)
Tim McCall, Nye County Water District Governing Board (NCWDGB)
John MacLaughlin, NCWDGB
Darrell Lacy, Director, Nye County Nuclear Waste Repository Project Office (NWRPO)
Levi Kryder, Nye County NWRPO, Nye County Natural Resources
Cheryl Beeman, Nye County NWRPO, Pahrump Nuclear Waste and Environmental Advisory
Board (PNWEAB)
Jose Nunez, Utilities Inc. of Central Nevada (UICN)
Ken Plewe, Nye County Public Works
Elizabeth Enriquez, Nye County NWRPO
George Sausman, PNWEAB, Anchor Inn Mobile Home Park (MHP)
John Yvon, BEC Environmental, Inc. (BEC)

*Participating from Beatty:* There were no meeting participants in Beatty

Participating from Tonopah: James Eason, Tonopah Town Manager Sara Keehfuss, Round Mountain Gold Corp. Rachel Kryder, BEC Eileen Christensen, BEC

*Participated by teleconference:* Kim Borgzinner, NDEP

# Agenda Focus/Meeting Purpose:

This was the ninth Nye County Community Source Water Protection (CSWP) Team meeting. The purpose of this meeting was to discuss and review potential contaminant source (PCS) management strategies.

# Summary:

McCall explained orphaned and abandoned wells were being identified by the Nye County Water District (NCWD). Borgzinner suggested orphaned well identification should be included as a management strategy and in the work plan, and clarified everything identified in the work plan should be based on management strategies. The Team discussed the value in including identification of orphaned septic systems in conjunction with orphaned wells. Borgzinner asked what the purpose of a septic system management strategy or regulation would be, such as if there had been any plans to centralize sewer systems in Nye County. Several Team members stated there were no plans to centralize sewer systems. L. Kryder said the results of a 2004 Ninyo and Moore report suggested septic systems were not as large a problem in Pahrump as previously thought. The Team decided a simple checkbox could be included on orphaned well identification/inventory sheets to identify whether a septic system was also present on the same property or in the vicinity of a suspected orphaned well.

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Christensen stated methamphetamine production facilities ("meth labs") and squatting were possible concerns relative to septic systems, and funding for assessment and cleanup of meth labs might be available through the brownfields program. R. Kryder reminded the Team that during the December 7, 2011, Team meeting, the Team decided to mention meth labs in the Plan as a potential future problem.

R. Kryder began the discussion of the management strategies table by reviewing the basic changes made since the December 7, 2011, Team meeting, and summarized that the PCS management strategies were joined into a single list, per discussion during the previous Team meeting.

R. Kryder explained the sanitary ordinances strategy wording was updated to include suggestions and comments made by the Team, and provided a reference to the Nevada Revised Statute (NRS) for sanitary ordinances for clarification regarding minimum lot size for septic systems. L. Kryder stated any reference to septic systems throughout the plan should be standardized including its reference in the sanitary ordinance, and the Team agreed. Borgzinner explained the language describing septic systems should be consistent with the Team's proposed management strategies included in the Plan.

R. Kryder said the land use ordinance was split into two parts to adequately address areas within and outside of Pahrump. The land use ordinance description was also updated to include the Team's comments and suggestions. R. Kryder asked if the land use ordinance description was appropriate, and Beeman said it was sufficient to allow for each community to make individual choices. The Team discussed the strategy of having a water advocate involved in the development process, and R. Kryder explained the water advocate concept would be part of the work plan. L. Kryder suggested the wording be changed to stress that a major goal of the Plan is to have the CSWP Plan used in the planning process, and to potentially be used as a basis for future ordinances. The Team agreed the change in wording was important. Lacy informed the Team that during the planning process, source water protection with respect to land use was not currently discussed; as such, it was important to at least have planning maps with the SWPAs incorporated. Lacy said SWPA maps would be a valuable tool which could be used immediately in the planning process.

Borgzinner asked if the draft management strategies had been sent to each community, and R. Kryder stated they had, but few responses were received. R. Kryder said individuals would be

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contacted concerning the management strategies, and requested the Team make suggestions concerning the applicability of management strategies to communities whenever possible.

R. Kryder explained the special use permits management strategy was renamed to conditional use permits and had been split into two parts to address areas within and outside of Pahrump. Lacy explained the 1994 Nye County Comprehensive Plan did address conditional use permits as part of the land use ordinance; however, additional ordinances were needed since the land use ordinance was not sufficient. Lacy further explained one function of conditional use permits was to provide a manner to regulate and mitigate potentially hazardous uses. Lacy asked Eason how Tonopah handles conditional use permits, and Eason explained Tonopah had a unique situation since their well fields were isolated and surrounded primarily by Bureau of Land Management (BLM)–managed land. Eason further explained the State Engineer placed regulations on land use surrounding the Tonopah Wells. Lacy asked if there were any PWSs in Tonopah. Eason informed the Team approximately 90 percent of Tonopah residents and businesses use municipal sewer, and approximately ten percent use septic systems.

The division of land regulations strategy was re-titled and the description was split into two parts to address areas within and outside of Pahrump. Eason said subdivision and parcel maps were reviewed by Nye County as part of the normal review process. Lacy explained setbacks between wells and septic systems were reviewed, and in some cases will-serve letters were required per NRS regulations. R. Kryder asked if the wording should be changed to incorporate the review of SWPAs during the planning process. Eason responded by agreeing with the earlier discussion concerning the use of a water advocate in the planning process. Christensen summarized the approach Douglas County implemented, which includes several new items on an existing checklist to address the potential impact of planned developments on source water. Lacy asked if it would be possible to obtain a copy of the checklist and process used by Douglas County, and Christensen agreed to provide the checklists.

No changes were made to the operating standards management strategy. R. Kryder clarified the operating standards strategy could be used in development agreements. Lacy explained development agreements were voluntary and used in the place of conditional use permits for some developments. Beeman asked how existing facilities which contain hazardous material were regulated, and Lacy stated NDEP was one of the organizations responsible for the regulation of hazardous materials and facilities. R. Kryder added Nye County Emergency Services also identifies and regulates hazardous materials and facilities.

R. Kryder explained the land acquisition strategy had been reworded so as not to imply the taking of private property through eminent domain. Lacy suggested information be forwarded to the BLM through the Resource Management Plan update process in order for SWPAs on BLM managed land to be identified in the BLM Resource Management Plan. R. Kryder asked if this would be possible due to BLM time constraints, and Lacy stated it was most likely possible if the information were to be forwarded to BLM within a few weeks.

During the household hazardous waste collection strategy discussion, R. Kryder explained that Nye County recently completed a recycling and household hazardous waste (HHW) management plan, and the management strategy referenced that plan.

No changes were made to the wellhead protection sign strategy. R. Kryder reminded the Team that the use of CSWP signs would remain an option for each individual PWS.

Christensen suggested a new management strategy be included called intra-agency coordination, in addition to the interagency coordination strategy, some of the agencies included in intraagency coordination were:

• Nye County National Resources Department

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- Nye County Public Works (Recycling and HHW Management Plan)
- Nye County NWRPO (managing the brownfields coalition grant)
- Nye County Emergency Services Department
- Nye County Water District

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No changes were made to the public education strategy. R. Kryder stated additional and more detailed resources were included in the CSWP Plan.

L. Kryder informed the Team of the upcoming Project WET (Water Education for Teachers) workshops, which were to be held on January 27 and 28, 2012, in Pahrump. Several Team members, Nye County staff, and school teachers were expected to participate.

Sausman informed the Team he had been invited by Desert Research Institute (DRI) to participate in their February 3, 2012, Las Vegas workshop. The purpose of the workshop was to train people for DRI's "teach the teachers" program. Borgzinner asked what the topics of the workshop would be, and Sausman replied topics were to include teaching, training and obtaining funding for programs, but the workshop was not entirely water-focused. Sausman said he would be attending the workshop, and would try to bring relevant information back to the Team.

Christensen suggested the public education strategy be coordinated with the NCWD to maximize benefit, and R. Kryder responded that cooperation and coordination with the NCWD had been discussed during previous Team meetings, and it had been agreed that the Team would coordinate closely with the NCWD for educational outreach. There was some discussion regarding the flyer referenced in the public education and outreach portion of the management strategies, and the Team decided the NDEP source water education website would be referenced in the public education strategy in place of the flyer.

Commissioner Hollis requested a strategy be included addressing the use of drilling fluids and chemical additives in the drilling process for mineral exploration, oil and gas well development, and water wells. Commissioner Hollis stated he was concerned these chemicals may affect drinking water in Nye County. Borgzinner asked how such a management strategy would function, and Christensen suggested Nye County could request notification of new drilling permit applications, then they could contact drillers directly to discuss the issue.

R. Kryder explained the Plan review process. The Plan would be uploaded to NDEP's ftp server, and the Team would then have three weeks to review and provide comments. Comments would then be addressed and revisions incorporated into the Draft Plan in preparation for the final Draft Plan.

McCall asked if a map had been developed which included all the SWPAs, and R. Kryder replied a number of area maps show the SWPAs for PWSs included in the Plan. R. Kryder also gave a brief summary of the methods used for SWPA modeling.

## Action Items:

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- Contact individuals to review the management strategies (BEC).
- Obtain Douglas County source water impact checklist (BEC).
- Obtain link to the NDEP source water education website (BEC).
- Add intra-agency coordination strategy to the management strategies (BEC).
- Complete CSWP maps (L. Kryder).

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## Next Steps:

- Complete the draft CSWP Plan (BEC).
- Update the management strategies to include comments and suggestions from this Team meeting (BEC).

## Next Meeting:

The next Team meeting was tentatively scheduled for 10:00 a.m. February 22, 2012. The meeting was expected to be held in Pahrump Nevada.

Respectfully submitted,

Name: John Yvon Title: Resource Specialist Date: March 20, 2012 Project: Nye Community Source Water Protection Project No. 018.08.24B

## Nye County Community Source Water Protection Plan

# CSWP Team Meeting Agenda Friday, May 4, 2012 – 10:30 AM 2100 E. Walt Williams Dr. BoCC Chambers Pahrump, NV

Videoconference/teleconference locations accessible to the public: Tonopah, Nevada: Board of County Commissioners Chambers, 101 Radar Road Pahrump, Nevada: Board of County Commissioners Chambers, 2100 E. Walt Williams Dr. (Host Location) Beatty, Nevada: Beatty Justice Center, 426 C. Avenue South

There may be a quorum of the Nye County Water District Governing Board and/or Pahrump Nuclear Waste and Environmental Advisory Board present; however, no deliberations shall occur, and no action shall be taken.

All agenda items are for presentation and discussion only.

- 1. Public Comment
- 2. Discuss Draft CSWP Plan Comments
- 3. Discuss Presentations to Boards
- 4. Confirm Action Items for next Team Meeting
- 5. Schedule next Team Meeting
- 6. Public Comment

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# Nye County Community Source Water Protection Team Meeting May 4, 2015 Meeting Summary 10:30 a.m. to 12:30 p.m.

## Meeting Participants:

Participating from Pahrump: Tim McCall, Nye County Water District Governing Board (NCWDGB) John MacLaughlin, NCWDGB Levi Kryder, Nye County Nuclear Waste Repository Project Office (NWRPO), Nye County Natural Resources Scott Lewis, Pahrump Valley Fire and Rescue Elizabeth Enriquez, Nye County NWRPO Walt Kuver, Nye County Water District (Consultant) Jose Nunez, Utilities Inc. of Central Nevada (UICN) George Sausman, Pahrump Nuclear Waste and Environmental Advisory Board (PNWEAB), Anchor Inn Mobile Home Park Kim Borgzinner, Nevada Division of Environmental Protection (NDEP) Rachel Kryder, BEC Environmental, Inc. (BEC) John Yvon, BEC Eileen Christensen, BEC

*Participating from Tonopah:* There were no meeting participants in Tonopah

Participating from Beatty:

There were no meeting participants in Beatty

# Agenda Focus/Meeting Purpose:

This was the tenth Nye County Community Source Water Protection (CSWP) Team meeting. The purpose of this meeting was to address questions and comments from Team members concerning their review of the Draft CSWP Plan, and to discuss the process for presenting the Plan to the Nye County Water District Governing Board and Board of County Commissioners (BoCC).

# Summary:

The Team began the meeting by discussing specific comments regarding the Draft Plan. L. Kryder stated he thought it was important to specifically designate a person to be responsible for keeping the Plan updated and active. He added the planning role should be formally specified in the Plan. Borgzinner added the designated responsible party can be a position, rather than a specific individual. L. Kryder also suggested the Team present this suggested designation (or list

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of potential candidates) to the Water District Governing Board and BoCC for approval. L. Kryder added this designation should be included in the Executive Summary as well.

The Team discussed the Work Plan next. L. Kryder suggested the Plan be more specific for item G, Public Education, relative to who would provide training for water system operators. Borgzinner suggested listing a number of agencies that may be able to provide training.

Sausman suggested providing cost estimates for items listed in the Work Plan, and the Team discussed some pros and cons to providing cost estimates. R. Kryder agreed to work on obtaining cost estimate ranges for Work Plan options, to have available upon request.

The Team discussed how to best present the contaminant management strategies, so those reading the Plan would not be overwhelmed by the exhaustive list of options. The Team was concerned readers may think the Plan was stating all possible management strategies would be acted upon, which was not the intent. The Team decided the Work Plan should be emphasized within the Plan and Executive Summary, not just in the applicable appendix. Borgzinner added the appendices should be listed within Section 1.1 of the Plan, in conjunction with the Plan sections already listed. The Team also discussed making it very clear that not all of the items identified in the Work Plan have to be done, but implementation measures cannot be considered by NDEP for funding unless they have been included in the Work Plan. Borgzinner added there should be a clearer correlation between the highest risk potential contaminant sources and items identified in the Work Plan.

The Team discussed striking a balance between assuring various board members and communities there were no potential contaminant sources identified that posed an immediate threat to ground water quality, but to maintain the importance of the program and the need for action in recommending the Plan and supporting implementation activities.

Sausman asked Borgzinner what commitment NDEP will expect from the communities once the Plan is endorsed. Borgzinner stated the program is voluntary, and while NDEP encourages as much action as possible, they understand the limits of local budgets and political will, and expect the communities to integrate implementation as they can. L. Kryder suggested emphasizing the potential for funding opportunities when presenting the Plan to various boards.

Nunez provided some input from the perspective of water system operators, and suggested he would be able to get the most participation from UICN by dealing directly with NDEP and not with local government entities. He stated they may be able to start implementing some of the Work Plan elements, particularly staff training. Nunez agreed to review the Work Plan thoroughly and provide input to ensure their needs as a public water system are included.

Other comments regarding the content of the Draft Plan included:

- Consider providing clarification between automotive uses and underground storage tanks in the contaminant source inventory;
- Identify any agricultural or pesticide storage tanks, if found;
- Do not use the term "Final Draft", as it can give the impression that no more revision or input will be considered;

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- A photo mosaic can be used for the cover art for the Draft Plan;
- Expand on the "miscellaneous" category of potential contaminant sources;
- Cross-reference the Contingency Plan section of the Plan (Section 3.1.5) with the Work Plan item M, First Responders; and
- Modify the language related to siting new drinking water sources so it does not sound like the Team has to approve new wells, and modify some of the language in Table 5, Source Development Plan Elements for New Water Supply Wells.

The Team discussed the path for moving the Draft Plan forward and presenting it to various boards. The Team determined the tentative process moving forward would be:

- Incorporation of Team comments into the Draft Plan;
- Review the Draft Plan in a Team meeting;
- Present the Draft Plan to the Water District Governing Board;
- Present the Draft Plan to town boards and town advisory boards within Nye County;
- Present the revised Draft Plan and comments received from town and advisory boards to the Water District Governing Board; and
- Present the Draft Plan to the Board of County Commissioners.

## Action Items:

- Contact NDEP Bureau of Corrective Actions to find out who may be able to provide training to water system operators (Borgzinner);
- Develop cost estimates for items identified in the Work Plan (BEC);
- Review Work Plan and provide comments to BEC (Nunez, Lewis);
- Provide photos for the Plan cover (all Team members); and
- Provide a tentative schedule for presentations to various boards (BEC).

## Next Meeting:

The next Team meeting was tentatively scheduled for May 24, 2012, at 1:30 pm. The meeting was expected to be held in Pahrump, Nevada, with video and teleconference available.

Respectfully submitted,

Name: Rachel Kryder Title: Engineer Date: May 16, 2012 Project: Nye Community Source Water Protection Project No. 018.08.24B

## Nye County Community Source Water Protection Plan

# CSWP Team Meeting Agenda Thursday, May 24, 2012 – 1:30 PM 2100 E. Walt Williams Dr. BoCC Chambers Pahrump, NV

Videoconference/teleconference locations accessible to the public: Tonopah, Nevada: Board of County Commissioners Chambers, 101 Radar Road Pahrump, Nevada: Board of County Commissioners Chambers, 2100 E. Walt Williams Dr. (Host Location)

There may be a quorum of the Nye County Water District Governing Board and/or Pahrump Nuclear Waste and Environmental Advisory Board present; however, no deliberations shall occur, and no action shall be taken.

All agenda items are for presentation and discussion only.

- 1. Public Comment
- 2. Discuss incorporation of Draft CSWP Plan Comments
- 3. Discuss Presentations to Boards
- 4. Confirm Action Items for next Team Meeting
- 5. Schedule next Team Meeting
- 6. Public Comment

Appendix C Inventory of Water Sources for Active Public Water Systems

DWC Norma		Current CSWP Plan Updat		odate
PWS Name	wen manie	Well Status	Pump Rate (gpm)	Max Pump Rate (gpm)
	<u>Amarg</u>	<u>osa Desert</u>		
Amargosa Elementary School	Well 1	Active	150	150
Amargosa Park	Amargosa Park Well	Active	150	150
Amargosa Senior Center	Well 1 (Well 1 Abandonded)	Active	2	20
	Well 2	Inactive	not listed	
Amargosa Town Complex	Well 1	Active	5	140
Amargosa Valley Resort INC	The Well	Active	3	50
Amargosa Valley VFW Post 6826	W01	Active	7	20
	Well 1	Active	5	10
Amargosa water Company	Well 2	Active	5	10
Chaurs Datah Lawa Darah	Main Well	Active	1	50
Cherry Patch Love Kanch	Backup Well	Inactive	not listed	50
Crystal Park Nye County Park	Well 1	Active	2	30
Mabels Far East Bar	The Well	Active	2	50
Fort Amargosa RV Park	New Well	Active	60	80
	Well 1 Main	Active	3	100
Horizon Academy	Well 2 Fire Abandoned	Inactive	3	100
Longetnest lan og L Covin	RV Park Well #1	Inactive	10	70
Longstreet inn and Casino	Hotel Well #2	Active	10	70

 Table C-1. Inventory of Water Sources for Active Public Water Systems in Nye County

NDOT Lathrop Wells Roadside Park RP801NY	The Well	Active	1	80	
Patch of Heaven	Well	Active	not listed	50	
Short Branch	Well	Active	7	50	
AVSTP 4PD	4PD	Future	n/a		
Beatty					
Baileys Hot Springs	Baily's Hot Springs	Active	not listed	20	
Beatty RV Park	Well 1	Active	1		
	Well 1 Inactive	Inactive	24	30	
	Well 2 Inactive	Inactive	90	90	
Beatty Water and Sanitation District	Well 3 Inactive	Inactive	130	180	
	Indian Springs Well	Active	75	110	
	Middle Well Inactive	Inactive	75	75	
	Summit Well	Active	40	80	
	Well EW4	Active	500	900 (500)	
	<u>Big Smoky V</u>	alley - Northern			
Carvers Café	The Well	Active	2	50	
Carvers Smoky Valley RV and	Well 01	Active	50	60	
MHP	Well 02	Inactive	20	30	
NDOT Big Smoky Roadside Park RP807NY	The Well	Active	3	50	
Round Mountain DUC	Well HW1	Active	1200	1500	
	Well HW2	Active	1200	1500	
Shoshone Estates Water	Well 1	Active	42	135	

Well 2 Active 12 80	Company	Well 2	Active	12	80
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	West Well 1	Active	432	700		
Smoky Valley Mine	East Well 1	Active	1500	1500		
	East Well 2	Active	1334	2500		
	<u>Big Smoky Val</u>	ley - Tonopah Flat				
	Main Well	Inactive	35	35		
Manhattan Town Water	Off-Line (Bottom Road Well)	Inactive	5			
	Pipe Springs Well	Active	50	50		
	Gabbs Valley					
Gabbs Water System	Well	Active	64	420		
	Emergency Well 2	Inactive	not listed			
	New Well	Future	n/a			
	Ione	e Valley				
	Berlin Well	Active	40	50		
Berlin Ictnyosaur State Park	Berlin Spring (off- line)	Inactive	not listed			
	Well 1	Active	not listed	325		
Ione water System	Well 2 (Backup Well)	Inactive	not listed	350		
	<u>Pahru</u>	mp Valley				
Anchor Inn MHP	Well 1	Active	7	45		
Big Five Park	Well 1	Active	5	10		
Big Valley MHP	Well 1	Active	5			
	Well 2 Back Up	Active	not listed			
C Vallay MHD	Well 1	Active	5	5		

	Well 2	Active	5	43
Calvada Meadows UICN	Well	Active	not listed	
Carberry Square	Well	Active	not listed	50
Champions	The Well	Active	3	
Chielen Dersk	Back Well	Active	5	5
Chicken Ranch	Front Well	Active	5	5
Chipmunk Retreat	Well 1	Active	12	12
Cousto Comon Monkot	Well 1 Inactive	Inactive	not listed	
Coyote Comer Market	Well 2	Active	not listed	50
Coyote Corner III	Well	Active	30	30
	Well 48	Active	50	156
Country View Estates UICN	Well #48 A	Active	45	320
	Calvanda North Well	Active	15	318
Desert Center Plaza	Well	Active	50	50
Desert Mirage Homeowners	Well 1	Active	5	130
Association	Well 2	Active	5	130
	Well 1	Active	42	550
	Well 2	Active	200	800
Desert Utilities	Well 3 Inactive	Inactive	not listed	600
	Well 4 Inactive	Inactive	150	650
	Well 5 Inactive	Inactive	not listed	1000
Elks Lodge Pahrump	The Well	Active	1	1

	Well 1	Active	not listed	10
Escapee CO OP of Nevada	Well 2 Abandoned	Inactive	10	15
	Well 3 New	Active	not listed	15
Horizon Market III	W01	Active	10	30
Just Country Bar	Well	Active	20	20
LDS Church Pahrump Ward	Well	Active	33	37
LJ's Market	Well 1	Active	10	30
Low Low Liquor Cigarettes and Goodies	Well W01	Active	20	20
Moose Lodge 808	Well	Active	not listed	
Mountain Falls Water System UICN	Well #1	Active	15	1500
	Well #2	Active	15	1500
Mountain View MHP UICN	Well 1	Active	2	5
Nya County Compley	Well 1	Active	5	350
Nye County Complex	Well 2	Active	150	150
Our Bar	Well	Active	not listed	12
Pahrump Café	Well	Active	not listed	25
Pahrump RV Park	The Well	Active	3	74
Pahrump Senior Center Inc.	Geezer Well	Active	20	20
	Well 1 Abandonded	Inactive	325	
	Well 2 Bridger St.	Active	325	325
Pahrump Utility Company, Inc. (Hefen Ranch Estates)	Well 3 Manse Rd.	Active	not listed	670
	Well 4 Fox Ave.	Active	670	670

	Hefen Well #5 Heritage Dr.	Inactive	670	670
Discount Vallay	Concordia East Well 1	Active	500	500
Pleasant Valley	Concordia West Well 2	Active	500	500
Quick Save Market	Well W01	Active	20	20
Sanders Winery	Well	Active	not listed	
	Well 1 (Sheri's Well #1)	Active	2	
Sherry Kalen	Well 2 (Sheri's Well #2)	Active	5	100
Spring Mountain Motor Sports Ranch	Well	Active	not listed	40
Stagestop Restaurant	Well 1	Active	10	40
Sunset MHP	Well 1	Active	125	150
	Well 2	Active	not listed	150
Terribes Ranch Casino and RV Park	Well W01	Active	35	35
The Maverick	Well	Active	20	80
Town Hall Bar	Well W01	Active	25	50
Tumbleweed Tavern	Well W01	Active	10	30
	Well 1	Active	861	
	Well 2	Active	1000	
Utilities Inc. of Central Nevada	Well 8	Active	570	
	Well 11	Active	141	
	Well 9	Active	1050	
Valley Bar	Well	Active	12	12
Villa Locale	Well	Inactive	12	12

VFW Pahrump Post 10054	Well	Active	7	23
Whos Dunes	The Well	Active	2	4

Ralston Valley					
	Well 1	Active	175	175	
	Well 2	Active	165	165	
	Well 3	Active	180	180	
	Well 4 Active 200	200	200		
Tonopah Public Utilities	Well 5	Active	200	200	
	Well 6	Active	100	100	
	Well 7	Active	not listed	200	
	Well 8	Active	250	250	
<u>Sarcobatus Flat</u>					
Shady Lady Ranch	Well 01	Active	1	1	
	White R	River Valley			
NDOT Sunnyside Roadside Park RP810NY	The Well	Active	1	30	

Community Source Water Protection Plan for Public Water Systems in Nye County, Nevada May 2012

Appendix D Delineation Summary

## **Community Source Water Protection Plan for Public Water Systems in Nye County, Nevada**

## **Delineation Summary Report**

In order to update the information and results presented in previous wellhead protection (WHP) plans and establish a county-wide Community Source Water Protection (CSWP) Plan for public water systems (PWSs) in Nye County, a comprehensive review of pertinent geological, hydrogeologic, and water supply information was completed. Once the Team located each of the PWS drinking water sources in Nye County and gathered pertinent technical data, source water protection areas (SWPAs) were delineated for each source using a United States Environmental Protection Agency (EPA) recognized method. This Summary Report provides the technical information and other considerations used to determine the methodology selected for SWPA delineations.

## 1. Geologic and Hydrogeologic Description

Nye County is located along the transition between the central and southwest sections of the Great Basin, on a long linear feature called the Walker Lane Belt. To the north, topography is characterized by dip-slip faulting which results in horst and graben valleys typical of the Basin and Range Physiographic Province while the terrain to the south is typified by both dip-slip and strike-slip faults which result in comparably irregular valley systems.

Much of the region's terrain, especially near Tonopah, is characterized by local outcrops of the Southwest Nevada Volcanic Field. The volcanic field was last active through the Miocene and erupted through the previously deposited sand and limestone outcropping in the area. Volcanic activity began as felsic in composition and gradually shifted to a more basaltic composition starting approximately ten million years ago.

## 1.1 Amargosa Valley Geologic Description

## 1.1.1 Physiography

Amargosa Valley lies in the Amargosa Desert Hydrographic Basin (basin number 230) in Southern Nevada, straddling the California border. The basin covers over 1,300 square miles, about two-thirds of which is in Nye County, Nevada. Nearly all water development has occurred in the Nevada portion of the basin. Of the remaining third of the basin in Inyo County, California, only the small town of Death Valley Junction is a developed area.

The Amargosa Desert Basin lies just to the north of Death Valley National Park in Inyo County, separated by the Funeral and Amargosa Ranges to the south. East of the basin is the Pahrump Valley, which is separated from Amargosa Valley by the Last Chance and Nopah Ranges. The Amargosa Basin is within the Southwest Nevada Volcanic Field and contains several cinder cones, such as those near Lathrop Wells, as well as ancient lava flows. Elevations range from 8,740 feet above mean sea level (amsl) at Grapevine Mountain to less than 1,900 feet amsl near the Amargosa River in California, spanning a vertical relief of nearly 7,000 feet for the basin.

#### 1.1.2 Geology

The primary structural feature in the vicinity of Amargosa Valley is the Southwest Nevada Volcanic Field. The volcanic field gradually sifted its composition over the last twenty million years before becoming dormant approximately ten million years ago. As a result, the region displays a wide range of volcanic rocks, from light colored rhyolites to dense, dark colored basalts. Calderas, or large eruption craters, and cinder cones are common throughout the volcanic field.

The primary water bearing unit in the valley is the Quaternary valley-fill, which is composed of alluvium, fluvial lake bed deposits, old semi-consolidated alluvium, conglomerates and volcanic sediments. Most ground water development in the basin occurs in this unit. Paleozoic carbonates and clastic sedimentary rocks also function as an aquifer in the Ash Meadows area. This is the primary water source for Devil's Hole and the nearby springs in Ash Meadows but is not developed for community ground water resources.

#### 1.1.3 Hydrology

The climate of Southern Nevada can be described as bi-modal, with a sharp contrast between winter and summer precipitation (NOAA, 2010). Winter precipitation, which originates over the Pacific Ocean, makes up the bulk of the yearly water budget. After evaporating over the Pacific, water is carried inland to the south by the Pacific Jet Stream, around the Sierra Nevada Mountains, and into Amargosa Valley. In contrast, summer precipitation is sourced from the Gulfs of Mexico and California and carried northward by high pressure cells of the North American Monsoon. Summer precipitation makes up only a small percentage of the overall moisture budget and has little impact on recharge in Southern Nevada.

Because of its position in the arid Mojave Desert, Amargosa Farms, at 2,450 feet in elevation in Amargosa Valley, receives only 4.55 inches of precipitation annually. Average monthly precipitation ranges from .093 inches in February to 0.10 inches in June. Annual average temperatures vary between an average high temperature of 61°F in January to an average high temperature of 103.8°F in July (NOAA, 2010). Amargosa Valley is an exceptionally arid location with annual potential evapotranspiration an order of magnitude higher than annual precipitation.

Ground water discharge in the valley is anomalously high for its elevation and the area of its surrounding highlands. Much of this recharge occurs in adjacent valleys and is believed to enter the basin through subsurface flow. Recharge originates primarily from recharge zones in the spring, Sheep and Southern Pahranagat Mountains in the east, the Nevada National Security Site to the north, and to a lesser extent from the Bullfrog and Grapevine Ranges to the west. Additional recharge comes from direct precipitation in the basin, especially in Ash Meadows, and from irrigation and the Amargosa River. As ground water moves through the regional flow system, it moves generally west-southwest into Amargosa Valley and continues either southwest into Death Valley or south to discharge into Ash Meadows.

Ground water varies in depth throughout the valley. Near Ash Meadows ground water is extremely shallow, sometimes intersecting the ground surface, while it can reach depths of 135 feet under the Amargosa Farms area and as much as 400 feet below ground

surface near Lathrop Wells. Ground water within the Farms area flows in a radial pattern toward a well developed pumping center located five miles south of the intersection of U.S. Highway 95 and Nevada State Highway 373.

Unlike much of Nye County, Amargosa Valley has surface water features in the form of Ash Meadows, a large regional discharge area with over 30 springs and nearly 23,000 acres of wetlands. Ash Meadows is the confluence of regional discharge systems covering much of Southern Nevada and extending into Death Valley (Naff et al., 1974). Here, ground water intersects a fault zone, which juxtaposes carbonates in the north with low permeability deposits, and locally forces ground water to the surface. The region was extensively farmed before the creation of the Ash Meadows National Refuge Area. Today, pumping rates in nearby wells are heavily restricted to maintain water levels in Ash Meadows and to protect the Devil's Hole Pupfish.

#### **1.2 Beatty Geologic Description**

#### 1.2.1 Physiography

The Town of Beatty is located in Nye County near the California border and Death Valley National Park. It is within the southern reaches of the Oasis Valley (basin number 228), near the border with the Amargosa Desert Basin (basin number 230). The Shady Lady water system is located north of Beatty, in Sarcobatus Flat (basin number 146).

#### 1.2.2 Geology

The primary structural feature in the vicinity of Beatty is the Timber Mountain-Oasis Valley Caldera Complex, which is a part of the Southwest Nevada Volcanic Field, as described in Section 1.1.2, Amargosa Valley Geology.

Geologic units near Beatty can be separated into three distinct groups: Cambrian Siliciclastics, Miocene Volcanics and Quaternary Valley-fill. The oldest of the three units are the Cambrian Siliciclastics, a complex of carbonate and clastic sedimentary rocks, which were originally deposited in a shallow marine environment and have undergone subsequent alteration by both regional and contact metamorphism. There are two geologic units of this type outcropping near Beatty, the Wood Canyon Formation and the Sterling Quartzite. Miocene volcanics in the area come in a variety of forms, from siliceous rhyolites and tuffs to basalt flows and the occasional diorite dyke. Quaternary valley-fills are composed of alluvial and stream-bed deposits and made up of a combination of weathered materials from local volcanic and sedimentary rocks.

#### 1.2.3 Hydrology

Beatty is located immediately north of Amargosa Valley, and like Amargosa Valley, has a bi-modal climate with the same precipitation mechanisms. Because of its position in arid Mojave Desert, Beatty receives only 3.49 inches of precipitation annually (NOAA, 2010). Monthly averages vary considerably between seasons with an average high temperature of 98°F in July and 54°F in December (Weather.com).

Ground water beneath the Town of Beatty can be found at a depth of approximately 20 feet or less when the Amargosa River is flowing (typically during the winter rainy season), while depth to ground water in the surrounding hills can be over 100 feet. Well

logs suggest the existence of an alluvial aquifer extending to a depth of at least 600 feet beneath Beatty.

#### **1.3** Pahrump Geologic Description

#### 1.3.1 Physiography

The Pahrump Valley hydrographic basin (basin number 162) is a closed basin split between three different counties in two separate states. While almost all development is within Nye County, 40 percent of the valley is within Clark County and 25 percent is within Inyo County, California. Pahrump Valley is bounded by the Spring Mountains to the east and the Last Chance and Nopah Ranges to the west. The basin is separated from Mesquite Valley to the south by a large fan originating on Mount Potosi.

Pahrump Valley is a hydrologically closed basin which covers approximately 1,050 square miles in area with a vertical relief of nearly 10,000 feet. Elevations range from the top of Mount Charleston at 11,916 feet amsl, to the Stewart Valley Playa at 2,460 feet amsl. All ground water in the alluvial fill aquifer is ultimately either removed through wells, drained into either the Pahrump or Stewart Valley playa, or flows downward into the underlying carbonate aquifer.

#### 1.3.2 Geology

The Pahrump Valley is a horst and graben system, typical of the Basin and Range Physiographic Province. The valley was formed as extensional forces in the Tertiary Period pulled apart the existing carbonate bedrock. As the bounding mountains were pulled away from each other, the central block was forced down, eventually forming a deep linear depression. As sediments eroded off the surrounding mountains, they filled this depression up to several thousand feet, burying the ancient carbonates and creating the modern alluvial aquifer system and valley floor. As a result, there are two distinct aquifer systems in the basin; the alluvial valley-fill aquifer, and the fractured carbonates of the surrounding ranges and deeply buried basement rock.

The valley-fill aquifer contains the primary water bearing units in Pahrump Valley and all known water production is found here. The sediments are composed of alluvium, Pleistocene lake bed deposits, and conglomerates with occasional volcanic units. Deposits are typically fine grained in the western and central sections of the valley, and trend to more coarse grained, bouldery deposits at the foot of the Spring Mountains to the east. Valley-fill sediments are often sourced from the bounding ranges, and are composed primarily of weathered volcanic and carbonate clasts.

Properties of the valley-fill aquifer have been established through well logs and a limited number of aquifer and specific capacity tests. Transmissivity values in the upper 1,000 feet of sediments are typical of fine grained fill material, between 1,000 and 4,000 feet<sup>2</sup>/day, and have been mapped by Harrill (1986). Well logs also show the generally fine grained nature of the fill material, consisting of silt, clay, fine-grained sand, evaporates and tuffs. Additionally, many of the well logs show interlayered calcrete and clay beds, whose low permeability forms localized confining layers throughout the valley.

In the bounding mountain ranges and beneath the valley-fill deposits lies a thick sequence of Paleozoic carbonate rocks. Starting from the bottom, these include the Cambrian Bonanza King Formation, the Nopah Formation, the Poginop Group, Eurika Quartzite, Ely Springs, Nevada and Devils Gate Formations, as well as the Sultan Monte Cristo and Bird Springs Formations. Together these units make up a series of carbonate aquifers and clastic aquitards which have been proposed to function as a conduit for interbasin flow in the Amargosa Regional Flow System (Naff, et al., 1974). Where these confined aquifers intersect the land surface, they produce springs and seeps. The carbonate aquifer has not been directly developed for public use in the Pahrump Valley.

#### 1.3.3 Hydrology

Because of its position in the arid Mojave Desert, Pahrump receives only 4.71 inches of precipitation annually. Winter average precipitation (December, January, and February) is 2.00 inches, while summer average precipitation (June, July, and August) is only 0.72 inches annually. Monthly average high temperatures vary considerably between seasons with an average high of 101°F in July and 58°F in December and January (weather.com).

Depth to ground water in the Pahrump Valley typically varies from less than 30 feet below the land surface to several hundred feet below the surface of the alluvial fan in the extreme east of the Nye County portion of the valley. Beneath the Town of Pahrump, depths vary from around 90 feet below the land surface west of Nevada Highway 160, to 45 feet on the west end of Pahrump. Areas of the basin where ground water nearly reaches the surface include: Stewart Valley, Manse Spring, and near the Artesia subdivision. Historically, ground water discharged as springs, wetlands and riparian areas on the valley floor, but much of this was lost during agricultural development.

Natural variations in ground water flow occur near Wheeler Wash and Carpenter Canyon, while man-made shifts in ground water direction occur near major utilities and the large dairy producer in the valley.

#### 1.4 Tonopah and Northern Communities Geologic Description

#### 1.4.1 Geology and Physiography

#### 1.4.1.1 Tonopah

Tonopah sits on a heavily faulted block of mixed volcanic material, which has been subjected to heavy hydrothermal alteration and mineralization. This alteration caused a significant increase in the concentration of naturally-occurring contaminants such as arsenic, fluoride and other metals in the underlying aquifer and has forced the community of Tonopah to import water from the nearby Ralston Valley. The well field in Ralston Valley is located in a shallow section of the alluvial basin fill aquifer, adjacent to a portion of the San Antonio Mountains which is composed largely of andesitic and basaltic rocks. Because of its position, it can be assumed the clasts comprising the valley fill aquifer are composed of the same rock type as the adjacent mountains. This assumption is supported by available well logs.

#### 1.4.1.2 Big Smoky Valley
The Big Smoky Valley lies between the Toiyabe and Toquima Ranges in the northern reaches of Nye County and extends into both Esmeralda and Lander counties. The basin fill aquifer, where most of the PWS wells are located, is composed of unconsolidated quaternary fill. The fill itself consists of clasts of the bounding mountain ranges that have been weathered and transported into the basin, which are largely volcanic in nature.

The Toquima Range, on the east side of the valley, also contains PWS wells serving the Town of Manhattan, and is composed of a thick sequence of igneous rocks, trending from granitic plutons in the south to undifferentiated masses of surface volcanics, such as rhyolite and tuff, in the northern end of the range. This sequence has been subjected to significant hydrothermal alteration and mineralization, which presents some water quality concerns for PWSs with wells sited in these units.

#### 1.4.1.3 Gabbs

The Town of Gabbs can be found in the Gabbs Valley, immediately west of the Paradise Range. The Town sits on a section of the Luning Formation, a 5,000 feet thick band of Triassic recrystalized limestone and dolostone, above Jurassic limestone and siltstones of the Gabbs and Sunrise Formations. The Luning formation has been subjected to intense hydrothermal alteration, especially where it is immediately adjacent to a large granitic pluton east of Gabbs, which may account for the extensive local mineralization.

#### 1.4.1.4 Ione Valley

Both the Berlin Ichthyosaur State Park and the Town of Ione are found in the northeast reaches of the Ione Valley, in a region composed of heavily faulted limestones and andesite flows. At Berlin, underlying bedrock is almost entirely composed of limestones from the Grantsville and Luning Formations folded into a complex structure. Bedrock near Ione is similar to that of Berlin, except the geology is further complicated by the presence of a faulted granitic pluton.

## 1.4.1.5 White River Valley

The White River Valley extends across the northeastern part of Nye County and southwestern part of White Pine County. Due to the fertile grounds and available water resources, the White River Valley consists of extensive grazing areas and ranches. The White River Valley is flanked to the west by several mountain ranges including the Horse, Grant and Quinn Ranges and to the east by the Egan and Seaman Ranges. The predominant formation beneath the White River Valley is a lacustrine sedimentary unit. The formation can be seen as outcroppings in many of the ranges within the White River Valley such as the Egan, Golden Gate and Grant Ranges. Fanglomerate aprons border the mountain ranges of this valley with alluvium and lacustrine deposits that form a valley fill as much as several thousand feet thick. (Kleinhampl and Ziony, 1985)

#### 1.4.2 Hydrology

#### 1.4.2.1 Tonopah

The predominant water supply for the Town of Tonopah is the valley-fill aquifer in Ralston Valley. The perennial yield for the Ralston Valley is approximately 6,000 acrefeet/year (State Engineer's Office, 1971). In terms of water quality, mining activities such as dewatering and mining process water and naturally occurring arsenic are a concern for residents of the Tonopah area.

Alluvial deposits characterize the majority of the formation in the Ralston Valley and the thickness is generally 100 feet or less with ground water in close proximity to the land surface. The alluvial aquifer in Ralston Valley consists of sand and gravel deposits that have been eroded from the mountains and transported by streams to the valley floor in the geologic past. Ground water within these deposits generally flows from north to south as indicated by water levels in the few wells that exist between Belmont and Mud Lake. There is likely ground water flow in the underlying bedrock, but this portion of the ground water flow regime is not well understood. The alluvial deposits have a potential to provide several thousand acre-feet of ground water on an annual basis. However, this resource has only been utilized to a limited degree as a source of water supply to the Town of Tonopah and a handful of domestic and stock-watering wells. Subsurface data indicates virtually all ground water recharge in Ralston Valley up-gradient (north) of the Town's well field flows southward past the well field.

Ten to 30 miles north of Rye Patch, ground water in the alluvial deposits is found at depths of approximately 200 feet below ground surface(bgs). Five miles south of Rye Patch near the Tonopah Airport, the depth to ground water in the alluvium increases to nearly 500 feet bgs. In the vicinity of Rye Patch, ground water rises to within a few feet of the land surface as a result of conditions that combine to constrict ground water flow in the alluvial deposits. Ralston Valley narrows in this area and a bedrock high effectively acts as a dam, impounding ground water to the north. These conditions provide a very favorable environment for ground water development.

The alluvial deposits overlay bedrock presumably of volcanic origin, similar to the rocks that crop out immediately west and northwest of the well field. Because the alluvial deposits have yielded adequate supplies of good quality water to Tonopah, the ground water resources potentially available from fractured rocks in this area have not been exhaustively explored and little information exists regarding the hydrogeologic properties of the underlying rocks.

#### 1.4.2.2 Big Smoky Valley

The Big Smoky Valley area is designated as Hydrographic Area 137 and is segregated into two Subareas, (A) Tonopah Flat and (B) Northern Part. Subarea 137A is bounded by non-water bearing rocks and a low alluvial ridge separates it from Subarea 137B. The Tonopah Flat Subarea has a surface area of 1,603 square miles and encompasses parts of Nye, Esmeralda and Mineral County. Tonopah Flat receives surface inflow from Ione Valley but has no surface water outflow (Rush and Schroer, 1971). Big Smoky Valley has two principal valley fill water bearing units: one in the northern part of the valley and one beneath Tonopah Flat. The boundary between the two formations coincides with the ground water divide, which is near the low alluvial divide in the basin floor. The

components of inflow to the valley-fill formations are recharge from precipitation, runoff, and subsurface inflow from Ione Valley to Tonopah Flat. Only an estimated 2-percent of the average annual precipitation of 580,000 acre-feet recharges the valley in Tonopah Flat, yielding an annual recharge to the ground water system of 12,000 to 15,000 acre-feet. The basin fill aquifer occurs in topographic basins that are physically separated from each other by mountain ranges. The carbonate rock aquifers can extend across topographic basins through the mountain ranges forming multi-basin ground water flow systems. The carbonate aquifer system is composed of thick sequences of Paleozoic and Mesozoic limestone and underlies a large portion of Nevada. The carbonate aquifer was estimated to reach its western extent along the San Antonio Mountains, which form the eastern edge of the Tonopah Flat Subarea. Thus the Tonopah Flat Subarea is not believed to be hydraulically connected to the carbonate aquifer flow system. (Handman and Kilroy, 1997)

#### 1.4.2.3 Gabbs

Gabbs Valley and its tributary drainage areas are principally in northeastern Mineral and northwestern Nye Counties. Gabbs Valley is about 32 miles long and about 20 miles wide. The long axis of the valley trends west. The valley as defined is about 950 square miles. The total drainage area, including tributary valleys, is approximately 1,150 square miles.

Ground water in the Gabbs Valley is presumed to originate largely or entirely from precipitation within the drainage basin. Precipitation on the flanks of the mountains is the source of virtually all of the ground water in the valley fill. In part, precipitation in the mountains collects in intermittent streams which flow from the mountains. Some of this stream flow seeps to the ground water reservoir through the unconsolidated deposits of the valley fill. Part of the precipitation seeps into the bedrock in the mountains and through the fractures or other secondary openings in the bedrock and eventually moves into the valley fill. Ground water is stored largely in the valley fill and moves slowly toward areas of natural discharge. The Permian metovolcanic rocks below the valley are of low permeability, but water most likely is transmitted through fractures, supplying water to the communities within the valley.

Natural ground water discharge occurs where the water table is near the land surface. In Gabbs Valley there are two such areas. Principal is the topographically low area in and adjacent to Akali Flat in the western part of the valley. The second is near Gabbs in the southwest part of the valley. This area is about 400 feet higher than the Alkali Flat and is a location where the water table ordinarily would be expected to be fairly deep. The shallow water apparently results from the combination of a nearby source of recharge, the Paradise Range, and a damming effect caused by a reduction of transmissibility of the valley fill westward from the mountains. (Eakin, 1969)

#### 1.4.2.4 Ione Valley

Ione Valley is north-trending and is bordered on the east by the Shoshone Range, on the west by Paradise Range and to the southwest by the Cedar Mountains. The estimated average annual recharge to the ground water units in Ione Valley is approximately 8,000 acre-feet. Most of the ground water is discharged through evapotranspiration and subsurface outflow through Ione Draw. The estimate of perennial yield is approximately 6,000 acre-feet for Ione Valley. The source of ground water in the basin is precipitation.

The mountains, which receive more precipitation than the lowlands, contribute most of the runoff and recharge to the basin. During the spring as the snow melts, some of the resulting stream flow infiltrates cracks or other openings in the consolidated rocks and moves toward the valley as ground water underflow. A small portion of the precipitation on the alluvial apron and some of the stream flow crossing the alluvial apron also infiltrates to the ground water units in the alluvium. The total thickness of the primary water bearing unit in the alluvium is not well understood and is thought to be variable through the valley. In general, ground water movement is in the direction of surface flow that is, from the mountain areas through the alluvium toward areas of discharge. Flow in Ione Valley is generally toward the axis of the valley and southward where ground water and surface water drain from the valley through Ione Draw. (Everret and Rush, 1964)

#### 1.4.2.5 White River Valley

White River Valley is a semiarid intermontane trough in the central part of the Great Basin. The water supply is derived from large springs which annually discharge approximately 40,000 acre-feet of water and from the White River. The principal water bearing zones are in the alluvial apron and river bed deposits which underlie the valley lowland. These aquifers consist of moderately to highly permeable sand and gravel deposits interbedded with silt and clay. The igneous and sedimentary bedrocks of the mountains that surround the valley are relatively impermeable and are a barrier to ground water movement, except for parts of the Pogonip and Nevada Limestones of Paleozoic age. These limestones are cavernous and are believed to transmit large quantities of water through the formation of karsts and other subsurface cracks.

The ultimate source of ground water is from precipitation within the watersheds of White River and Jakes Valleys. Most of the precipitation is lost by evaporation and transpiration before it percolates into the ground water reservoir. Estimates based on the available precipitation data indicate the annual ground water recharge is about 53,000 acre-feet. This water moves in the subsurface towards the axis of the valley where about 34,000 acre-feet is discharged from the valley by evapotranspiration. The remainder flows out of the valley on the surface or as underflow. (Eakin, 1966)

The White River Valley has four surface water reservoirs:

- a. Adams-McGill with an approximate surface area and storage capacity of 791 acres and 4,040 acre-feet, respectively;
- b. Dacey with an approximate surface area and storage capacity of 215 acres and 784 acre-feet, respectively;
- c. Hay Meadows with an approximate surface area and storage capacity of 203 acres and 1,120 acre-feet, respectively; and
- d. Tule Field with an approximate surface area and storage capacity of 218 acres and 875 acre-feet, respectively.

However, it should be noted the above described reservoirs do not provide a source of drinking water to PWSs in Nye County.

## 2. Delineation Methods

The distinction between "modeling" and "delineation" should be noted at this point. Modeling is the process of using physical features and/or criteria to predict capture zones that reflect aquifer conditions and behavior. Delineation is the process of using the modeled area in conjunction with other criteria to define the SWPA for each drinking water source. In some cases, the modeled capture zones may serve as the final SWPAs; however, in this Plan where the model output created some uncertainty, other considerations for the final SWPA delineations were incorporated. Thus, the final SWPA delineations included a combination of model outputs and areas created from computer-based algorithms for combining modeled areas when they were adjacent or overlapping.

The Team used one of three methods to model the source or well capture zones: the Analytical Method (using EPA's Wellhead Analytical Element Model, version 3.2.1, or "WhAEM 2000" software); the Arbitrary Fixed Radius (AFR) method; or the Calculated Fixed Radius (CFR) method. The method selection was based on the availability (or lack of availability) of technical data associated with individual wells. The Nye County Data Matrix Summary table (Table D-1 on page D-14, immediately following this Summary Report) contains information used: 1) to determine whether or not each well should be modeled or re-modeled; 2) to recommend the modeling method; and 3) to incorporate collected data into the CFR equations or the analytical model. The Nye County Data Matrix Codes (Table D-2 on page D-23) is included after Table D-1 to provide information on the codes referenced in Nye County Data Matrix Summary table.

The AFR is a circle with a specified radius around the well. The distance of the radius is based on established set back requirements for distancing specific contaminant sources from public drinking water wells. For example, Nevada Administrative Code (NAC) 445A.66865.2(b) prohibits locating a public water supply well within 150 feet of a septic tank or other source of pollution or contamination. Additionally, the Nevada Division of Environmental Protection (NDEP) uses a 3,000-foot fixed radius as a minimum for all Source Water Protection Areas (SWPAs) at the State level in performing vulnerability surveys around existing public water supply wells. NDEP also utilizes the 3,000-foot fixed radius for consideration in various permitting activities and to meet contaminant survey requirements for the development of new public drinking water wells funded through some NDEP grant and loan programs.

In the Nye County CSWP Plan, the AFR method was used for existing sources with little or no information on the ground water conditions for the area, such as the Beatty RV Park well and Bailey's Hot Springs north of Beatty. The SWPAs for the two wells in Gabbs were previously delineated using the AFR method and were not re-delineated as a part of this Plan. Similarly, wells proposed for future construction, such as the new Gabbs well and the well for the Amargosa Valley Science and Technology Park system, were delineated using the AFR method.

The CFR method is used when minimal information is available to establish a radius for a specific time of travel (TOT), which is defined as the time required to transport water from a given location to the source location. Additional considerations for modeling capture zones are provided in Section 5 of the Nevada Integrated Source Water Protection Program, Draft Update: March 2010. The method utilizes a simple mathematical relationship between pumping rate, aquifer porosity, length of well screen and TOT to establish a radius around the well. These radii represent the estimated maximum time required for contaminants to reach the well in question.

The following equation was the method used for the CFR for applicable wells:

$$r = \sqrt{\frac{Qt}{\pi nb}}$$

Where:

ere:	
r = calculated fixed radius (capture zone in	$\pi = pi = 3.1416$
ft) for the specified travel time;	n = aquifer porosity (expressed as a fraction)
Q = pumping rate of the subject well	by volume)
$(ft^{3}/day);$	b = length of well screen (ft)
t = travel time to well (days)	
In the COWD Dian, the CED method was concred	lly used for non community DWCs, such as

Reference: EPA, 1987

In the CSWP Plan, the CFR method was generally used for non-community PWSs, such as churches and restaurants in Pahrump. The CFR method was also used for some community wells, such as the Carver's Smoky Valley RV and Mobile Home Park (MHP) and Shoshone Estates Water Company in Carvers, where an analytically modeled capture zone was expected to produce a significantly smaller capture zone.

## Figure D-1. Mathematical Basis for Capture Zone Analysis of Nye County Wells



Analytical modeling requires the most geological and hydrologic information and is the preferred method due to its relative accuracy in reflecting ground water and contaminant movement through the subsurface. The analytical method uses a set of equations to define a steady state capture zone and is suitable in environments found in unconsolidated basin-fill sediments without fracture flow or surface water conditions. Information required includes such hydrogeologic

parameters as porosity, hydrologic gradient, saturated thickness, pumping rate and several others (Figure D-1).

In some of the Nye County communities, NDEP had previously approved SWPAs from previous WHP plans. For the purposes of this report, the CSWP Team determined SWPAs for 42 drinking water sources, including SWPAs in Beatty, Manhattan, Gabbs, Tonopah, and 23 in Pahrump, were previously endorsed by the State and should continue to be used. For other previously delineated SWPAs, the Team determined the SWPAs should be remodeled for reasons including increased maximum pumping rates, new wells incorporated into the system, and abandoned wells removed from system operations. Additionally, the Team chose to remodel 18 previously endorsed SWPAs in Pahrump and one in Amargosa Valley due to the elongated shape of the SWPAs, which the Team did not believe was reflective of the actual ground water flow.

Prior to delineating SWPAs, the Team submitted a conceptual hydrologic model to NDEP for review and approval. The conceptual hydrologic model included parameters that would be used for SWPA modeling, methodology proposed (if any) for modeling, whether to re-model various SWPAs, and justification for the proposed methodology.

In numerous cases, the SWPAs for wells overlapped (in the case of AFR and CFR delineations) or were immediately adjacent to each other and displayed apparent interference with each other (in the case of analytical delineations). The Team felt it would be a more realistic and conservative approach to combine such delineated areas into single TOT areas. The convex hull algorithm within the geographic information system (GIS) software was utilized for this purpose. These combined areas are depicted on the SWPA maps included in Appendix A.

The method used to establish SWPAs for each PWS well is indicated in Table D-1, Nye County Data Matrix Summary, (page D-12) immediately following this Summary Report. Detailed inputs for the WhAEM2000 model and modeling results are also provided in the Table D-1.

# 3. <u>General Modeling Assumptions and Approach</u>

CFR and analytical model input parameters and specifications were based on information provided in the Nye County Data Matrix Summary table (page D-14). Multiple reference resources were used to obtain this data, including interviews with PWS owners and operators, existing WHP Plans, Nevada Source Water Assessment Program (SWAP) Water System Assessment Reports from the Bureau of Safe Drinking Water (BSDW), the Safe Drinking Water Information System (SDWIS) database, well logs from the Nevada Division of Water Resources (NDWR), United States Geological Survey (USGS) references, field data, and interpreted/calculated data. Where discrepancies were observed among different references, the information provided by the PWS operator was assumed to be the most accurate.

For analytical modeling purposes, hydraulic gradient values were derived from ground water elevation information provided by NDWR and USGS. Using this data, a flow net was created to simulate the gradient across the modeled area utilizing a matrix of test points, comprising locations of known ground water elevation. The software platform incorporates the test point data and produces a hydraulic gradient across the model. The level of detail, and assumed accuracy, increases with the number and spatial distribution of test points. This method affords more localized detail than just drawing a line perpendicular to isobars on a topographic map.

Multiple wells within the same hydrographic basin, and close enough to anticipate how the wells' SWPAs may be influenced by pumping activities from surrounding wells, were modeled as if all

wells were operating concurrently, full time, and at maximum pump capacity. This was designed to maximize the length and width of the resulting capture zones and account for the interference caused by the relative well proximities. This method also successfully demonstrated localized interference (including small-scale changes in ground water flow directions) among wells in the Hadley area and in several locations in Pahrump.

Prior to modeling the SWPAs, the modeler performed a comprehensive sensitivity analysis of WhAEM to understand the software platforms idiosyncrasies. Multiple model iterations were performed to ascertain how the results are affected by modifications to the input parameters. Through multiple model iterations, each input parameter was modified and the resulting capture zone documented. The resulting changes in capture zone length and width were plotted versus the value of the respective input parameters to show the sensitivity of a model to said parameter change. For example, the variable widths of the SWPAs, were attributed primarily to the pitch of the hydraulic gradient. The WhAEM platform was highly sensitive to gradient. The SWPAs were thicker/wider where gradient was flatter and thinner/narrower where the gradient pitch was relatively steep.

								Previous WH	P Plan						Current WHP Plan Up	date									I	Well Lo	cation D	Data
PWS Name	Code	PWS #	Code	System Type	Code	Well Name	Well Status	Modeled Pump Rate	SWPA Method	Well Status	Pumping Rate/Yield (gpm)	Code	SWPA to be Updated?	Proposed SWPA Method	Justification	Revised SWPA Method	Revision Justification	PWS Approved	NDEP Approved	Township	Code	Range	Code	Section	Code	1/4 Section	Code	1/4-1/4 Section
Amargosa Desert			1			1		1		<u> </u>						1						<u> </u>		1				
Amargosa Elementary School	D65	NV0002190	D65	NTNC	D65	Well 1	Active	5	Analytical	Active	150	Е	Yes	CFR	Pumping rate increased. System is remote.					16S	D65 F2	49E	D65 F2	9	D65 F2	SE	D65 F2	SW
Amargosa Park	D39	NV0000828	D39	TNC	D39	Amargosa Park Well	n/a	n/a	n/a	Active	150	Е	Yes	CFR	System is remote.					16S	D39 F1	49E	D39 F1	16	D39 F1	NE	D39 F1	NW
Amargosa Senior Center	D64	NV0003061	D64	NTNC	D64	Well 1 (Well 1 Abandonded)	Active	2.5	Analytical	Active	2	Е	No	N/A	Well abandoned					16S	D64 F2	49E	D64 F2	8	D64 F2	NE	D64 F2	SE
Amargosa Town Complex	D63	NV0002574	D63	NTNC	D63	Well 2 Well 1	n/a Active	n/a 5	n/a Analytical	Inactive Active	not listed 5	E	Yes	CFR N/A	System is remote. Pumping rate unchanged.	CFR	Modeling recommended by Team. Previous SWPA long			16S	A2 D63 F1	49E 49E	A2 D63 F1	8 9	A2 D63 F1	NE SE	A2 D63 F1	SE SW
Amargosa Valley Resort INC	D45	NV0002141	D45	TNC	D45	The Well	n/a	n/a	n/a	Active	3	Е	Yes	CFR	System is remote, and has very low pumping rate.		and harrow.			158	D45 F1	50E	D45 F1	18	D45 F1	SW	D45 F1	SE
Amargosa Valley VFW Post 6826	D62	NV0002574	D62	TNC	D62	W01	n/a	n/a	n/a	Active	7	Е	Yes	CFR	System is remote, and has					16S	D62	49E	D62	35	D62	SE	D62	NE
						Well 1	n/a	n/a	n/a	Active	5	Е	Yes	CFR	System is remote, and has							<u> </u>	F1		F1			INW
Amargosa Water Company	Е	NV0002588	Е	С	Е	W-11.2				A	-		- 103 	CER	very low pumping rate. System is remote, and has					165		405	<b>F1</b>	21	<b>F1</b>	CW		
						well 2	n/a	n/a	n/a	Active	5	Е	Yes	CFR	very low pumping rate. Well not complete					105	FI	49E	FI	51	FI	5W	FI	
AVSTP 4PD	A5					4PD	n/a	n/a	n/a	Future	n/a	A5	Yes	AFR	Pumping rate not established.							<b> </b>						
Cherry Patch Love Ranch	D6	NV0003060	D6	TNC	D6	Main Well	n/a	n/a	n/a	Active	1	Е	Yes	CFR	very low pumping rate.					175	D6	52E	D6	8	D6	NW	D6 N	NW
				TNC	D6	Backup Well	n/a	n/a	n/a	Inactive	not listed	Е	Yes	CFR	System is remote, and has very low pumping rate.					17S	D6	52E	D6	8	D6	NW	D6 1	NW
Crystal Park Nye County Park	Е	NV0002588	Е	TNC	Е	Well 1	n/a	n/a	n/a	Active	2	Е	Yes	CFR	System is remote, and has very low pumping rate.					17S	F1	52E	F1	7	F1	NE	F1	SE
Fort Amargosa RV Park	D38	NV0000155	D38	TNC	D38	New Well	n/a	n/a	n/a	Active	60	Е	Yes	CFR	System is remote.					158	D38 F1	50E	D38 F1	18	D38 F1	SW	D38 F1	SE
						Well 1 Main	n/a	n/a	n/a	Active	3	Е	Yes	CFR	System is remote, and has													
Horizon Academy	Е	NV0004067	Е	NTNC	E	Well 2 Fire Abandoned	n/a	n/a	n/a	Inactive	3	Е	No	N/A	Inactive well appears to be													
											-			-	abandoned							┝──						
Longstreet Inn and Casino	D14	NV0000871	D14	NTNC	D14	RV Park Well #1	n/a	n/a	n/a	Inactive	10	Е	Yes	CFR	System is remote, and has very low pumping rate.					18S	D14	49E	D14	2	D14	SW	D14 5	SW
				NTNC	D14	Hotel Well #2	n/a	n/a	n/a	Active	10	E	Yes	CFR	very low pumping rate.					18S	D14	49E	D14	2	D14	SW	D14 5	SW
Mabels Far East Bar	D23	NV0005019	D23	TNC	D23	The Well	n/a	n/a	n/a	Active	2	Е	Yes	CFR	System is remote, and has very low pumping rate.					17S	D23 F1	52E	D23 F1	8	D23 F1	sw	D23	SW
NDOT Lathrop Wells Roadside Park RP801NY	D32	NV0002146	D32	TNC	D32	The Well	n/a	n/a	n/a	Active	1	Е	Yes	CFR	System is remote, and has very low pumping rate.					15S	D32 F1	50E	D32 F1	18	D32 F1	sw	D32 F1	SW
Patch of Heaven	Е	NV0001094	Е	TNC	Е	Well	n/a	n/a	n/a	Active	not listed	Е	Yes	CFR	System is remote.					17S	F1	50E	F1	21	F2	SW	F2	SW
Short Branch	D7	NV0003074	D7	TNC	D7	Well	n/a	n/a	n/a	Active	7	Е	Yes	CFR	System is remote, and has					17S	D7	52E	D7	7	D7	NE	D7	NE
		1	1	1	1	1			1	1	I				very low pumping rate.	1	1	1				<u> </u>						
Beatty						1				-					The entire Oscie Vallavia	1				1	<del></del>	<u> </u>	1	1		<u> </u>	<u> </u>	
Baileys Hot Springs	D13	NV0003010	D13	TNC	D13	Baily's Hot Springs	n/a	n/a	n/a	Active	n/a	Е	No	N/A	already designated as a SWPA.	AFR	Geology is complex and there is little data to map flow.			115	D13	47E	D13	16	D13	SE	D13 5	SW
Beatty RV Park	Е	NV0005038	Е	TNC	Е	Well 1	n/a	n/a	n/a	Active	1	Е	No	N/A	already designated as a SWPA.	AFR	Geology is complex and there is little data to map flow.			115	F1	47E	F1	28	F1	SE	F1	SE
						Well 1 Inactive	Active	30	Analytical	Inactive	24	Е	No	N/A	Pumping rate decreased.					12S	F1	47E	F1	16	F1	SE	F1 5	SW
						Well 2 Inactive	Inactive	90	Analytical	Inactive	90	Е	No	N/A	Pumping rate unchanged.					12S	F1	47E	F1	7	F1	SE	F1 J	NW
						Well 3 Inactive	Inactive	180	Analytical	Inactive	130	Е	No	N/A	Pumping rate decreased.													
						Indian Springs Well	Active	110	Analytical	Active	75	Е	No	N/A	Pumping rate decreased.					115	F1	46E	F1	26	F1	NW	F1	SW
Beatty Water and Sanitation District	D55	NV0000009	D55	С	Е	Middle Well Inactive	Inactive	75	Analytical	Inactive	75	Е	No	N/A	Pumping rate unchanged.					115	F1	46E	F1	34	F1	NE	F1	sw
						Summit Well	Active	80	Analytical	Active	40	Е	No	N/A	Pumping rate unchanged.					125	F1	46E	F1	2	F1	NW	F1	SE
1	I	I	I	I	I			1	1		1		I		I			ı					1					

								Previous WH	P Plan						Current WHP Plan Up	date		
PWS Name	Code	PWS #	Code	System Type	Code	Well Name	Well Status	Modeled Pump Rate	SWPA Method	Well Status	Pumping Rate/Yield (gpm)	Code	SWPA to be Updated?	Proposed SWPA Method	Justification	Revised SWPA Method	Revision Justification	PWS
						Well EW4	Active	900	Analytical	Active	500	E	No	N/A	Pumping rate decreased.			
Big Smoky Valley - Northern		•						•		•					•	•		
Carvers Café	D31	NV0002140	D31	TNC	D31	The Well	n/a	n/a	n/a	Active	2	Е	Yes	CFR	Not previously delineated, low pumping rate (2 gpm)			
	Dra	NR/0000210	D.50	С	D59	Well 1	n/a	n/a	n/a	Active	50	Е	Yes	CFR	Not previously delineated.			
Carvers Smoky valley RV and MHP	D59	N V0000218	D39	С	D59	Well 2	n/a	n/a	n/a	Inactive	20	Е	Yes	CFR	Not previously delineated, low pumping rate			
NDOT Big Smoky Roadside Park RP807NY	D33	NV0002147	D33	TNC	D33	The Well	n/a	n/a	n/a	Active	3	Е	Yes	CFR	Not previously delineated, low pumping rate (3 gpm)			
Round Mountain PUC	F	NV0004074	F	C	F	Well HW1	n/a	n/a	n/a	Active	1200	Е	Yes	Analytical	Not previously delineated.			
		1110004074	-	č		Well HW2	n/a	n/a	n/a	Active	1200	Е	Yes	Analytical	Not previously delineated.		ļ	
Shoshone Estates Water Company	Do	NV0005028	D9	С	D9	Well 1	n/a	n/a	n/a	Active	42	Е	Yes	CFR	Not previously delineated			
Shoshole Estates water Company	55	1110000020	59	С	Е	Well 2	n/a	n/a	n/a	Active	12	Е	Yes	CFR	Not previously delineated			
				NTNC	D35	West Well 1	n/a	n/a	n/a	Active	432	Е	Yes	Analytical	Not previously delineated.			

NTNC       D35       East Well 2       n/a       n/a       Active       1334       E       Yes       Analytical       Not previously delineated.	1
Main Well     Active     Modified AFR     Inactive     35     E     No     N/a     Well is currently inactive, but may be reconnected in the future.	

													-		the future.		i i
Manhattan Town Water	14	NIV000016E	14	6	14	0000									Inactive well, may not have		
Mannattan Town Water	11	NV0000165	J1	C	J1	(Rottom Road Woll)	Active		Modified AFR	Inactive	5	E	Yes	Remove	been part of Manhattan		
						(Bottom Koau Well)									system.		
						Dine Springs Well	n/a	n/a	Modified AER	Activo	50	۸1	No	n/a	Well modeled in previous		
						Fipe spinings well	11/a	11/d	Woullieu AFK	Active	50	AI	NO	liya	Plan.		

Gabbs Valley																
						Well	Active	450	CFR completed, but AFR adopted	Active	64	E	No	n/a	Pumping rate has not increased.	
Gabbs Water System	D29	NV0000063	D29	с	D29	Emergency Well 2	Active	400	CFR completed, but AFR adopted	Inactive	not listed	E	No	n/a	Pumping rate has not increased.	ł
						New Well	n/a	n/a	n/a	Future	n/a	A3	Yes	AFR	Well not complete. Pumping rate not established.	

Ione Valley										_							
Berlin Icthyosaur State Park	D34	NV0002151	D34	TNC	D34	Berlin Well	n/a	n/a	n/a	Active	40	E	Yes	CFR	Remote PWS, low pumping rate.		
				TNC	D34	Berlin Spring (off-line)	n/a	n/a	n/a	Inactive	not listed	E	No	n/a	Inactive		
				TNC	D19	Well 1	n/a	n/a	n/a	Active	not listed	E	Yes	CFR	Remote PWS, small population served.		
Ione Water System	D19	NV0002143	D19	TNC	D19	Well 2 (Backup Well) (Well 2 Inactive)	n/a	n/a	n/a	Inactive	not listed	E	Yes	CFR	Remote PWS, small population served.		

Pahrump Valley																	
Anchor Inn MHP	D61	NV0005033	D61	С	D61	Well 1	Active	7	Analytical	Active	7	E	No	N/A	Pumping rate unchanged		
Big Five Park	D56	NV0000362	D56	с	D56	Well 1	Active	5	Analytical	Active	5	E	No	N/A	Pumping rate unchanged		
						Well 1	Active	5	Analytical	Active	5	E	No	N/A	Pumping rate unchanged		
Big Valley MHP	E	NV0000369	E	с	E	Well 2 Back Up	Active	unknown	Analytical	Active	not listed	E	No	N/A	Pumping rate unchanged		

							V	Vell Lo	cation	Data
5 Approved	NDEP Approved	Township	Code	Range	Code	Section	Code	1/4 Section	Code	1/4-1/4 Section
		138	F1	46E	F1	3	F1	SW	F1	NW
		11N	D31 F1	43E	D31 F1	29	D31 F1	NW	D31 F1	SW
		11N	D59 F1	43E	D59 F1	29	D59 F1	SW	D59 F1	SE
		11N	D59 F2	43E	D59 F2	29	D59 F2	NW	D59 F2	SE
		11N	D33 F1	43E	D33 F1	29	D33 F1	SW	D33	SW
		10S	F1 F1	43E 43E	F1 F1	28 29	F1 F1	NW NE	F1 F1	NW NW
		11N	F1 D9	43E	F1 D9	29	F1 D9	SE	F1 D9	SE
		11N	F1 D#	43E	F1 D#	29	F1 D#	SE	F1 D#	SW
		10N	D35F1	43E	D35F1	20	D35F1	NE	D35F1	NE
		10N	D35 F1	43E	D35 F1	20	D35 F1	NE	D35 F1	NE
		10N	D35 F1	43E	D35 F1	21	D35 F1	NW	D35 F1	NW
		8N	J1 F1	44E	J1 F1	20	J1 F1	NE	J1 F1	SW
		8N	J1	43E	J1	23	J1	SE	J1	NE
		8N	F1	43E	F1	20	F1	SE	F1	NW
		12N	D29 F1	36E	D29 F1	9	D29 F1	SE	D29 F1	SE
			1							
		12N	D34 F1	39E	D34 F1	27	D34 F1	SW	D34 F1	NW
		12N	D34	39E	D34	27	D34	SW	D34	NW
		13N	D19	39E	D19	34	D19	NE	D19	SW
		13N	D19	39E	D19	27	D19	SE	D19	SW
		205	D61 F1	53E	D61 F1	7	D61 F1	SE	D61 F1	SE
		205	12	53E	12	16	12	SE	12	SW
		205	к	53E	к	16	К	SE	К	NW
		205	К	53E	К	16	к	SE	к	NW

								Previous WH	P Plan						Current WHP Plan Upd	late									V	Well Lo	ocation	Data
PWS Name	Code	PWS #	Code	System Type	Code	Well Name	Well Status	Modeled Pump Rate	SWPA Method	Well Status	Pumping Rate/Yield (gpm)	Code	SWPA to be Updated?	Proposed SWPA Method	Justification	Revised SWPA Method	Revision Justification	PWS Approved	NDEP Approved	Township	Code	Range	Code	Section	Code	1/4 Section	Code	1/4-1/4 Section
C Volley MHD	057	NIV/0002528	057	с	D57	Well 1	Active	5	Analytical	Active	5	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.			205	12	53E	12	15	12	SE	12	SE
C valley Minp	057	NV0002538	057	с	D57	Well 2	Active	5	Analytical	Active	5	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.	,		205	12	53E	12	15	12	SE	12	SE
Calvada Meadows UICN	E	NV0000408	E	С	E	Well	Active	n/a	n/a	Active	not listed	E	Yes	Analytical	Not previously delineated					19S	F2	53E	F2	26	F2	NW	F2	SW
Carberry Square	E	NV0000405	E	TNC	E	Well	n/a	n/a	n/a	Active	not listed	E	Yes	CFR	Not previously delineated, small pumping rate, NC system					215	F2	53E	F2	3	F2	NE	F2	SE
Champions	D1	NV0002555	D1	TNC	D1	The Well	Active	3	Analytical	Active	3	E	No	N/A	Pumping rate unchanged					20S	D1	53E	D1	16	D1	SW	D1	NW
Chicken Ranch	D46	NV0004085	D46	TNC	D46	Back Well	Active	5	Analytical	Active	5	E	No	N/A	Pumping rate unchanged					225	D46 F1	54E	D46 F1	6	D46 F1	NW	D46 F1	NW
	D40	100004085	D40	TNC	D46	Front Well	Active	5	Analytical	Active	5	E	No	N/A	Pumping rate unchanged					225	D46 F1	54E	D46 F1	6	D46 F1	NW	D46 F1	NW
Chipmunk Retreat	D36	NV0002554	D36	TNC	D36	Well 1	Active	12	Analytical	Active	12	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.	,		205	D36 F1	53E	D36 F1	20	D36 F1	NE NW	D36 F1	NW
						Well 1 Inactive	n/a	n/a	n/a	Inactive	not listed	E	No	N/A	Well appears to be abandoned, per log 102915					205	D3	53E	D3	7	D3	NE	D3	NE
Coyote Corner Market	D3	NV0002565	D3	TNC	D3	Well 2	n/a	n/a	n/a	Active	not listed	E	Yes	CFR	Not previously delineated, small pumping rate, NC system					205	F1	53E	F1	7	F1	NE	F2	NE
Coyote Corner III		NV0000385	E	TNC	E	Well	n/a	n/a	n/a	А	30	E	Yes	CFR	Not previously delineated, small pumping rate, NC system					215	F2	54E	F2	19	F2	NE	F2	NE
						Well 48	Active	50	Analytical	Active	50	E	No	N/A	Pumping rate unchanged					19S	D47 F1	53E	D47 F1	15	D47 F1	NE	D46	NE
Country View Estates UICN	D47	NV0005032	E	С	D47	Well #48 A	Active	45	Analytical	Active	45	E	No	N/A	Pumping rate unchanged					195	D47 F1	53E	D47 F1	15	D47 F1	NE	D47 F1	NE
						Calvanda North Well	n/a	15	Analytical	Active	15	E	No	N/A	Pumping rate unchanged Not previously delineated,					195	F1	53E	F1	19	F1	SE	F1	SW
Desert Center Plaza	E	NV0002196	E	TNC	E	Well	n/a	n/a	n/a	Active	50	E	Yes	CFR	small pumping rate, NC system					195	F2	53E	F2	34	F2	SW	F2	SE
Desert Mirage Homeowners Association	D48	NV0000831	D47	С	D48	Well 1	Active	5	Analytical	Active	5	E	No	N/A	Pumping rate unchanged					205	12	53E	12	19	12	NW	12	SE
				С	D48	Well 2	Active	5	Analytical	Active	5	E	No	N/A	Pumping rate unchanged					205	12	53E	12	19	12	NW	12	SE
						Well 1	Active	42	Analytical	Active	42	E	Yes	Analytical	based on new elementary school in serving area					195	F1	53E	F1	22	F1	NE	F1	SW
						Well 2	Active	200	Analytical	Active	200	E	Yes	Analytical	based on new elementary school in serving area					195	F1	53E	F1	22	F1	SE	F1	SE
Desert Utilities	E	NV0000300	E	с	E	Well 3 Inactive	Active	n/a	Analytical	Inactive	not listed	E	Yes	Analytical	based on new elementary school in serving area													
						Well 4 Inactive	Active	150	Analytical	Inactive	150	E	Yes	Analytical	based on new elementary school in serving area					195	F1	53E	F1	21	F1	NE	F1	NE
						Well 5 Inactive	Active	n/a	Analytical	Inactive	not listed	E	Yes	Analytical	based on new elementary school in serving area													
Elks Lodge Pahrump	D43	NV0000923 (NV0002574)	D43	TNC	D43	The Well	Active	1	Analytical	Active	1	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.			205	D43 F1	53E	D43 F1	12	D43 F1	SW	D43 F1	SW
						Well 1	Active	10	Analytical	Active	not listed	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.			215	12	53E	12	12	12	NE	к	NW
Escapee CO OP of Nevada	D49	NV0002552	D49	с	D49	Well 2 Abandoned	Active	10	Analytical	Inactive	10	E	Yes	Remove	Well abandoned in 2007, per log 103489					215	12	53E	12	12	12	NW	12	NE
						Well 3 New	n/a	n/a	n/a	Active	not listed	E	Yes	Analytical	Not previously delineated	CFR	Analytical results not reliable due to lack of surrounding data.	e		215	F2	53E	F2	12	F2	NE	F2	NW
Horizon Market III	D53	NV0000918	D53	TNC	D53	W01	Active	10	Analytical	Active	10	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.			205	12	53E	12	16	12	NE	12	SW
Just Country Bar	E	NV0000886	E	TNC	E	Well	n/a	n/a	n/a	Active	20	E	Yes	CFR	Not previously delineated, small pumping rate, NC system					195	F1	53E	F1	33	F1	SE	F1	NE
LDS Church Pahrump Ward	D20	NV0005068	D20	NTNC	D20	Well	Active	33	Analytical	Active	33	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.			205	D20 F1	53E	D20 F1	15	D20 F1	SE	D20 F1	NE

_								Previous WH	P Plan						Current WHP Plan Up	date									W	ell Loc	ation Data
PWS Name	Code	PWS #	Code	System Type	Code	Well Name	Well Status	Modeled Pump Rate	SWPA Method	Well Status	Pumping Rate/Yield (gpm)	Code	SWPA to be Updated?	Proposed SWPA Method	Justification	Revised SWPA Method	Revision Justification	PWS Approved	NDEP Approved	Township	Code	Range	Code	Section	Code	1/4 Section	Code 1/4-1/4 Section
LI's Market	E	NV0000833	E	TNC	E	Well 1	n/a	n/a	n/a	Active	10	E	Yes	CFR	Not previously delineated, small pumping rate, NC system					215	F2	53E	F2	10	F2	NE	F2 NE
Low Low Liquor Cigarettes and Goodies	D17	NV0000917	D17	TNC	D17	Well W01	Active	20	Analytical	Active	20	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.			215	D17	53E	D17	2	D17	NW	D17 NW
Moose Lodge 808	D52	NV0002142	D52	NC	D52	Well	Active	3	Analytical	Active	not listed	E	No	N/A	Pumping rate unchanged					20S	D52	53E	D52	14	D52	sw	D52 NW
Mountain Falls Water System UICN	D18	NV0000920	D18	с	D18	Well #1	n/a	n/a	n/a	Active	15	E	Yes	Analytical	Not previously delineated					215	D18	54E	D18	3	D18	SE	D18 NW
				С	D18	Well #2	n/a	n/a	n/a	Active	15	E	Yes	Analytical	Not previously delineated					215	D18	54E	D18	3	D18	NE	D18 SW
Mountain View MHP UICN	D51	NV0005067	D51	с	D51	Well 1	Active	2	Analytical	Active	2	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.			205	12	53E	12	20	12	NE	I2 NE
Nue Courte Correlau	D60	NIV/0002152		NTHE		Well 1	n/a	n/a	n/a	Active	5	E	Yes	Analytical	Not previously delineated					205	D60 F2	53E	D60 F2	10	A2	NE	A2 SE
Nye county complex		NV0002132	D60	NTINC	060	Well 2	n/a	n/a	n/a	Active	150	E	Yes	Analytical	Not previously delineated					20S	A2	53E	A2	11	A2	sw	A2 SW
Our Bar	D5	NV0003035	D5	TNC	D5	Well	Active	12	Analytical	Active	not listed	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.			195	D5	52E	D5	25	D5	SW	D5 SE
Pahrump Café	E	NV0000409	E	TNC	E	Well	n/a	n/a	n/a	Active	not listed	E	Yes	CFR	Not previously delineated, small pumping rate, NC system					195	F2	53E	F2	33	F2	SE	F2 NE
Pahrump RV Park	D24	NV0005034	D24	TNC	D24	The Well	Active	3	Analytical	Active	3	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.			205	D24 F1	53E	D24 F1	16	D24 F1	NW	D24 F1 NW
Pahrump Senior Center Inc.	D12	NV0003036	D12	NTNC	D12	Geezer Well	Active	20	Analytical	Active	20	E	No	N/A	Pumping rate unchanged	CFR	Modeling recommended by Team. Previous SWPA long and narrow.			20S	D12	53E	D12	8	D12	SW	D12 SE
						Well 1 Abandonded	Active	325	Analytical	Inactive	325	E	Yes	Remove	Well abandoned												
						Well 2 Bridger St.	Active	325	Analytical	Active	325	E	No	N/A	Pumping rate unchanged					215	F2	54E	F2	16	F2	NE	F2 SE
Pahrump Utility Company, Inc.	E	NV0000926	D58	с	D58	Well 3 Manse Rd.	n/a	n/a	n/a	Active	not listed	E	Yes	Analytical	Not previously delineated					215	к	54E	к	3	к	SE	к sw
	(030)	/				Well 4 Fox Ave.	n/a	n/a	n/a	Active	670	E	Yes	Analytical	Not previously delineated					215	F2	54E	F2	8	F2	NE	F2 SE
						Hefen Well #5 Heritage Dr.	n/a	n/a	n/a	Inactive	670	E	Yes	Analytical	Not previously delineated					215	F2	54E	F2	8	F2	SE	F2 NE
						Concordia East Well 1	n/a	n/a	n/a	Active	500	E	Yes	Analytical	Not previously delineated					215	F2	53E	F2	13	F2	NE	F2 NE
Pleasant Valley	E	NV0000402	E	С	E	Concordia West Well 2	n/a	n/a	n/a	Active	500	E	Yes	Analytical	Not previously delineated					215	F2	53E	F2	13	F2	NW	F2 SE

						Conve	rted UTM												Well	field D	ata										
PWS Name	Code	Latitude	Code	Longitude	Code	Easting	Northing	Zone	Total Wel Depth (ft)	Code		1	Well Scree	en Depth	ıs		Seal/ Grout	Code	Diameter (ft)	Code	Screened Total (ft)	Code	Maximum Pump Rate Capacity	Code	Approved Design Capacity	Code	Secured Wel Housing	Code	Well Log Number	Code	Static Water Level
											Top Depth	Code	Bottom Depth	Code	Interval Length	Code	Depth (It)						(GPM)		(GPM)						(It bgs)
Amargosa Desert							•			-	1	_			1		1	-	1		1		1	_			1				
Amargosa Elementary School	D65 F2	36.5696	Е	-116.4609	Е	548234	4047264	11	320	F1	280	A2	320	A2	40	Ι	50	F2	0.85	F2	100	I	150	D65	150	Е	gated	A2	52474	A2	165
Amargosa Park	D39 F1	36.5683	F1	-116.4596	F1	548353	4047127	11	300	D39 F1	205	A2	300	D39 F1	95	A2	80	D39 F1	0.90	D39 F1	100	I	150	D39			gated	A2	31040	D39	120
Amargosa Senior Center	D64 F2	36.5765	E	-116.4710	E	547330	4048021	11	260 (296)	E (F2)	100	A2		A2		A2	50	F2	1.02	F2	117	I	20	D64	20					- 42	50
Amargosa Town Complex	A2 D63 F1	36.5692	F1	-116.4600	E F1	548317	4047216	11	300	Е D63 F1	200	F1	300	F1	100	F1	75	D63 F1	0.85	F2 D63 F1	117	I	140	D63	30	E	No	A2	22504	A2 A2	168
Amargosa Valley Resort INC	D45 F1	36.6447	Е	-116.3957	Е	554018	4055629	11	1220	D45 F1	1020	D45 F1	1220	D45 F1	200	D45 F1	100	D45 F1	0.67 0.72	D45 F1	200	I	50	13	3	Е			70979	D45	330
Amargosa Valley VFW Post 6826	D62	36.5149	I2	-116.4233	I2	551636	4041220	11	158	D62	118	F1	138	F1	20	F1	50	D62	0.72	D62	20	Ι	20	D62	7	Е			47451	D62	90
America Water Comment	11	36.5098	H1	-116.4941	H1	545300	4040614	11	217	F1	177	F1	217	F1	40	Ι	52	F1	0.72	F1	40	I	10	Е					22680	F1	57
Amargosa water Company		36.5078	I2	-116.5075	I2	544106	4040387	11	190	Е	150	F1	170	F1	20	Ι	50	Е	0.72	F1	20	I	10	Е					27277	Fl	71
AVSTP 4PD		36.6568	H1	-116.4051	H1	553171	4056969	11																							
Cherry Patch Love Ranch	D6	36.4902	Е	-116.1578	Е	575435	4038656	11	175	F1	155	F1	175	F1	20	Ι	50	F1	0.67	D6	20	Ι	50	13	1	Е			60971	D6	42
	D6	36.4904	Е	-116.1596	Е	575273	4038672	11							20	13			0.67	D6	20	13	50	I3	not listed	Е				<u> </u>	
Crystal Park Nye County Park	F1	36.4905	Е	-116.1618	E	575079	4038677	11	130	E	110	F1	130	F1	20	Ι	50	E	0.72	F1	20	I	30	Е	2	E	Yes	A2	35901	F1	35
Fort Amargosa RV Park	D38 F1	36.6419	12	-116.3971	12	553894	4055318	11	1280	D38 F1	500 920	D38	600 1240	D38	100 320	D38	300	F2	0.67 0.72	D38 F1	480	I	80	D38					50458	D38	360
Horizon Academy		36.4961	Е	-116.4236	E	551624	4039135	11	119	F2	89	F2	109	F2	20	Ι	19	F2	0.67	F2	20	Ι	100	Е	3	Е			99451	F1	86
		36.4963	Е	-116.4234	Е	551642	4039147	11	172	F2	72 112	F2	92 152	F2	20 40	F2	50	F2	0.67	F2	60	I	100	Е					102427, 107410	F1	87
Longstreet Inn and Casino	D14	36.4122	Е	-116.4247	E	551582	4029827	11	400	D14	226 313	D14	203 269 334	D14	43 21	D14	50	D14	0.72	D14	86	I	70	D14					47862	F1	52
	D14	36.4128	Е	-116.4246	E	551586	4029892	11	425	D14	105 168 210	D14	146 189 231	D14	21 21	D14	100	D14	0.72	D14	83	I	70	D14	10	Е			47861	F1	47
Mabels Far East Bar	D23	36.4837	H1	-116.1567	HI	575539	4037931	11	120	F2	40	F2	80	F2	40	Ι	65	F2	0.67	F2	40	Ι	50	I3	2	Е			60970	D23	42
NDOT Lathrop Wells Roadside Park RP801NY	D32 F1	36.6431	F1	-116.4001	F1	553627	4055454	11	495	D32 F1	395	D32 F1	495	D32 F1	100	D32 F1	50	D32 F1	0.67 0.72	D32 F1	100	Ι	80	D32	1	Е			61615	D32	365
Patch of Heaven	F2	36.4547	F1	-116.3536	F1	557922	4034580	11	160	F2	60 140	F2	80 160	F2	20 20	Ι	55	F2	0.50	F2	40	Ι	50	I3	8	Е			72553	F1	22
Short Branch	D7	36.4908	Е	-116.1654	Е	574753	4038715	11	160	D7									0.67	D7	20	13	50	I3	7	Е					37
Beatty																															
Baileys Hot Springs	D13	36.9747	Е	-116.7222	Е	524722	4092100	11															20	D13	20	Е					
Beatty RV Park	F1	36.9457	Е	-116.7164	E	525250	4088883	11	75	Е	55	F1	75	F1	20	Ι	55	Е	0.67	F1	20	I			10	Е			27275	F1	32
	F1	36.9156	Е	-116.7608	Е	521307	4085536	11	200	Е	95	F1	160	F1	65	Ι	50	F1	0.83	C2	65	Ι	30	Е					7135	F1	95
	F1	36.9063	Е	-116.7586	Е	521501	4084501	11	195	Е	90	Fl	195	Fl	105	I	None	C2	1.00	C2	105	I	90	D55					7046	F1	20
		36.9049	Е	-116.7578	Е	521578	4084348	11	134	Е							None	C2	0.67	C2			180	Е							18
	F1	36.9515	Е	-116.8043	Е	517421	4089512	11	693	E F1	200	F1	690	F1	490	Ι	55	Е	0.90	C2	490	Ι	110	D55	75	Е			31028	D55	177 (399)
Beatty Water and Sanitation District	F1	36.9398	Е	-116.8133	Е	516625	4088211	11	700	Е	160 280 320	F1	260 300 380	Fl	100 20 60	I	100	Е	0.83	C2	260	I	75	Е					42327	F1	49
	F1	36.9242	Е	-116.7997	Е	517842	4086481	11	700	Е	240	Fl	700	Fl	460	I	65	Е	0.90	F1	460	Ι	80	D55	80	Е			31029	D55	130 (378)

						Conver	rted UTM												Well	field Da	ata										
PWS Name	Code	Latitude	Code	Longitude	Code	Easting	Northing	Zone	Total Wel Depth (ft)	Code			Well Scre	een Depth	s	-	Seal/ Grout Depth (ft)	Code	Diameter (ft)	Code	Screened Total (ft)	Code	Maximum Pump Rate Capacity	Code	Approved Design Capacity	Code	Secured Well Housing	Code	Well Log Number	Code	Static Water Level (ft bgs)
											Top Depth	Code	Bottom Dept	h Code	Interval Length	Code							(GPM)		(GPM)						(
	Fl	36.8334	E	-116.8240	E	515698	4076402	11	1450	Е	878 1039 1139 1200 1320	F1	958 1099 1159 1270 1360	Fl	80 60 20 79 40	Ι	50	Е	1.50	C2	279	Ι	900 (500)	C2 (E)	500	E			31968	F1	687
Big Smoky Valley - Northern										-		-				_	-	-								-					
Carvers Café	D31 F1	38.7867	H1	-117.1807	H1	484306	4293122	11	135	D31 F1	92	D31 F1	132	D31 F1	40	D31 F1	50	D31 F1	0.67	D31 F1	40	I	50	13					26747	D31	0
Carvers Smoky Valley RV and MHP	D59 F1 D59	38.7819 38.7803	E H1	-117.1730 -117.1711	E H1	484974 485138	4292589 4292411	11 11	230	D59 F1 D59	90 80	F1 F2	220	F1 F2	130	F1 I	70 50	D59 F1 D59	0.67	D59 F1 D59	130 80	I	60 30	D59 D59	50	E			23420 96237	D59 F1	0
NDOT Big Smoky Roadside Park RP807NY	F2 D33	38.7830	H1	-117.1752	H1	484783	4292711	11	180	F2 D33	90	D33	180	D33	90	D33		F2	0.67	F2 D33	90	I	50	D33	3	Е			8986	D33	21
Round Mountain PUC	F1	38.7042	E	-117.1657	E	485596	4283964	11	350	E	200	F1 F1	345	F1 F1	145	FI I	50	E	1.33	F1 F1	145	I	1500	E	1200	Е			29162	F1	109.6
	F1 F1	38.7027	HI	-117.1687	HI	485077 485347	4283800	11	206	F1	250 60	F1 F1	350 197	F1 F1	100	F1	52	F1	1.33	F1 F1	100	I	135	E D9	42	E			29163	D9	132
Shoshone Estates Water Company	F1	38.7790	Е	-117.1734	Е	484938	4292267	11	200	F1	140	D9	160	D9	20	D9	50	F1	0.72	F1	40	I	80	Е	13	Е			49223	F1	0
	D#	38.7176	H1	-117.1679	H1	485404	4285453	11	592	D# D35 F1	250	D35 F1	470	D35	20	D35 F1		D#	1	D# D35 F1	220	I	700	D35	432	Е			743	D35	105
Smoky Valley Mine	D35 F1	38.7175	HI	-117.1665	ні	485525	4285441	11	405 372	D35 F1(a) F1(b)	240 300	D35 F1(a) F1(b)	380 372	D35 F1(a) F1(b)	140 72	D35 F1(a) F1(b)	143	D35 F1(a)	1.33	D35 F1(a)	140 72	D35 F1(a) F1(b)	1500	D35	1500	Е		(	31167 (a)/1999 (b)	D35	101 98
	D35 F1	38.7159	H1	-117.1561	H1	486429	4285262	11	450	D35 F1	150 180 390	D35	170 320 440	D35	20 140 50	D35	50	D35 F1	1.33 1.5	D35 F1	210	I	2500	D35	1334	Е			30764	D35	74
Big Smoky Valley - Tonopah Flat											•					•	•		•				•								
	J1	38.5383	F1	-117.0622	F1	494577	4265549	11	303	J1	263	F1	303	F1	40	F1	60	J1	0.33	J1	40	1	35	J1					34484	F2	44
	F1									F1								F1	0.67	F1		_									
Manhattan Town Water	J1	38.5382	E	-117.0630	E	494511	4265532	11	350	J1							95	J1	0.67	J1											
	F1	38.5354	A3	-117.0745	A3	493506	4265227	11	500	A1	240	F1	460	F1	220	F1	100	A1	0.72	A1	220	A1	50	A1	200	A1	Yes	A1	108636	A1	220
Gabbs Valley					- 1						1	1					1		1	1		_									
	D29 F1	38.9125	A3	-117.9319	A3	419203	4307475	11	400	A2	98	D29 F1	398	D29 F1	300	D29 F1	50	D29 F1	0.50	D29 F1	300	T	420	D29	64	E	Yes	C5	29912	D29	79.5
Gabbs Water System		38.8888	A3	-117.9185	A3	420336	4304842	11	285	E																					
		38.9070	Н1	-117.9377	H1	418696	4306874	11																							
Ione Valley																															
Berlin Icthyosaur State Park	D34 F1	38.8736	Н1	-117.5905	H1	448777	4302916	11	83	D34 F1	59	D34 F1	79	D34 F1	20	D34 F1	50	D34 F1	0.67	D34 F1	20	ı	50	13	12	E			11567	D34	23
	D34	38.8773	E	-117.5852	E	449239	4303324	11			312		335		23														N/A		
lone Water System	D19	38.9546	E	-117.5738	E	450280	4311899	11	430	F1	355 391	F2	373 410	F2	18 19	1	50	F2	.83 .67	D19 F2	60	1	325	D19					20686	F2	330
	D19	38.9596	E	-117.5735	E	450311	4312455	11											0.83	D19	60	13	350	D19							
Pahrump Valley																															
Anchor Inn MHP	D61 F1	36.2222	12	-116.0524	12	585164	4009007	11	160	D61 F1	80	F2	160	F2	80	I	50	D61 F1	0.72	D61 F1	80	I	45	D61	7				52518	D61	30
Big Five Park	12	36.2073	12	-116.0201	E	588077	4007384	11	205	E	140		205		65		54	E	0.55	F2	65	C3	10	D56	5				87008	D56	54
0.164. 1420	к	36.2115	E	-116.0227	E	587849	4007845	11	140	C3	60	F2	140	F2	80	I	50	F2	0.67	F2	80	I							18010	к	44
Big Valley MHP	к	36.2113	E	-116.0216	E	587945	4007833	11	140	C3	60	F1	140	F1	80	I	50	E	0.67	F1	80	C3							63312	F1	33

						Conve	rted UTM												Well	field D	ata										
PWS Name	Code	Latitude	Code	Longitude	Code	Easting	Northing	Zone	Total Well Depth (ft)	Code		1	Well Scree	n Depth	ıs	1	Seal/ Grout	Code	Diameter (ft)	Code	Screened Total (ft)	Code	Maximum Pump Rate Capacity	Code	Approved Design Capacity	Code	Secured Well Housing	Code Z A	Vell Log Number	Code	Static Water Level
											Top Depth	Code	Bottom Depth	Code	Interval Length	Code	Depth (It)						(GPM)		(GPM)						(It bgs)
C Valley MHP	12	36.2071	12	-115.9986	12	590022	4007382	11	160	E	80		160		80		50	E	0.67		80	I	5	D57				1	17231	D57	20
	12	36.2069	12	-115.9982	12	590053	4007358	11	200	E	75		200		125		50	E	0.67		125	I	43	D57				e	63297	D57	40
Calvada Meadows UICN	F2	36.2690	12	-115.9956	12	590217	4014253	11	500	F2	119 199	F2	159 500	F2	40 301	I	70	F2	0.90	F2	341	Ι			800	E		6	61904	F1	115
Carberry Square	F2	36.1491	H1	-115.9939	H1	590508	4000955	11	140	E	100	F2	140	F2	40	ı	50	F2	0.55	F2	40	I	50	13				:	72499	F1	52
Champions	D1	36.2107	E	-116.0322	E	586991	4007754	11	120	E											80	C3							UNK	D1	ļ
Chicken Ranch	D46 F1 D46	36.0732 36.0726	H1 H1	-115.9556 -115.9529	H1 H1	594044 594288	3992572 3992509	11 11	340 278	D46 F1 D46	245 138	F1 F1	305 278	F1 F1	60 140	F1 F1	50 50	D46 F1 D46	0.67	D46 F1 D46	60 140		5	D46 D46					48989 29664	D46 D46	83 105
Chipmunk Retreat	D36 F1	36.2015	12	-116.0369	12	586585	4006728	11	140	D36 F1	100	D36 F1	140	D36 F1	40	D36 F1	50	D36 F1	0.67 0.72	D36 F1	40	I	12	D36				(	63640	D36	36
	D3	36.2333	E	-116.0513	E	585252	4010247	11	160	E									0.67	D3								1	102914	F1	14
Coyote Corner Market	F2	36.2317	F2	-116.0539	F2	585022	4010059		200	F2	140	F2	200	F2	60	I	50	F2	0.67	F2	60	I	50	13				1	102915	F1	57
Coyote Corner III	F2	36.1169	12	-115.9406	12	595346	3997439	11	300	F2	200	F2	300	F2	100	F2	50	E	0.38	F2	100	I	30	E	30	E		1	114125	F1	75
	D46	36.3074	12	-115.9966	12	590087	4018514	11	365	D47 F1	265	D47 F1	365	D47 F1	100	D47 F1	50	D47 F1	0.72	D47 F1	100	I	156	D46					25475	D46	215
Country View Estates UICN	D47 F1 H1	36.3075 36.3111	12 H1	-115.9966 -116.0197	12 H1	590087 588003	4018514 4018904	11 11	815 230	D47 F1 E	395 150	D47 F1 F1	815 230	D47 F1 F1	420 80	D47 F1	150 50	D47 F1 E	0.83 0.895 0.83	D47 F1 F1	420 80		320 318	D46 E				6	65583 28425	D46 F1	210 104
Desert Center Plaza	F2	36.2498	12	-116.0048	12	589410	4012118	11	180	E F2	100	F2	180	F2	80	I	50	E	0.67	F2	80	I	50	E	50	E		5	51026	F1	50
Desert Mirage Homeowners Association	12	36.1999	E	-116.0547	E	584985	4006540	11													340	СЗ	130	D48							
	12	36.2006	E	-116.0547	E	584979	4006613	11	400	E	200		380		180		50	E	0.72		180 (340)	I (C3)	130	D48				4	43390	D48	46
	F1	36.2801	E	-115.9971	E	590069	4015478	11	200	C3	120 140 180	F1	140 160 200	F1	20 20 40	I	50	F1	0.67	C3	140 80	C3 F1,I	550	E				6	61840	F1	93
	F1	36.2857	E	-116.0058	E	589278	4016100	11	200	СЗ	160	F1	200	F1	40	I	50	F1	0.50	C3	140 40	C3 F1,I	800	E				1	104746	F1	80
Desert Utilities		36.2929	E	-116.0235	E	587684	4016878	11	702	СЗ							50	E	0.66	C3	374	С3	600	E							
	F1	36.2857	E	-116.0236	E	587684	4016084	11	350	C3	55	F1	530	F1	295	I	50	E	0.50	C3	295	C3	650	E				4	41503	F1	96
		36.2930	E	-116.0147	E	588474	4016898	11	808	C3							50	E	0.67	C3	590	C3	1000	Е							
Elks Lodge Pahrump	D43 F1	36.2207	H1	-115.9739	Н1	592223	4008916	11	345	D43 F1	305	D43 F1	345	D43 F1	40	D43 F1	50	D43 F1	0.5 0.55	D43 F1	40	I	1	F1				;	75502	D43	270
	к	36.1448	E	-115.9704	E	592631	4000504	11	300	E	155		300		145		50	E	0.67		145	I	10	D49				2	29438	D49	40
Escapee CO OP of Nevada	12	36.1442	E	-115.9703	E	592632	4000432	11	250	E	145		250		105		50	E	0.67		105	I	15	D49				2943	39, 103489	D49 F2	44
	F2	36.1447	F2	-115.9678	F2	592863	4000494	11	400	F2	240	F2	380	F2	140	I	200	F2	0.50	F2	140	I	15	ı				1	103488	F1	57
Horizon Market III	12	36.2053	12	-116.0313	12	587081	4007155	11	180	E	100	F2	180	F2	80	ı	50	E	0.72	F2	80	I	30	D53				5	51128	D53	45
Just Country Bar	F1	36.2600	12	-116.0149	12	588494	4013237	11	140 510	E F2									1.17	E			20	E	20	E			3855	F1	22
LDS Church Pahrump Ward	D20 F1	36.2113	F1	-115.9971	F1	590150	4007852	11	400 199	D20 F1	60	F1	199	F1	139	F1	50	F1	0.67 0.73	D20 F1	139	I	37	D20				6330	306/63303	D20	52 65

. <u>.</u>						Conve	rted UTM												Well	ïeld D	ata										
PWS Name	Oode	Latitude	Code	Longitude	Code	Easting	Northing	one	Total Well	Code		-	Well Scree	n Deptl	15		Seal/ Grout	Code	Diameter (ft)	Code	Screened Total (ft)	Ode	Maximum Pump Rate Capacity	Oode	Approved Design Capacity	Code	Secured Well	Code	Well Log	Code	Static Water Level
								2	Deptil (It)		Top Depth	Code	Bottom Depth	Code	Interval Length	Code	Depth (ft)		(11)	0	Total (It)	U	(GPM)		(GPM)		Housing		Number		(ft bgs)
⊔'s Market	F2	36.1462	E	-115.9938	E	590520	4000631	11	200	E	160	F2	180	F2	20	I	50	E	0.72	F2	20	I	30	E	10	E			43857	F1	56
Low Low Liquor Cigarettes and Goodies	D17	36.1601	E	-115.9922	E	590645	4002174	11	140	D17	100	D17	140	D17	40	D17	50	D17	0.55	D17	40	ı	20	D17					UNK	D17	58
Moose Lodge 808	D52	36.2109	E	-115.9947	Е	590366	4007812	11	300	D52	200	D52	300	D52	100	I	50	D52	0.67	D52	100	Т							32663	D52	58
Mountain Falls Water System LIICN	D18	36.1551	E	-115.8959	E	599317	4001711	11	704 730	D18 F2	228	F2	704	F2	476	I	228	F2	1.17	F2	476	Т	1500	D18					1093	К	48
	D18	36.1517	E	-115.8962	Е	599296	4001337	11	707 730	D18 F2	500	F1	560	F1	60 +156	I			1.33 1.67	D18 F2	60 +156	Т	1500	D18					12038	к	42
Mountain View MHP UICN	12	36.2046	E	-116.0335	E	586881	4007079	11	220	E	80 120 160		100 140 180		20 20 20		50	E	0.72		60	ı	5	D51					63653	D51	49
Nue County Complex	A2	36.2248	E	-115.9974	Е	590105	4009351	11	410	A2	80	A2	410	A2	330	A2	50	D60	0.85	D60	330	Т	350	D60			No	A2	10274	A2	38
Nye county complex	A2	36.2211	12	-115.9957	12	590264	4008941	11	375	E	335	A2	365	A2	30	A2	50	Е	1.17	F2	30	Т	150	Е			No	A2	7515	A2	70
Our Bar	D5	36.2641	E	-116.0807	E	582579	4013639	11	140	С3	60	F2	140	F2	80	I	50	F2	0.67	D5	80	F2	12	СЗ					61091	F1	37
Pahrump Café	F2	36.2579	H1	-116.0158	H1	588415	4013003	11	140	E	100	F2	120	F2	20	I	50	E	0.67	E	20	I	25	E	25	E			57883	F2	48
Pahrump RV Park	D24 F1	36.2179	H1	-116.0306	H1	587130	4008553	11	200	D24 F1	100	D24 F1	200	D24 F1	100	D24 F1	50	D24 F1	0.67	D24 F1	100	I	74	D24					26843	D24	38
Pahrump Senior Center Inc.	D12	36.2203	E	-116.0390	E	586376	4008817	11	200	D12	100	D12	200	D12	100	D12	80	D12	0.67	D12	100	I	20						UNK	D12	35
		36.1201	12	-115.9052	12	598527	3997829	11	810	E							60	A4													0
	F2	36.1242	E	-115.9052	Е	598516	3998278	11	952	E, F2	200	F2	933	F2	733	I	60	E	1.17	F2	733	Т	325	E					9214	F1	0
Pahrump Utility Company, Inc. (Hefen Ranch Estates)	к	36.1469	F1	-115.8935	F1	599539	4000813	11	760	F1	83	F2	760	F2	677	I	50	F2	1.00	F2	677	Т	670	Т					101783	к	34
	F2	36.1393	12	-115.9229	12	596903	3999931	11	500	E	190	F2	440	F2	250	I	50	E	1.00	E	250	F2	670	E					5092, 100178	F1	68
	F2	36.1393	12	-115.9268	12	596561	3999930	11	500	E	220	F2	420	F2	200	I	70	F2	1.33	E	200	I	670	E		1			16112, 100176	F1	70
	F2	36.1244	12	-115.9623	12	593379	3998247	11	675 490	E F2	40	F2	490	F2	450	I	40	F2	1.33	F2	450	I	500	E					8263	к	68
Pleasant Valley	F2	36.1244	12	-115.9579	12	593772	3998254	11	490	E	90	F2	490	F2	400	I	50	F2	1.17	F2	400	ı	500	E					54665	F1	57

Interviews with Public Water         Al         Provided by Qz Wichman (Nye County).           A2         Provided by Lexi Oxburn (Nye County).         A2           System (PWS)         A3         Provided by Kan Piewe (Nye County).           A4         Provided by Crogory Hafen II (Pahrump Utility Company).           A4         Provided by Levi Kryder (Nye County).           Studies Provided by PWS         B1           Owners/Operators (Nom         B2           C1         Amargosa WHP Plan.           C2         Beatty WHP Plan.           C3         Parvande B Plan.           C3         Gabbs WHP Plan.           C4         Tonopah WHP Plan.           C5         Gabbs WHP Plan.           C4         Tonopah WHP Plan.           C5         Gabbs WHP Plan.           C4         Tonopah WHP Plan.           C5         Gabbs WHP Plan.           C4         Tonopah State Health Division, Bureau of Health Protection Services, Source Water Program Public Water           System Assessment Report, Cryte Correr Marker, PWS ID #: NV002556, December 7, 2004.           D2         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water           System Assessment Report, Cryte Correr Marker, PWS ID #: NV0002556, December 7, 2004.	Resource	Code	Reference
Interviews with Public Water         A2         Provided by Lack Osburn (Nye County).           System (PWS)         A3         Provided by Ken Plewe (Nye County).           Owners/Operators         A4         Provided by Cregory Hafen II (Pahrump Uillity Company).           A5         Provided by Levi Kryder (Nye County).           Studics Provided by PWS         B1           Cowners/Operators (Non         B2           C1         Amargosa WHP Plan.           C2         Beatry WHP Plan.           C3         Pahrump WHP Plan.           C4         Tonopah WHP Plan.           C5         Gabbs WHP Plan.           C4         Tonopah WHP Plan.           C5         Gabbs WHP Plan.           C5         Gabbs WHP Plan.           C5         Gabbs WHP Plan.           C5         Gabbs WHP Plan.           C6         Tonopah WHP Plan.           C7         Pahrump Will Protection Services, Source Water Program Public Water System Assessment Report, Champions, PWS ID #: NV0002555, January 4, 2005.           C9         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyote Corner Market, PWS ID #: NV0002555, Docember 7, 2004.           C9         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Publi		A1	Provided by Oz Wichman (Nye County).
System (PWS) Owners/Operators         A3         Provided by Ken Plewe (Nye County).           A4         Provided by Gregory Hafen II (Pahrump Utility Company).           Studies Provided by PWS         B1           Owners/Operators (Nom         B2           Existing Wellhead Protection         C1           Amargosa WHP Plan.         C2           C2         Beatry WHP Plan.           C3         C3           C4         Tonopah WHP Plan.           C4         Tonopah WHP Plan.           C5         Gabbs WHP Plan.           C4         Tonopah WHP Plan.           C5         Gabbs WHP Plan.           C4         Tonopah WHP Plan.           C5         Gabbs WHP Plan.           C4         Tonopah WHP Plan.           C5         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Champions, PWS ID #: NV0002555, Lanuary 4, 2005.           D2         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Valley Bar, PWS ID #: NV0002556, November 30, 2004.           D4         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.           D4         Nevada State H	Interviews with Public Water	A2	Provided by Jack Osburn (Nye County).
Owners/Operators         A4         Provided by Gregory Hafen II (Pahrump Utility Company).           A5         Provided by Levi Kryder (Nye County).           Studies Provided by PWS         B1           Owners/Operators (Nom         B2           C1         Amargosa WHP Plan.           C2         Beatty WHP Plan.           C3         Pahrump WHP Plan.           C4         Tonopah State Health Division, Bureau of Health Protection Services, Source Water Program Public Water           System Assessment Report, VFW Pahrump Post 10054, PWS ID #: NV0002556, December 7, 2004.           D4         System Assessment Report, Coyte Corner Market, PWS ID #: NV000256, November 30, 2004.           D4         System Assessment Report, Coyte Corner Market, PWS ID #: NV0002576, December 6, 2004.           D5         N	System (PWS)	A3	Provided by Ken Plewe (Nye County).
Matrix         Matrix         Matrix           Studies Provided by PWS         B1            Owners/Operators (Nome)         B2            Existing Wellhead Protection         C2         Beatry WHP Plan.            C2         Beatry WHP Plan.         C3         Pahrump WHP Plan.            C4         Tonopah WHP Plan.         C4         Tonopah WHP Plan.            C4         Tonopah WHP Plan.         C5         Gabbs WHP Plan.            C5         Gabbs WHP Plan.         C5         Gabbs WHP Plan.            C5         Gabbs WHP Plan.              C5         Gabbs WHP Plan.              C5         Gabbs WHP Plan.               C6         Saystem Assessment Report, Champions, PWS ID #: NV0002555, Journe Water Program Public Water         System Assessment Report, VFW Pahrump Post 10054, PWS ID #: NV000255, November 30, 2004.            C9         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Valley Bar, PWS ID #: NV0002575, November 30, 2004.           C9         Nevada State Health Division, Bureau of Health Protection Services, Source W	Owners/Operators	A4	Provided by Gregory Hafen II (Pahrump Utility Company).
Studies Provided by PWS         B1           Owners/Operators (Note         B2           Amargosa WHP Plan.         C1           C2         Beatty WHP Plan.           C3         Pahrump WHP Plan.           C4         Tonopah WHP Plan.           C5         Gabbs WHP Plan.           C6         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Champions, PWS ID #: NV0002555, January 4, 2005.           D2         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyate Corner Market, PWS ID #: NV0002555, November 30, 2004.           D4         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyate Corner Market, PWS ID #: NV0002555, November 30, 2004.           D4         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV000355, December 14, 2004.           D6         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003055, December 14, 2004.           D7 <t< td=""><td></td><td>A5</td><td>Provided by Levi Kryder (Nye County).</td></t<>		A5	Provided by Levi Kryder (Nye County).
Owners/Operators         B2           Existing Wellhead Protection (WHP) Plans         C1         Amargosa WHP Plan.           C2         Beatry WHP Plan.         C3         Pahrump WHP Plan.           C4         Tonopah WHP Plan.         C5         Gabbs WHP Plan.           C5         Gabbs WHP Plan.         C5         Gabbs WHP Plan.           C5         Gabbs WHP Plan.         C5         Gabbs WHP Plan.           C4         Tonopah WHP Plan.         C5         Gabbs WHP Plan.           D1         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Champions, PWS ID #: NV0002555, January 4, 2005.           D2         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyote Corner Market, PWS ID #: NV0002556, November 30, 2004.           D3         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV000255, December 6, 2004.           D4         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV000255, December 14, 2004.           D5         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003050, December 22, 2004.	Studies Provided by PWS	B1	
Existing Wellhead Protection         C1         Amargosa WHP Plan.           C2         Beatty WHP Plan.         C3         Pahrump WHP Plan.           C4         Tonopad WHP Plan.         C4         Tonopad WHP Plan.           C5         Gabbs WHP Plan.         C5         Gabbs WHP Plan.           C4         Tonopad WHP Plan.         C5         Gabbs WHP Plan.           C5         Gabbs WHP Plan.         C5         Source Water Program Public Water           System Assessment Report, Champions, PWS ID #: NV0002555, January 4, 2005.         D2         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water           D2         System Assessment Report, Coyote Corner Market, PWS ID #: NV0002555, December 7, 2004.         D3           D3         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Valley Bar, PWS ID #: NV0002555, Docember 6, 2004.           D4         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Our Bar, PWS ID #: NV000355, December 14, 2004.           D6         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.           D6         Nevada State Health Division, Bureau of Health Protection Services	Owners/Operators (None	B2	
Existing Wellhead Protection         C2         Beatty WHP Plan.           C3         Pahrunp WHP Plan.         C3         Pahrunp WHP Plan.           C4         Tonopah WHP Plan.         C5         Gabbs WHP Plan.           C5         Gabbs WHP Plan.         C5         Gabbs WHP Plan.           D1         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Champions, PWS ID #: NV0002555, January 4, 2005.           D2         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, VFW Pahrunp Post 10054, PWS ID #: NV0002555, December 7, 2004.           D3         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyote Corner Market, PWS ID #: NV0002555, November 30, 2004.           D4         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Valley Bar, PWS ID #: NV0002575, December 4, 2004.           D5         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003055, December 14, 2004.           D6         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003060, December 22, 2004.           D7         Nevada State Health Division, Bureau of Health Protec		C1	Amargosa WHP Plan.
Existing Weinead Protection (WHP) Plans         C3         Pahrump WHP Plan.           C4         Tonopab WHP Plan.         C5         Gabbs WHP Plan.           C5         Gabbs WHP Plan.         C5         Gabbs WHP Plan.           D1         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Champions, PWS ID #: NV0002555, January 4, 2005.           D2         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyote Corner Market, PWS ID #: NV0002556, December 7, 2004.           D3         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyote Corner Market, PWS ID #: NV0002555, November 30, 2004.           D4         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Valley Bar, PWS ID #: NV0002575, December 6, 2004.           D4         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.           D6         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.           D7         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0000306, December 22, 2		C2	Beatty WHP Plan.
C4         Tonopah WHP Plan.           C5         Gabbs WHP Plan.           D1         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Champions, PWS ID #: NV0002555, January 4, 2005.           D2         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, VFW Pahrump Post 10054, PWS ID #: NV0002565, December 7, 2004.           D3         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyote Corner Market, PWS ID #: NV0002565, November 30, 2004.           D4         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Valley Bar, PWS ID #: NV0002575, December 6, 2004.           D4         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV000305, December 14, 2004.           D5         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV000305, December 14, 2004.           D6         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV000306, December 22, 2004.           D7         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Short Branch, PWS ID #: NV	(WHD) Plans	C3	Pahrump WHP Plan.
C5       Gabbs WHP Plan.         D1       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Champions, PWS ID #: NV0002555, January 4, 2005.         D2       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, VFW Pahramp Post 10054, PWS ID #: NV0002555, December 7, 2004.         D3       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Coyote Corner Market, PWS ID #: NV0002565, November 30, 2004.         D4       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Valley Bar, PWS ID #: NV0002575, December 6, 2004.         D4       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Our Bar, PWS ID #: NV000305, December 14, 2004.         D6       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Core Bar, PWS ID #: NV0003035, December 14, 2004.         D6       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Core Bar, PWS ID #: NV000305, December 14, 2004.         D7       Nevada State Health Division, Bureau of Health Protection S	(will ) Fians	C4	Tonopah WHP Plan.
D1         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Champions, PWS ID #: NV0002555, January 4, 2005.           D2         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, VFW Pahrump Post 10054, PWS ID #: NV0002556, December 7, 2004.           D3         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyote Corner Market, PWS ID #: NV0002555, November 30, 2004.           D4         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Valley Bar, PWS ID #: NV0002575, December 6, 2004.           D5         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV000305, December 14, 2004.           D6         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.           D7         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003060, December 22, 2004.           D8         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Short Branch, PWS ID #: NV0003074, December 6, 2004.           D8         Nevada State Health Division, Bureau of Health Protection Services, Source Water Pro		C5	Gabbs WHP Plan.
D1System Assessment Report, Champions, PWS ID #: NV0002555, January 4, 2005.D2Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, VFW Pahrump Post 10054, PWS ID #: NV0002556, December 7, 2004.D3Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyote Corner Market, PWS ID #: NV0002565, November 30, 2004.D4Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Valley Bar, PWS ID #: NV0002575, December 6, 2004.D5Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.D6Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.D6Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003060, December 22, 2004.D7Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Short Branch, PWS ID #: NV0003074, December 6, 2004.D8Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D8Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0		D1	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water
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D2       System Assessment Report, VFW Pahrump Post 10054, PWS ID #: NV0002556, December 7, 2004.         D3       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyote Corner Market, PWS ID #: NV0002555, November 30, 2004.         D4       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Valley Bar, PWS ID #: NV0002575, December 6, 2004.         D4       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.         D5       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.         D6       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003060, December 22, 2004.         D7       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003060, December 22, 2004.         D8       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Short Branch, PWS ID #: NV0003074, December 6, 2004.         D9       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2		D2	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water
D3Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Coyote Corner Market, PWS ID #: NV0002565, November 30, 2004.D4Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Valley Bar, PWS ID #: NV0002575, December 6, 2004.D5Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.D6Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.D6Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003060, December 22, 2004.D7Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Short Branch, PWS ID #: NV0003074, December 6, 2004.D8Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D9Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D10Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.		02	System Assessment Report, VFW Pahrump Post 10054, PWS ID #: NV0002556, December 7, 2004.
System Assessment Report, Coyote Corner Market, PWS ID #: NV0002565, November 30, 2004.D4Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Valley Bar, PWS ID #: NV0002575, December 6, 2004.D5Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.D6Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.D6Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.D7Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003060, December 22, 2004.D8Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Short Branch, PWS ID #: NV0003074, December 6, 2004.D9Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D10Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Shady Lady Ranch, PWS ID #: NV000820, December 6, 2004.		D3	Nevada State Health Division, Bureau of Health Protection Services, <i>Source Water Program Public Water</i>
D4Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Valley Bar, PWS ID #: NV0002575, December 6, 2004.D5Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.D6Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.D6Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.D7Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003060, December 22, 2004.D8Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Short Branch, PWS ID #: NV0003074, December 6, 2004.D9Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D10Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D10Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.			System Assessment Report, Coyote Corner Market, PWS ID #: NV0002565, November 30, 2004.
Dystem Assessment Report, Valley Bal, 1 Ws Bal,		D4	Nevada State Health Division, Bureau of Health Protection Services, Source water Program Public Water System Assassment Report Valley Bar, PWS ID #: NV0002575, December 6, 2004
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D6System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.D7Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003060, December 22, 2004.D8Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Short Branch, PWS ID #: NV0003074, December 6, 2004.D9Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D10Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D10Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Shady Lady Ranch, PWS ID #: NV0000820, December 6, 2004.		Dí	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water
D7Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003060, December 22, 2004.D8Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Short Branch, PWS ID #: NV0003074, December 6, 2004.D9Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D10Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D10Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Shady Lady Ranch, PWS ID #: NV0000820, December 6, 2004.		D6	System Assessment Report, Our Bar, PWS ID #: NV0003035, December 14, 2004.
D1System Assessment Report, Crystal Springs Bar Restaurant, PWS ID #: NV0003060, December 22, 2004.D8Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Short Branch, PWS ID #: NV0003074, December 6, 2004.D9Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D10Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.D10Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Shady Lady Ranch, PWS ID #: NV0000820, December 6, 2004.		D7	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water
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D0       System Assessment Report, Short Branch, PWS ID #: NV0003074, December 6, 2004.         D9       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.         D10       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Shady Lady Ranch, PWS ID #: NV0000820, December 6, 2004.		D8	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water
D9       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Desert Village Motel Inc., PWS ID #: NV0004067, October 7, 2004.         D10       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Shady Lady Ranch, PWS ID #: NV0000820, December 6, 2004.		20	System Assessment Report, Short Branch, PWS ID #: NV0003074, December 6, 2004.
D10       Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Shady Lady Ranch, PWS ID #: NV0000820, December 6, 2004.		D9	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water
D10 Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Shady Lady Ranch, PWS ID #: NV0000820, December 6, 2004.			System Assessment Report, Desert Village Motel Inc., PWS ID #: NV000406/, October 7, 2004.
system Assessment Report, Shaay Laay Kanch, F ws ID #: IV V0000620, December 0, 2004.		D10	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water
Nevada State Health Division Bureau of Health Protection Services Source Water Program Public Water			Nevada State Health Division Bureau of Health Protection Services Source Water Program Public Water
D11 System Assessment Report. Tonopah Public Utilities. PWS ID #: NV0000237, December 9, 2004		D11	System Assessment Report. Tonopah Public Utilities. PWS ID #: NV0000237. December 9, 2004

 Table D-2. Nye County Data Matrix Codes

D12	Nevada State Health Division, Bureau of Health Protection Services, <i>Source Water Program Public Water</i>
D13	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Baileys Hot Springs, PWS ID #: NV0003010, October 28, 2004
D14	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Longstreet Inn and Casino, PWS ID #: NV0000871, November 10, 2004.
D15	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Tonopah Conservation Camp NDOP, PWS ID #: NV0000823, December 8, 2004.
D16	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Tonopah Test Range Area 10, PWS ID #: NV0005001, November 22, 2004.
D17	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Low Low Liquor Cigarettes and Goodies, PWS ID #: NV0000917, January 1, 2005.
D18	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Mountain Falls Water System UICN, PWS ID #: NV0000920, March 31, 2005.
D19	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Ione Water System, PWS ID #: NV0002143, December 6, 2004.
D20	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, LDS Chruch Pahrump Ward, PWS ID #: NV0005068, November 18, 2004.
D21	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report Hadley Subdivision, PWS ID #: NV0004074, December 20, 2004
	System Historismin Report, Humby Subartiston, 1 (15 ID #: 100001077), December 20, 200 II
D22	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water S ystem Assessment Report, Tonopah Electronic Combat Range O & M, PWS ID #: NV0005002, November 22, 2004.
D22 D23	Nevada State Health Division, Bureau of Health Protection Services, <i>Source Water Program Public Water S</i> <i>ystem Assessment Report, Tonopah Electronic Combat Range O &amp; M, PWS ID #: NV0005002</i> , November 22, 2004. Nevada State Health Division, Bureau of Health Protection Services, <i>Source Water Program Public Water</i> <i>System Assessment Report, Far East Bar, PWS ID #: NV0005019</i> , October 7, 2004.
D22 D23 D24	Nevada State Health Division, Bureau of Health Protection Services, <i>Source Water Program Public Water S</i> <i>ystem Assessment Report, Tonopah Electronic Combat Range O &amp; M, PWS ID #: NV0005002</i> , November 22, 2004. Nevada State Health Division, Bureau of Health Protection Services, <i>Source Water Program Public Water</i> <i>System Assessment Report, Far East Bar, PWS ID #: NV0005019</i> , October 7, 2004. Nevada State Health Division, Bureau of Health Protection Services, <i>Source Water Program Public Water</i> <i>System Assessment Report, Far East Bar, PWS ID #: NV0005019</i> , October 7, 2004.
D22 D23 D24 D25	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water S         ystem Assessment Report, Tonopah Electronic Combat Range O & M, PWS ID #: NV0005002, November 22, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Far East Bar, PWS ID #: NV0005019, October 7, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Far East Bar, PWS ID #: NV0005019, October 7, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Seven Palms RV Park, PWS ID #: NV0005034, December 13, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Seven Palms RV Park, PWS ID #: NV0005034, December 13, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Kays Korral, PWS ID #: NV0005038, November 24, 2004.
D22 D23 D24 D25 D26	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water S         ystem Assessment Report, Tonopah Electronic Combat Range O & M, PWS ID #: NV0005002, November 22, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Far East Bar, PWS ID #: NV0005019, October 7, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Far East Bar, PWS ID #: NV0005019, October 7, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Seven Palms RV Park, PWS ID #: NV0005034, December 13, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Kays Korral, PWS ID #: NV0005038, November 24, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Kays Korral, PWS ID #: NV0005038, November 24, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, Kays Korral, PWS ID #: NV0005038, November 24, 2004.         Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water         System Assessment Report, NDOT Blue Jay Roadside Park RP809NY, PWS ID #: NV0002148, November 12, 2004.<
D22 D23 D24 D25 D26 D27	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water S ystem Assessment Report, Tonopah Electronic Combat Range O & M, PWS ID #: NV0005002, November 22, 2004.Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Far East Bar, PWS ID #: NV0005019, October 7, 2004.Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Far East Bar, PWS ID #: NV0005019, October 7, 2004.Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Seven Palms RV Park, PWS ID #: NV0005034, December 13, 2004.Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Kays Korral, PWS ID #: NV0005038, November 24, 2004.Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Kays Korral, PWS ID #: NV0005038, November 24, 2004.Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, NDOT Blue Jay Roadside Park RP809NY, PWS ID #: NV0002148, November 12, 2004.Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, NDOT Blue Jay Roadside Park RP809NY, PWS ID #: NV0002148, November 12, 2004.Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Calvada North UICN, PWS ID #: NV0002589, August 31, 2004.

	D29	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Gabbs Water System, PWS ID #: NV0000063, October 11, 2004.
	D30	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Quick Save Market, PWS ID #: NV0000853, November 19, 2004.
	D31	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Carvers Cafe, PWS ID #: NV0002140, November 30, 2004.
Source Water Assessment Program (SWAP) /	D32	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, NDOT Lathrop Wells Roadside Park RP801NY, PWS ID #: NV0002146, November 19, 2004.
Vulnerability Assessment Program (VAP) Reports	D33	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, NDOT Big Smokey Roadside Park RP807NY, PWS ID #: NV0002147, November 19, 2004.
	D34	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Berlin Icthyosaur State Park, PWS ID #: NV0002151, November 30, 2004.
	D35	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Smoky Valley Mine, PWS ID #: NV0002535, December 28, 2004.
	D36	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Chipmunk Retreat, PWS ID #: NV0002554, February 3, 2005.
	D37	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Tonopah Test Range Mancamp, PWS ID #: NV0004068, November 22, 2004.
	D38	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Fort Amargosa RV Park, PWS ID #: NV0000155, December 3, 2004.
	D39	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Amargosa Park, PWS ID #: NV0000828, October 28, 2004.
	D40	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Horizon Market I, PWS ID #: NV0000833, December 8, 2004.
	D41	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Terribles Ranch and RV Park, PWS ID #: NV0000834, November 23, 2004.
	D42	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Town Hall Bar, PWS ID #: NV0000828, December 8, 2004.
	D43	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Elks Lodge Pahrump, PWS ID #: NV0000923, December 2, 2004.
	D44	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Whos Dunes, PWS ID #: NV0000946, December 6, 2004.
	D45	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Amargosa Valley Resort INC, PWS ID #: NV0002141, October 11, 2004.

D46	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water
D 17	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water
D47	System Assessment Report, Country View Estates UICN, PWS ID #: NV0005032, October 27, 2004.
D48	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Desert Mirage Homeowners Association, PWS ID #: NV0000831, August 26, 2004.
D49	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Escapee CO OP of Nevada, PWS ID #: NV0002552, December 3, 2004.
D50	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, NDOT Sunnyside Roadside Park RP810NY, PWS ID #: NV0000943, May 21, 2004.
D51	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Mountain View MHP UICN, PWS ID #: NV0005067, September 7, 2004.
D52	Nevada State Health Division, Bureau of Health Protection Services, <i>Groundwater Assesment Survey, Moose Lodge 808, PWS ID #: NV0002142</i> , November 15, 2000.
D53	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Horizon Market III, PWS ID #: NV0000918, May 20, 2004.
D54	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Tumbleweed Tavern, PWS ID #: NV0000827, November 30, 2004.
D55	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Beatty Water and Sanitation District, PWS ID #: NV0000009, June 14, 2004.
D56	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Big Five Park, PWS ID #: NV0000362, October 27, 2004.
D57	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, C Valley MHP, PWS ID #: NV0002538, October 6, 2004.
D58	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Hafen Ranch Estates, PWS ID #: NV0000926, June 14, 2004.
D59	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Carvers Smokey Valley RV and MHP, PWS ID #: NV0000218, June 17, 2004.
D60	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Nye County Complex, PWS ID #: NV0002152, May 21, 2004.
D61	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Anchor IN MHP, PWS ID #: NV0005033, October 26, 2004.
D62	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Amargosa Valley VFW Post 6826, PWS ID #: NV0000811, May 20, 2004.
D63	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Amargosa Town Complex, PWS ID #: NV0005037, May 21, 2004.

	D64	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Amargosa Senior Center, PWS ID #: NV0003061, May 24, 2004.
	D65	Nevada State Health Division, Bureau of Health Protection Services, Source Water Program Public Water System Assessment Report, Amargosa Elementary School, PWS ID #: NV0002190, May 21, 2004.
DWS Vulnershility Info	J1	Public Water Supply Groundwater Vulnerability Information. <i>Manhattan Town Water, PWS ID # NV0000165, July 21, 2006.</i>
r w s v unierability illo	J2	Public Water Supply Groundwater Vulnerability Information. <i>Sunset Mobile Home Park, PWS ID # NV0005066, June 28, 1999.</i>
Safe Drinking Water Information System (SDWIS) Database	Е	Online SDWIS database accessed on various dates.
Well Logs	F1	Nevada Division of Water Resources.
Well Logs	F2	Well Drillers Report.
Collected Field Data	H1	Collected by hand-held Global Positioning System (GPS).
Conceled Pield Data	H2	If needed.
	Ι	Calculated/Recommended by BEC/Ninyo & Moore.
Intpreted Data	I2	Located by BEC using a combination of Nye County geographic information system (GIS) aerial photography, Nye County Assessor's data, and Google Earth coordinates.
	I3	Assumed, based on reasonable similar values.
Nevada Division of Environmental Protection (NDEP) Data	К	Provided by Kim Borgzinner (NDEP).

Community Source Water Protection Plan for Public Water Systems in Nye County, Nevada May 2012

Appendix E Contaminant Source Inventory

# **Community Source Water Protection Plan for Public Water Systems in Nye County, Nevada**

# **Contaminant Source Inventory Summary Report**

A Contaminant Source Inventory (CSI) is used to identify existing and potential threats to ground water quality from potential sources of pollution. The Nye County Community Source Water Protection (CSWP) Team conducted desktop research prior to field surveys for the dual purpose of preparing personnel to find and survey potential contaminant sources (PCSs) in the field as well as to find historical sources of contamination which may otherwise be overlooked on location.

A number of resources were used to conduct the CSI. These resources included aerial photographs; previous wellhead protection (WHP) plans for communities in Nye County; the Nevada Division of Environmental Protection's (NDEP's) geographic information system (GIS); the United States Environmental Protection Agency's (EPA's) online and regulatory databases; a field survey of the communities and their environments; and information from Team members.

Table E-1 (page E-2) provides a brief overview of PCSs and how their presence may be rated in terms of the relative risk to ground water resources. The Team used this table to assist with identification and ranking of PCSs as a means of standardizing the review process. For purposes of this report, PCSs were classified as "Not Adequately Controlled" if there was no evidence that active control measures were in place during the site visit, or if BEC did not observe the PCS during field activities.

## **Previous Wellhead Protection Plans**

Previous surveys of potential contaminant sources were reviewed for each of the communities in the study areas with previous WHP plans, including: Armargosa Valley, Beatty, Gabbs, Pahrump, Manhattan, and Tonopah. Where available, these previous studies were used as a starting point for further investigation.

# **Environmental Protection Agency Online Databases**

The online databases ECHO and Envirofacts, hosted by the EPA, were utilized in the search for facilities in the Source Water Protection Areas (SWPAs), regulated under the following regulatory databases:

- CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information contains information on hazardous waste being remediated by the federal Superfund)
- TRI (Toxic Release Inventory)
- RCRA (Hazardous Waste Handler)
- FRS (Facility Registry System)
- SDWIS (Safe Drinking Water Information System)
- IDEA (Integrated Data for Enforcement Analysis)

## Nevada Division of Environmental Protection's Geographic Information System

NDEP's GIS (<u>http://ndep-emap.nv.gov/emap/</u>) contains information for all of Nevada and is regularly updated. It was used to obtain information on brownfields, leaking underground storage tank (LUST) sites, TRIs, and mining related sites.

PCS	CLASS	SOURCE		CAT	TEGO	RY		RISK RANKING
CODE	CLASS	SUCKEE	Α	В	С	D	Е	KIOK KAIVKIIVO
1		Animal burial areas			Х	Х		High
2		Animal feedlots		Х	Х	Х		Moderate to High
3		Chemical application (e.g. pesticides, fungicides, & fertilizers)		Х	Х			High
4	Agricultural	Chemical mixing & storage areas (including rural airports)	Х	X	Х			High
5		Irrigated fields		Х	X/			Moderate
5		Irrigation ditches	v		X			High
7		Unsealed irrigation wells	A V		A V			High
8		Chemical manufacturers warehousing/distribution activities	X	x	X			High
9		Electroplaters & fabricators			X			High
10		Electrical products & manufacturing			X			High
11	Industrial	Machine & metalworking shops	Х					High
12		Manufacturing sites	Х	Х	Х			High
13		Petroleum products production, storage & distribution centers	Х					High
14		Dry cleaning establishments	Х					High
15		Furniture & wood stripper & refinishers	Х					High
16	Communitat	Jewelry & metal plating			Х			High
17	Commerciai	Laundromats						Low
18		Paint shops	Х					High
19		Photography establishments & printers			Х			High
20		Auto repair shops	Х					High
21		Car washes	Х		Х	Х		Moderate
22	Automotive	Gas stations	Х					High
23		Road deicing operations: storage & application areas (e.g. road salt)	X.		X			Moderate
24		Road maintenance depots	X	v	X			High
25	D 11 (1	Household hazardous products	X	X	X	v		Moderate
20	Residential	Private wells	Λ	A V		A V		Moderate Moderate
27		Septic systems, cesspools		A V	A V	л		Moderate to High
28	Medical /	Educational institutions (labs, lawns, & chemical storage areas)		X	X	v		Moderate
30	Educational	Research laboratories	v	v	v	A V		Low High
31		Aboveground storage tanks	X	Λ	Л	Λ		High
32		Underground storage tanks	X					High
33	Storage	Public storage	Х					Low
34		Radioactive materials storage					Х	High
35		Dumps and landfills (historical/active)	Х	Х	Х	Х	Х	High
36		Municipal incinerators		Х	Х	Х		Moderate
37	Municipal Waste	Recycling & reduction facilities			Х			High
38	Wulleipar Waste	Scrap & junkyards	Х		Х			High
39		Septage Lagoons, wastewater treatment plants		Х	Х	Х		High
40		Sewer Transfer Stations		Х	Х	Х		High
41		Airports	X					High
42		Asphalt plants	X					High
43	-	Boat yards	Λ			v		High
44		Construction grade	v			Λ		Moderate
45		Dry wells	X			x		High
40		Fuel storage systems	X			Λ		High
48		Golf courses, parks & nurseries (chemical application)		Х	Х			High
49		Mining (surface & underground)	Х		Х			High
50	Min 11	Pipelines (oil, gas, coal slurry)	Х					High
51	Miscellaneous	Railroad tracks, yards & maintenance	Х	Х	Х	Х		High
52		Surface water impoundments, streams/ditches				Х		High
53		Stormwater drains & retention basins	Х	Х	Х	Х		High
54	4	Unplugged abandoned well	X	X	X	X		High
55	4	Well: operating	X	X	X	X		High – Low
56	{	Other	X	X	X	X	X	High – Low
5/	4	Dusiness	X	X	X	X	X V	High Low
50	{	Transportation	X	X	X V	X	X V	High Low
59	1	Governmental Municipal Works	A V	A V	A V	A V	A V	High Low
Contaminant Cat	egories:	Governmental, Municipal WOIKS	Λ	л	л	Λ	Λ	nigii – Low
A = VOLATILE C B = SYNTHETIC C = INORGANIC D = MICROBIOL E = RADIONUCL	DRGANIC COMPOUND (' ORGANIC COMPOUND CONTAMINANT (IOC) OGICAL IDES	VOC) (SOC)						

**Table E-1. Potential Contaminant Sources** 

## **Field Surveys**

Field surveys were conducted on September 28 through 30, October 3 through 6, and October 17 through 21, 2011, in order to supplement the data from the desktop research. Surveys utilized hand-held global positioning system (GPS) receivers (Garmin GPS eTrex Vista HcX) to ensure accuracy and to identify PCSs within SWPAs in Nye County. GPS data points were cross-referenced against known locations using Google Earth to provide reasonable data quality verification.

## **Summary of Survey Results**

The PCS inventory identified 244 PCSs throughout the SWPAs studied in Nye County. Of these, 69 (28 percent) were classified as miscellaneous with risk rankings from low to high. The majority of the PCSs in the miscellaneous class were grass fields (24), mining related (17), or highways (13). Automotive sources accounted for 56 (23 percent) PCSs, including both above and underground fuel storage tanks, with primarily a high risk rankings. There were 32 (13 percent) PCSs classified as residential with a moderate or high risk ranking, the majority of which were private storage yards (25). Medical/educational facilities accounted for 25 (11 percent) PCSs with a low or moderate risk ranking. There were 25 (11 percent) PCSs categorized as storage with either a low or high risk ranking. Industrial facilities accounted for12 (five percent) PCSs with a high risk ranking. Both agriculture (with a moderate to high risk ranking) and municipal waste (with a high risk ranking) each accounted for 11 (four percent) PCSs. Lastly, three (one percent) PCSs were commercial with either a low or high risk ranking.

Private storage yards account for approximately ten percent of the total number of PCSs identified; those identified in the inventory were sizable and mainly concentrated in residential areas. Communities in Nye County contain numerous private storage yards ranging from small to large. Due to the uncertainty of what PCSs may be present in any of these personal storage yards, the Team chose to rank private storage yards as a high risk. However, a subsequent site visit to Manhattan, prompted by a request from Nye County Public Works, exemplified the need to evaluate personal storage yards on a case-by-case basis, as the relative risk ranking for such PCSs is significantly different based on the characteristics of individual water systems. Factors such as depth to water, subsurface stratigraphy between ground surface and the aquifer supplying potable water, and similar factors should be considered before the relative risk ranking is determined, particularly given the size of Nye County and the variability of water system parameters among and within each hydrographic basin.

The Tonopah, Shady Lady, Gabbs, Ione, and Sunnyside Nevada Department of Transportation (NDOT) rest stop SWPAs were isolated with few if any PCSs within their SWPAs. Amargosa Valley, Manhattan, Crystal, Pahrump, and Round Mountain SWPAs were located in or near to residential/industrial areas, resulting in a greater number of PCSs within or adjacent to SWPAs. SWPAs for Beatty's primary production wells were isolated; however, the backup wells' SWPAs were in town and contained or were directly adjacent to PCSs.

## Septic Systems

While septic systems were not found within every SWPA in Nye County, in regions where these systems occurred, they were numerous and often found in high densities. According to the ISWPP Draft Update: March 2010, septic systems were given a risk ranking of moderate to high. Areas where septic systems were present are illustrated in the maps in Appendix A as hatched areas. Hatched areas were used in place of specific points in order to account for unknown septic system locations and areas which contained a high density of septic systems. Beatty, Gabbs, Tonopah, and Round Mountain used centralized municipal sanitary sewer systems. Amargosa, Manhattan, Ione, Carvers, the Shady Lady, and

NDOT Sunnyside Roadside Park used primarily individual septic systems. The Town of Pahrump contained both municipal sanitary sewer and individual septic systems.

PWS	ID # Facility	Id	Address	Latitude	Longitude	Easting	Northing	Datum	Code	Class	Source	Category (A,B,C,D,E)	Risk	Well	Control
Amargosa Desert															
Amargosa Elementary School	1 Agriculture Fie	ld (Hay)	1103 School Ln, Amargosa Valley, NV 89020, USA	36.574353	-116.463877	548152	4047923	NAD83/WGS84	5	Agricultural	Irrigated Fields	В	Moderate	Armargosa Town Complex /Armargosa Elementary School / Armargosa Park	Not Adequately Controlled
Amargosa Elementary School	Amargosa Eler School	nentary	777 E Amargosa Farm Rd, Amargosa Valley, NV 89020, USA	36.569398	-116.460848	548240.9855	4047241.386	NAD83/WGS84	28	Medical / Educational	Educational Institutions	B, C	Moderate	Armargosa Town Complex /Armargosa Elementary School / Armargosa Park	Not Adequately Controlled
Amargosa Elementary School	Amargosa Eler 3 School Field	nentary	777 E Amargosa Farm Rd, Amargosa Valley, NV 89020, USA	36.570493	-116.460785	548245.9415	4047362.883	NAD83/WGS84	48	Miscellaneous	Golf Courses, Parks and Nurseries	B, C	High	Armargosa Town Complex /Armargosa Elementary School / Armargosa Park	Not Adequately Controlled
Amargosa Elementary School	4 Private Storage	Yard	1113 School Ln, Amargosa Valley, NV 89020, USA	36.57143	-116.46188	548148	4047466	NAD83/WGS84	25	Residential	Household Hazardous Products	A. B. C	High	Armargosa Town Complex /Armargosa Elementary School / Armargosa Park	Not Adequately Controlled
Amargosa Senior Center	Agricultural Fi 5 (Grapes)	eld	1321 Williamson Rd, Amargosa Valley, NV 89020, USA	36.57876	-116.47116	547313	4048274	NAD83/WGS84	5	Agricultural	Irrigated Fields	В	Moderate	Amargosa Senior Center	Not Adequately Controlled
Amargosa Town Complex	6 AST Fuel		Farm Rd, Amargosa Valley, NV 89020, USA	36.570546	-116.459291	548379.5843	4047369.513	NAD83/WGS84	31	Storage	Above Ground Storage Tanks	А	High	Armargosa Town Complex /Armargosa Elementary School / Armargosa Park	Adequately Controlled
Amargosa Town Complex	7 Amargosa Cen	etery	Farm Rd, Amargosa Valley, NV 89020, USA	36.570033	-116.456171	548659.0685	4047314.182	NAD83/WGS84	44	Miscellaneous	Cemeteries	D	Moderate	Armargosa Town Complex /Armargosa Elementary School / Armargosa Park	Not Adequately Controlled
Amargosa Town Complex	Used Oil Drop 8 Center	off	Farm Rd, Amargosa Valley, NV 89020, USA	36.570282	-116.458054	548490.4301	4047340.851	NAD83/WGS84	13	Industrial	Petroleum Products Production, Storage & Distribution Centers	А	High	Armargosa Town Complex /Armargosa Elementary School / Armargosa Park	Not Adequately Controlled
Amargosa Valley Resort INC	9 Gas Station		Hwy 95/Veterans Memorial Hwy, Amargosa Valley, NV 89020, USA	36.643484	-116.395896	554000.9966	4055494.136	NAD83/WGS84	22	Automotive	Gas Stations	А	High	Fort Amargosa RV Park Well	Not Adequately Controlled
Amargosa Valley VFW Post 6826	10 Private Storage	Yard	Windmill, Amargosa Valley, NV 89020, USA	36.51321	-116.42423	551554	4041027	NAD83/WGS84	25	Residential	Household Hazardous Products	A, B, C	High	Amargosa Valley VFW Post	Not Adequately Controlled
Amargosa Valley VFW Post 6827	11 Private Storage	Yard	Windmill, Amargosa Valley, NV 89020, USA	36.512184	-116.424585	551523.6229	4040913.659	NAD83/WGS84	25	Residential	Household Hazardous Products	A, B, C	High	Amargosa Valley VFW Post	Not Adequately Controlled
Amargosa Valley VFW Post 6828	12 Private Storage	Yard	Windmill, Amargosa Valley, NV 89020, USA	36.514014	-116.424522	551528.0509	4041116.687	NAD83/WGS84	25	Residential	Products	A, B, C	High	Amargosa Valley VFW Post	Controlled
Amargosa Water Company	13 Field	tural	369 Roberts Rd, Amargosa Valley, NV 89020, USA	36.509696	-116.509301	544106	4040387	NAD83/WGS84	5	Agricultural	Irrigated Fields	В	Moderate	Amargosa Valley Water Company Well 1	Not Adequately Controlled
Amargosa water Company	14 Resources		Cottonwood Rd, Amargosa Valley, NV 89020, USA	36.507068	-116.510217	543858.8166	4040303.739	NAD83/WGS84	12	Industrial	Manufacturing sites	A, B, B	High	Company Well 2	Controlled
Armargosa Park	15 Park Field		Farm Rd, Amargosa Valley, NV 89020, USA	36.568097	-116.459872	548329.1251	4047097.561	NAD83/WGS84	48	Miscellaneous	Golf Courses, Parks and Nurseries	B, C	High	Armargosa Town Complex /Armargosa Elementary School / Armargosa Park	Not Adequately Controlled
Cherry Patch Love Ranch	16 AST Fuel		Appaloosa Ln, Pahrump, NV 89048, USA	36.48906775	-116.1567712	575527	4038526	NAD83/WGS84	31	Storage	Above Ground Storage Tanks	А	High	Cherry Patch	Not Adequately Controlled
Ranch	17 Gravel Pit		202 Pinto Way, Pahrump, NV 89048, USA	36.48879521	-116.1590293	575325	4038494	NAD83/WGS84	49	Miscellaneous	Mining Household Hazardous	A, C	High	Cherry Patch Short Branch / Crystal Park /	Controlled
County Park	18 Private Storage	Yard	25 Corral Ln, Pahrump, NV 89048, USA	36.49047371	-116.1618358	575072	4038678	NAD83/WGS84	25	Residential	Products Household Hazardous	A, B, C	High	Cherry Patch	Controlled Not Adequately
County Park Fort Amargosa RV	19 Private Storage	Yard	80 Corral Ln, Pahrump, NV 89048, USA	36.488276	-116.162246	575037.3799	4038434.05	NAD83/WGS84	25	Residential	Products	A, B, C	High	Crystal Park Well NDOT Lathrop / Fort	Controlled Not Adequately
Park Fort Amargosa RV	20 Gas Station		Hwy 95/Veterans Memorial Hwy, Pahrump, NV 89048, USA	36.64275	-116.39761	553849	4055411	NAD83/WGS84	22	Automotive	Gas Stations Septic System,	А	High	Amargosa RV Park NDOT Lathrop / Fort	Controlled Not Adequately
Park Horizon Academy	21 RV Septic Dur	пр	Hwy 373, Amargosa Valley, NV 89020, USA	36.64063	-116.39894	553731	4055175	NAD83/WGS84	27	Residential	Cesspools	B, C, D	Moderate	Amargosa RV Park	Controlled Not Adequately
Wells	22 Ponderosa Dai	у	900 Mecca Rd, Amargosa Valley, NV 89020, USA	36.48703	-116.449654	549294.8241	4038110.315	NAD83/WGS84	2	Agricultural	Animal Feedlots	B, C, D	High	N/A Armargosa Town Complex	Controlled
Wells	23 Horizon Acade	my	Mecca Rd, Amargosa Valley, NV 89020, USA	36.495557	-116.4236	551622.8603	4039069.826	NAD83/WGS84	28	Medical / Educational	Educational Institutions	B, C	Moderate	/Armargosa Elementary School / Armargosa Park	Not Adequately Controlled Not Adequately
Wells	24 Horizon Acade	my Field	Mecca Rd, Amargosa Valley, NV 89020, USA	36.495719	-116.424012	551585.8535	4039087.576	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	Horizon Academy Wells	Controlled
Horizon Academy Wells	Wastewater Tr 25 Pond(s)	eatment	Mecca Rd, Amargosa Valley, NV 89020, USA	36.497245	-116.424231	551565.2277	4039256.731	NAD83/WGS84	39	Municipal Waste	Wastewater Treatment	B, C, D	High	Horizon Academy Wells	Not Adequately Controlled
Long Street Wells	Casino Sewage 26 Treatment		4400 Hwy 373, Amargosa Valley, NV 89020, USA	36.41282	-116.42662	551407	4029890	NAD83/WGS84	39	Municipal Waste	Septage Lagoons, Wastewater Treatment Plants	B, C, D	High	Long Street Wells	Adequately Controlled

PWS	ID #	Facility Id	Address	Latitude	Longitude	Easting	Northing	Datum	Code	Class	Source	Category (A,B,C,D,E)	Risk	Well	Control
Mabel's Far Fast Bar		Former Water									Surface Water Impoundments.				Not Adequately
Wabers I ar East Dar	27	Storage/Filling Facility	Appaloosa Ln, Pahrump, NV 89048, USA	36.48501933	-116.1566699	575540	4038077	NAD83/WGS84	52	Miscellaneous	Streams/Ditches	D	High	Mabel's Far East Bar	Controlled
NDOT Lathrop Wells Roadside Park	20	Jackage Apro ports	Hun 272 American Valley NV 20020 USA	26 62 172	116 4125	552522 605	4054512 745	NAD82/WCS84	41	Misselleneous	Aimorto		Uich	NI/A	Not Adequately
NDOT Lathrop Wells	20	Jackass Aelo park	Hwy 575, Annargusa Vaney, NV 89020, USA	50.03472	-110.4123	332322.093	4034312.743	NAD85/ W 0584	41	winscentaneous	Septic System.	A	nigii	IN/A	Not Adequately
Roadside Park	29	Vault Toilet	Hwy 373, Amargosa Valley, NV 89020, USA	36.64266	-116.400013	553633.5444	4055400.422	NAD83/WGS84	27	Residential	Cesspools	B, C, D	Moderate	Pipe Springs Well	Controlled
Amargosa PWSs	30	Hwy 373 (Amargosa)	Hwy 373 (Amargosa)						58	Miscellaneous	Transportation	A, B, C	Low	Amargosa PWSs	Not Adequately Controlled
Amargosa PWSs	31	Memorial Hwy (Amargosa)	Hwy 95/Veterans Memorial Hwy (Amargosa)						58	Miscellaneous	Transportation	A, B, C	Low	Amargosa PWSs	Not Adequately Controlled
Short Branch	32	Private Storage Yard	106 Bronco Way, Pahrump, NV 89048, USA	36.48894154	-116.1683276	574492	4038503	NAD83/WGS84	25	Residential	Household Hazardous Products	A, B, C	High	Short Branch	Not Adequately Controlled
				1	1	1	1		1		1	1	Ţ	1	1
Beatty		1			1	1	1	1	1	1	1	1	1	1	
Beatty RV Park	33	D&H Mining	Hwy 95/Veterans Memorial Hwy, Beatty, NV 89003, USA	36.949707	-116.711813	525658.6545	4089332.109	NAD83/WGS84	49	Miscellaneous	Mining	A, C	High	Beatty RV Park	Not Adequately Controlled
Beatty Water and	24	Desert Hill Comptony	A Ave S Deatty NV 90002 USA	26 000215	116 7606	521228 6005	4092920 92	NAD92/WCS94	44	Misselleneous	Comotorios	D	Modorata	Pootty Woll 2 / Pootty Woll 2	Not Adequately
Beatty Water and	54	Beatty Elementary	A Ave 5, Beatty, NV 89005, USA	50.900215	-110.7000	321328.0903	4003029.03	NAD85/ W 0584	44	Medical /	Cemeteries		Widderate	beauty well 27 beauty well 5	Not Adequately
Sanitation District	35	School	411 4th St, Beatty, NV 89003, USA	36.907336	-116.762878	521123.7749	4084619.268	NAD83/WGS84	28	Educational	Educational Institutions	B, C	Moderate	Beatty Well 2 / Beatty Well 3	Controlled
Sanitation District	36	School Field	411 4th St, Beatty, NV 89003, USA	36.907817	-116.763406	521076.6062	4084672.509	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	Beatty Well 2 / Beatty Well 3	Controlled
Beatty Water and	27	Beatty High School	1 Harris Anna Davider NR/ 20002 110 A	26 002455	116 750270	521526.0245	4004070.016	NADO2/WCC04	40	Manullana	Golf Courses, Parks	D C	IT: -1.	Desites Well 2 / Desites Well 2	Not Adequately
Beatty Water and	57	Beatty High School	I Homet Ave, Beatty, NV 89003, USA	36.902455	-110./585/8	521526.0247	4084078.816	NAD85/WG584	48	Miscellaneous	Golf Courses, Parks	B, C	High	Beatty well 27 Beatty well 3	Not Adequately
Sanitation District	38	Field	1 Hornet Ave, Beatty, NV 89003, USA	36.902695	-116.757578	521597.2289	4084105.621	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	Beatty Well 2 / Beatty Well 3	Controlled
Beatty Water and Sanitation District	39	Beatty High School Field	1 Hornet Ave, Beatty, NV 89003, USA	36.901944	-116.759642	521413.558	4084021.845	NAD83/WGS84	48	Miscellaneous	Golf Courses, Parks and Nurseries	B, C	High	Beatty Well 2 / Beatty Well 3	Not Adequately Controlled
Beatty Water and	10			26.001001	116 5500 64	5015510006	1000005 555			Medical /		D.C.			Not Adequately
Sanitation District Beatty Water and	40	Beatty High School	I Hornet Ave, Beatty, NV 89003, USA	36.901091	-116.758064	521554.3826	4083927.576	NAD83/WGS84	28	Educational Medical /	Educational Institutions	B, C	Moderate	Beatty Well 2 / Beatty Well 3	Controlled Not Adequately
Sanitation District	41	Beatty Medical Clinic	702 Irving St, Beatty, NV 89003, USA	36.904792	-116.760299	521354.2319	4084337.632	NAD83/WGS84	29	Educational	Medical Institutions	D	Low	Beatty Well 2 / Beatty Well 3	Controlled
Beatty Water and Sanitation District	42	Private Storage Yard	B Ave W, Beatty, NV 89003, USA	36.913674	-116.764301	520991	4085265	NAD83/WGS84	25	Residential	Household Hazardous Products	A, B, C	High	Beatty Well 1	Not Adequately Controlled
Beatty Water and											Household Hazardous				Not Adequately
Sanitation District Beatty Water and	43	Private Storage Yard	285 Ward St, Beatty, NV 89003, USA	36.9101	-116.76173	521226	4084926	NAD83/WGS84	25	Residential	Products Golf Courses Parks	A, B, C	High	Beatty Well 2 / Beatty Well 3	Controlled Not Adequately
Sanitation District	44	Beatty Park and Pool	4th St, Beatty, NV 89003, USA	36.905562	-116.758174	521543.3255	4084423.527	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	Beatty Well 2 / Beatty Well 3	Controlled
Beatty Water and		Wastewater Treatment								Municipal	Septage Lagoons, Wastewater Treatment				Not Adequately
Sanitation District	45	Pond(s)	Hwy 95/Veterans Memorial Hwy, Beatty, NV 89003, USA	36.89567	-116.754081	521910.7833	4083327.123	NAD83/WGS84	39	Waste	Plants	B, C, D	High	Beatty Well 2 / Beatty Well 3	Controlled
Beatty Water and Senitation District	46	Gas Station	102 F Main St Beatty NV 89003 USA	36 909457	-116 758274	521533 3222	4084855 584	NAD83/WGS84	22	Automotive	Gas Stations	А	High	Beatty Well 2 / Beatty Well 3	Not Adequately
Beatty Water and					1101100211	02100010222	10010001001			i latomou ve			ing.	Deally Weir 27 Deally Weir 5	Not Adequately
Sanitation District	47	Gas Station	648 Hwy 95/Veterans Memorial Hwy, Beatty, NV 89003, USA	36.904963	-116.755194	521808.9729	4084357.756	NAD83/WGS84	22	Automotive	Gas Stations	A	High	Beatty Well 2 / Beatty Well 3	Controlled
Sanitation District	48	Gas Station	900 Hwy 95/Veterans Memorial Hwy, Beatty, NV 89003, USA	36.91374	-116.75427	521889	4085331	NAD83/WGS84	22	Automotive	Gas Stations	А	High	Beatty Well 2 / Beatty Well 3	Controlled
Beatty Water and Sanitation District	49	Revert's Enterprises	Beach St. Beatty, NV 89003, USA	36 911659	-116 759273	521443 7132	4085099 631	NAD83/WGS84	22	Automotive	Gas Stations	А	High	Beatty Well 1	Not Adequately Controlled
Destine DWCs	.,	Hwy 95/Veterans		000011000	110110/210	0211101/102	10020771021			i latomou ve			ing.	Deatty Will I	Not Adequately
Beatty PwSs	50	Memorial Hwy (Beatty)	Hwy 95/Veterans Memorial Hwy (Beatty)						58	Miscellaneous	Transportation	A, B, C	Low	Beatty PWSs	Controlled
Beatty PWSs	51	Hwy 374 (Beatty)	Hwy 374 (Beatty)						58	Miscellaneous	Transportation	A, B, C	Low	Beatty PWSs	Not Adequately Controlled
Beatty Water and	52	Ryder Dedicated	650 Hwy 95/Veterans Memorial Hwy Beatty NV 89003 USA	36 905319	-116 755615	521771 3662	4084397 152	NAD83/WGS84	22	Automotive	Gas Stations	А	High	Beatty Well 2 / Beatty Well 3	Not Adequately Controlled
Sanitation District	52	Logistics	550 Hwy 55, rearaits including Hwy, Dearly, IV 05005, ODA	50.705517	110.755015	521771.5002	4004377.132	11/12/05/11/05/04	22	Automotive	Gus Stations	11	Ingn	Beauty Wen 27 Beauty Wen 5	Controlled
Big Smoky Valley -															
Northern					1						Above Ground Storage	1			Not Adequately
Carvers Café	53	AST Fuel	Hwy 376, Round Mountain, NV 89045, USA	38.78650742	-117.1805843	484316	4293101	NAD83/WGS84	31	Storage	Tanks	А	High	Carvers Café Well	Controlled Not Adequately
Carvers Café	54	Agriculture Field	Hwy 376, Round Mountain, NV 89045, USA	38.788467	-117.175915	484721.9543	4293317.741	NAD83/WGS84	5	Agricultural	Irrigated Fields	В	Moderate	Carvers Café Well	Controlled
Carvers Café	55	Private Storage Yard	Hwy 376, Round Mountain, NV 89045, USA	38.787858	-117.178477	484499.315	4293250.593	NAD83/WGS84	25	Residential	Products	A, B, C	High	Carvers Café Well	Controlled

PWS	ID #	Facility Id	Address	Latitude	Longitude	Easting	Northing	Datum	Code	Class	Source	Category (A,B,C,D,E)	Risk	Well	Control
Carvers Café	56	Former Gas Station	Hwy 376, Round Mountain, NV 89045, USA	38.785543	-117.178632	484485.3516	4292993.731	NAD83/WGS84	22	Automotive	Gas Stations	А	High	Carvers Café Well	Not Adequately Controlled
Carvers Smoky Valley RV and MHP	57	Private Storage Yard	Hwy 376, Round Mountain, NV 89045, USA	38.782804	-117.16879	485339.5943	4292688.168	NAD83/WGS84	25	Residential	Household Hazardous Products	A, B, C	High	Carvers Smoky Valley RV and MHP	Not Adequately Controlled
Carvers Smoky Valley RV and MHP	58	Smoky Valley MHP Laundromat	Hwy 376, Round Mountain, NV 89045, USA	38.781925	-117.172819	484989	4292591	NAD83/WGS84	17	Commercial	Laundromats	N/A	Low	Carvers Smoky Valley RV and MHP	Not Adequately Controlled
Carvers Smoky Valley RV and MHP	59	Former Auto Shop	Hwy 376, Round Mountain, NV 89045, USA	38.783798	-117.172995	484974.5736	4292799.152	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	Carvers Smoky Valley RV and MHP	Not Adequately Controlled
Carvers Smoky Valley RV and MHP	60	Wastewater Treatment Pond(s)	Hwy 376, Round Mountain, NV 89045, USA	38.783867	-117.171614	485094.5344	4292806.582	NAD83/WGS84	39	Municipal Waste	Septage Lagoons, Wastewater Treatment Plants	B, C, D	High	Carvers Smoky Valley RV and MHP	Not Adequately Controlled
NDOT Big Smoky Roadside Park RP807NY	61	Vault Toilet	Hwy 376, Round Mountain, NV 89045, USA	38.78298303	-117.1752102	484782	4292709	NAD83/WGS84	27	Residential	Septic System, Cesspools	B, C, D	Moderate	NDOT Big Smoky Roadside Park RP807NY Well	Not Adequately Controlled
NDOT Big Smoky Roadside Park RP807NY	62	NDOT Maintenance Facility	Hwy 376, Round Mountain, NV 89045, USA	38.783678	-117.173933	484893.0786	4292785.99	NAD83/WGS84	13	Industrial	Petroleum Products Production, Storage & Distribution Centers	А	High	NDOT Big Smoky Roadside Park RP807NY Well	Not Adequately Controlled
Round Mountain PUC	63	Former Round Mountain Dump Site	Pablo Canyon Rd, Round Mountain, NV 89045, USA	38.695733	-117.19402	483127.7441	4283030.573	NAD83/WGS84	35	Municipal Waste	Dumps and Landfills	A, B, C, D, E	High	Round Mountain PUC Well HW 1	Not Adequately Controlled
Round Mountain PUC	64	Hadley Airport	Electrum Dr, Round Mountain, NV 89045, USA	38.6941	-117.1468	487233.7747	4282841.728	NAD83/WGS84	41	Miscellaneous	Airports	А	Low	N/A	Not Adequately Controlled
Round Mountain PUC	65	AST Fuel	Electrum Dr, Round Mountain, NV 89045, USA	38.693064	-117.158666	486201.6676	4282728.489	NAD83/WGS84	31	Storage	Above Ground Storage Tanks	А	High	Round Mountain PUC Well HW 2	Adequately Controlled
Round Mountain PUC	66	Private Storage Yard	58 Prospect Ave, Round Mountain, NV 89045, USA	38.69720108	-117.1620867	485905	4283188	NAD83/WGS84	25	Residential	Household Hazardous Products	A, B, C	High	Round Mountain PUC Well HW 2	Not Adequately Controlled
Round Mountain PUC	67	Golf Course	30 Hadley Cir, Round Mountain, NV 89045, USA	38.702984	-117.160257	486065.2317	4283829.506	NAD83/WGS84	48	Miscellaneous	Golf Courses, Parks and Nurseries	B, C	High	Round Mountain PUC Well HW 2	Not Adequately Controlled
Round Mountain PUC	68	Middle School	61 Hadley CIR Round Mountain, NV 89045, USA	38.69418	-117.163828	485752.9772	4282853.116	NAD83/WGS84	28	Medical / Educational	Educational Institutions	B, C	Moderate	Round Mountain PUC Well HW 2	Not Adequately Controlled
Round Mountain PUC	69	School Field	Hadley Cir, Round Mountain, NV 89045, USA	38.697345	-117.154733	486544.5018	4283202.946	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	Round Mountain PUC Well HW 2	Not Adequately Controlled
Round Mountain PUC	70	School Field	Hadley Cir, Round Mountain, NV 89045, USA	38.6991	-117.155789	486453.0036	4283397.846	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	Round Mountain PUC Well HW 2	Controlled
Round Mountain PUC	71	School Field	Hadley Cir, Round Mountain, NV 89045, USA	38.697444	-117.156708	486329	4283237	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	HW 2 Round Mountain PUC Well	Controlled
Round Mountain PUC	72	School Former Recreation Hall	Hadley Cir, Round Mountain, NV 89045, USA	38.69722	-117.156101	486425.5175	4283189.277	NAD83/WGS84	28	Educational	Educational Institutions	B, C	Moderate	HW 2 Round Mountain PUC Well	Controlled
Round Mountain PUC	73	(Brownfield)	50 Hadley CIR Round Mountain, NV 89045, USA	38.698595	-117.157385	486314.1234	4283342.046	NAD83/WGS84	56	Miscellaneous	Other Golf Courses Parks	N/A	low	HW 2 Round Mountain PUC Well	Controlled
Round Mountain PUC	74	Grass Field	Hadley Cir, Round Mountain, NV 89045, USA	38.694752	-117.155968	486436.6171	4282915.395	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	HW 2 Round Mountain PUC Well	Controlled Not Adequately
Round Mountain PUC	75	Grass Field	Hadley Cir, Round Mountain, NV 89045, USA	38.693906	-117.156011	486432.7179	4282821.525	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	HW 2 Round Mountain PUC Well	Controlled
Round Mountain PUC	76	Grass Field	Hadley Cir, Round Mountain, NV 89045, USA	38.694885	-117.158289	486234.8023	4282930.5	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	HW 2	Controlled
Round Mountain PUC	77	Wastewater Treatment Pond(s)	60 Hadley Cir, Round Mountain, NV 89045, USA	38.703046	-117.154253	486587.3072	4283835.49	NAD83/WGS84	39	Municipal Waste	Wastewater Treatment Plants	B, C, D	High	Round Mountain PUC Well HW 2	Not Adequately Controlled
Water Company	78	AST Fuel	Hwy 376, Round Mountain, NV 89045, USA	38.77639218	-117.1650978	485659	4291976	NAD83/WGS84	31	Storage	Tanks	А	High	company Well 1	Controlled
Water Company	79	AST Fuel	Hwy 376, Round Mountain, NV 89045, USA	38.77673317	-117.1661232	485570	4292014	NAD83/WGS84	31	Storage	Tanks	А	High	company Well 1 Shoshone Estates Water	Controlled
Water Company	80	Private Storage Yard	Hwy 376, Round Mountain, NV 89045, USA	38.78107	-117.166966	485497.6683	4292495.46	NAD83/WGS84	25	Residential	Products Household Hazardous	A, B, C	High	company Well 1 Shoshone Estates Water	Controlled
Water Company Shoshone Estates	81	Private Storage Yard	Hwy 376, Round Mountain, NV 89045, USA	38.778872	-117.167303	485467.9511	4292251.608	NAD83/WGS84	25	Residential	Products Household Hazardous	A, B, C	High	company Well 1 Shoshone Estates Water	Controlled Not Adequately
Water Company Shoshone Estates	82	Private Storage Yard	Hwy 376, Round Mountain, NV 89045, USA	38.781436	-117.16468	485696.2989	4292535.714	NAD83/WGS84	25	Residential	Products	A, B, C	High	Company Well 1 Shoshone Estates Water	Controlled Not Adequately
Water Company Shoshone Estates	83	Agriculture Field	Hwy 376, Round Mountain, NV 89045, USA	38.776771	-117.170564	485184.2636	4292018.99	NAD83/WGS84	5	Agricultural	Irrigated Fields	В	Moderate	Company Well 2	Controlled
Water Company	84	Repair and Auto shop	Hwy 376, Round Mountain, NV 89045, USA	38.778222	-117.167987	485408.4059	4292179.589	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	company Well 1	Controlled
Water Company	85	Equipment	Hwy 376, Round Mountain, NV 89045, USA	38.779765	-117.173445	484934.6405	4292351.696	NAD83/WGS84	25	Residential	Products	A, B, C	High	Company Well 2	Controlled
Smoky Valley Mine	86	Mining Facility	Hwy 376, Round Mountain, NV 89045, USA	38.723834	-117.145412	487359.7166	4286140.987	NAD83/WGS84	49	Miscellaneous	Mining	A, C	High	Well 2	Controlled
Carver PWSs	87	Hwy 376	Hwy 376						58	Miscellaneous	Transportation	A, B, C	Low	Carver PWSs	Controlled

PWS ID # Facility Id Address	Latitude	Longitude	Easting	Northing	Datum	Code	Class	Source	Category (A,B,C,D,E)	
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PWS	ID # Facility Iu	Audress	Latitude	Longitude	Easting	Northing	Datum	Code	Class	Source	(A,B,C,D,E)	RISK	vven	Control
Big Smoky Valley -	-													
<u>I onopan Flat</u>				1	1	1	1	1	1		1	1		
Manhattan Town	Manhattan Public Was	te							Municipal	Recycling and				Not Adequately
Water	88 Bin Facility	Natl Forest Develop Road 015 Rd, Manhattan, NV 89022, USA	38.537463	-117.074754	493484.9874	4265453.119	NAD83/WGS84	3	/ Waste	Reduction Facilities	С	Hıgh	Pipe Springs Well	Controlled
Manhattan Town	20 A CT F1	Main St. Manhattan NV 20022 LICA	29 5291 40 40	117.071(221	402759	42(552)	NADO2/WCC04		1.0	Above Ground Storage		11.1	Ding Casing Well	Not Adequately
Water	89 AS1 Fuel	Main St, Manhattan, NV 89022, USA	38.53814049	-117.0716221	493758	4265528	NAD83/WGS84	5	1 Storage	Tanks	А	High	Pipe Springs Well	Controlled
Manhattan Town										Above Ground Storage				Not Adequately
Water	90 AST Fuel	Natl Forest Develop Road 015 Rd, Manhattan, NV 89022, USA	38.53802129	-117.0748921	493473	4265515	NAD83/WGS84	3	1 Storage	Tanks	А	High	Pipe Springs Well	Controlled
Manhattan Town														Not Adequately
Water	91 Former Auto Shop	Main St, Manhattan, NV 89022, USA	38.53887768	-117.0745144	493506	4265610	NAD83/WGS84	2	0 Automotive	Auto Repair Shops	А	High	Pipe Springs Well	Controlled
Manhattan Town										Household Hazardous				Not Adequately
Water	92 Private Storage Yard	Natl Forest Develop Road 015 Rd, Manhattan, NV 89022, USA	38.53793119	-117.0748576	493476	4265505	NAD83/WGS84	2	5 Residential	Products	A, B, C	High	Pipe Springs Well	Controlled
Manhattan Town										Household Hazardous				Not Adequately
Water	93 Private Storage Yard	9 Gold St, Manhattan, NV 89022, USA	38.54004037	-117.074309	493524	4265739	NAD83/WGS84	2	5 Residential	Products	A, B, C	Hıgh	Pipe Springs Well	Controlled
Manhattan Town	04 Directo Stores a Vend	Main St. Manhattan NV 20022 LICA	29 5292202	117.07215	402712	42(5520	NADO2/WCC04	2	5 Desidential	Household Hazardous	A D C	11.1	Dine Conine - Well	Not Adequately
Water	94 Private Storage Fard	Main St, Manhattan, NV 89022, USA	38.3382393	-117.07215	493/12	4203339	NAD85/WG584	2.	5 Residential	Products	А, Б, С	High	Pipe Springs wen	Not A dequately
Watar	95 East Pit (Pits)	Gold Hill Nevada 89022 USA	38 53500085	117 0770461	103285	4265180	NAD83/WGS84	1	Miscellaneous	Mining	A C	High	Pipe Springs Well	Controlled
Manhattan Town	Manhattan (RMGC)		50.55500005	117.0770401	475205	4203100	111203/110504	т.	/ Wilseenancous	winning	11, C	Ingn	Tipe Springs Weil	Not Adequately
Water	96 Stray Dog Pit (Pits)	7 Turtle Dove, Manhattan, NV 89022, USA	38.53499802	-117.081234	492920	4265180	NAD83/WGS84	4	9 Miscellaneous	Mining	A.C	High	Pipe Springs Well	Controlled
Manhattan Town	Manhattan (RMGC)											8		Not Adequately
Water	97 (Tailings)	Main St, Manhattan, NV 89022, USA	38.5312992	-117.0866222	492450	4264770	NAD83/WGS84	4	9 Miscellaneous	Mining	A, C	High	Pipe Springs Well	Controlled
Manhattan Town														Not Adequately
Water	98 Manhattan Mill Site	Erie St, Manhattan, NV 89022, USA	38.541404	-117.070398	493864.9594	4265890.122	NAD83/WGS84	4	9 Miscellaneous	Mining	A, C	High	Pipe Springs Well	Controlled
Manhattan Town	Manhattan Mill Site													Not Adequately
Water	99 (Tailings)	1 Gold St, Manhattan, NV 89022, USA	38.54221354	-117.0722917	493700	4265980	NAD83/WGS84	4	9 Miscellaneous	Mining	A, C	High	Pipe Springs Well	Controlled
Manhattan Town	Manhattan West Pit													Not Adequately
Water	100 Lake	Main St, Manhattan, NV 89022, USA	38.53851078	-117.0839917	492680	4265570	NAD83/WGS84	4	9 Miscellaneous	Mining	A, C	High	Pipe Springs Well	Controlled
Manhattan Town			20 5 105 10	117.00.0004	102102	10	NUDOANICAGA						D: G · W !!	Not Adequately
Water	101 Gold Wedge	202 Main St Manhattan, NV 89022, USA	38.543743	-117.086824	492402	4266015	NAD83/WGS84	4	9 Miscellaneous	Mining	A, C	High	Pipe Springs Well	Controlled
Manhattan Town	Round Mountain Gold	Dipoling Springs Conver Dd Manhattan NW 20022 USA	29 52014	117.092112	102812 0022	1261611.00	NAD92/WCS94	1	Miccallencous	Mining		High	Ding Springs Wall	Not Adequately
water		Fipenne Springs Canyon Ku, Mannattan, NV 89022, USA	58.55014	-117.082112	492842.9923	4204041.09	NAD65/ W0364	4	9 Wilscenaneous	winning	A, C	nigii	ripe springs wen	Controlled
Manhattan Town	White Caps Manhattan	1												Not Adequately
water	103 Tailings	Natl Forest Develop Road 460 Rd, Manhattan, NV 89022, USA	38.53384289	-117.0524341	495430	4265050	NAD83/WGS84	4	9 Miscellaneous	Mining	A, C	Hıgh	Manhattan Main Well	Controlled
Manhattan PWSs													Manhattan PWSs	Not Adequately
Mamatan 1 (195	104 Hwy 377 (Manhattan)	Hwy 377 (Manhattan)						5	8 Miscellaneous	Transportation	A, B, C	Low	Maintal 1 W55	Controlled
Manhattan Town		135 Main St Manhattan, NV 89022, USA								Above Ground Storage	:			Not Adequately
Water	105 AST Fuel		38.536321	-117.068434	494035.6982	2 4265325.971	NAD83/WGS84	3	1 Storage	Tanks	А	High	Manhattan Main Well	Controlled
Gabbs Valley														
													Gabbs Well / Gabbs New	Not Adequately
Gabbs Water System	106 Gabbs Airport	Hwy 361, Gabbs, NV 89409, USA	38.92417	-117.95806	416950.6027	4308798.228	NAD83/WGS84	4	1 Miscellaneous	Airports	А	Low	Well	Controlled
	r									I - ···				Not Adequately
Gabbs PWSs	107 Hwy 361 (Gabbs)	Hwy 361 (Gabbs)						5	8 Miscellaneous	Transportation	A, B, C	Low	Gabbs PWSs	Controlled
													Gabbs Well / Gabbs New	Not Adequately
Gabbs Water System	108 Downeyville	Hwy 844, Gabbs, NV 89409, USA	38.91052452	-117.9029258	421715	4307235	NAD83/WGS84	4	9 Miscellaneous	Mining	A, C	High	Well	Controlled
	· · ·						- -		÷	·	<u>.</u>			
Ione Valley														
Darlin Jakthuasaur				1	1	1	1	1	1	Above Ground Storege	.1	1	Johthyocour State Dark Barlin	Adaquately
State Dork	109 AST Fuel	Natl Forest Develop Road 024 Trail Gabbs NV 89409 USA	38 87552056	117 5908678	118716	4303120	NAD83/WGS84	3	1 Storage	Tanke		High		Controlled
Barlin Johthyosour		Nati Tolest Develop Road 024 Trail, Gabos, IVV 09407, USA	56.67552050	-117.5900070	440/40	4303127	117203/ 110304	5	1 Storage	Sentic System	A	Ingn	Ichthyosaur State Park Berlin	Not Adequately
State Park	110 Vault Toilet	Berlin Ichthyosaur State Park Rd, Gabbs, NV 89409, USA	38,86977746	-117.59497	448386	4302494	NAD83/WGS84	2	7 Residential	Cesspools	B. C. D	Moderate	Well	Controlled
Berlin Ichthyosaur			20100777710	11/10/10/	110200	1002171			, residentia	Septic System.	2, 0, 2	inoderate	Ichthyosaur State Park Berlin	Not Adequately
State Park	111 Vault Toilet	Berlin Ichthyosaur State Park Rd, Gabbs, NV 89409, USA	38.87381496	-117.5913494	448703	4302940	NAD83/WGS84	2	7 Residential	Cesspools	B, C, D	Moderate	Well	Controlled
										1				Not Adequately
Ione PWSs	112 Hwy 844 (Ione)	Hwy 844 (Ione)						5	8 Miscellaneous	Transportation	A, B, C	Low	Ione PWSs	Controlled
					1					Above Ground Storage			Ĭ	Not Adequately
Ione Water System	113 Diesel Generator	Hwy 844, Austin, NV 89310, USA	38.957036	-117.574004	4 450265.7657	7 4312165.617	7 NAD83/WGS84	3	1 Storage	Tanks	А	High	Ione Water System Well 1	Controlled
Pahrump Vallev														

PWS	ID #	Facility Id	Address	Latitude	Longitude	Easting	Northing	Datum	Code	Class	Source	Category (A,B,C,D,E)	Risk	Well	Control
Anchor Inn MHP	114	Service Rock Products	2091 E Christine Way, Pahrump, NV 89048, USA	36.222654	-116.053599	585057.6368	4009059.874	NAD83/WGS84	49 N	liscellaneous	Mining	A, C	High	Anchor Inn MHP	Not Adequately Controlled
Pahrump PWSs	115	Hwy 372	Hwy 372						58 N	liscellaneous	Transportation	A, B, C	Low	Pahrump PWSs	Not Adequately Controlled
Pahrump PWSs	116	Hwy 160	Hwy 160						58 N	liscellaneous	Transportation	A, B, C	Low	Pahrump PWSs	Not Adequately Controlled
Big Five Park	117	Joe's Sanitation Site	850 S Lola Ln., Pahrump, NV 89048, USA	36.207071	-116.023265	587801.3903	4007358.404	NAD83/WGS84	27 R	esidential	Septic System, Cesspools	B, C, D	Moderate	Big Five Park / Whose Dunes / Horizon Market III	Not Adequately Controlled
Big Five Park	118	Advantage Self Storage	851 South Lola Lane, Pahrump, NV 89041, USA	36.207308	-116.022995	587825.3972	4007384.937	NAD83/WGS84	33 S	torage	Public Storage	А	Low	Big Five Park / Whose Dunes / Horizon Market III	Not Adequately Controlled
C Valley MHP	119	All Center Automotive	1100 Fourth St, Pahrump, NV 89048, USA	36.207685	-115.996439	590212.2225	4007451.141	NAD83/WGS84	20 A	utomotive	Auto Repair Shops	А	High	C Valley MHP Wells	Not Adequately Controlled
C Valley MHP	120	Valley Electric	800 E Hwy 372, Pahrump, NV 89048, USA	36.206465	-116.000399	589857.6335	4007312.136	NAD83/WGS84	57 N	liscellaneous	Business	С	Low	C Valley MHP	Not Adequately Controlled
C Valley MHP	121	RV Septic Dump	901 S West Street, Pahrump, NV 89048, USA	36.206821	-115.99541	590305.7171	4007356.261	NAD83/WGS84	27 R	esidential	Septic System, Cesspools	B, C, D	Moderate	C Valley MHP	Not Adequately Controlled
C Valley MHP	122	Horizon Market 5	840 E Hwy 372, Pahrump, NV 89048, USA	36.205462	-115.999056	589979.5124	4007202.125	NAD83/WGS84	22 A	utomotive	Gas Stations	А	High	C Valley MPH Well 1 / C Valley MPH well 2	Not Adequately Controlled
Calvada Meadows UICN	123	Calvada Meadows Airport	Croyden Pl, Pahrump, NV 89060, USA	36.2710695	-115.9950306	590265.9201	4014483.33	NAD83/WGS84	41 N	fiscellaneous	Airports	А	High	Calvada Meadows UICN	Not Adequately Controlled
Calvada Meadows UICN	124	Former Fuel Truck	Bellanca Pl, Pahrump, NV 89060, USA	36.268231	-116.000578	589770.8891	4014163.311	NAD83/WGS84	31 S	torage	Above Ground Storage Tanks	А	High	Calvada Meadows UICN	Not Adequately Controlled
Carberry Square	125	Andy's RV & Automotive Repairer	4585 Pahrump Valley Blvd, Pahrump, NV 89048, USA	36.152089	-115.992211	590656.3377	4001288.197	NAD83/WGS84	20 A	utomotive	Auto Repair Shops	А	High	Carberry Square	Not Adequately Controlled
Carberry Square	126	Former Auto Shop	901 Carberry Ln, Pahrump, NV 89048, USA	36.149686	-115.994577	590446.2554	4001019.443	NAD83/WGS84	20 A	utomotive	Auto Repair Shops	А	High	Carberry Square	Not Adequately Controlled
Champions	127	C & L Mini Storage	831 W Wilson Rd, Pahrump, NV 89048, USA	36.211889	-116.029251	587257.9271	4007887.428	NAD83/WGS84	33 S	torage	Public Storage	А	Low	Champions	Not Adequately Controlled
Chipmunk Retreat	128	Auto World	1391 Chipmunk Rd, Pahrump, NV 89048, USA	36.20119676	-116.0395822	586341	4006692	NAD83/WGS84	20 A	utomotive	Auto Repair Shops	А	High	Chipmunk Retreat	Not Adequately Controlled
Country View Estates UICN	129	RV Park	301 W Leslie St, Pahrump, NV 89060, USA	36.310916	-116.018094	588149	4018880	NAD83/WGS84	48 N	liscellaneous	Golf Courses, Parks and Nurseries	B, C	High	Country View Estates (RVP)	Not Adequately Controlled
Country View Estates UICN	130	Former Wastewater Treatment Facility	Isola Ln, Pahrump, NV 89060, USA	36.30826642	-116.0213626	587859	4018585	NAD83/WGS84	N 39 W	Iunicipal Vaste	Septage Lagoons, Wastewater Treatment Plants	B, C, D	High	Country View Estates (RVP)	Not Adequately Controlled
Coyote Corner III	131	Gas Station	3971 E Kellogg Rd, Pahrump, NV 89061, USA	36.116911	-115.940332	595365.868	3997435.848	NAD83/WGS84	22 A	utomotive	Gas Stations	А	High	Coyote Corner III	Not Adequately Controlled
Coyote Corner Market	132	Gas Station	967 North Leslie Street, Pahrump, NV 89060, USA	36.23391492	-116.0511113	585269	4010311	NAD83/WGS84	22 A	utomotive	Gas Stations	А	High	Coyote Corner Market	Not Adequately Controlled
Desert Center Plaza	133	Pahrump Valley Landfil	II 1631 E Mesquite Ave, Pahrump, No 89060, USA	36.2456	-115.9832	591360	4011666	NAD83/WGS84	35 W	Iunicipal /aste	Dumps and landfills	A, B, C, D, E	High	N/A	Not Adequately Controlled
Desert Center Plaza	134	Private Storage Yard	Paddock Ave, Pahrump, NV 89060, USA	36.249883	-116.006392	589269.52	4012122.693	NAD83/WGS84	25 R	esidential	Household Hazardous Products	A, B, C	High	The Maverick / Desert Center Plaza	Not Adequately Controlled
Desert Center Plaza	135	AST Fuel	639 East Mesquite Ave, Pahrump, NV 89060, USA	36.24983815	-116.004829	589410	4012119	NAD83/WGS84	31 S	torage	Above Ground Storage Tanks	А	High	The Maverick / Desert Center Plaza	Not Adequately Controlled
Desert Center Plaza	136	Gas Station	2050 N Hwy 160, Pahrump, NV 89060, USA	36.249326	-116.004771	589415.7959	4012062.404	NAD83/WGS84	22 A	utomotive	Gas Stations	А	High	Desert Center Plaza	Not Adequately Controlled
Desert Utilities	137	AST Fuel	E Simkins Rd, Pahrump, NV 89060, USA	36.27779312	-115.9982392	589970	4015226	NAD83/WGS84	31 S	torage	Above Ground Storage Tanks	А	High	Desert Utilities Well 1	Adequately Controlled
Desert Utilities	138	Former Tanks	4985 N Blagg Rd, Pahrump, NV 89060, USA	36.29272537	-116.0148973	588457	4016867	NAD83/WGS84	31 S	torage	Above Ground Storage Tanks	А	High	Desert Utilities Well 5	Not Adequately Controlled
Desert Utilities	139	Former Auto Shop	Vida Dr, Pahrump, NV 89060, USA	36.28008968	-115.9979649	589992	4015481	NAD83/WGS84	20 A	utomotive	Auto Repair Shops	А	High	Desert Utilities Well 1	Not Adequately Controlled
Desert Utilities	140	Private Auto Shop	380 Annie Ave, Pahrump, NV 89060, USA	36.29679419	-116.0207487	587927.0011	4017313.16	NAD83/WGS84	20 A	utomotive	Auto Repair Shops	А	High	Desert Utilities Well 3	Not Adequately Controlled
Desert Utilities	141	Manse Elementary School (new) and Ground Source Heat Pump	Lola Lu Pahrump NV 89060 USA	36 29109861	-116 0231918	587714	4016679	NAD83/WGS84	N 28 E	fedical / ducational	Educational Institutions	вс	Moderate	Desert Utilities Well 3	Not Adequately Controlled
Desert Utilities	142	Pahrump Health and Rehabilitation Center	4501 NE Blagg Rd. Pahrump. NV 89060. USA	36.286561	-116.013686	588572 7441	4016184 486	NAD83/WGS84	20 E	fedical / ducational	Medical Institutions	D	Low	Desert Utilities Well 2	Not Adequately Controlled
Desert Utilities	143	Rosemary Clarke Middle School Field	4201 North Blagg Rd, Pahrump, NV 89060. USA	36.281986	-116.010551	588859.468	4015679.879	NAD83/WGS84	48 N	liscellaneous	Golf Courses, Parks and Nurseries	B, C	High	Desert Utilities Well 2	Not Adequately Controlled
Desert Utilities	144	Rosemary Clarke Middle School	4201 North Blagg Rd, Pahrump, NV 89060, USA	36.282033	-116.012226	588708.9835	4015683.555	NAD83/WGS84	28 E	fedical / ducational	Educational Institutions	B, C	Moderate	Desert Utilities Well 2	Not Adequately Controlled
Desert Utilities	145	Gravel Pit	E Simkins Rd, Pahrump, NV 89060, USA	36.27716	-115.981494	591475	4015171	NAD83/WGS84	49 N	liscellaneous	Mining	A, C	High	Desert Utilities Well 1	Not Adequately Controlled
Desert Utilities	146	AST Fuel	E Simkins Rd, Pahrump, NV 89060, USA	36.27853252	-115.98331	591310	4015322	NAD83/WGS84	22 A	utomotive	Gas Stations	А	High	Desert Utilities Well 1	Adequately Controlled

PWS	ID #	Facility Id	Address	Latitude	Longitude	Easting	Northing	Datum	Code Class	Source	Category (A,B,C,D,E)	Risk	Well	Control
Desert Utilities	147	Former Gas Station	2091 N Hwy 160, Pahrump, NV 89060, USA	36.278725	-115.999655	589841.7727	4015328.213	NAD83/WGS84	22 Automotive	Gas Stations	А	High	Desert Utilities Well 1	Not Adequately Controlled
Desert Utilities	148	Gas Station	4060 N Blagg Rd, Pahrump, NV 89060, USA	36.2792397	-116.0150112	588462	4015371	NAD83/WGS84	22 Automotive	Gas Stations	А	High	N/A	Not Adequately Controlled
Desert Utilities	149	Hwy 160 Self Storage	900 East Simkins Rd, Pahrump, NV 89060, USA	36.279488	-115.998519	589942.9254	4015413.904	NAD83/WGS84	33 Storage	Public Storage	А	Low	Desert Utilities Well 1	Not Adequately Controlled
Desert Utilities		Wastewater Treatment	· · · · · · · · · · · · · · · · · · ·						Municipal	Septage Lagoons, Wastewater Treatment				Not Adequately
	150	Pond(s)	807 W Simkins Rd, Pahrump, NV 89060, USA	36.27845634	-116.0316777	586966	4015269	NAD83/WGS84	39 Waste	Plants	B, C, D	High	Desert Utilities Well 4	Controlled
Elks Lodge Pahrump	151	A Payless Mini Storage	2340 E Basin Ave, Pahrump, NV 89060, USA	36.22002224	-115.9714733	592442	4008843	NAD83/WGS84	33 Storage	Public Storage	А	Low	Elks Lodge	Not Adequately Controlled
Horizon Market III	152	Gas Station	961 S Linda St, Pahrump, NV 89048, USA	36.205401	-116.03191	587026.0939	4007165.367	NAD83/WGS84	22 Automotive	Gas Stations	А	High	Whose Dunes / Horizon Market III / Mountain View MHP UICN	Not Adequately Controlled
LDS Church Pahrump Ward	153	Ace Auto Sale	591 West St, Pahrump, NV 89048, USA	36.21064046	-115.9962369	590227	4007779	NAD83/WGS84	20 Automotive	Auto Repair Shops	А	High	LDS Church Pahrump Ward Well	Not Adequately Controlled
LDS Church Pahrump Ward	154	Manse Elementary (former)	798 E Wilson Rd, Pahrump, NV 89048, USA	36.212591	-115.995793	590264.6596	4007995.934	NAD83/WGS84	Medical / 28 Educational	Educational Institutions	B, C	Moderate	LDS Church Pahrump Ward Well / Moose Lodge 808 Well	Not Adequately Controlled
LDS Church Pahrump Ward	155	Pathways School	484 West St, Pahrump, NV 89048, USA	36.213032	-115.996756	590177.5901	4008043.955	NAD83/WGS84	Medical / 28 Educational	Educational Institutions	B, C	Moderate	LDS Church Pahrump Ward Well / Moose Lodge 808 Well	Not Adequately Controlled
LDS Church Pahrump Ward	156	Community Christian Academy	826 E Wilson Rd, Pahrump, NV 89048, USA	36.211929	-115.995276	590311.8932	4007922.984	NAD83/WGS84	Medical / 28 Educational	Educational Institutions	B, C	Moderate	LDS Church Pahrump Ward Well / Moose Lodge 808 Well	Not Adequately Controlled
LJ's Market	157	Dog Rescue Facility	780 Manse Rd. Pahrump. NV 89048. USA	36 146848	-115 996783	590251 0526	4000702 591	NAD83/WGS84	2 Agricultural	Animal Feedlots	вср	Moderate	LJ's Market	Not Adequately Controlled
LJ's Market	158	Gas Station	5090 Pahrum Valley Blyd Pahrum NV 89048 USA	36 146107	-115 993245	590570 199	4000623 693	NAD83/WGS84	22 Automotive	Gas Stations	Δ	High	LI's Market	Not Adequately Controlled
LJ's Market	150			26.14740752	115.002005	500(01	1000777		22 14 10 11 01 10			1.1.5.1	LJ's Market / Carberry	Not Adequately
Moose Lodge 808	159	Bulletproof	S006 Panrump Valley Bivd, Panrump, NV 89048, USA	36.14748752	-115.992885	590601	4000777	NAD83/WGS84	33 Storage	Public Storage	A	Low	Square	Not Adequately
Mountain Falls Water	160	Former Crop Duster	1060 3rd St, Pahrump, NV 89048, USA	36.209131	-115.995093	590331.5591	4007612.79	NAD83/WGS84	20 Automotive	Auto Repair Shops	A	High	Moose Lodge 808	Controlled
system UICN	161	Landing Strip and Storage Area	CAAS Rd, Pahrump, NV 89061, USA	36.151456	-115.898974	599044.6342	4001309.087	NAD83/WGS84	4 Agricultural	Chemical Mixing and Storage Areas	A, B, C	High	Mountain Falls UICN Well 2	Not Adequately Controlled
Mountain Falls Water system UICN	162	Golf Course and Lake	Mountain Falls Pkwy, Pahrump, NV 89061, USA	36.15231	-115.907769	598386	4001493	NAD83/WGS84	48 Miscellaneous	Golf Courses, Parks and Nurseries	B, C	High	Mountain Falls UICN Well 2	Not Adequately Controlled
Mountain Falls Water system UICN	163	Former Agricultural Storage Yard	Jeanne Ave, Pahrump, NV 89061, USA	36.15338	-115.902842	598587	4001622	NAD83/WGS84	25 Residential	Household Hazardous Products	A, B, C	High	Mountain Falls UICN Well 2	Not Adequately Controlled
Mountain Falls Water	164	Gravel Pit	Frontage Rd Pahrumn NV 89048 USA	36 16039672	-115 8957209	599326	4002304	NAD83/WGS84	49 Miscellaneous	Mining	A C	High	Mountain Falls LIICN Well 1	Not Adequately
Mountain Falls Water	165	Former Fireworks	4/58 State Huy 160 Pahrimo NV 80061 USA	36 153304	-115 895103	599240	4001467	NAD83/WGS84	56 Miscellaneous	Other	B C	Low	Mountain Falls LIICN Well 2	Not Adequately
Mountain Falls Water	105	Storage Location		30.135304	115.0055150	599240	4001407	NAD03/W0304	54 Miscellaneous	Unplugged Abandoned	b, c	Low		Not Adequately
system UICN	166	Unsecured Filling Well	Carpenter Canyon Rd, Pahrump, NV 89061, USA	36.1555183	-115.8975458	599168	4001761	NAD83/WGS84	54 Miscellaneous	Chemical	A, B, C, D	High	Mountain Falls UICN Well I	Controlled
Nye County Complex	167	Stadium Lights	307 Nevada 160, Pahrump, NV 89060, USA	36.22416983	-115.9970209	590141	4009279	NAD83/WGS84	8 Industrial	Manufacturers, Warehousing/Distributi on Activities	A, B, C	High	Nye County Complex Well 1	Not Adequately Controlled
Nye County Complex		Pahrump Rentals and								Chemical Manufacturers, Warehousing/Distributi				Not Adequately
	168	Hardware	31 N Hwy 160, Pahrump, NV 89048, USA	36.220042	-115.993639	590449.7032	4008824.435	NAD83/WGS84	8 Industrial	on Activities Chemical	A, B, C	High	Nye County Complex Well 2	Controlled
Nye County Complex	169	The Home Depot	301 N Hwy 160 Pahrump NV 89060 USA	36 221946	-115 992064	590589 0699	4009037 106	NAD83/WGS84	8 Industrial	Manufacturers, Warehousing/Distributi	ABC	High	Nye County Complex Well 2	Not Adequately
Nye County Complex	170	Patrack Park	976 E Dosin Avo Dohamma NW 20049 LISA	26 2212	115 006727	500170 8222	4009050.009	NAD82/WCS84	48 Missellensous	Golf Courses, Parks	P. C.	High	Nya County Complex Well 2	Not Adequately
Nye County Complex	170		870 E Basin Ave, Panrump, NV 89046, USA	30.2212	-115.996727	590170.8222	4008950.008	NAD85/WGS84	48 Miscellaneous	Golf Courses, Parks	b, C	riign	Nye County Complex wen 2	Not Adequately
Nye County Complex	171	Swimming Pool High Tech Muffler	W Frontage Rd, Pahrump, NV 89048, USA	36.22155	-115.996363	590203.1364	4008989.17	NAD83/WGS84	48 Miscellaneous	and Nurseries	B, C	High	Nye County Complex Well 2 Nye County Complex Well 1 / Nye County Complex Well	Not Adequately
Nye County Complex	172	Custom Exhaust	431 South Frontage Rd, Pahrump, NV 89048, USA	36.213895	-115.990937	590341.9708	4009106.093	NAD83/WGS84	20 Automotive	Auto Repair Shops	A	High		Controlled Not Adequately
Nye County Complex	173	Former Auto Shop	1190 Lockspur Ave, Panrump, NV 89048, USA	36.22326985	-115.9939838	590415	4009182	NAD83/WGS84	20 Automotive	Auto Repair Shops	A	High	Nye County Complex Well 1	Not Adequately
Tyc County Complex	174	Rental Center	1047 E Basin Ave, Pahrump, NV 89060, USA	36.219031	-115.993165	590493.4713	4008712.734	NAD83/WGS84	20 Automotive	Auto Repair Shops	Α	High	Nye County Complex Well 2	Controlled

PWS	ID #	Facility Id	Address	Latitude	Longitude	Easting	Northing	Datum	Code	Class	Source	Category (A,B,C,D,E)	Risk	Well	Control
Nye County Complex	175	Xpress Lube Shop	50 S Hwy 160, Pahrump, NV 89048, USA	36.218995	-115.995242	590306.8278	4008706.803	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	Nye County Complex Well 2	Not Adequately Controlled
Nye County Complex	176	Petroleum Products & Car Wash	307 Nevada 160, Pahrump, NV 89060, USA	36.22464174	-115.9973931	590107	4009331	NAD83/WGS84	21	Automotive	Car Washes	A, C, D	Moderate	Nye County Complex Well 2	Not Adequately Controlled
Nye County Complex	177	Super Wash	60 Dahlia St, Pahrump, NV 89048, USA	36.218682	-115.996159	590224.7655	4008671.23	NAD83/WGS84	21	Automotive	Car washes	A, C, D	Moderate	Nye county Complex Well 2	Not Adequately Controlled
Nye County Complex	178	American Dental	Dahlia St. Pahrump. NV 89048, USA	36.218021	-115.995282	590304.3521	4008598.726	NAD83/WGS84	29	Medical / Educational	Medical Institutions	D	Low	Nye County Complex Well 2	Not Adequately Controlled
Nye County Complex	179	Quest diagnostics	150 S Hwy 160, Pahrump, NV 89048, USA	36.217697	-115.995274	590305.4436	4008562.794	NAD83/WGS84	29	Medical / Educational	Medical Institutions	D	Low	Nye County Complex Well 2	Not Adequately Controlled
Nye County Complex	180	55 Gallon Drums	307 Nevada 160. Pahrump. NV 89060. USA	36.22447762	-115.9971727	590127	4009313	NAD83/WGS84	22	Automotive	Gas Stations	А	High	Nye County Complex Well 1	Not Adequately Controlled
Nye County Complex	181	Gas Station	40 S Hwy 160 Pahrump NV 89048 USA	36 219115	-115 994549	590368 978	4008720.76	NAD83/WGS84	22	Automotive	Gas Stations	A	High	Nye County Complex Well 2	Not Adequately Controlled
Nye County Complex	182	Gas Station	Boothill Dr. Pahrump, NV 89060, USA	36 22497343	-115 9982457	590030	4009367	NAD83/WGS84	22	Automotive	Gas Stations	A	High	Nye County Complex Well 1	Not Adequately Controlled
	102	Gus Buildin		50.22197515	115.5762157	570050	1007507				Petroleum Products		ingn	Type County Complex Wen 1	Controlled
Nye County Complex	193	Town of Pahrump	Frontage P.d. Pahrump, NV 80060, USA	36 224584	115 007722	500077 5115	4000324 449	NAD83/WGS84	13	Industrial	Production, Storage &		High	Nya County Complex Well 1	Not Adequately
Pahrump Senior	103	De cheuse En cines	1241 W Desig Aug Delegano NV 90049 UCA	26 210599	116.029405	596419 5176	4009722 145		20	Automotivo	Auto Donoin Shono	A	High	Pahrump Senior Center /	Not Adequately
Pahrump Utility	184	Sanchea & Sons Plant	1541 w Basin Ave, Panrump, NV 89048, USA	30.219388	-110.038493	380418.3170	4008755.145	NAD85/ WG584	20	Automotive	Golf Courses, Parks	A	High	Sunset MHP wens	Not Adequately
Company, Inc. (Haten	185	Nursery	5970 East Kellogg Rd, Pahrump, NV 89061, USA	36.117846	-115.905396	598508.9157	3997574.42	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	Pahrump Utilities Well 1	Controlled
Company, Inc. (Hafen Ranch Estates)	100			26 120072	115 00 01 44	500420 0170	2007020 577	NADO2WCC04			Household Hazardous	L D C	XT: 1		Not Adequately
Pahrump Utility	180	Private Storage Tard	3921 Santovno St, Panruinp, NV 89001, USA	30.120072	-113.906144	398438.8179	3997820.377	NAD85/ WG584	23	Residential	Products	А, Б, С	High	Panrump Ounties wen 1	Controlled
Company, Inc. (Hafen Ranch Estates)	107	Floyd Elementary		26 1200 /2	115 000100	50 (271 0 ( ( 2	2000700 5 (2	NADOANICZOA		Medical /		D.G.			Not Adequately
Pahrump Utility	187	School	6181 Jane Ave, Pahrump, NV 89061, USA	36.128943	-115.930102	5962/1.8662	3998780.562	NAD83/WGS84	28	Educational	Educational Institutions	B, C	Moderate	N/A	Controlled
Company, Inc. (Hafen Ranch Estates)	188	Hafen Elementary School	5968 East Kellogg Rd, Pahrump, NV 89061, USA	36.116397	-115.905485	598502.7158	3997413.603	NAD83/WGS84	28	Medical / Educational	Educational Institutions	B, C	Moderate	Pahrump Utilities Well 1	Not Adequately Controlled
Pleasant Valley	189	Large Irrigated Field	6494 Centennial Rd, Pahrump, NV 89048, USA	36.12452797	-115.9625528	593357	3998259	NAD83/WGS84	5	Agricultural	Irrigated Fields	В	Moderate	Pleasant Valley West Well 2	Not Adequately Controlled
Pleasant Valley	190	Done Rite Auto Repair & Services	6471 Homestead Rd, Pahrump, NV 89048, USA	36.124854	-115.956672	593885.8245	3998300.989	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	Pleasant Valley West Well 2	Not Adequately Controlled
Pleasant Valley	191	Doug's Auto Shop	6563 Homestead Rd, Pahrump, NV 89048, USA	36.12698342	-115.957742	593787	3998536	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	Pleasant Valley West Well 2	Not Adequately Controlled
Quick Save Market	192	Tire Auto Shop	1280 W Hwy 372, Pahrump, NV 89048, USA	36.20438657	-116.0371405	586557	4007048	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	Quick Save Market	Not Adequately Controlled
Quick Save Market	103	Quick Save Mini	1280 W Husy 272 Pahrump NV 80048 USA	36 20/1362	-116.037334	586530 6352	4007045 263	NAD83/WGS84	33	Storage	Public Storage	۵	Low	Ouick Save Market	Not Adequately
Spring Mountain	175	Storage	1200 w Hwy 572 Fairlain, 100 05040, 0571	50.204502	110.037334	500557.0552	4007043.203	1111005/11/05/04		Storage	i uone biorage		LOW	Quick Dave Market	Controlled
Motor Sports Ranch	194	Spring Mountain Motor Sports Auto shop	3601 S Hwy 160, Pahrump, NV 89048, USA	36.172268	-115.910037	598023.4897	4003606.402	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	Spring Mountain Motor Sports	Not Adequately Controlled
Stagestop Restaurant	195	Stagecoach Manufacturing	101 West Stagecoach Rd, Pahrump, NV 89060, USA	36.238357	-116.016248	588396.9727	4010835.142	NAD83/WGS84	12	Industrial	Manufacturing sites	A, B, C	High	Stagestop Restaurant	Not Adequately Controlled
Terribles Ranch Casino and RV Park	196	Grass Field	5870 Homestead Rd, Pahrump, NV 89048, USA	36.13407	-115.959749	593597.9811	3999320.283	NAD83/WGS84	48	Miscellaneous	Golf Courses, Parks and Nurseries	B, C	High	Terribles Ranch Casino and RV Park	Not Adequately Controlled
Terribles Ranch Casino and RV Park	197	Former Auto Shop	5641 Homestead Rd, Pahrump, NV 89061, USA	36.13585364	-115.9576469	593785	3999520	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	Terribles Ranch Casino	Not Adequately Controlled
Terribles Ranch	198	Gas Station	5870 Homestead Rd Pahrump NV 89048 USA	36 13244954	-115 9580698	593751	3999142	NAD83/WGS84	22	Automotive	Gas Stations	A	High	Terribles Ranch Casino	Not Adequately Controlled
Terribles Ranch	190	Price is Right Mini &	3620 E Thousandaire Blvd Pahrump NV 89061 USA	36 133707	-115 94712	594734 7678	3999292 264	NAD83/WGS84	33	Storage	Public Storage	A	Low	Terribles Ranch Casino and RV Park	Not Adequately
The Maverick	200	Fagle Motors	50 East Macquita Ava Pahruma NU 20060 115 A	36 2/0555	-116.01/116	588575 0150	4012070 219	NAD82/WCS04	20	Automotivo	Auto Repair Shone	Δ	High	The Mayoriak	Not Adequately
The Maverick	200	Kustom V -1	JUE Last Mesquite Ave Fairunip, IV 00000, USA	26 2507127	116.0146240	500575.9139	4012079.218		20	Automotive	Auto Dancia Sl	A	High	The Mayer'-1-	Not Adequately
The Maverick	201	Kustom Kolors	2108 N Biagg Kd, Panrump, NV 89060, USA	36.250/12/	-116.0146348	588528	4012207	NAD83/WGS84	20	Automotive	Auto Repair Shops	A	High		Not Adequately
The Meyerial	202	Al's Storage	90 W Mesquite Ave, Pahrump, NV 89060, USA	36.250046	-116.016449	588365.7503	4012131.55	NAD83/WGS84	33	Storage	Public Storage	A	Low	The Maverick	Controlled Not Adequately
The Maverick	203	RCT Storage	2191 N Blagg Rd, Pahrump, NV 89060, USA	36.25131711	-116.0146828	588523	4012274	NAD83/WGS84	33	Storage	Public Storage	А	Low	The Maverick	Controlled

PWS	ID #	Facility Id	Address	Latitude	Longitude	Easting	Northing	Datum	Code	Class	Source	Category (A,B,C,D,E)	Risk	Well	Control
											Chemical Manufacturers				
Town Hall Bar											Warehousing/Distributi				Not Adequately
	204	Pahrump Drums	1911 W Blosser Ranch Rd, Pahrump, NV 89060, USA	36.25644	-116.055125	584883.9448	4012806.202	NAD83/WGS84	8	Industrial	on Activities	A, B , C	High	Town Hall Bar	Controlled Not Adequately
Tumbleweed Tavern	205	Shadow Mountain Feed	2031 W Bell Vista Ave, Pahrump, NV 89060, USA	36.263531	-116.051016	585245.3859	4013596.374	NAD83/WGS84	57	Miscellaneous	Business	D	Low	Tumbleweed Tavern	Controlled
Tumbleweed Tavern	206	Gas Station	2030 W Bell Vista Ave, Pahrump, NV 89060, USA	36.26422312	-116.0510008	585246	4013673	NAD83/WGS84	22	Automotive	Gas Stations	А	High	Tumbleweed Tavern	Not Adequately Controlled
Utilities Inc. of	207	Area 51 Fireworks	1381 F Huzy 372 Pahrump NV 800/8 USA	36 206507	-115 080331	500852 5575	4007327 111	NAD83/WG884	57	Miscellaneous	Business	C	Low	LIICN Well 4	Not Adequately
Utilities Inc. of	207	Aica 51 Flicwolks	1561 L Hwy 572, 1 and mp, 199 65040, 05A	50.200507	-115.767551	570652.5575	4007327.111	117203/ 110304	57	Wiscenaneous	Golf Courses, Parks	c	Low		Not Adequately
Central Nevada Utilities Inc. of	208	Grass Field	Walt Williams Dr, Pahrump, NV 89048, USA	36.191825	-115.975806	592085.6012	4005711.288	NAD83/WGS84	48	Miscellaneous	and Nurseries Household Hazardous	B, C	High	UICN Well 1	Controlled Not Adequately
Central Nevada	209	Private Storage Yard	2831 National Ave, Pahrump, NV 89048, USA	36.178001	-115.942791	595045	4004347	NAD83/WGS84	25	Residential	Products	A, B, C	High	UICN Well 8	Controlled
Utilities Inc. of Central Nevada	210	Ahern Rentals	4377 East Dandelion Street Pahrump, NV 89048, USA	36.175268	-115.934875	595786.0059	4003914.364	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	UICN Well 8	Not Adequately Controlled
Utilities Inc. of Central Nevada	211	Auto Body Connection	2150 State Hwy 160 Pahrump NV 89048 USA	36 18715	-115 96085	593436	4005207	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	LIICN Well 2	Not Adequately Controlled
Utilities Inc. of	211			50.10715	115.70005		1005207		20						Not Adequately
Central Nevada Utilities Inc. of	212	Lewis Equipment	3081 Autumnwood Dr, Pahrump, NV 89048, USA	36.175312	-115.93848	595461.7458	4003915.692	NAD83/WGS84	20	Automotive	Auto Repair Shops	A	High	UICN Well 8	Controlled Not Adequately
Central Nevada	213	RV Superstore	4427 E Dandelion St, Pahrump, NV 89048, USA	36.17516	-115.934094	595856.3747	4003903.156	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	UICN Well 8	Controlled
Utilities Inc. of											Manufacturers,				
Central Nevada	214	Blackjack Fireworks LLC	1181 S Highway 160, Pahrump, NV 89048, USA	36.19461	-115.968804	592711.8904	4006026.882	NAD83/WGS84	8	Industrial	Warehousing/Distributi on Activities	A, B, C	High	UICN Well 1	Not Adequately Controlled
Utilities Inc. of	015			26 200007	115 002027	501242 4270	1007610 566						U. 1	UICN Well 11 / UICN Well	Not Adequately
Central Nevada Utilities Inc. of	215	Gas Station	758 Nevada 160, Pahrump, NV 89048, USA	36.209097	-115.983837	591343.4379	4007619.566	NAD83/WG884	22	Automotive	Gas Stations	A	High	9 UICN Well 11 / UICN Well	Not Adequately
Central Nevada	216	Gas Station	820 S Hwy 160, Pahrump, NV 89048, USA	36.208034	-115.983865	591342.1563	4007501.628	NAD83/WGS84	22	Automotive	Gas Stations	A	High	9	Controlled
Utilities Inc. of											Petroleum Products				
Central Nevada	217	55 Gallon Drums	3952 E Dandelion St, Pahrump, NV 89048, USA	36.175695	-115.942137	595132	4003954	NAD83/WGS84	13	Industrial	Production, Storage & Distribution Centers	А	High	UICN Well 8	Not Adequately Controlled
Utilities Inc. of	218	Gas Station	2306 E. Acome Ave. Patrum NV 80048 USA	36 10336	115 06705	502871	4005880	NAD83/WCS84	22	Automotiva	Gas Stations		Uigh	LUCN Well 1	Not Adequately
Utilities Inc. of	210	Gas Station		50.17550	-115.90705	572671	4005007	117203/ 110304		Medical /	Gas Stations	Λ	Ingn		Not Adequately
Central Nevada	219	G Dennis Leaks LTD Martinizing Dry	2120 E Calvada Blvd, Pahrump, NV 89048, USA	36.193932	-115.975844	592079.7173	4005944.968	NAD83/WGS84	29	Educational	Medical Institutions	D	Low	UICN Well 1 UICN Well 11 / UICN Well	Controlled Not Adequately
Central Nevada	220	Cleaning	1050 S Dandelion St, Pahrump, NV 89048, USA	36.204231	-115.979597	591730.2649	4007083.814	NAD83/WGS84	14	Commercial	Dry cleaning	А	High	9	Controlled
Utilities Inc. of Central Nevada	221	Medical Facilities	2360 E Calvada Blvd, Pahrump, NV 89048, USA	36.19227	-115.97196	592431	4005764	NAD83/WGS84	29	Educational	Medical Institutions	D	Low	UICN Well 1	Not Adequately Controlled
Utilities Inc. of Central Nevada	222	Pahrump Dermatology	2050 Calvada Boulevard North Pahrump NV 89048 USA	36 193654	-115 97456	592195 4888	4005915 351	NAD83/WGS84	29	Medical / Educational	Medical Institutions	D	Low	LIICN Well 1	Not Adequately Controlled
Utilities Inc. of			2000 Currada Dourorad Norun , Fantanip, NY 00010, CDT	50.175051	110.07100	572175.1000	1000910.001		27	Medical /					Not Adequately
Central Nevada Utilities Inc. of	223	Southwest Medical Southwest Wellness	2058 Calvada Boulevard North, Pahrump, NV 89048, USA	36.193376	-115.974189	592229.1719	4005884.867	NAD83/WGS84	29	Educational Medical /	Medical Institutions	D	Low	UICN Well 1	Controlled Not Adequately
Central Nevada	224	Center	2080 E Calvada Blvd, Pahrump, NV 89048, USA	36.193958	-115.976842	591989.9559	4005946.905	NAD83/WGS84	29	Educational	Medical Institutions	D	Low	UICN Well 1	Controlled
Central Nevada	225	Veteran Affairs Clinic	2020 Calvada Boulevard North, Pahrump, NV 89048, USA	36.194146	-115.97614	592052.8532	4005968.425	NAD83/WGS84	29	Educational	Medical Institutions	D	Low	UICN Well 1	Controlled
Utilities Inc. of Central Nevada	226	Walgreens Pharmacies	770 S Hwy 160, Pahrump, NV 89048, USA	36.208053	-115.98477	591260.7796	4007502.883	NAD83/WGS84	29	Medical / Educational	Medical Institutions	D	Low	UICN Well 11	Not Adequately Controlled
Utilities Inc. of	227	W	2200 E. C. Les J. D. J. D. J. D. Les and NV 20049. USA	26 102642	115 072249	502214 (402	4005004 245	NA DO2 MUCCO A	20	Medical /	Madical Institutions	D	I	LUCN W-11 1	Not Adequately
Central Nevada	221	westcare	2280 E Caivada Bivd, Panrump, NV 89048, USA	30.192042	-115.973248	592514.6402	4005804.545	NAD85/WG584	29	Educational	Photography	D	Low		Controlled
Valley Bar	228	Nye Printing and	2031 E Gamebird Rd Pabrump NV 89048 USA	36 160634	-115 974354	592252.7168	4002252.859	NAD83/WGS84	19	Commercial	Establishments and Printers	C	Hiơh	Valley Bar	Not Adequately Controlled
VFW Pahrump Post	220			00100001	1101971001	07220201000	10022021000				Septage Lagoons,	0			
10054	229	Wastewater Treatment Facility	3209 Manse Rd, Pahrump, NV 89061, USA	36.14760382	-115.95389	594109	4000827	NAD83/WGS84	39	Municipal Waste	Wastewater Treatment Plants	B, C, D	High	VFW Post	Not Adequately Controlled
Villa Locale	220	A grigulture Fields	220 S Place Dd Dahmunn NV 20060 LISA	26 222026	116.01029	500122 0406	4000120 622	NAD92/WCS94	5	Agricultural	Irrigated Fields	D	Modoroto	Villa Locala	Not Adequately
Villa Locale	230	Agriculture Fields	220 S Blagg Ru, Fainump, NV 89000, USA	30.222920	-110.01938	388132.8480	4009120.022	NAD65/ W0364	5	Agricultural	Inigated Fields	D	wioderate		Not Adequately
	231	A-1 Storage	520 Alaska Way, Pahrump, NV 89060, USA	36.221478	-116.02378	587739.0059	4008956.012	NAD83/WGS84	33	Storage	Public Storage Household Hazardous	A	Low	Villa Locale Whose Dunes / Horizon	Controlled Not Adequately
Whose Dunes	232	Private Storage Yard	750 Margaret St, Pahrump, NV 89048, USA	36.20873776	-116.0278318	587389	4007539	NAD83/WGS84	25	Residential	Products	A, B, C	High	Market III	Controlled
Whose Dunes	233	Al's Used Cars and Auto Repair	867 South Linda Street Pahrump, NV 89048, USA	36.207893	-116.032291	586989.085	4007441.446	NAD83/WGS84	20	Automotive	Auto Repair Shops	А	High	Market III	Not Adequately Controlled
Whose Dunes	234	Pahrump Auto Body and Glass	960 Margaret St. Pahrump. NV 89048 USA	36.205644	-116.028152	587363 6577	4007195 701	NAD83/WGS84	20	Automotive	Auto Renair Shops	А	High	Whose Dunes / Horizon Market III	Not Adequately Controlled
	204										biops	1	8		

PWS	ID #	Facility Id	Address	Latitude	Longitude	Easting	Northing	Datum	Code	Class	Source	Category (A,B,C,D,E)	Risk	Well	Control
Whose Dunes		Silver State Armory									Machine and			Big Five Park / Whose	Not Adequately
	235	(closed)	788 Margaret St, Pahrump, NV 89048, USA	36.20798	-116.027789	587393.6928	4007455.145	NAD83/WGS84	11	Industrial	Metalworking Shops	А	High	Dunes / Horizon Market III	Controlled
			451 Brentwood Dr, Pahrump, NV 89048, USA								Golf Courses, Parks				Not Adequately
Big Valley MHP	236	Private Golf Course		36.212914	-116.021722	587933.5609	4008007.928	NAD83/WGS84	48	Miscellaneous	and Nurseries	B, C	High	Big Valley MPH	Controlled
Nye County Complex	237	Walmart Shopping Center	300 S Hwy 160, Pahrump, NV 89048, USA	36.215766	-115.994617	590366.7179	4008349.213	NAD83/WGS84	57	Miscellaneous	Business	А	Moderate	Nye County Complex Well 2	Not Adequately Controlled
Ralston Valley				-	-			-					-		_
Tonopah Public	238	Midway Explo	82 Ralston NV 89049 USA	38 25900965	-117 0753706	493406	4234556	NAD83/WGS84	49	Miscellaneous	Mining	A C	High	Tononah Wells	Not Adequately Controlled
Tonopah Public Utilities	239	Hwy 376 (Tonopah)	Hwy 376 (Tonopah)	0.120700700					58	Miscellaneous	Transportation	A, B, C	Low	Tonopah Public Utilities	Not Adequately Controlled
Sacrobatus Flat															
Shady Lady Ranch	240	Private Storage Yard	Hwy 95/Veterans Memorial Hwy, Beatty, NV 89003, USA	37.258996	-117.00996	499116.8132	4123604.39	NAD83/WGS84	25	Residential	Household Hazardous Products	A, B, C	High	Shady Lady Ranch Well 1	Not Adequately Controlled
Shady Lady Ranch	241	Hwy 95/Veterans Memorial Hwy	Hwy 95/Veterans Memorial Hwy						58	Miscellaneous	Transportation	A, B, C	Low	Shady Lady Ranch	Not Adequately Controlled
													•		
White River Valley															
NDOT Sunnyside														NDOT Sunnyside Roadside	Not Adequately
Roadside Park	242	Former Gravel Pit	Hwy 318, Duckwater, NV, USA	38.456678	-115.007975	673812.3508	4258366.762	NAD83/WGS84	45	Miscellaneous	Construction areas	А	Moderate	Park	Controlled
NDOT Sunnyside															
Roadside Park		Former Agricultural												NDOT Sunnyside Roadside	Not Adequately
RP810NY	243	Field	Hwy 318, Duckwater, NV, USA	38.44871	-115.022017	672606.008	4257456.084	NAD83/WGS84	5	Agricultural	Irrigated Fields	В	Moderate	Park	Controlled
NDOT Sunnyside														NDOT Sunnyside Roadside	Not Adaguately
Roadside Park RP810NY	244	Hwy 318	Hwy 318						58	Miscellaneous	Transportation	A, B, C	Low	Park RP810NY	Controlled

Appendix F Work Plan for the Community Source Water Protection Plan Implementation
## **Community Source Water Protection Plan for Public Water Systems in Nye County, Nevada**

#### Work Plan

This section summarizes specific action items compiled from previous work plans and new information provided during Community Source Water Protection (CSWP) Team meetings. Action Items were developed to meet the objectives of the CSWP Plan and keep the Plan up to date. This Work Plan is intended to assist individual water purveyors in Nye County by presenting potential action items which may be used to meet their individual system needs or work with one or more other purveyors collectively to meet a more comprehensive regional planning objective. This Work Plan provides a list of action items developed based on management strategies identified in consideration of the contaminant source inventory and SWPAs in communities throughout Nye County. This list can act as a guide in selecting implementation measures, but in no way implies a mandate that any or all of these items must be completed. NDEP recognizes communities must work within budget, manpower, and political constraints. It is important to note that should communities wish to pursue funding from NDEP for implementation activities, the specific action item must be included in this Work Plan, which must be endorsed by NDEP.

Budget estimates for action items included here can vary widely depending upon the PWSs participating in each action item and the scope of work to be completed. Additionally, since these action items may not be completed immediately after endorsement of this Plan, the cost estimates are subject to change over time. For these reasons, estimated budgets are not included in this Work Plan. Workload and budget estimates will be prepared by the individual water purveyors based on selected actions and available funding/resources.

Implementation of these activities can begin immediately and some activities are already underway. For example, the Nye County Water District (NCWD) has already dedicated some funding for identification of orphaned wells. Certain activities may coincide with availability of funding and resources for particular water systems.

A. <u>Potential Contaminant Source Identification and Ranking</u>: It is important that water system staff personnel are trained to recognize contaminant sources within their water service areas. Additional focus should be given to potential contaminant sources (PCSs) within or near Source Water Protection Areas (SWPAs). The following activities may be implemented by water purveyors to ensure water system operators and personnel can recognize sources of contamination and document them accordingly.

Public water system (PWS) utility workers may be trained to locate and establish an associated risk for contaminant sources within their service areas. Training for various water-related issues and skills may be available from a number of organizations, including but not limited to Nevada Rural Water Authority and Project WET. PWS operators can work with NDEP to identify appropriate training organizations. Aboveground Storage Tanks (ASTs), Leaking Underground Storage Tanks (LUSTs), agricultural practices, industry, etc. can pose a threat to ground water quality. Utility personnel who recognize such threats should inform their superiors and document all instances within their service area and work collectively to evaluate the risk to the drinking water supply and ultimately implement a strategy to mitigate the impact.

Training may be structured such that utility staff can learn how to: identify contaminant sources in the field; investigate resources for identifying contaminant sources through desktop research; use global positioning system (GPS) applications for collecting location data and associated mapping needs; review criteria for establishing an associated risk assessment/ranking; determine whether a contaminant is adequately controlled; and determine if additional measures are needed.

B. <u>Leaking Underground Storage Tanks</u>: Water purveyors may consider developing a LUST Identification and Reduction Plan in cooperation with the Nevada Department of Environmental Protection (NDEP). This Plan should address LUSTs with the highest potential for impacting local ground water quality near the public drinking water wells first. The integration of the CSWP Plan information and Bureau of Corrective Actions (BCA) data on remedial activities will result in a data set that clearly highlights areas requiring immediate action.

The best way to ensure the proper organization of relevant data is for the CSWP Team to identify a Team member to act as a point of contact with BCA, to supervise the exchange of information, and to coordinate the warranted action.

- C. <u>Production Facilities</u>: A minimum security standard should be set for every public drinking water well (and any associated water treatment systems and storage tanks) in Nye County. Such security standards include but are not limited to fencing, barbed wire, vehicle and man gates, lighting, and landscaping. Upgrades to various water production and storage sites will be completed to bring the security at each site up to the minimum security standard.
- D. <u>Review of Inactive Wells:</u> This task entails evaluation of inactive wells to determine their value as potential future source or back-up wells versus their status as potential sources of contamination. This task assumes inactive wells, located within sensitive protection areas and not proposed for future service, will be abandoned. Typically, these wells do not meet the minimum construction standards, water quality standards, or water quantity requirements for public drinking water wells.
- E. <u>Improperly Abandoned and Orphaned Wells</u>: Improperly abandoned and orphaned wells located in or near SWPAs have been categorized as a PCS in SWPAs throughout the County. Subsequently, improperly abandoned and orphaned wells throughout the County will continue to be inventoried and prioritized for future abandonment depending on funding availability.

As of the release date of this Plan the Nye County Water District Governing Board (NCWDGB) was in the process of developing a program to identify and inventory improperly abandoned and orphaned wells.

F. Zoning and Subdivision Ordinances and Site Plan Review (Within the Pahrump Regional Planning District only): Zoning ordinances are typically comprehensive land-use requirements designed to direct the development of an area, and may be used to restrict or regulate certain land uses in SWPAs. The support of Nye County communities is critical to the long-term success of the Nye County CSWP Plan.

The ultimate objective is to include the CSWP Plan in master planning documents, such as the Pahrump Regional Master Plan, the Amargosa Area Plan, and the Beatty Area Plan, and to establish acceptable controls that address land use issues (zoning) in specified SWPAs.

Development review procedures will be established to direct development in the SWPAs in order to minimize incompatible land use.

Initially, this issue will be discussed with representatives from the Nye County Planning Department to continue developing a process to address local SWPAs. Representatives from the Planning Department will be invited to join the CSWP Team and participate in the implementation process.

A representative should be designated publically, possibly from the CSWP Team, to assist in planning and other activities which may impact source water. The representative would review and provide comments on proposed development from the standpoint of source water protection. The representative would also act as a liaison for the CSWP Plan.

G. <u>Public Education</u>: Public education includes two components. The first is the presentation of the CSWP Plan to community leaders and advisory and governing boards to obtain support for the Plan. It is anticipated this component will be completed prior to the NCWDGB and BoCC recommending the CSWP Plan for endorsement by NDEP.

The second component is to implement the Public Education Plan located in Appendix H. The Public Education Plan targets a primary and secondary audience. The primary audience is community leaders, governing boards, and advisory boards. The secondary audience is PWS operators and users. Information designed to present source water issues and protection efforts will be furnished, while opening a channel for communication between agencies/entities, water purveyors, residents and business owners.

Water purveyors may receive training for staff and purchase water models to support the NCWD in making presentations and encouraging knowledge of local source water protection issues. This will ultimately enhance relationships between the community and the water purveyors. The Team will work with the NCWD, the Nye County School District, and teachers to provide presentations or support the School District in presenting Project WET curriculum in classrooms in Nye County.

H. <u>Contingency Planning:</u> Contingency plans are intended to provide a course of action in the event the drinking water resource for a community becomes contaminated. Contingency plans, within the context of the ISWPP, are built upon emergency response plans and provide guidance and direction to the local community and PWSs in the event the aquifer or main source of drinking water is significantly contaminated.

Though individual contingency plans were include as part of wellhead protection plans previously established for six communities in Nye County, no contingency plan addresses communities in the county as a whole. Develop a more comprehensive contingency plan for PWSs in Nye County and coordinate with Emergency Services to incorporate water contamination into emergency response planning.

I. <u>Ground Water Monitoring</u>: Water sampling and testing is performed by PWS operators on a regular basis in accordance with State requirements. The results of this testing is publicly available information. Additionally, the Nye County Nuclear Waste Repository Project Office (NWRPO) performs regular water level monitoring and some water sampling in southern Nye County. The NCWD is working to expand ground water monitoring into northern Nye County. Water purveyors and other entities may consider the development of a

more rigorous monitoring program in high risk locations, including regular water sampling and analysis, which can act as an early warning system for potential contamination.

- J. <u>Well Drilling</u>: The well drilling, development, and completion processes and some products used may have the potential to contaminate drinking water. Nye County has historically has been home to a variety of industries which require drilling including, but not limited to: mining exploration, oil and natural gas production, geothermal energy production, water production, and testing and monitoring. Nye County will coordinate with NDEP and the Nevada Division of Minerals (NDOM) to be notified of new drilling permits within the County. Nye County can identify activity in potentially sensitive areas and coordinate directly with the drillers to obtain relevant information regarding the drilling and completion processes and products used.
- K. <u>Mine Dewatering:</u> Coordinate with NDEP and NDOM to receive notifications of any permit applications for mine dewatering operations near PWSs in Nye County. Team members or PWS staff can then evaluate whether such dewatering may change the characteristics of ground water flow and ground water quality near PWSs and can provide comments and proposed mitigation measures to NDEP and NDOM.
- L. <u>Household Hazardous Waste:</u> Coordinate with departments and organizations within Nye County and Nye County communities to increase participation in and awareness of existing programs, such as Nye County's Recycling and Household Hazardous Waste (HHW) disposal program currently available to Nye County residents. Expand on the HHW program by implementing one or more HHW collection events in Nye County communities. Include information to promote the existing programs as part of public outreach and education efforts.
- M. <u>Property Acquisition:</u> Identify high priority sites within or adjacent to SWPAs that Nye County may acquire through tax default, and remove those properties from the tax rolls for the purpose of land management to protect source water.
- N. <u>First Responders:</u> Coordinate with first responders (police, medical, fire, hazmat) in each community to encourage their communication with the Team and local PWSs in the case of incidents that have the potential to contaminate drinking water, such as hazardous spills, and locating methamphetamine and marijuana production facilities. Provide training to first responders in how to identify incidents that have the potential to contaminate drinking water. Provide maps of SWPAs to first responders. Work with local first responders to integrate plans for drinking water contamination into their hazard mitigation and emergency response plans. Designate a liaison between Emergency Services/Pahrump Valley Fire and Rescue and the CSWP Team.

Appendix G Community Wellhead Protection Planning Templates

## Nevada Division of Environmental Protection Community Source Water Protection Plan Endorsement Checklist

Formation of the Planning Team						
Minimum Requirements	Yes	No	Comments			
The Team includes representatives from public water systems, local public officials, NDEP representative, local community planners, and other pertinent parties.						
The Team conducted meetings to develop and establish the community's source water protection goals and to outline how those goals are to be accomplished.						
The Plan includes a list of Team members and their respective contact information and outlines their individual involvement or responsibility in the planning effort.						
Where applicable, the Team presented the Plan development and implementation schedule and Community Source Water Protection Goals to the Board of County Commissioners.						
Delineation of Source Water Protection Are	as and	Recharg	ge Areas			
Minimum Requirements	Yes	No	Comments			
Minimum Requirements A review and assessment of available and applicable Source Water Assessment Program/Vulnerability Assessment Program (SWAP/VAP) reports was conducted.	Yes	No	Comments			
Minimum RequirementsA review and assessment of available and applicable Source Water Assessment Program/Vulnerability Assessment Program (SWAP/VAP) reports was conducted.Delineation of Source Water Protection Are	Yes	No	Comments ge Areas Cont.			
Minimum RequirementsA review and assessment of available and applicable Source Water Assessment Program/Vulnerability Assessment Program (SWAP/VAP) reports was conducted.Delineation of Source Water Protection Are Minimum Requirements	Yes	No Recharg No	Comments ge Areas Cont. Comments			
Minimum Requirements         A review and assessment of available and applicable Source Water Assessment Program/Vulnerability Assessment Program (SWAP/VAP) reports was conducted.         Delineation of Source Water Protection Are Minimum Requirements         A complete review was conducted to include available well logs, pump test data, other relevant engineering studies or planning documents, and information was compiled and presented in the plan.	Yes	No Charge No Charge No Charge No Charge Char	Comments ge Areas Cont. Comments			
<ul> <li>Minimum Requirements</li> <li>A review and assessment of available and applicable Source Water Assessment Program/Vulnerability Assessment Program (SWAP/VAP) reports was conducted.</li> <li>Delineation of Source Water Protection Are Minimum Requirements</li> <li>A complete review was conducted to include available well logs, pump test data, other relevant engineering studies or planning documents, and information was compiled and presented in the plan.</li> <li>A conceptual hydrologic model was submitted to NDEP for approval prior to delineating source water protection areas.</li> </ul>	Yes	No Recharg No	Comments ge Areas Cont. Comments			

All information related to the model input data was derived from pump test data, or an equivalent approved by NDEP.					
The method, criteria, and threshold selected for the SWPAs were presented and a rationale and supporting documentation for the selection was provided to the satisfaction of NDEP.					
Maps were prepared to include the modeled capture zones and delineated source water protection areas and maps are clearly depicted on a scale that is consistent with the community's land use and zoning maps or master planning maps.					
A discussion of the ground water recharge area(s) was provided and included sufficient details to provide context for ground water flow to the community.					
A discussion of the geologic and hydrogeologic susceptibility to contaminant infiltration in the source water protection areas and recharge areas was included.					
Contaminant Source Inventory					
Contaminant Source Inventory					
Contaminant Source Inventory Minimum Requirements	Yes	No	Comments		
Contaminant Source Inventory         Minimum Requirements         Obtained and reviewed available source water assessments completed by NDEP.	Yes	No	Comments		
Contaminant Source Inventory         Minimum Requirements         Obtained and reviewed available source water assessments completed by NDEP.         Performed a review and inventory using available local, state and federal databases and documents (maps and other relevant engineering or planning studies and documents)	Yes	No	Comments		
Contaminant Source Inventory         Minimum Requirements         Obtained and reviewed available source water assessments completed by NDEP.         Performed a review and inventory using available local, state and federal databases and documents (maps and other relevant engineering or planning studies and documents)         Walked or drove through the delineated source water protection areas to visually determine the locations of all potential contaminant sources that may have been overlooked.	Yes	No	Comments		
Contaminant Source Inventory         Minimum Requirements         Obtained and reviewed available source water assessments completed by NDEP.         Performed a review and inventory using available local, state and federal databases and documents (maps and other relevant engineering or planning studies and documents)         Walked or drove through the delineated source water protection areas to visually determine the locations of all potential contaminant sources that may have been overlooked.         Prepared a map of contaminant source locations in relation to the source water protection areas and local land use planning maps.	Yes	No	Comments		

Selection and Implementation of Contaminant Source Management Strategies						
Minimum Requirements	Yes	No	Comments			
The Plan Team conducted a meeting(s) to discuss and evaluate appropriate management strategies to be implemented for protecting the source water from existing or potential contaminant sources.						
The Plan outlines selected management strategies including a prioritization and implementation schedule and an action plan.						
Selection and Implementation of Contamin	ant Sou	rce Man	agement Strategies Cont.			
Minimum Requirements	Yes	No	Comments			
Documentation related to management options, such as copies of proposed or enacted zoning changes, ordinances, design or operating standards, public education materials, etc. were provided.						
A Team member was identified with contact information that is responsible for coordinating and overseeing implementation of the source management and who is also responsible for regular updates or necessary revisions.						
Contingency Planning						
Minimum Requirements	Yes	No	Comments			
The Plan identifies all public water systems which are included in this plan that have already satisfied (or not) the Bureau of Safe Drinking Water requirements for an Emergency Response Plan in accordance with NAC 445A.66665.						
The Plan demonstrates the community's preparedness to deal with a contamination event; outlines chain of command and contact information; identifies current production redundancy or sustainability should the main production source be taken out of service (short term and long term) and outlines relative costs versus available local resources.						
The Plan lists applicable state and local response agencies and personnel, including contact information and chain of command.						

Plans for New Well Siting						
Minimum Requirements	Yes	No	Comments			
The Plan includes a map(s) depicting sites of planned future well sites.						
The Plan outlines historical water quality monitoring and geologic information and rationale for selecting the site(s) as a future source(s).						
The Plan identifies resource dedication to acquire and develop the source(s) and a tentative schedule for putting the new source(s) into production.						
Where feasible and where data is available, the Plan models and delineates all future planned source water protection areas and outlines management strategies to protect them.						
Public Education						
Minimum Requirements	Yes	No	Comments			
The Plan identifies all source water protection public education activities (presentations, handouts, flyers, workshops, events, etc.) which the community has or plans to coordinate during program development and implementation planning phases.						

Taken from Table 4-9 NDEP CSWP Plan Endorsement Checklist of the Nevada Integrated Source Water Protection Program, Draft Update: March 2010.

## **Team Membership Contact Information**

Name:	Phone:
Interest / Affiliation:	E-mail:
Mailing Address:	
Name:	Phone:
Interest / Affiliation:	E-mail:
Mailing Address:	
Name:	Phone:
Interest / Affiliation:	E-mail:
Mailing Address:	
Name:	Phone:
Interest / Affiliation:	E-mail:
Mailing Address:	
Name:	Phone:
Interest / Affiliation:	E-mail:
Mailing Address:	

Taken from Figure 4-3Team Roster and Contact Information Form of the Nevada Integrated Source Water Protection Program, Draft Update: March 2010.

## **Annual Review Form**

Team Lead:				

		Section #	
Date	Reviewer	and Page #	Changes or Comments

Modified from Table 8 of the Douglas County Community Development Wellhead Protection Program, 2008

## **Special Events Log**

Date/ Time	Incident or Action	Reporting Organization	Responding Team Member	Comments	Plan Review Required? (Y/N)

Modified from Table 9 of the Douglas County Community Development Wellhead Protection Program, 2008

#### **Conducting a Contaminant Source Inventory**

- □ Review any previous work conducted;
- Develop a team that may include non-Plan Team members, such as community organizations, scouting troops, or students, who can serve as local historians and conduct the inventory;
- □ Walk or drive through delineated SWPAs to further determine the locations of potential contaminant sources that may have been overlooked by previous surveys or assessments;
- □ Consider including detailed surveys to provide further information on potential contaminant source in industrial areas, farmsteads, or other high-risk areas;
- □ Establish an up-to-date database of the information gathered including well information and potential contaminant sources;
- □ Establish a map that will provide an accurate visual assessment of all potential contaminant sources within the SWPAs; and
- □ Establish a monitoring plan that will continue to update the inventory on a time schedule agreed upon by the Plan Team.

Taken from Section 4, Page 23 of the Nevada Integrated Source Water Protection Program, Draft Update: March 2010.

	Nevada Potential Contamination Sources							
CODE	CLASS	SOURCE	А	CAT B	rego C	DRY D	Е	RISK RANKING
1		Animal burial areas			Х	Х		High
2		Animal feedlots		Х	Х	Х		Moderate to High
3		Chemical application (e.g. pesticides, fungicides, & fertilizers)		Х	Х			High
4	Agricultural	Chemical mixing & storage areas (including rural airports)	Х	Х	Х			High
5	Agricultural	Irrigated fields		Х				Moderate
		Irrigation ditches			Х			High
6		Manure spreading & pits	Х		Х			Moderate
7		Unsealed irrigation wells	Х		Х			High
8		Chemical manufacturers, warehousing/distribution activities	Х	Х	Х			High
9		Electroplaters & fabricators			Х			High
10	Industrial	Electrical products & manufacturing			Х			High
11	industrial	Machine & metalworking shops	Х					High
12		Manufacturing sites	Х	Х	Х			High
13		Petroleum products production, storage & distribution centers	Х					High
14		Dry cleaning establishments	Х					High
15		Furniture & wood stripper & refinishers	Х					High
16	Commercial	Jewelry & metal plating			Х			High
17	Commercial	Laundromats						Low
18		Paint shops	Х					High
19		Photography establishments & printers			Х			High
20		Auto repair shops	Х					High
21		Car washes	Х		Х	Х		Moderate
22	Automotive	Gas stations	Х					High
23		Road deicing operations: storage & application areas (e.g. road			Х			Moderate
24		Road maintenance depots	Х		Х			High
25		Household hazardous products	Х	Х	Х			Moderate
26	Residential	Private wells	Х	Х		Х		Moderate
27		Septic systems, cesspools		Х	Х	Х		Moderate to High
28	Madia at /	Educational institutions (labs, lawns, & chemical storage areas)		Х	Х			Moderate
29	Medical /	Medical institutions (medical, dental, vet offices)				Х		Low
30	Euucational	Research laboratories	Х	Х		Х		High
31		Aboveground storage tanks	Х					High
32	Chanana	Underground storage tanks	Х					High
33	Storage	Public storage	Х					Low
34		Radioactive materials storage					Х	High
35		Dumps and landfills (historical/active)	Х	Х	Х	Х	Х	High
36		Municipal incinerators		Х	Х	Х		Moderate
37	Municipal	Recycling & reduction facilities			Х			High
38	Waste	Scrap & junkyards	Х		Х			High
39	1	Septage Lagoons, wastewater treatment plants		Х	Х	Х		High
40		Sewer Transfer Stations		Х	Х	Х		High
41		Airports	Х					High
42		Asphalt plants	Х					High
43		Boat yards	Х					High
44		Cemeteries				Х		Moderate
45	1	Construction areas	Х					Moderate
46	1	Dry wells	Х			Х		High
47	1	Fuel storage systems	Х					High
48	Miscellaneous	Golf courses, parks & nurseries (chemical application)		Х	Х			High
49	1	Mining (surface & underground)	Х	1	Х			High
50		Pipelines (oil, gas, coal slurry)	Х					High
51	1	Railroad tracks, yards & maintenance	Х	Х	Х	Х		High
52		Surface water impoundments, streams/ditches				X		Hiah
53		Stormwater drains & retention basins	х	Х	Х	Х		Hiah
54		Unplugged abandoned well	X	X		Х		Hiah
55		Well: operating	X	X	Х	X		High – Low
								. v

# Contaminant Categories: A = V.O.C. B = S.O.C.

C = I.O. C. D = MICROBIOLOGICAL E = RADIONUCLIDES

Contaminant Source Inventory Data Sheet					
Windshield Survey					
Name of Water System:         Well Site ID:         Facility/Tenant/Land Use:         Address:         Spoke with:         Time the facility has been in business:         Previous uses of the location:         How long ago?	on site, Quantities, Number of Units - i.e. of livestock, etc.):				
Collectors Name:	Date:				

Taken from Table 4-5 Example Windshield Survey Form of the Nevada Integrated Source Water Protection Program, Draft Update: March 2010.

SYSTEM NAME:	PWS ID#:
ADDRESS:	CONTACT PERSON:
COUNTY:	PHONE NUMBER:
TOWNSHIP:	DATE OF INVENTORY:
<b>ON-SITE (Property) SOURCH</b>	<b>ES</b> (Please note the any specific information regarding the source under the
"comments" section.)	
Potential Contaminant	COMMENTS - Substances present, amount, type of storage, emergency
Source	response plans, maintenance, etc
Above Ground Storage Tanks	
Chemical Drums/ Storage	
Chemical Spills	
Chemical/petroleum pipelines	
Combined Sewer overflows*	
Fertilizer Application	
Floor drains (to septic tank/ well)	
Gas Lines	
Industrial pipelines	
Lagoon/Pond/Pit	
Material stockpiles	
Pesticide Application	
Salt/Deicing Storage Piles	
Septic Systems (discharging)*	
stream or surface water)*	
Sepue Systems (leachneid)	
Sewer Lines*	
Starm Drains	
Storm Drams	
Surface Impoundments	
Walls, ail and gas	
Wells: on and gas	
Wells: orine injection	
Wells: not in use	
Other	
Uner	
* potential pathogen source	
Practices to reduce spills or relea	ases employed on-site:

## **On-Site Potential Sources of Contamination Checklist**

Taken from Appendix B of the State of Ohio Environmental Protection Agency Potential Contaminant Source Inventory Process Manual Draft, Revised September 2009.

## **Off-Site Potential Contaminant Source Inventory Checklist**

Is your If you a Does an If you a Does an Do you	Is your entire protection area sewered?YESNO. If you answered "NO," is your entire protection area un-sewered (on septic tanks, or package plants, etc.)YESNO. If you answered "NO" please mark all areas that are unsewered on your protection area map. Does any portion of your protection area utilize home fuel oil tanks?YESNO. (may be indicated by areas that do not have gas lines). If you answered "yes" please mark these areas on your protection area map. Does any portion of your protection area have zoning?YESNO. Do you have any of the potential contaminant sources listed in Table X?YESNO.						
Map Code	Name	Street Address	City	Zip Code	Comments (Underground Storage Tanks? Chemical Storage? Floor Drains? Unused Wells?)		

Modified from Appendix A of the State of Ohio Environmental Protection Agency Potential Contaminant Source Inventory Process Manual Draft, Revised September 2009.

Community Source Water Protection Plan for Public Water Systems in Nye County, Nevada May 2012

Appendix H Public Education Plan

# Nye County Community Source Water Protection Public Education Plan and Attachments



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## Nye County Community Source Water Protection Public Education Plan

## Introduction

This Public Education Plan (Plan) is an organized and strategic approach to gain understanding of source water and wellhead protection. The intent is to motivate communities served by public water purveyors to take action. In this case, action entails changing practices and personal behavior to prevent contamination of source water, per the drinking water protection goals outlined in the "Community Source Water Protection Plan for Public Water Systems in Nye County, Nevada" (January 2012).

## Situation

Source water protection programs in Nevada are initiated and implemented at local levels and depend on the willingness of a community to support the local program. Therefore, public education and participation is an important strategy to enable community members to be stewards of their local drinking water sources, to promote voluntary protection efforts, and to build public support.

The objective of this Plan is to provide water providers, community leaders, and various other stakeholders with a variety of tools and tactics to promote source water protection outreach and education.

## How to get the most out of this Plan

The most effective communications begin with clear, consistent, meaningful messages used consistently in various venues (at a workplace, on the radio, at a special event, in a flyer, etc.) and reinforced over time. This allows your target audience (for the purposes of this Plan, governing and advisory boards, community leaders, and public water system operators and users) the opportunity to see and hear the messages over a period of time and in different places which increases the chance of recognition. Recognition can, in turn, make people recall a message and act on the message in some form – through investigation, inquiry or action.

## Goals

- 1. Gain understanding of and interest in community source water protection areas.
- 2. Motivate a change in practices and personal behavior to prevent contamination of source water per the drinking water protection goals of the Community Source Water Protection (CSWP) Plan in Nye County.



## Background

This Plan is organized by audience with suggested tactics and brief explanations. There is a range of ways to reach each audience. Organizations and providers can tailor their approach based on available resources and indentify tactics that will work for them and that best reach the identified audience.

Community leaders and governing and advisory boards were selected as the primary audience because they can actively use the CSWP Plan to protect source water. The secondary audience, public water system (PWS) operators and users, were selected because they have the potential to make the largest impact.

Education outreach tools/tactics were created in formats to allow each user to personalize them to their individual needs. The attachments (pages H-10 through H-16) support tactics outlined in this Plan. Depending on the tactics selected, users may need to create additional communication pieces. A few tips to remember when creating any communication piece:

- Simple is best;
- Allow whitespace do not fill every space; and
- You do not need to say it all the more you say the less effective the entire piece.

Be consistent in the look and message of every piece and limit it to no more than three messages. Finally, always include a call to action:

- "To learn more, log onto our website: www.nyecounty.net."
- "To register for a presentation, contact your water purveyor."
- "Take oil to one of the following disposal locations..."

Also, when thinking about how best to reach the audience, these are a few things to consider:

- What is my budget?
- How much time do I have?
- What will I do with the tactic?
- Do I have a plan to get it to my audience?
- What will follow this? And when?
- A great idea without the resources to execute it will not be effective, nor will brochures that simply sit on the counter at the community library when they need to be in people's hands.

The items below, which are part of your Nye County CSWP Plan may be used as support in presentations, community meetings, and other opportunities that allow more information to be shared.

- Names and affiliations of the individuals who helped prepare the CSWP Plan (also known as the Nye County CSWP Team);
- Location(s) and source(s) of drinking water for the community;
- The community's current water supply and projected demands on that water supply;



- A map of the areas around the drinking water source(s) that may be susceptible to contamination;
- Inventory of activities and conditions that may adversely affect drinking water quality;
- Strategies the community currently utilizes or intends to use to protect its drinking water sources;
- Contingency Plan describing what the community would do to replace its drinking water supply if the source became contaminated; and
- Action Plan that provides a schedule for implementation of the Public Education Plan.

## The Plan

## **Primary Audience:**

Governing and Advisory Boards and community leaders.

## **Secondary Audience:**

PWS operators and users.

#### Messages:

## What is source water protection?

Source water protection, also known as wellhead protection, is a way to prevent drinking water from becoming polluted. Much can be done to prevent pollution, such as the informed use of land and disposal of chemicals.

## Why is it important to protect water at the source?

Protecting public drinking water supplies at the source *before* pollution enters our drinking water supply lessens potential health issues, the high costs associated with water treatment, and source water development. Public water users can help protect our community's source water. Managing land uses and human-caused sources of contamination are the keys to preventing pollution *before* it enters our drinking water supply at the source.

## What contaminates the water we drink?

There are numerous pollutants that can contaminate surface and ground water. Some contaminants are a result of improper disposal of common household products such as cleaning products, waste oil, pet waste, fertilizers and pesticides. Others may be used or generated by businesses such as dry cleaners, film processing centers, salons, cemeteries, petroleum storage and handling, etc. These and other harmful products, when improperly disposed of may threaten to contaminate our drinking water.

## Tactics or Ways to deliver the message

CSWP Team members should consider themselves Plan Ambassadors. Water purveyors are best positioned to make contact with the audiences, but the entire Team should take every opportunity to convey the essence and objectives of the CSWP Plan. The following tactics provide means by which Team members can increase knowledge and change behavior in accordance with protecting our drinking water sources.

Team members identified these tactics as most likely to be used for the primary or secondary audiences:

- PowerPoint presentations;
- Newsletter inserts;
- Fact sheets, brochures or handouts;
- Inserts in water bills;
- Press releases;
- Website inserts and links;
- Partnership with other organizations;
- Local government education and engagement; and
- Public meetings and community events.

**PowerPoint presentations** – by a spokesperson knowledgeable about the CSWP Plan who could relate potential impacts on source water and what practices could benefit efforts to protect water sources. Attached is a short PowerPoint template (Attachment B, pages H-13 through H-15) that can be customized for your sensitive source water protection area by including pertinent local source water names, maps or photos of the areas, etc.

**Newsletter inserts** – scheduled to be distributed as newsworthy information becomes available. Items to be included: updates on the CSWP Plan, testimonials collected, pertinent Nevada Division of Environmental Protection (NDEP) news, information on what other communities are doing to protect their water resources, and real time changes happening at businesses or source water sites. Photos and links to information make newsletter inserts more interesting.

**Fact sheet, brochures, handouts, flyers, etc.** – can be effective forms of communication. The key is to plan ahead as to how you want the audience to use them, how you will get them to the audience, and how you will evaluate their effectiveness. Libraries, community centers, builder associations, and economic development authorities can be useful locations. However, unless your audience knows the materials are available at these locations, the materials will not be successful.

**Inserts in water bills** – purveyors may want to insert information in water bills periodically to communicate a special event or speaker related to informational sessions on protecting our community's drinking water source.



Nevada (Attachment A, page H-10). Contact persons at these outlets can change quickly so it is important to confirm this information before moving forward.

**Website inserts and links** – the Nye County Water District website (address TBD) will serve as the repository for education materials. The site or page could be as simple as text that explains all the things happening related to the subject. Photos and links are very important on a website. Create a section on the website for businesses to learn how they can become source water protectors and share stories of how they are helping protect their community's source water. If resources allow, a more in-depth website or page can highlight source water and the protection projects related to that source with images. This will give users access to more detailed information. *All other tactics should include your website address*. Additionally, websites operated by public water systems can also be used to communicate details of the CSWP Plan by incorporating information on the site or by containing links to the Nye County Water District website.

**Partnership with local chamber of commerce** – could include the creation of a "Source Water Protector of the Year" award or recognition through a partnership with the local Chamber of Commerce. Encourage local businesses and members of the Chamber to make affordable and effective changes at their place of business that will help protect the community's source water. Celebrate and honor all participants and award and recognize one business for being a key protector of source water.

**Governing and Advisory Board, and local government leader's education and engagement** – educate board members and other local government leaders regarding the importance of source water protection in our community. Also, engage local government leaders in a friendly challenge to protect source water. Ask leaders to participate in site visits, offer testimonials, and change their habits at both their place of business and home to protect source water.

**Public meetings/conferences/community events** – identify where and when and plan ahead. Publicize the meeting or event and use other tactics to support the education at the meeting, conference, or event. Also, ask to be part of an agenda on existing community events. "Chuck the Duck", the mascot of the Nevada Rural Water Association can be a valuable contact for such public events. Organizations such as the Nevada Rural Water Association and Project WET may be able to assist in presentations and workshops for communities.

Other tactics identified as possible outreach means include:

- Talking points for presentations;
- Posters;
- Employee training materials;
- Inserts in employee paychecks;
- Social media;
- Site visits and education events at the wellhead;
- Direct mail;
- Testimonials;

- Site signage;
- Guest columns/editorials; and
- Case studies.

**Talking points for presentations** – are notes from the PowerPoint presentation and other subjects of interest.

**Posters** – purveyors may want to create appropriate signage as a reminder of best management practices related to protecting your community's drinking water source.

**Employee training on materials handling practices, emergency spill situations** – purveyors should have these items on hand and, if asked, they may consider including information on the importance of protecting your community's source water.

**Inserts in employee paychecks** – could be something similar to the inserts in water bills but with emphasis on the employee's responsibility to prevent contamination and encouragement for them to serve as a CSWP Plan ambassadors.

**Social media** (blogs, podcasts, Facebook, YouTube, Twitter, LinkedIn) – can be a crucial component to communications and is worth consideration. Through websites, blogs, YouTube, etc., audiences have an opportunity to get information anytime. It can also provide an interactive experience. Be aware this kind of media changes rapidly, however.

**Sensitive wellhead area site visits** – with a spokesperson who can explain how contamination can happen and how it affects the water supply in everyday terms. Organizers choose a date and can provide a shuttle or have attendees meet at the site. This also provides an opportunity for a question and answer session.

Direct mail – to water users promoting speakers or events that may be of interest to them.

**Testimonials** – water users who have changed their practices in an effort to lessen their impact on source water and how and what they did and the results. These could be used in many other forms: posters, electronic newsletters, at events and in presentations.

**Site signage** – at businesses that use best management practices to lessen their impact on source water indicating their dedication to their community's most important resource, drinking water. For example:

[INSERT BUSINESS NAME HERE] is dedicated to protection of Nye County (or community name: Amargosa Valley, Round Mountain, etc.) drinking water sources through the use and support of best management practices.

**Guest columns/editorials** – providing guest columns and editorial pieces to local newspapers enables the CSWP Team the opportunity to position the Team as source water protection experts. Guest columns from respected and well-known community members also offer a



medium to encourage, educate, and motivate readers to protect their source water. Use the attached Nevada media list (Attachment A, page H-10) to assist you in pitching a guest column or editorial.

**Case studies** – give audiences an understanding of the issue and how it is being approached in the community. The studies should be brief with general information as to who, what, where, when, and why and include photos where appropriate.

## Ways to measure

Effectiveness of primary audience outreach will be measured through Plan usage or consideration when community projects, events, or emergencies may impact water quality as well as the incorporation of the CSWP Plan into community planning documents and initiatives, either directly or by reference.

## Evaluation

Effective evaluation is key in determining how effective your messages and tactics are received. There are many options for evaluation using both quantitative and qualitative measurements. Based on the tactic you have chosen and what resources you have, at least one form of measurement will work for each tactic. Establish the best form of evaluation as soon as you have decided on which tactics to execute.

Evaluating effectiveness is the foundation for a successful education plan. Without proper evaluation and reporting, communities, local Team members, and NDEP will not have a clear understanding of the effectiveness, resources will be wasted, and most importantly, the significance of the public's role in source water protection may suffer. When conducting outreach one should be thinking about the difference being made and how best to measure the impact.

**Quantitative** – these measure the amount of information, not necessarily the quality of information.

- Quantity of presentations delivered and people in attendance;
- Quantity of distributed materials; and
- Quantity of inquiries (phone calls, e-mail, e-newsletter, website testimonials and visits).

**Qualitative** – these measure the quality of the information by giving an opportunity for feedback. In this way you can determine how the messages you are communicating are being received. This can be as simple as asking each and every person who has come into contact with your messages a few simple questions:

- Survey attendees of presentations;
- Email surveys to those who receive email communications; and/or
- Online survey of website visitors.



## **Attachment A**

## Nevada Media List

#### **NEWSPAPERS:**

- <u>Bonanza</u> (North Lake Tahoe)
- Clark County Legal News
- <u>Desert Valley Times Online</u> (Mesquite)
- <u>Elko Daily Free Press</u> (Elko)
- <u>Ely Times</u> (Ely)
- Lahontan Valley News (Fallon)
- <u>Las Vegas Business Press</u> (Las Vegas)
- <u>Las Vegas City Life</u> (Las Vegas)
- <u>Las Vegas Review-Journal</u> (Las Vegas)
- <u>Las Vegas Sun</u> (Las Vegas)
- <u>Las Vegas Tribune</u> (Las Vegas)
- <u>Las Vegas Weekly</u> (Las Vegas)
- <u>Leader-Courier</u> (North and Central Lyon County)
- Lovelock Review Miner (Lovelock)
- <u>Mason Valley News</u> (Yerington)
- <u>Nevada Appeal</u> (Carson City)
- <u>Nevada Business Journal</u> (Las Vegas)
- Nevada Legal News
- Nevada Legal Press
- Northern Nevada Business Weekly
- <u>Pahrump Valley Times</u> (Pahrump)
- <u>Record-Courier</u> (Gardnerville)
- <u>Reno Gazette-Journal</u> (Reno)
- <u>Sparks Tribune</u> (Sparks)
- <u>Tahoe World</u> (Lake Tahoe)
- <u>The Nevada Rancher</u> (Lovelock)
- <u>The Pahrump Mirror</u> (Pahrump)
- The Tahoe Daily Tribune (Lake Tahoe)
- The Tonopah Times-Bonanza (Tonopah, Goldfield)
- <u>Nevada Press Association</u> [for other newspaper listings]
- <u>NewsVoyager</u> [for other newspaper listings in the U.S.]

#### TELEVISION

#### Elko:

• <u>KENV-TV, Ch. 10, NBC</u>

#### Las Vegas:

- <u>KLAS, Ch. 8, CBS</u>
- <u>KLVX, Ch. 10, PBS</u>
- KTNV, Ch. 13, ABC
- <u>KVBC, Ch. 3, NBC</u>
- <u>KVVU, Ch. 5, FOX</u>

#### Reno:

- KNPB, Ch. 5, PBS
- KOLO, Ch. 8, ABC
- <u>KRNV, Ch. 4, NBC</u>
- KTVN, Ch. 2, CBS

#### Pahrump:

- <u>KPVM, Ch. 41, local</u>
- <u>Ch. 30, local</u>

#### RADIO

#### Pahrump:

KNYE, 95.1 FM

#### **OTHER TYPES OF MEDIA**

 <u>Nevada Nonprofit News</u> [An innovative online magazine, or e-zine, that highlights the news events, and topics of interest to professionals, volunteers, and supporters of the nonprofit sector in Nevada]





## What is source water?

Source water includes bodies of water such as lakes, springs, streams, rivers and ground water/aquifers that become our water supply. Most of our water is groundwater.





# Why is it important to protect source water?

A-6

A-6

Protecting public drinking water supplies at the source *before* pollution enters our drinking water supply lessens associated health issues, the high costs of water treatment and source water development.

# What contaminates source water?

There are numerous pollutants that can contaminate source water.

Some contaminants are a result of improperly disposed of common household products like cleaning products, waste oil, pet waste, fertilizers and pesticides. Private septic systems also need to be pumped periodically.

Others may be used or generated by businesses such as dry cleaners, film processing centers, salons, cemeteries, petroleum storage and handling, etc.

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INSERT LOGOS HERE

## Press Release Template

INSERT LOGO HERE

Attachment C

Date: Contact email@email.com

FOR IMMEDIATE RELEASE

## Volunteer Team of Residents and Businesses Working Together to Help Protect Drinking Water in Nye County

(*Nye County*, Nev.) – With an annual rain fall of less than ten inches, few natural resources are as precious as water to residents of Nevada. Protecting our source water from possible contamination and pollution helps protect our drinking water. In *Nye County*, a Community Source Water Protection (CSWP) Team made up of local residents and business owners has been formed with the goal of helping inform and educate residents of *Nye County* about the importance of protecting our community's drinking water sources.

The Team is made up of both business owners and residents who live and work in *Nye County*. They represent a cross section of organizations including Nye County staff, utility company representatives, first responders, community leaders, and many others.

The Team of volunteers is collaborating with *Nevada Division of Environmental Protection's Integrated Source Water Protection Program (ISWPP)*.

ISWPP is a comprehensive, voluntary approach designed to help communities develop and implement a plan that protects their drinking water supply.

For more information on Nye County's CSWP Plan, please visit <u>www.nyecounty.net</u> or (address for the Nye County Water District, TBD).

### INSERT LOGO HERE



**Attachment D** 

## **Terms Defined**

Aquifer: a naturally-occurring, underground "pocket" of water-soaked sand or gravel.

**Best Management Practices**: are barriers, methods, measures or practices designed to prevent or reduce water pollution.

**Contamination**: introduction of an undesirable chemical or biological substance not normally present in source water.

Ground water: water found beneath the earth's surface.

**Source water**: consists of bodies of water such as lakes, springs, streams, rivers and ground water/aquifers that become our water supply.

**Nevada Division of Environmental Protection (NDEP)**: NDEP will protect the State's natural resources through an effective, efficient program of permitting, enforcement of regulations, monitoring the environment, pollution prevention and remediation based on state and federal laws.

NDEP encourages, motivates and supports communities' local source water protection activities; manages, shares and integrates source water protection information; develops federal, state and local source water protection partnerships; and integrates and implements source water protection at the state level.

**Bureau of Water Pollution Control (BWPC)**: the mission of BWPC is to protect the waters of the State from the discharge of pollutants. This is accomplished by issuing discharge permits, which define the quality of the discharge necessary to protect the quality of the waters of the State, enforcing the state's water pollution control laws and regulations, and by providing technical and financial assistance to dischargers. Through the NDEP, BWPC helps communities protect their drinking water.

**Integrated Source Water Protection Program (ISWPP)**: ISWPP is a comprehensive, voluntary approach designed to help communities develop and implement a plan that protects their drinking water supplies. ISWPP is a program created and monitored through BWPC.



## Attachment E

## **Online Resources**

For more information on your drinking water and source water protection go to:

Nevada Source Water Protections – General Information http://ndep.nv.gov/bwpc/sourcewater.htm

Nevada Integrated Source Water Protection Program <a href="http://ndep.nv.gov/bwpc/wellhead.htm">http://ndep.nv.gov/bwpc/wellhead.htm</a>

Nevada Drinking Water http://water.epa.gov/drink/local/nv.cfm

After the Storm: A Citizen's Guide to Understanding Stormwater http://www.epa.gov/npdes/pubs/after\_the\_storm.pdf Appendix I Updates and Additions to the Community Source Water Protection Plan