GW – 033

2013 DISCHARGE PERMIT RENEWAL APPLICATION

Anadarko
Petroleum Corporation

DISCHARGE PLAN RENEWAL APPLICATION

WESTERN GAS RESOURCES, INC.

SAN JUAN RIVER GAS PLANT

SAN JUAN COUNTY, NEW MEXICO

Submitted for:

Western Gas Resources, Inc.
1201 Lake Robbins Drive
The Woodlands, Texas 77380

June 2013

Anadarko
Petroleum Corporation

June 19, 2013

Mr. Glenn von Gonten
Senior Hydrologist
State of New Mexico
Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Sante Fe, NM 87505

RE: WQCC GW-033
Discharge Permit Renewal
Western Gas San Juan River Gas Plant

Dear Mr. von Goten:

Please find enclosed two copies for the GW-033 WQCC Discharge Permit Renewal Application. A check for $100.00 for the filing fee is included.

If you require additional information, please don't hesitate to contact me at (620) 544-677 or email Cheryl.bommarito@andarko.com.

Sincerely,

Cheryl Bommarito
Environmental Representative II
1400 Cemetery Road
Hugoton, KS 67951

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

John Bemis
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey
Division Director
Oil Conservation Division

MAY 14, 2013

CERTIFIED MAIL
RETURN RECEIPT NO: 3341 0383

Mr. Eric Weaver
Western Gas Resources, Inc.
1201 Lake Robbins Drive
The Woodlands, TX 77380

Dear Mr. Weaver:

Based on your response given in the "Oil & Gas Facilities Questionnaire for Determination of a WQCC Discharge Permit" and a file review, the Oil Conservation Division (OCD) has determined that Western Gas Resources must renew its WQCC Discharge Permit for the San Juan River Gas Plant (GW-033) because of the discharge of reverse osmosis reject water directly to the ground. Please submit a complete permit renewal application pursuant to 20.6.2.3106 NMAC within 120 days of your receipt of this letter. Please include the $100.00 filing fee specified in 20.6.2.3114 NMAC. Please note the renewal application informational requirements specified in 20.6.2.3106 - .3108 NMAC.

If you have any questions regarding this matter, please contact Glenn von Gonten at 505-476-3488.

Thank you for your cooperation.

Glenn von Gonten
Senior Hydrologist

GvG/gvg

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Revised August 1, 2011

Submit Original
Plus 1 Copy
to Santa Fe
1 Copy to Appropriate
District Office

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES,GAS PLANTS, REFINERIES, COMPRESSOR, GEOTHERMAL FACILITES AND CRUDE OIL PUMP STATIONS

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☒ Renewal ☐ Modification

1. Type: Natural Gas Processing Plant

2. Operator: Western Gas Resources, Inc.

   Address: 1201 Lake Robbins Drive, The Woodlands, Texas 77380

   Contact Person: Cheryl Bommarito Phone: (620) 544-6236

3. Location: ____/4 NW /4 Section 1 Township 29N Range 15W
   Submit large scale topographic map showing exact location.

4. Attach the name, telephone number and address of the landowner of the facility site.

5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.

6. Attach a description of all materials stored or used at the facility.

7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.

8. Attach a description of current liquid and solid waste collection/treatment/disposal procedures.

9. Attach a description of proposed modifications to existing collection/treatment/disposal systems.

10. Attach a routine inspection and maintenance plan to ensure permit compliance.

11. Attach a contingency plan for reporting and clean-up of spills or releases.

12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.

13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.

14. CERTIFICATIONI hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Cheryl Bommarito Title: ~~Environmental REpresentative II~~

Signature: Date: 6-19-13

E-mail Address: cheryl.bommarito@anadarko.com

Anadarko Petroleum Corporation

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WESTERN GAS RESOURCES, INC.
SAN JUAN RIVER GAS PLANT
SAN JUAN COUNTY, NEW MEXICO

Date Prepared:
June 19, 2013

Prepared For:
State of New Mexico
Oil Conservation Division

Prepared on Behalf of:
Western Gas Resources, Inc.

Cheryl Bommarito
Environmental Representative II

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Western Gas Resources Inc. (WGR), 1201 Lake Robbins Drive, The Woodlands, TX 77380, submits this Discharge Plan renewal application, dated June 2013, for the San Juan River Gas Plant located in Kirtland, San Juan County, New Mexico. The current discharge plan, GW-033, expires on December 29, 2011. WGR has submitted two Discharge Plan Renewal Applications to the New Mexico Oil Conservation Division (NMOCD) in 2010 and 2011. The only significant changes to the plant since the permit renewal in 2006 is the addition of the Acid Gas Injection (AGI) well and supporting equipment, the reverse osmosis unit, and the closure of the evaporation pond.

As part of the new AGI system the acid gas from the amine treater has been routed to compression for down-hole injection and sequestration rather than going to the sulfur recovery unit. An approved C-108 allows acid gas injection into the Entrada formation.

Total production of wastewater, both contact and non-contact, is expected to be approximately 1,200,600 gallons per year. The non-contact wastewater consists of hydrostatic test water, cooling tower blow-down, and boiler blow-down. The condensed steam from the hydrostatic test water is exempt from RCRA Subtitle C regulations. The boiler blow-down is considered non-hazardous due to the non-hazardous nature of the process that produces the wastewater. With the startup of the AGI system the condensed steam from the sulfur recovery unit is no longer a factor in daily non-contact water blow-down as the plant has been purged and retired in place.

Except for a low volume of laboratory wastewater, the contact wastewater stream is exempt from RCRA Subtitle C regulations. The laboratory wastewater is not a hazardous waste, based on its characteristics and laboratory analytical data.

The reverse osmosis unit (RO Unit) was installed in 2011 to treat the Lower Valley Water (LVW) entering the plant to reduce chlorine levels. The LWV runs through the RO Unit and a series of sediment filters and then through a carbon filtration. The RO effluent discharges direct to the irrigation sprinkler system at the east end of plant, onto the grass area (Site Plan). All contact and non-contact with the exception of RO effluent is being hauled off-site for disposal to a deep well injection facility.

1.0 GENERAL INFORMATION

1.1 Western Gas Resources Representatives

Local Representative:

Arlyn Thorson
Operations Superintendent
P.O. Box 70
Kirtland, New Mexico 87417
(505) 598-5601

Technical Representative:

Cheryl Bommarito
Environmental Representative II
Anadarko Petroleum Corporation
1400 Cemetery Road
P.O. Box 40
Hugoton, KS 67951
(620) 544-6236

1.2 Location of Discharges

The San Juan River Plant is located in Section 1, Township 29 North, Range 15 West, San Juan County, New Mexico, approximately eight miles west of Farmington and 1.7 miles north of Kirtland, New Mexico. Highway 64 and County Road 6500 provide access to the plant.

The land to the north and west of the plant site is publicly owned. Approximately thirty private parties own tracts located south and east of the plant. The Reverse Osmosis (RO) Unit discharges to the irrigation sprinkler system and waters the landscape area of grass and tree's on the east side of plant (see Figure 1).

1.3 San Juan River Plant Operations

Current activities at the San Juan River Plant include natural gas sweetening, gas compression, gas dehydration, liquid storage, and operation of plant utilities. These utilities include steam producing boilers and a cooling water system.

1.4 Changes to system with the introduction of Acid Gas Injection (AGI)

The acid gas from the amine treater has been routed to compression for down-hole injection and sequestration rather than going to the sulfur recovery unit. An approved C-108 allows acid gas injection

into the Entrada formation. The details of this program are available online on the OCD website included with the issued C-108. (See attached diagrams for facility layout)

1.4.1 Modification Benefits to the discharge plan by implementing AGI

- Shutting down and retiring of the sulfur recovery unit has eliminated the potential discharge of sulfur and sulfur byproducts.
- There will be no more steam, steam condensers and blow-down from the many heat exchangers that are associated with an SRU.
- There will be no SO_2 emissions from the incinerator unless the plant is in a scheduled, routine or emergency maintenance of the acid gas injection equipment.
- Transportation of molten sulfur to the rail-site in Gallup New Mexico over some of the busiest roads in the state has ceased.
- The rail-site and car/sulfur storage has been stopped along one of the busiest railroads in the country. This has allowed WGR to stop rail car loading and moving onto the main rail system.
- This project has reduced air quality emissions of CO_2 and SO_2 by sequestering the CO_2 and H_2S into a trapped zone (see C-108 application).

1.4.2 Project Impacts

- A new cooling tower with a 960 gallon water capacity has been installed to control the inlet and inter-stage temperatures of the AGI compression. This requires periodic blow-downs to the contact water sump. Estimated volumes are 10 bbls per event.
- Three (3) 450 hp Caterpillar acid gas injection compressors have been installed. Skid drainage is to the OCD specifications.
- For scheduled maintenance and emergency events, acid gas has been routed to the flare or incinerator for destruction/combustion.
- The only new underground lines added are the injection and return line to the AGI well.

1.4.3 Added Equipment

- Cooling tower skid with associated pumps.
- Three (3) 450 hp compressor units with 30 gallon slop oil blow pots.
- One (1) 500 gallon antifreeze tank.
- One (1) 500 gallon motor oil tank.
- One (1) 1,000 gallon lube oil tank.
- One (1) 500 gallon nitrogen / compressor air tank.
- Reverse Osmosis System for groundwater discharge

2.0 PLANT PROCESSES

2.1 Sources and Quantities of Effluent and Process Fluids

The source of the San Juan River Plant's water is the Lower Valley Water Users Association. Approximately 15,000 gallons of high-quality water are purchased daily from the association.

Contact water (process water that has contacted hydrocarbon streams) is generated at a rate of approximately 540 gallons per day by the following sources:

- Dehydration unit and triethylene glycol (TEG) regeneration – Regeneration of TEG by natural gas dehydration units creates a wastewater stream. This stream is considered to be an exempt waste in accordance with RCRA Subtitle C regulations listed in 40 CFR 261.4(b)(5). The various exempt waste streams are listed in the May 1995 EPA document number EPA530-K-95-V003.

- Amine reflux and gas inlet – Contact wastewater is produced at the amine reflux and gas inlet vessels. These streams are also considered to be exempt wastes in accordance with RCRA Subtitle C regulations listed in 40 CFR 261.4(b)(5). The various exempt waste streams are listed in the May 1995 EPA document number EPA530-K-95-V003.

Wastewater is produced by laboratory tests performed at the plant. The tests are performed to determine the content of H_2S extracted from the gas sample. The waste consists of small amounts of water, ¼% iodine, H2S extracted from the gas sample, sulfuric acid, and/or hydrochloric acid. No more than one quart per month of the iodine or acids each are used. The laboratory wastewater stream volume is low and the stream is considered to be a non-exempt waste in accordance with 40 CFR 261.4(b) (5).

In 1996, the typical laboratory wastewater stream was collected in a clean 5-gallon pail and a grab sample was retrieved for analyses of hazardous waste characteristics (ignitability, corrosivity, reactivity, and toxicity). The sample results indicated that this waste is not characteristically hazardous. A copy of the 1996 Laboratory analytical results is included in Appendix A. This waste is also not a listed hazardous waste in the RCRA regulations.

The laboratory wastewater stream is commingled with the contact wastewater streams. The commingled wastewater stream is considered to be an exempt waste according to RCRA Subtitle C, since the non-exempt waste does not indicate hazardous characteristics prior to commingling and since the contact wastewater streams are considered to be exempt. The mixture rule is also discussed in the EPA document number EPA530-K-95-V003. Disposal of this water is made directly to the wastewater tank battery, where it is hauled off to a licensed facility.

Non-contact wastewater is currently produced at an average rate of 4,383 gallons per day. The non-contact water streams consist of the following:

- Boiler blow-down – Two boilers produce steam for the amine unit and other process requirements. Periodic blow-down is required to reduce total dissolved solids (TDC). This

stream is routed through a sump and subsequently to the cooling tower. This stream is not a RCRA listed hazardous waste and is considered non-hazardous based on process knowledge. Periodic in-plant tests performed for pH and conductivity also demonstrate that this waste stream does not exhibit characteristics for corrosivity.

- Cooling tower blow-down – An evaporative cooling tower is used to cool water for gas plant processes. Much of the water is recycled, but some periodic blow-down is required to avoid exceeding operating limits for TDS, phosphates, and hardness. Variation in the blow-down rate will occur during the year due to the seasonal operation of the cooling tower system. Cooling tower blow-down in gas production is considered as an exempt waste in accordance with 40 CFR 261.4(b) (5) and is listed in the EPA document number EPA530-K-95-V003.

- Due to the addition of the AGI compressors an additional cooling tower has been added, increasing the amount of daily non-contact blow-down water. An evaporative cooling tower is used to cool water for acid gas leaving the compressor. Much of the water is recycled, but some periodic blow-down is required to avoid exceeding operating limits for TDS, phosphates, and hardness. Variation in the blow-down rate will occur during the year due to the seasonal operation of the cooling tower system. Cooling tower blow-down in gas production is considered as an exempt waste in accordance with 40 CFR 261.4(b) (5) and is listed in the EPA document number EPA530-K-95-V003.

- Sulfur recovery plant – This waste stream is no longer a factor in daily non-contact water blow-down as the plant has been purged and retired in place.

- Hydrostatic test wastewater is periodically generated during plant maintenance and construction operations. Hydrostatic test wastewater is considered to be exempt waste in accordance with 40 CFR 261.4(b) (5). Disposal of this water is made directly to the wastewater tank battery.

A summary of the expected annual wastewater discharge volumes is presented below:

Annual Wastewater Discharge Estimation	
Contact water to wastewater tank battery	200,000 gallons
Non-contact water to wastewater tank battery	1,000,600 gallons
Total expected wastewater discharge to tank battery for disposal	1,200,600 gallons

A site plan and a process flow sheet are included in Figure 1 and 3.

2.2 Wastewater Characteristics

The non-contact wastewater stream is commingled with the contact wastewater stream in a large sump and then properly disposed by a licensed hauler to be properly disposed at a licensed facility. Wastewater characteristics will vary depending upon the ratio of contact to non-contact water being discharged to the sump at any given time. More non-contact wastewater is produced during the warm weather months than during cooler months, due to the operation of the cooling tower system.

2.3 Wastewater Management

All wastewater streams are collected in the contact wastewater sump located on the north side of the gas plant. The sump is constructed of steel and is approximately 10 feet deep. The sump is equipped with a plastic liner to prevent corrosion. Waste water is properly disposed hauled and disposed of at a licensed facility.

The boiler blow-down stream is collected in a concrete sump that is located in the boiler house. From there, it is transferred to the contact water sump. The commingled cooling tower blow-down and boiler blow-down streams are transferred to the contact wastewater sump.

The storm drain sump is located east of the amine treating unit and west of the control room. In addition to collecting storm water runoff, the sump is used to drain process filters prior to disposal. The sump is constructed of concrete. Liquids collected in the sump are pumped to the contact wastewater sump and properly disposed of by a licensed hauler.

Wastewater is transferred from the contact wastewater sump to the wastewater tank battery. There is no discharge of wastewater to ground, surface water, or to unlined impoundments. The wastewater in the tank battery inlet is properly disposed at a licensed facility.

Used compressor engine oil, antifreeze, produced water, and other fluid wastes associated with plant operations are not combined with the wastewater streams. These fluids are collected in drums or atmospheric storage tanks to prevent their migration into the environment.

2.4 Spill/Leak Prevention and Housekeeping Procedures

A copy of the Spill Prevention Control and Countermeasure Plan (SPCC) is included in Appendix B. The spill/leak prevention and housekeeping procedures are discussed in the following sections.

2.4.1 Monitoring of Wastewater Disposal Systems

In accordance with the current Discharge Plan approval, all sumps at the plant are inspected annually. Inspection reports are maintained at the plant office and are submitted to the Oil Conservation Division. The current Discharge Plan approval also requires that all below ground process and wastewater lines be tested to demonstrate mechanical integrity at least every five years. The below ground lines at plant were subjected to pressure tests during the period of August 22 to November 21, 2008. The below ground lines are scheduled for pressure testing from August to November 2013.

2.4.2 Protection from Spills and Leaks

WGR acts responsibly to avoid spills and leaks that might harm the environment. Plant personnel are aware of the imperative nature of spill prevention. Housekeeping measures require prompt identification of leaks, drips and spills.

The San Juan River Gas Plant property is enclosed by a fence to minimize trespassing. With the exception of limited Y-grade natural gas liquid storage east of the plant yard, there is no large scale processing or storage of hydrocarbons at the plant. Therefore, large spills of hydrocarbons are unlikely.

WGR utilizes two concrete storage basins (basin "A" and "B") for the storage of hazardous materials. The basins were previously used as containment for cooling towers that have been dismantled and removed.

The following substances are stored in basin "A" in quantities of 500 gallons or less: solvent, gasoline, and diesel fuel. Methanol is also stored in basin "A" at a quantity of 1000 gallons or less. The basin walls are high enough to adequately contain the contents of a ruptured tank.

WGR uses the concrete basin "B" beneath the tower as a drum storage area. Empty drums are also stored in this area. Drums are not likely to be disturbed since they are located away from normal work areas.

WGR stores cooling tower and boiler chemicals inside plant buildings on concrete floors. Accidental spills of these chemicals onto the building floors are promptly cleaned up.

In April, 1999 WGR implemented the use of four aboveground pressurized storage tanks. Three 40,000-gallon "bullet" type tanks are located east of the plant yard and are used for the storage of Y-grade natural gas liquids. Storage of the Y-grade NGL is intermittent, since the material is usually pumped directly to a liquids pipeline. Y-grade liquid product is considered to be a gas at ambient conditions. Therefore, the tanks are not equipped with secondary containment.

The fourth tank is a 17,000-gallon pressurized tank that is used to receive pipeline pigging liquids. The tank is equipped with a berm and a 30-mil liner for containment of spills.

Additional storage tanks at the facility include those used for the storage of produced water, amine, triethylene glycol, and used and new refined oils. As required by SPCC regulations, tanks are provided with secondary containment and are designed to prevent leaks and spills. Additional details are provided in the SPCC plan that is attached at Appendix B.

2.4.3 Spill Response Measures

WGR procedures require prompt attention to releases of hydrocarbons and hazardous materials. The following substances are present at the plant site and could potentially be released to the environment:

- Refined hydrocarbons such as engine oil, diesel fuel, and gasoline

- Chemicals such as sulfuric acid, boiler and cooling tower chemicals, amine, and triethylene glycol
- Plant products and by-products, including natural gas liquids, produced water, pigging sludge, sulfur, contact wastewater, and non-contact wastewater

WGR will respond to a spill in accordance with the facility SPCC plan, which is included as Appendix B. Generally, the following procedures will be followed:

1) Plant employees will implement appropriate response measures and will report the spill to the Operations Superintendent.
2) The Operations Superintendent will notify WGR Environment Engineering staff in Hugoton, Kansas. The Environmental Engineering staff will determine whether the spill is reportable to any regulatory agencies and, if so, submit the required reports.
3) Under the direction of the Operations Superintendent, plant personnel will implement appropriate cleanup measures. If requested, Environmental Engineering will provide guidance and oversight.

Absorbent pads and booms are available at the plant site, although the site location makes a discharge to surface water highly unlikely. In the event of a discharge to land, shovels and sand are available for cleanup. Contaminated materials will be handled according to applicable environmental regulations. See Section 3.3 for discussion of solid waste disposal.

3.0 WASTEWATER AND SOLD WASTE DISPOSAL

A reverse osmosis system (RO Unit) was installed at the San Juan Plant in 2011. The purpose of the RO unit is to treat the Lower Valley Water (LVW) brought into the plant and run it through a series of sediment filters and then a secondary treatment through carbon filtration to remove Chlorine. The RO unit treats the LVW and removes the Total Dissolved Solids (TDS) from the water supply by means of a membrane and then to clean the membrane, LVW is used to flush the system. For every gallon of LVW brought into the plant, approximately 35-40% is treated through the RO unit and discharged into the irrigation sprinkler system and the other 60-65% is used as contact and non-contact water for plant operations and is discharged into the tank battery and properly disposed. The 35-40% of flush water treated through the RO unit has no contact with plant operations and is immediately treated through the RO unit and then discharged into the irrigation sprinkler system on the east side of the plant for watering the grass and tree landscape. This discharged water is not treated in any way expect through the RO unit using sediment and carbon filtration systems. The levels of TDS are somewhat higher then the inlet water from Lower Valley Water. Since the discharge water is not used in plant operations, the discharge is not expected to threaten surface or groundwater quality. The schematic and RO Unit specifications are included in Appendix C.

A summary of the expected annual discharge of RO Unit volume to the landscape area east side of the plant is presented below:

Annual Wastewater Discharge Estimation	
RO Unit Gallons per Minute discharge	6 gallons
RO Unit gallons per day	8640 gallons
Total expected discharge annually	3,153,600 gallons

3.1 On-site Facilities

As discussed in Section 2.3, the commingled wastewater stream is routed through an oil/water separator. Oil recovery in small quantities is expected. Use of the separator enhances oil recovery.

3.2 Off-site Disposal - Wastewater

Wastewater produced at the San Juan Plant is routinely disposed of off-site. The wastewater is transported to a permitted Class II disposal well, since the wastewaters have been deemed exempt from RCRA Subtitle C. Approval of the well operator and the NMOCD would be obtained prior to disposal of wastewater at an off-site disposal well. This disposal amounts are approximately 600 barrels per week or 25,200 gallons a week.

On occasion, disposal of pipeline hydrostatic test water is necessary. Disposal of hydrostatic test water is expected to occur no more than twice annually. The water will be transported for off-site disposal.

3.3 Solid Wastes

Solid wastes generated at the San Juan River Gas Plant are generally exempt from RCRA hazardous waste regulations. They are managed in accordance with 19.15.9.712 NMAC. WGR uses Waste Management's landfill facility located in Cortez, Colorado for disposal of most gas plant waste materials. Pipeline pigging sludge is shipped to Envirotech Inc. facilities for landfarming. Other plant wastes such as office trash are shipped to the San Juan County Regional Landfill. Listed below are NMOCD Rule 712 wastes that are shipped off-site disposal:

712 D. (1) Wastes:
Empty and RCRA-clean barrels, 5-gallon buckets, and 1-gallon containers
Uncontaminated construction debris
Uncontaminated concrete
Non-friable asbestos and asbestos-containing materials
Office trash
Paper and empty paper bags
Soiled rags or gloves that pass Paint Filter Test
Uncontaminated wood pallets

712 D. (2) Wastes:
Activated alumina
Activated carbon
Amine filters
Gas condensate filters
Glycol filters
Junked pipes, valves, and metal pipe
Molecular sieve
Pipe scale and other deposits removed from pipeline and equipment
Oil filters

712 D. (3) Wastes:
Contaminated soil other than petroleum contaminated soil
Petroleum contaminated soil
Demolition debris not otherwise specified
Other wastes as applicable, including mole sieve dust filters and cryogenic skid inlet gas filters

3.4 Recycled Materials

Approximately 10,500 gallons of used lubricating oil are produced at the plant per year. The used oil is stored in Tank TK-8901, which is located east of the Compressor Building. The used oil is transported to an off-site recycling facility.

4.0 SITE

The physical characteristics of the plant site have been studied in detail as part of a previously completed land application feasibility study completed in 1986 and 1987. Detailed information concerning site soil and ground water characteristics are presented in the Phase I and II feasibility study reports, and should be consulted if more specific information is required than provided in the following summary.

4.1 Hydrologic Features

Surface water run-off from the plant site is expected to follow the local topographic contours. The topography slopes to the northwest across the majority of the site, although a south-southeasterly slope is apparent in the southeastern portion of the site. The topographic gradient across most the site is relatively flat (on the order of 0.0 1 feet/foot), with the exception of moderate to steep topographic gradients encountered on the flanks of Flare Hill. The infiltration rate of the majority of the surficial deposits is high (Sheppard soil = 8.9 in/hr). Therefore, large-scale overland flow of surface runoff is not anticipated to occur under all but the most extreme storm or flood events.

Surface water bodies within a one-mile radius of the site include 1) the Stevens Arroyo (0.2 miles west), 2) the Farmers Mutual Ditch (0.5 miles south), and 3) small fresh water ponds located on the golf course south of the site. The Stevens Arroyo is an intermittent watercourse. The San Juan River is located greater than one mile south of the plant site.

Based on New Mexico State Engineer well records, ground water wells in the areas are generally completed within the shallow alluvial aquifer at approximately 75 feet below ground surface and are permitted for "domestic" water usage. Ground water is anticipated to discharge as a seep approximately 0.75 miles south of the site where the base of the alluvial aquifer is exposed.

Shallow ground water is contained within alluvial terrace gravel deposits beneath the site. The alluvial sediments are underlain by greenish grey sediments of the Lower Shale Member of the Kirtland Shale. The Kirtland Shale is exposed in the extreme northern and western portions of the site, and approximately 0.5 miles south of the site. The thickness of the alluvial sediments varies from zero feet in the extreme northern and western portions of the site, to greater than 70 feet in the southern and eastern portions of the site. Depth to ground water varies across the site. It is estimated to be less than 10 feet below the surface in the extreme northern and western portions of the site where the alluvial sediments are thin to nonexistent and greater than 50 feet in the extreme southern and eastern portions of the site. Regional ground water flow is to the southwest beneath the majority of the site, with local south to southeasterly flow in the southeast portion of the site.

4.2 Surface and Groundwater Quality

Groundwater samples have been collected monthly from the RO unit discharge since 2011. Groundwater samples were collected from the sprinkler heads and analyzed for TDS, PH, and chloride contents. The average TDS is 800 mg/L and Chloride is 50 mg/L. A complete analysis for the RO Discharge was collected in May 2013 for parameters listed in the NMOCD guidelines (Appendix D) and

analytical results are included in Appendix A. All groundwater sampling events can be found in Appendix A. Groundwater samples will be collected monthly from the sprinklers (discharge) and sampled for TDS, Chlorides, and PH concentrations.

Groundwater samples from on-site monitoring wells and off-site local wells were analyzed for various water quality parameters as part of the Phase I and II feasibility study in 1987. Results of these analyses indicate that WQCC standards for TDS, sulfate, and manganese are exceeded in on-site wells. TDS, sulfate, and chloride content exceed WQCC standards in all off-site wells. The average TDS for on-site wells is 4,500 mg/L and is 2,775 mg/L for local wells.

Background ground water quality can be assessed from water quality data obtained from the Daley well (the only local well not located down gradient from the plant site). It is interesting to note that the TDS concentration in the Daley well (4,300 mg/L) is higher than that of the local wells located down gradient of the plant site and is near the average TDS concentration for on-site wells (4,500 mg/L). This fact, in conjunction with the high chloride concentrations in the Daley well, suggests that background water quality is comparable to that beneath the plant site.

Surface water quality samples have been obtained from the Stevens Arroyo located west of the plant site. Background water quality from Stevens Arroyo reportedly exceeds 10,000 mg/L for TDS and, therefore, exceeds the WQCC limit for surface water.

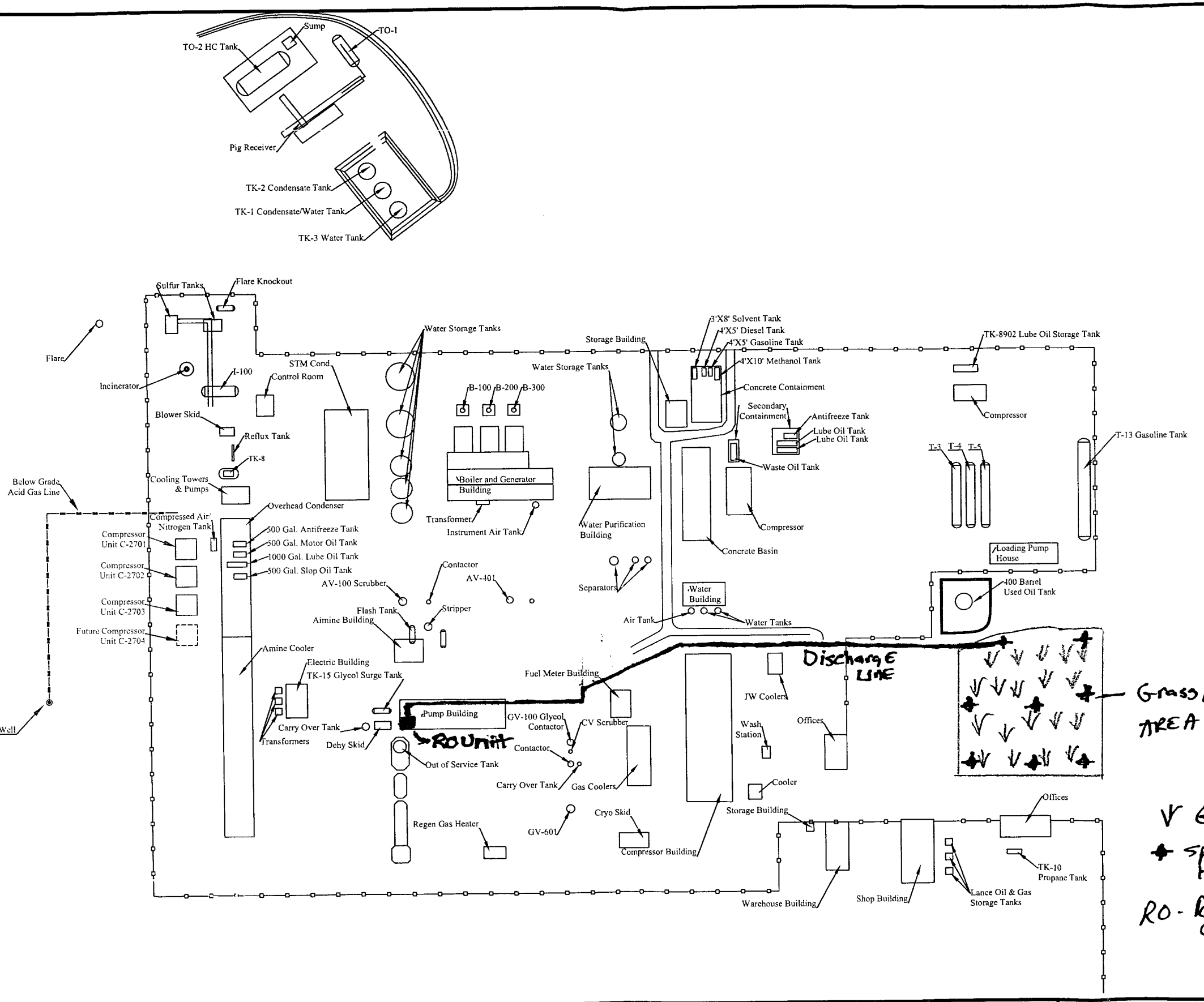
5.0 POND CLOSURE PLAN

As outlined in the pond closure scope of work dated June 14, 2011, the closure of the permitted evaporation pond located at the San Juan River Gas Plant in Kirkland, New Mexico was completed by Etech in July 2011. The closure plan was in accordance with the New Mexico Water Quality Control Commission regulation number 3107A.11. A copy of the Closure Report prepared by Etech is included in Appendix E.

6.0 PUBLIC NOTICE

Public notice will be posted in the Farmington Daily Times and the Four Corners News. Please see Appendix F for the draft Public Notice in both English and Spanish.

FIGURE 1 – SITE PLAN



Site Map - San Juan River Gas Plant

Western Gas Resources, Inc.
San Juan County, New Mexico

September 2010

N

Legend

Fenceline

Red highlighted items indicate new acid gas injection
Blue highlighted items indicate old sulphur plant

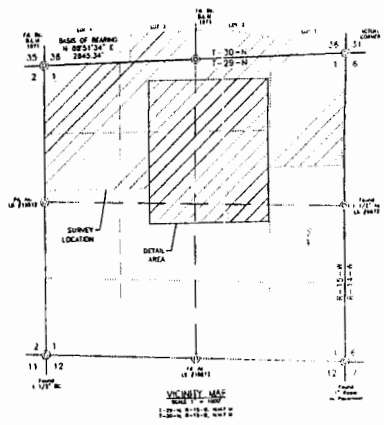
Not to Scale

eTECH
Environmental & Safety Solutions, Inc.

ANADARKO PETROLEUM CORPORATION

SAN JUAN RIVER PLANT DETAIL

LOCATED IN THE NWNE 1/4 & THE SWNE 1/4, & THE NENW 1/4, & THE SENW 1/4,
& THE NWSE 1/4 & THE NESW 1/4 OF SEC. 36, T-30-N, R-15-W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO



VICINITY MAP

TRACT 1
262.152 ACRES

(R-1)
WESTERN GAS RESOURCES, INC.
BOOK 1150, PAGE 160

(R-3)
WESTERN GAS RESOURCES, INC.
BOOK 1454
PAGE 542

SAN JUAN RIVER PLANT

MID-AMERICA

EL PASO NATURAL GAS
1.864 ACRES

(R-6)
EL PASO NATURAL GAS COMPANY
BOOK 147
PAGE 18

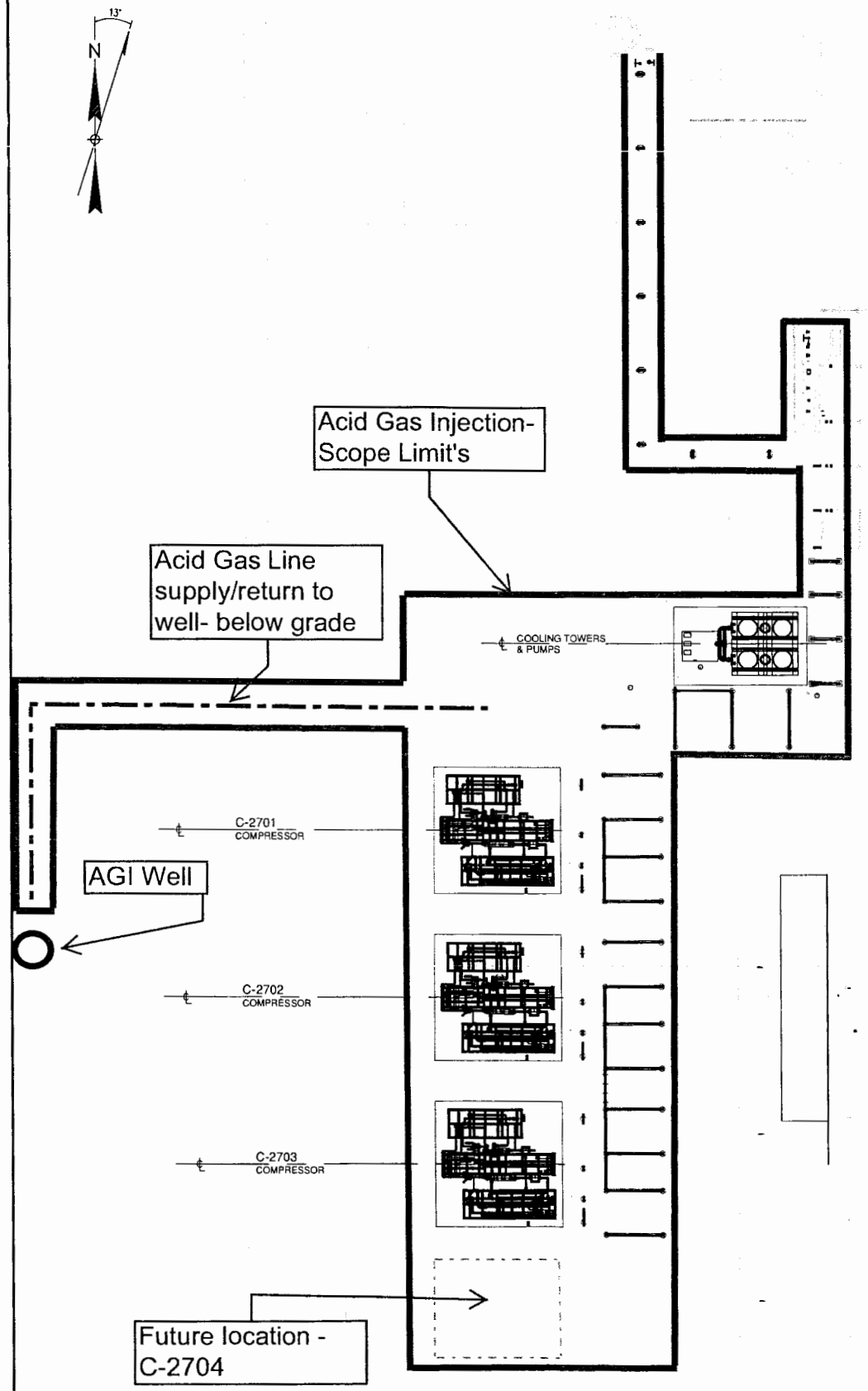
LEGEND

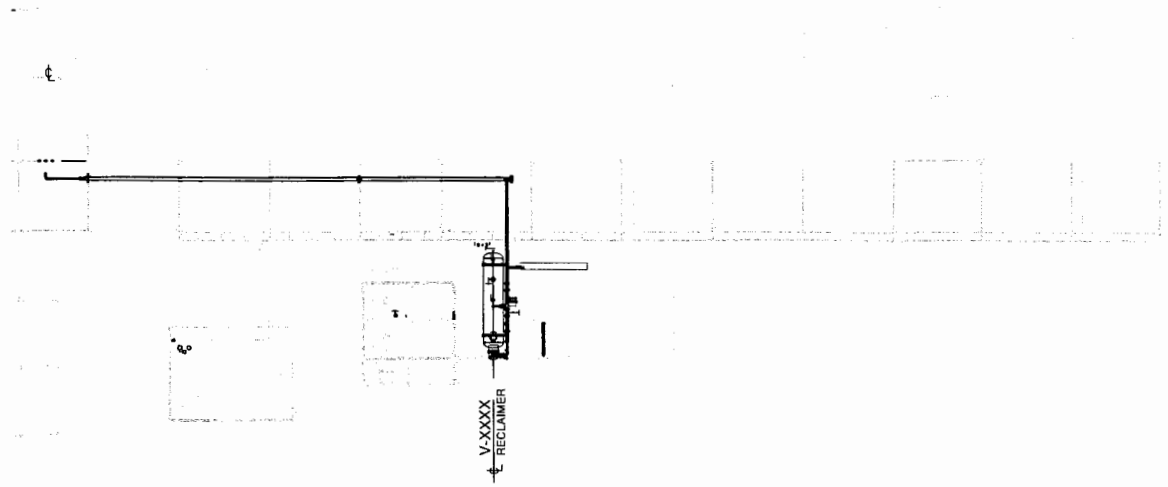
- (1) = FOUND SECTION CORNERS
- ⊕ = FOUND MONUMENT AS NOTED
- ⊕ = BENCH MARK 1968 USRP
- ● = SET MAG
- ● = VESSEL
- = TANK
- = LIGHT POLE
- = POWER POLE
- = FIRE HYDRANT
- = ANCHOR
- (R-) = REFERENCED RECORD DATA
- = GATE
- = CABLE
- = WATER LINE
- = BARBED WIRE FENCE
- = CHAIN-LINK FENCE
- = GRAVEL ROAD (UNLESS NOTED)
- = TELEPHONE LINE
- = POWER LINE
- = PIPE RACK
- = CONCRETE
- = BUILDING

NOTE:
1) BASIS OF BEARING: AS MEASURED BETWEEN NW CORNER & THE NORTH 1/4 CORNER OF SECTION 1, T-29-N, R-15-W, N.M.P.M., SAN JUAN COUNTY, NEW MEXICO
BEARS: N 88°51'34" E, 2645.34'
2) ALL BEARING & DISTANCE SHOWN ARE BASED UPON THE NEW MEXICO COORDINATE SYSTEM, WEST ZONE, NAD 83, IN U.S. SURVEY FEET
(COMBINED SCALE FACTOR 0.99999538)

ANADARKO PETROLEUM CORPORATION
DENVER, COLORADO

UNITED FIELD SERVICES INC





KAHUNA VENTURES LLC
WESTMINSTER, CO 80021
303-451-7374

GWD DESIGN INC.
621 17th St., Suite 2020, Denver, CO 303-951-9300

NOTES:

REFERENCE DRAWINGS	No	REVISIONS	BY	CHKD	PM	DATE
	B	ISSUED FOR BID	MT			6/18/10
	A	ISSUED FOR REVIEW	MT			5/28/10

Anadarko Petroleum Corporation
SAN JUAN RIVER PLANT
ACID GAS INJECTION PROJECT
PLOT PLAN
PLOT PLAN

FILE NUMBER	DRAWING NUMBER	SCALE	REVISION
SJ-PP-3000	SJ-PI-3000	1"=20'-0"	B

LEGEND:

- EMERGENCY SHUTDOWN
- H2S TRANSMITTER
- HYDROCARBON TRANSMITTER
- HYDROCARBON TRANSMITTER IN SUMP
- FIRE EXTINGUISHER
- WIND SOCK
- MONITOR INDICATOR
- BEACON
- HORN
- EMERGENCY EVACUATION ROUTE
- SCBA (30 MINUTE)
- SCBA (5 MINUTE)
- BRIEFING AREA

FLARE STACK
2 @ THIS LOCATION
REACTOR
CONTROL ROOM
A4
A3
A1
A2
2 @ THIS LOCATION
LOAD OUT CHOCK
SULFER PLANT
BLOWER SKID
ANGER H2S ALARM
FIN FANS
BOILER HOUSE
LAB
ANSETH SCRUBBER
BARKER SCRUBBER
CONTACTOR SCRUBBER
RED H2S ALARM
A PUMP HOUSE
LOADING PUMP BLDG.
C1
C3
C2
C4
B1
B3
B4
E1
STILL
FLASH TANK
REBOILER
AMINE BLDG.
H1
H&E
CONTROL ROOM
ANGER H2S ALARM
RED H2S ALARM
FAN
FANS
LOADING DOCKS
D&J
D1
D2
D3
D4
J6
J5
J7
J4
J8
FUEL BLDG.
SURGE TANK
B2
H2
H3
WEST MCC
TREATER BLDG.
PORTA TEST BLDG.
COMPRESSOR BLDG.
MAINTENANCE/SAFETY OFFICE BLDG.
BRIEFING AREA #2 @ HIGHWAY
GLYCOL CONTACTOR
MARLEY
DEHY BLDG.
CRYO SKID
SHOP
OFFICE BLDG.
BRIEFING AREA #1
WAREHOUSE
N41+00
N40+00
N39+00
N38+00
N37+00
N36+00
N35+00
N34+00

NOTES:

07/29/00 FOUNDATION LOCATION PLAT

DWG. NO.	TITLE	NO.	DESCRIPTION
		0	ISSUED FOR INFORMATION

REFERENCE DRAWINGS

REVISIONS

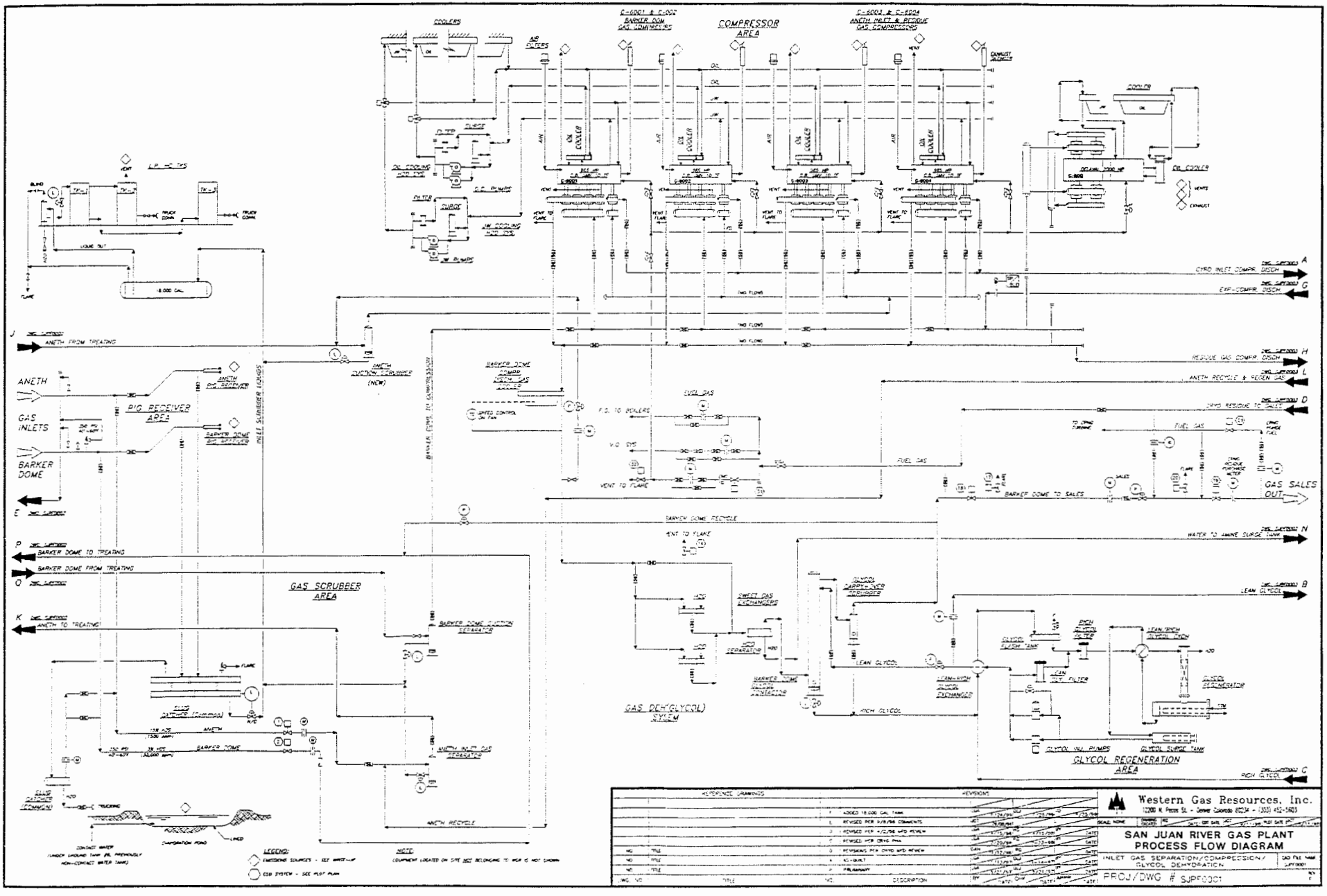
Western Gas Resources, Inc.

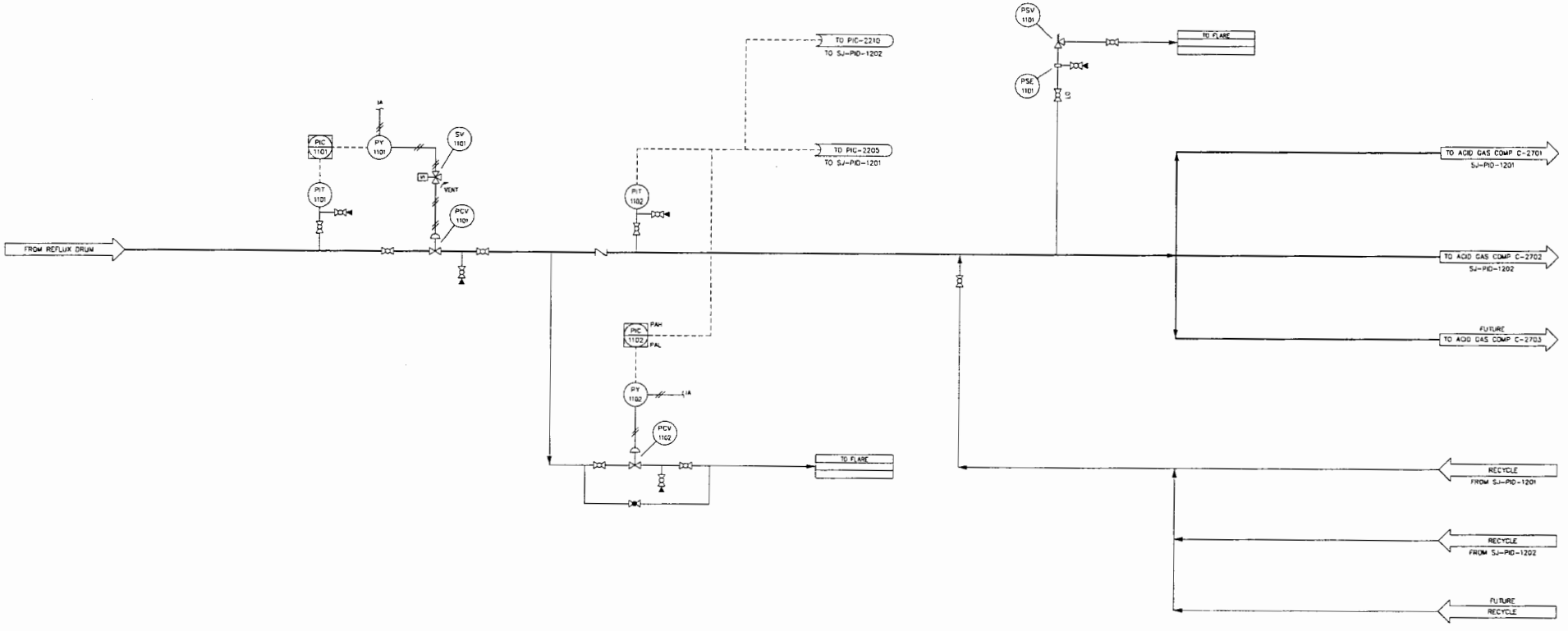
SAN JUAN RIVER PLANT
EMERGENCY ITEMS AND PLACEMENT

DRAWING NUMBER: SJRP-H2S0200

FIGURE 2 – AERIAL BOUNDARY MAP

— — — — = SAN JUAN GAS PLANT PROPERTY BOUNDARY


COMPRESSOR AREA
C-6001 & C-6002 BARKER DOM GAS COMPRESSORS
C-6003 & C-6004 ANETH INLET & RESIDUE GAS COMPRESSORS
COOLERS
AIR FILTERS
OIL COOLER
SURGE
FILTER
OIL COOLING FAN
OIL PUMP
AIR COOLING FAN
AIR COOLER
VENT TO FLARE
EXHAUST
PIG RECEIVER AREA
ANETH
GAS INLETS
BARKER DOME
INLET SCRUBBER (TYP)
ANETH INLET GAS SEPARATOR
ANETH SCRUBBER
BARKER DOME SUCTION SEPARATOR
GAS SCRUBBER AREA
ANETH TO TREATING
BARKER DOME TO TREATING
BARKER DOME FROM TREATING
ANETH FROM TREATING
ANETH SUCTION SCRUBBER (NEW)
BARKER DOME SUCTION SCRUBBER
BARKER DOME TO SALES
GAS SALES OUT
FUEL GAS
F.G. TO BOILERS
V.G. TO
BARKER DOME RECYCLE
ANETH RECYCLE
WATER TO AMINE SURGE TANK
LEAN GLYCOL
RICH GLYCOL
INLET GAS EXCHANGERS
GLYCOL FLASH TANK
GLYCOL CHARCOAL FILTER
LEAN/RICH GLYCOL EXCHANGER
GLYCOL REGENERATOR
GLYCOL SURGE TANK
GLYCOL INJ. PUMPS
GAS DEH'(GLYCOL) SYSTEM
GLYCOL REGENERATION AREA
CRYO INLET COMPR. DISCH.
EFF-COMPR. DISCH.
RESIDUE GAS COMPR. DISCH.
ANETH RECYCLE & REGEN GAS
CRYO RESIDUE TO SALES
TO CRYO TURBINE
CRYO RESIDUE HEATER
LP HC TKS
TRUCK LOAD
TRUCK UNLOAD
LIQUID OUT
18,000 GAL
FLARE
EVAPORATION POND
LINED
CONTACT WATER (UNDER GROUND TANK (FIL PREVIOUSLY NON-CONTACT WATER TANK))
LEGEND:
EMISSIONS SOURCES - SEE SHEET 1 OF
ESD SYSTEM - SEE PLOT PLAN
NOTE:
EQUIPMENT LOCATED ON SITE BUT RECENTLY TO WGR IS NOT SHOWN
NO FLOW
VENT TO FLARE
REFERENCE DRAWINGS
NO. TITLE
NO. TITLE
NO. TITLE
DWG. NO. TITLE
NO. DESCRIPTION
REVISIONS
1 ADDED 18,000 GAL TANK
K REVISED PER 9/8/98 COMMENTS
J REVISED PER 4/2/98 MTG REVIEW
H REVISED PER ORIG. PLAN
G REVISIONS PER CHVO MTG REVIEW
A AS-BUILT
- PRELIMINARY
Western Gas Resources, Inc.
12200 N. Pecos St. - Denver, Colorado 80234 - (303) 452-5603
SCALE: NONE
SAN JUAN RIVER GAS PLANT
PROCESS FLOW DIAGRAM
INLET GAS SEPARATION/COMPRESSION/ GLYCOL DEHYDRATION
CAD FILE NAME: SJPF0001
PROJ/DWG # SJPF0001



KAHUNA VENTURES LLC
WESTMINSTER, CO 80021
303-451-7374

GWD DESIGN INC.
621 17th St., Suite 2020, Denver, CO 303-951-9300

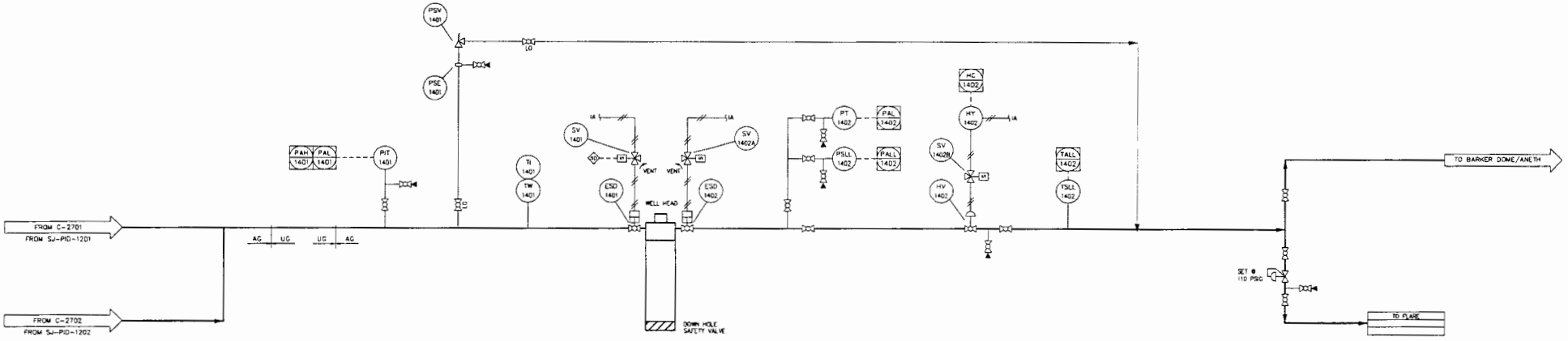
REFERENCE DRAWINGS	No	REVISIONS	BY	CHKD	PM	DATE
	C	REVISED	TJZ			7/16/09
	B	REVISED	TJZ			7/13/09
	A	PRELIMINARY	TJZ			7/8/09

Anadarko Petroleum Corporation

SAN JUAN RIVER PLANT
PIPING AND INSTRUMENTATION DRAWING
INLET

FILE NUMBER	DRAWING NUMBER	SCALE	REVISION
	SJ-PID-1101	NONE	C

7/16/2009 3:51:01 PM, tjanssen



KAHUNA VENTURES LLC
WESTMINSTER, CO 80021
303-451-7374

GWD DESIGN INC.
621 17th St., Suite 2070, Denver, CO 303-861-8300

REFERENCE DRAWINGS

No	REVISIONS	BY	CHKD	PM	DATE
C	REVISED	TJZ			7/16/09
B	REMOVED PUMPS	TJZ			7/13/09
A	PRELIMINARY	TJZ			7/8/09

Anadarko Petroleum Corporation

SAN JUAN RIVER PLANT
PIPING AND INSTRUMENTATION DRAWING
WELL HEAD

FILE NUMBER	DRAWING NUMBER	SCALE	REVISION
	SJ-PID-1401	NONE	C

7/16/2009 4:03:11 PM, TJZackson

APPENDIX A - ANALYTICAL RESULTS

envirotech
Analytical Laboratory

Analytical Report

Report Summary

Client: Anadarko Petroleum Corp.
Chain Of Custody Number: 15582
Samples Received: 5/21/2013 11:56:00AM
Job Number: 92187-0008
Work Order: P305063
Project Name/Location: San Juan River Plant

Entire Report Reviewed By: _____ Date: 5/22/13

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

envirotech
Analytical Laboratory

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	Reported:
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	22-May-13 09:44

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
R/O Water	P305063-01A	Aqueous	05/21/13	05/21/13	Poly 250mL

envirotech
Analytical Laboratory

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	Reported:
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	22-May-13 09:44

R/O Water

P305063-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
pH	**7.82**		pH Units	1	1321019	21-May-13	21-May-13	EPA 150.1	
Total Dissolved Solids	**732**		mg/L	1	1321020	21-May-13	21-May-13	EPA 160.1	
Chloride	**56.9**	1.00	mg/L	1	1321021	21-May-13	21-May-13	EPA 300.0	

envirotech
Analytical Laboratory

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	Reported:
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	22-May-13 09:44

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1321021 - Anion Extraction EPA 300.0										
Blank (1321021-BLK1)				Prepared & Analyzed: 21-May-13						
Chloride	ND	1.00	mg/L							
Duplicate (1321021-DUP1)		**Source: P305063-01**		Prepared & Analyzed: 21-May-13						
Chloride	57.0	1.00	mg/L		56.9			0.0896	30	

envirotech
Analytical Laboratory

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	22-May-13 09:44

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

CHAIN OF CUSTODY RECORD

15582

Client:	Project Name / Location:
Anadarko	San Juan River Plant
Email results to:	Sampler Name:
Cheryl.Bommarito@anadarko.com	Cheryl Bommarito
Client Phone No.:	Client No.:
505-578-5601	92187-0003

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative			ANALYSIS / PARAMETERS																	
					HNO_3	HCl		TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS	pH		Sample Cool	Sample Intact
E/O Water	5/21/13	11:00	P305063-01	1			NA										X	X	X		X	X

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	5-21-13	11:56		5/21/13	11:56
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☒ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

envirotech
Analytical Laboratory

5795 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 • laboratory@envirotech-inc.com

san juan reproduction 578-129

envirotech
Analytical Laboratory

Analytical Report

Report Summary

Client: Anadarko Petroleum Corp.
Chain Of Custody Number: 15590
Samples Received: 5/22/2013 1:19:00PM
Job Number: 92187-0008
Work Order: P305064
Project Name/Location: San Juan River Plant

Entire Report Reviewed By: _____ Date: 6/17/13

Tim Cain, Laboratory Manager

5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865
Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fr (800) 362-1879
envirotech-inc.com
laboratory@envirotech-inc.com

envirotech
Analytical Laboratory

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	Reported:
The Woodlands TX, 77387-4995	Project Manager:	Cheryl Bommarito	17-Jun-13 11:33

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
RIO Discharge	P305064-01A	Aqueous	05/22/13	05/22/13	Amber, 1L
	P305064-01B	Aqueous	05/22/13	05/22/13	Amber, 1L
	P305064-01C	Aqueous	05/22/13	05/22/13	Amber, 1L
	P305064-01D	Aqueous	05/22/13	05/22/13	Poly 500mL
	P305064-01E	Aqueous	05/22/13	05/22/13	Poly 500mL
	P305064-01F	Aqueous	05/22/13	05/22/13	Poly 500mL
	P305064-01G	Aqueous	05/22/13	05/22/13	Poly 250mL; NaOH
	P305064-01H	Aqueous	05/22/13	05/22/13	Poly 250mL; HNO3
	P305064-01I	Aqueous	05/22/13	05/22/13	Poly 250mL
	P305064-01J	Aqueous	05/22/13	05/22/13	Poly 250mL
	P305064-01K	Aqueous	05/22/13	05/22/13	Amber Glass, 100mL
	P305064-01L	Aqueous	05/22/13	05/22/13	Amber Glass, 100mL
	P305064-01M	Aqueous	05/22/13	05/22/13	Amber Glass, 100mL
	P305064-01N	Aqueous	05/22/13	05/22/13	Amber Glass, 100mL
	P305064-01O	Aqueous	05/22/13	05/22/13	Voa vial, 40mL, HCl
	P305064-01P	Aqueous	05/22/13	05/22/13	Voa vial, 40mL, HCl
	P305064-01Q	Aqueous	05/22/13	05/22/13	Voa vial, 40mL, HCl
	P305064-01R	Aqueous	05/22/13	05/22/13	Voa vial, 40mL, HCl
	P305064-01S	Aqueous	05/22/13	05/22/13	Voa vial, 40mL, HCl
	P305064-01T	Aqueous	05/22/13	05/22/13	Voa vial, 40mL, HCl

envirotech
Analytical Laboratory

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	Reported:
The Woodlands TX, 77387-4995	Project Manager:	Cheryl Bommarito	17-Jun-13 11:33

RIO Discharge

P305064-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by 8260									
Naphthalene	ND	0.005	mg/L	1	1321027	24-May-13	24-May-13	EPA 8260B	
1-Methylnaphthalene	ND	0.005	mg/L	1	1321027	24-May-13	24-May-13	EPA 8260B	
2-Methylnaphthalene	ND	0.005	mg/L	1	1321027	24-May-13	24-May-13	EPA 8260B	
Total Naphthalenes	ND	0.005	mg/L	1	1321027	24-May-13	24-May-13	EPA 8260B	
Surrogate: Dibromofluoromethane		*149 %*	*75-125*		*1321027*	*24-May-13*	*24-May-13*	*EPA 8260B*	*Surr1*
Surrogate: 1,2-Dichloroethane-d4		*150 %*	*75-125*		*1321027*	*24-May-13*	*24-May-13*	*EPA 8260B*	*Surr1*
Surrogate: Toluene-d8		*118 %*	*75-125*		*1321027*	*24-May-13*	*24-May-13*	*EPA 8260B*	
Surrogate: 4-Bromofluorobenzene		*116 %*	*75-125*		*1321027*	*24-May-13*	*24-May-13*	*EPA 8260B*	
Dissolved Metals by 6010									
Aluminum	**0.08**	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Arsenic	ND	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Barium	**0.19**	0.05	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Boron	**0.13**	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Cadmium	ND	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Chromium	ND	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Cobalt	ND	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Copper	ND	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Iron	ND	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Lead	ND	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Manganese	ND	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Molybdenum	ND	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Nickel	ND	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Selenium	ND	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Silver	**0.01**	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	
Zinc	**0.08**	0.01	mg/L	1	1321025	23-May-13	23-May-13	EPA 6010C	

envirotech
Analytical Laboratory

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	Reported:
The Woodlands TX, 77387-4995	Project Manager:	Cheryl Bommarito	17-Jun-13 11:33

RIO Discharge

P305064-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Water Chemistry									
Cyanide	ND	0.10	mg/L	1	1321024	22-May-13	22-May-13	Hach Method 8027	
Nitrate-N	ND	1.00	mg/L	1	1321023	22-May-13	22-May-13	EPA 300.0	
Fluoride	ND	1.00	mg/L	1	1321023	22-May-13	22-May-13	EPA 300.0	
Sulfate	**269**	1.00	mg/L	1	1321023	22-May-13	22-May-13	EPA 300.0	

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	Reported:
The Woodlands TX, 77387-4995	Project Manager:	Cheryl Bommarito	17-Jun-13 11:33

Volatile Organic Compounds by 8260 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1321027 - Purge and Trap EPA 5030A										
Blank (1321027-BLK1)				Prepared & Analyzed: 24-May-13						
Naphthalene	ND	0.005	mg/L							
1-Methylnaphthalene	ND	0.005	"							
2-Methylnaphthalene	ND	0.005	"							
Total Naphthalenes	ND	0.005	"							
Surrogate: Dibromofluoromethane	*0.132*		"	*0.100*		*132*	*75-125*			*Surr1*
Surrogate: 1,2-Dichloroethane-d4	*0.138*		"	*0.100*		*138*	*75-125*			*Surr1*
Surrogate: Toluene-d8	*0.105*		"	*0.100*		*105*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.113*		"	*0.100*		*113*	*75-125*			
Matrix Spike (1321027-MS1)	**Source: P305064-01**			Prepared & Analyzed: 24-May-13						
Naphthalene	0.09	0.005	mg/L	0.100	ND	91.4	75-125			
1-Methylnaphthalene	0.22	0.005	"	0.200	ND	111	75-125			
2-Methylnaphthalene	0.22	0.005	"	0.200	ND	110	75-125			
Surrogate: Dibromofluoromethane	*0.118*		"	*0.100*		*118*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*0.121*		"	*0.100*		*121*	*75-125*			
Surrogate: Toluene-d8	*0.102*		"	*0.100*		*102*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.103*		"	*0.100*		*103*	*75-125*			
Matrix Spike Dup (1321027-MSD1)	**Source: P305064-01**			Prepared & Analyzed: 24-May-13						
Naphthalene	0.11	0.005	mg/L	0.100	ND	105	75-125	14.1	30	
1-Methylnaphthalene	0.30	0.005	"	0.200	ND	150	75-125	29.6	30	SPK1
2-Methylnaphthalene	0.29	0.005	"	0.200	ND	145	75-125	27.3	30	SPK1
Surrogate: Dibromofluoromethane	*0.104*		"	*0.100*		*104*	*75-125*			
Surrogate: 1,2-Dichloroethane-d4	*0.101*		"	*0.100*		*101*	*75-125*			
Surrogate: Toluene-d8	*0.102*		"	*0.100*		*102*	*75-125*			
Surrogate: 4-Bromofluorobenzene	*0.102*		"	*0.100*		*102*	*75-125*			

Anadarko Petroleum Corp	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Cheryl Bommarito	17-Jun-13 11:33

Dissolved Metals by 6010 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1321025 - Metal Water/TCLP Digestion EPA 3015A										
Blank (1321025-BLK1)				Prepared & Analyzed: 23-May-13						
Aluminum	ND	0.01	mg/L							
Arsenic	ND	0.01	"							
Barium	ND	0.05	"							
Boron	0.03	0.01	"							B
Cadmium	ND	0.01	"							
Chromium	ND	0.01	"							
Cobalt	ND	0.01	"							
Copper	0.02	0.01	"							B
Iron	ND	0.01	"							
Lead	ND	0.01	"							
Manganese	ND	0.01	"							
Molybdenum	ND	0.01	"							
Nickel	0.59	0.01	"							B1
Selenium	ND	0.01	"							
Silver	ND	0.01	"							
Zinc	1.69	0.01	"							B
Duplicate (1321025-DUP1)		**Source: P305064-01**		Prepared & Analyzed: 23-May-13						
Aluminum	ND	0.01	mg/L		0.08				30	
Arsenic	ND	0.01	"		ND				30	
Barium	0.15	0.05	"		0.19			24.3	30	
Boron	0.12	0.01	"		0.13			14.0	30	
Cadmium	ND	0.01	"		ND				30	
Chromium	ND	0.01	"		ND				30	
Cobalt	ND	0.01	"		ND				30	
Copper	ND	0.01	"		ND				30	
Iron	ND	0.01	"		ND				30	
Lead	ND	0.01	"		ND				30	
Manganese	ND	0.01	"		ND				30	
Molybdenum	ND	0.01	"		ND				30	
Nickel	ND	0.01	"		ND				30	
Selenium	ND	0.01	"		ND				30	
Silver	ND	0.01	"		0.01				30	
Zinc	0.05	0.01	"		0.08			48.7	30	D1
Matrix Spike (1321025-MS1)		**Source: P305064-01**		Prepared & Analyzed: 23-May-13						
Aluminum	0.34	0.01	mg/L	0.292	0.08	91.0	75-125			
Arsenic	0.27	0.01	"	0.292	ND	91.4	75-125			

envirotech
Analytical Laboratory

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Cheryl Bommarito	17-Jun-13 11:33

Dissolved Metals by 6010 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1321025 - Metal Water/TCLP Digestion EPA 3015A										
Matrix Spike (1321025-MS1)	**Source: P305064-01**			Prepared & Analyzed: 23-May-13						
Barium	6.51	0.05	mg/L	5.85	0.19	108	75-125			
Boron	0.70	0.01	"	0.585	0.13	96.8	75-125			
Cadmium	0.29	0.01	"	0.292	ND	99.2	75-125			
Chromium	0.58	0.01	"	0.585	ND	99.4	75-125			
Cobalt	0.28	0.01	"	0.292	ND	96.1	75-125			
Copper	0.57	0.01	"	0.585	ND	96.9	75-125			
Iron	0.54	0.01	"	0.585	ND	93.0	75-125			
Lead	0.56	0.01	"	0.585	ND	95.9	75-125			
Manganese	0.28	0.01	"	0.292	ND	94.5	75-125			
Molybdenum	0.12	0.01	"	0.117	ND	104	75-125			
Nickel	0.54	0.01	"	0.585	ND	93.2	75-125			
Selenium	0.12	0.01	"	0.117	ND	98.6	75-125			
Silver	0.12	0.01	"	0.117	0.01	93.1	75-125			
Zinc	0.66	0.01	"	0.585	0.08	99.4	75-125			

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Analytical Laboratory

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	Reported:
The Woodlands TX, 77387-4995	Project Manager:	Cheryl Bommarito	17-Jun-13 11:33

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1321023 - Anion Extraction EPA 300.0										
Blank (1321023-BLK1)				Prepared & Analyzed: 22-May-13						
Nitrate-N	ND	1.00	mg/L							
Fluoride	ND	1.00	"							
Sulfate	ND	1.00	"							
Duplicate (1321023-DUP1)		**Source: P305064-01**		Prepared & Analyzed: 22-May-13						
Nitrate-N	ND	1.00	mg/L		ND				30	
Fluoride	ND	1.00	"		ND				30	
Sulfate	270	1.00	"		269			0.109	30	

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	Reported:
The Woodlands TX, 77387-4995	Project Manager:	Cheryl Bommarito	17-Jun-13 11:33

Notes and Definitions

Surr1	Surrogate recovery was above acceptable limits.
SPK1	The spike recovery for this QC sample is outside of control limits.
D1	Duplicates or Matrix Spike Duplicates Relative Percent Difference exceeds 30%.
B1	Analyte is found in the associated blank but not in the sample.
B	Analyte is found in the associated blank as well as in the sample.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

CHAIN OF CUSTODY RECORD

15590

Client:	Project Name / Location:
Anadarko	San Juan River Plant
Email results to: Cheryl.Bommarito@anadarko.com	Sampler Name: Cheryl Bommarito
Client Phone No.: 620-544-6774	Client No.: 92187-0068

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative HNO_3	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	NMAC 3103			Sample Cool	Sample Intact
210 Discharge	5/22/13	10:00	P305064-01	3x 1L amber 3x 500 poly	X	X											X			Y	Y
				4 x 100mL amber																	
				6 x VOA + HCl																	
				1 x 250 poly + NaOH																	
				2 x 250 poly																	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	5/22/13	13 19		5/22/13	1319
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix: Soil ☐ Solid ☐ Sludge ☐ Aqueous ☒ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

* No ph, TDS or Chloride Analysis
Mercury is total - All other metals
Please Filter + run dissolved Metal analysis

envirotech Analytical Laboratory

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Est. 1970

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

Report Summary

Wednesday June 05, 2013

Report Number: L637859
Samples Received: 05/24/13
Client Project: 92187-0008

Description: San Jaun River Plant

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Daphne R Richards

Daphne Richards , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

June 05, 2013

ESC Sample # : L637859-01

Site ID : P305064-01

Project # : 92187-0008

Date Received : May 24, 2013
Description : San Jaun River Plant

Sample ID : RIO DISCHARGE

Collected By : Cheryl Bommarito
Collection Date : 05/22/13 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Mercury	BDL	0.00020	mg/l	7470A	05/27/13	1
Volatile Organics						
Acetone	BDL	0.050	mg/l	8260B	05/26/13	1
Acrolein	BDL	0.050	mg/l	8260B	05/26/13	1
Acrylonitrile	BDL	0.010	mg/l	8260B	05/26/13	1
Benzene	BDL	0.0010	mg/l	8260B	05/26/13	1
Bromobenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
Bromodichloromethane	0.011	0.0010	mg/l	8260B	05/26/13	1
Bromoform	BDL	0.0010	mg/l	8260B	05/26/13	1
Bromomethane	BDL	0.0050	mg/l	8260B	05/26/13	1
n-Butylbenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
sec-Butylbenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
tert-Butylbenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
Carbon tetrachloride	BDL	0.0010	mg/l	8260B	05/26/13	1
Chlorobenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
Chlorodibromomethane	0.0029	0.0010	mg/l	8260B	05/26/13	1
Chloroethane	BDL	0.0050	mg/l	8260B	05/26/13	1
2-Chloroethyl vinyl ether	BDL	0.050	mg/l	8260B	05/26/13	1
Chloroform	0.035	0.0050	mg/l	8260B	05/26/13	1
Chloromethane	BDL	0.0025	mg/l	8260B	05/26/13	1
2-Chlorotoluene	BDL	0.0010	mg/l	8260B	05/26/13	1
4-Chlorotoluene	BDL	0.0010	mg/l	8260B	05/26/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.0050	mg/l	8260B	05/26/13	1
1,2-Dibromoethane	BDL	0.0010	mg/l	8260B	05/26/13	1
Dibromomethane	BDL	0.0010	mg/l	8260B	05/26/13	1
1,2-Dichlorobenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
1,3-Dichlorobenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
1,4-Dichlorobenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
Dichlorodifluoromethane	BDL	0.0050	mg/l	8260B	05/26/13	1
1,1-Dichloroethane	BDL	0.0010	mg/l	8260B	05/26/13	1
1,2-Dichloroethane	BDL	0.0010	mg/l	8260B	05/26/13	1
1,1-Dichloroethene	BDL	0.0010	mg/l	8260B	05/26/13	1
cis-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	05/26/13	1
trans-1,2-Dichloroethene	BDL	0.0010	mg/l	8260B	05/26/13	1
1,2-Dichloropropane	BDL	0.0010	mg/l	8260B	05/26/13	1
1,1-Dichloropropene	BDL	0.0010	mg/l	8260B	05/26/13	1
1,3-Dichloropropane	BDL	0.0010	mg/l	8260B	05/26/13	1
cis-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	05/26/13	1
trans-1,3-Dichloropropene	BDL	0.0010	mg/l	8260B	05/26/13	1
2,2-Dichloropropane	BDL	0.0010	mg/l	8260B	05/26/13	1
Di-isopropyl ether	BDL	0.0010	mg/l	8260B	05/26/13	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
Hexachloro-1,3-butadiene	BDL	0.0010	mg/l	8260B	05/26/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

June 05, 2013

Date Received : May 24, 2013
Description : San Jaun River Plant

Sample ID : RIO DISCHARGE

Collected By : Cheryl Bommarito
Collection Date : 05/22/13 10:00

ESC Sample # : L637859-01

Site ID : P305064-01

Project # : 92187-0008

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Isopropylbenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
p-Isopropyltoluene	BDL	0.0010	mg/l	8260B	05/26/13	1
2-Butanone (MEK)	BDL	0.010	mg/l	8260B	05/26/13	1
Methylene Chloride	BDL	0.0050	mg/l	8260B	05/26/13	1
4-Methyl-2-pentanone (MIBK)	BDL	0.010	mg/l	8260B	05/26/13	1
Methyl tert-butyl ether	BDL	0.0010	mg/l	8260B	05/26/13	1
Naphthalene	BDL	0.0050	mg/l	8260B	05/26/13	1
n-Propylbenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
Styrene	BDL	0.0010	mg/l	8260B	05/26/13	1
1,1,1,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	05/26/13	1
1,1,2,2-Tetrachloroethane	BDL	0.0010	mg/l	8260B	05/26/13	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0010	mg/l	8260B	05/26/13	1
Tetrachloroethene	BDL	0.0010	mg/l	8260B	05/26/13	1
Toluene	BDL	0.0050	mg/l	8260B	05/26/13	1
1,2,3-Trichlorobenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
1,2,4-Trichlorobenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
1,1,1-Trichloroethane	BDL	0.0010	mg/l	8260B	05/26/13	1
1,1,2-Trichloroethane	BDL	0.0010	mg/l	8260B	05/26/13	1
Trichloroethene	BDL	0.0010	mg/l	8260B	05/26/13	1
Trichlorofluoromethane	BDL	0.0050	mg/l	8260B	05/26/13	1
1,2,3-Trichloropropane	BDL	0.0025	mg/l	8260B	05/26/13	1
1,2,4-Trimethylbenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
1,2,3-Trimethylbenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
1,3,5-Trimethylbenzene	BDL	0.0010	mg/l	8260B	05/26/13	1
Vinyl chloride	BDL	0.0010	mg/l	8260B	05/26/13	1
Xylenes, Total	BDL	0.0030	mg/l	8260B	05/26/13	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	05/26/13	1
Dibromofluoromethane	104.		% Rec.	8260B	05/26/13	1
4-Bromofluorobenzene	93.3		% Rec.	8260B	05/26/13	1
Ethylene Dibromide	BDL	0.000010	mg/l	504.1	06/03/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.000020	mg/l	504.1	06/03/13	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Acenaphthene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Acenaphthylene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Chrysene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

June 05, 2013

ESC Sample # : L637859-01

Date Received : May 24, 2013
Description : San Jaun River Plant

Site ID : P305064-01

Sample ID : RIO DISCHARGE

Project # : 92187-0008

Collected By : Cheryl Bommarito
Collection Date : 05/22/13 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Fluoranthene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Fluorene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Naphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/29/13	1
Phenanthrene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
Pyrene	BDL	0.000050	mg/l	8270 C-SIM	05/29/13	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/29/13	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/29/13	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/29/13	1
Surrogate Recovery						
Nitrobenzene-d5	76.5		% Rec.	8270 C-SIM	05/29/13	1
2-Fluorobiphenyl	81.2		% Rec.	8270 C-SIM	05/29/13	1
p-Terphenyl-d14	84.2		% Rec.	8270 C-SIM	05/29/13	1
Polychlorinated Biphenyls						
PCB 1016	BDL	0.00050	mg/l	8082	06/04/13	1
PCB 1221	BDL	0.00050	mg/l	8082	06/04/13	1
PCB 1232	BDL	0.00050	mg/l	8082	06/04/13	1
PCB 1242	BDL	0.00050	mg/l	8082	06/04/13	1
PCB 1248	BDL	0.00050	mg/l	8082	06/04/13	1
PCB 1254	BDL	0.00050	mg/l	8082	06/04/13	1
PCB 1260	BDL	0.00050	mg/l	8082	06/04/13	1
PCBs Surrogates						
Decachlorobiphenyl	90.6		% Rec.	8082	06/04/13	1
Tetrachloro-m-xylene	79.0		% Rec.	8082	06/04/13	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Acenaphthylene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Anthracene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Benzidine	BDL	0.010	mg/l	8270 C	05/30/13	1
Benzo(a)anthracene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Benzo(a)pyrene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	8270 C	05/30/13	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	8270 C	05/30/13	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	8270 C	05/30/13	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	8270 C	05/30/13	1
2-Chloronaphthalene	BDL	0.0010	mg/l	8270 C	05/30/13	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	8270 C	05/30/13	1
Chrysene	BDL	0.0010	mg/l	8270 C	05/30/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

June 05, 2013

ESC Sample # : L637859-01

Site ID : P305064-01

Project # : 92187-0008

Date Received : May 24, 2013
Description : San Jaun River Plant

Sample ID : RIO DISCHARGE

Collected By : Cheryl Bommarito
Collection Date : 05/22/13 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	8270 C	05/30/13	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	8270 C	05/30/13	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	8270 C	05/30/13	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	8270 C	05/30/13	1
Fluoranthene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Fluorene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Hexachlorobenzene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	8270 C	05/30/13	1
Hexachlorocyclopentadiene	BDL	0.010	mg/l	8270 C	05/30/13	1
Hexachloroethane	BDL	0.010	mg/l	8270 C	05/30/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Isophorone	BDL	0.010	mg/l	8270 C	05/30/13	1
Naphthalene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Nitrobenzene	BDL	0.010	mg/l	8270 C	05/30/13	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	8270 C	05/30/13	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	8270 C	05/30/13	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	8270 C	05/30/13	1
Phenanthrene	BDL	0.0010	mg/l	8270 C	05/30/13	1
Benzylbutyl phthalate	BDL	0.0030	mg/l	8270 C	05/30/13	1
Bis(2-ethylhexyl)phthalate	BDL	0.0030	mg/l	8270 C	05/30/13	1
Di-n-butyl phthalate	BDL	0.0030	mg/l	8270 C	05/30/13	1
Diethyl phthalate	BDL	0.0030	mg/l	8270 C	05/30/13	1
Dimethyl phthalate	BDL	0.0030	mg/l	8270 C	05/30/13	1
Di-n-octyl phthalate	BDL	0.0030	mg/l	8270 C	05/30/13	1
Pyrene	BDL	0.0010	mg/l	8270 C	05/30/13	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	8270 C	05/30/13	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	8270 C	05/30/13	1
2-Chlorophenol	BDL	0.010	mg/l	8270 C	05/30/13	1
2,4-Dichlorophenol	BDL	0.010	mg/l	8270 C	05/30/13	1
2,4-Dimethylphenol	BDL	0.010	mg/l	8270 C	05/30/13	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	8270 C	05/30/13	1
2,4-Dinitrophenol	BDL	0.010	mg/l	8270 C	05/30/13	1
2-Nitrophenol	BDL	0.010	mg/l	8270 C	05/30/13	1
4-Nitrophenol	BDL	0.010	mg/l	8270 C	05/30/13	1
Pentachlorophenol	BDL	0.010	mg/l	8270 C	05/30/13	1
Phenol	BDL	0.010	mg/l	8270 C	05/30/13	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	8270 C	05/30/13	1
Surrogate Recovery						
2-Fluorophenol	49.5		% Rec.	8270 C	05/30/13	1
Phenol-d5	36.2		% Rec.	8270 C	05/30/13	1
Nitrobenzene-d5	56.5		% Rec.	8270 C	05/30/13	1
2-Fluorobiphenyl	70.4		% Rec.	8270 C	05/30/13	1
2,4,6-Tribromophenol	67.2		% Rec.	8270 C	05/30/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

June 05, 2013

ESC Sample # : L637859-01

Site ID : P305064-01

Project # : 92187-0008

Date Received : May 24, 2013
Description : San Jaun River Plant

Sample ID : RIO DISCHARGE

Collected By : Cheryl Bommarito
Collection Date : 05/22/13 10:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
p-Terphenyl-d14	66.4		% Rec.	8270 C	05/30/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
The reported analytical results relate only to the sample submitted.

.
Reported: 06/05/13 10:35 Printed: 06/05/13 10:49

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L637859-01	WG663246	SAMP	1,2-Dichlorobenzene	R2685004	J4
	WG663246	SAMP	1,4-Dichlorobenzene	R2685004	J4
	WG663246	SAMP	1,2,4-Trichlorobenzene	R2685004	J4
	WG663422	SAMP	Acenaphthene	R2688325	J3
	WG663422	SAMP	Acenaphthylene	R2688325	J3
	WG663422	SAMP	Anthracene	R2688325	J3
	WG663422	SAMP	Benzo(a)anthracene	R2688325	J3
	WG663422	SAMP	Benzo(b)fluoranthene	R2688325	J3
	WG663422	SAMP	Benzo(k)fluoranthene	R2688325	J3
	WG663422	SAMP	Benzo(g,h,i)perylene	R2688325	J3
	WG663422	SAMP	Benzo(a)pyrene	R2688325	J3
	WG663422	SAMP	Bis(2-chlorethoxy)methane	R2688325	J3
	WG663422	SAMP	Bis(2-chloroisopropyl)ether	R2688325	J3
	WG663422	SAMP	4-Bromophenyl-phenylether	R2688325	J3
	WG663422	SAMP	4-Chlorophenyl-phenylether	R2688325	J3
	WG663422	SAMP	Chrysene	R2688325	J3
	WG663422	SAMP	Dibenz(a,h)anthracene	R2688325	J3
	WG663422	SAMP	3,3-Dichlorobenzidine	R2688325	J3
	WG663422	SAMP	2,4-Dinitrotoluene	R2688325	J3
	WG663422	SAMP	2,6-Dinitrotoluene	R2688325	J3
	WG663422	SAMP	Fluoranthene	R2688325	J3
	WG663422	SAMP	Fluorene	R2688325	J3
	WG663422	SAMP	Hexachlorobenzene	R2688325	J3
	WG663422	SAMP	Indeno(1,2,3-cd)pyrene	R2688325	J3
	WG663422	SAMP	Isophorone	R2688325	J3
	WG663422	SAMP	n-Nitrosodimethylamine	R2688325	J3
	WG663422	SAMP	n-Nitrosodiphenylamine	R2688325	J3
	WG663422	SAMP	Phenanthrene	R2688325	J3
	WG663422	SAMP	Benzylbutyl phthalate	R2688325	J3
	WG663422	SAMP	Diethyl phthalate	R2688325	J3
	WG663422	SAMP	Dimethyl phthalate	R2688325	J3
	WG663422	SAMP	Di-n-octyl phthalate	R2688325	J3
	WG663422	SAMP	Pyrene	R2688325	J3
	WG663422	SAMP	2-Chlorophenol	R2688325	J3
	WG663422	SAMP	2,4-Dichlorophenol	R2688325	J3
	WG663422	SAMP	4,6-Dinitro-2-methylphenol	R2688325	J3
	WG663422	SAMP	2,4-Dinitrophenol	R2688325	J3
	WG663422	SAMP	2-Nitrophenol	R2688325	J3
	WG663422	SAMP	4-Nitrophenol	R2688325	J3
	WG663422	SAMP	Pentachlorophenol	R2688325	J3
	WG663422	SAMP	Phenol	R2688325	J3
	WG663422	SAMP	2,4,6-Trichlorophenol	R2688325	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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Lynn Berry
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Farmington, NM 87401

Quality Assurance Report
Level II

L637859

June 05, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Mercury	< .0002	mg/l			WG663326	05/27/13 11:34
1,1,1,2-Tetrachloroethane	< .001	mg/l			WG663246	05/26/13 10:28
1,1,1-Trichloroethane	< .001	mg/l			WG663246	05/26/13 10:28
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG663246	05/26/13 10:28
1,1,2-Trichloroethane	< .001	mg/l			WG663246	05/26/13 10:28
1,1,2-Trichlorotrifluoroethane	< .001	mg/l			WG663246	05/26/13 10:28
1,1-Dichloroethane	< .001	mg/l			WG663246	05/26/13 10:28
1,1-Dichloroethene	< .001	mg/l			WG663246	05/26/13 10:28
1,1-Dichloropropene	< .001	mg/l			WG663246	05/26/13 10:28
1,2,3-Trichlorobenzene	< .001	mg/l			WG663246	05/26/13 10:28
1,2,3-Trichloropropane	< .001	mg/l			WG663246	05/26/13 10:28
1,2,3-Trimethylbenzene	< .001	mg/l			WG663246	05/26/13 10:28
1,2,4-Trichlorobenzene	< .001	mg/l			WG663246	05/26/13 10:28
1,2,4-Trimethylbenzene	< .001	mg/l			WG663246	05/26/13 10:28
1,2-Dibromo-3-Chloropropane	< .005	mg/l			WG663246	05/26/13 10:28
1,2-Dibromoethane	< .001	mg/l			WG663246	05/26/13 10:28
1,2-Dichlorobenzene	< .001	mg/l			WG663246	05/26/13 10:28
1,2-Dichloroethane	< .001	mg/l			WG663246	05/26/13 10:28
1,2-Dichloropropane	< .001	mg/l			WG663246	05/26/13 10:28
1,3,5-Trimethylbenzene	< .001	mg/l			WG663246	05/26/13 10:28
1,3-Dichlorobenzene	< .001	mg/l			WG663246	05/26/13 10:28
1,3-Dichloropropane	< .001	mg/l			WG663246	05/26/13 10:28
1,4-Dichlorobenzene	< .001	mg/l			WG663246	05/26/13 10:28
2,2-Dichloropropane	< .001	mg/l			WG663246	05/26/13 10:28
2-Butanone (MEK)	< .01	mg/l			WG663246	05/26/13 10:28
2-Chloroethyl vinyl ether	< .05	mg/l			WG663246	05/26/13 10:28
2-Chlorotoluene	< .001	mg/l			WG663246	05/26/13 10:28
4-Chlorotoluene	< .001	mg/l			WG663246	05/26/13 10:28
4-Methyl-2-pentanone (MIBK)	< .01	mg/l			WG663246	05/26/13 10:28
Acetone	< .05	mg/l			WG663246	05/26/13 10:28
Acrolein	< .025	mg/l			WG663246	05/26/13 10:28
Acrylonitrile	< .01	mg/l			WG663246	05/26/13 10:28
Benzene	< .001	mg/l			WG663246	05/26/13 10:28
Bromobenzene	< .001	mg/l			WG663246	05/26/13 10:28
Bromodichloromethane	< .001	mg/l			WG663246	05/26/13 10:28
Bromoform	< .001	mg/l			WG663246	05/26/13 10:28
Bromomethane	< .005	mg/l			WG663246	05/26/13 10:28
Carbon tetrachloride	< .001	mg/l			WG663246	05/26/13 10:28
Chlorobenzene	< .001	mg/l			WG663246	05/26/13 10:28
Chlorodibromomethane	< .001	mg/l			WG663246	05/26/13 10:28
Chloroethane	< .005	mg/l			WG663246	05/26/13 10:28
Chloroform	< .005	mg/l			WG663246	05/26/13 10:28
Chloromethane	< .0025	mg/l			WG663246	05/26/13 10:28
cis-1,2-Dichloroethene	< .001	mg/l			WG663246	05/26/13 10:28
cis-1,3-Dichloropropene	< .001	mg/l			WG663246	05/26/13 10:28
Di-isopropyl ether	< .001	mg/l			WG663246	05/26/13 10:28
Dibromomethane	< .001	mg/l			WG663246	05/26/13 10:28
Dichlorodifluoromethane	< .005	mg/l			WG663246	05/26/13 10:28
Ethylbenzene	< .001	mg/l			WG663246	05/26/13 10:28
Hexachloro-1,3-butadiene	< .001	mg/l			WG663246	05/26/13 10:28
Isopropylbenzene	< .001	mg/l			WG663246	05/26/13 10:28
Methyl tert-butyl ether	< .001	mg/l			WG663246	05/26/13 10:28
Methylene Chloride	< .005	mg/l			WG663246	05/26/13 10:28
n-Butylbenzene	< .001	mg/l			WG663246	05/26/13 10:28
n-Propylbenzene	< .001	mg/l			WG663246	05/26/13 10:28
Naphthalene	< .005	mg/l			WG663246	05/26/13 10:28
p-Isopropyltoluene	< .001	mg/l			WG663246	05/26/13 10:28

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L637859

June 05, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
sec-Butylbenzene	< .001	mg/l			WG663246	05/26/13 10:28
Styrene	< .001	mg/l			WG663246	05/26/13 10:28
tert-Butylbenzene	< .001	mg/l			WG663246	05/26/13 10:28
Tetrachloroethene	< .001	mg/l			WG663246	05/26/13 10:28
Toluene	< .005	mg/l			WG663246	05/26/13 10:28
trans-1,2-Dichloroethene	< .001	mg/l			WG663246	05/26/13 10:28
trans-1,3-Dichloropropene	< .001	mg/l			WG663246	05/26/13 10:28
Trichloroethene	< .001	mg/l			WG663246	05/26/13 10:28
Trichlorofluoromethane	< .005	mg/l			WG663246	05/26/13 10:28
Vinyl chloride	< .001	mg/l			WG663246	05/26/13 10:28
Xylenes, Total	< .003	mg/l			WG663246	05/26/13 10:28
4-Bromofluorobenzene		% Rec.	94.20	82-120	WG663246	05/26/13 10:28
Dibromofluoromethane		% Rec.	99.67	82-126	WG663246	05/26/13 10:28
Toluene-d8		% Rec.	100.8	92-112	WG663246	05/26/13 10:28
1,2,4-Trichlorobenzene	< .01	mg/l			WG663422	05/29/13 16:32
2,4,6-Trichlorophenol	< .01	mg/l			WG663422	05/29/13 16:32
2,4-Dichlorophenol	< .01	mg/l			WG663422	05/29/13 16:32
2,4-Dimethylphenol	< .01	mg/l			WG663422	05/29/13 16:32
2,4-Dinitrophenol	< .01	mg/l			WG663422	05/29/13 16:32
2,4-Dinitrotoluene	< .01	mg/l			WG663422	05/29/13 16:32
2,6-Dinitrotoluene	< .01	mg/l			WG663422	05/29/13 16:32
2-Chloronaphthalene	< .001	mg/l			WG663422	05/29/13 16:32
2-Chlorophenol	< .01	mg/l			WG663422	05/29/13 16:32
2-Nitrophenol	< .01	mg/l			WG663422	05/29/13 16:32
3,3-Dichlorobenzidine	< .01	mg/l			WG663422	05/29/13 16:32
4,6-Dinitro-2-methylphenol	< .01	mg/l			WG663422	05/29/13 16:32
4-Bromophenyl-phenylether	< .01	mg/l			WG663422	05/29/13 16:32
4-Chloro-3-methylphenol	< .01	mg/l			WG663422	05/29/13 16:32
4-Chlorophenyl-phenylether	< .01	mg/l			WG663422	05/29/13 16:32
4-Nitrophenol	< .01	mg/l			WG663422	05/29/13 16:32
Acenaphthene	< .001	mg/l			WG663422	05/29/13 16:32
Acenaphthylene	< .001	mg/l			WG663422	05/29/13 16:32
Anthracene	< .001	mg/l			WG663422	05/29/13 16:32
Benzidine	< .01	mg/l			WG663422	05/29/13 16:32
Benzo(a)anthracene	< .001	mg/l			WG663422	05/29/13 16:32
Benzo(a)pyrene	< .001	mg/l			WG663422	05/29/13 16:32
Benzo(b)fluoranthene	< .001	mg/l			WG663422	05/29/13 16:32
Benzo(g,h,i)perylene	< .001	mg/l			WG663422	05/29/13 16:32
Benzo(k)fluoranthene	< .001	mg/l			WG663422	05/29/13 16:32
Benzylbutyl phthalate	< .003	mg/l			WG663422	05/29/13 16:32
Bis(2-chlorethoxy)methane	< .01	mg/l			WG663422	05/29/13 16:32
Bis(2-chloroethyl)ether	< .01	mg/l			WG663422	05/29/13 16:32
Bis(2-chloroisopropyl)ether	< .01	mg/l			WG663422	05/29/13 16:32
Bis(2-ethylhexyl)phthalate	< .003	mg/l			WG663422	05/29/13 16:32
Chrysene	< .001	mg/l			WG663422	05/29/13 16:32
Di-n-butyl phthalate	< .003	mg/l			WG663422	05/29/13 16:32
Di-n-octyl phthalate	< .003	mg/l			WG663422	05/29/13 16:32
Dibenz(a,h)anthracene	< .001	mg/l			WG663422	05/29/13 16:32
Diethyl phthalate	< .003	mg/l			WG663422	05/29/13 16:32
Dimethyl phthalate	< .003	mg/l			WG663422	05/29/13 16:32
Fluoranthene	< .001	mg/l			WG663422	05/29/13 16:32
Fluorene	< .001	mg/l			WG663422	05/29/13 16:32
Hexachloro-1,3-butadiene	< .01	mg/l			WG663422	05/29/13 16:32
Hexachlorobenzene	< .001	mg/l			WG663422	05/29/13 16:32
Hexachlorocyclopentadiene	< .01	mg/l			WG663422	05/29/13 16:32
Hexachloroethane	< .01	mg/l			WG663422	05/29/13 16:32
Indeno(1,2,3-cd)pyrene	< .001	mg/l			WG663422	05/29/13 16:32

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Tax I.D. 62-0814289

Est. 1970

EnviroTech- NM
Lynn Berry
5796 US. Highway 64

Farmington, NM 87401

Quality Assurance Report
Level II

L637859

June 05, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Isophorone	< .01	mg/l			WG663422	05/29/13 16:32
n-Nitrosodi-n-propylamine	< .01	mg/l			WG663422	05/29/13 16:32
n-Nitrosodimethylamine	< .01	mg/l			WG663422	05/29/13 16:32
n-Nitrosodiphenylamine	< .01	mg/l			WG663422	05/29/13 16:32
Naphthalene	< .001	mg/l			WG663422	05/29/13 16:32
Nitrobenzene	< .01	mg/l			WG663422	05/29/13 16:32
Pentachlorophenol	< .001	mg/l			WG663422	05/29/13 16:32
Phenanthrene	< .001	mg/l			WG663422	05/29/13 16:32
Phenol	< .01	mg/l			WG663422	05/29/13 16:32
Pyrene	< .001	mg/l			WG663422	05/29/13 16:32
2,4,6-Tribromophenol		% Rec.	54.40	11.2-130	WG663422	05/29/13 16:32
2-Fluorobiphenyl		% Rec.	70.70	29.5-131	WG663422	05/29/13 16:32
2-Fluorophenol		% Rec.	41.60	10-77.9	WG663422	05/29/13 16:32
Nitrobenzene-d5		% Rec.	60.20	21.8-123	WG663422	05/29/13 16:32
Phenol-d5		% Rec.	30.00	5-70.1	WG663422	05/29/13 16:32
p-Terphenyl-d14		% Rec.	66.70	29.3-137	WG663422	05/29/13 16:32
1-Methylnaphthalene	< .00025	mg/l			WG663416	05/29/13 17:01
2-Chloronaphthalene	< .00025	mg/l			WG663416	05/29/13 17:01
2-Methylnaphthalene	< .00025	mg/l			WG663416	05/29/13 17:01
Acenaphthene	< .00005	mg/l			WG663416	05/29/13 17:01
Acenaphthylene	< .00005	mg/l			WG663416	05/29/13 17:01
Anthracene	< .00005	mg/l			WG663416	05/29/13 17:01
Benzo(a)anthracene	< .00005	mg/l			WG663416	05/29/13 17:01
Benzo(a)pyrene	< .00005	mg/l			WG663416	05/29/13 17:01
Benzo(b)fluoranthene	< .00005	mg/l			WG663416	05/29/13 17:01
Benzo(g,h,i)perylene	< .00005	mg/l			WG663416	05/29/13 17:01
Benzo(k)fluoranthene	< .00005	mg/l			WG663416	05/29/13 17:01
Chrysene	< .00005	mg/l			WG663416	05/29/13 17:01
Dibenz(a,h)anthracene	< .00005	mg/l			WG663416	05/29/13 17:01
Fluoranthene	< .00005	mg/l			WG663416	05/29/13 17:01
Fluorene	< .00005	mg/l			WG663416	05/29/13 17:01
Indeno(1,2,3-cd)pyrene	< .00005	mg/l			WG663416	05/29/13 17:01
Naphthalene	< .00025	mg/l			WG663416	05/29/13 17:01
Phenanthrene	< .00005	mg/l			WG663416	05/29/13 17:01
Pyrene	< .00005	mg/l			WG663416	05/29/13 17:01
2-Fluorobiphenyl		% Rec.	90.00	31-130	WG663416	05/29/13 17:01
Nitrobenzene-d5		% Rec.	82.00	19.7-149	WG663416	05/29/13 17:01
p-Terphenyl-d14		% Rec.	92.30	31.4-133	WG663416	05/29/13 17:01
1,2-Dibromo-3-Chloropropane	< .00002	mg/l			WG664442	06/03/13 19:00
Ethylene Dibromide	< .00001	mg/l			WG664442	06/03/13 19:00
PCB 1016	< .0005	mg/l			WG663566	06/04/13 12:36
PCB 1221	< .0005	mg/l			WG663566	06/04/13 12:36
PCB 1232	< .0005	mg/l			WG663566	06/04/13 12:36
PCB 1242	< .0005	mg/l			WG663566	06/04/13 12:36
PCB 1248	< .0005	mg/l			WG663566	06/04/13 12:36
PCB 1254	< .0005	mg/l			WG663566	06/04/13 12:36
PCB 1260	< .0005	mg/l			WG663566	06/04/13 12:36
Decachlorobiphenyl		% Rec.	89.00	10-141	WG663566	06/04/13 12:36
Tetrachloro-m-xylene		% Rec.	56.00	10-125	WG663566	06/04/13 12:36

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L637859

June 05, 2013

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/l	0	0.0000655	1.19	20	L637707-01	WG663326
1,2-Dibromo-3-Chloropropane	mg/l	0	0	0	20		WG664442
Ethylene Dibromide	mg/l	0	0	0	20		WG664442

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Mercury	mg/l	.003	0.00297	99.0	85-115	WG663326
1,1,1,2-Tetrachloroethane	mg/l	.025	0.0263	105.	77-128	WG663246
1,1,1-Trichloroethane	mg/l	.025	0.0256	103.	71-126	WG663246
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0256	103.	78-130	WG663246
1,1,2-Trichloroethane	mg/l	.025	0.0256	102.	81-121	WG663246
1,1,2-Trichlorotrifluoroethane	mg/l	.025	0.0259	103.	53-143	WG663246
1,1-Dichloroethane	mg/l	.025	0.0258	103.	73-123	WG663246
1,1-Dichloroethene	mg/l	.025	0.0248	99.1	54-134	WG663246
1,1-Dichloropropene	mg/l	.025	0.0252	101.	67-127	WG663246
1,2,3-Trichlorobenzene	mg/l	.025	0.0314	125.	77-130	WG663246
1,2,3-Trichloropropane	mg/l	.025	0.0249	99.5	68-130	WG663246
1,2,3-Trimethylbenzene	mg/l	.025	0.0287	115.	77-126	WG663246
1,2,4-Trichlorobenzene	mg/l	.025	0.0318	127.*	76-127	WG663246
1,2,4-Trimethylbenzene	mg/l	.025	0.0261	104.	77-129	WG663246
1,2-Dibromo-3-Chloropropane	mg/l	.025	0.0279	111.	55-142	WG663246
1,2-Dibromoethane	mg/l	.025	0.0242	96.9	78-124	WG663246
1,2-Dichlorobenzene	mg/l	.025	0.0295	118.	82-121	WG663246
1,2-Dichloroethane	mg/l	.025	0.0237	94.8	69-128	WG663246
1,2-Dichloropropane	mg/l	.025	0.0263	105.	77-121	WG663246
1,3,5-Trimethylbenzene	mg/l	.025	0.0273	109.	78-127	WG663246
1,3-Dichlorobenzene	mg/l	.025	0.0264	106.	77-127	WG663246
1,3-Dichloropropane	mg/l	.025	0.0252	101.	78-117	WG663246
1,4-Dichlorobenzene	mg/l	.025	0.0285	114.	79-117	WG663246
2,2-Dichloropropane	mg/l	.025	0.0258	103.	63-130	WG663246
2-Butanone (MEK)	mg/l	.125	0.133	106.	58-144	WG663246
2-Chloroethyl vinyl ether	mg/l	.125	0.128	102.	26-172	WG663246
2-Chlorotoluene	mg/l	.025	0.0260	104.	78-123	WG663246
4-Chlorotoluene	mg/l	.025	0.0255	102.	78-122	WG663246
4-Methyl-2-pentanone (MIBK)	mg/l	.125	0.134	107.	58-147	WG663246
Acetone	mg/l	.125	0.133	106.	49-153	WG663246
Acrolein	mg/l	.125	0.0621	49.7	10-181	WG663246
Acrylonitrile	mg/l	.125	0.138	110.	53-153	WG663246
Benzene	mg/l	.025	0.0252	101.	72-119	WG663246
Bromobenzene	mg/l	.025	0.0250	100.	76-121	WG663246
Bromodichloromethane	mg/l	.025	0.0244	97.6	75-127	WG663246
Bromoform	mg/l	.025	0.0263	105.	61-136	WG663246
Bromomethane	mg/l	.025	0.0250	100.	42-172	WG663246
Carbon tetrachloride	mg/l	.025	0.0255	102.	63-129	WG663246
Chlorobenzene	mg/l	.025	0.0257	103.	78-123	WG663246
Chlorodibromomethane	mg/l	.025	0.0253	101.	73-128	WG663246
Chloroethane	mg/l	.025	0.0233	93.3	52-164	WG663246
Chloroform	mg/l	.025	0.0252	101.	76-122	WG663246
Chloromethane	mg/l	.025	0.0266	106.	50-141	WG663246
cis-1,2-Dichloroethene	mg/l	.025	0.0255	102.	75-121	WG663246
cis-1,3-Dichloropropene	mg/l	.025	0.0258	103.	74-124	WG663246
Di-isopropyl ether	mg/l	.025	0.0255	102.	66-129	WG663246
Dibromomethane	mg/l	.025	0.0244	97.4	77-124	WG663246
Dichlorodifluoromethane	mg/l	.025	0.0241	96.4	33-173	WG663246
Ethylbenzene	mg/l	.025	0.0265	106.	77-124	WG663246

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Quality Assurance Report
Level II

L637859

June 05, 2013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Hexachloro-1,3-butadiene	mg/l	.025	0.0320	128.	71-134	WG663246
Isopropylbenzene	mg/l	.025	0.0272	109.	74-126	WG663246
Methyl tert-butyl ether	mg/l	.025	0.0253	101.	67-127	WG663246
Methylene Chloride	mg/l	.025	0.0250	99.9	67-122	WG663246
n-Butylbenzene	mg/l	.025	0.0309	124.	74-130	WG663246
n-Propylbenzene	mg/l	.025	0.0269	107.	77-125	WG663246
Naphthalene	mg/l	.025	0.0299	120.	70-134	WG663246
p-Isopropyltoluene	mg/l	.025	0.0280	112.	77-132	WG663246
sec-Butylbenzene	mg/l	.025	0.0282	113.	77-130	WG663246
Styrene	mg/l	.025	0.0265	106.	69-145	WG663246
tert-Butylbenzene	mg/l	.025	0.0279	111.	76-131	WG663246
Tetrachloroethene	mg/l	.025	0.0264	106.	69-131	WG663246
Toluene	mg/l	.025	0.0250	100.	75-114	WG663246
trans-1,2-Dichloroethene	mg/l	.025	0.0254	102.	63-127	WG663246
trans-1,3-Dichloropropene	mg/l	.025	0.0258	103.	69-124	WG663246
Trichloroethene	mg/l	.025	0.0248	99.0	69-131	WG663246
Trichlorofluoromethane	mg/l	.025	0.0253	101.	53-161	WG663246
Vinyl chloride	mg/l	.025	0.0265	106.	55-142	WG663246
Xylenes, Total	mg/l	.075	0.0808	108.	77-123	WG663246
4-Bromofluorobenzene				90.73	82-120	WG663246
Dibromofluoromethane				101.3	82-126	WG663246
Toluene-d8				103.6	92-112	WG663246
1,2,4-Trichlorobenzene	mg/l	.01	0.00525	52.5	22.9-96.1	WG663422
2,4,6-Trichlorophenol	mg/l	.01	0.00677	67.7	29.8-107	WG663422
2,4-Dichlorophenol	mg/l	.01	0.00694	69.4	31.4-103	WG663422
2,4-Dimethylphenol	mg/l	.01	0.00592	59.2	31.9-107	WG663422
2,4-Dinitrophenol	mg/l	.01	0.00922	92.2	24.2-128	WG663422
2,4-Dinitrotoluene	mg/l	.01	0.00520	52.0	31.2-105	WG663422
2,6-Dinitrotoluene	mg/l	.01	0.00539	53.9	30.6-106	WG663422
2-Chloronaphthalene	mg/l	.01	0.00616	61.6	33.6-105	WG663422
2-Chlorophenol	mg/l	.01	0.00634	63.4	26.2-91.5	WG663422
2-Nitrophenol	mg/l	.01	0.00615	61.5	25.9-106	WG663422
3,3-Dichlorobenzidine	mg/l	.01	0.00559	55.9	27.2-142	WG663422
4,6-Dinitro-2-methylphenol	mg/l	.01	0.0104	104.	18.4-148	WG663422
4-Bromophenyl-phenylether	mg/l	.01	0.00639	63.9	40.7-116	WG663422
4-Chloro-3-methylphenol	mg/l	.01	0.00637	63.7	35.7-100	WG663422
4-Chlorophenyl-phenylether	mg/l	.01	0.00641	64.1	39-113	WG663422
4-Nitrophenol	mg/l	.01	0.00214	21.4	10-52.7	WG663422
Acenaphthene	mg/l	.01	0.00644	64.4	38.7-109	WG663422
Acenaphthylene	mg/l	.01	0.00628	62.8	36-106	WG663422
Anthracene	mg/l	.01	0.00636	63.6	43.6-113	WG663422
Benzidine	mg/l	.01	0.00173	17.3	10-165.2	WG663422
Benzo(a)anthracene	mg/l	.01	0.00640	64.0	51.2-112	WG663422
Benzo(a)pyrene	mg/l	.01	0.00611	61.1	45.6-106	WG663422
Benzo(b)fluoranthene	mg/l	.01	0.00664	66.4	47.6-111	WG663422
Benzo(g,h,i)perylene	mg/l	.01	0.00687	68.7	45.2-117	WG663422
Benzo(k)fluoranthene	mg/l	.01	0.00635	63.5	49.4-114	WG663422
Benzylbutyl phthalate	mg/l	.01	0.00564	56.4	31.8-123	WG663422
Bis(2-chlorethoxy)methane	mg/l	.01	0.00707	70.7	37.2-111	WG663422
Bis(2-chloroethyl)ether	mg/l	.01	0.00648	64.8	22.6-108	WG663422
Bis(2-chloroisopropyl)ether	mg/l	.01	0.00648	64.8	32.9-100	WG663422
Bis(2-ethylhexyl)phthalate	mg/l	.01	0.00826	82.6	36.9-134	WG663422
Chrysene	mg/l	.01	0.00695	69.5	54.6-120	WG663422
Di-n-butyl phthalate	mg/l	.01	0.00736	73.6	41.8-120	WG663422
Di-n-octyl phthalate	mg/l	.01	0.00616	61.6	39.7-112	WG663422
Dibenz(a,h)anthracene	mg/l	.01	0.00639	63.9	42.8-118	WG663422
Diethyl phthalate	mg/l	.01	0.00670	67.0	36.5-129	WG663422

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Tax I.D. [illegible]

Est. 1970

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Farmington, NM 87401

Quality Assurance Report
Level II

L637859

June 05, 2013

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Dimethyl phthalate	mg/l	.01	0.00680	68.0	35.3-128	WG663422
Fluoranthene	mg/l	.01	0.00617	61.7	45.9-115	WG663422
Fluorene	mg/l	.01	0.00635	63.5	41-112	WG663422
Hexachloro-1,3-butadiene	mg/l	.01	0.00547	54.7	16.1-104	WG663422
Hexachlorobenzene	mg/l	.01	0.00626	62.6	38.5-116	WG663422
Hexachlorocyclopentadiene	mg/l	.01	0.00506	50.6	10-121	WG663422
Hexachloroethane	mg/l	.01	0.00565	56.5	16.5-89.8	WG663422
Indeno(1,2,3-cd)pyrene	mg/l	.01	0.00657	65.7	45-116	WG663422
Isophorone	mg/l	.01	0.00686	68.6	35.4-112	WG663422
n-Nitrosodi-n-propylamine	mg/l	.01	0.00724	72.4	33.2-106	WG663422
n-Nitrosodimethylamine	mg/l	.01	0.00415	41.5	10-80.1	WG663422
n-Nitrosodiphenylamine	mg/l	.01	0.00647	64.7	44.4-113	WG663422
Naphthalene	mg/l	.01	0.00612	61.2	32.2-101	WG663422
Nitrobenzene	mg/l	.01	0.00633	63.3	31.4-106	WG663422
Pentachlorophenol	mg/l	.01	0.00458	45.8	10-97.4	WG663422
Phenanthrene	mg/l	.01	0.00664	66.4	46.4-113	WG663422
Phenol	mg/l	.01	0.00319	31.9	10-57.9	WG663422
Pyrene	mg/l	.01	0.00648	64.8	46.3-117	WG663422
2,4,6-Tribromophenol				65.60	11.2-130	WG663422
2-Fluorobiphenyl				63.10	29.5-131	WG663422
2-Fluorophenol				42.50	10-77.9	WG663422
Nitrobenzene-d5				59.20	21.8-123	WG663422
Phenol-d5				30.80	5-70.1	WG663422
p-Terphenyl-d14				57.60	29.3-137	WG663422
1-Methylnaphthalene	mg/l	.002	0.00178	88.8	36.1-123	WG663416
2-Chloronaphthalene	mg/l	.002	0.00169	84.5	43.4-120	WG663416
2-Methylnaphthalene	mg/l	.002	0.00178	89.2	35.1-121	WG663416
Acenaphthene	mg/l	.002	0.00172	86.1	45.8-118	WG663416
Acenaphthylene	mg/l	.002	0.00181	90.4	44.2-121	WG663416
Anthracene	mg/l	.002	0.00184	91.9	47.9-125	WG663416
Benzo(a)anthracene	mg/l	.002	0.00191	95.4	50.6-129	WG663416
Benzo(a)pyrene	mg/l	.002	0.00186	93.1	51.5-121	WG663416
Benzo(b)fluoranthene	mg/l	.002	0.00192	95.8	47.7-126	WG663416
Benzo(g,h,i)perylene	mg/l	.002	0.00179	89.4	45.4-122	WG663416
Benzo(k)fluoranthene	mg/l	.002	0.00180	89.8	48.4-126	WG663416
Chrysene	mg/l	.002	0.00172	85.9	48.8-123	WG663416
Dibenz(a,h)anthracene	mg/l	.002	0.00179	89.7	42.4-128	WG663416
Fluoranthene	mg/l	.002	0.00194	96.8	50.3-126	WG663416
Fluorene	mg/l	.002	0.00176	88.2	47.9-118	WG663416
Indeno(1,2,3-cd)pyrene	mg/l	.002	0.00184	91.9	46.9-125	WG663416
Naphthalene	mg/l	.002	0.00177	88.6	41.2-118	WG663416
Phenanthrene	mg/l	.002	0.00182	91.0	49.1-118	WG663416
Pyrene	mg/l	.002	0.00172	85.8	49.8-120	WG663416
2-Fluorobiphenyl				92.50	31-130	WG663416
Nitrobenzene-d5				84.20	19.7-149	WG663416
p-Terphenyl-d14				91.20	31.4-133	WG663416
1,2-Dibromo-3-Chloropropane	mg/l	.00025	0.000247	99.0	60-140	WG664442
Ethylene Dibromide	mg/l	.00025	0.000250	100.	60-140	WG664442
PCB 1016	mg/l	.0005	0.000337	67.3	49-105	WG663566
PCB 1260	mg/l	.0005	0.000393	78.6	46-126	WG663566
Decachlorobiphenyl				94.20	10-141	WG663566
Tetrachloro-m-xylene				55.60	10-125	WG663566

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Quality Assurance Report
Level II

L637859

June 05, 2013

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0273	0.0263	109.	77-128	3.63	20	WG663246
1,1,1-Trichloroethane	mg/l	0.0267	0.0256	107.	71-126	3.84	20	WG663246
1,1,2,2-Tetrachloroethane	mg/l	0.0278	0.0256	111.	78-130	8.14	20	WG663246
1,1,2-Trichloroethane	mg/l	0.0285	0.0256	114.	81-121	10.9	20	WG663246
1,1,2-Trichlorotrifluoroethane	mg/l	0.0270	0.0259	108.	53-143	4.34	20	WG663246
1,1-Dichloroethane	mg/l	0.0267	0.0258	107.	73-123	3.55	20	WG663246
1,1-Dichloroethene	mg/l	0.0260	0.0248	104.	54-134	4.73	20	WG663246
1,1-Dichloropropene	mg/l	0.0270	0.0252	108.	67-127	6.73	20	WG663246
1,2,3-Trichlorobenzene	mg/l	0.0310	0.0314	124.	77-130	1.19	20	WG663246
1,2,3-Trichloropropane	mg/l	0.0278	0.0249	111.	68-130	11.0	20	WG663246
1,2,3-Trimethylbenzene	mg/l	0.0296	0.0287	118.	77-126	3.06	20	WG663246
1,2,4-Trichlorobenzene	mg/l	0.0324	0.0318	129*	76-127	1.74	20	WG663246
1,2,4-Trimethylbenzene	mg/l	0.0276	0.0261	110.	77-129	5.81	20	WG663246
1,2-Dibromo-3-Chloropropane	mg/l	0.0306	0.0279	122.	55-142	9.34	20	WG663246
1,2-Dibromoethane	mg/l	0.0279	0.0242	112.	78-124	14.0	20	WG663246
1,2-Dichlorobenzene	mg/l	0.0307	0.0295	123*	82-121	3.79	20	WG663246
1,2-Dichloroethane	mg/l	0.0255	0.0237	102.	69-128	7.29	20	WG663246
1,2-Dichloropropane	mg/l	0.0276	0.0263	110.	77-121	4.94	20	WG663246
1,3,5-Trimethylbenzene	mg/l	0.0288	0.0273	115.	78-127	5.47	20	WG663246
1,3-Dichlorobenzene	mg/l	0.0281	0.0264	112.	77-127	6.31	20	WG663246
1,3-Dichloropropane	mg/l	0.0279	0.0252	112.	78-117	10.0	20	WG663246
1,4-Dichlorobenzene	mg/l	0.0300	0.0285	120*	79-117	5.21	20	WG663246
2,2-Dichloropropane	mg/l	0.0274	0.0258	110.	63-130	6.32	20	WG663246
2-Butanone (MEK)	mg/l	0.144	0.133	115.	58-144	8.41	20	WG663246
2-Chloroethyl vinyl ether	mg/l	0.145	0.128	116.	26-172	12.6	22	WG663246
2-Chlorotoluene	mg/l	0.0279	0.0260	112.	78-123	7.13	20	WG663246
4-Chlorotoluene	mg/l	0.0279	0.0255	112.	78-122	9.16	20	WG663246
4-Methyl-2-pentanone (MIBK)	mg/l	0.144	0.134	115.	58-147	7.75	20	WG663246
Acetone	mg/l	0.144	0.133	115.	49-153	7.93	21	WG663246
Acrolein	mg/l	0.0768	0.0621	61.0	10-181	21.1	30	WG663246
Acrylonitrile	mg/l	0.150	0.138	120.	53-153	8.45	20	WG663246
Benzene	mg/l	0.0268	0.0252	107.	72-119	6.34	20	WG663246
Bromobenzene	mg/l	0.0265	0.0250	106.	76-121	6.04	20	WG663246
Bromodichloromethane	mg/l	0.0258	0.0244	103.	75-127	5.67	20	WG663246
Bromoform	mg/l	0.0287	0.0263	115.	61-136	8.66	20	WG663246
Bromomethane	mg/l	0.0253	0.0250	101.	42-172	1.16	20	WG663246
Carbon tetrachloride	mg/l	0.0268	0.0255	107.	63-129	4.93	20	WG663246
Chlorobenzene	mg/l	0.0285	0.0257	114.	78-123	10.4	20	WG663246
Chlorodibromomethane	mg/l	0.0275	0.0253	110.	73-128	8.09	20	WG663246
Chloroethane	mg/l	0.0252	0.0233	101.	52-164	7.94	20	WG663246
Chloroform	mg/l	0.0265	0.0252	106.	76-122	4.73	20	WG663246
Chloromethane	mg/l	0.0277	0.0266	111.	50-141	4.00	20	WG663246
cis-1,2-Dichloroethene	mg/l	0.0265	0.0255	106.	75-121	3.72	20	WG663246
cis-1,3-Dichloropropene	mg/l	0.0276	0.0258	110.	74-124	6.82	20	WG663246
Di-isopropyl ether	mg/l	0.0267	0.0255	107.	66-129	4.42	20	WG663246
Dibromomethane	mg/l	0.0262	0.0244	105.	77-124	7.22	20	WG663246
Dichlorodifluoromethane	mg/l	0.0248	0.0241	99.0	33-173	2.99	20	WG663246
Ethylbenzene	mg/l	0.0290	0.0265	116.	77-124	8.95	20	WG663246
Hexachloro-1,3-butadiene	mg/l	0.0319	0.0320	128.	71-134	0.490	20	WG663246
Isopropylbenzene	mg/l	0.0292	0.0272	117.	74-126	6.89	20	WG663246
Methyl tert-butyl ether	mg/l	0.0263	0.0253	105.	67-127	3.71	20	WG663246
Methylene Chloride	mg/l	0.0260	0.0250	104.	67-122	4.07	20	WG663246
n-Butylbenzene	mg/l	0.0320	0.0309	128.	74-130	3.24	20	WG663246
n-Propylbenzene	mg/l	0.0288	0.0269	115.	77-125	7.05	20	WG663246
Naphthalene	mg/l	0.0312	0.0299	125.	70-134	4.21	20	WG663246
p-Isopropyltoluene	mg/l	0.0299	0.0280	119.	77-132	6.30	20	WG663246
sec-Butylbenzene	mg/l	0.0298	0.0282	119.	77-130	5.57	20	WG663246
Styrene	mg/l	0.0284	0.0265	114.	69-145	6.85	20	WG663246
tert-Butylbenzene	mg/l	0.0298	0.0279	119.	76-131	6.58	20	WG663246
Tetrachloroethene	mg/l	0.0286	0.0264	114.	69-131	7.89	20	WG663246

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Est. 1970

EnviroTech- NM
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Quality Assurance Report
Level II

L637859

June 05, 2013

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	Duplicate RPD	Limit	Batch
Toluene	mg/l	0.0267	0.0250	107.	75-114	6.69	20	WG663246
trans-1,2-Dichloroethene	mg/l	0.0264	0.0254	106.	63-127	4.11	20	WG663246
trans-1,3-Dichloropropene	mg/l	0.0285	0.0258	114.	69-124	9.93	20	WG663246
Trichloroethene	mg/l	0.0263	0.0248	105.	69-131	5.90	20	WG663246
Trichlorofluoromethane	mg/l	0.0261	0.0253	104.	53-161	3.05	20	WG663246
Vinyl chloride	mg/l	0.0274	0.0265	110.	55-142	3.42	20	WG663246
Xylenes, Total	mg/l	0.0866	0.0808	115.	77-123	6.90	20	WG663246
4-Bromofluorobenzene				93.83	82-120			WG663246
Dibromofluoromethane				99.22	82-126			WG663246
Toluene-d8				102.5	92-112			WG663246
1,2,4-Trichlorobenzene	mg/l	0.00661	0.00525	66.0	22.9-96.1	22.9	27.5	WG663422
2,4,6-Trichlorophenol	mg/l	0.00313	0.00677	31.0	29.8-107	73.5*	24.1	WG663422
2,4-Dichlorophenol	mg/l	0.00356	0.00694	36.0	31.4-103	64.5*	24.9	WG663422
2,4-Dimethylphenol	mg/l	0.00757	0.00592	76.0	31.9-107	24.5	25.7	WG663422
2,4-Dinitrophenol	mg/l	0.00747	0.00922	75.0	24.2-128	21.0*	20.5	WG663422
2,4-Dinitrotoluene	mg/l	0.00720	0.00520	72.0	31.2-105	32.2*	22	WG663422
2,6-Dinitrotoluene	mg/l	0.00731	0.00539	73.0	30.6-106	30.3*	23.1	WG663422
2-Chloronaphthalene	mg/l	0.00771	0.00616	77.0	33.6-105	22.4	23	WG663422
2-Chlorophenol	mg/l	0.00359	0.00634	36.0	26.2-91.5	55.4*	26.5	WG663422
2-Nitrophenol	mg/l	0.00332	0.00615	33.0	25.9-106	59.8*	26.9	WG663422
3,3-Dichlorobenzidine	mg/l	0.00774	0.00559	77.0	27.2-142	32.3*	22.3	WG663422
4,6-Dinitro-2-methylphenol	mg/l	0.00812	0.0104	81.0	18.4-148	24.8*	24.4	WG663422
4-Bromophenyl-phenylether	mg/l	0.00838	0.00639	84.0	40.7-116	26.9*	21	WG663422
4-Chloro-3-methylphenol	mg/l	0.00518	0.00637	52.0	35.7-100	20.7	22.9	WG663422
4-Chlorophenyl-phenylether	mg/l	0.00824	0.00641	82.0	39-113	25.0*	20.9	WG663422
4-Nitrophenol	mg/l	0.00119	0.00214	12.0	10-52.7	57.4*	40	WG663422
Acenaphthene	mg/l	0.00823	0.00644	82.0	38.7-109	24.4*	21.5	WG663422
Acenaphthylene	mg/l	0.00817	0.00628	82.0	36-106	26.1*	21	WG663422
Anthracene	mg/l	0.00823	0.00636	82.0	43.6-113	25.7*	18.8	WG663422
Benzidine	mg/l	0.00186	0.00173	18.0	10-165.2	7.23	40	WG663422
Benzo(a)anthracene	mg/l	0.00837	0.00640	84.0	51.2-112	26.7*	20	WG663422
Benzo(a)pyrene	mg/l	0.00800	0.00611	80.0	45.6-106	26.8*	20	WG663422
Benzo(b)fluoranthene	mg/l	0.00854	0.00664	85.0	47.6-111	25.1*	20	WG663422
Benzo(g,h,i)perylene	mg/l	0.00876	0.00687	88.0	45.2-117	24.2*	20	WG663422
Benzo(k)fluoranthene	mg/l	0.00857	0.00635	86.0	49.4-114	29.7*	20	WG663422
Benzylbutyl phthalate	mg/l	0.00782	0.00564	78.0	31.8-123	32.5*	20.7	WG663422
Bis(2-chlorethoxy)methane	mg/l	0.00907	0.00707	91.0	37.2-111	24.8*	24.1	WG663422
Bis(2-chloroethyl)ether	mg/l	0.00835	0.00648	83.0	22.6-108	25.2	27.9	WG663422
Bis(2-chloroisopropyl)ether	mg/l	0.00858	0.00648	86.0	32.9-100	27.8*	25.1	WG663422
Bis(2-ethylhexyl)phthalate	mg/l	0.00825	0.00826	82.0	36.9-134	0.120	23.6	WG663422
Chrysene	mg/l	0.00925	0.00695	92.0	54.6-120	28.3*	20	WG663422
Di-n-butyl phthalate	mg/l	0.00805	0.00736	80.0	41.8-120	9.00	20.2	WG663422
Di-n-octyl phthalate	mg/l	0.00813	0.00616	81.0	39.7-112	27.6*	21.1	WG663422
Dibenz(a,h)anthracene	mg/l	0.00816	0.00639	82.0	42.8-118	24.3*	20	WG663422
Diethyl phthalate	mg/l	0.00890	0.00670	89.0	36.5-129	28.3*	20	WG663422
Dimethyl phthalate	mg/l	0.00911	0.00680	91.0	35.3-128	29.0*	20.8	WG663422
Fluoranthene	mg/l	0.00820	0.00617	82.0	45.9-115	28.3*	20	WG663422
Fluorene	mg/l	0.00841	0.00635	84.0	41-112	28.0*	20.2	WG663422
Hexachloro-1,3-butadiene	mg/l	0.00691	0.00547	69.0	16.1-104	23.3	31.2	WG663422
Hexachlorobenzene	mg/l	0.00790	0.00626	79.0	38.5-116	23.1*	20.1	WG663422
Hexachlorocyclopentadiene	mg/l	0.00660	0.00506	66.0	10-121	26.5	27.9	WG663422
Hexachloroethane	mg/l	0.00736	0.00565	74.0	16.5-89.8	26.3	30.7	WG663422
Indeno(1,2,3-cd)pyrene	mg/l	0.00845	0.00657	84.0	45-116	25.0*	20	WG663422
Isophorone	mg/l	0.00901	0.00686	90.0	35.4-112	27.1*	21.5	WG663422
n-Nitrosodi-n-propylamine	mg/l	0.00918	0.00724	92.0	33.2-106	23.7	23.7	WG663422
n-Nitrosodimethylamine	mg/l	0.00622	0.00415	62.0	10-80.1	40.0*	37.5	WG663422
n-Nitrosodiphenylamine	mg/l	0.00827	0.00647	83.0	44.4-113	24.5*	20	WG663422

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Quality Assurance Report
Level II

L637859

June 05, 2013

Analyte	Units	Laboratory Control Sample Result	Ref	%Rec	Limit	RPD	Limit	Batch
Naphthalene	mg/l	0.00774	0.00612	77.0	32.2-101	23.4	23.8	WG663422
Nitrobenzene	mg/l	0.00799	0.00633	80.0	31.4-106	23.2	25.7	WG663422
Pentachlorophenol	mg/l	0.00275	0.00458	28.0	10-97.4	49.8*	35.1	WG663422
Phenanthrene	mg/l	0.00875	0.00664	87.0	46.4-113	27.4*	20	WG663422
Phenol	mg/l	0.00209	0.00319	21.0	10-57.9	41.5*	35	WG663422
Pyrene	mg/l	0.00857	0.00648	86.0	46.3-117	27.8*	20	WG663422
2,4,6-Tribromophenol				33.30	11.2-130			WG663422
2-Fluorobiphenyl				79.40	29.5-131			WG663422
2-Fluorophenol				24.40	10-77.9			WG663422
Nitrobenzene-d5				76.90	21.8-123			WG663422
Phenol-d5				20.60	5-70.1			WG663422
p-Terphenyl-d14				75.70	29.3-137			WG663422
1-Methylnaphthalene	mg/l	0.00179	0.00178	90.0	36.1-123	0.910	20	WG663416
2-Chloronaphthalene	mg/l	0.00168	0.00169	84.0	43.4-120	0.550	20	WG663416
2-Methylnaphthalene	mg/l	0.00179	0.00178	90.0	35.1-121	0.460	20	WG663416
Acenaphthene	mg/l	0.00170	0.00172	85.0	45.8-118	1.08	20	WG663416
Acenaphthylene	mg/l	0.00179	0.00181	89.0	44.2-121	1.19	20	WG663416
Anthracene	mg/l	0.00184	0.00184	92.0	47.9-125	0.0100	20	WG663416
Benzo(a)anthracene	mg/l	0.00194	0.00191	97.0	50.6-129	1.72	20	WG663416
Benzo(a)pyrene	mg/l	0.00190	0.00186	95.0	51.5-121	2.14	20	WG663416
Benzo(b)fluoranthene	mg/l	0.00193	0.00192	96.0	47.7-126	0.470	21.3	WG663416
Benzo(g,h,i)perylene	mg/l	0.00182	0.00179	91.0	45.4-122	1.46	20	WG663416
Benzo(k)fluoranthene	mg/l	0.00188	0.00180	94.0	48.4-126	4.67	20	WG663416
Chrysene	mg/l	0.00175	0.00172	88.0	48.8-123	1.98	20	WG663416
Dibenz(a,h)anthracene	mg/l	0.00182	0.00179	91.0	42.4-128	1.55	20.2	WG663416
Fluoranthene	mg/l	0.00197	0.00194	98.0	50.3-126	1.57	20	WG663416
Fluorene	mg/l	0.00173	0.00176	87.0	47.9-118	1.68	20	WG663416
Indeno(1,2,3-cd)pyrene	mg/l	0.00185	0.00184	93.0	46.9-125	0.760	20	WG663416
Naphthalene	mg/l	0.00178	0.00177	89.0	41.2-118	0.270	20	WG663416
Phenanthrene	mg/l	0.00182	0.00182	91.0	49.1-118	0.0900	20	WG663416
Pyrene	mg/l	0.00175	0.00172	87.0	49.8-120	1.81	20	WG663416
2-Fluorobiphenyl				90.40	31-130			WG663416
Nitrobenzene-d5				82.80	19.7-149			WG663416
p-Terphenyl-d14				92.90	31.4-133			WG663416
1,2-Dibromo-3-Chloropropane	mg/l	0.000239	0.000247	96.0	60-140	3.58	20	WG664442
Ethylene Dibromide	mg/l	0.000243	0.000250	97.0	60-140	3.07	20	WG664442
PCB 1016	mg/l	0.000357	0.000337	71.0	49-105	5.97	25	WG663566
PCB 1260	mg/l	0.000427	0.000393	85.0	46-126	8.34	34	WG663566
Decachlorobiphenyl				95.30	10-141			WG663566
Tetrachloro-m-xylene				65.90	10-125			WG663566

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Mercury	mg/l	0.00300	0.0000655	.003	97.8	80-120	L637707-01	WG663326
1,1,1,2-Tetrachloroethane	mg/l	0.0263	0	.025	105.	71-130	L637763-15	WG663246
1,1,1-Trichloroethane	mg/l	0.0274	0	.025	110.	58-137	L637763-15	WG663246
1,1,2,2-Tetrachloroethane	mg/l	0.0245	0	.025	98.1	64-149	L637763-15	WG663246
1,1,2-Trichloroethane	mg/l	0.0258	0	.025	103.	73-128	L637763-15	WG663246
1,1,2-Trichlorotrifluoroethane	mg/l	0.0311	0	.025	124.	36-159	L637763-15	WG663246
1,1-Dichloroethane	mg/l	0.0271	0	.025	108.	58-133	L637763-15	WG663246

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Quality Assurance Report
Level II

L637859

June 05, 2013

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1-Dichloroethene	mg/l	0.0272	0	.025	109.	32-152	L637763-15	WG663246
1,1-Dichloropropene	mg/l	0.0262	0	.025	105.	50-140	L637763-15	WG663246
1,2,3-Trichlorobenzene	mg/l	0.0304	0	.025	121.	68-135	L637763-15	WG663246
1,2,3-Trichloropropane	mg/l	0.0244	0	.025	97.6	74-137	L637763-15	WG663246
1,2,3-Trimethylbenzene	mg/l	0.0278	0	.025	111.	67-133	L637763-15	WG663246
1,2,4-Trichlorobenzene	mg/l	0.0330	0	.025	132.	67-133	L637763-15	WG663246
1,2,4-Trimethylbenzene	mg/l	0.0259	0	.025	104.	62-141	L637763-15	WG663246
1,2-Dibromo-3-Chloropropane	mg/l	0.0282	0	.025	113.	55-148	L637763-15	WG663246
1,2-Dibromoethane	mg/l	0.0246	0	.025	98.6	71-129	L637763-15	WG663246
1,2-Dichlorobenzene	mg/l	0.0302	0	.025	121.	75-125	L637763-15	WG663246
1,2-Dichloroethane	mg/l	0.0237	0	.025	95.0	59-135	L637763-15	WG663246
1,2-Dichloropropane	mg/l	0.0266	0	.025	106.	68-126	L637763-15	WG663246
1,3,5-Trimethylbenzene	mg/l	0.0275	0	.025	110.	67-136	L637763-15	WG663246
1,3-Dichlorobenzene	mg/l	0.0264	0	.025	106.	69-131	L637763-15	WG663246
1,3-Dichloropropane	mg/l	0.0253	0	.025	101.	70-122	L637763-15	WG663246
1,4-Dichlorobenzene	mg/l	0.0298	0	.025	119.	70-123	L637763-15	WG663246
2,2-Dichloropropane	mg/l	0.0275	0	.025	110.	51-141	L637763-15	WG663246
2-Butanone (MEK)	mg/l	0.100	0	.125	80.2	51-149	L637763-15	WG663246
2-Chloroethyl vinyl ether	mg/l	0.119	0	.125	95.3	10-161	L637763-15	WG663246
2-Chlorotoluene	mg/l	0.0261	0	.025	104.	65-133	L637763-15	WG663246
4-Chlorotoluene	mg/l	0.0261	0	.025	104.	67-129	L637763-15	WG663246
4-Methyl-2-pentanone (MIBK)	mg/l	0.132	0	.125	106.	53-154	L637763-15	WG663246
Acetone	mg/l	0.0714	0.00184	.125	55.7	34-146	L637763-15	WG663246
Acrolein	mg/l	0.111	0	.125	88.9	10-189	L637763-15	WG663246
Acrylonitrile	mg/l	0.126	0	.125	100.	49-162	L637763-15	WG663246
Benzene	mg/l	0.0263	0	.025	105.	51-134	L637763-15	WG663246
Bromobenzene	mg/l	0.0250	0	.025	100.	64-130	L637763-15	WG663246
Bromodichloromethane	mg/l	0.0244	0	.025	97.5	67-132	L637763-15	WG663246
Bromoform	mg/l	0.0255	0	.025	102.	59-137	L637763-15	WG663246
Bromomethane	mg/l	0.0239	0	.025	95.6	23-177	L637763-15	WG663246
Carbon tetrachloride	mg/l	0.0264	0	.025	106.	49-140	L637763-15	WG663246
Chlorobenzene	mg/l	0.0260	0	.025	104.	69-126	L637763-15	WG663246
Chlorodibromomethane	mg/l	0.0249	0	.025	99.7	68-130	L637763-15	WG663246
Chloroethane	mg/l	0.0236	0	.025	94.4	32-177	L637763-15	WG663246
Chloroform	mg/l	0.0261	0	.025	104.	64-130	L637763-15	WG663246
Chloromethane	mg/l	0.0257	0	.025	103.	27-155	L637763-15	WG663246
cis-1,2-Dichloroethene	mg/l	0.0630	0.0380	.025	100.	54-137	L637763-15	WG663246
cis-1,3-Dichloropropene	mg/l	0.0261	0	.025	104.	63-127	L637763-15	WG663246
Di-isopropyl ether	mg/l	0.0271	0	.025	108.	58-133	L637763-15	WG663246
Dibromomethane	mg/l	0.0249	0	.025	99.5	68-131	L637763-15	WG663246
Dichlorodifluoromethane	mg/l	0.0231	0	.025	92.6	16-188	L637763-15	WG663246
Ethylbenzene	mg/l	0.0274	0	.025	110.	64-135	L637763-15	WG663246
Hexachloro-1,3-butadiene	mg/l	0.0315	0	.025	126.	64-140	L637763-15	WG663246
Isopropylbenzene	mg/l	0.0301	0	.025	120.	62-134	L637763-15	WG663246
Methyl tert-butyl ether	mg/l	0.0272	0	.025	109.	55-136	L637763-15	WG663246
Methylene Chloride	mg/l	0.0258	0.000341	.025	102.	52-130	L637763-15	WG663246
n-Butylbenzene	mg/l	0.0322	0	.025	129.	62-142	L637763-15	WG663246
n-Propylbenzene	mg/l	0.0274	0	.025	109.	62-137	L637763-15	WG663246
Naphthalene	mg/l	0.0286	0	.025	114.	65-140	L637763-15	WG663246
p-Isopropyltoluene	mg/l	0.0286	0	.025	114.	64-142	L637763-15	WG663246
sec-Butylbenzene	mg/l	0.0284	0	.025	114.	67-139	L637763-15	WG663246
Styrene	mg/l	0.0275	0	.025	110.	58-152	L637763-15	WG663246
tert-Butylbenzene	mg/l	0.0281	0	.025	112.	66-139	L637763-15	WG663246
Tetrachloroethene	mg/l	0.0398	0.0151	.025	98.8	56-139	L637763-15	WG663246
Toluene	mg/l	0.0258	0.000549	.025	101.	61-126	L637763-15	WG663246
trans-1,2-Dichloroethene	mg/l	0.0303	0.00423	.025	104.	45-137	L637763-15	WG663246
trans-1,3-Dichloropropene	mg/l	0.0252	0	.025	101.	59-130	L637763-15	WG663246
Trichloroethene	mg/l	0.0334	0.00906	.025	97.2	40-155	L637763-15	WG663246
Trichlorofluoromethane	mg/l	0.0255	0	.025	102.	35-177	L637763-15	WG663246

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Est. 1970

EnviroTech- NM
Lynn Berry
5796 US. Highway 64

Farmington, NM 87401

Quality Assurance Report
Level II

L637859

June 05, 2013

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Vinyl chloride	mg/l	0.0261	0	.025	104.	32-159	L637763-15	WG663246
Xylenes, Total	mg/l	0.0818	0	.075	109.	64-133	L637763-15	WG663246
4-Bromofluorobenzene					88.92	82-120		WG663246
Dibromofluoromethane					99.72	82-126		WG663246
Toluene-d8					101.4	92-112		WG663246
1,2-Dibromo-3-Chloropropane	mg/l	0.000108	0	.0001	108.	60-140	L638217-03	WG664442
Ethylene Dibromide	mg/l	0.000104	0	.0001	104.	60-140	L638217-03	WG664442

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Mercury	mg/l	0.00294	0.00300	96.0	80-120	1.89	20	L637707-01	WG663326
1,1,1,2-Tetrachloroethane	mg/l	0.0266	0.0263	106.	71-130	0.870	20	L637763-15	WG663246
1,1,1-Trichloroethane	mg/l	0.0270	0.0274	108.	58-137	1.43	20	L637763-15	WG663246
1,1,2,2-Tetrachloroethane	mg/l	0.0264	0.0245	106.	64-149	7.46	20	L637763-15	WG663246
1,1,2-Trichloroethane	mg/l	0.0273	0.0258	109.	73-128	5.62	20	L637763-15	WG663246
1,1,2-Trichlorotrifluoroethane	mg/l	0.0310	0.0311	124.	36-159	0.250	21	L637763-15	WG663246
1,1-Dichloroethane	mg/l	0.0275	0.0271	110.	58-133	1.45	20	L637763-15	WG663246
1,1-Dichloroethene	mg/l	0.0281	0.0272	112.	32-152	3.43	20	L637763-15	WG663246
1,1-Dichloropropene	mg/l	0.0275	0.0262	110.	50-140	4.95	20	L637763-15	WG663246
1,2,3-Trichlorobenzene	mg/l	0.0332	0.0304	133.	68-135	9.01	20	L637763-15	WG663246
1,2,3-Trichloropropane	mg/l	0.0267	0.0244	107.	74-137	8.98	20	L637763-15	WG663246
1,2,3-Trimethylbenzene	mg/l	0.0271	0.0278	108.	67-133	2.40	20	L637763-15	WG663246
1,2,4-Trichlorobenzene	mg/l	0.0355	0.0330	142.*	67-133	7.26	20	L637763-15	WG663246
1,2,4-Trimethylbenzene	mg/l	0.0262	0.0259	105.	62-141	1.15	20	L637763-15	WG663246
1,2-Dibromo-3-Chloropropane	mg/l	0.0303	0.0282	121.	55-148	6.97	22	L637763-15	WG663246
1,2-Dibromoethane	mg/l	0.0264	0.0246	106.	71-129	7.02	20	L637763-15	WG663246
1,2-Dichlorobenzene	mg/l	0.0301	0.0302	120.	75-125	0.320	20	L637763-15	WG663246
1,2-Dichloroethane	mg/l	0.0250	0.0237	99.9	59-135	5.04	20	L637763-15	WG663246
1,2-Dichloropropane	mg/l	0.0273	0.0266	109.	68-126	2.53	20	L637763-15	WG663246
1,3,5-Trimethylbenzene	mg/l	0.0274	0.0275	110.	67-136	0.120	20	L637763-15	WG663246
1,3-Dichlorobenzene	mg/l	0.0273	0.0264	109.	69-131	3.30	20	L637763-15	WG663246
1,3-Dichloropropane	mg/l	0.0268	0.0253	107.	70-122	5.62	20	L637763-15	WG663246
1,4-Dichlorobenzene	mg/l	0.0292	0.0298	117.	70-123	1.89	20	L637763-15	WG663246
2,2-Dichloropropane	mg/l	0.0276	0.0275	110.	51-141	0.210	20	L637763-15	WG663246
2-Butanone (MEK)	mg/l	0.113	0.100	90.6	51-149	12.2	22	L637763-15	WG663246
2-Chloroethyl vinyl ether	mg/l	0.131	0.119	105.	10-161	9.55	40	L637763-15	WG663246
2-Chlorotoluene	mg/l	0.0264	0.0261	106.	65-133	1.36	20	L637763-15	WG663246
4-Chlorotoluene	mg/l	0.0265	0.0261	106.	67-129	1.55	20	L637763-15	WG663246
4-Methyl-2-pentanone (MIBK)	mg/l	0.144	0.132	116.	53-154	8.76	21	L637763-15	WG663246
Acetone	mg/l	0.0820	0.0714	64.1	34-146	13.8	22	L637763-15	WG663246
Acrolein	mg/l	0.179	0.111	143.	10-189	46.7*	30	L637763-15	WG663246
Acrylonitrile	mg/l	0.134	0.126	107.	49-162	6.26	20	L637763-15	WG663246
Benzene	mg/l	0.0273	0.0263	109.	51-134	3.80	20	L637763-15	WG663246
Bromobenzene	mg/l	0.0254	0.0250	102.	64-130	1.64	20	L637763-15	WG663246
Bromodichloromethane	mg/l	0.0252	0.0244	101.	67-132	3.20	20	L637763-15	WG663246
Bromoform	mg/l	0.0276	0.0255	110.	59-137	7.92	20	L637763-15	WG663246
Bromomethane	mg/l	0.0242	0.0239	96.7	23-177	1.19	21	L637763-15	WG663246
Carbon tetrachloride	mg/l	0.0243	0.0264	97.1	49-140	8.48	20	L637763-15	WG663246
Chlorobenzene	mg/l	0.0268	0.0260	107.	69-126	2.76	20	L637763-15	WG663246
Chlorodibromomethane	mg/l	0.0259	0.0249	104.	68-130	3.99	20	L637763-15	WG663246
Chloroethane	mg/l	0.0230	0.0236	92.1	32-177	2.44	21	L637763-15	WG663246
Chloroform	mg/l	0.0265	0.0261	106.	64-130	1.43	20	L637763-15	WG663246
Chloromethane	mg/l	0.0257	0.0257	103.	27-155	0.100	20	L637763-15	WG663246
cis-1,2-Dichloroethene	mg/l	0.0610	0.0630	92.1	54-137	3.16	20	L637763-15	WG663246

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Tax I.D. 62-0814289

Est. 1970

EnviroTech- NM
Lynn Berry
5796 US. Highway 64

Farmington, NM 87401

Quality Assurance Report
Level II

L637859

June 05, 2013

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
cis-1,3-Dichloropropene	mg/l	0.0275	0.0261	110.	63-127	4.98	20	L637763-15	WG663246
Di-isopropyl ether	mg/l	0.0281	0.0271	112.	58-133	3.48	20	L637763-15	WG663246
Dibromomethane	mg/l	0.0264	0.0249	106.	68-131	5.82	20	L637763-15	WG663246
Dichlorodifluoromethane	mg/l	0.0228	0.0231	91.0	16-188	1.69	22	L637763-15	WG663246
Ethylbenzene	mg/l	0.0273	0.0274	109.	64-135	0.380	20	L637763-15	WG663246
Hexachloro-1,3-butadiene	mg/l	0.0321	0.0315	128.	64-140	1.97	20	L637763-15	WG663246
Isopropylbenzene	mg/l	0.0299	0.0301	120.	62-134	0.490	20	L637763-15	WG663246
Methyl tert-butyl ether	mg/l	0.0288	0.0272	115.	55-136	5.50	20	L637763-15	WG663246
Methylene Chloride	mg/l	0.0264	0.0258	104.	52-130	2.24	20	L637763-15	WG663246
n-Butylbenzene	mg/l	0.0318	0.0322	127.	62-142	1.50	20	L637763-15	WG663246
n-Propylbenzene	mg/l	0.0275	0.0274	110.	62-137	0.400	20	L637763-15	WG663246
Naphthalene	mg/l	0.0321	0.0286	128.	65-140	11.5	20	L637763-15	WG663246
p-Isopropyltoluene	mg/l	0.0291	0.0286	116.	64-142	1.47	20	L637763-15	WG663246
sec-Butylbenzene	mg/l	0.0282	0.0284	113.	67-139	0.620	20	L637763-15	WG663246
Styrene	mg/l	0.0281	0.0275	112.	58-152	2.27	20	L637763-15	WG663246
tert-Butylbenzene	mg/l	0.0282	0.0281	113.	66-139	0.380	20	L637763-15	WG663246
Tetrachloroethene	mg/l	0.0388	0.0398	94.8	56-139	2.54	20	L637763-15	WG663246
Toluene	mg/l	0.0264	0.0258	103.	61-126	2.34	20	L637763-15	WG663246
trans-1,2-Dichloroethene	mg/l	0.0303	0.0303	104.	45-137	0.170	20	L637763-15	WG663246
trans-1,3-Dichloropropene	mg/l	0.0275	0.0252	110.	59-130	8.69	20	L637763-15	WG663246
Trichloroethene	mg/l	0.0333	0.0334	97.1	40-155	0.0900	20	L637763-15	WG663246
Trichlorofluoromethane	mg/l	0.0249	0.0255	99.6	35-177	2.29	23	L637763-15	WG663246
Vinyl chloride	mg/l	0.0264	0.0261	105.	32-159	1.13	21	L637763-15	WG663246
Xylenes, Total	mg/l	0.0827	0.0818	110.	64-133	1.13	20	L637763-15	WG663246
4-Bromofluorobenzene				92.04	82-120				WG663246
Dibromofluoromethane				100.2	82-126				WG663246
Toluene-d8				102.4	92-112				WG663246

Serial Dilution

Batch number /Run number / Sample number cross reference

WG663326: R2684463: L637859-01
WG663246: R2685004: L637859-01
WG663422: R2688325: L637859-01
WG663416: R2689382: L637859-01
WG664442: R2693060: L637859-01
WG663566: R2694243: L637859-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
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Quality Assurance Report
Level II

L637859

June 05, 2013

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

D198

Chain of Custody Page 1 of 1

Company Name/Address:
EnviroTech- NM

5796 US. Highway 64
Farmington.NM 87401

Billing Information:

Doris Moore
5796 US. Highway 64

Farmington,NM 87401

Report to: Lynn Berry

Email to: lberry@envirotech-inc.com

Project Description: San Juan River Plant

City/Sate Collected

Phone: (505) 632-0615
FAX:

Client Project #: 92187-0008

ESC Key:

Collected by: (print) Cheryl Bommarito

Site/Facility ID#: P305064-01

P.O.#: 21789

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day..... 200%
___ Next Day..... 100%
___ Two Day..... 50%
___ Three Day..... 25%

Date Results Needed:

Email? __No X Yes
FAX? __No __Yes

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	7470 Mercury (Total) 250 poly + HNO_3	8011 EDB 504.1 2x40mL VOA+HCl	8260 2x40mL VOA+HCl	8270 PAHSIM (benzo-a-Pyrene) 8x40mL amber	8270 SVOC 2x100mL amber no preserv.	6020 500mL poly +HNO_3 Uranium	8082 3x1L Amber no preserv. PCB
~~P305064-01~~ R10-Discharge		OT		5/22/13	10:00	13	✓	✓	✓	✓	✓	✓	✓

Analysis/Container/Preservative

ESC LAB SCIENCES
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

CoCode: ENVIROFNM (lab use only)
Template/Prelogin
Shipped Via:

Remarks/Contaminant	Sample # (lab only)
	L637861-01

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other Aqueous

pH ___ Temp ___

Remarks: 5435 5515 2350 Flow ___ Other ___

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ ___	Condition:	(lab use only)
Temp: 2.7°C	Bottles Received: NV +3 11	CoC Seals Intact: ___ Y ___ N ___ NA
Date: 5-24-13	Time: 0900	pH Checked: NCF:

ESC
L·A·B S·C·I·E·N·C·E·S

NON-CONFORMANCE FORM

Login No.: L637861

Date: 5/24/13

Evaluated by: [signature]

Client: ENVIROFNM

Non-Conformance (check applicable items)

- ☐ Parameter(s) past holding time
- ☐ Improper temperature
- ☐ Improper container type
- ☐ Improper preservation
- ☐ Container lid not intact
- ☐ Login Clarification Needed
- ☐ Chain of custody is incomplete
- ☐ Chain of Custody is missing (see below)
- ☐ Broken container(s) (See below)
- ☐ Broken container: sufficient sample volume remains for analysis requested (See below)

If no COC: Received by_____
Date:_____Time:_____
Temp:_____Cont. Rec_____ pH:_____
☐ Fedex ☐ UPS ☐SWA ☐ Other_____
Tracking #_____

- ☐ Insufficient packing material around container
- ☐ Insufficient packing material inside cooler
- ☐ Improper handling by carrier (FedEx / UPS / Courier
- ☐ Sample was frozen

Comments: (1.) Client listed PAHSIM as having 40ml vials. We did not receive any 40ml unpreserved vials. (2.) Received four 125ml ambers as opposed to 100ml ambers. (3.) Received one vial + one amber liter broken. (4.) Did not receive 40ml NaThio vials for 5U504.

Login Instructions: **TSR Initials:** DR

Client informed by call / email / fax / voice mail date: 5/24 time: 13:50
Client contact: (1) Use (1) of the IL 8082 containers to run PAHSIM's and 504.1's
(2) Proceed w/ analysis using 125ml's if possible
(3) Remaining sample.
(4) Vial #1 Poor up MAS pending for improper container

The GEL Group

Charleston, SC 29417
Columbia, SC 29209
T 843.556.8171 F 843.766.1178

www.gel.com

June 12, 2013

Ms. Janice Cozby
Environmental Science Corporation
12065 Lebanon Road
Mount Juliet, Tennessee 37122

Re: Routine Analytical
Work Order: 326582

Dear Ms. Cozby:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 29, 2013. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4300.

Sincerely,

Julie Robinson

Julie Robinson for
Client Services Team
Project Manager

Purchase Order: S18331
Chain of Custody: WG663542
Enclosures

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis Report
for

ENVL001 Environmental Science Corporation

Client SDG: 326582 GEL Work Order: 326582

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a Tracer compound

** Analyte is a surrogate compound

J Value is estimated

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Client Services Team.

Reviewed by Julie Roberson

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 12, 2013

Company : Environmental Science Corporation
Address : 12065 Lebanon Road

Mount Juliet, Tennessee 37122
Contact: Ms. Janice Cozby
Project: Routine Analytical

Client Sample ID:	L637861-01	Project:	ENVL00507
Sample ID:	326582001	Client ID:	ENVL001
Matrix:	GW		
Collect Date:	22-MAY-13 10:00		
Receive Date:	29-MAY-13		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
3005/6020 Uranium "As Received"											
Uranium		0.484	0.067	0.200	ug/L	1	PRB	06/07/13	0306	1304859	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
3546 3005A	ICP-MS 3005 PREP	AXG2	06/06/13	0830	1304858

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3005/6020	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: June 12, 2013

Environmental Science Corporation
12065 Lebanon Road
Mount Juliet, Tennessee
Contact: Ms. Janice Cozby

Workorder: 326582

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1304859										
QC1202884003 326582001 DUP										
Uranium		0.484		0.471	ug/L	2.72 ^		(+/-0.200)	PRB	06/07/13 03:12
QC1202884002 LCS										
Uranium	50.0			51.9	ug/L		104	(80%-120%)		06/07/13 03:00
QC1202884001 MB										
Uranium			U	ND	ug/L					06/07/13 02:54
QC1202884004 326582001 MS										
Uranium	50.0	0.484		51.9	ug/L		103	(75%-125%)		06/07/13 03:18
QC1202884005 326582001 SDILT										
Uranium		0.484	J	0.080	ug/L	17.4		(0%-10%)		06/07/13 03:24

Notes:

The Qualifiers in this report are defined as follows:

- < Result is less than value reported
- > Result is greater than value reported
- E %difference of sample and SD is >10%. Sample concentration must meet flagging criteria
- FB Mercury was found present at quantifiable concentrations in field blanks received with these samples. Data associated with the blank are deemed invalid for reporting to regulatory agencies
- H Analytical holding time was exceeded
- J Value is estimated
- N Metals--The Matrix spike sample recovery is not within specified control limits
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Other specific qualifiers were required to properly define the results. Consult case narrative.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- h Preparation or preservation holding time was exceeded

QC Summary

Workorder: 326582

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

There are no "Data Exception Reports" associated with this analytical report.

List of current GEL Certifications as of 12 June 2013

State	Certification
Alaska	UST-110
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC00012
DoD ELAP A2LA ISO 17025	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-12-00283, P330-12-00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M-SC012
Nevada	SC000122011-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
Plant Material Permit	PDEP-12-00260
South Carolina Chemistry	10120001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-13-8
Utah NELAP	SC000122013-8
Vermont	VT87156
Virginia NELAP	460202
Washington	C780-12
Wisconsin	999887790

320587

Sub-Contract Chain of Custody

Environmental Science Corp
12065 Lebanon Road
Mt. Juliet, TN 37122
(615) 773-9756 (615) 758-5859 fax

Sub-Contract Lab : GEL
City / State : Charleston, SC
Results Needed by : 6/18/13
ESC Purchase Order # : S18331

Send Reports To : Janice Cozby jcozby@esclabsciences.com

WORKGROUP	WG663542
Date Created :	5/28/2013

SAMPLENO Container #	MATRIX	Date / Time Collected	PARAMETER	Code	METHOD	Comments
L637861-01	GW	5/22/2013 10:00	Miscellaneous Analyses MISC-SUB			TOTAL URANIUM BY 6020

15261192

Relinquished by: [signature] Date: 052813
Received by: [signature] Date: 5/29/13 0920
Relinquished by: Date:
Received by: Date:

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: Environmental Science	SDG/AR/COC/Work Order: 326582
Received By: DH	Date Received: 5/29/13

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 cpm
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		✓	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: (Ice bags) Blue ice Dry ice None Other (describe) 4 °C *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: 310499 19 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	✓			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.	✓			Circle Applicable: (FedEx Air) FedEx Ground UPS Field Services Courier Other 5547 0244 3124

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials _____ Date 5/29/13 Page 1 of 1

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: Environmental Science	SDG/AR/COC/Work Order: 326582
Received By: JH	Date Received: 5/29/13

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 cpm
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample contatiners < action levels?
COC/Samples marked containing PCBs?		✓	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	If yes, samples are to be segregeated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: (Ice bags) Blue ice Dry ice None Other (describe) 4°C *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: 31049919 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	✓			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.	✓			Circle Applicable: (FedEx Air) FedEx Ground UPS Field Services Courier Other 5547 0244 3124

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials JH Date 5/29/13 Page 1 of 1

2609 North River Road, Port Allen, Louisiana 70767
(800) 401-4277 -- FAX (225) 381-2996

AMRAD
AMERICAN RADIATION SERVICES, LLC

American Radiation Services, LLC

Laboratory Analysis Report

ARS1-13-01055

Prepared for:

Envirotech, Inc

Lynn Berry
5796 US Hwy 64
Farmington, NM 87401

laboratory@envirotech-inc.com

Phone: 505.320.0615
Fax: 505.632.1865

Project Manager Review

Management Review

Contact Person: Questions regarding this analytical report should be addressed to:

Project Manager

ProjectManagers@amrad.com

Phone: 225.381.2991
Fax: 225.3812996

ACLASS ACCREDITED

LELAP Cert# 01949

AMRAD
AMERICAN RADIATION SERVICES, LLC

2609 North River Road, Port Allen, Louisiana 70767
1 (800) 401-4277 FAX (225) 381-2996

ARS Sample Delivery Group: ARS1-13-01055
Client Sample ID: Rio Discharge
Sample Collection Date: 05/22/13
Sample Matrix: Aqueous

Request or PO Number: 21783
ARS Sample ID: ARS1-13-01055-001
Date Received: 05/24/13
Report Date: 06/05/13

Analysis Description	Analysis Results	Analysis Error +/- 2 s	MDC	DLC	Qual	Analysis Units	Analysis Test Method	Analysis Date/Time	Analysis Technician	Tracer/Chem Recovery
BE-7	-5.736	10.063	18.000	9.000	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
K-40	11.072	24.887	29.300	14.650	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
SC-46	-0.476	1.402	2.360	1.180	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
TL-208	-0.408	2.445	2.540	1.270	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
PB-210	10.471	28.538	44.200	22.100	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
BI-212	-2.228	10.071	18.700	9.350	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
BI-214	-1.626	4.276	5.350	2.675	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
PB-214	-1.489	5.179	5.220	2.610	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
RA-226	-6.251	38.203	46.800	23.400	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
RA-228	1.326	4.605	8.230	4.115	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
TH-228	3.167	2.905	3.740	1.870	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
U-235	-0.306	7.703	12.300	6.150	U	pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA
Total Gamma	33.864	NA	NA	NA		pCi/L	ARS-006/EPA 901.1	05/28/13 16:12	BZF	NA

NOTES:

Project Manager Review

Notes: American Radiation Services, Inc. assumes no liability for the use or interpretation of any analytical results provided other than the cost of the analysis itself. Reproduction of this report in less than full requires the written consent of the American Radiation Services, Inc.

LELAP Certificate# 01949

AMRAD
AMERICAN RADIATION SERVICES, LLC

QC Results per Analytical Batch

Analytical Batch	ARS1-B13-01068
SDG	ARS1-13-01055
Analysis	Gamma Spec (Aqueous)
Analysis Test Method	ARS-006/EPA 901.1
Analysis Code	GAM-A-015
Report Units	pCi/L

Acceptable QC Performance Ranges

QC Sample Type	Performance Items and Ranges		
Laboratory Control Sample	Recovery (%):	> 75	< 125
Matrix Spike	Recovery (%):	> 60	< 140
Duplicate	Replicate Error Ratio (RER):		< 1
	Duplicate Error Ratio (DER):		< 3
	Relative Percent Difference (RPD %):		≤ 25

Laboratory Control Sample

Analysis Date: 05/28/13 14:58 | Analysis Technician: BZF

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	Expected Value	LCS Rec (%)	MDC
ARS1-B13-01068-01	LCS	AM-241	44500	3300	43730	102	630
ARS1-B13-01068-01	LCS	CO-60	67800	2600	68162	99	700
ARS1-B13-01068-01	LCS	CS-137	52700	2200	51811	102	370

Duplicate RER/DER/RPD

Analysis Date: 05/28/13 15:11 | Analysis Technician: BZF

Analyte	Result LCS	CSU LCS (2s)	Results LCSD	CSU LCSD (2s)	RER	DER	RPD
AM-241	44500	3305	43700	3285	0.12	0.33	1.8
CO-60	67800	2565	67800	2576	0.00	0.00	0.0
CS-137	52700	2211	52800	2164	0.02	0.06	0.2

Method Blank

Analysis Date: 05/28/13 16:11 | Analysis Technician: BZF

Analysis Batch Sample ID	QC Type	Analyte	Results	CSU (2s)	MDC	Qual
ARS1-B13-01068-03	MBL	AM-241	-1.6	7.2	4.3	U
ARS1-B13-01068-03	MBL	CO-60	-0.2	1.4	2.4	U
ARS1-B13-01068-03	MBL	CS-137	0	250	2.7	U

LELAP Certificate# 01949

ARS INTERNATIONAL
2609 North River Road • Port Allen, Louisiana 70767
1 (800) 401-4277 • Fax (225) 381-2996

Notes:

Comments:

1.0) Soil and Sludge analysis are reported on a wet basis or an as received basis unless otherwise indicated.

2.0) Data in this report are within the limits of uncertainty specified in the reference method unless otherwise specified.

3.0) Modified analysis procedures are procedures that are modified to meet the certain specifications. An example may be the use of a water method to analyze a solid matrix due to the lack of an officially recognized procedure for the analysis of the solid matrix. Modified analyses are indicated by the subsequent addition of "m" to the procedure number (i.e. 900.0M).

4.0) Derived Air Concentrations and Effluent Release Concentrations are obtained from 10 CFR 20 Appendix B.

5.0) **Total activity** is actually total gamma activity and is determined utilizing the prominent gamma emitters from the naturally occurring radioactive decay chains and other prominent radioactive nuclides. Total activity may be lower than the actual total activity due to the extent of secular equilibrium achieved in the various decay chains at the time of analysis. The total activity is not representative of nuclides that emit solely alpha or beta particles.

6.0) Ra-228 is determined via secular equilibrium with its daughter, Actinium 228 (Gamma Spectroscopy only).

7.0) U-238 is determined via secular equilibrium with its daughter, Thorium 234 (Gamma Spectroscopy only).

8.0) All gamma spectroscopy was performed utilizing high purity germanium detectors (**HPGe**).

9.0) ARS makes every attempt to match sample density to calibrated density; however, in some cases, it is not practical or possible to do so and data results may be affected (Gamma Spectroscopy only).

10.0) Gamma spectroscopy results are calculated values based on the **ORTEC®** GammaVision ENV32 Analysis Engine.

Method References:

1.0) **EPA 600/4-80-032**; Prescribed Procedures for the Measurements of Radioactivity in Drinking Water, August 1980.

2.0) Standard Methods for Examination of Water and Waste Water, 18th, 1992.

3.0) **EPA SW-846**; Test Methods for Evaluating Solid Waste, Third Edition, (9/86). (Updated through 1995).

4.0) **EPA 600/4/79-020**; Methods for Chemical Analysis of Water and Waste, March 1983.

5.0) **HASL 300**

6.0) **ARS-040**; An LCSD is not reported with this process. The criteria for the LCS/LCSD analysis for reproducibility have not been established for Low Level Tritium analysis. A prepared standard for Low Level Tritium has not been developed. As a result, the standard we use is based on the dilution of a verified conventional tritium standard. The volume required for Low Level Tritium analysis, in addition to the lack of an available Low Level Tritium standard, introduce variability into the LCS/LCSD analysis that does not represent the actual sample analysis. The preferred measure for reproducibility is to run a duplicate analysis of a sample.

Definitions:

1.0)	**ND**	Not detected above the detection limit (non-detect).
2.0)	**MDC**	(Minimum Detectable Concentration) minimum concentration of the analyte that ARS can detect utilizing the specific analysis
3.0)	**MBL**	Method Blank
4.0)	**DO**	Duplicate Original
5.0)	**DUP**	Method Duplicate
6.0)	**MS/MSD**	Matrix Spike/Matrix Spike Duplicate
7.0)	**S**	Spike
8.0)	**RS**	Reference Spike
9.0)	***SC**	Subcontracted out to another qualified laboratory
10.0)	**NR**	Not Referenced
11.0)	**N/A**	Not Applicable
12.0)	******	False Positive due to interference from_____
13.0)	**U**	Activity is below the MDC
14.0)	**LCS/LCSD**	Laboratory Control Standard/Laboratory Control Standard Duplicate
15.0)	**DLC**	Decision Level Concentration (ANSI N42.23) or critical level

LELAP Cert# 01949

ARS INTERNATIONAL

Company Name:	Envirotech	Client Contact :	Lynn Berry	Sent To:	ARS International, Inc.
Address:	5796 US Hwy 64	Purchase Order	21783	Contact:	Susan Leese
	Farmington, NM 87401	Job #:	92187-0008	Address:	2609 North River Road
Phone #:	505-632-~~96415~~ 0615				Port Allen, LA 70767
Fax #:	505-632-1865	Turn around time in bussiness days (please circle one)		Phone:	(225)381-2991
Email:	laboratory@envirotech-inc.com	3hr 24hr 48hr 2-5d 5-7d (10-14d) ____ (other)		Fax:	(225)381-2996

	Date / Time	Sample ID	Type *	# of Cont.	Radiochemistry									GROSS		Radium in water				Gamma Spectroscopy		Others			
					AM	PU	U	TH	Pb	Po	Np	Sr-90	Sr-89/90	Gross Alpha	Gross Beta	Ra-228 904.0	Ra-226 903.0	Ra-226 903.1	Rn-222 910.0	Natural Norm	Total Gamma	H-3	Total U	KPA	C-14
1	5-22-13/ 10:00	~~P305864-01~~ RIO Discharge	AQ	2-500mL												X	X								
2																									
3																									
4																									
5																									
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20																									

Additional notes: _____

Relinquished by (signature)	Date / Time
Rene Ozuna	05-23-13 / 10:00am

Received by (signature)	Date / Time
Heather Hoffer	5-24-13 11:16

*** Types of sample:**
S: solids, AQ: aqueous, DW: Drinking Water, Sm: Smear, LT: Leak Test, AF: Air Filter, SI: Silica Gel, VG: vegetation, Bio: Bioassay

envirotech
Analytical Laboratory

Analytical Report

Report Summary

Client: Anadarko Petroleum Corp.
Chain Of Custody Number: 15582
Samples Received: 5/21/2013 11:56:00AM
Job Number: 92187-0008
Work Order: P305063
Project Name/Location: San Juan River Plant

Entire Report Reviewed By: _____ Date: 5/22/13

Tim Cain, Laboratory Manager

5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865
Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fr (800) 362-1879
envirotech-inc.com
laboratory@envirotech-inc.com

envirotech
Analytical Laboratory

Anadarko Petroleum Corp	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	22-May-13 09:44

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
R/O Water	P305063-01A	Aqueous	05/21/13	05/21/13	Poly 250mL

envirotech
Analytical Laboratory

Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	22-May-13 09:44

R/O Water

P305063-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
pH	**7.82**		pH Units	1	1321019	21-May-13	21-May-13	EPA 150.1	
Total Dissolved Solids	**732**		mg/L	1	1321020	21-May-13	21-May-13	EPA 160.1	
Chloride	**56.9**	1.00	mg/L	1	1321021	21-May-13	21-May-13	EPA 300.0	

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Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	22-May-13 09:44

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1321021 - Anion Extraction EPA 300.0										
Blank (1321021-BLK1)				Prepared & Analyzed: 21-May-13						
Chloride	ND	1.00	mg/L							
Duplicate (1321021-DUP1)		**Source: P305063-01**		Prepared & Analyzed: 21-May-13						
Chloride	57.0	1.00	mg/L		56.9			0.0896	30	

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Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	22-May-13 09:44

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

CHAIN OF CUSTODY RECORD

15582

Client:	Project Name / Location:
Anadarko	San Juan River Plant
Email results to:	Sampler Name:
Cheryl.Bommarito@anadarko.com	Cheryl Bommarito
Client Phone No.:	Client No.:
505-578-5601	92187-0003

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative HNO_3	Preservative HCl	Preservative	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS	Ph		Sample Cool	Sample Intact
L10 Water	5/21/13	11:00	P305063-01	1			NA										X	X	X		X	X

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	5-21-13	11:56		5/21/13	11:56
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☒ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

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Analytical Report

Report Summary

Client: Anadarko Petroleum Corp.

Chain Of Custody Number: 15544

Samples Received: 5/15/2013 11:30:00AM

Job Number: 92187-0008

Work Order: P305044

Project Name/Location: San Juan Gas Plant
Kirtland NM

Entire Report Reviewed By: _____ Date: 5/16/13

Tim Cain, Laboratory Manager

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Anadarko Petroleum Corp.	Project Name:	San Juan Gas Plant Kirtland NM	
PO Box 4995	Project Number:	92187-0008	Reported:
The Woodlands TX, 77387-4995	Project Manager:	Anadarko Petroleum Corp.	16-May-13 14:32

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
R/O Water	P305044-01A	Aqueous	05/15/13	05/15/13	Poly, 500mL

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Anadarko Petroleum Corp.	Project Name:	San Juan Gas Plant Kirtland NM	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Anadarko Petroleum Corp.	16-May-13 14:32

R/O Water

P305044-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
Total Dissolved Solids	**720**		mg/L	1	1320019	15-May-13	15-May-13	EPA 160.1	
Chloride	**59.3**	1.00	mg/L	1	1320020	15-May-13	15-May-13	EPA 300.0	

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Anadarko Petroleum Corp.	Project Name:	San Juan Gas Plant Kirtland NM	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Anadarko Petroleum Corp.	16-May-13 14:32

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1320020 - Anion Extraction EPA 300.0										
Blank (1320020-BLK1)				Prepared & Analyzed: 15-May-13						
Chloride	ND	1.00	mg/L							
Duplicate (1320020-DUP1)		**Source: P305044-01**		Prepared & Analyzed: 15-May-13						
Chloride	59.3	1.00	mg/L		59.3			0.0152	30	

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Anadarko Petroleum Corp.	Project Name:	San Juan Gas Plant Kirtland NM	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Anadarko Petroleum Corp.	16-May-13 14:32

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

CHAIN OF CUSTODY RECORD

15544

Client: Anadarko Petroleum Corp	Project Name / Location: San Juan Gas Plant Kirtland NM
Email results to: tiffany.garcia@anadarko.com	Sampler Name:
Client Phone No.: 505.598.5601 ext 15571	Client No.: 92187-0008

ANALYSIS / PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative HNO_3	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
H/O Water	5/15/2013	9:30am	1305044-01	1												X	X			✓	✓

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Tiffany M. Garcia	5/15/2013	11:30 am		5/15/13	1130
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix: Soil ☐ Solid ☐ Sludge ☐ Aqueous ☒ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

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Analytical Report

Report Summary

Client: Anadarko Petroleum Corp.
Chain Of Custody Number: 15284
Samples Received: 3/13/2013 9:55:00AM
Job Number: 92187-0008
Work Order: P303033
Project Name/Location: San Juan River Plant

Entire Report Reviewed By: _____ Date: 3/15/13

Tim Cain, Laboratory Manager

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Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
R-O Water	P303033-01A	Aqueous	03/13/13	03/13/13	Poly 500mL

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R-O Water

P303033-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
Total Dissolved Solids	704		mg/L	1	1311015	13-Mar-13	13-Mar-13	EPA 160.1	
Chloride	49.5	1.00	mg/L	1	1311025	14-Mar-13	15-Mar-13	EPA 300.0	

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Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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CHAIN OF CUSTODY RECORD

15284

Client:	Project Name / Location:
Andarko	San Juan River Plant
Email results to:	Sampler Name:
Report. mcclain@Andarko.com	Bob McClain
Client Phone No.:	Client No.:
598-5601	92187-0008

ANALYSIS / PARAMETERS — Rush

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
R-O water	3/13/13	9:20AM	P303033-01													✓	✓			✓	✓

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Bob McClain	3/13/13	9:55AM	[signature]	3/13/13	9:55
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

Sample(s) dropped off after hours to secure drop off area.

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Analytical Report

Report Summary

Client: Anadarko Petroleum Corp.
Chain Of Custody Number: 15181
Samples Received: 2/12/2013 9:04:00AM
Job Number: 92187-0008
Work Order: P302059
Project Name/Location: San Juan River Plant

Entire Report Reviewed By: _____ Date: 2/13/13

Tim Cain, Laboratory Manager

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Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	13-Feb-13 15:53

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
R-O water	P302059-01A	Aqueous	02/12/13	02/12/13	Poly, 500mL

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Anadarko Petroleum Corp	Project Name:	San Juan River Plant	
PO Box 4995	Project Number	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	13-Feb-13 15:53

R-O water

P302059-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cation/Anion Analysis									
Total Dissolved Solids	**836**		mg/L	1	1307014	12-Feb-13	12-Feb-13	EPA 160.1	
Chloride	**39.0**	1.00	mg/L	1	1307012	12-Feb-13	12-Feb-13	EPA 300.0	

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Anadarko Petroleum Corp.	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	13-Feb-13 15:53

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1307014 - No Prep Wet Chem										
Duplicate (1307014-DUP1)	**Source: P302059-01**		Prepared & Analyzed: 12-Feb-13							
Total Dissolved Solids	832		mg/L		836			0.476	30	

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Anadarko Petroleum Corp	Project Name:	San Juan River Plant	
PO Box 4995	Project Number:	92187-0008	**Reported:**
The Woodlands TX, 77387-4995	Project Manager:	Robert McClain	13-Feb-13 15:53

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

CHAIN OF CUSTODY RECORD

15181

Client: ANADARKO	Project Name / Location: SAN JUAN RIVER PLANT	ANALYSIS / PARAMETERS (Rush)
Email results to: ROSCALIN@ANADARKO.COM	Sampler Name:	
Client Phone No.: 505-598-5601	Client No.: 92187-0008	

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
R-O WATER	2/12/13	8:30 AM	P302059-01A													✓	✓			✓	✓

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2/12/13	9:00 AM	[signature]	2/12/13	9:04
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

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Report Summary

Client: Anadarko

Chain of Custody Number: 15074

Samples Received: 01-18-13

Job Number: 92187-0008

Sample Number(s): 64121

Project Name/Location: San Juan River Plant

Entire Report Reviewed By: _____ Date: 1/21/13

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Chloride

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	01-21-13
Lab ID#:	64121	Date Sampled:	01-18-13
Sample Matrix:	Aqueous	Date Received:	01-18-13
Preservative:	Cool	Date Analyzed:	01-18-13
Condition:	Intact	Chain of Custody:	15074

Parameter	Concentration (mg/Kg)
Total Chloride	**77.1**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

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Water Analysis

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	01-21-13
Laboratory Number:	64121	Date Sampled:	01-18-13
Sample Matrix:	Aqueous	Date Received:	01-18-13
Preservative:	Cool	Date Analyzed:	01-18-13
Condition:	Intact	Chain of Custody:	15074

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**976**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

15074

CHAIN OF CUSTODY RECORD

Client: Anadarko	Project Name / Location: San Juan River Plant
Email results to: robert.mcclain@anadarko.com	Sampler Name: Bob McClain
Client Phone No.: 598-5601	Client No.: 92187-0008

ANALYSIS / PARAMETERS — Rush

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative H_2O_2	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
2-0 water	1/18/13	8:40 AM	64121													✓	✓			✓	✓
			P301042-01A																		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert McClain	1/18/13	9:25 AM	William Joe	01/18/13	10:34
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

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Report Summary

Client: Anadarko

Chain of Custody Number: 15009

Samples Received: 12-14-12

Job Number: 92187-0008

Sample Number(s): 63947

Project Name/Location: San Juan River Plant

Entire Report Reviewed By: _____ Date: 12/18/12

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Chloride

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R.O. Water	Date Reported:	12-17-12
Lab ID#:	63947	Date Sampled:	12-14-12
Sample Matrix:	Aqueous	Date Received:	12-14-12
Preservative:	Cool	Date Analyzed:	12-14-12
Condition:	Intact	Chain of Custody:	15009

Parameter	Concentration (mg/L)
Total Chloride	**45.3**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

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Water Analysis

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	12-17-12
Laboratory Number:	63947	Date Sampled:	12-14-12
Sample Matrix:	Aqueous	Date Received:	12-14-12
Preservative:	Cool	Date Analyzed:	12-17-12
Condition:	Intact	Chain of Custody:	15009

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**812**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

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15009

CHAIN OF CUSTODY RECORD

Client:	Project Name / Location:
Animas Air	San Juan River Plant
Email results to:	Sampler Name:
robert.mcclain@animasair.com	Bob McClain
Client Phone No.:	Client No.:
325-598-5601	92187-0008

ANALYSIS / PARAMETERS — Rush

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
R-O Water	12/14/12	9:20AM	603947													✓	✓			✓	✓
			P212044-01A																		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert McClain	12/14/12	9:42AM		12/14/12	1005
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

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Report Summary

Client: Anadarko

Chain of Custody Number: 14669

Samples Received: 11-16-12

Job Number: 92187-0008

Sample Number(s): 63686

Project Name/Location: R-O Water San Juan River Plant

Entire Report Reviewed By: _____ Date: 11/20/12

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Chloride

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R.O. Water	Date Reported:	11-16-12
Lab ID#:	63686	Date Sampled:	11-16-12
Sample Matrix:	Aqueous	Date Received:	11-16-12
Preservative:	Cool	Date Analyzed:	11-16-12
Condition:	Intact	Chain of Custody:	14669

Parameter	Concentration (mg/L)
Total Chloride	**58.5**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **R-O Water San Juan River Plant**

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Water Analysis

Client:	Andarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	11-19-12
Laboratory Number:	63686	Date Sampled:	11-16-12
Sample Matrix:	Aqueous	Date Received:	11-16-12
Preservative:	Cool	Date Analyzed:	11-16-12
Condition:	Intact	Chain of Custody:	14669

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**516**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **R-O Water San Juan River Plant**

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~~Enhouse~~
14659

CHAIN OF CUSTODY RECORD

Client:	Project Name / Location:	ANALYSIS / PARAMETERS
Hilcorp	R-C water Station Rio Vista Plant	Rush
Email results to:	Sampler Name:	
Robert.McClain@hilcorp.com	Robert McClain	
Client Phone No.:	Client No.:	
505-598-5601	92187-0008	

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative H_2SO_4	Preservative HCl		TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
R-C water	11/16/12	8:25AM	63686 P211036-01														✓	✓			✓	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert McClain	11/16/12	9:10AM		11/16/12	9:10
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

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Report Summary

Client: Anadarko

Chain of Custody Number: 14552

Samples Received: 10-16-12

Job Number: 92187-0008

Sample Number(s): 63461

Project Name/Location: R-O Water Sample

Entire Report Reviewed By: Dene Zazzie Date: 10-18-12

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Chloride

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	10-17-12
Lab ID#:	63461	Date Sampled:	10-16-12
Sample Matrix:	Aqueous	Date Received:	10-16-12
Preservative:	Cool	Date Analyzed:	10-16-12
Condition:	Intact	Chain of Custody:	14552

Parameter	Concentration (mg/Kg)
Total Chloride	**58.9**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **R-O Water Sample**

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Water Analysis

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	10-17-12
Laboratory Number:	63461	Date Sampled:	10-16-12
Sample Matrix:	Aqueous	Date Received:	10-16-12
Preservative:	Cool	Date Analyzed:	10-17-12
Condition:	Intact	Chain of Custody:	14552

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**820**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **R-O Water Sample**

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CHAIN OF CUSTODY RECORD

14552

Client: Hilcorp	Project Name / Location: R-O water Sample
Email results to: Robert.McClain@hilcorp.com	Sampler Name: Bob McClain
Client Phone No.: 505-598-5601	Client No.: 92187-0008

ANALYSIS / PARAMETERS (Rush)

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
R-O water	10/14/12	9:05 AM	103401													✓	✓			✓	✓

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert McClain	10/16/12	10:05 AM	Miriam Joe	10/16/12	10:05
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

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Report Summary

Client: Anadarko

Chain of Custody Number: 14456

Samples Received: 09-18-12

Job Number: 92187-0008

Sample Number(s): 63274

Project Name/Location: R-O Water San Juan River Kirtland, NM

Entire Report Reviewed By: Dene Zezzi Date: 09-19-12

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

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Chloride

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	09-18-12
Lab ID#:	63274	Date Sampled:	09-18-12
Sample Matrix:	Aqueous	Date Received:	09-18-12
Preservative:	Cool	Date Analyzed:	09-18-12
Condition:	Intact	Chain of Custody:	14456

Parameter	Concentration (mg/Kg)
Total Chloride	**62.9**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983. Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **R-O Water San Juan River Kirtland, NM**

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Water Analysis

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	09-19-12
Laboratory Number:	63274	Date Sampled:	09-18-12
Sample Matrix:	Aqueous	Date Received:	09-18-12
Preservative:	Cool	Date Analyzed:	09-18-12
Condition:	Intact	Chain of Custody:	14456

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**900**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **R-O Water San Juan River Kirtland, NM**

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14456

CHAIN OF CUSTODY RECORD

Client: Anadarko	Project Name / Location: San Juan River R-O Water Kirtland, NM	ANALYSIS / PARAMETERS Rush
Email results to: Robert McClain Robert.McClain@Anadarko.com	Sampler Name: Robert McClain	
Client Phone No.: 505-598-6210	Client No.: 92187-0008	

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl		TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
R-O Water	9/18/12	9:05 AM	103274														✓	✓			X	X

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert McClain	9/18/12	9:35 AM		9/18/12	9:35 AM
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix: Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

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CHAIN OF CUSTODY RECORD

14262

Client:	Project Name / Location:
Anadarko	R-O water
Email results to: ~~Robert.McClain@~~ Anadarko.com	Sampler Name: Bob McClain
Client Phone No.: 505-598-5601 Ext 15547	Client No.: 92187-0008

ANALYSIS / PARAMETERS * Rush *

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
R-O water	8/15/12	9:00 am	102962													↓	↓			X	X

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Bob McClain	8/15/12	9:28 am		8/15/12	9:28 am
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☒ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

* Rush *

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Report Summary

Client: Anadarko

Chain of Custody Number: 14262

Samples Received: 08-15-12

Job Number: 92187-0008

Sample Number(s): 62962

Project Name/Location: R-O Water

Entire Report Reviewed By: _____ Date: 8/17/12

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Water Analysis

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	08-15-12
Laboratory Number:	62962	Date Sampled:	08-15-12
Sample Matrix:	Aqueous	Date Received:	08-15-12
Preservative:	Cool	Date Analyzed:	08-15-12
Condition:	Intact	Chain of Custody:	14262

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**632**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **R-O Water**

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Chloride

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	08-16-12
Lab ID#:	62962	Date Sampled:	08-15-12
Sample Matrix:	Aqueous	Date Received:	08-15-12
Preservative:	Cool	Date Analyzed:	08-16-12
Condition:	Intact	Chain of Custody:	14262

Parameter	Concentration (mg/L)
Total Chloride	**46.4**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **R-O Water**

CHAIN OF CUSTODY RECORD

14078

Client:	Project Name / Location:
Animas	R-O Water
Email results to:	Sampler Name:
RMcInnes@Animas.com	Bobby Irvin
Client Phone No.:	Client No.:
505-598-5601	92187-0008

ANALYSIS / PARAMETERS *Rush*

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
R-O Water	7/16/12	1050 AM	120601													✓	✓			✓	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert McCoy	7/16/12	11:43 AM	[signature] Dean	7/16/12	11:43
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

RUSH

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Report Summary

Client: Anadarko

Chain of Custody Number: 14078

Samples Received: 07-16-12

Job Number: 92187-0008

Sample Number(s): 62601

Project Name/Location: R-O Water

Entire Report Reviewed By: _____ Date: 7/17/12

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Water Analysis

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	07-17-12
Laboratory Number:	62601	Date Sampled:	07-16-12
Sample Matrix:	Aqueous	Date Received:	07-16-12
Preservative:	Cool	Date Analyzed:	07-16-12
Condition:	Intact	Chain of Custody:	14078

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**768**	mg/L
Chloride	**110**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **R-O Water**

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Report Summary

Client: Anadarko

Chain of Custody Number: 13973

Samples Received: 05-17-12

Job Number: 92187-0008

Sample Number(s): 62096

Project Name/Location: San Juan River Plant

Entire Report Reviewed By: _____ Date: 5/17/12

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Chloride

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	05-17-12
Lab ID#:	62096	Date Sampled:	05-17-12
Sample Matrix:	Aqueous	Date Received:	05-17-12
Preservative:	Cool	Date Analyzed:	05-17-12
Condition:	Intact	Chain of Custody:	13973

Parameter	Concentration (mg/L)
Total Chloride	**55**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

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Water Analysis

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	05-17-12
Laboratory Number:	62096	Date Sampled:	05-17-12
Sample Matrix:	Aqueous	Date Received:	05-17-12
Preservative:	Cool	Date Analyzed:	05-17-12
Condition:	Intact	Chain of Custody:	13973

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**396**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

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CHAIN OF CUSTODY RECORD

13973

Client:	Project Name / Location:	ANALYSIS / PARAMETERS
Animas Air	San Juan River Plant	* Rush *
Email results to:	Sampler Name:	
Robert.mcclain@animasair.com	Robert McClain	
Client Phone No.: 505-598-5601 ext 15542	Client No.: 92187-0008	

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
R-O water	5/17/12	8:13 AM	62096													✓	✓			✓	✓

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert McClain	5/17/12	9:07 AM	Juana D Hammer	5.17.12	9:10
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

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CHAIN OF CUSTODY RECORD

13788

Client:	Project Name / Location:	ANALYSIS / PARAMETERS Rush
Andarko	San Juan River Plant	
Email results to:	Sampler Name: Robert McClain	
Client Phone No.: 598-5601	Client No.: 92187-0008	

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative H_2SO_4	Preservative HCl	Preservative	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
R-O water	4/26/12	9:20 am	601898														✓	✓			✓	✓

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert McClain	4/26/12	10:05 am	Cristina S. Hammer	4-26-12	10:10
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

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Analytical Laboratory

Water Analysis

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	04-27-12
Laboratory Number:	61898	Date Sampled:	04-26-12
Sample Matrix:	Aqueous	Date Received:	04-26-12
Preservative:	Cool	Date Analyzed:	04-26-12
Condition:	Intact	Chain of Custody:	13788

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**540**	mg/L
Total Chloride	**50.0**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

Analyst

Review

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CHAIN OF CUSTODY RECORD

13562

Client:	Project Name / Location:
Anadarko	San Juan River Plant
Email results to:	Sampler Name:
Robert.McClure@Anadarko.com	Robert McClure
Client Phone No.:	Client No.:
307-578-5601	92187-0008

ANALYSIS / PARAMETERS (Rush)

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
P-0 Water	3/14/12	8:36AM	61393													✓	✓			✓	✓

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert McClure	3/14/12	8:55 AM	Ariana S Hammer	3-14-12	8:55
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

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Water Analysis

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	03-15-12
Laboratory Number:	61393	Date Sampled:	03-14-12
Sample Matrix:	Aqueous	Date Received:	03-14-12
Preservative:	Cool	Date Analyzed:	03-14-12
Condition:	Intact	Chain of Custody:	13562

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**552**	mg/L
Total Chloride	**45**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

Analyst

Review

5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865
Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fr (800) 362-1879
envirotech-inc.com
laboratory@envirotech-inc.com

McClain, Robert

From: Lynn Berry [lberry@envirotech-inc.com]
Sent: Tuesday, August 16, 2011 2:46 PM
To: McClain, Robert; laboratory
Subject: SJ River Plant

The test results for the San Juan River Plant sample are;

Chlorides	110ppm
TDS @ 180 degrees C	714mg/L

If you have any questions please let us know.

Thanks You,

Lynn Berry
Analyst
Envirotech Analytical Laboratory
5794 US Hwy 64
Farmington, NM 87401
lberry@envirotech-inc.com
505-632-0615

13217

CHAIN OF CUSTODY RECORD

Client:	Project Name / Location:
Anadarko	San Juan River Plant
Email results to:	Sampler Name:
Matt.McClain@Anadarko.com	Bob McClain
Client Phone No.:	Client No.:
505-564-3701 Ext 15512	92187-0008

ANALYSIS / PARAMETERS — Rush

Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl	Preservative	TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
~~Anadarko Well~~	~~1/3/12~~																					
RC Water	1/12/12	9:25 am	60831														✓	✓			Y	Y

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Bob McClain	1/13/12	10:05 am	Miriam Jo	1.13.12	10.05
Relinquished by: (Signature)			Received by: (Signature)		

Sample Matrix

Soil ☐ Solid ☐ Sludge ☐ Aqueous ☑ Other ☐ _____

☐ Sample(s) dropped off after hours to secure drop off area.

envirotech
Analytical Laboratory

5795 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 • laboratory@envirotech-inc.com

Analytical Laboratory

Water Analysis

Client:	Anadarko	Project #:	92187-0006
Sample ID:	R-O Water	Date Reported:	01-16-12
Laboratory Number:	60831	Date Sampled:	01-13-12
Sample Matrix:	Aqueous	Date Received:	01-13-12
Preservative:	Cool	Date Analyzed:	01-13-12
Condition:	Intact	Chain of Custody:	13217

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**676**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: San Juan River Plant

Analyst

Review

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Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fx (800) 362-1879

Analytical Laboratory

Chloride

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R-O Water	Date Reported:	01-13-12
Lab ID#:	60831	Date Sampled:	01-13-12
Sample Matrix:	Aqueous	Date Received:	01-13-12
Preservative:	Cool	Date Analyzed:	01-13-12
Condition:	Intact	Chain of Custody:	13217

Parameter	Concentration (mg/L)
Total Chloride	**120**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: San Juan River Plant

Analyst

Review

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Ph (505) 632-0615 Fx (505) 632-1865
Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301
Ph (970) 259-0615 Fx (800) 362-1879

CHAIN OF CUSTODY RECORD

12799

Client:	Project Name / Location:
Anadarko	San Juan River Plant Kirtland, NM
Client Address: Kirtland, P.O. Box 70 NM	Sampler Name: Robert McClain
Client Phone No.: 505-598-5601 Ext. 1554 (Bob)	Client No.: 92187-0008

ANALYSIS / PARAMETERS — Rush

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl		TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	PAH	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
RO water	10/20/11	8:45 am	L0056	Soil Sludge Solid (Aqueous)														✓	✓			✓	✓
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert McClain	10/20/11	9:37 am	[signature]	10-20-11	9:37
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

e-mail
Robert.McClain@anadarko.com

envirotech
Analytical Laboratory

5796 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • lab@envirotech-inc.com

envirotech
Analytical Laboratory

Water Analysis

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R.O. Water	Date Reported:	10/21/11
Laboratory Number:	60056	Date Sampled:	10/20/11
Sample Matrix:	Aqueous	Date Received:	10/20/11
Preservative:	Cool	Date Analyzed:	10/21/11
Condition:	Intact	Chain of Custody:	12799

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**788**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant Kirtland, NM**

Analyst

Review

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envirotech
Analytical Laboratory

Chloride

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R.O. Water	Date Reported:	10/21/11
Lab ID#:	60056	Date Sampled:	10/20/11
Sample Matrix:	Aqueous	Date Received:	10/20/11
Preservative:	Cool	Date Analyzed:	10/21/11
Condition:	Intact	Chain of Custody:	12799

Parameter	Concentration (mg/L)
Total Chloride	**120**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant Kirtland, NM**

Analyst

Review

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CHAIN OF CUSTODY RECORD

11956

Client: AnAdArKo	Project Name / Location: SAN JUAN River Plant
Client Address: Kirtland, N.M P.O. Box 70	Sampler Name: Robert McClain
Client Phone No.: 598-5601 Ext. 15542	Client No.: 92187-0008

ANALYSIS / PARAMETERS

Sample No./ Identification	Sample Date	Sample Time	Lab No.	Sample Matrix	No./Volume of Containers	Preservative $HgCl_2$	Preservative HCl		TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	PAH	TPH (418.1)	CHLORIDE	TDS			Sample Cool	Sample Intact
R.O. Water	6/17/11	8:20 AM	58569	Soil Sludge Solid (Aqueous)	1-500ml													✓	✓			Y	Y
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			
				Soil Sludge Solid Aqueous																			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Robert McClain	6/17/11	8:47	[signature]	6/17/11	8:47
Relinquished by: (Signature) Robert McClain			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

Robert.McClain@Anadarko.com

E-Mail Test

envirotech
Analytical Laboratory

5796 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • lab@envirotech-inc.com

envirotech
Analytical Laboratory

Chloride

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R.O. Water	Date Reported:	06/20/11
Lab ID#:	58569	Date Sampled:	06/17/11
Sample Matrix:	Aqueous	Date Received:	06/17/11
Preservative:	Cool	Date Analyzed:	06/17/11
Condition:	Intact	Chain of Custody:	11956

Parameter	Concentration (mg/L)
Total Chloride	**70**

Reference: U.S.E.P.A., 4500B, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

Analyst

Review

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Analytical Laboratory

Water Analysis

Client:	Anadarko	Project #:	92187-0008
Sample ID:	R.O. Water	Date Reported:	06/20/11
Laboratory Number:	58569	Date Sampled:	06/17/11
Sample Matrix:	Aqueous	Date Received:	06/17/11
Preservative:	Cool	Date Analyzed:	06/20/11
Condition:	Intact	Chain of Custody:	11956

Parameter	Analytical Result	Units
Total Dissolved Solids @ 180C	**352**	mg/L

Reference: U.S.E.P.A., 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1983.
Standard Methods For The Examination of Water And Waste Water", 18th ed., 1992.

Comments: **San Juan River Plant**

Analyst

Review

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APPENDIX B – SPILL PREVENTION CONTROL & COUNTERMEASURE PLAN

SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN

PREPARED FOR:

ANADARKO PETROLEUM CORPORATION

San Juan River Area
99 County Road 6500
Kirtland, New mexico 87417

PLAN TYPE:

§112.9 Requirements for Onshore Production Facilities

IF AN EMERGENCY OR SPILL,

CONTACT

San Juan River Area AT 505-598-5601 OR

Kent McEvers AT +1 505/598-5601

AND REFER TO SECTION A.2. FOR SPILL REPORTING AND RESPONSE PROCEDURES

LIST OF FACILITIES COVERED BY THIS PART A

- Barker Creek Compressor Station
- Four Corners Compressor Station
- Salty Dog #2 Compressor Station
- San Juan River Gas Plant

ACTION ITEM SUMMARY

Throughout this Spill Prevention, Control and Countermeasure (SPCC) Plan (the Plan), items that require specific attention because of inspection, training and recordkeeping requirements, are presented in bold print and underlined. These 'Action Items' are summarized below.

PART A – GENERAL PLAN REQUIREMENTS

- **Section A.1.1. – (At all times)** Maintain a complete copy of the SPCC Plan at the nearest field office.
- **Section A.1.3. – (After change to a Facility)** The SPCC Plan will be revised whenever there are design, construction, operation, or maintenance changes to a Facility. See Log of Plan Review and Amendments.
- **Section A.1.3. – (Every 5 years)** Management must review, evaluate and re-certify the Plan for its adequacy.
- **Section A.1.5. - (At all times)** Inspection procedures, tests and records, signed by the appropriate supervisor or inspector, will be kept with the SPCC Plan for a period of no less than three years.
- **Section A.1.5. – (Annual)** Inspection of SPCC Facilities (e.g. bulk storage containers, oil-filled equipment, oil and oily-water containing process units, and containment structures) will be conducted.
- **Section A.1.6. - (Prior to assignment of responsibilities)** All oil-handling personnel will be trained in discharge prevention and spill response prior to the assignment of job responsibilities.
- **Section A.1.6. – (Annual)** Discharge prevention briefings for all oil-handling personnel will be conducted.
- **Oil Spill Contingency Plan and/or Facility Response Plan will be updated on an as-needed basis**

PART B – FACILITY INFORMATION

- **Section B.1.5.1. - (Annual)** Inspection of aboveground piping will be conducted.
- **Section B.1.8. - (After repair or change)** Field constructed containers must be reevaluated for brittle fracture failure potential.
- **Section B.1.10. - (Each drainage/discharge event)** All discharges of stormwater from secondary containment must be evaluated and recorded.

TABLE OF CONTENTS

FIGURES

TABLE OF CONTENTS (Cont'd)

APPENDICES

FIGURES

LOG OF PLAN REVIEW AND AMENDMENTS – PART A

NON-TECHNICAL AMENDMENTS

- Non-technical amendments are not certified by a Professional Engineer.
- Examples of changes include, but are not limited to, phone numbers, name changes, or any non-technical text change(s).

TECHNICAL AMENDMENTS

- Technical amendments are certified by a Professional Engineer (§112.5(c)).
- Examples of changes include, but are not limited to, commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or addition/deletion of standard operation or maintenance procedures related to discharge prevention measures. It is the responsibility of the field to determine, and confirm with the regulatory authority as necessary, what constitutes a technical amendment. The preamble of the rule states that an amendment is required only "when there is a change that materially affects the facility's potential to discharge oil" (67 FR 47091).
- An amendment made under this section will be prepared within six (6) months of the change and implemented as soon as possible but not later than six (6) months following preparation of the amendment.
- Technical Amendments affecting various pages within the Plan will require P.E. certification of the Plan and will be documented on the log form below.

MANAGEMENT REVIEW

- Management will review this SPCC Plan at least every five (5) years and document the review on the form below (§112.5(b)).
- By signature below, signor confirms that management has completed a review and evaluation of this SPCC Plan.

Review/ Amend Date	Signature* (Specify)	Amend Plan (will/will not)	Description of Review/Amendment	Affected Page(s)	P.E. Certification (Y/N)

*Typically signed by Manager, Professional Engineer or Plan Reviewer

Area Name: San Juan River Area

FEDERAL REGULATORY APPLICABILITY / SPCC PLAN CROSS-REFERENCE

Citation	Description	Heading (Page)	
		Part A	Part B
Subpart A	Applicability, Definitions, and General Requirements for All Facilities and All Types of Oil	(See Below)	
§112.3(d)	Professional Engineer Certification		B.1.2.
§112.3(e)	Plan Copy	A.1.1.	
§112.4	Amendment of SPCC Plan by Regional Administrator	A.2.2.	
§112.5	Amendment of SPCC Plan by Owners or Operators	A.1.3., (vi)	(B-2)
§112.7	General requirements for SPCC Plans for all facilities and all oil types	A.1., (vii)	
§112.7(a)	General requirements: discussion of facility's conformance with rule requirements; deviations from Plan requirements; facility characteristics that must be described in the Plan; spill reporting information in the Plan; emergency procedures	A.2., A.2.1., A.2.2., A.2.3., A.2.4.	B.1., B.1.3., B.1.4., B.1.6.
§112.7(b)	Fault analysis		B.1.7.
§112.7(c)	Secondary containment		B.1.9.
§112.7(d)	Contingency planning	A.1.2., A.1.4.	
§112.7(e)	Inspections, tests, and records	A.1.5.	
§112.7(f)	Employee training and discharge prevention procedures	A.1.6.	B.1.1.
§112.7(g)	Security (excluding oil production facilities)	A.1.7.	
§112.7(h)	Loading/unloading (excluding offshore facilities)		B.1.5.4.
§112.7(i)	Brittle fracture evaluation requirements		B.1.6., B.1.8.
§112.7(j)	Conformance with State requirements	A.1.8.	
§112.7(k)	Qualified Oil-filled Operational Equipment		B.1.9.
Subpart B	Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)	(See Below)	
§112.8	Requirements for onshore facilities (excluding production facilities)	NA	NA
§112.9	Requirements for onshore production facilities	(See Below)	
§112.9(a)	General and specific requirements	(See Below)	
§112.9(b)	Oil production facility drainage	A.1.5.	B.1.10.
§112.9(c)	Oil production facility bulk storage containers	A.1.5.	B.1.6., B.1.9.
§112.9(d)	Facility transfer operations, oil production facility	A.1.5.	B.1.5.
§112.10	Requirements for onshore oil drilling and workover facilities	A.3.	NA
§112.11	Requirements for offshore oil drilling, production, or workover facilities	NA	NA
Subpart C	Requirements for Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils, Including Oils from Seeds, Nuts, Fruits, and Kernels	(See Below)	
§112.12	Requirements for onshore facilities (excluding production facilities)	NA	NA
§112.13	Requirements for onshore oil production facilities	NA	NA
§112.14	Requirements for onshore oil drilling and workover facilities	NA	NA
§112.15	Requirements for offshore oil drilling, production, or workover facilities	NA	NA
Subpart D	Response Requirements	(See Below)	
§112.20	Facility response plans	A.4., A.5.	.
§112.21	Facility response training and drills/exercises	NA	NA

SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN

ANADARKO PETROLEUM CORPORATION
San Juan River Area
PART A – GENERAL PLAN REQUIREMENTS

A.1. GENERAL INFORMATION

The regulations requiring preparation of SPCC Plans were revised by EPA on July 17, 2002 and December 26, 2006. The SPCC regulations are intended to prevent the discharge of oil into or upon the navigable waters of the United States. The regulations, which are codified in 40 CFR 112 (each relevant regulatory citation is identified by brackets), require that facilities that have the potential to impact navigable waters and with aboveground oil storage capacity of 1,320 gallons or more, exclusive of exempt containers, prepare and implement an SPCC Plan.

This Plan is presented in two parts: (1) a Part A which contains Area-specific information that is associated with all of the Facilities within that Area and (2) a Part B for each Facility in the Area that contains the SPCC information specific to that Facility. Thus, Part A in its entirety is fully incorporated into each Part B and each Part B relies on and incorporates the information contained in Part A. In accordance with 40 CFR 112, a Cross-Reference Table is included in Part A of this Plan and indicates which provisions are located in the Part A and/or Part B. The Table of Contents for this Plan also serves as a cross-reference.

A.1.1. Plan Copy [§112.3(e)]

A complete copy of the SPCC Plan will be maintained either at the facility, if normally attended at least four hours per day, or at the nearest manned office and will be available for onsite review during normal working hours.

A.1.2. Management Approval [§112.7(d)]

I hereby certify that this document and all attachments have full management approval and will be fully implemented under my direction or supervision. Based on my inquiry of the person or persons who manage the Facilities, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Should a discharge occur, Management is committed to provide the necessary manpower, equipment and resources required to expeditiously control and remove any harmful quantity of oil discharged.

Name: Mario Reyes _____ Signature: _____

Title: Operations Mgr _____ Date: _____

A.1.2.1. Designated Person Accountable for Oil Spill Prevention at the Facility [112.7(f)(2)]

The following Designated Person is accountable for discharge prevention and reports to the management personnel listed above.

Name: Kent McEvers

Title: Area Supt

A.1.3. Amendment of Plan by Owner or Operator [§112.5]

The SPCC Plan will be revised whenever there is a change to facility design, construction, operation, or maintenance that materially affects the Facility's potential for discharge as described in 40 CFR 112.1(b) and/or as described in the Log of Plan Review and Amendments of this Plan. As required by the regulations, the Plan will be revised within six (6) months of such facility change.

All amendments will be properly authorized by Facility management and will be implemented as soon as possible, but not later than six (6) months following the preparation of the amendment. Technical amendments will be certified by a Professional Engineer as required by 40 CFR 112.5(c) and kept as an attachment to this plan. The completion of the Plan reviews will be documented on Log of Plan Review and Amendments attached to the Plan.

Facility management will review and evaluate the entire Plan for its adequacy at least once every five (5) years. At the conclusion of this review, management must affirmatively document the review by completing the Log of Plan Review and Amendments.

If as a result of this review and evaluation, the Plan requires amendment, it must be amended within six (6) months of the completion of the review to include more effective prevention and control technology, if the technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge as described in 40 CFR 112.1(b).

A.1.4. Oil Spill Contingency Plan [§112.7(d)]

The operator has determined that for its bulk storage containers and most process vessels, the use of containment and/or diversionary structures to prevent discharged oil from reaching navigable waters is practical and effective at the facilities covered under this Part A. The operator has implemented an Oil Spill Contingency Plan for those facilities that have wellheads, oil-filled operating equipment, truck loading areas, process vessels, flowlines and gathering lines not equipped with secondary containment, or where secondary containment is insufficient. The Oil Spill Contingency Plan serves as a written commitment of manpower and resources as discussed in each facility's SPCC Part B, Section B.1.9. The facility is visited on a frequent basis and any spills or accidental releases of oil are properly cleaned up.

A.1.5. Inspections, Tests And Records [§112.7(e), §112.9(b)(2), (c)(3), (d)(1) and (2)]

Inspection procedures and a record of the inspections and testswill be kept with the Plan for a period of three years. If during any inspection, equipment or a containment system is found to be malfunctioning, resulting in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts, the tank or structure will be removed from service and appropriate repairs completed.

A documented visual inspection for every bulk storage container system, oil and water containing process unit, and containment structure will be completed annually. Tank, heater treater, separator and other container inspections will seek out evidence of wear, defect, and releases in the oil and water containing units and their support system. Inspections of containment areas will seek out general damage, breach of the floor, breach of the walls and releases. Defects discovered in the course of the inspections will be repaired as soon as practicable. See Appendix A for sample Annual Inspection forms.

A.1.6. Personnel Training [§112.7(f)]

Appropriate oil-handling personnel will be trained in discharge prevention and spill response prior to the assignment of job responsibilities. Training will be completed under the charge of the **Designated Person,** as identified in Section A.1.2.1 of this Plan, (Designated Person) or a qualified, designated representative. Training may be done in conjunction with other materials handling training. At a minimum the training will include:

- Operation and maintenance of equipment to prevent discharges;
- Discharge emergency protocols;
- Applicable pollution control laws, rules, and regulations;
- General Facility operations; and
- The contents of the SPCC Plan.

A discharge prevention briefing for appropriate oil-handling personnel will be scheduled at least annually (this may be done in conjunction with other required annual training) and will be documented in the Area training logs. At a minimum, annual briefings will include:

- The contents of the SPCC Plan;
- Descriptions of known discharges or failures and their corrective actions;
- Malfunctioning components; and
- Recently developed precautionary measures.

A.1.7. Security [§112.7(g)]

The facility is an oil production facility and therefore, this provision is not applicable.

A.1.8. Conformance with State Requirements [§112.7(j)]

This SPCC Plan conforms to all State rules, regulations, and guidelines. Appropriate state reporting guidelines are provided in the Oil Spill Contingency Plan.

A.2. SPILL REPORTING AND RESPONSE [§112.7(a)]

Pursuant to Section 112.2, the term 'discharge' means 'spilling, leaking, pumping, pouring, emitting emptying or dumping of oil'. For the purpose of this Plan the terms discharge, spill and release shall be synonymous. Additional information with regard to spill reporting and response can be found in the Oil Spill Contingency Plan.

A.2.1. Emergency Contact Information [§112.7(a)(3)(vi)]

The emergency contact lists for responding to spills are provided in the Oil Spill Contingency Plan.

A.2.2. Spill Reporting Requirements and Amendment of Plan by Regional Administrator [§112.4(a), §112.7(a)(4) and 112.7(a)(5)]

The requirements for spill notification and reporting to local, state, and/or federal officials depend upon the nature and extent of the spill. Notification of and reporting to federal, state and local agencies may be required as referenced in the Oil Spill Contingency Plan. A copy of the spill report form is provided in Appendix A and should be used to assist in meeting the reporting requirements identified below. Non-reportable spill events must be addressed immediately by containing, removing and disposing of the released material according to applicable regulations.

Also note that there are special reporting requirements for facilities that experience reportable spills to navigable waters as referenced in 40 CFR 112.1(b) of 1,000 gallons (238 bbls) or more or that experience two (2) reportable spills as reference in 40 CFR 112.1(b) of greater than 42 gallons (1 bbls) each within a 12-month period. Those facilities meeting one or both of these criteria are required to submit a report to the Regional Administrator within 60 days of the spill event (see Regional Administrator Reporting Form in Appendix A).

After review of the information submitted, or after an on-site review of the Plan, the Regional Administrator may require an amendment to the Plan if the Regional Administrator finds that the Plan does not meet the requirements of 40 CFR 112 or if an amendment is necessary to prevent and contain discharges at the Facility.

A.2.2.1. Spill Reporting and Response Requirements

Following discovery of a spill, on-scene personnel should notify their Supervisor and/or the Designated Person as soon as practicable. If the situation allows, on-scene personnel should also attempt to control or eliminate the source of the spill.

A preliminary spill assessment is to be conducted by on-scene personnel to provide the Designated

Person with the information necessary to initiate the appropriate response. A Spill Report Form (see Appendix A) should be completed, provided to the Designated Person and include the following information:

- Date and time of incident;
- Type and estimated total quantity of material released;
- Source and cause of the release;
- Description of all affected media and assessment of environmental conditions such as precipitation, wind speed and direction, and temperature;
- Estimated spill destination and local topography;
- Assessment of immediate danger to human life or health or to the environment, including outside the Facility, and extent of damages or injuries, if any and
- Actions being used to stop, remove and mitigate the effects of the release.

A.2.3. Emergency Response Procedures [§112.7(a)(3)(iv) and (a)(5)]

If a spill occurs, Facility personnel trained in accordance with the training requirements of this Plan, or their Contractors listed in the Oil Spill Contingency Plan, will respond as outlined in Figure A-1 Emergency Response Flowchart and Responsibilities.

A.2.3.1. Spill Discovery and Response

In the event of a release, the observer will move to a place of safety in relation to the spill. Only if trained to do so and if it is safe, the observer will take reasonable efforts to stop or control the source of the spill. The observer will immediately report the spill to their Supervisor and/or Designated Person. If necessary, the Designated Person, or his designee, will notify the On-Scene Commander to assess the situation and initiate response actions. The Designated Person, or his designee, will then determine if the spill is reportable, notify the appropriate Agencies, and provide the information listed on the Spill Reporting Form in Appendix A.

The spill will be isolated and cleaned up as directed by the Designated Person and/or On-Scene Commander. In general, the procedures to be used are as follows:

- Identify the material spilled and its source;
- Remove all sources of ignition;
- Take appropriate measures to stop the flow of material;
- Quickly determine the size and flow direction of the spill;
- If possible, contain the spill with equipment and materials located within the area;
- Determine if the spill can be handled by Facility personnel or whether an emergency clean-up contractor must become involved;

- Recover spilled material and dispose of properly; and
- Complete the Spill Reporting Form (Appendix A) as directed by the Designated Person and/or On-Scene Commander.

A.2.3.2. Spill Response Resources

The necessary response personnel, materials, contractors, and equipment are listed in the Oil Spill Contingency Plan and will be mobilized as needed to respond to each spill. Resources are as follows:

- Emergency Response Personnel - Manage and/or conduct emergency response actions. All emergency response personnel have full authority to implement response actions.
- Emergency Response Contractors - Emergency response personnel utilize emergency response contractors to supplement internal resources.
- Emergency Response Authorities - Emergency response personnel have access to a number of external emergency response authorities who can provide assistance during spill response events.
- Spill Response Equipment and Materials - Various spill response materials are maintained in the area of the Facility. These materials are stored either at the facility or supplied by contractors and are available for use by Company Emergency Response Personnel and Emergency Response Contractors.

A.2.4. Recovered Materials Management [§112.7(a)(3)(v)]

Following an emergency response incident, the On-Scene Commander and any involved contractors will ensure that any material recovered is properly characterized and managed in accordance with applicable regulations. Additionally, following the completion of spill response and cleanup activities, emergency equipment and supplies will be decontaminated and returned to storage or replaced, as appropriate.

A.3. ONSHORE WORKOVER FACILITIES [§112.10]

This section applies to company owned workover rigs. Contracted workover rigs and associated rental equipment are not covered in this SPCC Plan. Contracted workover rigs and associated rental equipment will comply with SPCC regulations as required by the Master Service Agreement.

A.3.1. Mobile Equipment and Containment [§112.10 (b) and (c)]

Mobile workover equipment will be positioned as to prevent a discharge as described in 112.10(b). Catchment basins or diversion structures to intercept and contain discharges of fuel, crude oil, or oil based drilling fluid will be provided as appropriate. Where catchment basins or diversion structures are impracticable, the Oil Spill Contingency Plan will be utilized to prevent or minimize impacts.

A.3.2. Blowout Prevention [§112.10 (d)]

Blowout prevention (BOP) assemblies and well control systems capable of controlling the expected wellhead pressure will be installed before drilling below any casing point. When working over a well, a BOP and well control system will be used.

A.4. SUBSTANTIAL HARM DETERMINATION [§112.20]

A Substantial Harm determination has been conducted for all SPCC Facilities covered by this Part A. A certified Substantial Harm Checklist has been signed and attached as Figure A-2.

A.5. FACILITY RESPONSE PLAN [§112.20]

In accordance with 40 CFR 112.20, it has been determined that a Facility Response Plan is not required for any SPCC Facility covered by this Part A. To support this determination, a certified Substantial Harm Checklist has been signed and attached as Figure A-2.

FIGURE A-1
EMERGENCY RESPONSE FLOWCHART AND RESPONSIBILITIES

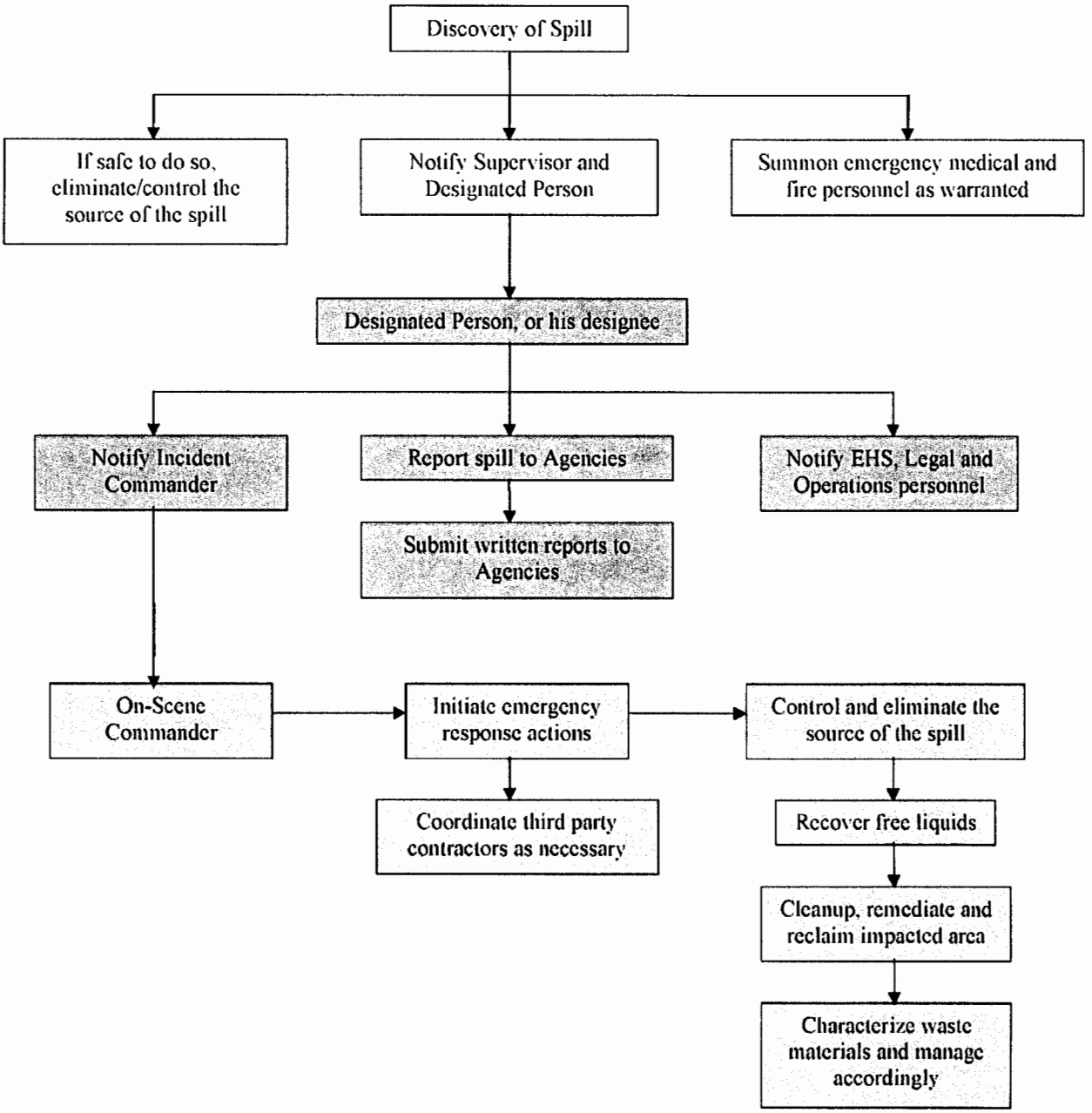


FIGURE A-2 SUBSTANTIAL HARM CRITERIA CHECKLIST [§112.20]

AREA NAME: San Juan River Area

AREA ADDRESS 99 County Road 6500
Kirtland, New mexico 87417

1. Do any of the facilities covered in this plan transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

   Yes_____ No X

2. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?

   Yes_____ No X

3. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the formula in Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula[1]) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Environments" (§10, Appendix E, 40 CFR 112 for availability) and the applicable Area Contingency Plan.

   Yes_____ No X

4. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the formula in Attachment C-III, Appendix C, 40 CFR 112 or a comparable formula[1]) such that a discharge from the facility would shut down a public drinking water intake[2]?

   Yes_____ No X

5. Do any of the facilities covered in this plan have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?

   Yes_____ No X

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.

Name (please type or print) _____ Signature _____

Title _____ Date _____

From 40 CFR 112 Appendix C, Attachment C-II

[1] If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

[2] For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).

APPENDIX A

FORMS

Spill Report Form
Regional Administrator Reporting Form
Annual SPCC Inspection Checklist
SPCC Drainage Inspection and Discharge Log

REGIONAL ADMINISTRATOR REPORTING FORM [§112.4(a)]

When reporting a discharge under 40 CFR 112.4(a), the information listed in the Regional Administrator Reporting Form must be submitted to the Regional Administrator within 60 days. (Check as appropriate)

☐ This Facility has experienced a reportable spill as referenced in 40 CFR Part 112.1(b) of 1,000 gallons or more

☐ This Facility has experienced two (2) reportable spills as referenced in 40 CFR Part 112.1(b) of greater than 42 gallons each within a 12-month period.

FACILITY NAME AND LOCATION:_____

_____

CONTACT PERSON (NAME, ADDRESS/PHONE NUMBER):_____

_____

MAXIMUM STORAGE/HANDLING CAPACITY:_____

NORMAL DAILY THROUGHPUT:_____

CORRECTIVE ACTION/COUNTERMEASURES:_____

_____

_____

FACILITY DESCRIPTION (Include maps and facility diagrams as needed): _____

_____

_____

_____

_____

CAUSE OF DISCHARGE/FAILURE ANALYSIS:_____

_____

_____

PREVENTIVE MEASURES TAKEN:_____

_____

_____

_____

_____ _____

Name (please type or print) Signature

_____ _____

Title Date

SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN

WESTERN GAS RESOURCES INC
San Juan River Gas Plant
PART B – FACILITY INFORMATION

B.1. FACILITY NAME AND LOCATION [§112.7(a)(3)]

WINS No: N/A

San Juan River Gas Plant
Section: 1, Township: 29, Range: 15
County/Parish: San juan State: New mexico
Latitude: 36.758966 Longitude: 108.367494

Directions to the Facility:
From the intersection of State Highway 64 and County Road 6500 go north on County Road 6500 for 1 mile to plant entrance road. Turn west on plant entrance road, go approximately 0.3 miles to the plant main office.

B.1.1. Designated Person at Facility [§112.7(f)(2)]

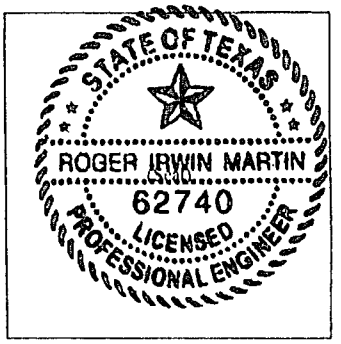
Name: Arlyn Thorson Title: Field Supv

B.1.2. Professional Engineer Certification [§112.3(d)]

By means of this Professional Engineer Certification, I hereby attest to the following:

- I am familiar with the requirements of Title 40, Part 112 of the Code of Federal Regulations (40 CFR 112);
- That I, or my agent, has visited and examined the above referenced Facility;
- That this Spill Prevention, Control and Countermeasure Plan, Parts A and B, (the Plan) has been prepared in accordance with good engineering practice, including applicable industry standards, and with the requirements of 40 CFR 112;
- That procedures for inspections and testing have been established; and
- This Plan is adequate for the Facility.

Date: 7/20/11
Name: Roger Martin
Signature: Roger Martin
Company: Etech Environmental
Registration No.: 62740
State: Texas



The Facility recognizes that, in accordance with 40 CFR 112.3(d)(2), engineer certification in no way relieves the Facility of the responsibility to prepare and fully implement the Plan.

LOG OF PLAN REVIEW AND AMENDMENTS – ART B

NON-TECHNICAL AMENDMENTS

Non-technical amendments are not certified by a Professional Engineer.

Examples of changes include, but are not limited to, phone numbers, name changes, or any non-technical text change(s).

TECHNICAL AMENDMENTS

Technical amendments are certified by a Professional Engineer (§112.5(c)).

Examples of changes include, but are not limited to, commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or addition/deletion of standard operation or maintenance procedures related to discharge prevention measures. It is the responsibility of the field to determine, and confirm with the regulatory authority as necessary, what constitutes a technical amendment. The preamble of the rule states that an amendment is required only "when there is a change that materially affects the facility's potential to discharge oil" (67 FR 47091).

An amendment made under this section will be prepared within six (6) months of the change and implemented as soon as possible but not later than six (6) months following preparation of the amendment.

Technical Amendments affecting various pages within the Plan will require P.E. certification of the Plan and will be documented on the log form below.

MANAGEMENT REVIEW

Management will review this SPCC Plan at least every five (5) years and document the review on the form below (§112.5(b)).

By signature below, signor confirms that management has completed a review and evaluation of this SPCC Plan.

Review/ Amend Date	Signature* (Specify)	Amend Plan (will/will not)	Description of Review/Amendment	Affected Page(s)	P.E. Certification (Y/N)
091712	Ryan Mast PE	Will	Added 750g Used Oil	B7-11, Fig B-1	Y

*Typically signed by Manager, Professional Engineer or Plan Reviewer

Facility Name: San Juan River Gas Plant

B.1.3. Facility Conformance with SPCC Rule [§112.7(a)(1) and (a)(2)]

This Plan is presented in two parts: (1) a Part A which contains Area-specific information that is associated with all of the Facilities within that Area and (2) a Part B for each Facility in the Area that contains the SPCC information specific to that Facility. Thus, Part A in its entirety is fully incorporated into each Part B and each Part B relies on and incorporates the information contained in Part A. In accordance with 40 CFR 112.7, a Cross-Reference Table is included in Part A of this Plan and indicates which provisions are located in the Part A and/or Part B.

As an onshore production facility, the following sections of SPCC regulations apply to this Facility: Sections 112.1 through 112.7 and 112.9. Sections 112.7(g), 112.8 and 112.11 do not apply because they specifically exempt production facilities or apply to offshore facilities. Section 112.10 is only applicable to those Facilities where the company is the owner and/or operator of an onshore oil drilling and workover facility. Sections 112.12 through 112.15 are not applicable because the Facility does not store, use or process animal fats and oils and greases. Sections 112.20 and 112.21 do not apply because this facility is not required to maintain a Facility Response Plan.

The Facility is in conformance with all applicable requirements specified in 40 CFR 112.7 and 112.9 unless noted in Table B-1.

B.1.4. Facility Description [§112.7(a)(3)]

The San Jaun Gas Plant is a natural gas treating and processing plant. Specific equipment includes a cryogenic processing skid, a liquid stabilizer, compressors, an amine treating unit, a sulfur recovery unit and a dehydration unit. Produced water and condensate storage tanks are located on the northwest protion of the property. Natural gas liquid product tanks are located on the east side of the property.

B.1.5. Facility Transfer Operations [§112.9(d)]

B.1.5.1. Aboveground Piping and Appurtenance Protection and Examination [§112.9(d)(1)]

The Facility's aboveground piping is inspected annually for wear, failure and leakage. During the course of inspection, valves, joints and other connections will be assessed by the inspector, as well as external pipe supports. The Annual Inspection Checklist included in Part A, Appendix A will be utilized to guide and document the inspections. Completed checklist forms will be maintained with the Plan.

B.1.5.2. Produced Water Disposal Facilities [§112.9(d)(2)]

Applicable produced water disposal facilities will be inspected annually and after any event that could result in a system upset. These inspections will be completed using the Annual Inspection form in Appendix A.

B.1.5.3. Flowline/Intra-Facility Gathering Line Maintenance [§112.9(d)(4)]

The facility has a maintenance program for flowlines and intra-facility gathering lines.

B.1.5.4. Loading/Unloading Racks [§112.7(h)]

This Facility is not equipped with loading/unloading racks; therefore this section is not applicable.

B.1.6. Facility Storage and Bulk Storage Containers [§112.7(a)(3)(i), §112.7(i) and §112.9(c)]

The Facility is equipped with the petroleum product containers listed in Table B-1.

B.1.6.1. Tank Compatibility with Contents [§112.9(c)(1)]

All containers are constructed in accordance with industry standards and are compatible with the material stored within and the conditions of storage. See Table B-1 for a listing of each container type.

B.1.6.2. Engineer or Update Each Container [§112.9(c)(4)]

'Good engineering practice' for tank batteries and other production facilities includes four elements: (1) providing adequate tank capacity to prevent overfilling, (2) using overflow equalizing lines, (3) providing vacuum protection to prevent collapse and (4) using high level sensors with a computerized control system. In accordance with 112.9(c)(4), every production facility must be equipped with at least one of four 'good engineering practice' elements. The Facility employs at least one of the above 'good engineering practices' which is identified on the Annual Inspection form.

B.1.7. Fault Analysis [§112.7(b)]

Where there exists a reasonable potential for equipment failure, the Plan must include a prediction of the direction, rate of flow and total quantity of oil which could be discharged from each type of failure. For this Facility, potential discharges of oil include container and/or pipe failure and spills. Potential spill sources (equipment), total quantity of oil (capacity), rate of flow (rate) and prediction of the flow path (flow direction) are summarized in Table B-1.

B.1.8. Brittle Fracture Evaluation [§112.7(i)]

Field constructed containers which undergo repair or change of service that might affect the risk of a discharge due to brittle fracture or other catastrophe must be evaluated to confirm vulnerability to brittle fracture failure. According to EPA SPCC Guidance for Regional Inspectors, Version 1.0 and API 653, "Tank Inspection, Repair, Alteration and Reconstruction", there is no brittle fracture concern for field-constructed containers with a maximum shell thickness of 0.5 inch or less. All field-constructed containers at this facility (identified in Table B-1) have a shell thickness of 0.5 inch or less, therefore brittle fracture evaluation is not applicable.

B.1.9. Secondary Containment [§112.7(c) and (d), §112.7(k), and §112.9(c)(2), (c)(5) and (d)(3)]

All dikes, berms, catchment basins, retention ponds, drip pans and other secondary containment devices are constructed of material (i.e. metal, compacted earth, concrete, plastic, fiberglass) that is sufficiently impervious to contain oil. Secondary containment is considered practicable for the Facility with the exception of the following:

- Some flow-through process vessels (i.e., separators, heater treaters, line heaters, scrubbers) may not be provided with a means of secondary containment due to the small oil capacity of some vessels and their distance to waters of the U.S., the ineffectiveness of berms for a high pressure vessel which, in the most likely release scenario, would tend to spray a small quantity of mist possibly beyond the berm walls, and safety hazards (oil collecting around a fired vessel). Furthermore, these process vessels are generally located at facilities that are visited on a regular basis, therefore increasing the likelihood of spill discovery and response while the spill is still on location.
- Some small, shop-built, elevated storage tanks may not be provided with containment for the entire capacity of the tank plus sufficient freeboard for precipitation due to limited space and access problems. For these tanks, periodic integrity testing will be conducted. This integrity testing will consist of external visual inspections for early signs of deterioration and leakage. Visual inspections plus elevation of the tanks decreases the potential for corrosion. Any tanks found to be leaking will be repaired or replaced.
- Loading/unloading areas and other undiked areas within the facility may not be provided with secondary containment due to limited space and/or safety hazards. Also, all oil and produced water transfer operations are manned, which minimizes the chance of any offsite impact.
- Secondary containment for wellheads and associated piping is impracticable due to limited space and access problems for trucks and well work equipment.

Flowlines and intra-facility gathering lines typically do not have secondary containment. Additionally, some oil-filled operational equipment may not be provided with secondary containment. Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (i.e., those for pumps, compressors and other rotating equipment, including pumpjack lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical

request for temporary permission to discharge pursuant to Subsection B of Section 20.6.2.3106 NMAC, or financial assurance pursuant to Paragraph 11 of Subsection A of Section 20.6.2.3107 NMAC shall pay the fees specified in Table 2 of this section to the Water Quality Management Fund.

B. Facilities applying for discharge permits which are subsequently withdrawn or denied shall pay one-half of the permit fee at the time of denial or withdrawal.

C. Every facility submitting an application for discharge permit modification will be assessed a filing fee plus one-half of the permit fee. Applications for both renewal and modification will pay the filing fee plus the permit fee.

D. If the secretary requires a discharge permit modification as a component of an enforcement action, the facility shall pay the applicable discharge permit modification fee. If the secretary requires a discharge permit modification outside the context of an enforcement action, the facility shall not be assessed a fee.

E. The secretary may waive or reduce fees for discharge permit modifications or renewals which require little or no cost for investigation or issuance.

F. Facilities shall pay the filing fee at the time of discharge permit application. The filing fee is nonrefundable. The required permit fees may be paid in a single payment at the time of discharge permit approval or in equal installments over the term of the discharge permit. Installment payments shall be remitted yearly, with the first installment due on the date of discharge permit approval. Subsequent installment payments shall be remitted yearly thereafter. The discharge permit or discharge permit application review of any facility shall be suspended or terminated if the facility fails to submit an installment payment by its due date.

G. Every three years beginning in 2004, the department shall review the fees specified in Table 1 and 2 of this section and shall provide a report to the commission. The department shall revise the fees as necessary in accordance with Section 74-6-5(J), NMSA 1978.

20.6.2.3114 TABLE 1 (gpd=gallons per day)	Permit Fee
Agriculture <10,000 gpd	$ 1,150
Agriculture 10,000 to 49,999 gpd	$ 2,300
Agriculture 50,000 to 99,999 gpd	$ 3,450
Agriculture 100,000 gpd or greater	$ 4,600
Domestic Waste <10,000 gpd	$ 1,150
Domestic Waste 10,000 to 49,999 gpd	$ 2,300
Domestic Waste 50,000 to 99,999 gpd	$ 3,450
Domestic Waste 100,000 to 999,999 gpd	$ 4,600
Domestic Waste 1,000,000 to 9,999,999 gpd	$ 7,000
Domestic Waste 10,000,000 gpd or greater	$ 9,200
Food Processing <10,000 gpd	$ 1,150
Food Processing 10,000 to 49,999 gpd	$ 2,300
Food Processing 50,000 to 99,999 gpd	$ 3,450
Food Processing 100,000 to 999,999 gpd	$ 4,600
Food Processing 1,000,000 or greater	$ 7,000
Grease/Septage surface disposal <10,000 gpd	$ 1,725
Grease/Septage surface disposal 10,000 gpd or greater	$ 3,450
Industrial <10,000 gpd; or <10,000 yd^3 of contaminated solids	$ 1,725
Industrial 10,000 to 99,999 gpd; or 10,000 to 99,999 yd^3 of contaminated solids	$ 3,450
Industrial 100,000 to 999,999 gpd; or 100,000 to 999,999 yd^3 of contaminated solids or greater	$ 6,900
Industrial 1,000,000 gpd or greater; or 1,000,000 yd^3 of contaminated solids or greater	$10,350
Discharge of remediation system effluent - remediation plan approved under separate regulatory authority	$ 1,600
Mining dewatering	$ 3,250
Mining leach dump	$13,000
Mining tailings	$13,000
Mining waste rock	$13,000
Mining in-situ leach (except salt) and old stope leaching	$13,000
Mining other (mines with minimal environmental impact, post closure operation and maintenance, evaporation lagoons and land application at uranium mines)	$ 4,750
Gas Compressor Stations 0 to 1000 Horsepower	$ 400
Gas Compressor Stations >1001 Horsepower	$ 1,700
Gas Processing Plants	$ 4,000
Injection Wells: Class I	$ 4,500
Injection Wells: Class III and Geothermal	$ 1,700
Oil and Gas Service Companies	$ 1,700
Refineries	$ 8,400
Crude Pump Station	$ 1,200
Underground Gas Storage	$ 1,700
Abatement of ground water and vadose zone contamination at oil and gas Sites	$ 2,600
General permit	$ 600

20.6.2.3114 Table 2

	Fee Amount
Filing fee	$ 100
Temporary permission	$ 150
Financial assurance: approval of instrument	greater of $250 or .01%
Financial assurance: annual review	greater of $100 or .001%

[8-17-91, 12-1-95; 20.6.2.3114, Rn & A, 20 NMAC 6.2.III.3114, 01-01-01]

20.6.2.3115 - 20.6.2.3999: [RESERVED]
[12-1-95; 20.6.2.3115 - 20.6.2.3999 NMAC - Rn, 20 NMAC 6.2.III.3115-4100, 1-15-01]

20.6.2.4000 PREVENTION AND ABATEMENT OF WATER POLLUTION:
[12-1-95; 20.6.2.4000 NMAC - Rn, 20 NMAC 6.2.IV, 1-15-01]

20.6.2.4001 - 20.6.2.4100: [RESERVED]
[12-1-95; 20.6.2.4001 - 20.6.2.4100 NMAC - Rn, 20 NMAC 6.2.III.3115-4100, 1-15-01]

20.6.2.4101 PURPOSE:

A. The purposes of Sections 20.6.2.4000 through 20.6.2.4115 NMAC are to:

(1) Abate pollution of subsurface water so that all ground water of the State of New Mexico which has a background concentration of 10,000 mg/L or less TDS, is either remediated or protected for use as domestic and agricultural water supply, and to remediate or protect those segments of surface waters which are gaining because of subsurface-water inflow, for uses designated in the Water Quality Standards for Interstate and Intrastate Streams in New Mexico (20.6.4 NMAC); and

(2) Abate surface-water pollution so that all surface waters of the State of New Mexico are remediated or protected for designated or attainable uses as defined in the Water Quality Standards for Interstate and Intrastate Streams in New Mexico (20.6.4 NMAC).

B. If the background concentration of any water contaminant exceeds the standard or requirement of Subsections A, B and C of Section 20.6.2.4103 NMAC, pollution shall be abated by the responsible person to the background concentration.

C. The standards and requirements set forth in Section 20.6.2.4103 NMAC are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations.
[12-1-95; 20.6.2.4101 NMAC - Rn, 20 NMAC 6.2.IV.4101, 1-15-01]

20.6.2.4102: [RESERVED]
[12-1-95; 20.6.2.4102 NMAC - Rn, 20 NMAC 6.2.IV.4102, 1-15-01]

20.6.2.4103 ABATEMENT STANDARDS AND REQUIREMENTS:

A. The vadose zone shall be abated so that water contaminants in the vadose zone shall not be capable of contaminating ground water or surface water, in excess of the standards in Subsections B and C below, through leaching, percolation or as the water table elevation fluctuates.

B. Ground-water pollution at any place of withdrawal for present or reasonably foreseeable future use, where the TDS concentration is 10,000 mg/L or less, shall be abated to conform to the following standards:

(1) toxic pollutant(s) as defined in Section 20.6.2.1101 NMAC shall not be present; and

(2) the standards of Section 20.6.2.3103 NMAC shall be met.

C. Surface-water pollution shall be abated to conform to the Water Quality Standards for Interstate and Intrastate Streams in New Mexico (20.6.4 NMAC).

D. Subsurface-water and surface-water abatement shall not be considered complete until a minimum of eight (8) consecutive quarterly samples from all compliance sampling stations approved by the secretary meet the abatement standards of Subsections A, B and C of this section. Abatement of water contaminants measured in solid-

matrix samples of the vadose zone shall be considered complete after one-time sampling from compliance stations approved by the secretary.

E. Technical Infeasibility.

(1) If any responsible person is unable to fully meet the abatement standards set forth in Subsections A and B of this section using commercially accepted abatement technology pursuant to an approved abatement plan, he may propose that abatement standards compliance is technically infeasible. Technical infeasibility proposals involving the use of experimental abatement technology shall be considered at the discretion of the secretary. Technical infeasibility may be demonstrated by a statistically valid extrapolation of the decrease in concentration(s) of any water contaminant(s) over the remainder of a twenty (20) year period, such that projected future reductions during that time would be less than 20 percent of the concentration(s) at the time technical infeasibility is proposed. A statistically valid decrease cannot be demonstrated by fewer than eight (8) consecutive quarters. The technical infeasibility proposal shall include a substitute abatement standard(s) for those contaminants that is/are technically feasible. Abatement standards for all other water contaminants not demonstrated to be technically infeasible shall be met.

(2) In no event shall a proposed technical infeasibility demonstration be approved by the secretary for any water contaminant if its concentration is greater than 200 percent of the abatement standard for that contaminant.

(3) If the secretary cannot approve any or all portions of a proposed technical infeasibility demonstration because the water contaminant concentration(s) is/are greater than 200 percent of the abatement standard(s) for each contaminant, the responsible person may further pursue the issue of technical infeasibility by filing a petition with the commission seeking:

(a) approval of alternate abatement standard(s) pursuant to Subsection F of this section; or

(b) granting of a variance pursuant to Section 20.6.2.1210 NMAC.

F. Alternative Abatement Standards.

(1) At any time during or after the submission of a Stage 2 abatement plan, the responsible person may file a petition seeking approval of alternative abatement standard(s) for the standards set forth in Subsections A and B of this section. The commission may approve alternative abatement standard(s) if the petitioner demonstrates that:

(a) compliance with the abatement standard(s) is/are not feasible, by the maximum use of technology within the economic capability of the responsible person; OR there is no reasonable relationship between the economic and social costs and benefits (including attainment of the standard(s) set forth in Section 20.6.2.4103 NMAC) to be obtained;

(b) the proposed alternative abatement standard(s) is/are technically achievable and cost-benefit justifiable; and

(c) compliance with the proposed alternative abatement standard(s) will not create a present or future hazard to public health or undue damage to property.

(2) The petition shall be in writing, filed with the secretary. The petition shall specify, in addition to the information required by Subsection A of Section 20.6.2.1210 NMAC, the water contaminant(s) for which alternative standard(s) is/are proposed, the alternative standard(s) proposed, the three-dimensional body of water pollution for which approval is sought, and the extent to which the abatement standard(s) set forth in Section 20.6.2.4103 NMAC is/are now, and will in the future be, violated. The petition may include a transport, fate and risk assessment in accordance with accepted methods, and other information as the petitioner deems necessary to support the petition.

(3) The commission shall review a petition for alternative abatement standards in accordance with the procedures for review of a variance petition provided in the commission's adjudicatory procedures, 20.1.3 NMAC. [12-1-95, 11-15-96; 20.6.2.4103 NMAC - Rn, 20 NMAC 6.2.IV.4103, 1-15-01]

20.6.2.4104 ABATEMENT PLAN REQUIRED:

A. Unless otherwise provided by this Part, all responsible persons who are abating, or who are required to abate, water pollution in excess of the standards and requirements set forth in Section 20.6.2.4103 NMAC of this Part shall do so pursuant to an abatement plan approved by the secretary. When an abatement plan has been approved, all actions leading to and including abatement shall be consistent with the terms and conditions of the abatement plan.

B. In the event of a transfer of the ownership, control or possession of a facility for which an abatement plan is required or approved, where the transferor is a responsible person, the transferee also shall be considered a responsible person for the duration of the abatement plan, and may jointly share the responsibility to

conduct the actions required by this Part with other responsible persons. The transferor shall notify the transferee in writing, at least thirty (30) days prior to the transfer, that an abatement plan has been required or approved for the facility, and shall deliver or send by certified mail to the secretary a copy of such notification together with a certificate or other proof that such notification has in fact been received by the transferee. The transferor and transferee may agree to a designated responsible person who shall assume the responsibility to conduct the actions required by this Part. The responsible persons shall notify the secretary in writing if a designated responsible person is agreed upon. If the secretary determines that the designated responsible person has failed to conduct the actions required by this Part, the secretary shall notify all responsible persons of this failure in writing and allow them thirty (30) days, or longer for good cause shown, to conduct the required actions before issuing a compliance order pursuant to Section 20.6.2.1220 NMAC.

C. If the source of the water pollution to be abated is a facility that operated under a discharge plan, the secretary may require the responsible person(s) to submit a financial assurance plan which covers the estimated costs to conduct the actions required by the abatement plan. Such a financial assurance plan shall be consistent with any financial assurance requirements adopted by the commission.

[12-1-95; 20.6.2.4104 NMAC - Rn, 20 NMAC 6.2.IV.4104, 1-15-01]

20.6.2.4105 EXEMPTIONS FROM ABATEMENT PLAN REQUIREMENTS:

A. Except as provided in Subsection B of this Section, Sections 20.6.2.4104 and 20.6.2.4106 NMAC do not apply to a person who is abating water pollution:

(1) from a storage tank, under the authority of the Petroleum Storage Tank Regulations (20.5 NMAC) adopted by the New Mexico Environmental Improvement Board, or in accordance with the New Mexico Ground Water Protection Act;

(2) under the authority of the U.S. Environmental Protection Agency pursuant to either the federal Comprehensive Environmental Response, Compensation and Liability Act, and amendments, or the Resource Conservation and Recovery Act;

(3) under the authority of the secretary pursuant to the Hazardous Waste Management Regulations (20.4.1 NMAC) adopted by the New Mexico Environmental Improvement Board;

(4) under the authority of the U.S. Nuclear Regulatory Commission or the U.S. Department of Energy pursuant to the Atomic Energy Act;

(5) from a solid waste landfill, under the authority of the secretary pursuant to the Solid Waste Management Regulations (20.9.1 NMAC) adopted by the N.M. Environmental Improvement Board;

(6) under the authority of a ground-water discharge plan approved by the secretary, provided that such abatement is consistent with the requirements and provisions of Sections 20.6.2.4101, 20.6.2.4103, Subsections C and E of Section 20.6.2.4106, Sections 20.6.2.4107 and 20.6.2.4112 NMAC;

(7) under the authority of a Letter of Understanding, Settlement Agreement or Administrative Order on Consent signed by the secretary prior to December 1, 1995, provided that abatement is being performed in full compliance with the terms of the Letter of Understanding, Settlement Agreement or Administrative Order on Consent; and

(8) on an emergency basis, or while abatement plan approval is pending, or in a manner that will result in compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC within one hundred and eighty (180) days after notice is required to be given pursuant to Paragraph (1) of Subsection A of Section 20.6.2.1203 NMAC, provided that the delegated agency does not object to the abatement action pursuant to Paragraphs (6) and (7) of Subsection A of Section 20.6.2.1203 NMAC.

B. If the secretary determines that abatement of water pollution subject to Subsection A of this section will not meet the standards of Subsections B and C of Section 20.6.2.4103 NMAC, or that additional action is necessary to protect health, welfare, environment or property, the secretary may notify a responsible person, by certified mail, to submit an abatement plan pursuant to Section 20.6.2.4104 and Subsection A of Section 20.6.2.4106 NMAC. The notification shall state the reasons for the secretary's determination. In any appeal of the secretary's determination under this Section, the secretary shall have the burden of proof.

C. Sections 20.6.2.4104 and 20.6.2.4106 NMAC do not apply to the following activities:

(1) Discharges subject to an effective and enforceable National Pollutant Discharge Elimination System (NPDES) permit;

(2) Land application of ground water contaminated with nitrogen originating from human or animal waste and not otherwise exceeding the standards of Subsection A of Section 20.6.2.3103 NMAC and not containing a toxic pollutant as defined in Section 20.6.2.1101 NMAC, provided that it is done in compliance with a discharge plan approved by the secretary;

(3) Abatement of water pollution resulting from the withdrawal and decontamination or blending of polluted water for use as a public or private drinking-water supply, by any person other than a responsible person, unless the secretary determines that a hazard to public health may result; and

(4) Reasonable operation and maintenance of irrigation and flood control facilities.

[12-1-95; 20.6.2.4105 NMAC - Rn, 20 NMAC 6.2.IV.4105, 1-15-01; A, 10/15/03]

20.6.2.4106 ABATEMENT PLAN PROPOSAL:

A. Except as provided for in Section 20.6.2.4105 NMAC, a responsible person shall, within sixty (60) days of receipt of written notice from the secretary that an abatement plan is required, submit an abatement plan proposal to the secretary for approval. For good cause shown, the secretary may allow for a total of one hundred and twenty (120) days to prepare and submit the abatement plan proposal.

B. Voluntary Abatement:

(1) Any person wishing to abate water pollution in excess of the standards and requirements set forth in Section 20.6.2.4103 NMAC may submit a Stage 1 abatement plan proposal to the secretary for approval. Following approval by the secretary of a final site investigation report prepared pursuant to Stage 1 of an abatement plan, any person may submit a Stage 2 abatement plan proposal to the secretary for approval.

(2) Following approval of a Stage 1 or Stage 2 abatement plan proposal under Paragraph (1) of Subsection B of this Section, the person submitting the approved plan shall be a responsible person under Sections 20.6.2.4000 through 20.6.2.4115 NMAC for the purpose of performing the approved Stage 1 or Stage 2 abatement plan. Nothing in this Section shall preclude the secretary from applying Paragraph (9) of Subsection A of Section 20.6.2.1203 NMAC to a responsible person if applicable.

C. Stage 1 Abatement Plan: The purpose of Stage 1 of the abatement plan shall be to design and conduct a site investigation that will adequately define site conditions, and provide the data necessary to select and design an effective abatement option. Stage 1 of the abatement plan may include, but not necessarily be limited to, the following information depending on the media affected, and as needed to select and implement an expeditious abatement option:

(1) Descriptions of the site, including a site map, and of site history including the nature of the discharge that caused the water pollution, and a summary of previous investigations;

(2) Site investigation workplan to define:

(a) site geology and hydrogeology, the vertical and horizontal extent and magnitude of vadose-zone and ground-water contamination, subsurface hydraulic parameters including hydraulic conductivity, transmissivity, storativity, and rate and direction of contaminant migration, inventory of water wells inside and within one (1) mile from the perimeter of the three-dimensional body where the standards set forth in Subsection B of Section 20.6.2.4103 NMAC are exceeded, and location and number of such wells actually or potentially affected by the pollution; and

(b) surface-water hydrology, seasonal stream flow characteristics, ground-water/surface-water relationships, the vertical and horizontal extent and magnitude of contamination and impacts to surface water and stream sediments. The magnitude of contamination and impacts on surface water may be, in part, defined by conducting a biological assessment of fish, benthic macroinvertebrates and other wildlife populations. Seasonal variations should be accounted for when conducting these assessments.

(3) Monitoring program, including sampling stations and frequencies, for the duration of the abatement plan that may be modified, after approval by the secretary, as additional sampling stations are created;

(4) Quality assurance plan, consistent with the sampling and analytical techniques listed in Subsection B of Section 20.6.2.3107 NMAC and with Section 20.6.4.10 NMAC of the Water Quality Standards for Interstate and Intrastate Streams in New Mexico (20.6.4 NMAC), for all work to be conducted pursuant to the abatement plan;

(5) Site health and safety plan for all work to be performed pursuant to the abatement plan;

(6) A schedule for all Stage 1 abatement plan activities, including the submission of summary quarterly progress reports, and the submission, for approval by the secretary, of a detailed final site investigation report; and

(7) Any additional information that may be required to design and perform an adequate site investigation.

D. Stage 2 Abatement Plan: Any responsible person shall submit a Stage 2 abatement plan proposal to the secretary for approval within sixty (60) days, or up to one hundred and twenty (120) days for good cause shown, after approval by the secretary of the final site investigation report prepared pursuant to Stage 1 of the abatement plan.

E. The purpose of Stage 2 of the abatement plan shall be to select and design, if necessary, an abatement option that, when implemented, will result in attainment of the abatement standards and requirements set forth in Section 20.6.2.4103 NMAC, including post-closure maintenance activities. Stage 2 of the abatement plan should include, at a minimum, the following information:

(1) Brief description of the current situation at the site;

(2) Development and assessment of abatement options;

(3) Description, justification and design, if necessary, of preferred abatement option;

(4) Modification, if necessary, of the monitoring program approved pursuant to Stage 1 of the abatement plan, including the designation of pre and post abatement-completion sampling stations and sampling frequencies to be used to demonstrate compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC;

(5) Site maintenance activities, if needed, proposed to be performed after termination of abatement activities;

(6) A schedule for the duration of abatement activities, including the submission of summary quarterly progress reports;

(7) A public notification proposal designed to satisfy the requirements of Subsections B and C of Sections 20.6.2.4108 and 20.6.2.4108 NMAC; and

(8) Any additional information that may be reasonably required to select, describe, justify and design an effective abatement option.

[12-1-95; 20.6.2.4106 NMAC - Rn, 20 NMAC 6.2.IV.4106, 1-15-01]

20.6.2.4107 OTHER REQUIREMENTS:

A. Any responsible person shall allow any authorized representative of the secretary to:

(1) upon presentation of proper credentials, enter the facility at reasonable times;

(2) inspect and copy records required by an abatement plan;

(3) inspect any treatment works, monitoring and analytical equipment;

(4) sample any wastes, ground water, surface water, stream sediment, plants, animals, or vadose-zone material including vadose-zone vapor;

(5) use monitoring systems and wells under such responsible person's control in order to collect samples of any media listed in Paragraph (4) of Subsection A of this section; and

(6) gain access to off-site property not owned or controlled by such responsible person, but accessible to such responsible person through a third-party access agreement, provided that it is allowed by the agreement.

B. Any responsible person shall provide the secretary, or a representative of the secretary, with at least four (4) working days advance notice of any sampling to be performed pursuant to an abatement plan, or any well plugging, abandonment or destruction at any facility where an abatement plan has been required.

C. Any responsible person wishing to plug, abandon or destroy a monitoring or water supply well within the perimeter of the 3-dimensional body where the standards set forth in Subsection B of Section 20.6.2.4103 NMAC are exceeded, at any facility where an abatement plan has been required, shall propose such action by certified mail to the secretary for approval, unless such approval is required from the State Engineer. The proposed action shall be designed to prevent water pollution that could result from water contaminants migrating through the well or borehole. The proposed action shall not take place without written approval from the secretary, unless written approval or disapproval is not received by the responsible person within thirty (30) days of the date of receipt of the proposal.

[12-1-95; 20.6.2.4107 NMAC - Rn, 20 NMAC 6.2.IV.4107, 1-15-01]

20.6.2.4108 PUBLIC NOTICE AND PARTICIPATION:

A. Within thirty (30) days of filing of a Stage 1 abatement plan proposal, the secretary shall issue a news release summarizing:

(1) the source, extent, magnitude and significance of water pollution, as known at that time;

(2) the proposed Stage 1 abatement plan investigation; and

(3) the name and telephone number of an agency contact who can provide additional information.

B. Within thirty (30) days of filing of a Stage 2 abatement plan proposal, or proposed significant modification of Stage 2 of the abatement plan, any responsible person shall provide to the secretary proof of public notice of the abatement plan to the following persons:

(1) the public, who shall be notified through publication of a notice in newspapers of general circulation in this state and in the county where the abatement will occur and, in areas with large percentages of non-

English speaking people, through the mailing of the public notice in English to a bilingual radio station serving the area where the abatement will occur with a request that it be aired as a public service announcement in the predominant non-English language of the area;

(2) those persons, as identified by the secretary, who have requested notification, who shall be notified by mail;

(3) the New Mexico Trustee for Natural Resources, and any other local, state or federal governmental agency affected, as identified by the secretary, which shall be notified by certified mail;

(4) owners and residents of surface property located inside, and within one (1) mile from, the perimeter of the geographic area where the standards and requirements set forth in Section 20.6.2.4103 NMAC are exceeded who shall be notified by a means approved by the secretary; and

(5) the Governor or President of each Indian Tribe, Pueblo or Nation within the state of New Mexico, as identified by the secretary, who shall be notified by mail.

C. The public notice shall include, as approved in advance by the secretary:

(1) name and address of the responsible person;

(2) location of the proposed abatement;

(3) brief description of the nature of the water pollution and of the proposed abatement action;

(4) brief description of the procedures followed by the secretary in making a final determination;

(5) statement on the comment period;

(6) statement that a copy of the abatement plan can be viewed by the public at the department's main office or at the department field office for the area in which the discharge occurred;

(7) statement that written comments on the abatement plan, and requests for a public meeting or hearing that include the reasons why a meeting or hearing should be held, will be accepted for consideration if sent to the secretary within sixty (60) days after the determination of administrative completeness; and

(8) address and phone number at which interested persons may obtain further information.

D. A public meeting or hearing may be held if the secretary determines there is significant public interest. Notice of the time and place of the meeting or hearing shall be given at least thirty (30) days prior to the meeting or hearing pursuant to Subsections A and B above. The secretary may appoint a meeting facilitator or hearing officer. The secretary may require the responsible person to prepare for approval by the secretary a fact sheet, to be distributed at the public meeting or hearing and afterwards upon request, written in English and Spanish, describing site history, the nature and extent of water pollution, and the proposed abatement. The record of the meeting or hearing, requested under this Section, consists of a tape recorded or transcribed session, provided that the cost of a court recorder shall be paid by the person requesting the transcript. If requested by the secretary, the responsible person will provide a translator approved by the secretary at a public meeting or hearing conducted in a locale where testimony from non-English speaking people can reasonably be expected. At the meeting or hearing, all interested persons shall be given a reasonable chance to submit data, views or arguments orally or in writing, and to ask questions of the secretary or the secretary's designee and of the responsible person, or their authorized representatives.

[12-1-95; 20.6.2.4108 NMAC - Rn, 20 NMAC 6.2.IV.4108, 1-15-01]

20.6.2.4109 SECRETARY APPROVAL OR NOTICE OF DEFICIENCY OF SUBMITTALS:

A. The secretary shall, within sixty (60) days of receiving a Stage 1 abatement plan proposal, a site investigation report, a technical infeasibility demonstration, or an abatement completion report, approve the document, or notify the responsible person of the document's deficiency, based upon the information available.

B. The secretary shall, within thirty (30) days of receiving a fact sheet, approve or notify the responsible person of the document's deficiency, based upon the information available.

C. If no public meeting or hearing is held pursuant to Subsection D of Section 20.6.2.4108 NMAC, then the secretary shall, within ninety (90) days of receiving a Stage 2 abatement plan proposal, approve the plan, or notify the responsible person of the plan's deficiency, based upon the information available.

D. If a public meeting or hearing is held pursuant to Subsection D of Section 20.6.2.4108, then the secretary shall, within sixty (60) days of receipt of all required information, approve Stage 2 of the abatement plan proposal, or notify the responsible person of the plan's deficiency, based upon the information contained in the plan and information submitted at the meeting or hearing.

E. If the secretary notifies a responsible person of any deficiencies in a site investigation report, or in a Stage 1 or Stage 2 abatement plan proposal, the responsible person shall submit a modified document to cure the deficiencies specified by the secretary within thirty (30) days of receipt of the notice of deficiency. The responsible person shall be in violation of Sections 20.6.2.4000 through 20.6.2.4115 NMAC if he fails to submit a modified

document within the required time, or if the modified document does not make a good faith effort to cure the deficiencies specified by the secretary.

F. Provided that the other requirements of this Part are met and provided further that Stage 2 of the abatement plan, if implemented, will result in the standards and requirements set forth in Section 20.6.2.4103 NMAC being met within a schedule that is reasonable given the particular circumstances of the site, the secretary shall approve the plan.

[12-1-95; 20.6.2.4109 NMAC - Rn, 20 NMAC 6.2.IV.4109, 1-15-01]

20.6.2.4110 INVESTIGATION AND ABATEMENT: Any responsible person who receives approval for Stage 1 and/or Stage 2 of an abatement plan shall conduct all investigation, abatement, monitoring and reporting activity in full compliance with Sections 20.6.2.4000 through 20.6.2.4115 NMAC and according to the terms and schedules contained in the approved abatement plans.

[12-1-95; 20.6.2.4110 NMAC - Rn, 20 NMAC 6.2.IV.4110, 1-15-01]

20.6.2.4111 ABATEMENT PLAN MODIFICATION:

A. Any approved abatement plan may be modified, at the written request of the responsible person, in accordance with Sections 20.6.2.4000 through 20.6.2.4115 NMAC, and with written approval of the secretary.

B. If data submitted pursuant to any monitoring requirements specified in the approved abatement plan or other information available to the secretary indicates that the abatement action is ineffective, or is creating unreasonable injury to or interference with health, welfare, environment or property, the secretary may require a responsible person to modify an abatement plan within the shortest reasonable time so as to effectively abate water pollution which exceeds the standards and requirements set forth in Section 20.6.2.4103 NMAC, and to abate and prevent unreasonable injury to or interference with health, welfare, environment or property.

[12-1-95; 20.6.2.4111 NMAC - Rn, 20 NMAC 6.2.IV.4111, 1-15-01]

20.6.2.4112 COMPLETION AND TERMINATION:

A. Abatement shall be considered complete when the standards and requirements set forth in Section 20.6.2.4103 NMAC are met. At that time, the responsible person shall submit an abatement completion report, documenting compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC, to the secretary for approval. The abatement completion report also shall propose any changes to long term monitoring and site maintenance activities, if needed, to be performed after termination of the abatement plan.

B. Provided that the other requirements of this Part are met and provided further that the standards and requirements set forth in Section 20.6.2.4103 NMAC have been met, the secretary shall approve the abatement completion report. When the secretary approves the abatement completion report, he shall also notify the responsible person in writing that the abatement plan is terminated.

[12-1-95; 20.6.2.4112 NMAC - Rn, 20 NMAC 6.2.IV.4112, 1-15-01]

20.6.2.4113 DISPUTE RESOLUTION: In the event of any technical dispute regarding the requirements of Paragraph (9) of Subsection A and Subsection E of Section 20.6.2.1203, Sections 20.6.2.4103, 20.6.2.4105, 20.6.2.4106, 20.6.2.4111 or 20.6.2.4112 NMAC, including notices of deficiency, the responsible person may notify the secretary by certified mail that a dispute has arisen, and desires to invoke the dispute resolution provisions of this Section, provided that such notification must be made within thirty (30) days after receipt by the responsible person of the decision of the secretary that causes the dispute. Upon such notification, all deadlines affected by the technical dispute shall be extended for a thirty (30) day negotiation period, or for a maximum of sixty (60) days if approved by the secretary for good cause shown. During this negotiation period, the secretary or his/her designee and the responsible person shall meet at least once. Such meeting(s) may be facilitated by a mutually agreed upon third party, but the third party shall assume no power or authority granted or delegated to the secretary by the Water Quality Act or by the commission. If the dispute remains unresolved after the negotiation period, the decision of secretary shall be final.

[12-1-95; 20.6.2.4113 NMAC - Rn, 20 NMAC 6.2.IV.4113, 1-15-01]

20.6.2.4114 APPEALS FROM SECRETARY'S DECISIONS:

A. If the secretary determines that an abatement plan is required pursuant to Paragraph (9) of Subsection A of 20.6.2.1203, Paragraph (4) of Subsection E of 20.6.2.3109, or Subsection B of 20.6.2.4105 NMAC, approves or provides notice of deficiency of a proposed abatement plan, technical infeasibility demonstration or

abatement completion report, or modifies or terminates an approved abatement plan, he shall provide written notice of such action by certified mail to the responsible person and any person who participated in the action.

B. Any person who participated in the action before the secretary and who is adversely affected by the action listed in Subsection A of 20.6.2.4114 NMAC may file a petition requesting a review before the commission.

C. The petition shall be made in writing to the commission and shall be filed with the commission's secretary within thirty (30) days after receiving notice of the secretary's action. The petition shall specify the portions of the action to which the petitioner objects, certify that a copy of the petition has been mailed or hand-delivered to the secretary, and to the applicant or permittee if the petitioner is not the applicant or permittee, and attach a copy of the action for which review is sought. Unless a timely petition for hearing is made, the secretary's action is final.

D. The proceedings before the commission shall be conducted as provided in the commission's adjudicatory procedures, 20 NMAC 1.3.

E. The cost of the court reporter for the hearing shall be paid by the petitioner.

F. The appeal provisions do not relieve the owner, operator or responsible person of their obligations to comply with any federal or state laws or regulations.

[12-1-95, 11-15-96; 20.6.2.4114 NMAC - Rn, 20 NMAC 6.2.IV.4114, 1-15-01; A, 7-16-06]

20.6.2.4115 COURT REVIEW OF COMMISSION DECISIONS: Court review of commission decisions shall be as provided by law.

[12-1-95; 20.6.2.4115 NMAC - Rn, 20 NMAC 6.2.IV.4115, 1-15-01]

20.6.2.4116 - 20.6.2.4999: [RESERVED]

[12-1-95; 20.6.2.4116 - 20.6.2.4999 NMAC - Rn, 20 NMAC 6.2.IV.4116-5100, 1-15-01]

20.6.2.5000 UNDERGROUND INJECTION CONTROL:

[12-1-95; 20.6.2.5000 NMAC - Rn, 20 NMAC 6.2.V, 1-15-01]

20.6.2.5001 PURPOSE: The purpose of Sections 20.6.2.5000 through 20.6.2.5299 NMAC controlling discharges from underground injection control wells is to protect all ground water of the State of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow for uses designated in the New Mexico Water Quality Standards. Sections 20.6.2.5000 through 20.6.2.5299 NMAC include notification requirements, and requirements for discharges directly into the subsurface through underground injection control wells.

[20.6.2.5001 NMAC - N, 12-1-01]

20.6.2.5002 UNDERGROUND INJECTION CONTROL WELL CLASSIFICATIONS:

A. Underground injection control wells include the following.

(1) Any dug hole or well that is deeper than its largest surface dimension, where the principal function of the hole is emplacement of fluids.

(2) Any septic tank or cesspool used by generators of hazardous waste, or by owners or operators of hazardous waste management facilities, to dispose of fluids containing hazardous waste.

(3) Any subsurface distribution system, cesspool or other well which is used for the injection of wastes.

B. Underground injection control wells are classified as follows:

(1) Class I wells inject fluids beneath the lowermost formation that contains 10,000 milligrams per liter or less TDS. Class I hazardous or radioactive waste injection wells inject fluids containing any hazardous or radioactive waste as defined in 74-4-3 and 74-4A-4 NMSA 1978, including any combination of these wastes. Class I non-hazardous waste injection wells inject non-hazardous and non-radioactive fluids, and they inject naturally-occurring radioactive material (NORM) as provided by Section 20.3.1.1407 NMAC.

(2) Class II wells inject fluids associated with oil and gas recovery.

(3) Class III wells inject fluids for extraction of minerals or other natural resources, including sulfur, uranium, metals, salts or potash by in situ extraction. This classification includes only in situ production from ore bodies that have not been conventionally mined. Solution mining of conventional mines such as stopes leaching is included in Class V.

(4) Class IV wells inject fluids containing any radioactive or hazardous waste as defined in 74-4-3 and 74-4A-4 NMSA 1978, including any combination of these wastes, above or into a formation that contains 10,000 mg/l or less TDS.

(5) Class V wells inject a variety of fluids and are those wells not included in Class I, II, III or IV. Types of Class V wells include, but are not limited to, the following:

(a) Domestic liquid waste injection wells

(i) domestic liquid waste disposal wells used to inject greater than 2,000 gallons per day of treated domestic liquid waste through subsurface fluid distribution systems or vertical wells;

(ii) septic system wells used to emplace greater than 2,000 gallons per day of domestic liquid waste into the subsurface, which are comprised of a septic tank and subsurface fluid distribution system;

(iii) large capacity cesspools used to inject greater than 2,000 gallons per day of domestic liquid waste, including drywells that sometimes have an open bottom and/or perforated sides.

(b) Industrial waste injection wells

(i) air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling;

(ii) dry wells used for the injection of wastes into a subsurface formation;

(iii) geothermal energy injection wells associated with the recovery of geothermal energy for heating, aquaculture and production of electrical power;

(iv) stormwater drainage wells used to inject storm runoff from the surface into the subsurface;

(v) motor vehicle waste disposal wells that receive or have received fluids from vehicular repair or maintenance activities;

(vi) car wash waste disposal wells used to inject fluids from motor vehicle washing activities.

(c) Mining injection wells

(i) stopes leaching wells used for solution mining of conventional mines;

(ii) brine injection wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts;

(iii) backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines whether water injected is a radioactive waste or not;

(iv) injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale.

(d) Ground water management injection wells

(i) ground water remediation injection wells used to inject contaminated ground water that has been treated to ground water quality standards;

(ii) in situ ground water remediation wells used to inject a fluid that facilitates vadose zone or ground water remediation.

(iii) recharge wells used to replenish the water in an aquifer, including use to reclaim or improve the quality of existing ground water;

(iv) barrier wells used to inject fluids into ground water to prevent the intrusion of saline or contaminated water into ground water of better quality;

(v) subsidence control wells (not used for purposes of oil or natural gas production) used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water;

(vi) wells used in experimental technologies.

(e) Agricultural injection wells - drainage wells used to inject fluids into ground water to prevent the intrusion of saline or contaminated water into ground water of better quality.

[20.6.2.5002 NMAC - N, 12-1-01]

20.6.2.5003 NOTIFICATION AND GENERAL OPERATION REQUIREMENTS FOR ALL UNDERGROUND INJECTION CONTROL WELLS: All operators of underground injection control wells, except those wells regulated under the Oil and Gas Act, the Geothermal Resources Conservation Act, and the Surface Mining Act, shall:

A. For existing underground injection control wells, submit to the secretary the information enumerated in Subsection C of Section 20.6.2.1201 NMAC of this Part; provided, however, that if the information in Subsection C of Section 20.6.2.1201 NMAC has been previously submitted to the secretary and acknowledged by him, the information need not be resubmitted; and

B. Operate and continue to operate in conformance with Sections 20.6.2.1 through 20.6.2.5299 NMAC.

C. For new underground injection control wells, submit to the secretary the information enumerated in Subsection C of Section 20.6.2.1201 NMAC of this Part at least 120 days prior to well construction.

[9-20-82, 12-1-95; 20.6.2.5300 NMAC - Rn, 20 NMAC 6.2.V.5300, 1-15-01; 20.6.2.5003 NMAC - Rn, 20.6.2.5300 NMAC, 12-1-01; A, 12-1-01; A, 9-15-02]

20.6.2.5004 PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES AND WELLS:

A. No person shall perform the following underground injection activities nor operate the following underground injection control wells:

(1) The injection of fluids into a motor vehicle waste disposal well is prohibited. Motor vehicle waste disposal wells are prohibited. Any person operating a new motor vehicle waste disposal well (for which construction began after April 5, 2000) must close the well immediately. Any person operating an existing motor vehicle waste disposal well must cease injection immediately and must close the well by December 31, 2002, except as provided in this Subsection.

(2) The injection of fluids into a large capacity cesspool is prohibited. Large capacity cesspools are prohibited. Any person operating a new large capacity cesspool (for which construction began after April 5, 2000) must close the cesspool immediately. Any person operating an existing large capacity cesspool must cease injection immediately and must close the cesspool by December 31, 2002.

(3) The injection of any hazardous or radioactive waste into a well is prohibited, except as provided in this Subsection.

(a) Class I hazardous or radioactive waste injection wells are prohibited, except naturally-occurring radioactive material (NORM) regulated under Section 20.3.1.1407 NMAC is allowed as a Class I non-hazardous waste injection well pursuant to Subsection B (1) of Section 20.6.2.5002 NMAC;

(b) Class IV wells are prohibited, except for wells re-injecting treated ground water into the same formation from which it was drawn as part of a removal or remedial action if the injection has prior approval from the Environmental Protection Agency (EPA) or the department under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA).

(4) Barrier wells, drainage wells, recharge wells, return flow wells, and motor vehicle waste disposal wells are prohibited, except when the discharger can demonstrate that the discharge will not adversely affect the health of persons, and

(a) the injection fluid does not contain a contaminant which may cause an exceedance at any place of present or reasonable foreseeable future use of any primary state drinking water maximum contaminant level as specified in the water supply regulations, "Drinking Water" (20 NMAC 7.1) [20.7.10 NMAC], adopted by the Environmental Improvement Board under the Environmental Improvement Act or the standard of Section 20.6.2.3103 NMAC, whichever is more stringent;

(b) the discharger can demonstrate that the injection will result in an overall or net improvement in water quality as determined by the secretary.

B. Closure of prohibited underground injection control wells shall be in accordance with Section 20.6.2.5005 NMAC and Section 20.6.2.5209 NMAC.

[20.6.2.5004 NMAC - N, 12-1-01]

20.6.2.5005 PRE-CLOSURE NOTIFICATION AND CLOSURE REQUIREMENTS:

A. Any person proposing to close a Class I, III, IV or V underground injection control well must submit pre-closure notification to the department at least 30 days prior to closure. Pre-closure notification must include the following information:

(1) Name of facility
(2) Address of facility
(3) Name of Owner/Operator
(4) Address of Owner/Operator
(5) Contact Person
(6) Phone Number
(7) Type of Well(s)
(8) Number of Well(s)
(9) Well Construction (e.g. drywell, improved sinkhole, septic tank, leachfield, cesspool, other...)
(10) Type of Discharge

(11) Average Flow (gallons per day)
(12) Year of Well Construction
(13) Proposed Well Closure Activities (e.g. sample fluids/sediment, appropriate disposal of remaining fluids/sediments, remove well and any contaminated soil, clean out well, install permanent plug, conversion to other type well, ground water and vadose zone investigation, other)
(14) Proposed Date of Well Closure
(15) Name of Preparer
(16) Date

B. Proposed well closure activities must be approved by the department prior to implementation.
[20.6.2.5005 NMAC - N, 12-1-01]

20.6.2.5006 DISCHARGE PERMIT REQUIREMENTS FOR CLASS V INJECTION WELLS
Class V injection wells must meet the requirements of Sections 20.6.2.3000 through 20.6.2.3999 NMAC and Sections 20.6.2.5000 through 20.6.2.5006 NMAC.
[20.6.2.5006 NMAC - N, 12-1-01]

20.6.2.5007 - 20.6.2.5100: [RESERVED]
[12-1-95; 20.6.2.5001 - 20.6.2.5100 NMAC - Rn, 20 NMAC 6.2.IV.4116-5100, 1-15-01; 20.6.2.5007 -20.6.2.5100 NMAC - Rn 20.6.2.5001 - 20.6.2.5100 NMAC, 12-1-01]

20.6.2.5101 DISCHARGE PERMIT AND OTHER REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. Class I non-hazardous waste injection wells and Class III wells must meet the requirements of Sections 20.6.2.5000 through 20.6.2.5299 NMAC in addition to other applicable requirements of the commission regulations. The secretary may also require that some Class IV and Class V wells comply with the requirements for Class I non-hazardous waste injection wells in Sections 20.6.2.5000 through 20.6.2.5299 NMAC if the secretary determines that the additional requirements are necessary to prevent the movement of water contaminants from a specified injection zone into ground water having 10,000 mg/l or less TDS. No Class I non-hazardous waste injection well or Class III well may be approved which allows for movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC, or pursuant to a temporary designation as provided in Paragraph (2) of Subsection C of Section 20.6.2.5101 NMAC.

B. Operation of a Class I non-hazardous waste injection well or Class III well must be pursuant to a discharge permit meeting the requirements of Sections 20.6.2.3000 through 20.6.2.3999 NMAC and Sections 20.6.2.5000 through 20.6.2.5299 NMAC.

C. Discharge permits for Class I non-hazardous waste injection wells, or Class III wells affecting ground water of 10,000 mg/l or less TDS submitted for secretary approval shall:

(1) Receive an aquifer designation if required in Section 20.6.2.5103 NMAC prior to discharge permit issuance; or

(2) For Class III wells only, address the methods or techniques to be used to restore ground water so that upon final termination of operations including restoration efforts, ground water at any place of withdrawal for present or reasonably foreseeable future use will not contain either concentrations in excess of the standards of Section 20.6.2.3103 NMAC or any toxic pollutant. Issuance of a discharge permit or project discharge permit for Class III wells that provides for restoration of ground water in accordance with the requirements of this Subsection shall substitute for the aquifer designation provisions of Section 20.6.2.5103 NMAC. The approval shall constitute a temporary aquifer designation for a mineral bearing or producing aquifer, or portion thereof, to allow injection as provided for in the discharge permit. Such temporary designation shall expire upon final termination of operations including restoration efforts.

D. The exemptions from the discharge permit requirement listed in Section 20.6.2.3105 NMAC do not apply to underground injection control wells except as provided below:

(1) Wells regulated by the Oil Conservation Division under the exclusive authority granted under Section 70-2-12 NMSA 1978 or under other Sections of the "Oil and Gas Act";

(2) Wells regulated by the Oil Conservation Division under the "Geothermal Resources Act";

(3) Wells regulated by the New Mexico Coal Surface Mining Bureau under the "Surface Mining Act";

(4) Wells for the disposal of effluent from systems which receive less than 2,000 gallons per day of domestic sewage effluent and are regulated under the "Liquid Waste Disposal Regulations" (20 NMAC 7.3) [20.7.3 NMAC] adopted by the Environmental Improvement Board under the "Environmental Improvement Act".

E. Project permits for Class III wells.

(1) The secretary may consider a project discharge permit for Class III wells, if the wells are:

(a) Within the same well field, facility site or similar unit,

(b) Within the same aquifer and ore deposit,

(c) Of similar construction,

(d) Of the same purpose, and

(e) Operated by a single owner or operator.

(2) A project discharge permit does not allow the discharger to commence injection in any individual operational area until the secretary approves an application for injection in that operational area (operational area approval).

(3) A project discharge permit shall:

(a) Specify the approximate locations and number of wells for which operational area approvals are or will be sought with approximate time frames for operation and restoration (if restoration is required) of each area; and

(b) Provide the information required under the following Sections of this Part, except for such additional site-specific information as needed to evaluate applications for individual operational area approvals: Subsection C of Section 20.6.2.3106, Sections 20.6.2.3107, 20.6.2.5204 through 20.6.2.5209, and Subsection B of Section 20.6.2.5210 NMAC.

(4) Applications for individual operational area approval shall include the following:

(a) Site-specific information demonstrating that the requirements of this Part are met, and

(b) Information required under Sections 20.6.2.5202 through 20.6.2.5210 NMAC and not previously provided pursuant to Subparagraph (b) of Paragraph (3) of Subsection E of this Section.

(5) Applications for project discharge permits and for operational area approval shall be processed in accordance with the same procedures provided for discharge permits under Sections 20.6.2.3000 through 20.6.2.3114 NMAC, allowing for public notice on the project discharge permit and on each application for operational area approval pursuant to Section 20.6.2.3108 NMAC with opportunity for public hearing prior to approval or disapproval.

(6) The discharger shall comply with additional requirements that may be imposed by the secretary pursuant to this Part on wells in each new operational area.

F. If the holder of a discharge permit for a Class I non-hazardous waste injection well, or Class III well submits an application for discharge permit renewal at least 120 days before discharge permit expiration, and the discharger is in compliance with his discharge permit on the date of its expiration, then the existing discharge permit for the same activity shall not expire until the application for renewal has been approved or disapproved. An application for discharge permit renewal must include and adequately address all of the information necessary for evaluation of a new discharge permit. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

G. Discharge Permit Signatory Requirements: No discharge permit for a Class I non-hazardous waste injection well or Class III well may be issued unless:

(1) The application for a discharge permit has been signed as follows:

(a) For a corporation: by a principal executive officer of at least the level of vice-president, or a representative who performs similar policy-making functions for the corporation who has authority to sign for the corporation; or

(b) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(c) For a municipality, state, federal, or other public agency: by either a principal executive officer who has authority to sign for the agency, or a ranking elected official; and

(2) The signature is directly preceded by the following certification: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment."

H. Transfer of Class I non-hazardous waste injection well and Class III well Discharge Permits.

(1) The transfer provisions of Section 20.6.2.3111 NMAC do not apply to a discharge permit for a Class I non-hazardous waste injection well or Class III well.

(2) A Class I non-hazardous waste injection well or Class III well discharge permit may be transferred if:

(a) The secretary receives written notice 30 days prior to the transfer date; and

(b) The secretary does not object prior to the proposed transfer date. The secretary may require modification of the discharge permit as a condition of transfer, and may require demonstration of adequate financial responsibility.

(3) The written notice required by Subparagraph (b) of Paragraph (2) of Subsection I above shall:

(a) Have been signed by the discharger and the succeeding discharger, including an acknowledgement that the succeeding discharger shall be responsible for compliance with the discharge permit upon taking possession of the facility; and

(b) Set a specific date for transfer of discharge permit responsibility, coverage and liability; and

(c) Include information relating to the succeeding discharger's financial responsibility required by Paragraph (17) of Subsection B of Section 20.6.2.5210 NMAC.

I. Modification or Termination of a Discharge Permit for a Class I non-hazardous waste injection well or Class III well: If data submitted pursuant to any monitoring requirements specified in the discharge permit or other information available to the secretary indicate that this Part are being or may be violated, the secretary may require modification or, if it is determined by the secretary that the modification may not be adequate, may terminate a discharge permit for a Class I non-hazardous waste injection Well, or Class III well or well field, that was approved pursuant to the requirements of this under Sections 20.6.2.5000 through 20.6.2.5299 NMAC for the following causes:

(1) Noncompliance by the discharger with any condition of the discharge permit; or

(2) The discharger's failure in the discharge permit application or during the discharge permit review process to disclose fully all relevant facts, or the discharger's misrepresentation of any relevant facts at any time; or

(3) A determination that the permitted activity may cause a hazard to public health or undue risk to property and can only be regulated to acceptable levels by discharge permit modification or termination.

[9-20-82, 12-1-95, 11-15-96; 20.6.2.5101 NMAC - Rn, 20 NMAC 6.2.V.5101, 1-15-01; A, 12-1-01; A, 9-15-02]

20.6.2.5102 PRE-CONSTRUCTION REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. Discharge Permit Requirement for Class I non-hazardous waste injection wells.

(1) Prior to construction of a Class I non-hazardous waste injection well or conversion of an existing well to a Class I non-hazardous waste injection well, an approved discharge permit is required that incorporates the requirements of Sections 20.6.2.5000 through 20.6.2.5299 NMAC, except Subsection C of Section 20.6.2.5210 NMAC. As a condition of discharge permit issuance, the operation of the Class I non-hazardous waste injection well under the discharge permit will not be authorized until the secretary has:

(a) Reviewed the information submitted for his consideration pursuant to Subsection C of Section 20.6.2.5210 NMAC, and

(b) Determined that the information submitted demonstrates that the operation will be in compliance with this Part and the discharge permit.

(2) If conditions encountered during construction represent a substantial change which could adversely impact ground water quality from those anticipated in the discharge permit, the secretary shall require a discharge permit modification or may terminate the discharge permit pursuant to Subsection I of Section 20.6.2.5101 NMAC, and the secretary shall publish public notice and allow for comments and hearing in accordance with Section 20.6.2.3108 NMAC.

B. Notification Requirement for Class III wells.

(1) The discharger shall notify the secretary in writing prior to the commencement of drilling or construction of wells which are expected to be used for in situ extraction, unless the discharger has previously received a discharge permit or project discharge permit for the Class III well operation.

(a) Any person, proposing to drill or construct a new Class III well or well field, or convert an existing well to a Class III well, shall file plans, specifications and pertinent documents regarding such construction or conversion, with the Ground Water Quality Bureau of the Environment Department.

(b) Plans, specifications, and pertinent documents required by this Section, if pertaining to geothermal installations, carbon dioxide facilities, or facilities for the exploration, production, refinement or pipeline transmission of oil and natural gas, shall be filed instead with the Oil Conservation Division.

(c) Plans, specifications and pertinent documents required to be filed under this Section must be filed 90 days prior to the planned commencement of construction or conversion.

(d) The following plans, specifications and pertinent documents shall be provided with the notification:

(i) Information required in Subsection C of Section 20.6.2.3106 NMAC;

(ii) A map showing the Class III wells which are to be constructed. The map must also show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads, that are within the expected area of review (Section 20.6.2.5202 NMAC) of the Class III well or well field perimeter;

(iii) Maps and cross-sections indicating the general vertical and lateral limits of all ground water having 10,000 mg/l or less TDS within one mile of the site, the position of such ground water within this area relative to the injection formation, and the direction of water movement, where known, in each zone of ground water which may be affected by the proposed injection operation;

(iv) Maps and cross-sections detailing the geology and geologic structure of the local area, including faults, if known or suspected;

(v) The proposed formation testing program to obtain an analysis or description, whichever the secretary requires, of the chemical, physical, and radiological characteristics of, and other information on, the receiving formation;

(vi) The proposed stimulation program;

(vii) The proposed injection procedure;

(viii) Schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(ix) Proposed construction procedures, including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;

(x) Information, as described in Paragraph (17) of Subsection B of Section 20.6.2.5210 NMAC, showing the ability of the discharger to undertake measures necessary to prevent groundwater contamination; and

(xi) A plugging and abandonment plan showing that the requirements of Subsections B, C and D of Section 20.6.2.5209 NMAC will be met.

(2) Prior to construction, the discharger shall have received written notice from the secretary that the information submitted under item 10 of Subparagraph (d) of Paragraph (1) of Subsection B of Section 20.6.2.5102 NMAC is acceptable. Within 30 days of submission of the above information the secretary shall notify the discharger that the information submitted is acceptable or unacceptable.

(3) Prior to construction, the secretary shall review said plans, specifications and pertinent documents and shall comment upon their adequacy of design for the intended purpose and their compliance with pertinent Sections of this Part. Review of plans, specifications and pertinent documents shall be based on the criteria contained in Section 20.6.2.5205, Subsection E of Section 20.6.2.5209, and Subparagraph (d) of Paragraph (1) of Subsection B of Section 20.6.2.5102 NMAC.

(4) Within thirty (30) days of receipt, the secretary shall issue public notice, consistent with Subsection B of Section 20.6.2.3108 NMAC, that notification was submitted pursuant to Subsection B of Section 20.6.2.5102 NMAC. The secretary shall allow a period of at least thirty (30) days during which comments may be submitted. The public notice shall include:

(a) Name and address of the proposed discharger;

(b) Location of the discharge;

(c) Brief description of the proposed activities;

(d) Statement of the public comment period; and

(e) Address and telephone number at which interested persons may obtain further information.

(5) The secretary shall comment in writing upon the plans and specifications within sixty (60) days of their receipt by the secretary.

(6) Within thirty (30) days after completion, the discharger shall submit written notice to the secretary that the construction or conversion was completed in accordance with submitted plans and specifications, or shall submit as-built plans detailing changes from the originally submitted plans and specifications.

(7) In the event a discharge permit application is not submitted or approved, all wells which may cause groundwater contamination shall be plugged and abandoned by the applicant pursuant to the plugging and abandonment plan submitted in the notification; these measures shall be consistent with any comments made by the

secretary in his review. If the wells are not to be permanently abandoned and the discharger demonstrates that plugging at this time is unnecessary to prevent groundwater contamination, plugging pursuant to the notification is not required. Financial responsibility established pursuant to Sections 20.6.2.5000 through 20.6.2.5299 NMAC will remain in effect until the discharger permanently abandons and plugs the wells in accordance with the plugging and abandonment plan.
[9-20-82, 12-24-87, 12-1-95; 20.6.2.5102 NMAC - Rn, 20 NMAC 6.2.V.5102, 1-15-01; A, 12-1-01]

20.6.2.5103 DESIGNATED AQUIFERS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. Any person may file a written petition with the secretary seeking commission consideration of certain aquifers or portions of aquifers as "designated aquifers". The purpose of aquifer designation is:

(1) For Class I non-hazardous waste injection wells, to allow as a result of injection, the addition of water contaminants into ground water, which before initiation of injection has a concentration between 5,000 and 10,000 mg/l TDS; or

(2) For Class III wells, to allow as a result of injection, the addition of water contaminants into ground water, which before initiation of injection has a concentration between 5,000 and 10,000 mg/l TDS, and not provide for restoration or complete restoration of that ground water pursuant to Paragraph (2) of Subsection C of Section 20.6.2.5101 NMAC.

B. The applicant shall identify (by narrative description, illustrations, maps or other means) and describe such aquifers, in geologic and/or geometric terms (such as vertical and lateral limits and gradient) which are clear and definite.

C. An aquifer or portion of an aquifer may be considered for aquifer designation under Subsection A. of this Section, if the applicant demonstrates that the following criteria are met:

(1) It is not currently used as a domestic or agricultural water supply; and

(2) There is no reasonable relationship between the economic and social costs of failure to designate and benefits to be obtained from its use as a domestic or agricultural water supply because:

(a) It is situated at a depth or location which makes recovery of water for drinking or agricultural purposes economically or technologically impractical at present and in the reasonably foreseeable future; or

(b) It is already so contaminated that it would be economically or technologically impractical to render that water fit for human consumption or agricultural use at present and in the reasonably foreseeable future.

D. The petition shall state the extent to which injection would add water contaminants to ground water and why the proposed aquifer designation should be approved. For Class III wells, the applicant shall state whether and to what extent restoration will be carried out.

E. The secretary shall either transmit the petition to the commission within sixty (60) days recommending that a public hearing be held, or refuse to transmit the petition and notify the applicant in writing citing reasons for such refusal.

F. If the secretary transmits the petition to the commission, the commission shall review the petition and determine to either grant or deny a public hearing on the petition. If the commission grants a public hearing, it shall issue a public notice, including the following information:

(1) Name and address of the applicant;

(2) Location, depth, TDS, areal extent, general description and common name or other identification of the aquifer for which designation is sought;

(3) Nature of injection and extent to which the injection will add water contaminants to ground water; and

(4) Address and telephone number at which interested persons may obtain further information.

G. If the secretary refuses to transmit the petition to the commission, then the applicant may appeal the secretary's disapproval of the proposed aquifer designation to the commission within thirty (30) days, and address the issue of whether the proposed aquifer designation meets the criteria of Subsections A, B, C, and D of this Section.

H. If the commission grants a public hearing, the hearing shall be held in accordance with the provisions of Section 74-6-6, NMSA 1978.

I. If the commission does not grant a public hearing on the petition, the aquifer designation shall not be approved.

J. After public hearing and consideration of all facts and circumstances included in Section 74-6-4(D), NMSA 1978, the commission may authorize the secretary to approve a proposed designated aquifer if the commission determines that the criteria of Subsection A, B, C, and D of this section are met.

K. Approval of a designated aquifer petition does not alleviate the applicant from complying with other Sections of Sections 20.6.2.5000 through 20.6.2.5299 NMAC, or of the responsibility for protection, pursuant to this part, of other nondesignated aquifers containing ground water having 10,000 mg/l or less TDS.

L. Persons other than the petitioner may add water contaminants as a result of injection into an aquifer designated for injection, provided the person receives a discharge permit pursuant to the requirements of Sections 20.6.2.5000 through 20.6.2.5299 NMAC. Persons, other than the original petitioner or his designee, requesting addition of water contaminants as a result of injection into aquifers previously designated only for injection with partial restoration shall file a petition with the commission pursuant to the requirements of Subsections A, B, C, and D of this Section.

[9-20-82, 12-1-95; 20.6.2.5103 NMAC - Rn, 20 NMAC 6.2.V.5103, 1-15-01; A, 12-1-01]

20.6.2.5104 WAIVER OF REQUIREMENT BY SECRETARY FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. Where a Class I non-hazardous waste injection well or a Class III well or well field, does not penetrate, or inject into or above, and which will not affect, ground water having 10,000 mg/l of less TDS, the secretary may:

(1) Issue a discharge permit for a well or well field with less stringent requirements for area of review, construction, mechanical integrity, operation, monitoring, and reporting than required by Sections 20.6.2.5000 through 20.6.2.5299 NMAC; or

(2) For Class III wells only, issue a discharge permit pursuant to the requirements of Sections 20.6.2.3000 through 20.6.2.3114 NMAC.

B. Authorization of a reduction in requirements under Subsection A of this Section shall be granted only if injection will not result in an increased risk of movement of fluids into ground water having 10,000 mg/l or less TDS, except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

[9-20-82, 12-1-95; 20.6.2.5104 NMAC - Rn & A, 20 NMAC 6.2.V.5104, 1-15-01; A, 12-1-01]

20.6.2.5105 - 20.6.2.5199: [RESERVED]

[12-1-95; 20.6.2.5105 - 20.6.2.5199 NMAC - Rn, 20 NMAC 6.2.V.5105-5199, 1-15-01]

20.6.2.5200 TECHNICAL CRITERIA AND PERFORMANCE STANDARDS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

[12-1-95; 20.6.2.5200 NMAC - Rn, 20 NMAC 6.2.V.5200, 1-15-01; A, 12-1-01]

20.6.2.5201 PURPOSE: Sections 20.6.2.5200 through 20.6.2.5210 NMAC provide the technical criteria and performance standards for Class I non-hazardous waste injection wells and Class III wells.

[9-20-82; 20.6.2.5201 NMAC - Rn, 20 NMAC 6.2.V.5201, 1-15-01; A, 12-1-01]

20.6.2.5202 AREA OF REVIEW:

A. The area of review is the area surrounding a Class I non-hazardous waste injection well or Class III well or the area within and surrounding a well field that is to be examined to identify possible fluid conduits, including the location of all known wells and fractures which may penetrate the injection zone.

B. The area of review for each Class I non-hazardous waste injection well, or each Class III well or well field shall be an area which extends:

(1) Two and one half (2 1/2) miles from the well, or well field; or

(2) One-quarter (1/4) mile from a well or well field where the area of review is calculated to be zero pursuant to Paragraph (3) of Subsection B below, or where the well field production at all times exceeds injection to produce a net withdrawal; or

(3) A suitable distance, not less than one-quarter (1/4) mile, proposed by the discharger and approved by the secretary, based upon a mathematical calculation to determine the area of review. Computations to determine the area of review may be based upon the parameters listed below and should be calculated for an injection time period equal to the expected life of the Class I non-hazardous waste injection well, or Class III well or well field. The following modified Theis equation illustrates one form which the mathematical model may take to compute the

area of review; the discharger must demonstrate that any equation or simulation used to compute the area of review applies to the hydrogeologic conditions in the area of review.

$$r = \left(\frac{2.25 K H t}{S 10^{x}} \right)^{1/2}$$

Where:

$$x = \frac{4BKH (H_w - H_{bo}) x \, S_p G_b}{2.3 Q}$$

r = Radius of the area of review for a Class I non-hazardous waste injection well or Class III well (length)

K = Hydraulic conductivity of the injection zone (length/time)

H = Thickness of the injection zone (length)

t = Time of injection (time)

S = Storage coefficient (dimensionless)

Q = Injection rate (volume/time)

H_{bo} = Observed original hydrostatic head of injection zone (length) measured from the base of the lowest aquifer containing ground water of 10,000 mg/l or less TDS

H_w = Hydrostatic head of underground source of drinking water (length) measured from the base of the lowest aquifer containing ground water of 10,000 mg/l or less TDS

S_pG_b = Specific gravity of fluid in the injection zone (dimensionless)

B = 3.142 (dimensionless)

(4) The above equation is based on the following assumptions:

(a) The injection zone is homogenous and isotropic:

(b) The injection zone has infinite areal extent;

(c) The Class I non-hazardous waste injection well or Class III well penetrates the entire thickness of the injection zone;

(d) The well diameter is infinitesimal compared to "r" when injection time is longer than a few minutes; and

(e) The emplacement of fluid into the injection zone creates an instantaneous increase in pressure.

C. The secretary shall require submittal by the discharger of information regarding the area of review including the information to be considered by the secretary in Subsection B of Section 20.6.2.5210 NMAC.
[9-20-82, 12-1-95; 20.6.2.5202 NMAC - Rn, 20 NMAC 6.2.V.5202, 1-15-01; A, 12-1-01]

20.6.2.5203 CORRECTIVE ACTION FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. Persons applying for approval of a Class I non-hazardous waste injection well, or a Class III well or well field shall identify the location of all known wells, drill holes, shafts, stopes and other conduits within the area of review which may penetrate the injection zone, in so far as is known or is reasonably available from the public records. For such wells or other conduits which are improperly sealed, completed, or abandoned, or otherwise provide a pathway for the migration of contaminants, the discharger shall address in the proposed discharge plan such steps or modifications (corrective action) as are necessary to prevent movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

B. Prior to operation, or continued operation of a well for which corrective action is required pursuant to Subsections A or D of Section 20.6.2.5203 NMAC, the discharger must demonstrate that:

(1) All required corrective action has been taken; or

(2) Injection pressure is to be limited so that pressure in the injection zone does not cause fluid movement through any well or other conduit within the area of review into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC. This pressure limitation may be removed after all required corrective action has been taken.

C. In determining the adequacy of corrective action proposed in the discharge permit application, the following factors will be considered by the secretary:

(1) Chemical nature and volume of the injected fluid;

(2) Chemical nature of native fluids and by-products of injection;

(3) Geology and hydrology;

(4) History of the injection and production operation;

(5) Completion and plugging records;

(6) Abandonment procedures in effect at the time a well, drill hole, or shaft was abandoned; and

(7) Hydraulic connections with waters having 10,000 mg/l or less TDS

D. In the event that, after approval for a Class I non-hazardous waste injection well or Class III well has been granted, additional information is submitted or it is discovered that a well or other conduit within the applicable area of review might allow movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC, the secretary may require action in accordance with Subsection I of Section 20.6.2.5101 and Subsection B Section 20.6.2.5203 NMAC.
[9-20-82, 12-1-95; 20.6.2.5203 NMAC - Rn, 20 NMAC 6.2.V.5203, 1-15-01; A, 12-1-01]

20.6.2.5204 MECHANICAL INTEGRITY FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. A Class I non-hazardous waste injection well or Class III well has mechanical integrity if there is no detectable leak in the casing, tubing or packer which the secretary considers to be significant at maximum operating temperature and pressure; and no detectable conduit for fluid movement out of the injection zone through the well bore or vertical channels adjacent to the well bore which the secretary considers to be significant.

B. Prior to well injection and at least once every five years or more frequently as the secretary may require for good cause during the life of the well, the discharger must demonstrate that a Class I non-hazardous waste injection well or Class III well has mechanical integrity. The demonstration shall be made through use of the following tests:

(1) For evaluation of leaks,

(a) Monitoring of annulus pressure (after an initial pressure test with liquid or gas before operation commences), or

(b) Pressure test with liquid or gas;

(2) For determination of conduits for fluid movement,

(a) The results of a temperature or noise log, or

(b) Where the nature of the casing used for Class III wells precludes use of these logs, cementing records and an appropriate monitoring program as the secretary may require which will demonstrate the presence of adequate cement to prevent such movement;

(3) Other appropriate tests as the secretary may require.

C. The secretary may consider the use by the discharger of equivalent alternative test methods to determine mechanical integrity. The discharger shall submit information on the proposed test and all technical data supporting its use. The secretary may approve the request if it will reliably demonstrate the mechanical integrity of wells for which its use is proposed. For Class III wells this demonstration may be made by submission of adequate monitoring data after the initial mechanical integrity tests.

D. In conducting and evaluating the tests enumerated in this Section or others to be allowed by the secretary, the discharger and the secretary shall apply methods and standards generally accepted in the affected industry. When the discharger reports the results of mechanical integrity tests to the secretary, he shall include a description of the test(s), the method(s) used, and the test results. In making an evaluation, the secretary's review shall include monitoring and other test data submitted since the previous evaluation.

[9-20-82, 12-1-95; 20.6.2.5204 NMAC - Rn, 20 NMAC 6.2.V.5204, 1-15-01; A, 12-1-01]

20.6.2.5205 CONSTRUCTION REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. General Construction Requirements Applicable to Class I non-hazardous waste injection wells and Class III wells.

(1) Construction of all Class I non-hazardous waste injection wells and all new Class III wells shall include casing and cementing. Prior to well injection, the discharger shall demonstrate that the construction and operation of:

(a) Class I non-hazardous waste injection wells will not cause or allow movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC;

(b) Class III wells will not cause or allow movement of fluids out of the injection zone into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

(2) The construction of each newly drilled well shall be designed for the proposed life expectancy of the well.

(3) In determining if the discharger has met the construction requirements of this Section and has demonstrated adequate construction, the secretary shall consider the following factors:

(a) Depth to the injection zone;

(b) Injection pressure, external pressure, annular pressure, axial loading, and other stresses that may cause well failure;

(c) Hole size;

(d) Size and grade of all casing strings, including wall thickness, diameter, nominal weight, length, joint specification, and construction material;

(e) Type and grade of cement;

(f) Rate, temperature, and volume of injected fluid;

(g) Chemical and physical characteristics of the injected fluid, including corrosiveness, density, and temperature;

(h) Chemical and physical characteristics of the formation fluids including pressure and temperature;

(i) Chemical and physical characteristics of the receiving formation and confining zones including lithology and stratigraphy, and fracture pressure; and

(j) Depth, thickness and chemical characteristics of penetrated formations which may contain ground water.

(4) To demonstrate adequate construction, appropriate logs and other tests shall be conducted during the drilling and construction of new Class I non-hazardous waste injection wells or Class III wells or during work-over of existing wells in preparation for reactivation or for change to injection use. A descriptive report interpreting the results of such logs and tests shall be prepared by a knowledgeable log analyst and submitted to the secretary for review prior to well injection. The logs and tests appropriate to each type of injection well shall be based on the intended function, depth, construction and other characteristics of the well, availability of similar data in the area of the drilling site and the need for additional information that may arise from time to time as the construction of the well progresses.

(a) The discharger shall demonstrate through use of sufficiently frequent deviation checks, or another equivalent method, that a Class I non-hazardous waste injection well or Class III well drilled using a pilot hole then enlarged by reaming or another method, does not allow a vertical avenue for fluid migration in the form of diverging holes created during drilling.

(b) The secretary may require use by the discharger of the following logs to assist in characterizing the formations penetrated and to demonstrate the integrity of the confining zones and the lack of vertical avenues for fluid migration:

(i) For casing intended to protect ground water having 10,000 mg/l or less TDS: Resistivity, spontaneous potential, and caliper logs before the casing is installed; and a cement bond, or temperature log after the casing is set and cemented.

(ii) For intermediate and long strings of casing intended to facilitate injection: Resistivity, spontaneous potential, porosity, and gamma ray logs before the casing is installed; and fracture finder or spectral logs; and a cement bond or temperature log after the casing is set and cemented.

(5) In addition to the requirements of Section 20.6.2.5102 NMAC, the discharger shall provide notice prior to commencement of drilling, cementing and casing, well logging, mechanical integrity tests, and any well work-over to allow opportunity for on-site inspection by the secretary or his representative.

B. Additional Construction Requirements for Class I non-hazardous waste injection wells.

(1) All Class I non-hazardous waste injection wells shall be sited in such a manner that they inject into a formation which is beneath the lowermost formation containing, within one quarter mile of the well bore, ground water having 10,000 mg/l TDS or less except as approved pursuant to Section 20.6.2.5103 NMAC.

(2) All Class I non-hazardous waste injection wells shall be cased and cemented by circulating cement to the surface.

(3) All Class I non-hazardous waste injection wells, except those municipal wells injecting noncorrosive wastes, shall inject fluids through tubing with a packer set in the annulus immediately above the injection zone, or tubing with an approved fluid seal as an alternative. The tubing, packer, and fluid seal shall be designed for the expected length of service.

(a) The use of other alternatives to a packer may be allowed with the written approval of the secretary. To obtain approval, the operator shall submit a written request to the secretary which shall set forth the proposed alternative and all technical data supporting its use. The secretary may approve the request if the alternative method will reliably provide a comparable level of protection to ground water. The secretary may approve an alternative method solely for an individual well or for general use.

(b) In determining the adequacy of the specifications proposed by the discharger for tubing and packer, or a packer alternative, the secretary shall consider the following factors:

(i) Depth of setting;

(ii) Characteristics of injection fluid (chemical nature or characteristics, corrosiveness, and density);

(iii) Injection pressure;

(iv) Annular pressure;

(v) Rate, temperature and volume of injected fluid; and

(vi) Size of casing.

C. Additional Construction Requirements for Class III wells.

(1) Where injection is into a formation containing ground water having 10,000 mg/l or less TDS, monitoring wells shall be completed into the injection zone and into the first formation above the injection zone containing ground water having 10,000 mg/l or less TDS which could be affected by the extraction operation. If ground water having 10,000 mg/l or less TDS below the injection zone could be affected by the extraction operation, monitoring of such ground water may be required. These wells shall be of sufficient number, located and constructed so as to detect any excursion of injection fluids, process byproducts, or formation fluids outside the extraction area or injection zone. The requirement for monitoring wells in aquifers designated pursuant to Section

20.6.2.5103 NMAC may be waived by the secretary, provided that the absence of monitoring wells does not result in an increased risk of movement of fluids into protected ground waters having 10,000 mg/l or less TDS.

(2) Where injection is into a formation which does not contain ground water having 10,000 mg/l or less TDS, no monitoring wells are necessary in the injection zone. However, monitoring wells may be necessary in adjoining zones with ground water having 10,000 mg/l or less TDS that could be affected by the extraction operation.

(3) In an area that the secretary determines is subject to subsidence or collapse, the required monitoring wells may be required to be located outside the physical influence of that area.

(4) In determining the adequacy of monitoring well location, number, construction and frequency of monitoring proposed by the discharger, the secretary shall consider the following factors:

(a) The local geology and hydrology;

(b) The operating pressures and whether a negative pressure gradient to the monitor well is being maintained;

(c) The nature and volume of injected fluid, formation water, and process by-products; and

(d) The number and spacing of Class III wells in the well field.

[9-20-82, 12-1-95; 20.6.2.5205 NMAC - Rn, 20 NMAC 6.2.V.5205, 1-15-01; A, 12-1-01]

20.6.2.5206 OPERATING REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. General Operating Requirements Applicable to Class I non-hazardous waste injection wells and Class III wells.

(1) The maximum injection pressure at the wellhead shall not initiate new fractures or propagate existing fractures in the confining zone, or cause the movement of injection or formation fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

(2) Injection between the outermost casing and the well bore is prohibited in a zone other than the authorized injection zone.

B. Additional Operating Requirements for Class I non-hazardous waste injection wells.

(1) Except during well stimulation, the maximum injection pressure shall not initiate new fractures or propagate existing fractures in the injection zone.

(2) Unless an alternative to a packer has been approved under Subparagraph (c) of Paragraph (3) of Subsection B of Section 20.6.2.5205 NMAC, the annulus between the tubing and the long string of casing shall be filled with a fluid approved by the secretary and a pressure, also approved by the secretary shall be maintained on the annulus.

C. Additional Operating Requirements for Class III wells: Initiation of new fractures or propagation of existing fractures in the injection zone will not be approved by the secretary as part of a discharge permit unless it is done during well stimulation and the discharger demonstrates:

(1) That such fracturing will not cause movement of fluids out of the injection zone into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC, and

(2) That the provisions of Subsection C of Section 20.6.2.3109 and Subsection C of Section 20.6.2.5101 NMAC for protection of ground water are met.

[9-20-82, 12-1-95; 20.6.2.5206 NMAC - Rn, 20 NMAC 6.2.V.5206, 1-15-01; A, 12-1-01]

20.6.2.5207 MONITORING REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. The discharger shall demonstrate mechanical integrity for each Class I non-hazardous waste injection well or Class III well at least once every five years during the life of the well pursuant to Section 20.6.2.5204 NMAC.

B. Additional Monitoring Requirements for Class I non-hazardous waste injection wells.

(1) The discharger shall provide analysis of the injected fluids at least quarterly or, if necessary, more frequently to yield data representative of their characteristics.

(2) Continuous monitoring devices shall be used to provide a record of injection pressure, flow rate, flow volume, and pressure on the annulus between the tubing and the long string of casing.

(3) The discharger shall provide wells within the area of review as required by the discharge permit to be used by the discharger to monitor pressure in, and possible fluid movement into, ground water having 10,000 mg/l or less TDS except for such ground waters designated pursuant to Section 20.6.2.5103 NMAC. This Section

does not require monitoring wells for Class I non-hazardous waste injection wells unless monitoring wells are necessary due to possible flow paths within the area of review.

C. Additional Monitoring Requirements for Class III wells.

(1) The discharger shall provide an analysis or description, whichever the secretary requires, of the injected fluids at least quarterly or, if necessary, more frequently to yield representative data.

(2) The discharger shall perform:

(a) Appropriate monitoring of injected and produced fluid volumes by whichever of the following methods the secretary requires:

(i) Recording injection pressure and either flow rate or volume every two weeks; or

(ii) Metering and daily recording of fluid volumes;

(b) Monitoring every two weeks, or more frequently as the secretary determines, of the monitor wells, required in Subsection C of Section 20.6.2.5205 NMAC for:

(i) Water chemistry parameters used to detect any migration from the injection zone;

(ii) Fluid levels adjacent to the injection zone; and

(c) Other necessary monitoring as the secretary for good cause may require to detect movement of fluids from the injection zone into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC.

(3) With the approval of the secretary, all Class III wells may be monitored on a well field basis by manifold monitoring rather than on an individual well basis. Manifold monitoring to determine the quality, pressure, and flow rate of the injected fluid may be approved in cases of facilities consisting of more than one Class III well, operating with a common manifold, provided that the discharger demonstrates that manifold monitoring is comparable to individual well monitoring.

[9-20-82, 12-1-95; 20.6.2.5207 NMAC - Rn, 20 NMAC 6.2.V.5207, 1-15-01; A, 12-1-01]

20.6.2.5208 REPORTING REQUIREMENTS FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. Reporting Requirements for Class I non-hazardous waste injection wells.

(1) If a Class I non-hazardous waste injection well is found to be discharging or is suspected of discharging fluids into a zone or zones other than the permitted or authorized injection zone, the discharger shall within 24 hours notify the secretary of the circumstances and action taken. The discharger shall provide subsequent written reports as required by the secretary.

(2) The discharger shall provide reports quarterly to the secretary on:

(a) The physical, chemical and other relevant characteristics of injection fluids;

(b) Monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure; and

(c) The results of monitoring prescribed under Subsection B of Section 20.6.2.5207 NMAC.

(3) The discharger shall report, no later than the first quarterly report after completion, the results of:

(a) Periodic tests of mechanical integrity as required in Sections 20.6.2.5204 and 20.6.2.5207 NMAC;

(b) Any other test of the Class I non-hazardous waste injection well conducted by the discharger if required by the secretary;

(c) Any well work-over; and

(d) Any changes within the area of review which might impact subsurface conditions.

B. Reporting Requirements for Class III wells.

(1) The discharger shall notify the secretary within 48 hours of the detection or suspected detection of a leachate excursion, and provide subsequent reports as required by the secretary.

(2) The discharger shall provide to the secretary:

(a) Reports on required monitoring quarterly, or more frequently as required by the secretary; and

(b) Results of mechanical integrity testing as required in Sections 20.6.2.5204 and 20.6.2.5207 NMAC and any other periodic tests required by the secretary. These results are to be reported no later than the first regular report after the completion of the test.

(3) Where manifold monitoring is permitted, monitoring results may be reported on a well field basis, rather than individual well basis.

C. Report Signatory Requirements.

(1) All reports submitted pursuant to this Section shall be signed and certified as provided in Subsection G of Section 20.6.2.5101 NMAC, or by a duly authorized representative.

(2) For a person to be a duly authorized representative, authorization must:

(a) Be made in writing by a signatory described in Paragraph (1) of Subsection G of Section 20.6.2.5101 NMAC;

(b) Specify either an individual or a position having responsibility for the overall operation of that regulated facility or activity, such as the position of plant manager, operator of a well or well field, superintendent, or position of equivalent responsibility; and

(c) Have been submitted to the secretary.

[9-20-82, 12-1-95; 20.6.2.5208 NMAC - Rn, 20 NMAC 6.2.V.5208, 1-15-01; A, 12-1-01]

20.6.2.5209 PLUGGING AND ABANDONMENT FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. The discharger shall submit as part of the discharge permit application, a plan for plugging and abandonment of a Class I non-hazardous waste injection well or a Class III well that meets the requirements of Subsection C of Section 20.6.2.3109 and Subsection C of Section 20.6.2.5101 NMAC and 20.6.2.5005 NMAC for protection of ground water. If requested, a revised or updated abandonment plan shall be submitted for approval prior to closure. The obligation to implement the plugging and abandonment plan as well as the requirements of the plan survives the termination or expiration of the permit.

B. Prior to abandonment of a well used in a Class I non-hazardous waste injection well or Class III well operation, the well shall be plugged in a manner which will not allow the movement of fluids through the well bore out of the injection zone or between other zones of ground water. Cement plugs shall be used unless a comparable method has been approved by the secretary for the plugging of Class III wells at that site.

C. Prior to placement of the plugs, the well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once or by a comparable method approved by the secretary.

D. Placement of the plugs shall be accomplished by one of the following:

(1) The Balance Method; or

(2) The Dump Bailer Method; or

(3) The Two-Plug Method; or

(4) An equivalent method with the approval of the secretary.

E. The following shall be considered by the secretary in determining the adequacy of a plugging and abandonment plan.

(1) The type and number of plugs to be used;

(2) The placement of each plug, including the elevation of the top and bottom;

(3) The type, grade and quantity of cementing slurry to be used;

(4) The method of placement of the plugs;

(5) The procedure to be used to plug and abandon the well; and

(6) Such other factors that may affect the adequacy of the plan.

F. The discharger shall retain all records concerning the nature and composition of injected fluids until five years after completion of any plugging and abandonment procedures.

[9-20-82, 12-1-95; 20.6.2.5209 NMAC - Rn, 20 NMAC 6.2.V.5209, 1-15-01; A, 12-1-01]

20.6.2.5210 INFORMATION TO BE CONSIDERED BY THE SECRETARY FOR CLASS I NON-HAZARDOUS WASTE INJECTION WELLS AND CLASS III WELLS:

A. This Section sets forth the information to be considered by the secretary in authorizing construction and use of a Class I non-hazardous waste injection well or Class III well or well field. Certain maps, cross-sections, tabulations of all wells within the area of review, and other data may be included in the discharge permit application submittal by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved.

B. Prior to the issuance of a discharge permit or project discharge permit allowing construction of a new Class I non-hazardous waste injection well, operation of an existing Class I non-hazardous waste injection well, or operation of a new or existing Class III well or well field, or conversion of any well to injection use, the secretary shall consider the following:

(1) Information required in Subsection C of Section 20.6.2.3106 NMAC;

(2) A map showing the Class I non-hazardous waste injection well, or Class III well or well fields, for which approval is sought and the applicable area of review. Within the area of review, the map must show, in so far as is known or is reasonably available from the public records, the number, name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells and other pertinent surface features, including residences and roads;

(3) A tabulation of data on all wells within the area of review which may penetrate into the proposed injection zone. Such data shall include, as available, a description of each well's type, the distance and direction to the injection well or well field, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the secretary may require;

(4) For wells within the area of review which penetrate the injection zone, but are not properly completed or plugged, the corrective action proposed to be taken under Section 20.6.2.5203 NMAC;

(5) Maps and cross-sections indicating the general vertical and lateral limits of all ground water having 10,000 mg/l or less TDS within the area of review, the position of such ground water within the area of review relative to the injection formation, and the direction of water movement, where known, in each zone of ground water which may be affected by the proposed injection operation;

(6) Maps and cross-sections detailing the geology and geologic structure of the local area, including faults, if known or suspected;

(7) Generalized maps and cross-sections illustrating the regional geologic setting;

(8) Proposed operating data, including:

(a) Average and maximum daily flow rate and volume of the fluid to be injected;

(b) Average and maximum injection pressure;

(c) Source of injection fluids and an analysis or description, whichever the secretary requires, of their chemical, physical, radiological and biological characteristics;

(9) Results of the formation testing program to obtain an analysis or description, whichever the secretary requires, of the chemical, physical, and radiological characteristics of, and other information on, the receiving formation, provided that the secretary may issue a conditional approval of a discharge permit if he finds that further formation testing is necessary for final approval;

(10) Expected pressure changes, native fluid displacement, and direction of movement of the injected fluid;

(11) Proposed stimulation program;

(12) Proposed or actual injection procedure;

(13) Schematic or other appropriate drawings of the surface and subsurface construction details of the well;

(14) Construction procedures, including a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program;

(15) Contingency plans to cope with all shut-ins or well failures so as to prevent movement of fluids into ground water having 10,000 mg/l or less TDS except for fluid movement approved pursuant to Section 20.6.2.5103 NMAC;

(16) Plans, including maps, for meeting the monitoring requirements of Section 20.6.2.5207 NMAC; and

(17) The ability of the discharger to undertake measures necessary to prevent contamination of ground water having 10,000 mg/l or less TDS after the cessation of operation, including the proper closing, plugging and abandonment of a well, ground water restoration if applicable, and any post-operational monitoring as may be needed. Methods by which the discharger shall demonstrate the ability to undertake these measures shall include submission of a surety bond or other adequate assurances, such as financial statements or other materials acceptable to the secretary, such as: (1) a surety bond; (2) a trust fund with a New Mexico bank in the name of the State of New Mexico, with the State as Beneficiary; (3) a non-renewable letter of credit made out to the State of New Mexico; (4) liability insurance specifically covering the contingencies listed in this paragraph; or (5) a performance bond, generally in conjunction with another type of financial assurance. Such bond or materials shall be approved and executed prior to discharge permit issuance and shall become effective upon commencement of construction. If an adequate bond is posted by the discharger to a federal or another state agency, and this bond covers all of the measures referred to above, the secretary shall consider this bond as satisfying the bonding requirements of Sections 20.6.2.5000 through 20.6.2.5299 NMAC wholly or in part, depending upon the extent to which such bond is adequate to ensure that the discharger will fully perform the measures required hereinabove.

C. Prior to the secretary's approval that allows the operation of a new or existing Class I non-hazardous waste injection well or Class III well or well field, the secretary shall consider the following:

(1) Update of pertinent information required under Subsection B of Section 20.6.2.5210 NMAC;
(2) All available logging and testing program data on the well;
(3) The demonstration of mechanical integrity pursuant to Section 20.6.2.5204 NMAC;
(4) The anticipated maximum pressure and flow rate at which the permittee will operate;
(5) The results of the formation testing program;
(6) The physical, chemical, and biological interactions between the injected fluids and fluids in the injection zone, and minerals in both the injection zone and the confining zone; and
(7) The status of corrective action on defective wells in the area of review.

[9-20-82, 12-24-87, 12-1-95; 20.6.2.5210 NMAC - Rn, 20 NMAC 6.2.V.5210, 1-15-01; A, 12-1-01]

20.6.2.5211 - 20.6.2.5299: [RESERVED]

[12-1-95; 20.6.2.5211 - 20.6.2.5299 NMAC - Rn, 20 NMAC 6.2.V.5211-5299, 1-15-01]

HISTORY of 20.6.2 NMAC:

Pre-NMAC History:

Material in this Part was derived from that previously filed with the commission of public records - state records center and archives:

WQC 67-2, Regulations Governing Water Pollution Control in New Mexico, filed 12-5-67, effective 1-4-68
WQC 72-1, Water Quality Control Commission Regulations, filed 8-4-72, effective 9-3-72
WQC 77-1, Amended Water Quality Control Commission Regulations, filed 1-18-77, effective 2-18-77
WQC 81-2, Water Quality Control Commission Regulations, filed 6-2-81, effective 7-2-81
WQC 82-1, Water Quality Control Commission Regulations, filed 8-19-82, effective 9-20-82

History of Repealed Material: [Reserved]

Other History:

20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 10-27-95, effective 12-1-95
20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 10-15-96, effective 11-15-96
20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 11-30-00, effective 1-15-01
20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 9-16-01, effective 12-1-01
20 NMAC 6.2, Water Quality - Ground and Surface Water Protection, filed 8-1-02, effective 9-15-02

APPENDIX E – POND CLOSURE REPORT

ETECH

Environmental & Safety Solutions, Inc.

Date: July 27, 2011

Client: Anadarko Petroleum Corporation

Project: Closure of Waste Water Evaporation Pond

Location: San Juan River Gas Plant, Kirkland, New Mexico

As outlined in the pond closure scope of work dated June 14, 2011, the closure of the permitted evaporation pond located at the San Juan River Gas Plant in Kirkland, New Mexico has been completed. The San Juan River Plant is located in Section 1, Township 29 North, Range 15 West, San Juan County, New Mexico, approximately eight miles west of Farmington and 1.7 miles north of Kirtland, New Mexico. Highway 550 and County Road 61 provide access to the plant.

Closure activities were started on June 27, 2011 with the solidification of liquids remaining within the evaporation pond. To complete the solidification of the pit approximately 900 cubic yards of soil and 450 bags of drilling paper were mixed into the pit. The solidified waste was stockpiled inside the pit on the existing liners.

To complete the loading and off-site disposal of the pit waste, a ramp was constructed to allow trucks to back into the pit for loading. All waste was shipped to Contract Environmental Services, Inc. in San Juan County, Utah for final disposal. 1,788 cubic yards of solidified pit solids and 411 cubic yards of liner material were shipped off-site for disposal. A total of 2,199 cubic yards of waste was transported off-site. A spreadsheet listing each load of waste is included with this report.

After removal of the bottom liner, the soil underlying the former pond was gridded in 50 feet by 50 feet grids and sampled for chlorides and total petroleum hydrocarbons. Initial sample analysis was completed by field screening prior to sending the samples to an independent laboratory to verify the field analytical screening results.

The laboratory analytical data along with a map indicating the position of each sample point is included with this report. A summary of the laboratory analytical data is presented in the following table:

Summary of Analytical Results – San Juan Evaporation Pit Closure July 12, 2011 (mg/kg)					
Sample ID	**TPH C6-C12**	**TPH C12-C28**	**TPH C28-C35**	**Total TPH**	**Chlorides**
Background E	<15.0	<15.0	<15.0	<15.0	20.7
1	<15.9	<15.9	<15.9	<15.9	32.0
2	<15.9	<15.9	<15.9	<15.9	12.4
3	<15.3	<15.3	<15.3	<15.3	12.6
4	<15.8	<15.8	<15.8	<15.8	13.2
5	<15.4	<15.4	<15.4	<15.4	31.0
6	<15.3	<15.3	<15.3	<15.3	17.0
7	<15.4	<15.4	<15.4	<15.4	10.0
8	<15.6	<15.6	<15.6	<15.6	207
9	<15.7	<15.7	<15.7	<15.7	173
10	<15.4	<15.4	<15.4	<15.4	168
11	<15.2	<15.2	<15.2	<15.2	17.5
12	<15.4	<15.4	<15.4	<15.4	10.7
13	<15.8	<15.8	<15.8	<15.8	30.2
14	<15.9	<15.9	<15.9	<15.9	93.5
15	<15.6	<15.6	<15.6	<15.6	131
16	<15.8	<15.8	<15.8	<15.8	77.0
17	<15.9	<15.9	<15.9	<15.9	69.4
18	<15.8	<15.8	<15.8	<15.8	70.2
19	<15.5	<15.5	<15.5	<15.5	337
20	<15.9	<15.9	<15.9	<15.9	78.7
21	<15.5	<15.5	<15.5	<15.5	40.2
22	<16.5	<16.5	<16.5	<16.5	84.7
23	<16.0	<16.0	<16.0	<16.0	141

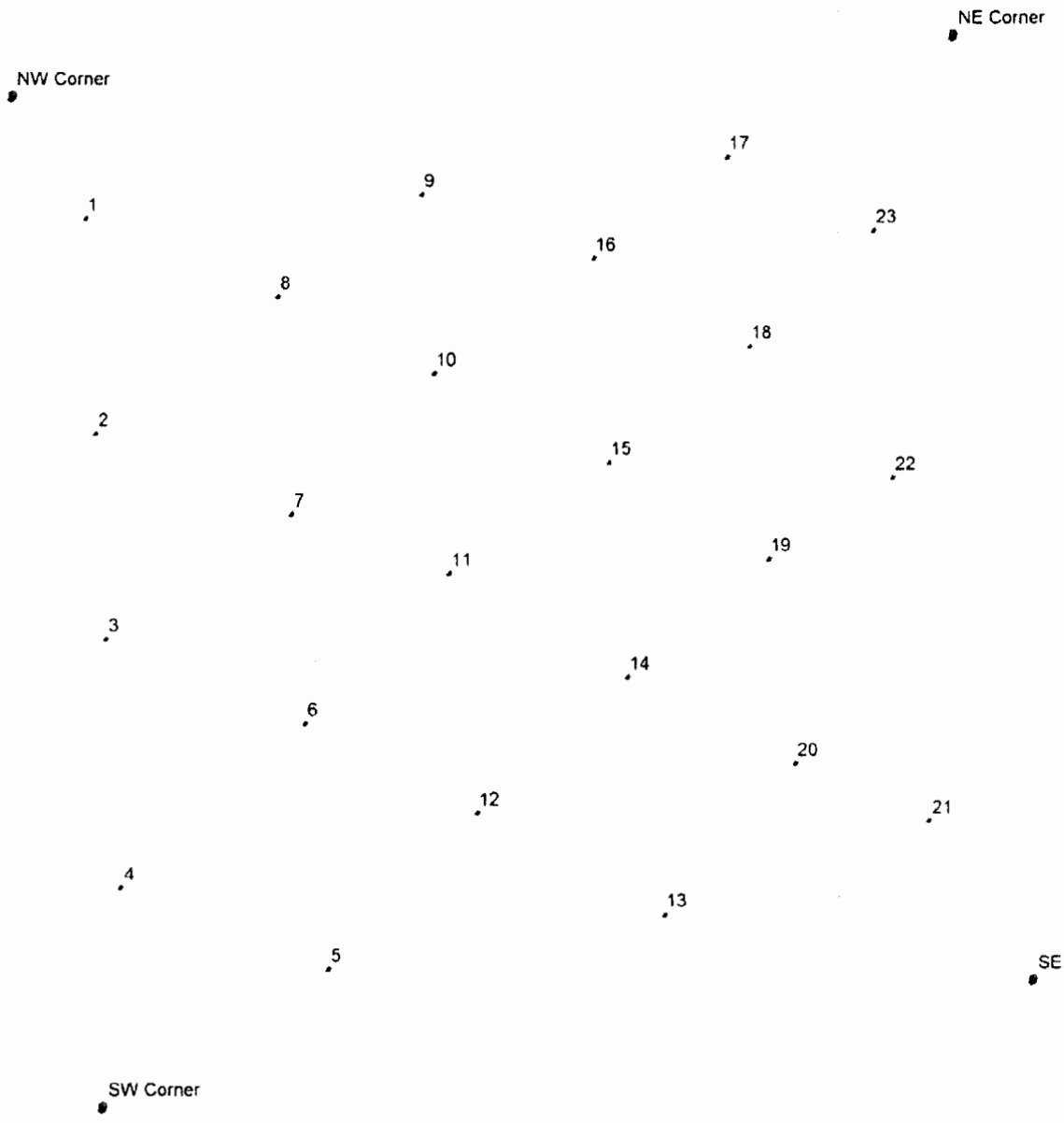
A review of the sample analytical results revealed one (1) sample with a slightly elevated level of chlorides. The area of sample 19 was excavated again removing approximately 6 inches of additional soil. The area was re-sampled and the analytical results indicated a chloride level of 135 mg/kg.

After confirmation of clearance sample analytical data, the backfilling of the former pond area was completed by first placing old concrete from the plant site into the bottom of the former pond. The concrete was then covered with clean fill obtained from the berms surrounding the former pit.

Prepared by:

Shane Estep
Etech Environmental & Safety Solutions, Inc.

San Juan Gas Plant Pit Closure
Bottom Sampling Locations
7/12/2011



TN
MN (10.1°E)

Scale 1 : 500
1" = 41.7 ft
Data Zoom 19-0

Photo 1 - Evaporation Pond Prior to Closure Activities

Photo 2 - Evaporation Pond Prior to Closure Activities

Photo 3 - Evaporation Pond at the Start of Solidification Process

Photo 4 - Evaporation Pond during Solidification Process

Photo 5 - Evaporation Pond during Solidification

Photo 6 - Drums and Miscellaneous Solid Waste

Photo 7 - Evaporation Pond during Solidification

Photo 8 - Solidification of Evaporation Pond

Photo 9 - Solidification of Evaporation Pond

Photo 10 - Solidified Pit Waste

Photo 11 - Solidified Pit Waste

Photo 12 - Truck Loading Area inside Pit

Photo 13 - Removal of Pit Liner Edge along East Side

Photo 14 - Removal of Pit Liner Edge along West Side

Photo 15 - Removal of Pit Liner Edge along West Side

Photo 16 - Stockpiled Liner and Contaminated Soil

Photo 17 - Pit Bottom after Removal of Liner

Photo 18 - Pit Bottom after Removal of Liner

Photo 19 - Placement of Concrete in Former Pit Bottom

Photo 20 - Burial of Concrete in Pit Bottom

Photo 21 - Pit during Burial of Concrete

Photo 22 - Pit during Burial of Concrete

Photo 23 - Backfilling of Former Pit

Photo 24 - Final Closed Pit – North

Photo 25 - Final Closure – Northeast

Photo 26 - Final Closure - North

Anadarko Petroleum Corp. Pit Clean Up Project by E-tech
CESI Disposal Delivery Report

Contaminated Soil

Date	Manifest #	CY	Trucking Company	Notes
7/5/2011	11651	13	Sierra Oilfield Service	
	11652	18	Kelley's Oilfield Services	
	11653	13	Kelley's Oilfield Services	
	11654	18	Kelley's Oilfield Services	
	11655	18	Kelley's Oilfield Services	
	11656	18	Bailey's Welding Service	
	11657	18	Bailey's Welding Service	
	11658	18	Bailey's Welding Service	
	11659	18	Sierra Oilfield Service	
	11660	18	Bailey's Welding Service	
	11690	18	Bailey's Welding Service	
	11691	18	Bailey's Welding Service	
	11692	18	Kelley's Oilfield Services	
	11693	18	Kelley's Oilfield Services	
	11694	13	Kelley's Oilfield Services	
	11695	18	Kelley's Oilfield Services	
	11700	18	Sierra Oilfield Service	
7/6/2011	11675	18	Kelley's Oilfield Services	
	11676	18	Bailey's Welding Service	
	11677	18	Kelley's Oilfield Services	
	11678	18	Bailey's Welding Service	
	11679	18	Sierra Oilfield Service	
	11680	13	Kelley's Oilfield Services	
	11681	18	Bailey's Welding Service	
	11682	18	Bailey's Welding Service	
	11683	18	Kelley's Oilfield Services	
	11684	18	Bailey's Welding Service	
	11685	18	Bailey's Welding Service	
	11696	18	Sierra Oilfield Service	
	11967	13	Kelley's Oilfield Services	
	11698	18	Bailey's Welding Service	
	11699	18	Kelley's Oilfield Services	
7/7/2011	11661	18	Bailey's Welding Service	
	11662	18	Bailey's Welding Service	
	11663	18	Sierra Oilfield Service	
	11664	18	Bailey's Welding Service	
	11665	18	Bailey's Welding Service	Pit Liners
	11666	18	Kelley's Oilfield Services	Pit Liners
	11667	18	Kelley's Oilfield Services	Pit Liners
	11668	18	Kelley's Oilfield Services	Pit Liners
	11669	18	Bailey's Welding Service	Pit Liners
	11670	18	Sierra Oilfield Service	
	11671	18	Kelley's Oilfield Services	Pit Liners
	11672	18	Kelley's Oilfield Services	Pit Liners
	11686	18	Sierra Oilfield Service	Pit Liners
	11687	18	Kelley's Oilfield Services	
	11688	18	Kelley's Oilfield Services	
	11689	18	Kelley's Oilfield Services	

7/8/2011	11673	18	Sierra Oilfield Service	Pit Liners
	11674	18	Bailey's Welding Service	Pit Liners
	11701	18	Bailey's Welding Service	Pit Liners
	11702	18	Bailey's Welding Service	Pit Liners
	11703	18	Kelley's Oilfield Services	Pit Liners
	11704	18	Kelley's Oilfield Services	Pit Liners
	11705	18	Kelley's Oilfield Services	Pit Liners
	11706	18	Bailey's Welding Service	Pit Liners
	11707	18	Bailey's Welding Service	Pit Liners
	11708	18	Bailey's Welding Service	Pit Liners
	11709	18	Sierra Oilfield Service	Pit Liners
	11710	13	Sierra Oilfield Service	Pit Liners
	11711	18	Kelley's Oilfield Services	Pit Liners
	11712	13	Kelley's Oilfield Services	Pit Liners
	11713	18	Kelley's Oilfield Services	Pit Liners
	11714	18	Kelley's Oilfield Services	Pit Liners
7/11/2011	11715	18	Sierra Oilfield Service	Pit Liners
	11716	13	Sierra Oilfield Service	Pit Liners
	11717	18	Bailey's Welding Service	Pit Liners
	11718	18	Bailey's Welding Service	Pit Liners
	11719	13	Kelley's Oilfield Services	Pit Liners
	11720	18	Bailey's Welding Service	Pit Liners
	11721	13	Kelley's Oilfield Services	Pit Liners
	11722	18	Kelley's Oilfield Services	Pit Liners
	11723	18	Bailey's Welding Service	Pit Liners
	11724	18	Bailey's Welding Service	Pit Liners
	11725	18	Sierra Oilfield Service	Pit Liners
	11726	18	Bailey's Welding Service	Pit Liners
	11727	18	Kelley's Oilfield Services	Pit Liners
7/12/2011	11626	18	Kelley's Oilfield Services	Pit Liners
	11627	18	Bailey's Welding Service	Pit Liners
	11628	18	Bailey's Welding Service	Pit Liners
	11629	18	Sierra Oilfield Service	Pit Liners
	11630	18	Kelley's Oilfield Services	Pit Liners
	11728	18	Sierra Oilfield Service	Pit Liners
	11729	18	Bailey's Welding Service	Pit Liners
	11730	18	Bailey's Welding Service	Pit Liners
7/13/2011	11631	18	Kelley's Oilfield Services	Pit Liners
	11632	18	Sierra Oilfield Service	Pit Liners
	11633	18	Bailey's Welding Service	Pit Liners
	11634	18	Sierra Oilfield Service	Pit Liners
	11636	13	Kelley's Oilfield Services	Pit Liners
	11637	18	Kelley's Oilfield Services	Pit Liners
	11638	18	Kelley's Oilfield Services	Pit Liners
	26142	30	Envirotech	Pit Liners / Used CD Manifest for Soil
	26143	30	Envirotech	Pit Liners / Used CD Manifest for Soil
	26145	13	Bailey's Welding Service	Pit Liners / Used CD Manifest for Soil
	26146	13	Bailey's Welding Service	Pit Liners / Used CD Manifest for Soil
7/14/2011	11639	18	Sierra Oilfield Service	Pit Liners
	11640	18	Kelley's Oilfield Services	Pit Liners
	26144	13	Sierra Oilfield Service	Pit Liners / Used CD Manifest for Soil
	26147	13	Kelley's Oilfield Services	Pit Liners / Used CD Manifest for Soil
	26148	13	Kelley's Oilfield Services	Pit Liners / Used CD Manifest for Soil
	26149	13	Kelley's Oilfield Services	Pit Liners / Used CD Manifest for Soil
	26150	13	Kelley's Oilfield Services	Pit Liners / Used CD Manifest for Soil
TOTAL		**1788**		**Total Loads with Pit Liners -- 63**

Construction/Demolition (Landfill Material)

Date	Manifest #	CY	Trucking Company	Notes
7/7/2011	26068	13	Kelly's Oilfield Services	
	26069	13	Sierra Oilfield Service	
	26070	13	Sierra Oilfield Service	
	26071	13	Kelly's Oilfield Services	
	26072	13	Kelly's Oilfield Services	
	26074	13	Sierra Oilfield Service	
7/8/2011	26075	13	Sierra Oilfield Service	
	26076	13	Kelly's Oilfield Services	
7/11/2011	26084	13	Sierra Oilfield Service	
	26085	13	Kelly's Oilfield Services	
	26086	13	Kelly's Oilfield Services	
7/12//2011	26087	13	Sierra Oilfield Service	
	26088	13	Bailey's Welding Service	
	26089	13	Kelly's Oilfield Services	
	26126	13	Kelly's Oilfield Services	
	26127	13	Kelly's Oilfield Services	
	26128	13	Sierra Oilfield Service	
	26129	13	Bailey's Welding Service	
	26130	13	Kelly's Oilfield Services	
7/13/2011	26131	13	Kelly's Oilfield Services	
	26132	13	Bailey's Welding Service	
	26133	13	Sierra Oilfield Service	
	26134	13	Kelly's Oilfield Services	
	26135	13	Bailey's Welding Service	
	26136	30	Envirotech	
	26137	30	Envirotech	
	26138	13	Bailey's Welding Service	
	26139	13	Sierra Oilfield Service	
	11635	13	Bailey's Welding Service	Used Soil Manifest for CD
TOTAL		**411**		

2199

ETECH

Environmental & Safety Solutions, Inc.

Date: June 14, 2011

Client: Anadarko Petroleum Corporation

Project: Scope of Work for Removal and Closure of Waste Water Evaporation Pond

Location: San Juan River Gas Plant, Kirkland, New Mexico

The following information is to outline the scope of work (SOW) to co mplete the removal and closure of the existing evaporation pond locat ed at the San Juan River Gas Plan t in Kirkland, New Mexico. The San Juan River Plant is loca ted in Section 1, Township 29 North, Range 15 West, San Juan County, Ne w Mexico, approximately eight miles west of Farming ton and 1.7 miles north of Kirtland, New Mexico. Highway 550 and Co unty Road 61 provide access to the plant.

The lined impoundment, located at the south end of the plant property, is lined with high density polyethylene (HDPE), and has the following specifications:

Line:	45-mil HDPE on sides, 30-mil HDPE on pond bottom
Dimensions:	250 feet x 250 feet x 4 feet, 4 inches
Volume:	1,650,000 gallons with 1-foot freeboard
Slope:	1.3 slope on sides, 1: 125 slope on pond bottom
Leachate Collection:	Slotted 4-inch PVC drains within 1-foot sand layer
Leak Detection:	Monitoring, wells connected to collection system
Secondary Containment:	6-inch clay liner beneath sand layer

To complete the removal of the evaporation pond, the in itial on-site activities will involve the solidification of the liquids remaining within the pond. A cellulose based material will be used to complete the solidification. If additional material is needed to complete the solidification, so il from the site will be used.

After solidification of th e waste, the waste will be remove d from the pond and st ockpiled on plastic in an area located to the north of the pond. All waste will be removed from the pond prior to starting the off-site transportation of the waste. W aste will b e shipped to Contract Environmental Services, Inc. in San Juan County, Utah for final disposal.

The top liner will be removed in sect ions for disposal at Contract Environmental Services along with the solid waste fro m the pond. After removal of this top liner, t he filter media located between the liners will b e inspected and analyzed to determine if it is contaminated and should be shipped off-site for disposal or if it can be u sed as backfill for fina l closure of the pond. The bottom liner will also be removed and shipped off-site for disposal.

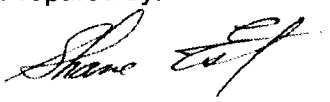
After removal of the bottom liner, the soil underlying the former pond will be gridded in 50 feet by 50 feet grids and sampled for chlorides and total petroleum hydrocarbons. If any grid indicates contamination, that grid will be broken into 10 feet by 10 feet grids and sampled again to narrow the area of contamination.

Based on the clearance sample analytical data the backfilling of the former pond area will be completed by first placing old concrete from the plant site into the bottom of the former pond. The concrete will then be covered with clean fill obtained from Contract Environmental. The backfill will be field screened for chlorides by using a field tab titration kit to verify the levels of chlorides.

A final report documenting the field activities and summarizing the analytical results of the clearance sampling will be completed.

Should you have any questions or need additional information, please contact me at (432) 563-2200.

Prepared by:



Shane Estep
Etech Environmental & Safety Solutions, Inc.

Analytical Report 423553

for

Etech Environmental & Safety Solutions, Inc

Project Manager: Shane Estep

San Juan Pit Closure

062-2824-000

21-JUL-11

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

21-JUL-11

Project Manager: **Shane Estep**
Etech Environmental & Safety Solutions, Inc
12800 E. Hwy 80 W.
Odessa, TX 79765

Reference: XENCO Report No: **423553**
San Juan Pit Closure
Project Address: Farmington, NM

Shane Estep:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 423553. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 423553 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 423553

Etech Environmental & Safety Solutions, Inc, Odessa, TX

San Juan Pit Closure

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Background E	S	Jul-11-11 11:00		423553-001
1	S	Jul-12-11 09:00		423553-002
2	S	Jul-12-11 09:02		423553-003
3	S	Jul-12-11 09:04		423553-004
4	S	Jul-12-11 09:06		423553-005
5	S	Jul-12-11 09:08		423553-006
6	S	Jul-12-11 09:10		423553-007
7	S	Jul-12-11 09:12		423553-008
8	S	Jul-12-11 09:14		423553-009
9	S	Jul-12-11 09:16		423553-010
10	S	Jul-11-11 09:18		423553-011
11	S	Jul-11-11 09:20		423553-012
12	S	Jul-11-11 09:22		423553-013
13	S	Jul-11-11 09:24		423553-014
14	S	Jul-11-11 09:26		423553-015
15	S	Jul-11-11 09:28		423553-016
16	S	Jul-11-11 09:30		423553-017
17	S	Jul-11-11 09:32		423553-018
18	S	Jul-11-11 09:34		423553-019
19	S	Jul-11-11 09:36		423553-020
20	S	Jul-11-11 09:38		423553-021
21	S	Jul-11-11 09:40		423553-022
22	S	Jul-11-11 09:42		423553-023
23	S	Jul-11-11 09:44		423553-024

CASE NARRATIVE

Client Name: Etech Environmental & Safety Solutions, In

Project Name: San Juan Pit Closure

Project ID:	*062-2824-000*	*Report Date:*	*21-JUL-11*
Work Order Number:	*423553*	*Date Received:*	*07/19/2011*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-864546 TPH By SW8015 Mod
SW8015MOD_NM

Batch 864546, 1-Chlorooctane, o-Terphenyl recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 423553-004.

Batch: LBA-864668 TPH By SW8015 Mod
SW8015MOD_NM

Batch 864668, o-Terphenyl recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis
Samples affected are: 423553-024 S,423553-024 SD,423553-015,423553-016,423553-017,423553-018,423553-021,423553-022,423553-023,423553-024,423553-014,423553-013,423553-020.

Certificate of Analysis Summary 423553

Etech Environmental & Safety Solutions, Inc, Odessa, TX

Project Name: San Juan Pit Closure

Project Id: 062-2824-000
Contact: Shane Estep
Project Location: Farmington, NM

Date Received in Lab: Tue Jul-19-11 01:24 pm
Report Date: 21-JUL-11
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	423553-001		423553-002		423553-003		423553-004		423553-005		423553-006	
	Field Id:	Background E		1		2		3		4		5	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-11-11 11:00		Jul-12-11 09:00		Jul-12-11 09:02		Jul-12-11 09:04		Jul-12-11 09:06		Jul-12-11 09:08	
Anions by E300	*Extracted:*												
	Analyzed:	Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		20.7	8.44	32.0	8.90	12.4	8.93	12.6	8.63	13.2	8.86	31.0	8.66
Percent Moisture	*Extracted:*												
	Analyzed:	Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		ND	1.00	5.59	1.00	5.98	1.00	2.72	1.00	5.24	1.00	3.02	1.00
TPH By SW8015 Mod	*Extracted:*	Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30	
	Analyzed:	Jul-20-11 08:13		Jul-20-11 08:41		Jul-20-11 09:10		Jul-20-11 09:38		Jul-20-11 10:06		Jul-20-11 10:35	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.0	ND	15.9	ND	15.9	ND	15.3	ND	15.8	ND	15.4
C12-C28 Diesel Range Hydrocarbons		ND	15.0	ND	15.9	ND	15.9	ND	15.3	ND	15.8	ND	15.4
C28-C35 Oil Range Hydrocarbons		ND	15.0	ND	15.9	ND	15.9	ND	15.3	ND	15.8	ND	15.4
Total TPH		ND	15.0	ND	15.9	ND	15.9	ND	15.3	ND	15.8	ND	15.4

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

Certificate of Analysis Summary 423553

Etech Environmental & Safety Solutions, Inc, Odessa, TX

Project Name: San Juan Pit Closure

Project Id: 062-2824-000
Contact: Shane Estep
Project Location: Farmington, NM

Date Received in Lab: Tue Jul-19-11 01:24 pm
Report Date: 21-JUL-11
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	423553-007		423553-008		423553-009		423553-010		423553-011		423553-012	
	Field Id:	6		7		8		9		10		11	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-12-11 09:10		Jul-12-11 09:12		Jul-12-11 09:14		Jul-12-11 09:16		Jul-11-11 09:18		Jul-11-11 09:20	
Anions by E300	*Extracted:*												
	Analyzed:	Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		17.0	8.58	10.0	8.60	207	8.71	173	8.74	168	8.63	17.5	8.55
Percent Moisture	*Extracted:*												
	Analyzed:	Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.15	1.00	2.38	1.00	3.57	1.00	3.88	1.00	2.70	1.00	1.81	1.00
TPH By SW8015 Mod	*Extracted:*	Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30	
	Analyzed:	Jul-20-11 11:04		Jul-20-11 11:33		Jul-20-11 12:02		Jul-20-11 12:31		Jul-20-11 06:05		Jul-20-11 06:35	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.3	ND	15.4	ND	15.6	ND	15.7	ND	15.4	ND	15.2
C12-C28 Diesel Range Hydrocarbons		ND	15.3	ND	15.4	ND	15.6	ND	15.7	ND	15.4	ND	15.2
C28-C35 Oil Range Hydrocarbons		ND	15.3	ND	15.4	ND	15.6	ND	15.7	ND	15.4	ND	15.2
Total TPH		ND	15.3	ND	15.4	ND	15.6	ND	15.7	ND	15.4	ND	15.2

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 423553

Etech Environmental & Safety Solutions, Inc, Odessa, TX

Project Name: San Juan Pit Closure

Project Id: 062-2824-000
Contact: Shane Estep
Project Location: Farmington, NM

Date Received in Lab: Tue Jul-19-11 01:24 pm
Report Date: 21-JUL-11
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	423553-013		423553-014		423553-015		423553-016		423553-017		423553-018	
	Field Id:	12		13		14		15		16		17	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-11-11 09:22		Jul-11-11 09:24		Jul-11-11 09:26		Jul-11-11 09:28		Jul-11-11 09:30		Jul-11-11 09:32	
Anions by E300	Extracted:												
	Analyzed:	Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 11:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		10.7	8.63	30.2	8.86	93.5	8.93	131	8.74	77.0	8.86	69.4	8.91
Percent Moisture	Extracted:												
	Analyzed:	Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 16:45	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.70	1.00	5.22	1.00	5.92	1.00	3.92	1.00	5.19	1.00	5.77	1.00
TPH By SW8015 Mod	Extracted:	Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30	
	Analyzed:	Jul-20-11 07:04		Jul-20-11 07:32		Jul-20-11 08:02		Jul-20-11 08:31		Jul-20-11 09:00		Jul-20-11 09:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.4	ND	15.8	ND	15.9	ND	15.6	ND	15.8	ND	15.9
C12-C28 Diesel Range Hydrocarbons		ND	15.4	ND	15.8	ND	15.9	ND	15.6	ND	15.8	ND	15.9
C28-C35 Oil Range Hydrocarbons		ND	15.4	ND	15.8	ND	15.9	ND	15.6	ND	15.8	ND	15.9
Total TPH		ND	15.4	ND	15.8	ND	15.9	ND	15.6	ND	15.8	ND	15.9

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 423553

Etech Environmental & Safety Solutions, Inc, Odessa, TX

Project Name: San Juan Pit Closure

Project Id: 062-2824-000
Contact: Shane Estep
Project Location: Farmington, NM

Date Received in Lab: Tue Jul-19-11 01:24 pm
Report Date: 21-JUL-11
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	423553-019		423553-020		423553-021		423553-022		423553-023		423553-024	
	Field Id:	18		19		20		21		22		23	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-11-11 09:34		Jul-11-11 09:36		Jul-11-11 09:38		Jul-11-11 09:40		Jul-11-11 09:42		Jul-11-11 09:44	
Anions by E300	***Extracted:***												
	Analyzed:	Jul-20-11 11:00		Jul-20-11 11:00		Jul-20-11 10:54		Jul-20-11 10:54		Jul-20-11 10:54		Jul-20-11 10:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		70.2	8.78	337	8.70	78.7	8.90	40.2	8.70	84.7	9.24	141	8.97
Percent Moisture	***Extracted:***												
	Analyzed:	Jul-19-11 16:45		Jul-19-11 16:45		Jul-19-11 17:05		Jul-19-11 17:05		Jul-19-11 17:05		Jul-19-11 17:05	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.29	1.00	3.44	1.00	5.62	1.00	3.44	1.00	9.09	1.00	6.32	1.00
TPH By SW8015 Mod	***Extracted:***	Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30		Jul-19-11 16:30	
	Analyzed:	Jul-20-11 09:58		Jul-20-11 10:27		Jul-20-11 11:27		Jul-20-11 11:56		Jul-20-11 12:26		Jul-20-11 12:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.8	ND	15.5	ND	15.9	ND	15.5	ND	16.5	ND	16.0
C12-C28 Diesel Range Hydrocarbons		ND	15.8	ND	15.5	ND	15.9	ND	15.5	ND	16.5	ND	16.0
C28-C35 Oil Range Hydrocarbons		ND	15.8	ND	15.5	ND	15.9	ND	15.5	ND	16.5	ND	16.0
Total TPH		ND	15.8	ND	15.5	ND	15.9	ND	15.5	ND	16.5	ND	16.0

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: San Juan Pit Closure

Work Orders : 423553,

Project ID: 062-2824-000

Lab Batch #: 864546 **Sample:** 608295-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/20/11 01:33

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	52.6	50.2	105	70-135	

Lab Batch #: 864546 **Sample:** 608295-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/20/11 02:01

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.5	105	70-135	
o-Terphenyl	49.8	49.8	100	70-135	

Lab Batch #: 864546 **Sample:** 608295-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/20/11 02:29

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.8	108	70-135	
o-Terphenyl	54.6	49.9	109	70-135	

Lab Batch #: 864546 **Sample:** 423553-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 08:13

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	60.6	49.9	121	70-135	

Lab Batch #: 864546 **Sample:** 423553-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 08:41

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	61.0	50.0	122	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: San Juan Pit Closure

Work Orders : 423553,

Project ID: 062-2824-000

Lab Batch #: 864546 **Sample:** 423553-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 09:10

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.7	119	70-135	
o-Terphenyl	63.8	49.9	128	70-135	

Lab Batch #: 864546 **Sample:** 423553-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 09:38

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	139	99.5	140	70-135	*
o-Terphenyl	72.9	49.8	146	70-135	*

Lab Batch #: 864546 **Sample:** 423553-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 10:06

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	60.5	50.1	121	70-135	

Lab Batch #: 864546 **Sample:** 423553-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 10:35

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.5	120	70-135	
o-Terphenyl	62.5	49.8	126	70-135	

Lab Batch #: 864546 **Sample:** 423553-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 11:04

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.9	111	70-135	
o-Terphenyl	58.5	50.0	117	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: San Juan Pit Closure

Work Orders : 423553,

Project ID: 062-2824-000

Lab Batch #: 864546 **Sample:** 423553-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 11:33

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	101	118	70-135	
o-Terphenyl	63.1	50.3	125	70-135	

Lab Batch #: 864546 **Sample:** 423553-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 12:02

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	55.5	50.1	111	70-135	

Lab Batch #: 864546 **Sample:** 423553-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 12:31

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	54.5	50.2	109	70-135	

Lab Batch #: 864546 **Sample:** 423553-009 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 13:00

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.8	124	70-135	
o-Terphenyl	58.8	49.9	118	70-135	

Lab Batch #: 864546 **Sample:** 423553-009 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 13:29

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.8	127	70-135	
o-Terphenyl	60.2	49.9	121	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: San Juan Pit Closure

Work Orders : 423553,

Project ID: 062-2824-000

Lab Batch #: 864668 **Sample:** 608378-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/20/11 04:38

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	62.1	50.2	124	70-135	

Lab Batch #: 864668 **Sample:** 608378-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/20/11 05:07

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.5	113	70-135	
o-Terphenyl	58.2	49.8	117	70-135	

Lab Batch #: 864668 **Sample:** 608378-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/20/11 05:36

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.8	118	70-135	
o-Terphenyl	66.3	49.9	133	70-135	

Lab Batch #: 864668 **Sample:** 423553-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 06:05

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	67.7	50.0	135	70-135	

Lab Batch #: 864668 **Sample:** 423553-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 06:35

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.5	125	70-135	
o-Terphenyl	65.8	49.8	132	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: San Juan Pit Closure

Work Orders : 423553,

Project ID: 062-2824-000

Lab Batch #: 864668 **Sample:** 423553-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 07:04

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.6	127	70-135	
o-Terphenyl	68.4	49.8	137	70-135	*

Lab Batch #: 864668 **Sample:** 423553-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 07:32

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.6	130	70-135	
o-Terphenyl	71.3	49.8	143	70-135	*

Lab Batch #: 864668 **Sample:** 423553-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 08:02

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	99.9	127	70-135	
o-Terphenyl	70.2	50.0	140	70-135	*

Lab Batch #: 864668 **Sample:** 423553-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 08:31

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	68.9	50.1	138	70-135	*

Lab Batch #: 864668 **Sample:** 423553-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 09:00

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	69.3	50.0	139	70-135	*

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: San Juan Pit Closure

Work Orders : 423553,

Project ID: 062-2824-000

Lab Batch #: 864668 **Sample:** 423553-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 09:28

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	69.0	50.0	138	70-135	*

Lab Batch #: 864668 **Sample:** 423553-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 09:58

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	101	123	70-135	
o-Terphenyl	67.2	50.3	134	70-135	

Lab Batch #: 864668 **Sample:** 423553-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 10:27

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	131	99.6	132	70-135	
o-Terphenyl	70.6	49.8	142	70-135	*

Lab Batch #: 864668 **Sample:** 423553-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 11:27

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	132	99.9	132	70-135	
o-Terphenyl	72.1	50.0	144	70-135	*

Lab Batch #: 864668 **Sample:** 423553-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 11:56

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.7	128	70-135	
o-Terphenyl	70.3	49.9	141	70-135	*

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: San Juan Pit Closure

Work Orders : 423553,

Project ID: 062-2824-000

Lab Batch #: 864668 **Sample:** 423553-023 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 12:26

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	70.9	50.1	142	70-135	*

Lab Batch #: 864668 **Sample:** 423553-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 12:56

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	133	100	133	70-135	
o-Terphenyl	73.6	50.1	147	70-135	*

Lab Batch #: 864668 **Sample:** 423553-024 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 13:25

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	136	101	135	70-135	
o-Terphenyl	69.5	50.3	138	70-135	*

Lab Batch #: 864668 **Sample:** 423553-024 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/20/11 13:55

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	136	101	135	70-135	
o-Terphenyl	70.8	50.3	141	70-135	*

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: San Juan Pit Closure

Work Order #: 423553 **Project ID:** 062-2824-000

Analyst: BRB **Date Prepared:** 07/20/2011 **Date Analyzed:** 07/20/2011

Lab Batch ID: 864725 **Sample:** 864725-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

Anions by E300	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.840	20.0	21.0	105	20.0	21.1	106	0	75-125	20	

Analyst: BRB **Date Prepared:** 07/20/2011 **Date Analyzed:** 07/20/2011

Lab Batch ID: 864726 **Sample:** 864726-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

Anions by E300	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.840	20.0	21.3	107	20.0	21.2	106	0	75-125	20	

Analyst: BEV **Date Prepared:** 07/19/2011 **Date Analyzed:** 07/20/2011

Lab Batch ID: 864546 **Sample:** 608295-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

TPH By SW8015 Mod	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	952	95	995	938	94	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	828	83	995	816	82	1	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Final 1.000

BS / BSD Recoveries

Project Name: San Juan Pit Closure

Work Order #: 423553
Analyst: BEV
Lab Batch ID: 864668
Sample: 608378-1-BKS
Batch #: 1
Units: mg/kg

Project ID: 062-2824-000
Date Prepared: 07/19/2011
Date Analyzed: 07/20/2011
Matrix: Solid

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	896	90	995	872	88	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	793	79	995	778	78	2	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: San Juan Pit Closure

Work Order #: 423553

Lab Batch #: 864725 **Project ID:** 062-2824-000

Date Analyzed: 07/20/2011 **Date Prepared:** 07/20/2011 **Analyst:** BRB

QC- Sample ID: 423553-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Inorganic Anions by EPA 300 **Analytes**	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**%R [D]**	**Control Limits %R**	**Flag**
Chloride	20.7	201	208	93	75-125	

Lab Batch #: 864726

Date Analyzed: 07/20/2011 **Date Prepared:** 07/20/2011 **Analyst:** BRB

QC- Sample ID: 423553-021 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Inorganic Anions by EPA 300 **Analytes**	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**%R [D]**	**Control Limits %R**	**Flag**
Chloride	78.7	212	289	99	75-125	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

. - Below Reporting Limit

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: San Juan Pit Closure

Work Order # : 423553 **Project ID:** 062-2824-000

Lab Batch ID: 864546 **QC- Sample ID:** 423553-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/20/2011 **Date Prepared:** 07/19/2011 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.5	1030	1000	97	1030	1020	99	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.5	1030	902	88	1030	927	90	3	70-135	35	

Lab Batch ID: 864668 **QC- Sample ID:** 423553-024 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/20/2011 **Date Prepared:** 07/19/2011 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<16.1	1070	994	93	1070	1000	93	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<16.1	1070	876	82	1070	896	84	2	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Final 1.000

XENCO Laboratories

Sample Duplicate Recovery

Project Name: San Juan Pit Closure

Work Order #: 423553

Lab Batch #: 864725 **Project ID:** 062-2824-000

Date Analyzed: 07/20/2011 11:00 **Date Prepared:** 07/20/2011 **Analyst:** BRB

QC- Sample ID: 423553-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	20.7	20.0	3	20	

Lab Batch #: 864726

Date Analyzed: 07/20/2011 10:54 **Date Prepared:** 07/20/2011 **Analyst:** BRB

QC- Sample ID: 423553-021 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	78.7	83.0	5	20	

Lab Batch #: 864454

Date Analyzed: 07/19/2011 16:45 **Date Prepared:** 07/19/2011 **Analyst:** WRU

QC- Sample ID: 423553-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	<1.00	<1.00	0	20	

Lab Batch #: 864458

Date Analyzed: 07/19/2011 17:05 **Date Prepared:** 07/19/2011 **Analyst:** WRU

QC- Sample ID: 423553-021 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.62	5.71	2	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Xenco Laboratories

1 of 3

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Shane Estep
Company Name: Etech Environmental & Safety Solutions, Inc.
Company Address: PO Box 8469
City/State/Zip: Midland, Texas 79708
Telephone No: 432-563-2200 Fax No: 432-563-2213
Sampler Signature:
e-mail: shane@etechenv.com

Project Name: San Juan Pit Closure
Project #: 062-2824-000
Project Loc: Farmington, NM
PO #: 062824000
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 423553

LAB # (lab use only)	FIELD CODE	Sample Depth	Date Sampled	Time Sampled	No. of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TPH: 418.1 (8015M) 1005 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RCI	N.O.R.M.	TDS. Bromide	Chlorides			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	Background E		7/11/11	1100	1	☒								S	☒											☒			☒	
02	1		7/12/11	0900	1	☒								S	☒											☒			☒	
03	2			0902	1	☒								S	☒											☒			☒	
04	3			0904	1	☒								S	☒											☒			☒	
05	4			0906	1	☒								S	☒											☒			☒	
06	5			0908	1	☒								S	☒											☒			☒	
07	6			0910	1	☒								S	☒											☒			☒	
08	7			0912	1	☒								S	☒											☒			☒	
09	8			0914	1	☒								S	☒											☒			☒	
10	9			0916	1	☒								S	☒											☒			☒	

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	7/19/11	1324			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Andrea Adam	Date 7.19.11	Time 13:24

Laboratory Comments:

Sample Containers intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star
402791455
Temperature Upon Receipt: 4.1 °C

Final 1.000

Xenco Laboratories

2 of 3

12600 West I-20 East
Odessa, Texas 79765

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Shane Estep
Company Name: Etech Environmental & Safety Solutions, Inc.
Company Address: PO Box 8469
City/State/Zip: Midland, Texas 79708
Telephone No: 432-563-2200 Fax No: 432-563-2213
Sampler Signature:
e-mail: shane@etechenv.com

Project Name: San Juan Pit Closure
Project #: 062-2824-000
Project Loc: Farmington, NM
PO #: 062282400O
Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 423553

LAB # (lab use only)	FIELD CODE	Sample Depth	Date Sampled	Time Sampled	No. of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge	GW=Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	Analyze For: TPH: 418.1 / 1005 / 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RCI	N.O.R.M.	TDS, Bromide	Chlorides	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
11	10		7/11/11	0918	1	X								S			X											X		
12	11			0920	1	X								S			X											X		
13	12			0922	1	X								S			X											X		
14	13			0924	1	X								S			X											X		
15	14			0926	1	X								S			X											X		
16	15			0928	1	X								S			X											X		
17	16			0930	1	X								S			X											X		
18	17			0932	1	X								S			X											X		
19	18			0934	1	X								S			X											X		
20	19			0936	1	X								S			X											X		

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	7/19/11	1324			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Andrea Elam	Date 7.19.11	Time 13:24

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star	Y	N

4029glass
Temperature Upon Receipt: 4.1 °C

Xenco Laboratories

3 of 3

12600 West I-20 East
Odessa, Texas 79765

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Shane Estep
Company Name: Etech Environmental & Safety Solutions, Inc.
Company Address: PO Box 8469
City/State/Zip: Midland, Texas 79708
Telephone No: 432-563-2200 Fax No: 432-563-2213
Sampler Signature:
e-mail: shane@etechenv.com

Project Name: San Juan Pit Closure
Project #: 062-2824-000
Project Loc: Farmington, NM
PO #: 062282400
Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 423553

LAB # (lab use only)	FIELD CODE	Sample Depth	Date Sampled	Time Sampled	No. of Containers 4 oz	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge; GW=Groundwater S=Soil/Solid; NP=Non-Potable Specify Other	Analyze For: TCLP: TOTAL: TPH: 418.1 / 8015M 1005 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RCI	N.O.R.M.	TDS, Bromide	Chlorides			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
21	20		7/11/11	0938	1	X								S	X										X			X	
22	21		"	0940	1	X								S	X										X			X	
23	22		"	0942	1	X								S	X										X			X	
24	23		"	0944	1	X								S	X										X			X	

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	7/9/11	1324			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Andrea Elam	7-19-11	13:24

Laboratory Comments:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N
Labels on container(s) Y N
Custody seals on container(s) Y N
Custody seals on cooler(s) Y N
Sample Hand Delivered by Sampler/Client Rep. ? Y N
by Courier? UPS DHL FedEx Lone Star
402 91935
Temperature Upon Receipt: 4.1 °C

XENCO Laboratories

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Etech Env.
Date/Time: 7.19.11 13:24
Lab ID # : 423553
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	(Yes)	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	No	(N/A)	
17. VOC sample have zero head space?	(Yes)	No	N/A	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	4.1 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Analytical Report 424224

for

Etech Environmental & Safety Solutions, Inc

Project Manager: Shane Estep

San Juan Pit Closure

062-2824-000

27-JUL-11

Collected By: Client

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

27-JUL-11

Project Manager: **Shane Estep**
Etech Environmental & Safety Solutions, Inc
12800 E. Hwy 80 W.
Odessa, TX 79765

Reference: XENCO Report No: **424224**
San Juan Pit Closure
Project Address:

Shane Estep:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 424224. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 424224 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brent Barron, II
Odessa Laboratory Manager

Sample Cross Reference 424224

Etech Environmental & Safety Solutions, Inc, Odessa, TX

San Juan Pit Closure

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
# 19	S	07-12-11 10:04		424224-001

CASE NARRATIVE

XENCO Laboratories

Client Name: Etech Environmental & Safety Solutions, In

Project Name: San Juan Pit Closure

Project ID:	*062-2824-000*	*Report Date:*	*27-JUL-11*
Work Order Number:	*424224*	*Date Received:*	*07/26/2011*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 424224

Etech Environmental & Safety Solutions, Inc, Odessa, TX

Project Name: San Juan Pit Closure

Project Id: 062-2824-000
Contact: Shane Estep
Project Location:

Date Received in Lab: Tue Jul-26-11 12:05 pm
Report Date: 27-JUL-11
Project Manager: Brent Barron, II

Analysis Requested								
	Lab Id:	424224-001						
	Field Id:	# 19						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Jul-12-11 10:04						
Anions by E300	*Extracted:*							
	Analyzed:	Jul-26-11 15:39						
	Units/RL:	mg/kg	RL					
Chloride		137	8.76					
Percent Moisture	*Extracted:*							
	Analyzed:	Jul-26-11 12:25						
	Units/RL:	%	RL					
Percent Moisture		4.13	1.00					

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

BS / BSD Recoveries

Project Name: San Juan Pit Closure

Work Order #: 424224 **Project ID:** 062-2824-000

Analyst: BRB **Date Prepared:** 07/26/2011 **Date Analyzed:** 07/26/2011

Lab Batch ID: 865391 **Sample:** 865391-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

Anions by E300	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.840	20.0	21.8	109	20.0	21.3	107	2	75-125	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: San Juan Pit Closure

Work Order #: 424224
Lab Batch #: 865391
Project ID: 062-2824-000
Date Analyzed: 07/26/2011
Date Prepared: 07/26/2011
Analyst: BRB
QC- Sample ID: 424224-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	137	209	342	98	75-125	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

. - Below Reporting Limit

XENCO Laboratories

Sample Duplicate Recovery

Project Name: San Juan Pit Closure

Work Order #: 424224

Lab Batch #: 865391 **Project ID:** 062-2824-000

Date Analyzed: 07/26/2011 15:39 **Date Prepared:** 07/26/2011 **Analyst:** BRB

QC- Sample ID: 424224-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	137	137	0	20	

Lab Batch #: 865390

Date Analyzed: 07/26/2011 12:25 **Date Prepared:** 07/26/2011 **Analyst:** WRU

QC- Sample ID: 424224-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	4.13	4.13	0	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.
BRL - Below Reporting Limit

Xenco Laboratories

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Shane Estep

Company Name: Etech Environmental & Safety Solutions, Inc.

Company Address: PO Box 8469

City/State/Zip: Midland, Texas 79708

Telephone No: 432-563-2200 Fax No: 432-563-2213

Sampler Signature:

e-mail: shane@etechenv.com

Project Name: San Juan Pit Closure

Project #: 062-2824-000

Project Loc:

PO #:

Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only)
ORDER #: 424224

LAB # (lab use only)	FIELD CODE	Sample Depth	Date Sampled	Time Sampled	No. of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M 1005 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	TOTAL: RCI	N.O.R.M.	TDS, Bromide	Chlorides			RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	#19		7/12/11	10:04am	1	X								S												X			X	

Special Instructions:

Relinquished by:	Date	Time	Received by	Date	Time
Keith Garcia	7/26/11	12:05pm			
Relinquished by:	Date	Time	Received by	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Andrea Elam	7-26-11	12:05

Laboratory Comments:

Sample Containers Intact? Y N

VOCs Free of Headspace? Y N NA

Labels on container(s) Y N

Custody seals on container(s) Y N NA

Custody seals on cooler(s) Y N NA

Sample Hand Delivered by Sampler/Client Rep. ? Y N

by Courier? UPS DHL FedEx Lone Star

4029455

Temperature Upon Receipt: 3.6 °C

XENCO Laboratories

XENCO Laboratories
Atlanta, Boca Raton, Corpus Christi, Dallas
Houston, Miami, Odessa, Philadelphia
Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist
Document No.: SYS-SRC
Revision/Date: No. 01, 5/27/2010
Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Etech Env.
Date/Time: 7.26.11 12:05
Lab ID # : 424224
Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	(Water)	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	(N/A)	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	(Yes)	No		
6. Any missing / extra samples?	Yes	(No)		
7. Chain of custody signed when relinquished / received?	(Yes)	No		
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	(Yes)	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples properly preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	No	(N/A)	
17. VOC sample have zero head space?	Yes	No	(N/A)	

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	3.6 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

Contact:_____ Contacted by:_____ Date/Time:_____

Regarding: _____

Corrective Action Taken: _____

Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
- ☐ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

APPENDIX F – DRAFT PUBLIC NOTICE

APPENDIX H – DRAFT PUBLIC NOTICE

PUBLIC NOTICE

Western Gas Resources Inc., 1201 Lake Robbins Drive, The Woodlands, TX 77380 has submitted a renewal application to the New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division for the previously approved discharge plan (GW-033) for their San Juan River Gas Plant, located in Section 1, Township 29 North, Range 15 West, NMPM, San Juan County, New Mexico, approximately eight miles west of Farmington, New Mexico and 1.7 miles north of Kirtland, New Mexico.

Plant process wastewater is stored in a tank battery within a lined impoundment until such time it can be hauled to off-site disposal by transport trucks. A reverse osmosis unit (RO Unit) was installed in 2011 to treat the Lower Valley Water (LVW) entering the plant to reduce chlorine levels. The LWV runs through the RO Unit and a series of sediment filters and then through a carbon filtration. The RO effluent discharges direct to the irrigation sprinkler system at the east end of plant, onto the grass area (Site Plan). All contact and non-contact with the exception of the RO effluent is being hauled off-site disposal to a deep well injection facility. Groundwater most likely to be affected by a spill, leak or accidental discharge varies in depth from 10-50 feet, with a total dissolved solids concentration of approximately 4,500 mg/l. The discharge plan addresses how oilfield products and waste will be properly handled, stored, and disposed of, including how spills, leaks, and other accidental discharges to the surface will be managed in order to protect fresh water.

Any interested person or persons may obtain information; submit comments or request to be placed on a facility-specific mailing list for future notices by contacting Leonard Lowe at the New Mexico OCD at 1220 South St. Francis Drive, Santa Fe, New Mexico 87505, Telephone (505) 476-3492. The OCD will accept comments and statements of interest regarding the renewal and will create a facility-specific mailing list for persons who wish to receive future notices.

NOTA PUBLICA

(Western Gas Resources Inc.) Los Recursos occidentales del Gas S.a., 1201 Lake Robbins Drive, The Woodlands, TX 77380 se han sometido una aplicación de renovación a (New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division) la Energía de Nuevo México, los Minerales y el Departamento Natural de Recursos, División de Conservación de Petróleo para el plan anteriormente aprobado de descarga (GW-033) para su San Planta de gas del Río de Juan, situó en la Sección 1, el Municipio 29 del norte, la Gama 15 Occidental, NMPM, San Condado de Juan, Nuevo México, aproximadamente ocho millas al oeste de Farmington, Nuevo México y 1,7 millas al norte De Kirtland, Nuevo México.

Plante wastewater de proceso es almacenado en una batería de tanque dentro de una confiscación forrada hasta que tal tiempo que pueda ser acarreado a la disposición fuera de obra por camiones de transporte. Una unidad inversa de la ósmosis (Unidad de RO) fue instalado en 2011 en tratar el Agua más Baja del Valle (LVW) entrando la planta para reducir niveles de cloro. El LWV corre por la Unidad de RO y una serie de filtros de sedimento y entonces por una filtración de carbón. Los vertidos de RO descargan directo al sistema de la regadera de la irrigación en el fin oriental de planta, en el área de césped (Plan de Sitio). Todo el contacto y no-contacto a excepción de los vertidos de RO son acarreados disposición fuera de obra a un hondo bien facilidad de inyección. La agua subterránea más probable de ser afectada por un derrame, la filtración o descarga accidental varían a fundo de 10-50 pies, con un suma se disolvieron concentración de sólidos de aproximadamente 4.500 mg/L. El plan de la descarga dirige cómo productos de yacimiento petrolífero y malgasta será manejado apropiadamente, será almacenado, y será deshecho de, inclusive cómo derrames, las filtraciones, y otras descargas accidentales a la superficie serán logradas proteger agua dulce.

Alguna persona o las personas interesadas pueden obtener información; sométase comentarios o la petición para ser colocada en una lista de envío facilidad-específico para futuras notas contactando Leonard Lowe en el Nuevo México OCD en 1220 S. del sur. Francis Maneja, Santa Fe, Nuevo México 87505, (New Mexico OCD at 1220 South St. Francis Drive, Santa Fe, New Mexico 87505) el Teléfono (505) 476-3492. El OCD aceptará que comentarios y declaraciones de interés con respecto a la renovación y creará una lista de envío facilidad-específico para personas que desean recibir futuras notas.

switches, and other systems containing oil solely to enable the operation of the device. An inspection or monitoring plan has been established for the oil-filled operational equipment that does not have secondary containment.

For the equipment and/or areas listed above, an Oil Spill Contingency Plan has been prepared and will be implemented in case of a spill.

A description of the secondary containment is provided in Table B-1 and in the facility diagram.

B.1.10. Oil Production Facility Drainage [§112.9(b)(1) and (b)(2)]

Small quantities of stormwater collected inside berms are typically lost through evaporation. Water accumulated in the secondary containment areas will be inspected prior to discharge to confirm that it does not pose a threat of a harmful discharge. A harmful discharge is defined as one that violates applicable water quality standards or causes a film or sheen upon or discoloration of surface water or adjoining shorelines.

Field drainage systems and road ditches will be visually inspected on a regular basis for accumulation of oil or oil impacted soil. Accumulations of oil will be recovered promptly and placed in the production system or taken to an approved disposal site. Discharges of stormwater will occur using the following procedures:

- Prior to discharge, water must be visually inspected for the presence of oil or oily sheen. If oil is present, water cannot be discharged and must be recovered and placed into the production system or taken to an approved disposal site.
- **All discharges of stormwater from secondary containment must be recorded.** The date of the discharge must be noted on the SPCC Drainage Inspection and Discharge Log form.

If the secondary containment is equipped with a drain, the drain must be closed and sealed when it is not in use. All secondary containment drains, if present, are shown on the facility diagram.

TABLE B-1 SITE SPECIFIC DATA

FACILITY NAME: San Juan River Gas Plant **DATE:** September 17, 2012

EQUIPMENT	CONTENTS	CAPACITY	TYPE	FIELD CONSTRUCTED	TYPE OF FAILURE	RATE (bbl/hr)	FLOW DIRECTION	CONTAINMENT
TK-1*	Condensate / Water	400.0	steel	No	Leak, Rupture, Overfill	400.0	NE	Northern
TK-2	Condensate	400.0	steel	No	Leak, Rupture, Overfill	400.0	NE	Northern
TK-3	Produced Water	400.0	steel	No	Leak, Rupture, Overfill	400.0	NE	Northern
T0-2 Surge Tank*	Condensate	430.0	steel	No	Leak, Rupture, Overfill	430.0	NE	Norhtern 2
TO-1 Pigged Liquids Receiver	Condensate / Water	350.0	steel	No	Leak, Rupture, Overfill	350.0	NE	Northern Area
TK-5	Diesel	7.0	steel	No	Leak, Rupture, Overfill	7.0	N	Products Storage
TK-6	Gasoline	7.0	steel	No	Leak, Rupture, Overfill	7.0	N	Products Storage
TK-7	Solvent	12.0	steel	No	Leak, Rupture, Overfill	12.0	N	Products Storage
TK-14*	Methanol	23.8	steel	No	Leak, Rupture, Overfill	23.8	N	Products Storage
TK-11	Diethanolamine	1048.0	steel	No	Leak, Rupture, Overfill	1048.0	N	Plant Area
TK-8901	Used Oil	23.8	steel	No	Leak, Rupture, Overfill	23.8	N	Plant Area
TK-8902	Engine Oil	23.8	steel	No	Leak, Rupture, Overfill	23.8	N	Plant Area
C-600	Engine Oil	12.0	steel	No	Leak, Rupture, Overfill	12.0	N	Plant Area
T-3	Y-Grade Product	1000.0	steel	No	Leak, Rupture, Overfill	1000.0	N	Plant Area
T-4	Y-Grade Product	1000.0	steel	No	Leak, Rupture, Overfill	1000.0	N	Plant Area
T-5	Y-Grade Product	1000.0	steel	No	Leak, Rupture, Overfill	1000.0	N	Plant Area
TK-8	Condensate / Water	143.0	steel	No	Leak, Rupture, Overfill	143.0	N	Plant Area
T-13	Condensate / Water	2381.0	steel	Yes	Leak, Rupture, Overfill	2381.0	N	Plant Area

T-17 Surge Tank	Glycol	20.0	steel	No	Leak, Rupture, Overfill	20.0	N	Plant Area
GV-500 Surge Tank	Glycol	53.4	steel	No	Leak, Rupture, Overfill	53.4	N	Plant Area
V-4106 Suction Scrubber	Produced Water	5.0	steel	No	Leak, Rupture, Overfill	5.0	N	Plant Area
V-5102 Suction Scrubber	Produced Water	28.33	steel	No	Leak, Rupture, Overfill	28.33	N	Plant Area
V-6 Inlet Scrubber	Produced Water	30.23	steel	No	Leak, Rupture, Overfill	30.23	N	Plant Area
V-5101 Suction Scrubber	Produced Water	28.33	steel	No	Leak, Rupture, Overfill	28.33	N	Plant Area
TK-13 Flare Knockout	Produced Water	71.4	steel	No	Leak, Rupture, Overfill	71.4	N	Plant Area
Lance Tank 1	Engine Oil	11.9	Steel	No	Leak, Rupture, Overfill	11.9	N	Plant Area
Lance Tank 2	Engine Oil	8.33	steel	No	Leak, Rupture, Overfill	8.33	N	Plant Area
Lance Tank 3	Methanol	8.33	steel	No	Leak, Rupture, Overfill	8.33	N	Plant Area
Steel Tank*	Used Oil	400.0	Steel	No	Leak, Rupture, Overfill	400.0	N	Used Oil
Used Oil Tank*	Used Oil	18.0	Steel	No	Rupture, Overfill, Leak	0.38	N	Used Oil 2
Total SPCC Volume: 9344.6 bbls								

*Largest container size used to determine amount of secondary containment required.
NA – Not Applicable

Northern

(1) **Calculate Total Dike Capacity**
Containment = Length x Width x Height
80 ft x 50 ft x 1.5 ft = 6000 ft^3
6000 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = **1068.6 bbl**

(2) **Calculate Net Dike Capacity**
Net Capacity = Total Capacity - Displacement
Displacement = Footprint x Dike Height
TK-2 displacement = (Pi/4) x 144 ft^2 x 1.5 ft = 169.6 ft^3
169.6 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = 30.2 bbl
TK-3 displacement = (Pi/4) x 144 ft^2 x 1.5 ft = 169.6 ft^3
169.6 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = 30.2 bbl
Net Capacity = 1068.6 bbl - 60.4 bbl = **1008.2 bbl**

(3) **Calculate Freeboard**
Required Freeboard = Storm Event x Dike Footprint
The 24-hour 25-year storm event for the area is expected to produce 2.8 inches (0.2 ft) of precipitation.
0.2 ft x 4000 ft^2 = 916.7 ft^3
916.7 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = **163.3 bbl**

(4) **Calculate Excess Dike Capacity**
Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container
1008.2 bbl - 163.3 bbl - 400 bbl = **444.9 bbl of Excess Dike Capacity**

Norhtern 2

(1) **Calculate Total Dike Capacity**
Containment = Length x Width x Height
80 ft x 35 ft x 2 ft = 5600 ft^3
5600 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = **997.4 bbl**

(2) **Calculate Net Dike Capacity**
Net Capacity = Total Capacity - Displacement
Displacement = Footprint x Dike Height
Net Capacity = 997.4 bbl - 0 bbl = **997.4 bbl**

(3) **Calculate Freeboard**
Required Freeboard = Storm Event x Dike Footprint
The 24-hour 25-year storm event for the area is expected to produce 2.8 inches (0.2 ft) of precipitation.
0.2 ft x 2800 ft^2 = 641.7 ft^3
641.7 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = **114.3 bbl**

(4) **Calculate Excess Dike Capacity**
Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container
997.4 bbl - 114.3 bbl - 430 bbl = **453.1 bbl of Excess Dike Capacity**

Northern Area

This containment group is not included in containment calculations

Products Storage

(1) **Calculate Total Dike Capacity**
Containment = Length x Width x Height
100 ft x 30 ft x 1.5 ft = 4500 ft^3
4500 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = **801.5 bbl**

(2) **Calculate Net Dike Capacity**
Net Capacity = Total Capacity - Displacement
Displacement = Footprint x Dike Height
Net Capacity = 801.5 bbl - 0 bbl = **801.5 bbl**

(3) **Calculate Freeboard**
Required Freeboard = Storm Event x Dike Footprint
The 24-hour 25-year storm event for the area is expected to produce 2.8 inches (0.2 ft) of precipitation.
0.2 ft x 3000 ft^2 = 687.5 ft^3
687.5 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = **122.4 bbl**

(4) **Calculate Excess Dike Capacity**
Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container
801.5 bbl - 122.4 bbl - 23.8 bbl = **655.2 bbl of Excess Dike Capacity**

Plant Area

This containment group is not included in containment calculations

Used Oil

(1) **Calculate Total Dike Capacity**
Containment = Length x Width x Height
36 ft x 40 ft x 2 ft = 2880 ft^3
2880 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = **512.9 bbl**

(2) **Calculate Net Dike Capacity**
Net Capacity = Total Capacity - Displacement
Displacement = Footprint x Dike Height
Net Capacity = 512.9 bbl - 0 bbl = **512.9 bbl**

(3) **Calculate Freeboard**
Required Freeboard = Storm Event x Dike Footprint
The 24-hour 25-year storm event for the area is expected to produce 2.8 inches (0.2 ft) of precipitation.
0.2 ft x 1440 ft^2 = 330 ft^3
330 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = **58.8 bbl**

(4) **Calculate Excess Dike Capacity**
Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container
512.9 bbl - 58.8 bbl - 400 bbl = **54.2 bbl of Excess Dike Capacity**

Used Oil 2

(1) **Calculate Total Dike Capacity**
Containment = Length x Width x Height
8 ft x 8 ft x 3 ft = 192 ft^3
192 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = **34.2 bbl**

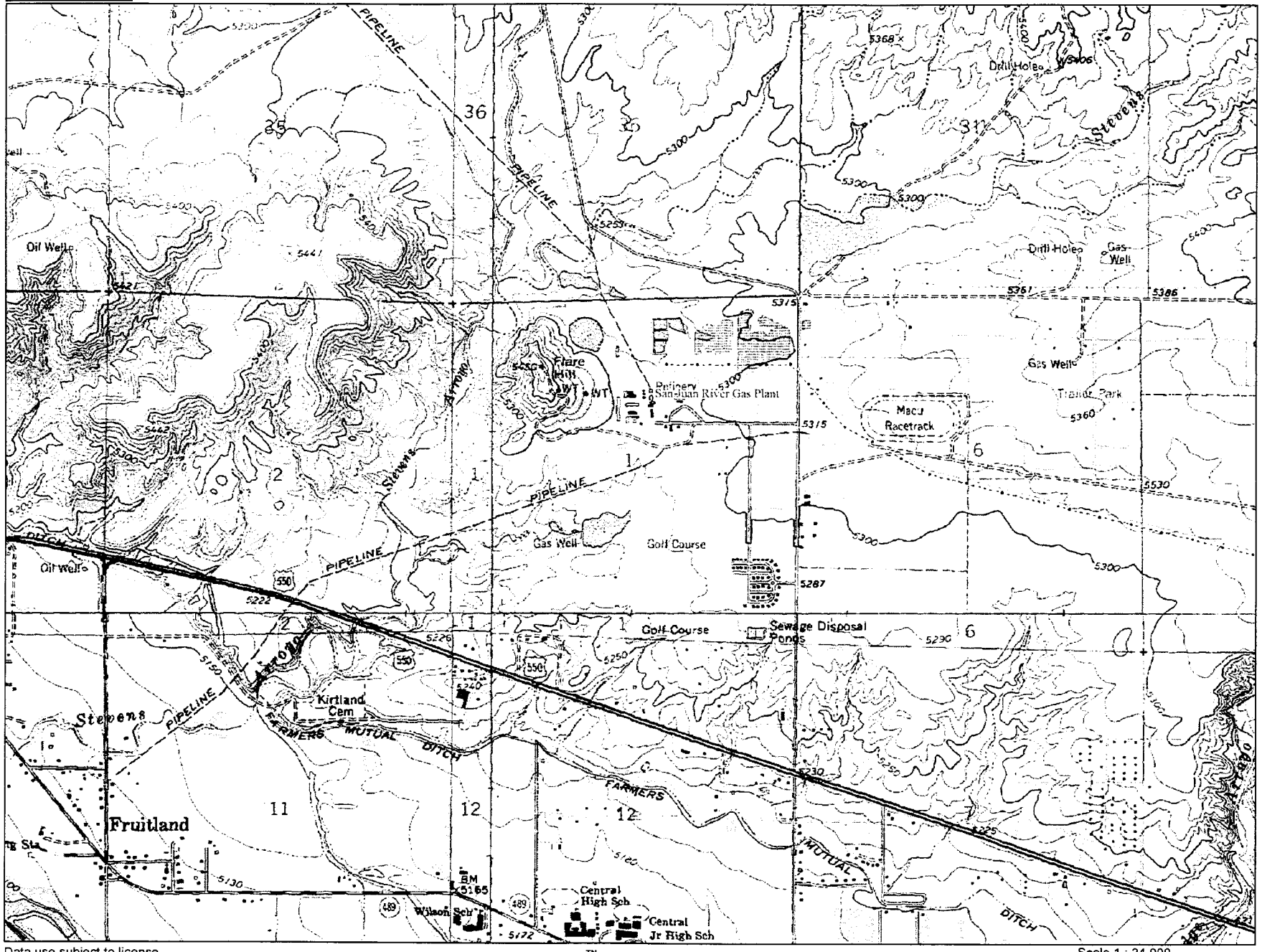
(2) **Calculate Net Dike Capacity**
Net Capacity = Total Capacity - Displacement
Displacement = Footprint x Dike Height
Net Capacity = 34.2 bbl - 0 bbl = **34.2 bbl**

(3) **Calculate Freeboard**
Required Freeboard = Storm Event x Dike Footprint
The 24-hour 25-year storm event for the area is expected to produce 2.8 inches (0.2 ft) of precipitation.
0.2 ft x 64 ft^2 = 14.7 ft^3
14.7 ft^3 x 7.48 gal/ft^3 x 1 bbl/42 gal = **2.6 bbl**

(4) **Calculate Excess Dike Capacity**
Excess Capacity = Net Capacity - Freeboard - Volume of Largest Container
34.2 bbl - 2.6 bbl - 18 bbl = **13.6 bbl of Excess Dike Capacity**

FIGURES

FIGURE B-1



TN

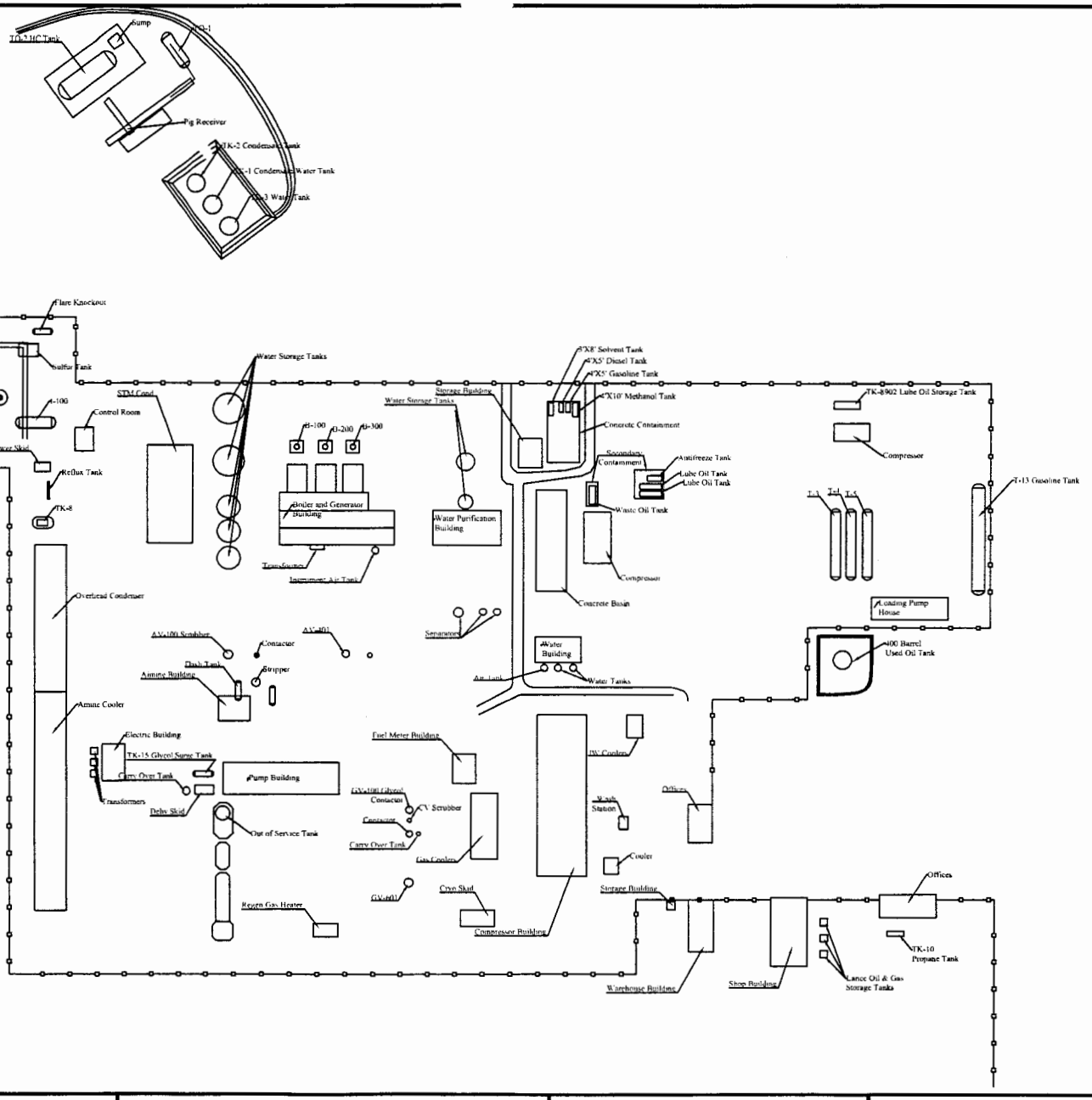
MN (10.4°E)

Scale 1 : 24,000

1" = 2,000.0 ft

Data Zoom 12-6

FIGURE B-2 (optional)



Site Map
San Juan River Gas Plant
Western Gas Resources, Inc.
San Juan County, New Mexico
December 15, 2008

N

Legend

Fenceline

Not to Scale

eTECH
Environmental & Safety Solutions, Inc.

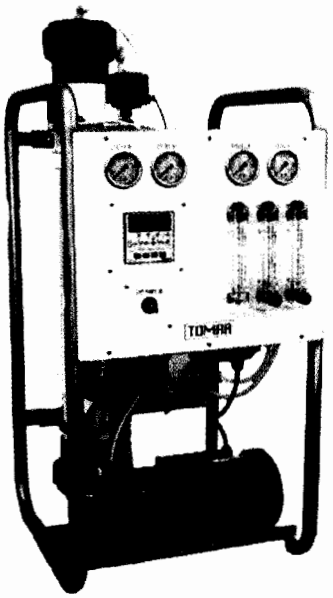
APPENDIX C – RO UNIT SPECIFICATIONS AND MANUAL

APPENDIX E – RO UNIT SPECIFICATIONS AND MANUAL

TOMAR
WATER SYSTEMS, INC.

TV-Series Commercial Systems 2000-12000 GPD

Description



TV-2000

	TV-2000	TV-4000	TV-6000 - 12000
Frame	Welded stainless steel tube		
Membranes	Low energy, thin-film (high rejection option)		
Vessels	PVC (stainless steel option)		
Pump	Brass Positive Displacement (SS option)	SS Multi-stage Centrfugal	
Gauges	Filter inlet/outlet, Vessel inlet/outlet, SS case, bronze internals, glycerine filled		
Valves	Brine and Recirculation control valves		
Switches	Low pressure cut-out		
Filters	10 micron, 20" pre-filter and housing		
Electrical*	110/220V 50/60Hz 1-phase 220/380/460V, 50/60Hz 3-ph.		220/380/460V 50/60Hz 3-phase
Connections Feed/Drain/Product	3/4" FPT/1/2" QC/1/2" QC		3/4" FPT/1/2" hose/1/2" hose
Control System	Microprocessor based		
Standard Panel Instruments	TDS Monitor, Recirculation flowmeter, Brine flowmeter, Product flowmeter		

*For 220/380/480 voltage/phase options and power specifications, please see the Tomar Electrical Datasheet

Specifications

Production rate and TDS rejection are based on membrane performance after 24 hours at 115 psig (10.3bar) net operating pressure, 77°F (25°C), pH 7.5, 15% recovery on feed water containing 1000 ppm TDS. Flow tolerance is +/- 15%

Potential membrane foulants such as excessive Iron and Manganese must be removed from the feed stream prior to the system.

	TV-2000	TV-4000	TV-6000	TV-8000	TV-10000	TV-12000
Capacity	2000 GPD (7.6m³/d)	4000 GPD (15.1m³/d)	6000 GPD (22.7m³/d)	8000 GPD (30.2m³/d)	10000 GPD (37.8m³/d)	12000 GPD (45.3m³/d)
Membranes	1	2	3	4	5	6
Nominal/Maximum Operating Pressure	150/200 psi (10.3/13.8 bar)					
Min. Conc. Flow - Discharge + Recirc	3 gpm (0.68m³/h)			6-9 gpm (1.36-2.04m³/h)		
Nominal Recovery (with Recirc Valve)	31% (70%)	48% (70%)	58% (70%)	48% (70%)	54% (70%)	58% (70%)
Typical TDS Rejection	98%					
Max Feed Temp	113°F (45°C)					
Feed pH	3-10					
Feed Chlorination	Dechlorination reqd. if >0.1 ppm					
Maximum Feed TDS	5,000 ppm					
Motor Rating	1.0-1.5HP	1.0-1.5HP	1.5-2HP		2.0-3.0HP	3.0-5.0HP

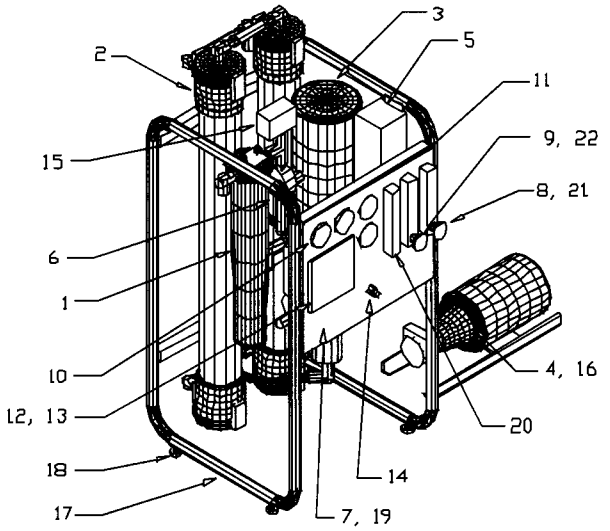
System Options

Cleaning Skid • Product Storage Tanks • Tank Level Controls
Repressurization system • Automatic Flush • Pre/Post Treatment

TOMAR
WATER SYSTEMS, INC.

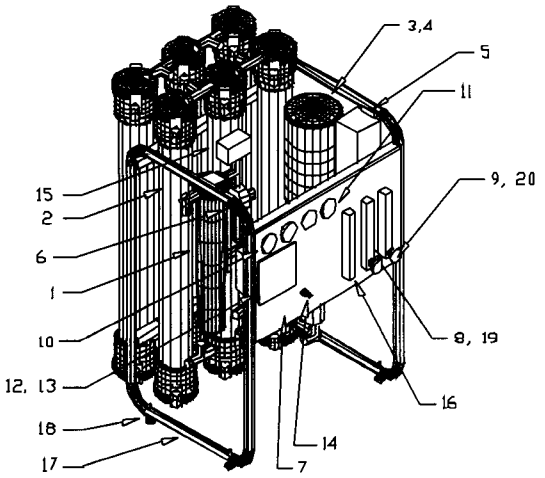
TV-Series
Commercial Systems
2000-12000 GPD

TV-2000 and TV-4000
System Diagram



1. Prefilter
2. Pressure Vessel Assembly
3. Pump & Motor (TV-4000)
4. Pump & Motor (TV-2000)
5. Motor Contactor & Ovl. Rly.
6. Solenoid Valve
7. Monitoring Panel
8. Brine Control Valve
9. Conc. Recirc. Valve
10. Prefilter In/Out Gauges
11. Vessel In/Out Gauges
12. PLC Controller
13. Conductivity Monitor
14. Main Power Switch
15. Low Pressure Switch
16. Pressure Relief Valve
17. SS Frame
18. Levelling Feet
19. Control Panel
20. Product Flow Meter
21. Brine Flow Meter
22. Recirc. Flow Meter

TV-6000 to TV-12000
System Diagram



1. Prefilter
2. Pressure Vessel Assembly
3. Pump
4. Motor
5. Motor Contactor & Ovl. Rly.
6. Solenoid Valve
7. Monitoring Panel
8. Brine Control Valve
9. Conc. Recirc. Valve
10. Prefilter In/Out Gauges
11. Vessel In/Out Gauges
12. Conductivity Monitor
13. Tank & PTL Switch Leads
14. Main Power Switch
15. Low Pressure Switch
16. Product Flowmeter
17. Frame
18. Levelling Feet
19. Brine Flowmeter
20. Recirc. Flowmeter

TV-Series
System Information

Dimensions and weight are for the system only. Systems are shipped on a boxed frame. A shipping crate is available for an additional charge.

	TV-2000	TV-4000	TV-6000	TV-8000	TV-10000	TV-12000
Weight lbs. (kg)	150 (68)	170 (77)	190 (86)	220 (100)	250(114)	280(127)
Dimensions	22"W x 26"D x 49"H (56 x 64 x 125cm)		28"W x 32"D x 49"H (56 x 81 x 125cm)			

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TOMAR TV-SERIES
(10000 and 12000 GPD)
REVERSE OSMOSIS WATER TREATMENT SYSTEM
OWNER'S MANUAL

186BS2014N4

Baldor
2HP
SPEC 35V6330P0806-1
FRAME 56 2C

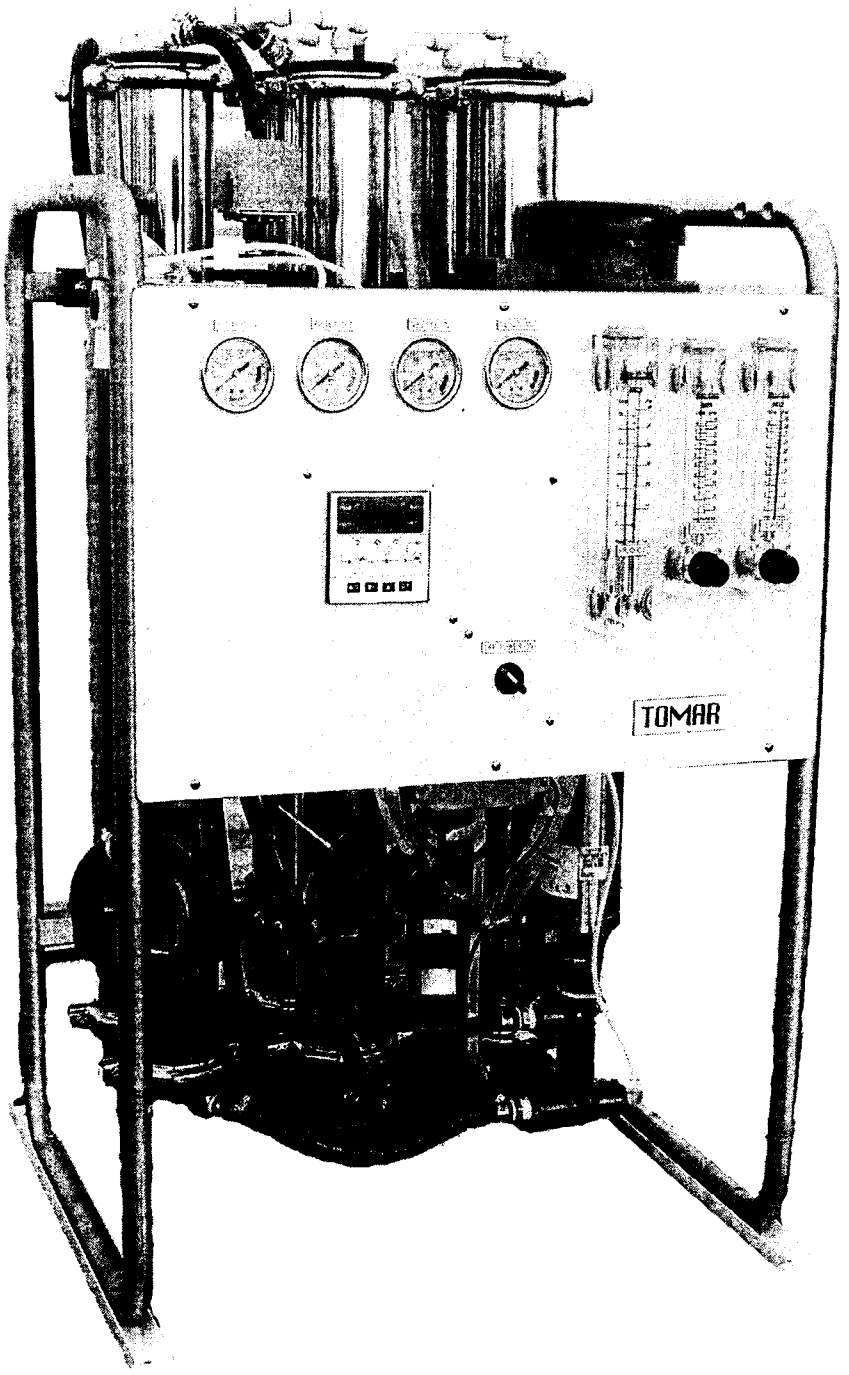
TOMAR
WATER TREATMENT SYSTEM

MODEL TV-12000SS
P/N TV-12000SS
S/N 7381
208-220V/1PH/60HZ/11A

TOMAR WATER SYSTEMS INC.
SAN MARCOS, CA
TEL. 760 510-9770 FAX 760 510-8235

Tomar Water Systems Inc.
804 North Twin Oaks Valley Road #118
San Marcos, CA 92069

107273.man 0806



TOMAR TV-12000 With SS Vessel Option

TABLE OF CONTENTS

NOTE

Systems may vary from manual content due to manufacturer's design changes, options or per customer special configuration requests.

PRODUCTION TEST DATA FOR THIS SYSTEM SHOULD APPEAR ON THE LAST PAGE OF THIS MANUAL. REFER TO THE SETTINGS AND PERFORMANCE GIVEN FOR THE PRODUCTION TEST RUN DURING THE INITIAL INSTALLATION SETUP AND ANY FUTURE CONTROL ADJUSTMENTS OR MAINTENANCE.

1.0 INTRODUCTION

The Tomar TV Series are the perfect systems for a wide variety of applications. Standard features include: 10 micron inlet filter, PVC pressure vessels, low energy membranes, glycerin filled gauges (prefilter and vessel, in and out), multi-stage centrifigal pump, TEFC motor, stainless steel tubular frame, low feed pressure cutoff switch and microprocessor control of all system functions.

1.1 SYSTEM SPECIFICATIONS

MODEL NO.		TV-10000	TV-12000
Membrane Type		Thin Film (TF)	Thin Film (TF)
Membrane(s), Vessel(s)		5,5	6,6
Production Rate†		10000 gpd (37.9 m^3/d)	12000 gpm (45.5 m^3/d)
Minimum Concentrate Flow (discharge + recirculation)		6.9 gpm (1.57 m^3/h)	8.3 gpm (1.89 m^3/h)
Operating Pressure:			
Nominal		150 psi (10.3 bar)	150 psi (10.3 bar)
Maximum		200 psi (13.8 bar)	200 psi (13.8 bar)
Nominal Recovery:			
Without Recirculation Valve		51%	41%
With Recirculation Valve		70%	70%
Electrical Supplies:	380V 50 Hz 3 phase	4 A	7A
	220V 50/60 Hz 3 phase	6 A	10 A
	460V 60 Hz 3 phase	3.0 A	5.0 A
Motor Rating		2.0 HP	3.0 HP
Goulds Pump Model 18GBS (304 SS)		15 Stage (60Hz) 15 Stage (50Hz)	15 Stage (60Hz) 15 Stage (50Hz)
System Dimensions		49"H x 28.5"W x 31.5"D (125cm x 72cm x 80cm)	
Dry Weight		270 lbs (123 kg)	280 lbs (127 kg)

† Production rates are based on 150 psig (10.3 bar) net working pressure at 77°F (25°C), running at 15% recovery with feed water at 7.5 pH containing 1500 ppm NaCl. Flow tolerances are ± 15%.

2.0 SYSTEM ITEM IDENTIFICATION (See Figure 1)

1. PRE-FILTER
2. PRESSURE VESSEL/MEMBRANE ASSEMBLY
3. PUMP/MOTOR
4. SOLENOID VALVE
5. BRINE CONTROL VALVE
6. CONCENTRATE RECIRCULATION VALVE
7. PRE-FILTER IN/OUT GAUGES
8. VESSEL IN/OUT GAUGES
9. LOW PRESSURE SWITCH
11. PRODUCT FLOW METER
12. BRINE FLOW METER
13. RECIRCULATION FLOW METER (OPTION)
14. N/A
15. MICROPROCESSOR CONTROLLER
16. CONTROL PANEL
17. SS FRAME
18. MOTOR CONTACTOR AND OVERLOAD RELAY
19. LEVELLING FEET
20. POWER SWITCH

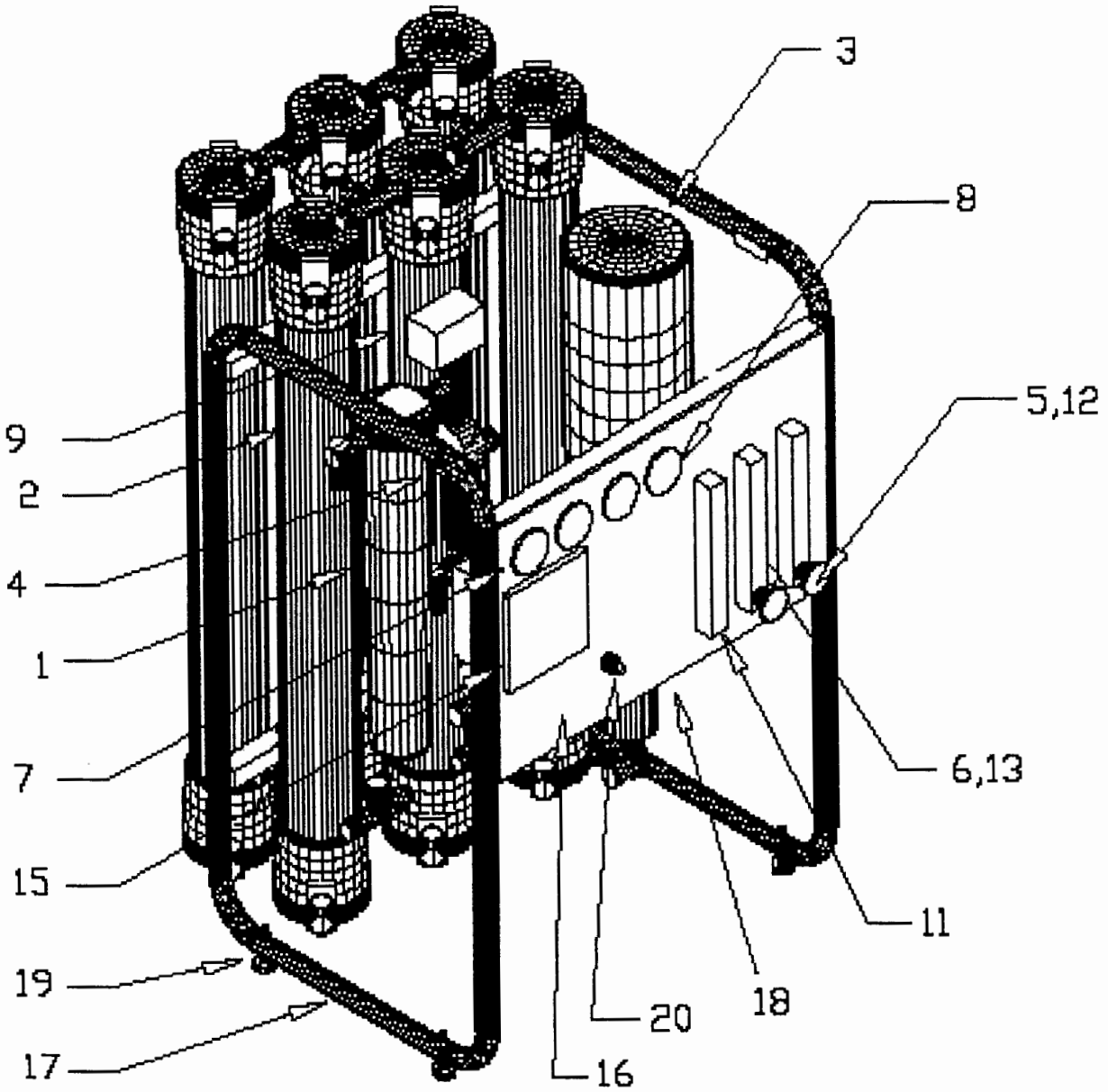


Figure 1. TV-12000 System Configuration (Typical)

2.1 SYSTEM ITEM DESCRIPTIONS (See Figure 1)

PRE-FILTER (#1): Consists of a 20" filter housing that contains a 10 micron sediment cartridge for removal of particulate matter. The filter cap includes the feed water ¾" FPT inlet port.

PRESSURE VESSEL/MEMBRANE ASSEMBLY(s) (#2): This is where dissolved solids are separated from the feed water. This assembly consists of 5 (10000) or 6 (12000) PVC pressure vessel(s) that house the reverse osmosis (RO) membrane(s). PVC pressure vessels are standard on both models. For optional pressure vessel construction, see 2.2 SYSTEM OPTIONS.

PUMP/MOTOR (#3): The multi-stage centrifugal pump boosts water pressure in the pressure vessel/membrane assembly(s) to about 150 psig (10.3 bar) to ensure high solids rejection and high flow rates. The motor is TEFC and sized for the specific pump configuration and supply voltage requirement.

SOLENOID VALVE (#4): Electrically operated valve that prevents feed water from flowing through the system when it is not in operation. The coil and body are separate replaceable units. The body is equipped with a small lever that allows the valve to be opened manually.

BRINE CONTROL VALVE (#5): A needle valve in the brine flowmeter that controls both the amount of water flowing across the membrane(s) that goes to drain and membrane pressure.

CONCENTRATE RE-CIRCULATION VALVE (#6): A needle valve in the recirculation flow meter that controls the amount of concentrate from the membrane to be re-circulated back into the feed stream. This feature allows for higher recovery rates, see 3.2.2 OPERATING PARAMETERS for guidance. This valve affects system operating pressure, brine flow rate and TDS.

PRE-FILTER IN/OUT GAUGES (#7): These gauges display the feed water pressure before and after the sediment pre-filter. The operator can use this to observe pressure drop through the filter as a means of detecting filter clogging to know when it is time to replace the element (See Section 7.4). For additional gauge options, see 2.2 SYSTEM OPTIONS.

VESSEL-IN/OUT GAUGES (#8): These gauges display the operating pressures at the inlet and outlet of the membrane(s)/vessel(s). These pressures are used in the setup of the unit and as an early warning of membrane fouling or degradation. For additional gauge options, see 2.2 SYSTEM OPTIONS.

LOW PRESSURE SWITCH (#9): A pressure switch that shuts off the unit in the event of low feed pressure (filter outlet). This is used as a pump protection device. It is factory set to cut off if the pressure drops to 12 psi (0.8 bar). A minimum of 22 psi (1.5 bar) is required to originally start the RO. The unit does not automatically restart if the loss of water pressure was temporary due to some other water usage. It is necessary to evaluate the pressure loss situation, make the necessary corrections and then restart the unit with the start switch (see #15 below).

MICROPROCESSOR CONTROLLER (#15) The PLC controls all functions of the RO System including product TDS monitoring. The PLC controls the RO system on/off from product tank level, pretreatment systems with auto backwash and from feed water pressure fault. This on/off function controls the feed water solenoid valve and the main pump. An optional 5 minute fast flush on tank full is also available. The leads for pre-treat lockout and tank level switch are so marked and are 10 feet in length. If the unit shuts down after turning the POWER ON/OFF switch to ON it will be necessary to take corrective action. This condition may be due to the feed water pressure momentarily dropping below the cutoff level and not recovering within the 2 second delay allowed by the controller. In this case it will be necessary to provide a higher capacity feed to the RO system or to

lower the low pressure cutoff switch setting. To adjust the low pressure cutoff switch setting, see 7.1 LOW PRESSURE SWITCH ADJUSTMENT.

CONTROL PANEL (#16): The panel is white ABS. This panel is standard on all units. It provides mounting for the main POWER switch, microprocessor controller, gauges and flow meters with valve(s).

FRAME (#17): The frame is formed and welded of stainless steel. The pump mounting plate is mild steel, powder coated and bolted in place on the SS frame. The SS frame provides a mounting for all the RO system components.

LEVELING FEET (#19): These allow for a stable mounting on an uneven surface. After adjustment of the feet, snug the looking nuts against the under side of the frame.

MAIN POWER ON/OFF SWITCH (#20): The RO system is completely unpowered when this switch is in the off position.

2.2 SYSTEM OPTION DESCRIPTIONS (See Figure 1)

STAINLESS STEEL PARTS (#2,3,7,8): 316 SS vessels. The pumps are standard 304 SS and not available in 316 SS. If feed water, including recirculation, is greater than 5000 PPM, 316 SS pressure guage internals are available in place of the standard bronze internals.

PRESSURE VESSEL/MEMBRANE ASSEMBLIES (#2): SS pressure vessels are available. These should be considered for higher temperature feed water with the high rejection membranes which require running at about 200 psi. High rejection membranes are generally used for higher TDS water.

TANK PRESSURE SWITCH (not shown): An electrical switch used with a pressurized storage tank that controls the system operation based on the storage tank pressure. This is factory set to shut the system off when the tank pressure is 60 psi (4.2 bar) and turn the system on when the tank pressure is below 40 psi (2.8 bar). The option includes a check valve for the product water line to prevent back flow to the membranes when the system is not running.

PRODUCT WATER CHECK VALVE (not shown, part of the tank pressure switch option): A one-way valve that prevents pressurized product water from flowing back into the desalinator (and possibly damaging the membrane) when the system is off. The product water check valve is only required when using a pressurized storage tank. However, presence of this valve will not affect operation with a non-pressurized storage tank.

TANK FLOAT SWITCH (not shown): Installed in an atmospheric storage tank to control system operation from tank low and tank full. (See #15 in 2.1 SYSTEM ITEM DESCRIPTIONS)

BLENDING VALVE (not shown): The blending valve allows the addition of filtered feed water to the product of the RO system. This is done when the product of the RO system is a lower TDS than is necessary or desired.

AUTO FLUSH SYSTEM (not shown): The auto flush system flushes the concentrated brine from the RO membrane(s) with pressurized product water. This replaces high salinity feed water with clean product water at the membrane feed surface during the non-running interval. The flush is automaticall performed for a preset period of time on each automatic shutdown of the RO system (on storage tank full condition). The flush time is set at 5 minutes. This option is generally incorporated with high fouling feed water as an aid to extending membrane life.

2.3 RO SUPPORT EQUIPMENT (External to the RO)

Cleaning injection pump-solution tank, feed pump, filter, hoses, connections, etc.
Product storage, atmospheric or pressurized.
Pre/post-treatment systems.
Product repressurization system, used with atmospheric tank storage.
Blending valve and flow meter. (These items installed in the RO system)

3.0 PRE-INSTALLATION PROCEDURES

PLEASE READ CAREFULLY. FAILURE TO FOLLOW THESE PROCEDURES CAN RESULT IN DAMAGE TO YOUR SYSTEM AND VOID YOUR WARRANTY.

3.1 PACKAGING

Upon delivery, inspect for external signs of damage and report any damage to your delivery carrier at that time. After unpacking the system, inspect it carefully for signs of damage. All damage claims should be made to the delivery carrier.

3.2 RO SYSTEM OPERATION

3.2.1 FEED WATER CONSIDERATIONS

Tomar TV-Series are to be used on microbiologically safe water that conforms to operating parameters per 3.2.3 only. The user must be sure that water, to be treated, is both microbiologically safe and non-toxic. Ensure that the operating parameters outlined in 3.2.3 are met at the installation site. Items of most importance are TDS, supply water pressure, flow rate, chlorine level and temperature range.

A water analysis is helpful in determining if any pre-treatment is needed. If your water analysis shows levels of substances in excess of the maximums stated in 3.2.3 or has TDS greater than 500, contact your dealer or Tomar for any pretreatment that may be required, and/or the maximum allowable recovery without pretreatment.

3.2.2 OPERATING PARAMETER SETTINGS

The TV-Series operates according to the following parameters, where:

Qs=Feed water flow rate
Qb=Brine flow rate
Qr=Recirculation flow rate
Qp=Product flow rate
Qro=Flow rate to the RO vessels (pump output)

Qs=Qb+Qp Qro=Qs+Qr Recovery=Qp/Qs

The system RO pump is a multi-stage centrifugal type pumps running at 3450 rpm for 60 Hz operation and 2875 rpm for 50 Hz operation. This type of pump runs essentially at full motor horsepower through the normal pressure and flow operating range of the pump.

Pump flow and pressure are controlled by adjusting the brine flow rate (Qb). Do not close the brine valve any further than is necessary to develop 100 to 150 psi for the low energy membranes and 200 psi for high rejection membranes. In any case, never increase pressure so that the combined brine and recirculation flow is less than 7 gpm for the TV-12000 or 5 gpm for the TV-10000.

Concentrate water flows to the drain. This waste can be reduced by recirculating some of the concentrate flow back to the pump. The amount of recirculation (Qr) reduces the amount of feed water (Qs) by the same amount, which increases the rate of recovery. However, recovery should not be greater than 70%. Higher recovery reduces the rejection of salts, which will be observed on a TDS Monitor. Set the recirculation flow rate (Qr) to the maximum level with the system still producing RO water with an acceptable TDS level. However, for high TDS feed water it is advisable to keep the recovery low to avoid possible fouling of the membranes. Tomar can provide a projection from your water analysis to determine safe operating parameters for your system.

3.2.3 CONTROLLER OPERATION

Following are the controller panel indications possible under various system conditions:

SLP = Standby Mode
XXX = Product water conductivity (press C/T button to read cond.)
XX.X = Product water temperature in degrees C (press C/T button to read temp.)
FULL = Product water tank full
ALA + HIGH PRESS LED RED = High pressure pump output over limit (optional feature)
ALA + LOW PRESS LED RED = Feed water pressure under limit
ALA + LOW FEED PRESS LED RED = Feed water storage tank level low (optional feature)
ALA + HIGH LED RED = Product water conductivity over limit

Green LED displays on the controller panel indicate that the parameter is within normal limits or that the element (pump or valve) is active. Flush mode settings may need to be set initially and after any power interuption to the controller. To change settings on the controller proceed as follows:

1. Press the SET button. The conductivity calibration factor will appear. This value has been factory set and should not be changed.

2. Press the SET button a second time. The value displayed is the high limit for product water conductivity (in microseimens). Readings above this value will result in an audible alarm as well as an ALA display and red HIGH LED indication. To change the limit value use the arrow buttons to go up or down. When the value is as desired press the C/T button to save the new value.

2. Press SET until "aXXX" displays. The right side of the display will now indicate the duration of flush that will occur whenever the system is initially powered up as "aXXX". The range is from 000 to 249 seconds (4 minutes). If no initial startup flush is desired or if the flush option is not installed set the value to 001 otherwise set the time to the desired duration. When done, press the C/T button to save the value. Factory default setting is 1 second (001)

3. Press SETuntil "bXXX" displays. The display will now indicate the duration of flush that will occur whenever the system shuts down as "bXXX". The range is from 000 to 249 seconds (4 minutes). If no shut down flush is desired or if the flush option is not installed set the value to 001 otherwise set the time to the desired duration. This flush will occur when the tank switch indicates full condition and again when the tank switch reaches low position and restarts the system. When done, press the C/T button to save the value. Factory default setting is 90 seconds (090).

4. Press the SET button until "C-XX" displays. The number now displayed as "C-XX" indicates the interval in continuous running that the system will stop and automatically go into a shut down flush, and then resume running after the flush is complete. The value range is 00 to 99 hours. If no automatic flush is desired, set the value to 99 hours otherwise set to the desired interval. Again, this feature is only active if the flush option is installed. If not, set the value to 99. Press the C/T button to save the value. Factory default is 99 hours (99).

3.2.4 OPERATING PARAMETER CONDITIONS

MODEL NO.	TV-10000	TV-12000
Membrane Type	Low Energy TF	Low Energy TF
Feed Pressure	25 psi (1.7 bar)	25 psi (1.7 bar)
Min. Feed Flow Rate (without recirculation)	14GPM @ 60Hz	16 GPM @ 60Hz
Maximum Temperature (Feed)	113°F (45°C)	113°F (45°C)
Maximum Chlorine (continuous)	<0.1 ppm	<0.1 ppm
Maximum Total Dissolved Solids	5,000 ppm	5,000 ppm
pH Range	3.0 - 10.0	3.0 - 10.0
Iron	0.0 ppm	0.0 ppm
Hydrogen Sulfide	0.0 ppm	0.0 ppm
Manganese	0.0 ppm	0.0 ppm
pH Range (optimum rejection)	5.0 - 8.0	5.0 - 8.0
Turbidity	< 1.0 NTU	< 1.0 NTU
Silt Density Index	< 5.0 SDI	< 5.0 SDI

3.3 PRE-TREATMENT

For any TV-Series system, do not use 20" carbon filters alone to de-chlorinate feed water. They will be depleted too quickly to properly de-chlorinate the water supply feeding the TF membranes; an adequate capacity granular activated carbon (GAC) back-washing filter should be used. Contact your Tomar factory representative for more information (see 3.3.3 OPERATING PARAMETERS).

4.0 INSTALLATION

PLEASE READ CAREFULLY. FAILURE TO FOLLOW THESE PROCEDURES CAN RESULT IN DAMAGE TO YOUR SYSTEM AND VOID YOUR WARRANTY.

4.1 LOCATION

It is recommended that systems be located where they are protected from harsh environments such as rain, snow and extreme temperatures (both hot and cold). The TV-Series is intended for indoor installation. TV-Series systems can be located just about anywhere inside where there are water and electrical supplies and a drain for the brine discharge. Keep in mind, however, that they should be out of normal traffic patterns but easily accessed for daily monitoring and service. The hazards of flooding in the event of system failure should also be considered in the location selection.

4.2 PLUMBING (see Figure 2)

Always adhere to local plumbing codes when installing the system. When installation procedures conflict with your local plumbing codes, STOP and contact your dealer or Tomar.

Connect a feed water supply line to the pre-filter inlet (the filter is 3/4" fnpt on the left side).
The product and drain line connections are 3/4" FPT and ½" tube QC fittings, respectively located at the lower rear of the unit and they are so marked.

4.2.1 WATER SUPPLY CONNECTION

If the supply water is being drawn from a non-pressurized tank, a boost pump will be required to overcome filter backpressure and maintain about 25 psi (1.7 bar) to the pump. When the RO starts there will be a momentary drop in feed water pressure. During this start-up, if the source feed water system can not maintain a pressure above the cutout pressure of the low pressure switch (12 psi), the following options are possible:

1) If the pressure drop is not more than, say, 6 psi below the 12 psi factory setting, the low pressure switch setting can be lowered. (See 7.1 LOW PRESSURE SWITCH ADJUSTMENT)

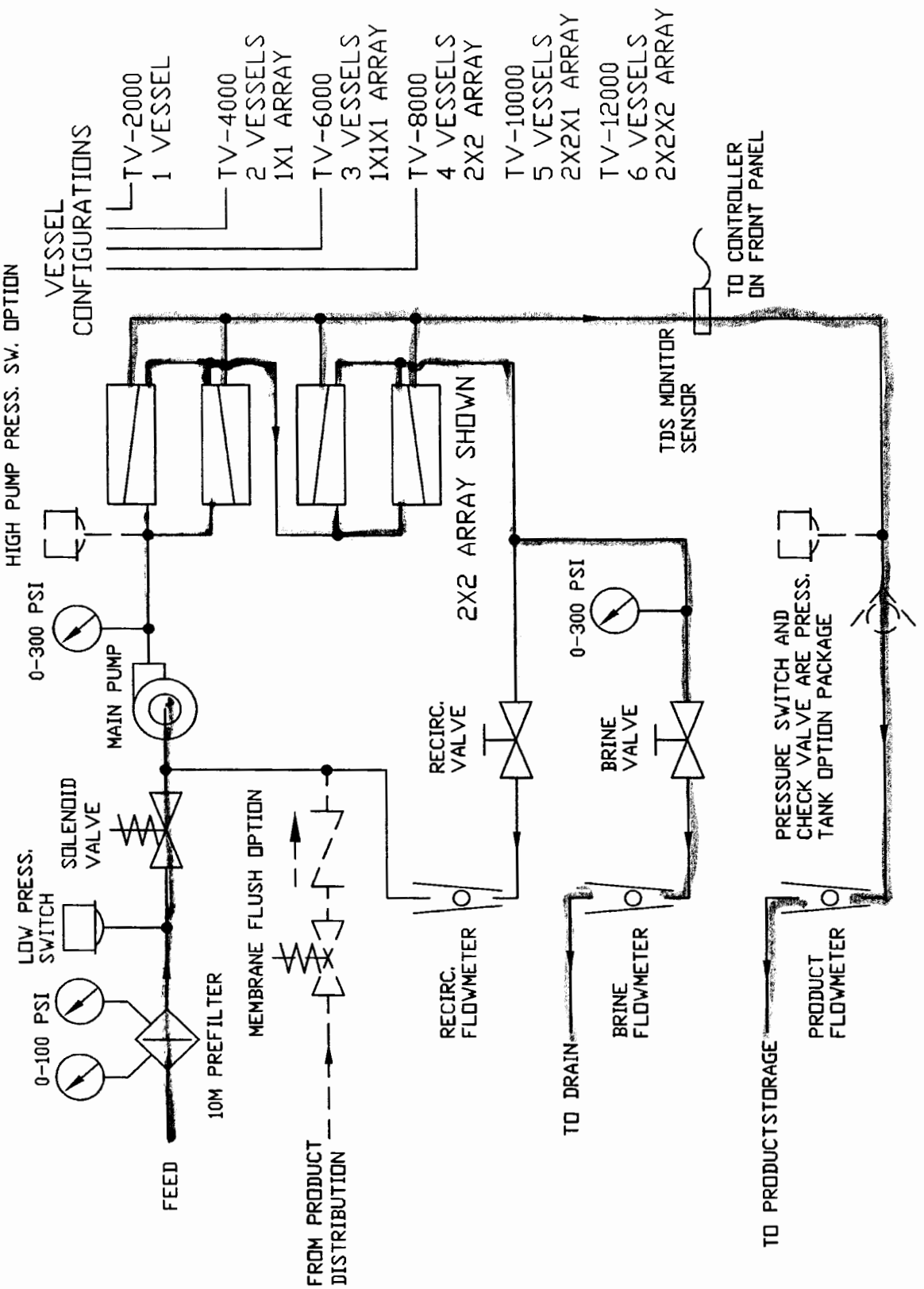
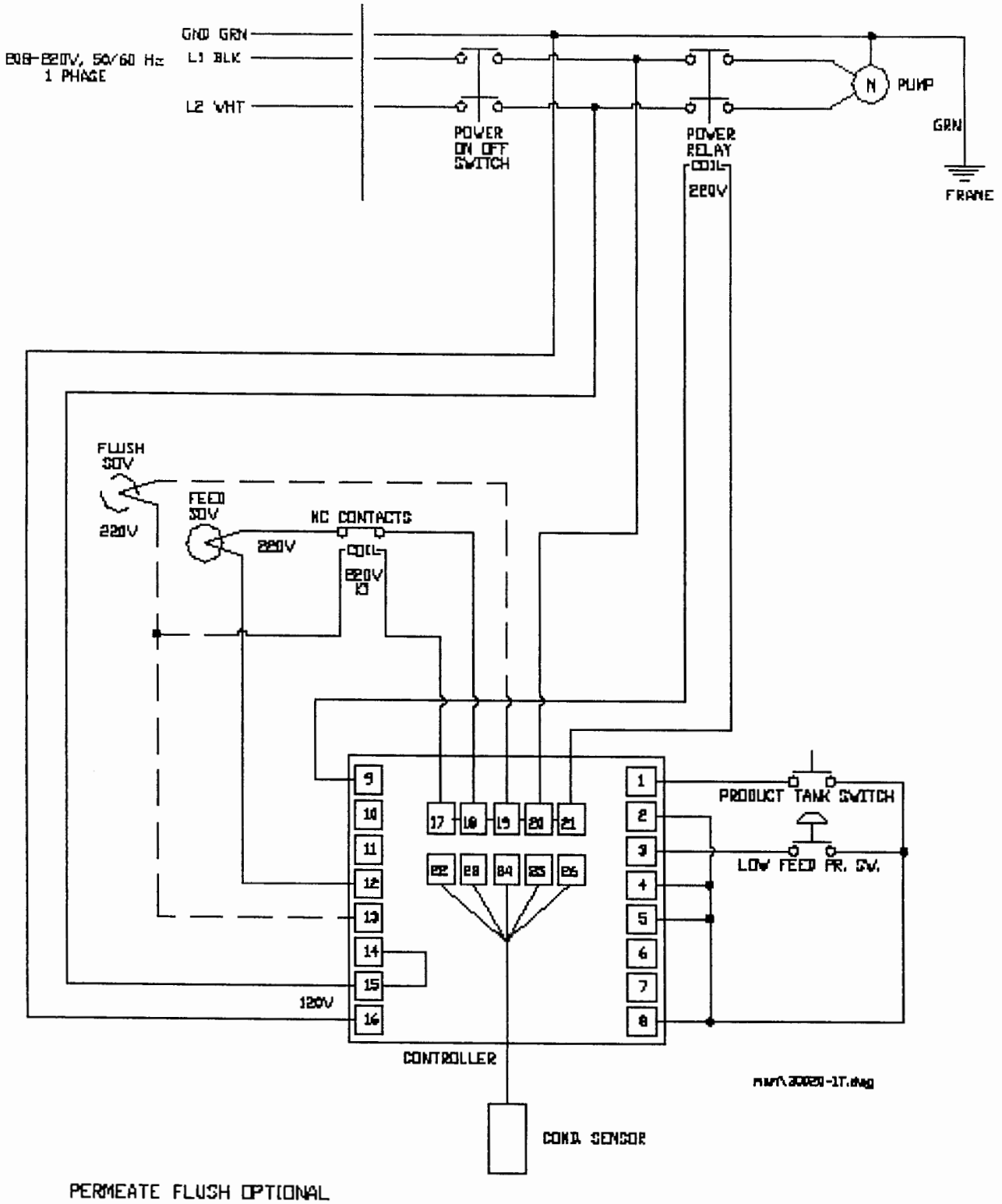


Figure 2. System Plumbing Diagram



PERMEATE FLUSH OPTIONAL

2) A 10-gallon bladder tank can be added at the feed filter inlet to help hold the pressure from dropping below the cutout setting of the LP switch. The bladder tank also reduces recovery time. If the feed pressure drops below the cutout point and can not recover to at least 22 psi quickly the use of the tank will not help.

3) The following should only be used as a last resort since it results in added cycling on and off of the RO system. Usage is indicated when the unit is able to start normally; then during operation another usage in the building drops the pressure below the low pressure switch cutout point (a flushing toilet for example). Remove the controller enclosure cover and at the top right of the board (on the cover), move jumper J5 to position A. With this jumper setting the controller will automatically restart in 30 seconds providing that the feed pressure has returned to normal. (See Microprocessor Controller Attachment Sheet)

4.2.2 DRAIN CONNECTION

Connect 1/2" OD tubing to the DRAIN QC fitting located on the lower rear of the system frame and run to a convenient drain. Be sure to check your local plumbing codes to see if an air gap between the system and the drain is required. If the flush option is installed in the system there is a 1/2" OD tubing line to be run to the same drain as the brine tubing.

4.2.3 PRODUCT CONNECTION

The PRODUCT 3/4" FNPT fitting is at the lower rear of the system frame. Make this connection to an atmospheric storage system, or if your TV was ordered with the pressure tank switch option you may connect a pressure tank sized per your requirements and the TV system production rate. The product water connection to storage tanks should not be made until the system is flushed and tested as outlined in 5.0.

4.3 ELECTRICAL (See Figure 3)

WARNING!
DO NOT CONNECT POWER UNTIL THE SYSTEM IS COMPLETELY INSTALLED AND READY TO RUN. ALL ELECTRICAL WORK SHOULD BE DONE BY A QUALIFIED ELECTRICIAN IN CONFORMANCE WITH ALL APPLICABLE ELECTRICAL CODES.

TV-Series systems come standard with bare power leads for either hard wiring to a disconnect box or for installation of the proper power plug. Be sure the receptacle you use is on a circuit that has a Ground Fault Interrupter (GFI) and has sufficient capacity for the operating current as listed in 1.0 SYSTEMS SPECIFICATIONS. It is recommended that the unit be installed on a dedicated circuit panel with the correct circuit breaker or fuse sizes installed (see Figure 3). The power cord is so labeled and extends from the front right side of the TV system.

Wire leads are provided for TV-Series control from pretreatment equipment and your product storage system. Do not connect electrical power to these leads in any way. The wires are red and black. These leads are wire nutted together at the factory. All external switches must be closed for normal operation. These wire leads are 10' long and marked "pre-treat" and "tank level" and are stowed at the bottom of the PLC enclosure.

The Electrical Schematic is all-inclusive. Your unit may not include all the components shown.

RO units requiring 460 volts (575 volts in Canada) will generally include an additional transformer. This transformer will generally be rated at 100 VA and is single phase. It can be set-up for 110 or

220 volt output or both depending on the equipment it will operate. The basic need is to drop the voltage to the RO system control circuit. If 110 or 220 single-phase power is available, the control circuit can be wired for this power as an alternate to the transformer.

4.3.1 EXTERNAL FLOAT SWITCH WIRING

Remove the wire nut from the two (2) leads. Strip approximately ½" of insulation from both wires on the float switch and splice to the TV leads. The float switch must be of the normally closed (NC) type, i.e. when the switch is hanging down the contacts are closed. Remove the wire nut from the leads on the wire marked "Tank Level" and connect to the float switch wires. Wires can be connected either way, there is no polarity.

4.3.2 EXTERNAL PRESSURE TANK SWITCH WIRING

If the pressure tank switch option is ordered, the tank switch will be mounted at the tank and the wire leads for "pre-treat are to be wired into one set of contacts in the switch. The product water check valve will also be installed. You need only connect the product water fitting to your distribution system and the pressure tank. If you are providing the pressure tank, check valve and tank switch, the switch must be a normally closed (NC) type. Remove the wire nut from the leads on the wire marked "tank level" and connect to one set of contacts in the tank switch.

4.3.3 PRE-TREAT LOCKOUT SWITCH WIRING

The pre-treat lockout switch must be wired through the normally closed set of contacts in the pre-treatment system(s). If there is more than one equipment that must control the TV system on/off, such as a GAC auto back wash filter and, say, a multi-media auto back wash filter, the switches in the auto valves would be wired through the Common and NC terminals, in series, to the RO system controller wires marked "pre-treat". Since these contact inputs to the controller are dry contacts there is no wire preference or polarity for making the connections.

5.0 STARTUP, FLUSH AND PERFORMANCE VERIFICATION

Although TV-Series systems are fully tested at the factory prior to shipping, it is strongly recommended to flush and verify your system's performance on-site, particularly if the unit was not installed soon after delivery.

NOTE

FOR 3 PHASE POWER DO NOT ATTEMPT TO RUN THE SYSTEM BEFORE THE PUMP ROTATION HAS BEEN VERIFIED AS INSTRUCTED BELOW.

5.1 PUMP ROTATION DIRECTION

Every TV-Series is thoroughly tested at the factory prior to shipment with factory 3-phase power connected for proper pump motor rotation. Your 3-phase power connection must also be configured for proper pump rotation. With the water supply on, turn the power switch on, then the controller power on momentarily, and check the direction of rotation of the pump. There is a direction of rotation arrow on the body of the pump. Observe rotation of the motor at the top end. If rotation is in the wrong direction, reverse any two of the 3-phase power leads at your fused disconnect.

5.2 INITIAL STARTUP AND FLUSHING

New membranes have a preservative on them that should be flushed before use. Although the system was run at the factory, additional flushing is recommended. Run the product line to a drain and run the system as follows until the product TDS has stabilized.

Fully open the concentrate recirculation valve (if system is equipped) by turning the knob CCW.

Fully open the brine control valve by turning the knob counterclockwise.

Turn on the water supply to the unit and check for leaks up to the solenoid valve. There is a small white lever on the outlet side (underneath) of the solenoid valve. Turn this lever pointing across the **Be sure to return the lever to the inline (pointing to the solenoid coil) position for normal operation.**

Turn the OFF-POWER-ON power to ON. Turn the controller POWER OFF/ON switch to ON.

After the system has run for a few minutes, close the RECIRC valve (if system is equipped). Turn the BRINE valve clockwise until the system pressure gauge reads 150 psi (10.3 bar) or a product flow rate of 7 gpm (26.5 l/min) for the TV-10000 or 8 gpm (30.2 l/min) for the TV-12000.

Allow the system to flush with all water discharged to drain. Periodically check for leaks and check the system vessel-in pressure gauge. It is likely that the pressure will drift from 150 psi (10.3 bar) during the flushing; if it does, adjust the concentrate valve to correct the pressure back to the original setting. **DO NOT LET SYSTEM PRESSURE RISE ABOVE 200 PSI (13.8 bar).** When pressure, flows and TDS have stabilized turn the unit off, connect the product line and re-start the unit.

5.3 PERFORMANCE VERIFICATION

Factory test data is supplied with the system. This data reflects unit performance with municipal water available at the factory. To ensure optimum performance, on-site data should be taken and compared to the factory test data. This data should be taken after the system has been flushed for one hour. Some deviations may be seen due to differences in feed water TDS and temperature between the site and factory. If you have already connected the product line to the tank, you will need to disconnect it ahead of the post carbon filter (if one is installed) to take product samples.

5.3.1 FLOW TESTS

This testing is needed only if the unit is not equipped with the full flow meter complement. Determine the flow rates for both product and concentrate (brine). Put the product line into a graduated container and measure the volume of water that flows into it in one minute. Repeat the process with the concentrate (labeled BRINE) line. These values should be in either gpm or ml/min.

5.3.2 RECOVERY

Compute the recovery according to the following formulas: Recovery = Qp/Qs where Qs=Qb+Qp, as discussed in 3.2.2 OPERATING PARAMETERS.

5.3.3 REJECTION

This testing is needed only if the unit is not equipped with the standard TDS meter. Using a conductivity meter (TDS meter) measure the TDS in both the feed water and the product water. Calculate percent rejection using the formula below:

(Feed TDS-Product TDS) / (Feed TDS)* 100 = % Rejection

Rejection should be 96% or better. For example, where the feed TDS is 600 and the product TDS is 24, the percent rejection is:

(600-24)/ 600*100 = 96%.

5.3.4 LOW PRESSURE SWITCH TEST

While the system is running, slowly shut off the water supply to the system. The system should shut off at about 12 psi on the filter out gauge. If the system does not shut off by at least 7 psi, reestablish the water supply. **DO NOT LET THE SYSTEM RUN WITHOUT AN ADEQUATE WATER SUPPLY TURNED ON. PUMP DAMAGE WILL OCCUR.** Turn the system off and refer to 7.1 for low-pressure switch adjustment.

5.3.5 OPTIONAL TANK PRESSURE SWITCH TEST

Generally, the TV-10000 and 12000 would be used with large atmospheric product water storage tanks. However, if a pressurized tank is indicated perform the following check. With the product line connected to the tank and usage demand on, and with the TV system running, slowly close the usage demand. The tank pressure gauge should start to rise as the tank fills. The system should shut off when the gauge reads about 60 psi (4.2 bar). Now, by opening the usage demand the tank pressure should begin to drop, and the system should turn on when the pressure drops below about 40 psi. If the system fails to shut off at 60 psi, watch the gauge and be sure that it does not rise above 70 psi. If it reaches 70 psi, turn the main POWER switch to OFF. Refer to 7.2 for tank switch adjustment.

5.3.6 FLOAT SWITCH TEST

The system should run when the float switch in the atmospheric product storage tank is hanging down by the cord (not in contact with water). Slowly tilt the float switch up to its highest position so the cord is at the bottom of the float. The unit should shut off. If the unit does not shut off, re-check installation as outlined in 4.3.1. Improper float installation could result in an overflow of the tank or too frequent start and stop of the pump.

5.3.7 OPTIONAL BLENDING SYSTEM

Start the RO with the valve closed. The TDS meter is reading the product water quality as produced by the RO system. Allow the TDS to stabilize, then gradually open the blending valve allowing time for the new TDS reading to stabilize. Adjust the valve to product the desired product TDS.

5.3.8 OPTIONAL AUTO FLUSH SYSTEM

The auto flush is normally set at 5 minutes. Check operation by simulating a tank full condition (example, tilting the float switch up in an atmospheric tank). Maintain the switch in the tank full position and observe that the flush function starts. Check the elapsed flush time to verify the timing setting. When the switch is returned to a tank low condition the system will restart.

6.0 MAINTENANCE

Tomar TV-Series systems are designed for simple operation with periodic monitoring of critical functions. Tomar recommends keeping accurate performance records and following a regular preventive maintenance schedule to maximize the life of your system. A performance record sheet is provided at the back of this manual for you to copy and keep near your system. This record sheet will be important for warranty verification and trouble shooting, as well as possibly suggesting more or different pre-treatment.

6.1 DAILY SYSTEM CHECKS

Your water supply pressure can vary from time to time. This can also affect your system operating pressure. Therefore, it is recommended to check and adjust your system pressure daily to ensure maximum water production rates and quality. Check both the water supply pressure gauge (Filter In gauge) and the Filter Out gauge. Under normal conditions, there should be a 3-5 psi difference between the two gauges. When the difference reaches 10 psi or if the Filter Out gauge reading is close to the 12 psi cutout point of the low pressure switch, a pre-filter change is recommended. See 7.4 for further discussion on cartridge replacement.

6.2 MONTHLY SYSTEM CHECKS

In addition to the daily checks, it is recommended to repeat the procedure in 5.2 and record all data on your performance record sheet.

6.3 SEMI-ANNUAL SERVICE

If you do not see a pressure drop on the Filter Out gauge as indicated in the Daily System Checks, it is recommended to change the filter cartridge at least every six months.

6.4 PERIPHERAL EQUIPMENT

Peripheral equipment such as pre-filters, post-filters, and tanks, external to the TV, may also have periodic maintenance requirements. It is essential to maintain these as they can have a dramatic effect on the performance of your system. Refer to their specific manuals for proper maintenance procedures.

7.0 SERVICE

7.1 LOW PRESSURE SWITCH ADJUSTMENT

The low pressure switch is factory set to turn the system off if feed pressure drops below 12 psi (0.8 bar) and will re-start the system when feed pressure reaches 22 psi (1.5 bar). This switch can be adjusted to as low as 4 psi (0.3 bar), called the cut-out setting (stop). The cut-in (start) adjustment can be set as high as 45 psi (3.1 bar). The difference between the two settings is referred to as differential. The low-pressure switch on TV systems has a differential of 6-20 psi (0.4-1.4 bar).

- Before servicing, always disconnect power to the unit to avoid shock.
- To adjust, remove the switch cover and refer to the diagram inside.
- Turn the tall center adjustment nut counterclockwise to decrease cutout pressure and clockwise to increase cutout pressure. This adjustment will also change cut-in pressure to maintain the same differential pressure.
- Turn the lower side adjustment nut counterclockwise to decrease cut-in pressure and clockwise to increase cut-in pressure. Under normal circumstances, it is not necessary to adjust this switch setting. This adjustment does not change the low cut-out setting.
- Replace cover, restart and check operation of the switch.

7.2 TANK PRESSURE SWITCH ADJUSTMENT

The tank pressure switch (if equipped) is factory set to turn the system off when the tank pressure reaches 60 psi (4.2 bar) and then restart when the tank pressure drops below 40 psi (2.8 bar). The cut-in can be set as low as 5 psi (0.3 bar) and the cut-out can be set as high as 65 psi (4.5 bar). The differential range is limited to 15-30 psi (1.0-2.0 bar). Before servicing, always disconnect power to the unit to avoid shock.

- To adjust, remove the switch cover and refer to the diagram inside.
- Turn the tall center adjustment nut counterclockwise to decrease cutout pressure and clockwise to increase cutout pressure. This adjustment will also change cut-in pressure to maintain the same differential pressure.
- Turn the lower side adjustment nut counterclockwise to decrease cut-in pressure and clock wise to increase cut-in pressure. Under normal circumstances, it is not necessary to adjust this switch setting. This adjustment does not change the low cut-out setting.
- Replace cover, restart and check operation of the switch.

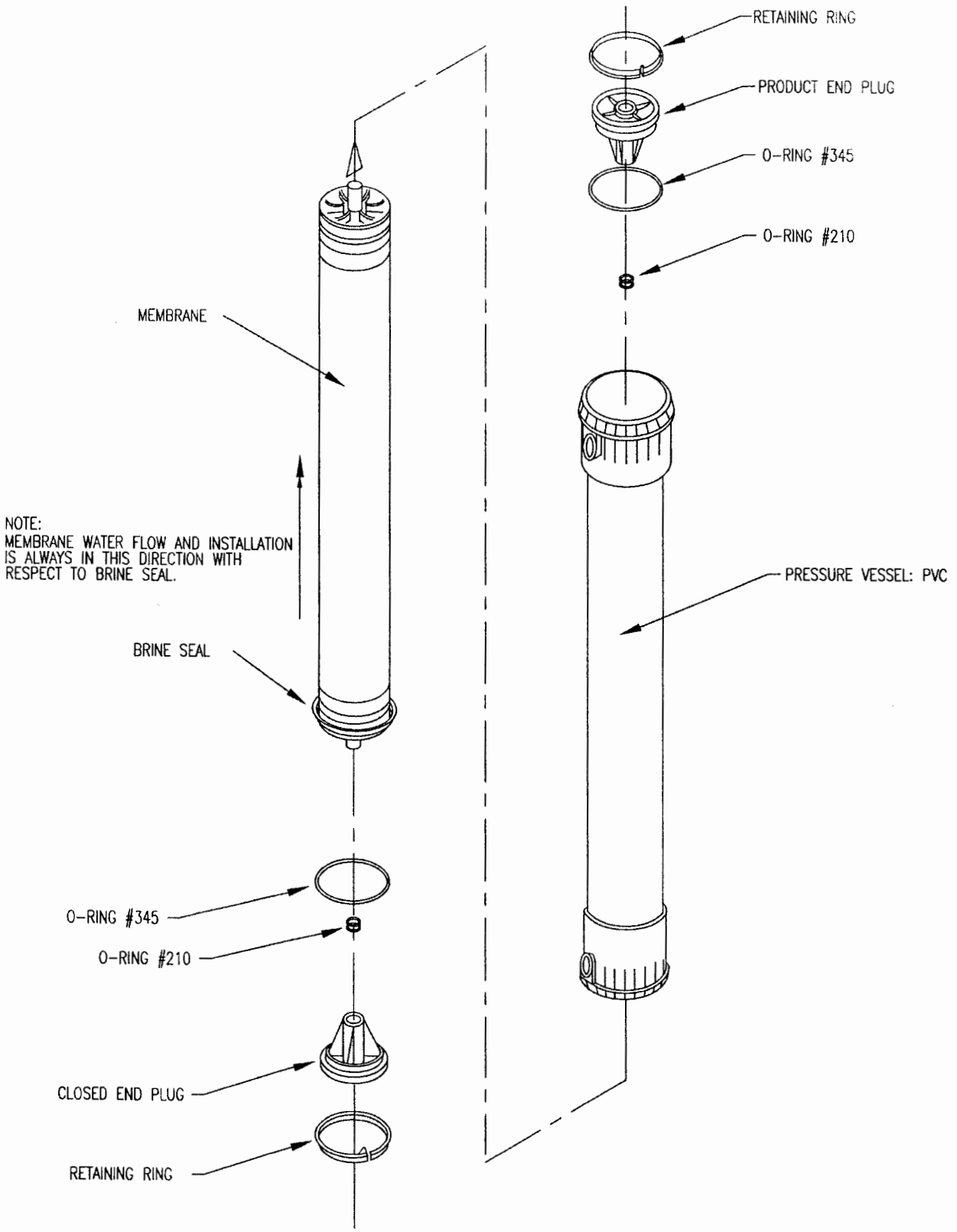


Figure 4. PVC Vessel/Membrane Assembly

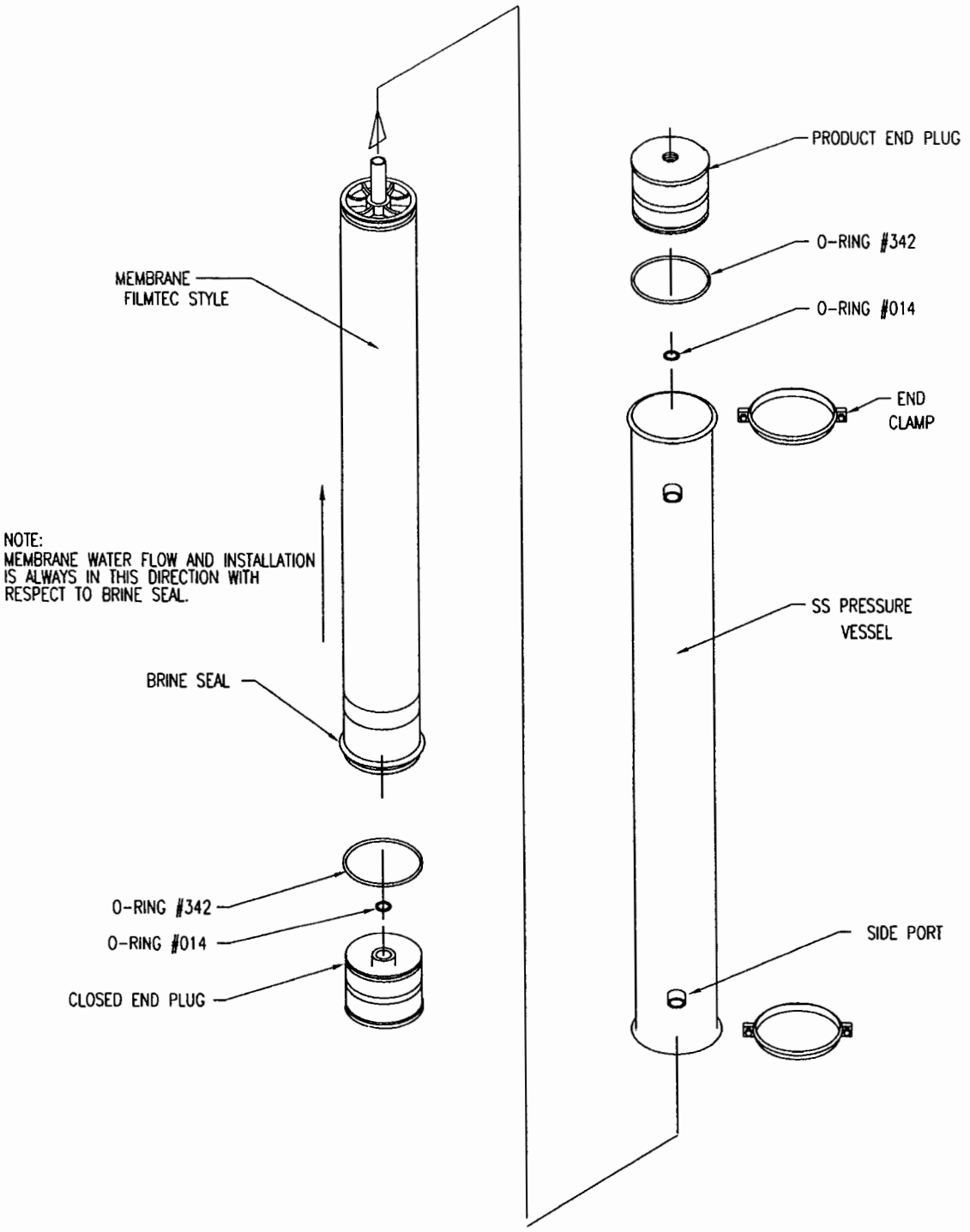


Figure 5. Stainless Steel Vessel/Membrane Assembly

7.3 **MEMBRANE REPLACEMENT** (See Figures 4 and 5)
Tomar recommends membrane replacement when the TDS rejection falls below 70%. A properly maintained and operated system typically will have a two (2) year service life. Your system may require more frequent membrane changes depending on your feed water. Always flush new membranes as outlined in: 5.2 INITIAL START AND FLUSH.

- Close feed water valve and release pressure from system by opening the feed water solenoid valve with the small white lever at the valve outlet end. Return the lever to the normal operating position. Before servicing, always disconnect power to the unit to avoid shock.

- Tag and disconnect the three tubing connections on the desalinators. These are the feed, concentrate (brine) and product (permeate) lines.

- Remove the vessels from the frame by removing the outer half of the retaining clamps. Move the vessels to a convenient work area.

- For the PVC vessels (Figure 4) remove the end plug retaining ring by pushing the nubbin on the ring toward the center of the vessel and working around to remove it from the groove in the vessel. For the SS vessels (Figure 5) pull the half clamps.

- In the next step, it is best to remove the membrane in the direction of flow as labeled on the outside of the vessel.

- The end plugs are not easily removed. On the end where product is removed, you may remove the fitting and install a short piece of pipe with a tee on the end as a puller. With one plug removed push the membrane out the other way to remove the other plug and the membrane. Also try pushing the plug at one end to move both plugs and the membrane, then with one plug removed push the membrane and one plug the other way for removal.
- Discard old membranes. Or, if in good condition, it may be worthwhile to have the membranes cleaned, sanitized and stored for use when the installed set are ready to be replaced.

- Clean vessel and plugs with a mild detergent soap and rinse thoroughly.

- Inspect all O-rings for cracks or nicks. Replace as necessary. Lubricate O-rings with an appropriate petroleum or silicone based-lubricant and re-install on all adapters and end plugs.

- Lubricate the brine seal on the inlet end of the new membrane. Install new membrane into the feed end of vessel in the direction shown in Figures 4 or 5. Note the brine seal end.

- Install end plugs into their proper ends. IF END PLUGS ARE INSTALLED ON THE WRONG ENDS, THE SYSTEM WILL NOT OPERATE PROPERLY.

- Install the retaining rings or half clamps (and product fittings if removed).

- Mount desalinator(s) in frame. Do not over tighten the clamp retaining screws. Use a board to support the vessel(s) off the floor and above the bottom of the frame. Connect feed, concentrate, and product lines to their proper ports.

7.4 SEDIMENT FILTER CARTRIDGE REPLACEMENT

- Before servicing, always disconnect power to the unit to avoid shock.
- Close feed water and tank valves.
- Relieve pressure in system.
- Remove pre-filter sump by turning clockwise (as viewed from the top). A filter wrench may be necessary.
- Remove cartridge and inspect. If cartridge is extremely silted, you should consider changing more often. Discard old cartridge.
- Remove O-ring from seat in sump and inspect for cracks or nicks. Replace as necessary.
- Inspect sump for cracks, especially in the threaded area. Replace as necessary.
- Lubricate O-ring with an appropriate silicone-based lubricant. Install o-ring into its seat in sump.
- Install new sediment cartridge.
- Replace sump by screwing it into cap in a counter-clockwise direction (as viewed from top). A wrench should not be needed. Hand tightened is sufficient.
- Restore water and power; check for leaks.

8.0 PLANT SHUTDOWN

RO systems require brine replacement for short or long-term shutdown. The duration between flushes depends on feed water, usage conditions, and type of unit and duration of the shutdown.

The shutdown procedure should be performed at a minimum every 3 weeks. Higher TDS feed water and/or the system located in elevated temperatures may require the shutdown procedure to be performed weekly.

If there is a chance of microbial activity in the water the shutdown procedure should be performed at least weekly.

8.1 SHUTDOWN PROCEDURE

Before making any of the valve changes indicated below, run the system and record the operating pressures and flows. This will aid in putting the unit back in service in the future.

For subsequent periodic flushes, leave the valve settings as directed below and re-install the feed water sediment filter and flush as directed.

For the TV series units there is a small white lever at the base of the solenoid on the valve (located in the feed water sediment filter outlet manifold plumbing). Turning this lever to point to the side opens the valve. This allows feed water to flow through the unit just at feed water pressure. To get the maximum flushing conditions, close the re-circulation valve and open the brine valve. This flow will flush the brine out of the membrane(s) and will produce a small product flow.

For systems with atmospheric tanks, the product will flow to the tank. For systems with pressure

tank storage, dump the pressure in the tank to zero so product flow can occur. Allow feed water to flow for at least 20 minutes for the TV-10000, to 30 minutes for the TV-12000.

Close the feed water valve and allow the filter pressure to go to zero. Remove the sediment filter housing and element. Dump the water and set the filter element aside to drain and dry. The sediment filter must be reinstalled for each subsequent flush.

Observe the product and brine water at the beginning of the flush operation. If either the product or brine seem to be fouled, a more frequent flushing is indicated.

8.2 RESTART PROCEDURE

Perform a flush cycle as indicated above (with feed water sediment filter installed). Move the solenoid valve lever to the closed position. Turn the RO system on and adjust brine and re-circulation valves to produce the original operating pressure and flow conditions.

9.0 PARTS, ACCESSORIES AND SPARES

Where the spares schedule is shown at the group heading, determine the component installed in your RO unit. We recommend spares be available after the time indicated. Some components scheduled for spares are for options, different voltages or 50 Hz units. Ensure the spares you choose are applicable to your RO system. Feed water conditions may indicate more frequent replacement, particularly for filtration and membranes.

SPARES SCHEDULE

PUMP/MOTOR		2 years
107199	10 Stage Pump & Motor (3 phase, 60 Hz))	
103446	10 Stage Pump & Motor (1 phase, 60 Hz))	
107200	15 Stage Pump & Motor (3 phase, 50 Hz)	
VESSELS		
105280	Vessel Assy, 4"ODx40"L, 316SS, U-Pin, Side Ports, FT Style	
104217	O-Ring set	1 year
105270	Vessel Assy, 4"ODx40"L, PVC, Lock Ring, Side Ports, FT Style	
105998	Plug	
105999	Locking Ring	
104217	O-ring Set	1 year
MEMBRANES		2 years
107702	membrane, 4040, TF, AG, FT style	
107744	membrane, 4040, TF, AK, FT style, Low Energy	
107724	membrane, 4040, TF, CPA2, FT style	
107712	membrane, 4040, TF, ESPA1, FT style, Low Energy	
107704	membrane, 4040, TF, ESPA3, FT style, Low Energy	
MONITORING AND CONTROL		
105931	Microprocessor Control in Enclosure, Wiring Harness	
105356	Valve, Solenoid Body, ¾ "fpt	2 years
102350	Valve, Solenoid Body, 3/8" fpt (Auto Flush System)	2 years
105285	Gauge, 100 psi, 2.5", SS Case, Bronze Int., Glycerin Filled	2 years
101275	Gauge, 300 psi, 2.5", SS Case, Bronze Int., Glycerin Filled	2 years
100684	Gauge, 100 psi, 2.5", SS Case, SS Int., Glycerin Filled	2 years
101940	Gauge, 300 psi, 2.5", SS Case, SS Int., Glycerin Filled	2 years

105030	Switch, Tank, (NC), 40-60 psi	2 years
105031	Switch, Low Pressure, (NO), 12-22 psi	2 years
101431	Meter, TDS, 0-199, with sensor, Hanna	
105686	Sensor, Replacement for Hanna TDS	3 months
101962	Flow Meter, 0-10 gpm, Acrylic Block, Panel Mnt.	
103956	Flow Meter, 0-5 gpm, Acrylic Block, Panel Mnt., With Valve	
101923	Meter, TDS, 0-999, with sensor, HM Digital	
103354	Flow Meter, 0-10 gpm, Acrylic Block, Panel Mnt., with Valve	

FILTRATION

100298	Housing/Cap Assy, 20", ¾"fpt ports	
105191	Filter Cartridge, 20" Sediment, 10 micron	3 months
100300	Filter Cartridge, 20" Sediment, 20 micron	3 months
103355	Filter Cartridge, 20" Sediment, 1 micron	3 months

MISCELLANEOUS

107152	Frame, TV-6 & 8K, Stainless Steel	
107160	Panel, Main, ¼" white ABS	
100740	Vessel Mounting Clamp (for PVC vessels)	
107169	Foot, Adjustable, 1/4-20 x 2" Stem	
103370	This INSTRUCTION MANUAL	

ELECTRICAL

103448	Contactor, 24V, 60Hz, 12 amp	1 year
103625	Contactor, 24V, 50Hz, 12 amp	1 year
101493	Contactor, 120V, 60Hz, 12 amp	1 year
101494	Relay, Overload (Three Phase)	1 year
107205	Relay, Overload (Single Phase)	1 year
103082	Coil, Solenoid, 24V, 50/60Hz (Auto Flush System)	1 year
105360	Coil, Solenoid, 24V, 50/60Hz (Feed Valve)	1 year
107007	PLC, board only	2 year
103236	Enclosure, Electrical Box, 10.25" x 4" x 3.75", Predrilled	

TOMAR LIMITED ONE YEAR WARRANTY
FOR LIGHT AND COMMERCIAL INDUSTRIAL SYSTEMS

EXTENT OF WARRANTY COVERAGE

The Tomar Limited Warranty extends to the original purchaser of the system. This warranty covers all parts and factory labor needed to repair any Tomar-provided item that proves to be defective in material, workmanship, or factory preparation. The warranty applies for the first full year from date of purchase. Items subject to normal maintenance, such as O-rings, filter elements, etc. are not covered under this warranty. Items replaced under warranty will be warranted for a period of one year from the date of return shipment of the repaired or replacement unit to the owner.

DISCLAIMERS

This warranty applies if the system is installed and used in compliance with the instructions enclosed with the system.

This warranty does not cover the cost of repairs or adjustments to the unit, that may be needed, due to the use or installation of improper parts, equipment, or materials. This warranty does not cover unauthorized alteration of the unit or failure of a unit caused by such alteration or by unauthorized repairs.

The Tomar Limited Warranty does not cover malfunctions of your unit due to misuse, alteration, lack of regular maintenance, misapplication, tampering, or operating at too high a recovery. In addition, damage to the unit due to fire, accident, negligence, acts of God, or events beyond the control of Tomar are not covered by this warranty.

Tomar warrants the membranes per the manufacturers' warranty. These warranties generally cover faulty material and workmanship for anywhere from 1 to 3 years. Membrane fouling will normally not be covered. The manufacturers' warranty of elements selected will be provided on demand.

Tomar warrants all items supplied by outside vendors, that are used as part of the system provided, per the manufacturer's warranties. These warranties generally cover faulty material and workmanship for 1 year.

INCIDENTAL AND CONSEQUENTIAL DAMAGES

Tomar will not assume the responsibility for payment of incidental or consequential damages, such as lost time, inconvenience, damage to personal property, loss of revenue, commercial losses, postage, travel, telephone expenditures, or other losses of this nature, which result from failure of this unit to comply with expressed or implied warranties.

OWNER'S WARRANTY RESPONSIBILITIES

Under the provisions of this warranty, the owner is expected to timely perform regular maintenance on the unit, as explained in the Tomar Operating and Maintenance Guide. Neglect, improper maintenance, abuse, or unapproved modifications may invalidate this warranty. Should the unit develop a defect or otherwise fail to perform within the provisions of this warranty, you must notify your Tomar dealer or Tomar directly.

In order to process your claim in a timely manner a Returned Goods Authorization (RGA) number will be assigned. Include the RGA number, with an explanation of the observed defect, with the item being returned. Items returned under the RGA will be reviewed by Tomar or forwarded to the original manufacturer for evaluation. Items returned to Tomar must be sent prepaid.

NOTES

CHEMICAL INJECTION PUMP SETTINGS

This antiscalant injection pump and tank have been provided for use with an R.O. system producing approx. 12000 GPD product water flow. The following instructions cover installation and adjustment of the antiscalant pump for this application. Refer to the manufacturer's instruction manual (attached) for more detailed information.

1. Locate the pump & tank convenient to the R.O. system. The pump power cord should be connected to the female cord receptacle hanging below the R.O. system control panel and marked for connection to the antiscalant pump.

2. The antiscalant injector and a length of 3/8" tubing are provided loose with the antiscalant pump & tank. The injector is a 1/2" NPT size and should be installed in a 1/2" threaded tee which is located on the plumbing line feeding the R.O. system. If the plumbing installed to feed the R.O. system is 3/4" size then the tee would need to be 3/4" with a 3/4" x 1/2" threaded bushing installed in the tee branch. The tubing at the end of the injector should be trimmed so that, after it is screwed into the tee, the tip is just visible when looking into the tee from one end. Next install the 3/8" tubing between the injector and the antiscalant pump. The tubing nuts should only be tightened finger tight.

3. The antiscalant solution is made by diluting the concentrated Vitec 3000 with either distilled or R.O. water. Add 1.5 gallons of concentrate to the tank. Then fill the tank up to the 15 gallon mark on the side of the tank with the purified water. Mix for a minute or two with a clean stick or length of PVC pipe then replace the tank lid.

4. The following adjustments must be made with the R.O. system running.

WARNING

*Never attempt to rotate the stroke knob (the large central knob) on the antiscalant pump when the pump is **not** running.*

With the R.O. and the pump running, set the STROKE knob in the center of the panel to 100%. Then set the RATE knob at the lower right of the panel to 100%. Turn the priming knob at the top of the pump outlet full counterclockwise and watch the clear tubing that runs back into the top of the tank. When fluid flows in this tube steadily then close the priming knob by turning it full clockwise. Antiscalant solution should now be injecting into the feed plumbing going to the R.O. system.

5. Again with the R.O. system and injection pump running, make the final operating adjustments to the pump settings. Turn the large STROKE knob to the 25% mark. Then turn the smaller RATE knob to the 17% mark. The pump should now be injecting antiscalant solution at the rate appropriate for the 12000 GPD R.O. system. The pumping rate should be equal to about 0.26 gallons per day of diluted solution. This means that, if the R.O. were operated non-stop for 24 hours a day, the solution tank would be empty in 57 days. If it were operated an average of 12 hours per day the solution would last 114 days, etc. Even though the consumption is very moderate, periodic checks of the tank level should be made to ensure that the level is dropping. If some circumstance causes the pump to lose its prime it could sound as if it is operating but it would not be injecting solution.

PERFORMANCE RECORD

DATE	PRE-FILTER IN PSI	PRE-FILTER OUT	FEED WATER PPM	FEED WATER TEMP.	PRODUCT GPM	PRODUCT PPM	VESSEL IN PSI	VESSEL OUT	BRINE GPM	BRINE RCVRY.	REJ. %

CUSTOMER: RAIN DANCE
S.O. NO.: 100524
DATE: 4-8-10

TOMAR

804 N. TWIN OAKS VALLEY ROAD
SAN MARCOS, CA 92069
TEL. 760 510-9770
FAX 760 510-8235
EMAIL sales@tomarwater.com

MODEL # TV-12000 SERIAL NO. # 7381

VESSELS(S): 4040 SS, 6 EA.
MEMBRANE(S): 4040 THIN FILM
MEMBRANE TYPE: HYDRANAUTICS ESPA1

POWER SOURCE VOLTAGE 208 HZ 60 PHASE 1

FEED WATER				PRODUCT WATER			BRINE		RECIRC	NOTES
PSI TAP	PSI PUMP	uS	TEMP	GPM	GPD	uS	GPM	GPD	GPM	
25	130	880	20°C	7.8	11232	20	2.0	2880	3.0	VESS. OUT = 110

PUMP FLOW(PROD-BRINE, WITH RECIRC) ML/MIN 12.8 GPM

PUMP
- MFR. GOULDS
- MODEL 18GBS2014N4
- MOTOR 2 HP
- MFR. BALDOR
- MODEL IP44
- RPM 3450
- PRV SETTING —
- ORIFICE DIA —
- LP SWITCH SETTING
- PUMP ON 22
- PUMP OFF 12
- TESTED BY AR
- TEST DATE 4-8-10

PERFORMANCE SUMMARY

GPD	12939 TEMP. CORR. TO 25°C
% REJ.	98%

CONVERSIONS

- ☐ ML/MM X 0.000264=GPM
- ☐ ML/MIN X 0.38016=GPD
- ☐ 1440 X GPM=GPD
- ☐ % REJCTN = PROD./(PROD+BRINE)
- ☐ PROD. + BRINE = FEED
- ☐ TEMP. CORRECTION = 1.4%/F

SPECIAL FEATURES AND OPTIONS:
SYSTEM EQUIPPED WITH PERM. FLUSH OPTION

TOMAR
WATER TREATMENT SYSTEM

MODEL TV-12000SS
P/N TV-12000SS
S/N 7381
208-220V/1PH/60HZ/11A

TOMAR WATER SYSTEMS INC.
SAN MARCOS, CA
TEL. 760 510-9770 FAX 760 510-8235

ITT

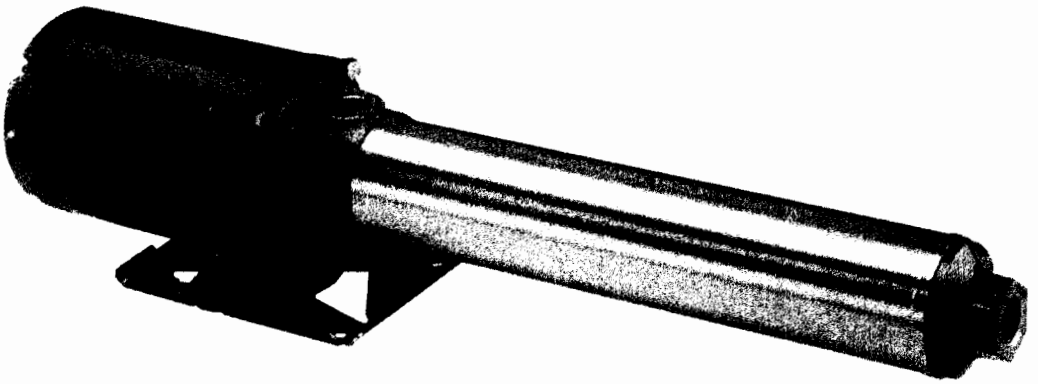
Commercial Water

Goulds Pumps

G&L SERIES

MODEL GB

Installation, Operation and
Maintenance Instructions



GOULDS PUMPS

Goulds Pumps is a brand of ITT Water Technology, Inc.
- a subsidiary of ITT Industries, Inc.

www.goulds.com

Engineered for life

SAFETY INSTRUCTIONS

TO AVOID SERIOUS OR FATAL PERSONAL INJURY OR MAJOR PROPERTY DAMAGE, READ AND FOLLOW ALL SAFETY INSTRUCTIONS IN MANUAL AND ON PUMP.

THIS MANUAL IS INTENDED TO ASSIST IN THE INSTALLATION AND OPERATION OF THIS UNIT AND MUST BE KEPT WITH THE PUMP.

This is a SAFETY ALERT SYMBOL. When you see this symbol on the pump or in the manual, look for one of the following signal words and be alert to the potential for personal injury or property damage.

⚠ DANGER Warns of hazards that WILL cause serious personal injury, death or major property damage.

⚠ WARNING Warns of hazards that CAN cause serious personal injury, death or major property damage.

⚠ CAUTION Warns of hazards that CAN cause personal injury or property damage.

NOTICE: INDICATES SPECIAL INSTRUCTIONS WHICH ARE VERY IMPORTANT AND MUST BE FOLLOWED.

THOROUGHLY REVIEW ALL INSTRUCTIONS AND WARNINGS PRIOR TO PERFORMING ANY WORK ON THIS PUMP.

MAINTAIN ALL SAFETY DECALS.

⚠ WARNING

Hazardous fluids can cause fire, burns or death.

UNIT NOT DESIGNED FOR USE WITH HAZARDOUS LIQUIDS OR FLAMMABLE GASES. THESE FLUIDS MAY BE PRESENT IN CONTAINMENT AREAS.

DESCRIPTION and SPECIFICATIONS:

The GB Series pump is a portable horizontal multi-stage pump designed for residential and agricultural washdown, misting and general boosting services.

The 304 stainless steel version of the GB is used for HVAC, general commercial, reverse osmosis and filtration applications.

ENGINEERING DATA

- Maximum Liquid Temperatures: 160°F (72°C).
- Maximum Suction Pressure 75 psi.
- Pipe connections are 1" NPT suction and discharge. ¾" Hose Adapters are available.
- Capacities to 33 GPM.
- Heads to 600 Feet (260) psi.
- Rotation: Right hand, ie; clockwise when viewed from motor end.

PIPING

- Piping should be no smaller than the pump discharge and/or suction connections. Piping should be kept as short as possible, avoiding unnecessary fittings to minimize friction losses.
- All piping **MUST** be independently supported and **MUST NOT** place any piping loads on the pump.
- All joints **MUST** be airtight. Use 3 – 4 wraps of Teflon™ tape to seal threaded connections.

WIRING AND GROUNDING

⚠ WARNING

Hazardous voltage can shock, burn or cause death.

⚠ Install ground and wire according to local and National Electrical Code requirements.

⚠ Install an all leg disconnect switch near the pump.

⚠ Disconnect and lockout electrical supply before installing or servicing pump.

⚠ Electrical supply **MUST** match pump's name plate specifications. Incorrect voltage can cause fire and/or damage to the motor and voids warranty.

⚠ Motors not protected **MUST** be provided with contactors and thermal overloads on single phase motors, or starters with heaters on three phase motors. See motor nameplate.

- Use only stranded copper wire to motor and ground. The ground wire **MUST** be at least as large as the wire to the motor. Wires should be color coded for ease of maintenance.

⚠ WARNING Pumps with open spray application must be plugged into electrical service which is protected by a Ground Fault Service Interrupter. Failure to do so may result in serious personal injury or death and property damage.

- Follow motor manufacturer's wiring diagram on the motor nameplate or terminal cover carefully.

⚠ WARNING
Hazardous voltage

FAILURE TO PERMANENTLY GROUND THE PUMP, MOTOR AND CONTROLS BEFORE CONNECTING TO ELECTRICAL POWER CAN CAUSE SHOCK, BURNS OR DEATH.

ROTATION

NOTICE: INCORRECT ROTATION MAY CAUSE DAMAGE TO PUMP AND VOIDS THE WARRANTY.

- Correct rotation is right-hand, CLOCKWISE when viewed from the motor end.
- To reverse three phase motor rotation interchange any two power supply leads.

With screwdriver in the slotted end of the pump shaft, turn the unit over (clockwise) before replacing plug (18). It should turn with no resistance except that of the shaft seal.

TROUBLESHOOTING

FAILURE TO DISCONNECT AND LOCKOUT ELECTRICAL POWER BEFORE ATTEMPTING ANY MAINTENANCE CAN CAUSE SHOCK, BURNS OR DEATH.

SYMPTOM

MOTOR NOT RUNNING
See Probable Causes 1 thru 5

LITTLE OR NO LIQUID DELIVERED
See Probable Causes 6 thru 12

EXCESSIVE POWER CONSUMPTION
See Probable Causes 3, 12, 13 & 14

EXCESSIVE NOISE & VIBRATION
See Probable Causes 3, 6, 7, 10, 13, 15 & 16

PROBABLE CAUSES

1. Motor thermal protector tripped
2. Open circuit breaker or blown fuse
3. Impeller binding
4. Motor improperly wired
5. Defective motor
6. Pump is not primed, air or gases in pumpage
7. Discharge, suction plugged or valve closed
8. Incorrect rotation (3 phase only)
9. Low voltage or phase loss
10. Impeller worn or plugged with debris
11. System head too high
12. Incorrect impeller diameter
13. Discharge head too low — excessive flow rate
14. Fluid viscosity and/or specific gravity too high
15. Worn bearing
16. Pump, motor or piping loose

ITT

Commercial Water

GOULDS PUMPS LIMITED WARRANTY

This warranty applies to all water systems pumps manufactured by Goulds Pumps.

Any part or parts found to be defective within the warranty period shall be replaced at no charge to the dealer during the warranty period. The warranty period shall exist for a period of twelve (12) months from date of installation or eighteen (18) months from date of manufacture, whichever period is shorter.

A dealer who believes that a warranty claim exists must contact the authorized Goulds Pumps distributor from whom the pump was purchased and furnish complete details regarding the claim. The distributor is authorized to adjust any warranty claims utilizing the Goulds Pumps Customer Service Department.

The warranty excludes:

(a) Labor, transportation and related costs incurred by the dealer;
(b) Reinstallation costs of repaired equipment;
(c) Reinstallation costs of replacement equipment;
(d) Consequential damages of any kind; and,
(e) Reimbursement for loss caused by interruption of service.

For purposes of this warranty, the following terms have these definitions:

(1) "Distributor" means any individual, partnership, corporation, association, or other legal relationship that stands between Goulds Pumps and the dealer in purchases, consignments or contracts for sale of the subject pumps.
(2) "Dealer" means any individual, partnership, corporation, association, or other legal relationship which engages in the business of selling or leasing pumps to customers.
(3) "Customer" means any entity who buys or leases the subject pumps from a dealer. The "customer" may mean an individual, partnership, corporation, limited liability company, association or other legal entity which may engage in any type of business.

THIS WARRANTY EXTENDS TO THE DEALER ONLY.

GOULDS PUMPS

IM055R02 March, 2006

Engineered for life

Información para el propietario

Número de modelo de la bomba: _____

Número de serie de la bomba: _____

Representante: _____

Número telefónico del representante: _____

Fecha de compra: _____

Fecha de Instalación: _____

Lecturas actuales de la puesta en servicio:

1 Ø	3 Ø	L1-2	L2-3	L3-1
Amps: _____	Amps: _____	_____	_____	_____
Voltios: _____	Voltios: _____	_____	_____	_____

⚠ ADVERTENCIA Tensión peligrosa

SI LA BOMBA, EL MOTOR Y LOS CONTROLES NO SE CONECTAN A TIERRA EN FORMA PERMANENTE ANTES DE CONECTAR LA ALIMENTACIÓN ELÉCTRICA, SE PUEDEN PRODUCIR SACUDIDAS ELÉCTRICAS, QUEMADURAS Y HASTA LA MUERTE.

ROTACIÓN

AVISO: LA ROTACIÓN INCORRECTA PUEDE DAÑAR LA BOMBA Y ANULA LA GARANTÍA.

- La rotación correcta es hacia la derecha, en el SENTIDO DE LAS AGUJAS DEL RELOJ cuando se mira desde el extremo del motor.
- Para invertir la rotación de un motor trifásico, intercambie dos conductores eléctricos cualesquiera.

OPERACIÓN

⚠ ADVERTENCIA Tensión peligrosa

SI SE SALPICA O SUMERGE EN FLUIDOS UN MOTOR ABIERTO A PRUEBA DE FILTRACIONES PUEDE OCURRIR UN CORTOCIRCUITO Y PROVOCARSE UN INCENDIO, SACUDIDAS ELÉCTRICAS, QUEMADURAS, O INCLUSO LA MUERTE.

AVISO: LA BOMBA DEBE ESTAR TOTALMENTE CERRADA ANTES DE INICIAR LA OPERACIÓN. NO OPERAR LA BOMBA EN SECO.

- Luego de estabilizar el sistema en las condiciones normales de operación, controlar la tubería. Si fuera necesario, ajustar los soportes de la tubería.

⚠ PRECAUCIÓN No operar la bomba en seco, se dañará el sello mecánico. No operar contra una tobera cerrada por períodos de tiempo prolongados pues se dañarán la bomba y la tubería.

ENSAMBLE DE LA MANIJA

Retirar los dos pernos superiores del adaptador del motor. Insertarlos a través de la parte posterior de la manija en el adaptador del motor y ajustarlos seguramente.

TOBERAS

Es importante seleccionar la tobera apropiada para el correcto desempeño de la bomba. Se debe examinar el grifo que sirve de agua a la bomba para determinar la velocidad del flujo que proveerá. Si el flujo de un minuto con el grifo abierto es:

7 galones — Usar la tobera V2005 de 6 gpm (que se incluye con cada AM2)

6 galones — Usar la tobera V1502 de 5 gpm
5 galones — Usar la tobera SN0045 de 4 gpm
4 galones — Usar la tobera V10152 de 3 gpm
} AM 7 Kit

Utilizando este método para seleccionar las toberas es posible mantener una presión positiva en la admisión de la bomba. Esto evitará que la bomba "robe" agua de otros grifos.

USO EN GRANJAS LECHERAS

Recomendamos que todas las pistolas WaterGuns® que se utilizan en granjas que producen leche grado "A" se equipen con un igualador de presión instalado de acuerdo a las instrucciones que acompañan a este dispositivo. Esto evitará la presión subatmosférica en la línea de suministro aún cuando el suministro de agua disminuya. Sugerimos colgar la pistola WaterGun de la pared, a por lo menos 18 pulgadas del suelo, y contar con un soporte para mangueras de forma de poder guardar la manguera de descarga sin que esté en contacto con el piso.

MANTENIMIENTO

⚠ ADVERTENCIA Tensión peligrosa

SI NO SE DESCONECTA Y BLOQUEA EL SUMINISTRO ELÉCTRICO ANTES DE INTENTAR TAREAS DE MANTENIMIENTO, SE PUEDEN PRODUCIR SACUDIDAS ELÉCTRICAS, QUEMADURAS O INCLUSO LA MUERTE.

- Los motores tienen cojinetes lubricados en forma permanente. No es posible, ni necesario, lubricarlos. Siga las recomendaciones del fabricante para el mantenimiento.
- Para **RETIRAR** la bomba de servicio, desagote todo el líquido bombeado de la bomba y la tubería.
- Para **VOLVER A PONER** la bomba en servicio, reemplace todos los tapones y tubería utilizando cinta de Teflon™ o equivalente en las roscas macho.
- Consulte la sección **"OPERACIÓN"** de este manual.

DESMONTAJE

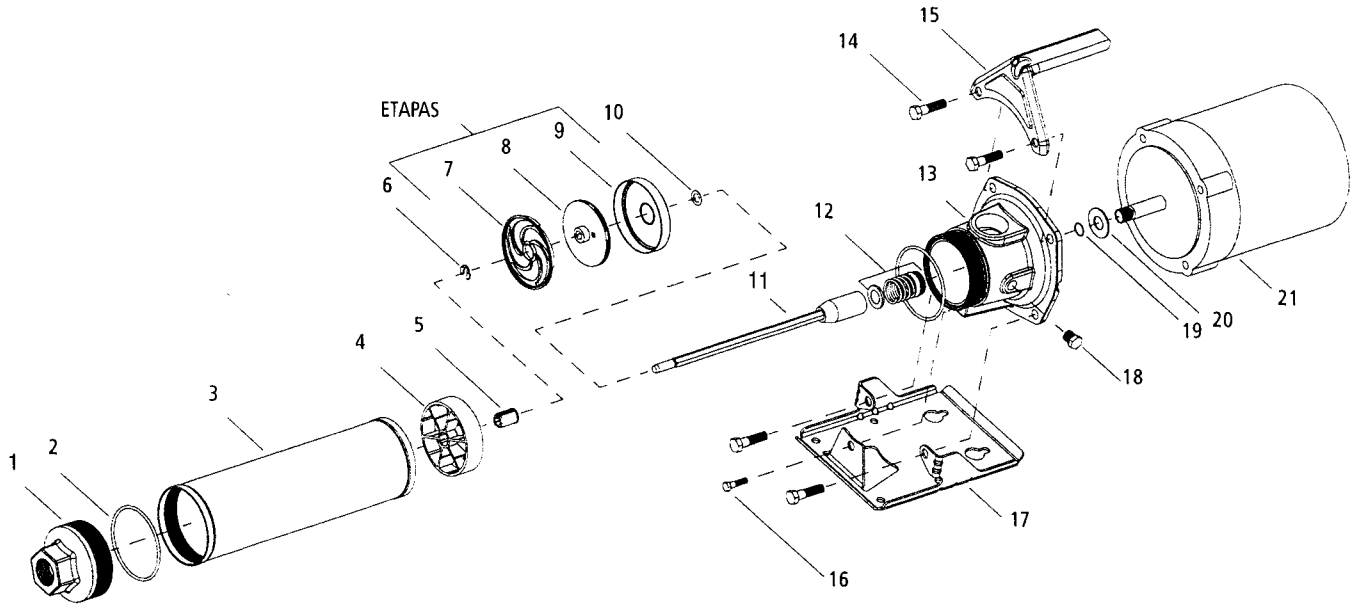
- Coloque las llaves para tuercas en el adaptador (13) y el cabezal de descarga (1) y destornille el cabezal de descarga y la cubierta.

NOTA: LA CARCASA TIENE ROSCA IZQUIERDA EN AMBOS EXTREMOS Y ESTÁ SELLADA CON ANILLOS EN O (2).

- Retire el anillo de sujeción (6) del extremo del eje (11). Ahora puede retirar las etapas, consistentes cada una en un recipiente (9), un impulsor (8) y un difusor (7). Si la bomba se ha atascado con materia extraña pero no presenta otros daños, tal vez no sea necesario proseguir con el desmontaje. Si fuera necesario reemplazar el conjunto del eje (11), el sello del eje (12) o el motor, prosiga de acuerdo a las siguientes indicaciones:
  - Retire el tapón (18) de la parte posterior del motor y sostenga el eje del motor con un destornillador. Destornille el conjunto del acoplamiento del eje de la bomba (11) del eje del motor. Retire los cuatro pernos de montaje del motor (14) y separe

Ítem No.	Descripción	Materiales
1	Cabezal de descarga	Hierro fundido
2	Anillo en O, carcasa	BUNA
3	Carcasa	Acero inox. 304
4	Cruceta del cojinete	Policarbonato relleno de vidrio
5	Cojinete	Uretano
6	Anillo de retención	Acero inox. 301
7	Difusor	Policarbonato relleno de vidrio
8	Impulsor	Policarbonato relleno de vidrio
9	Recipiente	Acero inox. 304

Ítem No.	Descripción	Materiales
10	Cuña	Acero inox. 304
11	Ensamble eje/acoplamiento	Acero inox. 304
12	Sello mecánico	Varía
13	Adaptador del motor	Hierro fundido
14	Tornillo, adaptador del motor al motor	Acero
15	Manija – optativa	Acero
16	Tornillo, base al adaptador del motor	Acero
17	Base	Acero
18	Tapón de tubería	Acero
19	Anillo en O, eje del motor	BUNA
20	Deflector	BUNA
21	Motor	Eje del motor Acero inox. 300



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Agua Industrial

GARANTÍA LIMITADA DE GOULDS PUMPS

Esta garantía es aplicable a todas las bombas para sistemas de agua fabricadas por Goulds Pumps.

Toda parte o partes que resulten defectuosas dentro del período de garantía serán reemplazadas sin cargo para el comerciante durante dicho período de garantía. Tal período de garantía se extiende por doce (12) meses a partir de la fecha de instalación, o dieciocho (18) meses a partir de la fecha de fabricación, cualquiera se cumpla primero.

Todo comerciante que considere que existe lugar a un reclamo de garantía deberá ponerse en contacto con el distribuidor autorizado de Goulds Pumps del cual adquiriera la bomba, y ofrecer información detallada con respecto al reclamo. El distribuidor está autorizado a liquidar todos los reclamos por garantía a través del Departamento de Servicios a Clientes de Goulds Pumps.

La presente garantía excluye:

(a) La mano de obra, el transporte y los costos relacionados en los que incurra el comerciante;
(b) los costos de reinstalación del equipo reparado;
(c) los costos de reinstalación del equipo reemplazado;
(d) daños emergentes de cualquier naturaleza; y
(e) el reembolso de cualquier pérdida causada por la interrupción del servicio.

A los fines de esta garantía, los términos "Distribuidor", "Comerciante" y "Cliente" se definen como sigue:

(1) "Distribuidor" es aquel individuo, sociedad, corporación, asociación u otra entidad jurídica que opera entre Goulds Pumps y el comerciante para la compra, consignación o contratos de venta de las bombas en cuestión.
(2) "Comerciante" es todo individuo, sociedad, corporación, asociación u otra entidad jurídica que realiza negocios de venta o alquiler-venta (leasing) de bombas a clientes.
(3) "Cliente" es toda entidad que compra o que adquiere bajo la modalidad de leasing las bombas en cuestión de un comerciante. El término "cliente" puede significar un individuo, una sociedad, una corporación, una sociedad de responsabilidad limitada, una asociación o cualquier otra entidad jurídica con actividades en cualquier tipo de negocios.

LA PRESENTE GARANTÍA SE EXTIENDE AL COMERCIANTE ÚNICAMENTE

GOULDS PUMPS

IM055R02 Marzo, 2006

Engineered for life

el motor del marco retirandolo directamente hacia atrás.

- Puede ser necesario palanquear el motor con dos destornilladores si el sello del eje se pega. El asiento estacionario del sello del eje puede empujarse fuera del adaptador desde el lado del motor. Hay un anillo en O de goma en el acoplamiento (19), entre el eje del motor y el acoplamiento, que generalmente permanece en el eje del motor mientras el sello se jala por encima de él.

REENSAMBLAJE

Verifique que el deflector de goma (20) y el anillo en O del acoplamiento (19) estén sobre el eje del motor. Si están gastados o dañados, reemplácelos. Instale el asiento del sello estacionario en el bastidor (13) y monte el bastidor (13) y la manija (15) en el motor. Instale el elemento rotativo del sello, asegurándose de que las caras estén limpias y que el último miembro de goma pase sobre el anillo en O del acoplamiento hasta el eje del motor. Enrosque el conjunto del eje de la bomba y el acoplamiento (11) hasta que se asiente sobre el eje del motor. Con una regla atravesada sobre la cara del bastidor, verifique la ubicación del extremo exterior del acoplamiento. Debido a variaciones en la longitud del eje del motor, etc., el extremo se encontrará entre 0,030 pulgadas corto o a nivel. Agregue cuñas 7K155 de 0,010 pulgadas hasta que estén a nivel o sobresalgan, es decir, hasta que la última cuña interfiera con la regla. Coloque las etapas requeridas, controlando cada etapa con la regla atravesada sobre el recipiente y verificando la ubicación del cubo del impulsor para determinar si es necesario agregar cuñas. Una vez que todas las etapas estén sobre el eje, reemplace el anillo de sujeción (6).

Inspeccione el anillo en O en el bastidor y el cabezal de descarga y reemplácelos si estuvieran dañados. Instale la carcasa (3) y la cruceta del cojinete (4). Enrosque el cabezal de descarga (1) (atención: roscas hacia la izquierda) y ajuste.

Con un destornillador en el extremo ranurado del eje de la bomba, dé vuelta la unidad (en el sentido de las agujas del reloj) antes de reemplazar el tapón (18). Debe girar sin ninguna otra resistencia que la del sello del eje.

IDENTIFICACIÓN Y RESOLUCIÓN DE PROBLEMAS

SI NO SE DESCONECTA Y BLOQUEA EL SUMINISTRO ELÉCTRICO ANTES DE INTENTAR TAREAS DE MANTENIMIENTO, SE PUEDEN PRODUCIR SACUDIDAS ELÉCTRICAS, QUEMADURAS O INCLUSO LA MUERTE.

SÍNTOMA

EL MOTOR NO FUNCIONA
Lea las causas N° 1 a 5 en la lista de causas probables

SE ENTREGA POCO O NADA DE LÍQUIDO
Lea las causas N° 6 a 12 en la lista de causas probables

CONSUMO EXCESIVO DE ELECTRICIDAD
Lea las causas N° 3, 12, 13 y 14 en la lista de causas probables

RUIDO O VIBRACIÓN EXCESIVOS
Lea las causas N° 3, 6, 7, 10, 13, 15 y 16 en la lista de causas probables

CAUSAS PROBABLES

1. Se disparó el protector térmico del motor
2. Interruptor de circuito abierto o fusible quemado
3. Agarrotamiento del impulsor
4. El cableado del motor es incorrecto
5. El motor es defectuoso
6. La bomba no está cebada, hay aire o gases en el agua bombeada.
7. Descarga o succión bloqueadas o válvula cerrada
8. Rotación incorrecta (motor trifásico solamente)
9. Baja tensión o pérdida de fase
10. Impulsor gastado o taponado con residuos
11. Carga del sistema muy alta
12. Diámetro incorrecto del impulsor
13. Carga de descarga muy baja — velocidad excesiva de flujo
14. Viscosidad y/o gravedad específica del fluido muy altas
15. Cojinete gastado
16. Bomba, motor o tubería flojos

INSTRUCCIONES DE SEGURIDAD

PARA EVITAR LESIONES PERSONALES GRAVES O FATALES, Y DAÑOS SIGNIFICATIVOS A LA PROPIEDAD, LEA Y SIGA TODAS LAS INSTRUCCIONES DE SEGURIDAD QUE SE ENCUENTRAN EN ESTE MANUAL O EN LA BOMBA.

ESTE MANUAL TIENE LA FUNCIÓN DE ASISTIRLO EN LA INSTALACIÓN Y OPERACIÓN DE ESTA UNIDAD Y DEBE CONSERVARSE CON LA BOMBA.

Éste es un **SÍMBOLO DE ALERTA DE SEGURIDAD**. Cuando vea este símbolo sobre la bomba o en el manual, localice una de las siguientes palabras de señalización y esté alerta ante posibles lesiones personales o daños a la propiedad.

⚠ PELIGRO Advierte sobre los peligros que **PROVOCARÁN** lesiones graves, muerte o daños significativos a la propiedad.

⚠ ADVERTENCIA Advierte sobre los peligros que **PUEDEN PROVOCAR** lesiones graves, muerte o daños significativos a la propiedad.

⚠ PRECAUCIÓN Advierte sobre los peligros que **PROVOCARÁN o PUEDEN PROVOCAR** lesiones o daños a la propiedad.

AVISO: INDICA QUE EXISTEN INSTRUCCIONES ESPECIALES MUY IMPORTANTES QUE DEBEN RESPETARSE.

EXAMINE COMPLETAMENTE TODAS LAS INSTRUCCIONES Y ADVERTENCIAS ANTES DE REALIZAR CUALQUIER TRABAJO EN ESTA BOMBA.

CONSERVE TODAS LAS CALCOMANÍAS.

⚠ ADVERTENCIA

Los fluidos peligrosos pueden causar incendios, quemaduras o la muerte.

ESTA UNIDAD NO SE ENCUENTRA DISEÑADA PARA SER USADA CON LÍQUIDOS O GASES INFLAMABLES. ESTOS FLUIDOS PUEDEN ESTAR PRESENTES EN ÁREAS CONTAMINADAS.

DESCRIPCIÓN Y ESPECIFICACIONES

Las bombas de la Serie GB son bombas portátiles horizontales de etapas múltiples diseñadas para lavados residenciales y agrícolas, aplicaciones de rociado y servicios de refuerzo en general.

La versión en acero inoxidable 304 se utiliza en la industria de la calefacción y el acondicionamiento de aire, de filtración y ósmosis inversa y en aplicaciones comerciales en general.

DATOS DE INGENIERÍA

- Temperatura máxima del líquido: 160°F (72°C)
- Presión máxima de succión: 75 psi
- Las conexiones para la tubería son NPT de 1 pulgada en la succión y la descarga. Se encuentran disponibles adaptadores para mangueras de ¾ de pulgada.
- Capacidad hasta 33 GPM
- Carga hasta 600 pies (260 psi)
- Rotación: Hacia la derecha, es decir, en el sentido de las agujas del reloj cuando se observa desde el extremo del motor.

TUBERÍA

- La tubería no debe ser menor que las conexiones de descarga o succión de la bomba. Se debe mantener tan corta como sea posible, evitando el uso de conexiones innecesarias para minimizar las pérdidas por fricción.
- Toda la tubería **DEBE** estar soportada en forma independiente y **NO DEBE** existir ninguna carga de la tubería sobre la bomba.
- Todas las juntas **DEBEN** ser herméticas. Utilizar 3 ó 4 vueltas de cinta de Teflon™ para sellar las conexiones roscadas.

CABLEADO Y PUESTA A TIERRA

⚠ ADVERTENCIA

Un voltaje peligroso puede producir golpes eléctricos, quemaduras o la muerte.

⚠ Instalar el cableado y la puesta a tierra de acuerdo a los requisitos locales y al Código Eléctrico Nacional.

⚠ Instalar un interruptor de desconexión de todos los circuitos cerca de la bomba.

⚠ Desconectar y bloquear el suministro eléctrico antes de instalar la bomba o realizar tareas de mantenimiento.

⚠ El suministro eléctrico **DEBE** ser el que se especifica en la placa nominal de la bomba. Un voltaje incorrecto puede provocar un incendio y/o dañar el motor y anular la garantía.

⚠ Los motores sin protección DEBEN equiparse con contactores y protectores contra sobrecargas térmicas si son monofásicos, o con arrancadores con calentadores si son trifásicos. Consulte la placa nominal del motor.

- Use únicamente cable trenzado de cobre para la conexión al motor y a tierra. El cable a tierra **DEBE** ser por lo menos del mismo tamaño que el cable al motor. Los cables deben estar codificados con colores para facilitar el mantenimiento.

⚠ ADVERTENCIA Las bombas en aplicaciones de rociado abierto deben enchufarse en una fuente de suministro eléctrico protegida por un interruptor de servicio por falla a tierra. De no hacerlo, podrían ocasionarse lesiones personales graves o fatales y daños materiales.

- Siga cuidadosamente el diagrama de cableado indicado por el fabricante del motor en la placa nominal o en la tapa de la terminal.

ITT

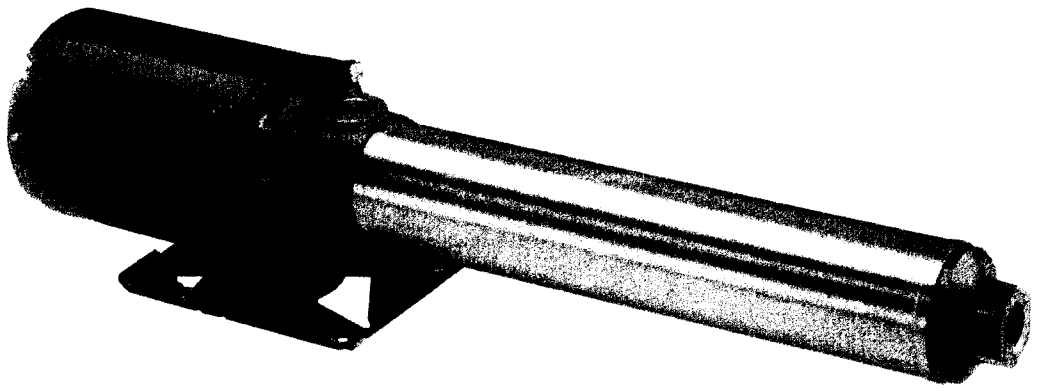
Agua Industrial

Goulds Pumps

SERIE G&L

MODELO GB

Instrucciones de instalación,
funcionamiento y mantenimiento



GOULDS PUMPS

Goulds Pumps son una marca de fábrica de ITT Water Technology, Inc. - un subsidiario de ITT Industries, inc.

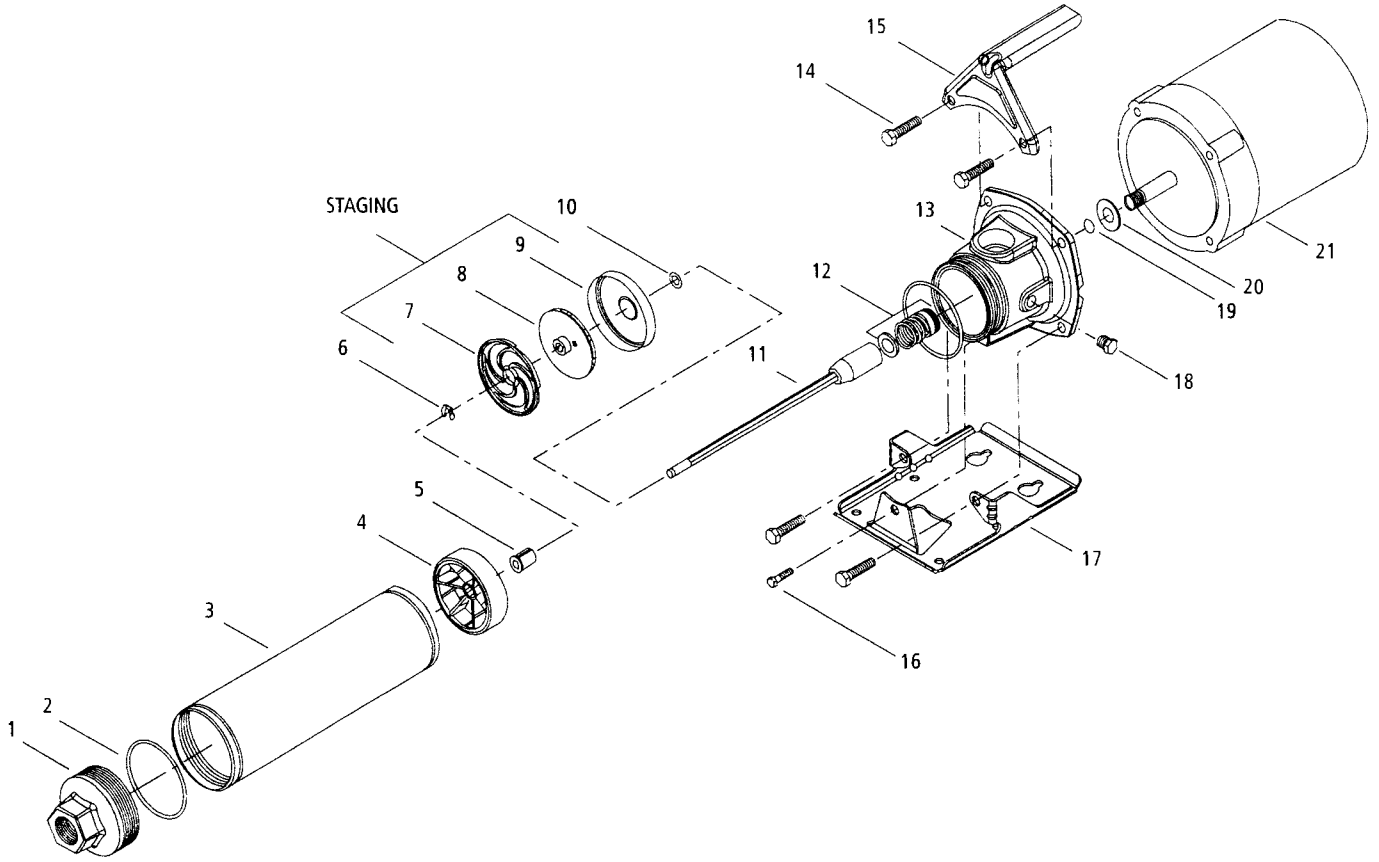
www.goulds.com

Engineered for life

GB COMPONENTS PARTS TABLE

Item No.	Description	Materials
1	Discharge Head	Cast Iron
2	O-ring, Casing	BUNA
3	Casing	304SS
4	Bearing Spider	Glass Filled Polycarbonate
5	Bearing	Urethane
6	Klip Ring	301SS
7	Diffuser	Glass Filled Polycarbonate
8	Impeller	Glass Filled Polycarbonate
9	Bowl	304SS

Item No.	Description	Materials
10	Shim	304SS
11	Shaft/Coupling Assembly	304SS
12	Mechanical Seal	Varies
13	Motor Adapter	Cast Iron
14	Screw, Motor Adapter to Motor	Steel
15	Handle – optional	Steel
16	Screw, Base to Motor Adapter	Steel
17	Base	Steel
18	Pipe Plug	Steel
19	O-ring, Motor Shaft	BUNA
20	Deflector	BUNA
21	Motor	Motor Shaft 300SS



⚠WARNING Hazardous voltage — SPLASHING OR IMMERSING OPEN DRIP PROOF MOTORS IN FLUIDS CAN SHORT OUT MOTOR AND CAUSE FIRE, SHOCK, BURNS OR DEATH.

NOTICE: PUMP MUST BE FULLY PRIMED BEFORE OPERATION. DO NOT RUN PUMP DRY.

- After stabilizing the system at normal operating conditions, check the piping. If necessary, adjust the pipe supports.

⚠CAUTION Do not run pump dry; damage to mechanical seal will result. Do not run against closed nozzle for prolonged periods or damage to pump and piping will result.

HANDLE ASSEMBLY

Remove two top bolts from motor adapter. Insert them through handle back into the motor adapter and tighten securely.

NOZZLING

It is important to choose the right nozzle for proper pump performance. The faucet supplying the water to the pump should be checked to see what rate of flow it will furnish. If the one min. flow with the faucet open is:

7 gals. — Use 6 gpm nozzle V2005 (which is included with each AM2)
6 gals. — Use 5 gpm nozzle V1502
5 gals. — Use 4 gpm nozzle SN0045 } AM 7 Kit
4 gals. — Use 3 gpm nozzle V10152

By using this method of choosing nozzles we can keep a positive pressure at the pump intake. This will keep the pump from "robbing" water from other faucets.

DAIRY FARM USE

We recommend that all WaterGuns® used on farms producing Grade "A" milk be equipped with a Vacuum Breaker, installed according to instructions supplied with Vacuum Breaker. This prevents sub-atmospheric pressure in the supply line even if the water supply should diminish. We suggest the WaterGun be hung on a wall at least 18" off the floor and that a hose rack be provided to store the discharge hose off the floor.

MAINTENANCE

⚠WARNING Hazardous voltage — FAILURE TO DISCONNECT AND LOCKOUT ELECTRICAL POWER BEFORE ATTEMPTING ANY MAINTENANCE CAN CAUSE SHOCK, BURNS OR DEATH.

- Motors have permanently lubricated bearings. No lubrication is possible or necessary. Follow the motor manufacturer's recommendations for maintenance.
- To REMOVE pump from service drain all pumpage from pump and piping.
- To RETURN pump to service replace all plugs and piping using Teflon™ tape or equivalent on male threads.
- Refer to "OPERATION" section of manual.

DISASSEMBLY

- Place wrenches on adapter (13) and discharge head (1), and unscrew discharge head and casing (3).

NOTE: CASING HAS A LEFT HAND THREAD ON BOTH ENDS AND IS SEALED WITH O-RINGS (2).

- Remove klip ring (6) from end of shaft (11). The stages, each comprising a bowl (9), impeller (8) and diffuser (7) may now be removed. If pump has been clogged by foreign matter, but otherwise undamaged, further dismantling may be unnecessary. If shaft assembly (11), shaft seal (12) or motor are to be replaced, proceed as follows:
  - Remove plug (18) from rear of motor and hold motor shaft with screwdriver. Unscrew pump shaft coupling assembly (11) from motor shaft. Remove four motor mounting bolts (14), separate the motor from frame by withdrawing it straight back.
  - Motor may have to be pried with two screwdrivers if the shaft seal sticks. The shaft seal stationary seat may be pushed out of adapter from the motor side. There is a rubber coupling o-ring (19) between motor shaft and coupling which will usually remain on the motor shaft as the seal is pulled over it.

REASSEMBLY

Check that the rubber deflector (20) and the coupling o-ring (19) are on the motor shaft. If they are worn or damaged, replace. Install stationary seal seat in frame (13) and mount frame (13) and handle (15) to motor. Install seal rotating element, making sure faces are clean and that the last rubber member goes over the coupling o-ring and onto the motor shaft. Screw the pump shaft and coupling assembly (11) on until it seats up against the motor shaft. With a straight edge across the face of the frame check the location of the outboard end of the coupling. Due to variations in motor shaft length, etc., it will be from .030" short to flush. Add .010" shims 7K155 until they are flush or higher, i.e., the last shim interferes with the straight edge. Put the required stages on checking each stage for additional shim requirements by putting the straight edge across the bowl and checking the location of the impeller hub. After all the stages are on the shaft replace klip ring (6).

Check o-ring on both frame and discharge head and replace if damaged. Install casing (3) and bearing spider (4). Thread on discharge head (1) (Notice: left hand threads) and tighten.

Owner's Information

Pump Model Number: _____

Pump Serial Number: _____

Dealer: _____

Dealer Phone No.: _____

Date of Purchase: _____

Date of Installation: _____

Current Readings at Startup:

1 Ø	3 Ø	L1-2	L2-3	L3-1
Amps: _____	Amps: _____	_____	_____	_____
Volts: _____	Volts: _____	_____	_____	_____

APPENDIX D – NEW MEXICO REGULATIONS

TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 6 WATER QUALITY
PART 2 GROUND AND SURFACE WATER PROTECTION

20.6.2.1 ISSUING AGENCY: Water Quality Control Commission
[12-1-95; 20.6.2.1 NMAC - Rn, 20 NMAC 6.2.I.1000, 1-15-01]

20.6.2.2 SCOPE: All persons subject to the Water Quality Act, NMSA 1978, Sections 74-6-1 et seq.
[12-1-95; 20.6.2.2 NMAC - Rn, 20 NMAC 6.2.I.1001, 1-15-01]

20.6.2.3 STATUTORY AUTHORITY: Standards and Regulations are adopted by the commission under the authority of the Water Quality Act, NMSA 1978, Sections 74-6-1 through 74-6-17.
[2-18-77, 9-20-82, 12-1-95; 20.6.2.3 NMAC - Rn, 20 NMAC 6.2.I.1002, 1-15-01]

20.6.2.4 DURATION: Permanent.
[12-1-95; 20.6.2.4 NMAC - Rn, 20 NMAC 6.2.I.1003, 1-15-01]

20.6.2.5 EFFECTIVE DATE: December 1, 1995 unless a later date is cited at the end of a section.
[12-1-95, 11-15-96; 20.6.2.5 NMAC - Rn, 20 NMAC 6.2.I.1004, 1-15-01; A, 1-15-01]

20.6.2.6 OBJECTIVE: The objective of this Part is to implement the Water Quality Act, NMSA 1978, Sections 74-6-1 et seq.
[12-1-95; 20.6.2.6 NMAC - Rn, 20 NMAC 6.2.I.1005, 1-15-01]

20.6.2.7 DEFINITIONS: Terms defined in the Water Quality Act, but not defined in this part, will have the meaning given in the act. As used in this part:

A. **"abandoned well"** means a well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be rehabilitated for its intended purpose or other purposes including monitoring and observation;

B. **"abate" or "abatement"** means the investigation, containment, removal or other mitigation of water pollution;

C. **"abatement plan"** means a description of any operational, monitoring, contingency and closure requirements and conditions for the prevention, investigation and abatement of water pollution, and includes Stage 1, Stage 2, or Stage 1 and 2 of the abatement plan, as approved by the secretary;

D. **"adjacent properties"** means properties that are contiguous to the discharge site or property that would be contiguous to the discharge site but for being separated by a public or private right of way, including roads and highways.

E. **"background"** means, for purposes of ground-water abatement plans only and for no other purposes in this part or any other regulations including but not limited to surface-water standards, the amount of ground-water contaminants naturally occurring from undisturbed geologic sources or water contaminants which the responsible person establishes are occurring from a source other than the responsible person's facility; this definition shall not prevent the secretary from requiring abatement of commingled plumes of pollution, shall not prevent responsible persons from seeking contribution or other legal or equitable relief from other persons, and shall not preclude the secretary from exercising enforcement authority under any applicable statute, regulation or common law;

F. **"casing"** means pipe or tubing of appropriate material, diameter and weight used to support the sides of a well hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous ground, or to prevent fluid from entering or leaving the well other than to or from the injection zone;

G. **"cementing"** means the operation whereby a cementing slurry is pumped into a drilled hole and/or forced behind the casing;

H. **"cesspool"** means a **"drywell"** that receives untreated domestic liquid waste containing human excreta, and which sometimes has an open bottom and/or perforated sides; a large capacity cesspool means a cesspool that receives greater than 2,000 gallons per day of untreated domestic liquid waste;

I. **"collapse"** means the structural failure of overlying materials caused by removal of underlying materials;

J. **"commission"** means:

(1) the New Mexico water quality control commission or

(2) the department, when used in connection with any administrative and enforcement activity;

K. "confining zone" means a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement from an injection zone;

L. "conventional mining" means the production of minerals from an open pit or underground excavation; underground excavations include mine shafts, workings and air vents, but does not include excavations primarily caused by in situ extraction activities;

M. "daily composite sample" means a sample collected over any twenty-four hour period at intervals not to exceed one hour and obtained by combining equal volumes of the effluent collected, or means a sample collected in accordance with federal permit conditions where a permit has been issued under the national pollutant discharge elimination system or for those facilities which include a waste stabilization pond in the treatment process where the retention time is greater than twenty (20) days, means a sample obtained by compositing equal volumes of at least two grab samples collected within a period of not more than twenty-four (24) hours;

N. "department", "agency", or **"division"** means the New Mexico environment department or a constituent agency designated by the commission;

O. "discharge permit" means a discharge plan approved by the department;

P. "discharge permit modification" means a change to the requirements of a discharge permit that result from a change in the location of the discharge, a significant increase in the quantity of the discharge, a significant change in the quality of the discharge; or as required by the secretary;

Q. "discharge permit renewal" means the re-issuance of a discharge permit for the same, previously permitted discharge;

R. "discharge plan" means a description of any operational, monitoring , contingency, and closure requirements and conditions for any discharge of effluent or leachate which may move directly or indirectly into ground water;

S. "discharge site" means the entire site where the discharge and associated activities will take place;

T. "disposal" means to abandon, deposit, inter or otherwise discard a fluid as a final action after its use has been achieved;

U. "domestic liquid waste" means human excreta and water-carried waste from typical residential plumbing fixtures and activities, including but not limited to waste from toilets, sinks, bath fixtures, clothes or dishwashing machines and floor drains;

V. "domestic liquid waste treatment unit" means a watertight unit designed, constructed and installed to stabilize only domestic liquid waste and to retain solids contained in such domestic liquid waste, including but not limited to aerobic treatment units and septic tanks;

W. "drywell" means a well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids;

X. "experimental technology" means a technology which has not been proven feasible under the conditions in which it is being tested;

Y. "fluid" means material or substance which flows or moves whether in a semisolid, liquid, sludge, gas, or any other form or state;

Z. "ground water" means interstitial water which occurs in saturated earth material and which is capable of entering a well in sufficient amounts to be utilized as a water supply;

AA. "hazard to public health" exists when water which is used or is reasonably expected to be used in the future as a human drinking water supply exceeds at the time and place of such use, one or more of the numerical standards of Subsection A of 20.6.2.3103 NMAC, or the naturally occurring concentrations, whichever is higher, or if any toxic pollutant affecting human health is present in the water; in determining whether a discharge would cause a hazard to public health to exist, the secretary shall investigate and consider the purification and dilution reasonably expected to occur from the time and place of discharge to the time and place of withdrawal for use as human drinking water;

BB. "improved sinkhole" means a naturally occurring karst depression or other natural crevice found in volcanic terrain and other geologic settings which have been modified by man for the purpose of directing and emplacing fluids into the subsurface;

CC. "injection" means the subsurface emplacement of fluids through a well;

DD. "injection zone" means a geological formation, group of formations, or part of a formation receiving fluids through a well;

EE. **"motor vehicle waste disposal well"** means a well which receives or has received fluids from vehicular repair or maintenance activities;

FF. **"non-aqueous phase liquid"** means an interstitial body of liquid oil, petroleum product, petrochemical, or organic solvent, including an emulsion containing such material;

GG. **"operational area"** means a geographic area defined in a project discharge permit where a group of wells or well fields in close proximity comprise a single class III well operation;

HH. **"owner of record"** means an owner of property according to the property records of the tax assessor in the county in which the discharge site is located at the time the application was deemed administratively complete;

II. **"packer"** means a device lowered into a well to produce a fluid-tight seal within the casing;

JJ. **"person"** means an individual or any other entity including partnerships, corporation, associations, responsible business or association agents or officers, the state or a political subdivision of the state or any agency, department or instrumentality of the United States and any of its officers, agents or employees;

KK. **"petitioner"** means a person seeking a variance from a regulation of the commission pursuant to Section 74-6-4(G) NMSA 1978;

LL. **"plugging"** means the act or process of stopping the flow of water, oil or gas into or out of a geological formation, group of formations or part of a formation through a borehole or well penetrating these geologic units;

MM. **"project discharge permit"** means a discharge permit which describes the operation of similar class III wells or well fields within one or more individual operational areas;

NN. **"refuse"** includes food, swill, carrion, slops and all substances from the preparation, cooking and consumption of food and from the handling, storage and sale of food products, the carcasses of animals, junked parts of automobiles and other machinery, paper, paper cartons, tree branches, yard trimmings, discarded furniture, cans, oil, ashes, bottles, and all unwholesome material;

OO. **"responsible person"** means a person who is required to submit an abatement plan or who submits an abatement plan pursuant to this part;

PP. **"secretary"** or **"director"** means the secretary of the New Mexico department of environment or the director of a constituent agency designated by the commission;

QQ. **"sewer system"** means pipelines, conduits, pumping stations, force mains, or other structures, devices, appurtenances or facilities used for collecting or conducting wastes to an ultimate point for treatment or disposal;

RR. **"sewerage system"** means a system for disposing of wastes, either by surface or underground methods, and includes sewer systems, treatment works, disposal wells and other systems;

SS. **"significant modification of Stage 2 of the abatement plan"** means a change in the abatement technology used excluding design and operational parameters, or re-location of 25 percent or more of the compliance sampling stations, for any single medium, as designated pursuant to Paragraph (4) of Subsection E of 20.6.2.4106 NMAC;

TT. **"subsurface fluid distribution system"** means an assemblage of perforated pipes, drain tiles, or other mechanisms intended to distribute fluids below the surface of the ground;

UU. **"subsurface water"** means ground water and water in the vadose zone that may become ground water or surface water in the reasonably foreseeable future or may be utilized by vegetation;

VV. **"TDS"** means total dissolved solids as determined by the "calculation method" (sum of constituents), by the "residue on evaporation method at 180 degrees" of the "*U.S. geological survey techniques of water resource investigations*," or by conductivity, as the secretary may determine;

WW. **"toxic pollutant"** means a water contaminant or combination of water contaminants in concentration(s) which, upon exposure, ingestion, or assimilation either directly from the environment or indirectly by ingestion through food chains, will unreasonably threaten to injure human health, or the health of animals or plants which are commonly hatched, bred, cultivated or protected for use by man for food or economic benefit; as used in this definition injuries to health include death, histopathologic change, clinical symptoms of disease, behavioral abnormalities, genetic mutation, physiological malfunctions or physical deformations in such organisms or their offspring; in order to be considered a toxic pollutant a contaminant must be one or a combination of the potential toxic pollutants listed below and be at a concentration shown by scientific information currently available to the public to have potential for causing one or more of the effects listed above; any water contaminant or combination of the water contaminants in the list below creating a lifetime risk of more than one cancer per 100,000 exposed persons is a toxic pollutant:

(1) acrolein

(2) acrylonitrile
(3) aldrin
(4) benzene
(5) benzidine
(6) carbon tetrachloride
(7) chlordane
(8) chlorinated benzenes
    (a) monochlorobenzene
    (b) hexachlorobenzene
    (c) pentachlorobenzene
(9) 1,2,4,5-tetrachlorobenzene
(10) chlorinated ethanes
    (a) 1,2-dichloroethane
    (b) hexachloroethane
    (c) 1,1,2,2-tetrachloroethane
    (d) 1,1,1-trichloroethane
    (e) 1,1,2-trichloroethane
(11) chlorinated phenols
    (a) 2,4-dichlorophenol
    (b) 2,4,5-trichlorophenol
    (c) 2,4,6-trichlorophenol
(12) chloroalkyl ethers
    (a) bis (2-chloroethyl) ether
    (b) bis (2-chloroisopropyl) ether
    (c) bis (chloromethyl) ether
(13) chloroform
(14) DDT
(15) dichlorobenzene
(16) dichlorobenzidine
(17) 1,1-dichloroethylene
(18) dichloropropenes
(19) dieldrin
(20) diphenylhydrazine
(21) endosulfan
(22) endrin
(23) ethylbenzene
(24) halomethanes
    (a) bromodichloromethane
    (b) bromomethane
    (c) chloromethane
    (d) dichlorodifluoromethane
    (e) dichloromethane
    (f) tribromomethane
    (g) trichlorofluoromethane
(25) heptachlor
(26) hexachlorobutadiene
(27) hexachlorocyclohexane (HCH)
    (a) alpha-HCH
    (b) beta-HCH
    (c) gamma-HCH
    (d) technical HCH
(28) hexachlorocyclopentadiene
(29) high explosives (HE)
    (a) 2,4-dinitrotoluene (2,4,DNT)
    (b) 2,6-dinitrotoluene (2,6,DNT)
    (c) octrahydro-1,3,5,7-tetranitro-1,3,5,7 tetrazocine (HMX)

(d) hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)
(e) 2,4,6-trinitrotoluene (TNT)
(30) isophorone
(31) methyl tertiary butyl ether
(32) nitrobenzene
(33) nitrophenols
(a) 2,4-dinitro-o-cresol
(b) dinitrophenols
(34) nitrosamines
(a) N-nitrosodiethylamine
(b) N-nitrosodimethylamine
(c) N-nitrosodibutylamine
(d) N-nitrosodiphenylamine
(e) N-nitrosopyrrolidine
(35) pentachlorophenol
(36) perchlorate
(37) phenol
(38) phthalate esters
(a) dibutyl phthalate
(b) di-2-ethylhexyl phthalate
(c) diethyl phthalate
(d) dimethyl phthalate
(39) polychlorinated biphenyls (PCB's)
(40) polynuclear aromatic hydrocarbons (PAH)
(a) anthracene
(b) 3,4-benzofluoranthene
(c) benzo (k) fluoranthene
(d) fluoranthene
(e) fluorene
(f) phenanthrene
(g) pyrene
(41) tetrachloroethylene
(42) toluene
(43) toxaphene
(44) trichloroethylene
(45) vinyl chloride
(46) xylenes
(a) o-xylene
(b) m-xylene
(c) p-xylene
(47) 1,1-dichloroethane
(48) ethylene dibromide (EDB)
(49) cis-1,2-dichloroethylene
(50) trans-1,2-dichloroethylene
(51) naphthalene
(52) 1-methylnaphthalene
(53) 2-methylnaphthalene
(54) benzo-a-pyrene

XX. **"vadose zone"** means earth material below the land surface and above ground water, or in between bodies of ground water;

YY. **"wastes"** means sewage, industrial wastes, or any other liquid, gaseous or solid substance which will pollute any waters of the state;

ZZ. **"water"** means all water including water situated wholly or partly within or bordering upon the state, whether surface or subsurface, public or private, except private waters that do not combine with other surface or subsurface water;

AAA. **"water contaminant"** means any substance that could alter if discharged or spilled the physical, chemical, biological or radiological qualities of water; "water contaminant" does not mean source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954;

BBB. **"watercourse"** means any river, creek, arroyo, canyon, draw, or wash, or any other channel having definite banks and beds with visible evidence of the occasional flow of water;

CCC. **"water pollution"** means introducing or permitting the introduction into water, either directly or indirectly, of one or more water contaminants in such quantity and of such duration as may with reasonable probability injure human health, animal or plant life or property, or to unreasonably interfere with the public welfare or the use of property;

DDD. **"well"** means: (1) A bored, drilled, or driven shaft; (2) A dug hole whose depth is greater than the largest surface dimension; (3) An improved sinkhole; or (4) A subsurface fluid distribution system;

EEE. **"well stimulation"** means a process used to clean the well, enlarge channels, and increase pore space in the interval to be injected, thus making it possible for fluids to move more readily into the injection zone; well stimulation includes, but is not limited to, (1) surging, (2) jetting, (3) blasting, (4) acidizing, (5) hydraulic fracturing.

[1-4-68, 4-20-68, 11-27-70, 9-3-72, 4-11-74, 8-13-76, 2-18-77, 6-26-80, 7-2-81, 1-29-82, 9-20-82, 11-17-84, 3-3-86, 8-17-91, 8-19-93, 12-1-95; 20.6.2.7 NMAC - Rn, 20 NMAC 6.2.I.1101, 1-15-01; A, 1-15-01; A, 12-1-01; A, 9-15-02; A, 9-26-04; A, 7-16-06]

20.6.2.8 **SEVERABILITY:** If any Section, Subsection, individual standard or application of these standards or regulations is held invalid, the remainder shall not be affected.

[2-18-77, 12-1-95; 20.6.2.8 NMAC - Rn, 20 NMAC 6.2.I.1007, 1-15-01]

20.6.2.9 **DOCUMENTS:** Documents referenced in the Part may be viewed at the New Mexico Environment Department, Ground Water Quality Bureau, Harold Runnels Building, 1190 St. Francis Drive, Santa Fe, New Mexico 87503.

[12-1-95; 20.6.2.9 NMAC - Rn, 20 NMAC 6.2.I.1006, 1-15-01; A, 12-1-01]

20.6.2.10 - 20.6.2.1199: [RESERVED]

[12-1-95; 20.6.2.10 - 20.6.2.1199 NMAC - Rn, 20 NMAC 6.2.I.1008-1100, 1102-1199, 1-15-01]

20.6.2.1200 **PROCEDURES:**

[12-1-95; 20.6.2.1200 NMAC - Rn, 20 NMAC 6.2.I.1200, 1-15-01]

20.6.2.1201 **NOTICE OF INTENT TO DISCHARGE:**

A. Any person intending to make a new water contaminant discharge or to alter the character or location of an existing water contaminant discharge, unless the discharge is being made or will be made into a community sewer system or subject to the Liquid Waste Disposal Regulations adopted by the New Mexico Environmental Improvement Board, shall file a notice with the Ground Water Quality Bureau of the department for discharges that may affect ground water, and/ or the Surface Water Quality Bureau of the department for discharges that may affect surface water. However, notice regarding discharges from facilities for the production, refinement, pipeline transmission of oil and gas or products thereof, the oil field service industry, oil field brine production wells, geothermal installations and carbon dioxide facilities shall be filed instead with the Oil Conservation Division.

B. Any person intending to inject fluids into a well, including a subsurface distribution system, unless the injection is being made subject to the Liquid Waste Disposal Regulations adopted by the New Mexico Environmental Improvement Board, shall file a notice with the Ground Water Quality Bureau of the department. However notice regarding injection to wells associated with oil and gas facilities as described in Subsection A of Section 20.6.2.1201 NMAC shall be filed instead with the Oil Conservation Division.

C. Notices shall state:

(1) the name of the person making the discharge;
(2) the address of the person making the discharge;
(3) the location of the discharge;
(4) an estimate of the concentration of water contaminants in the discharge; and
(5) the quantity of the discharge.

D. Based on information provided in the notice of intent, the department will notify the person proposing the discharge as to which of the following apply:

(1) a discharge permit is required;

(2) a discharge permit is not required;

(3) the proposed injection well will be added to the department's underground injection well inventory;

(4) the proposed injection activity or injection well is prohibited pursuant to 20.6.2.5004 NMAC.

[1-4-68, 9-5-69, 9-3-72, 2-17-74, 2-20-81, 12-1-95; 20.6.2.1201 NMAC - Rn, 20 NMAC 6.2.I.1201, 1-15-01; A, 12-1-01]

20.6.2.1202 FILING OF PLANS AND SPECIFICATIONS--SEWERAGE SYSTEMS:

A. Any person proposing to construct a sewerage system or proposing to modify any sewerage system in a manner that will change substantially the quantity or quality of the discharge from the system shall file plans and specifications of the construction or modification with Ground Water Quality Bureau of the department for discharges that may affect ground water, and/or the Surface Water Quality Bureau of the department for discharges that may affect surface water. Modifications having a minor effect on the character of the discharge from sewerage systems shall be reported as of January 1 and June 30 of each year to the Ground Water Quality Bureau of the department for discharges that may affect ground water, or the Surface Water Quality Bureau of the department for discharges that may affect surface water.

B. Plans, specifications and reports required by this Section, if related to facilities for the production, refinement and pipeline transmission of oil and gas, or products thereof, shall be filed instead with the Oil Conservation Division.

C. Plans and specifications required to be filed under this Section must be filed prior to the commencement of construction.

[1-4-68, 9-3-72, 2-20-81, 12-1-95; 20.6.2.1202 NMAC - Rn, 20 NMAC 6.2.I.1202, 1-15-01; A, 12-1-01]

20.6.2.1203 NOTIFICATION OF DISCHARGE-REMOVAL:

A. With respect to any discharge from any facility of oil or other water contaminant, in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property, the following notifications and corrective actions are required:

(1) As soon as possible after learning of such a discharge, but in no event more than twenty-four (24) hours thereafter, any person in charge of the facility shall orally notify the Chief of the Ground Water Quality Bureau of the department, or his counterpart in any constituent agency delegated responsibility for enforcement of these rules as to any facility subject to such delegation. To the best of that person's knowledge, the following items of information shall be provided:

(a) the name, address, and telephone number of the person or persons in charge of the facility, as well as of the owner and/or operator of the facility;

(b) the name and address of the facility;

(c) the date, time, location, and duration of the discharge

(d) the source and cause of discharge;

(e) a description of the discharge, including its chemical composition;

(f) the estimated volume of the discharge; and

(g) any actions taken to mitigate immediate damage from the discharge.

(2) When in doubt as to which agency to notify, the person in charge of the facility shall notify the Chief of the Ground Water Quality Bureau of the department. If that department does not have authority pursuant to commission delegation, the department shall notify the appropriate constituent agency.

(3) Within one week after the discharger has learned of the discharge, the facility owner and/or operator shall send written notification to the same department official, verifying the prior oral notification as to each of the foregoing items and providing any appropriate additions or corrections to the information contained in the prior oral notification.

(4) The oral and written notification and reporting requirements contained in this Subsection A are not intended to be duplicative of discharge notification and reporting requirements promulgated by the Oil Conservation Commission (OCC) or by the Oil Conservation Division (OCD); therefore, any facility which is subject to OCC or OCD discharge notification and reporting requirements need not additionally comply with the notification and reporting requirements herein.

(5) As soon as possible after learning of such a discharge, the owner/operator of the facility shall take such corrective actions as are necessary or appropriate to contain and remove or mitigate the damage caused by the discharge.

(6) If it is possible to do so without unduly delaying needed corrective actions, the facility owner/operator shall endeavor to contact and consult with the Chief of the Ground Water Quality Bureau of the department or appropriate counterpart in a delegated agency, in an effort to determine the department's views as to what further corrective actions may be necessary or appropriate to the discharge in question. In any event, no later than fifteen (15) days after the discharger learns of the discharge, the facility owner/operator shall send to said Bureau Chief a written report describing any corrective actions taken and/or to be taken relative to the discharge. Upon a written request and for good cause shown, the Bureau Chief may extend the time limit beyond fifteen (15) days.

(7) The Bureau Chief shall approve or disapprove in writing the foregoing corrective action report within thirty (30) days of its receipt by the department. In the event that the report is not satisfactory to the department, the Bureau Chief shall specify in writing to the facility owner/operator any shortcomings in the report or in the corrective actions already taken or proposed to be taken relative to the discharge, and shall give the facility owner/operator a reasonable and clearly specified time within which to submit a modified corrective action report. The Bureau Chief shall approve or disapprove in writing the modified corrective action report within fifteen (15) days of its receipt by the department.

(8) In the event that the modified corrective action report also is unsatisfactory to the department, the facility owner/operator has five (5) days from the notification by the Bureau Chief that it is unsatisfactory to appeal to the department secretary. The department secretary shall approve or disapprove the modified corrective action report within five (5) days of receipt of the appeal from the Bureau Chief's decision. In the absence of either corrective action consistent with the approved corrective action report or with the decision of the secretary concerning the shortcomings of the modified corrective action report, the department may take whatever enforcement or legal action it deems necessary or appropriate.

(9) If the secretary determines that the discharge causes or may with reasonable probability cause water pollution in excess of the standards and requirements of Section 20.6.2.4103 NMAC, and the water pollution will not be abated within one hundred and eighty (180) days after notice is required to be given pursuant to Paragraph (1) of Subsection A of Section 20.6.2.1203 NMAC, the secretary may notify the facility owner/operator that he is a responsible person and that an abatement plan may be required pursuant to Section 20.6.2.4104 and Subsection A of Section 20.6.2.4106 NMAC.

B. Exempt from the requirements of this Section are continuous or periodic discharges which are made:

(1) in conformance with regulations of the commission and rules, regulations or orders of other state or federal agencies; or

(2) in violation of regulations of the commission, but pursuant to an assurance of discontinuance or schedule of compliance approved by the commission or one of its duly authorized constituent agencies.

C. As used in this Section and in Sections 20.6.2.4100 through 20.6.2.4115 NMAC, but not in other Sections of this Part:

(1) "discharge" means spilling, leaking, pumping, pouring, emitting, emptying, or dumping into water or in a location and manner where there is a reasonable probability that the discharged substance will reach surface or subsurface water;

(2) "facility" means any structure, installation, operation, storage tank, transmission line, motor vehicle, rolling stock, or activity of any kind, whether stationary or mobile;

(3) "oil" means oil of any kind or in any form including petroleum, fuel oil, sludge, oil refuse and oil mixed with wastes;

(4) "operator" means the person or persons responsible for the overall operations of a facility; and

(5) "owner" means the person or persons who own a facility, or part of a facility.

D. Notification of discharge received pursuant to this Part or information obtained by the exploitation of such notification shall not be used against any such person in any criminal case, except for perjury or for giving a false statement.

E. Any person who has any information relating to any discharge from any facility of oil or other water contaminant, in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property, is urged to notify the Chief of the Ground Water Quality Bureau of the department. Upon such notification, the secretary may

require an owner/operator or a responsible person to perform corrective actions pursuant to Paragraphs (5) and (9) of Subsection A of Section 20.6.2.1203 NMAC.
[2-17-74, 2-20-81, 12-24-87, 12-1-95; 20.6.2.1203 NMAC - Rn, 20 NMAC 6.2.I.1203, 1-15-01; A, 12-1-01]

20.6.2.1204 - 20.6.2.1209 [RESERVED]
[12-1-95; 20.6.2.1204 - 20.6.2.1209 NMAC - Rn, 20 NMAC 6.2.I.1204-1209, 1-15-01]

20.6.2.1210 VARIANCE PETITIONS:

A. Any person seeking a variance pursuant to Section 74-6-4 (G) NMSA 1978, shall do so by filing a written petition with the commission. The petitioner may submit with his petition any relevant documents or material which the petitioner believes would support his petition. Petitions shall:

(1) state the petitioner's name and address;
(2) state the date of the petition;
(3) describe the facility or activity for which the variance is sought;
(4) state the address or description of the property upon which the facility is located;
(5) describe the water body or watercourse affected by the discharge;
(6) identify the regulation of the commission from which the variance is sought;
(7) state in detail the extent to which the petitioner wishes to vary from the regulation;
(8) state why the petitioner believes that compliance with the regulation will impose an unreasonable burden upon his activity; and
(9) state the period of time for which the variance is desired.

B. The variance petition shall be reviewed in accordance with the adjudicatory procedures of 20 NMAC 1.3.

C. The commission may grant the requested variance, in whole or in part, may grant the variance subject to conditions, or may deny the variance. The commission shall not grant a variance for a period of time in excess of five years.

D. An order of the commission is final and bars the petitioner from petitioning for the same variance without special permission from the commission. The commission may consider, among other things, the development of new information and techniques to be sufficient justification for a second petition. If the petitioner, or his authorized representative, fails to appear at the public hearing on the variance petition, the commission shall proceed with the hearing on the basis of the petition. A variance may not be extended or renewed unless a new petition is filed and processed in accordance with the procedures established by this Section.
[7-19-68, 11-27-70, 9-3-72, 2-20-81, 11-15-96; 20.6.2.1210 NMAC - Rn, 20 NMAC 6.2.I.1210, 1-15-01]

20.6.2.1211 - 20.6.2.1219: [RESERVED]
[12-1-95; 20.6.2.1211 - 20.6.2.1219 NMAC - Rn, 20 NMAC 6.2.I.1211-1219, 1-15-01]

20.6.2.1220 PENALTIES ENFORCEMENT, COMPLIANCE ORDERS, PENALTIES, ASSURANCE OF DISCONTINUANCE.: Failure to comply with the Water Quality Act, or any regulation or standard promulgated pursuant to the Water Quality Act is a prohibited act. If the secretary determines that a person has violated or is violating a requirement of the Water Quality Act or any regulation promulgated thereunder or is exceeding any water quality standard or ground water standard contained in Commission regulations, or is not complying with a condition or provision of an approved or modified abatement plan, discharge plan, or permit issued pursuant to the Water Quality Act, the secretary may issue a compliance order, assess a penalty, commence a civil action in district court, or accept an assurance of discontinuance in accordance with NMSA 1978, Section 74-6-10 of the Water Quality Act.
[12-1-95; 20.6.2.1220 NMAC - Rn, 20 NMAC 6.2.I.1220, 1-15-01]

20.6.2.1221 - 20.6.2.1999: [RESERVED]
[12-1-95; 20.6.2.1221 - 20.6.2.1999 NMAC - Rn, 20 NMAC 6.2.I.1221-2099, 1-15-01]

20.6.2.2000 SURFACE WATER PROTECTION:
[12-1-95; 20.6.2.2000 NMAC - Rn, 20 NMAC 6.2.II, 1-15-01]

20.6.2.2001 - 20.6.2.2099: [RESERVED]
[12-1-95; 20.6.2.2001 - 20.6.2.2099 NMAC - Rn, 20 NMAC 6.2.I.1221-2099, 1-15-01]

20.6.2.2100 **APPLICABILITY:** The requirements of Section 20.6.2.2101 and 20.6.2.2102 NMAC shall not apply to any discharge which is subject to a permit under the National Pollutant Discharge Elimination System of P. L. 92-500; provided that any discharger who is given written notice of National Pollutant Discharge Elimination System permit violation from the Administrator of the Environmental Protection Agency and who has not corrected the violation within thirty days of receipt of said notice shall be subject to Section 20.6.2.2101 and 20.6.2.2102 NMAC until in compliance with the National Pollution Discharge Elimination System permit conditions; provided further that nothing in this Part shall be construed as a deterrent to action under Section 74-6-11 NMSA, 1978.
[8-13-76; 20.6.2.2100 NMAC - Rn, 20 NMAC 6.2.II.2100, 1-15-01]

20.6.2.2101 GENERAL REQUIREMENTS:

A. Except as otherwise provided in Sections 20.6.2.2000 through 20.6.2.2201 NMAC, no person shall cause or allow effluent to discharge to a watercourse if the effluent as indicated by:

(1) any two consecutive daily composite samples;

(2) more than one daily composite sample in any thirty-day period (in which less than ten (10) daily composite samples are examined);

(3) more than ten percent (10%) of the daily composite samples in any thirty-day period (in which ten (10) or more daily composite samples are examined); or

(4) a grab sample collected during flow from an intermittent or infrequent discharge

does not conform to the following:

(a)	Bio-chemical Oxygen Demand (BOD)	Less than 30 mg/l
(b)	Chemical Oxygen Demand (COD)	Less than 125 mg/l
(c)	Settleable Solids	Less than 0.5 mg/l
(d)	Fecal Coliform Bacteria	Less than 500 organisms per 100 ml
(e)	pH	Between 6.6 and 8.6

B. Upon application, the secretary may eliminate the pH requirement for any effluent source that the secretary determines does not unreasonably degrade the water into which the effluent is discharged.

C. Subsection A of this Section does not apply to the weight of constituents in the water diverted.

D. Samples shall be examined in accordance with the most current edition of Standard Methods for the Examination of Water and Wastewater published by the American Public Health Association or the most current edition of Methods for Chemical Analysis of Water and Wastes published by the Environmental Protection Agency, where applicable.
[4-20-68, 3-14-71, 10-8-71, 8-13-76, 2-20-81, 12-1-95; 20.6.2.2101 NMAC - Rn, 20 NMAC 6.2.II.2101, 1-15-01]

20.6.2.2102 RIO GRANDE BASIN--COMMUNITY SEWERAGE SYSTEMS:

A. No person shall cause or allow effluent from a community sewerage system to discharge to a watercourse in the Rio Grande Basin between the headwaters of Elephant Butte Reservoir and Angostura Diversion Dam as described in Subsection E of this Section if the effluent, as indicated by:

(1) any two consecutive daily composite samples;

(2) more than one daily composite sample in any thirty-day period (in which less than ten (10) daily composite samples are examined);

(3) more than ten percent (10%) of the daily composite samples in any thirty-day period (in which ten (10) or more daily composite samples are examined); or

(4) a grab sample collected during flow from an intermittent or infrequent discharge

does not conform to the following:

(a)	Bio-chemical Oxygen Demand (BOD)	Less than 30 mg/l
(b)	Chemical Oxygen Demand (COD)	Less than 80 mg/l
(c)	Settleable Solids	Less than 0.1 mg/l
(d)	Fecal Coliform Bacteria	Less than 500 organisms per 100 ml
(e)	pH	Between 6.6 and 8.6

B. Upon application, the secretary may eliminate the pH requirement for any effluent source that the secretary determines does not unreasonably degrade the water into which the effluent is discharged.

C. Subsection A of this Section does not apply to the weight of constituents in the water diverted.

D. Samples shall be examined in accordance with the most current edition of Standard Methods for the Analysis of Water and Wastewater published by the American Public Health Association or the most current

edition of Methods for Chemical Analysis of Water and Wastes published by the Environmental Protection Agency, where applicable.

E. The following is a description of the Rio Grande Basin from the headwaters of Elephant Butte Reservoir to Angostura Diversion Dam as used in this Section. Begin at San Marcial USGS gauging station, which is the headwaters of Elephant Butte Reservoir Irrigation Project, thence northwest to U.S. Highway 60, nine miles ± west of Magdalena; thence west along the northeast edge of the San Agustin Plains closed basin; thence north along the east side of the north plains closed basin to the Continental Divide; thence northly along the Continental Divide to the community of Regina on State Highway 96; thence southeasterly along the crest of the San Pedro Mountains to Cerro Toledo Peak; thence southwesterly along the Sierra de Los Valles ridge and the Borrego Mesa to Bodega Butte; thence southerly to Angostura Diversion Dam which is the upper reach of the Rio Grande in this basin; thence southeast to the crest and the crest of the Manzano Mountains and the Los Pinos Mountains; thence southerly along the divide that contributes to the Rio Grande to San Marcial gauging station to the point and place of beginning; excluding all waters upstream of Jemez Pueblo which flow into the Jemez River drainage and the Bluewater Lake. Counties included in the basin are:

(1) north portion of Socorro County;
(2) northeast corner of Catron County;
(3) east portion of Valencia County;
(4) west portion of Bernalillo County;
(5) east portion of McKinley County; and
(6) most of Sandoval County.

[3-14-71, 9-3-72, 8-13-76, 2-20-81, 12-1-95; 20.6.2.2102 NMAC - Rn, 20 NMAC 6.2.II.2102, 1-15-01]

20.6.2.2103 - 20.6.2.2199: [RESERVED]
[12-1-95; 20.6.2.2103 - 20.6.2.2199 NMAC - Rn, 20 NMAC 6.2.II.2103-2199, 1-15-01]

20.6.2.2200 WATERCOURSE PROTECTION:
[12-1-95; 20.6.2.2200 NMAC - Rn, 20 NMAC 6.2.II.2200, 1-15-01]

20.6.2.2201 DISPOSAL OF REFUSE: No person shall dispose of any refuse in a natural watercourse or in a location and manner where there is a reasonable probability that the refuse will be moved into a natural watercourse by leaching or otherwise. Solids diverted from the stream and returned thereto are not subject to abatement under this Section.
[4-20-68, 9-3-72; 20.6.2.2201 NMAC - Rn, 20 NMAC 6.2.II.2201, 1-15-01]

20.6.2.2202 - 20.6.2.2999: [RESERVED]
[12-1-95; 20.6.2.2202 - 20.6.2.2999 NMAC - Rn, 20 NMAC 6.2.II.2202-3100, 1-15-01]

20.6.2.3000 PERMITTING AND GROUND WATER STANDARDS:
[12-1-95; 20.6.2.3000 NMAC - Rn, 20 NMAC 6.2.III, 1-15-01]

20.6.2.3001 - 20.6.2.3100: [RESERVED]
[12-1-95; 20.6.2.3001 - 20.6.2.3100 NMAC - Rn, 20 NMAC 6.2.II.2202-3100, 1-15-01]

20.6.2.3101 PURPOSE:

A. The purpose of Sections 20.6.2.3000 through 20.6.2.3114 NMAC controlling discharges onto or below the surface of the ground is to protect all ground water of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow, for uses designated in the New Mexico Water Quality Standards. Sections 20.6.2.3000 through 20.6.2.3114 NMAC are written so that in general:

(1) if the existing concentration of any water contaminant in ground water is in conformance with the standard of 20.6.2.3103 NMAC, degradation of the ground water up to the limit of the standard will be allowed; and

(2) if the existing concentration of any water contaminant in ground water exceeds the standard of Section 20.6.2.3103 NMAC, no degradation of the ground water beyond the existing concentration will be allowed.

B. Ground water standards are numbers that represent the pH range and maximum concentrations of water contaminants in the ground water which still allow for the present and future use of ground water resources.

C. The standards are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations.
[2-18-77; 20.6.2.3101 NMAC - Rn, 20 NMAC 6.2.III.3101, 1-15-01]

20.6.2.3102: [RESERVED]
[12-1-95; 20.6.2.3102 NMAC - Rn, 20 NMAC 6.2.III.3102, 1-15-01]

20.6.2.3103 STANDARDS FOR GROUND WATER OF 10,000 mg/l TDS CONCENTRATION OR LESS: The following standards are the allowable pH range and the maximum allowable concentration in ground water for the contaminants specified unless the existing condition exceeds the standard or unless otherwise provided in Subsection D of Section 20.6.2.3109 NMAC. Regardless of whether there is one contaminant or more than one contaminant present in ground water, when an existing pH or concentration of any water contaminant exceeds the standard specified in Subsection A, B, or C of this section, the existing pH or concentration shall be the allowable limit, provided that the discharge at such concentrations will not result in concentrations at any place of withdrawal for present or reasonably foreseeable future use in excess of the standards of this section. These standards shall apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication "*methods for chemical analysis of water and waste of the U.S. environmental protection agency*," with the exception that standards for mercury, organic compounds and non-aqueous phase liquids shall apply to the total unfiltered concentrations of the contaminants.

A. **Human Health Standards**-Ground water shall meet the standards of Subsection A and B of this section unless otherwise provided. If more than one water contaminant affecting human health is present, the toxic pollutant criteria as set forth in the definition of toxic pollutant in Section 20.6.2.1101 NMAC for the combination of contaminants, or the Human Health Standard of Subsection A of Section 20.6.2.3103 NMAC for each contaminant shall apply, whichever is more stringent. Non-aqueous phase liquid shall not be present floating atop of or immersed within ground water, as can be reasonably measured.

(1) Arsenic (As).....0.1 mg/l
(2) Barium (Ba).....1.0 mg/l
(3) Cadmium (Cd).....0.01 mg/l
(4) Chromium (Cr).....0.05 mg/l
(5) Cyanide (CN).....0.2 mg/l
(6) Fluoride (F).....1.6 mg/l
(7) Lead (Pb).....0.05 mg/l
(8) Total Mercury (Hg).....0.002 mg/l
(9) Nitrate (NO_3 as N).....10.0 mg/l
(10) Selenium (Se).....0.05 mg/l
(11) Silver (Ag).....0.05 mg/l
(12) Uranium (U).....0.03 mg/l
(13) Radioactivity: Combined Radium-226 & Radium-228.....30 pCi/l
(14) Benzene.....0.01 mg/l
(15) Polychlorinated biphenyls (PCB's).....0.001 mg/l
(16) Toluene.....0.75 mg/l
(17) Carbon Tetrachloride.....0.01 mg/l
(18) 1,2-dichloroethane (EDC).....0.01 mg/l
(19) 1,1-dichloroethylene (1,1-DCE).....0.005 mg/l
(20) 1,1,2,2-tetrachloroethylene (PCE).....0.02 mg/l
(21) 1,1,2-trichloroethylene (TCE).....0.1 mg/l
(22) ethylbenzene.....0.75 mg/l
(23) total xylenes.....0.62 mg/l
(24) methylene chloride.....0.1 mg/l
(25) chloroform.....0.1 mg/l
(26) 1,1-dichloroethane.....0.025 mg/l
(27) ethylene dibromide (EDB).....0.0001 mg/l
(28) 1,1,1-trichloroethane.....0.06 mg/l
(29) 1,1,2-trichloroethane.....0.01 mg/l
(30) 1,1,2,2-tetrachloroethane.....0.01 mg/l
(31) vinyl chloride.....0.001 mg/l

(32) PAHs: total naphthalene plus monomethylnaphthalenes.....0.03 mg/l
(33) benzo-a-pyrene.....0.0007 mg/l

B. Other Standards for Domestic Water Supply

(1) Chloride (Cl) .....250.0 mg/l
(2) Copper (Cu) .....1.0 mg/l
(3) Iron (Fe) .....1.0 mg/l
(4) Manganese (Mn) .....0.2 mg/l
(6) Phenols.....0.005 mg/l
(7) Sulfate (SO_4) .....600.0 mg/l
(8) Total Dissolved Solids (TDS) .....1000.0 mg/l
(9) Zinc (Zn) .....10.0 mg/l
(10) pH.....between 6 and 9

C. Standards for Irrigation Use - Ground water shall meet the standards of Subsection A, B, and C of this section unless otherwise provided.

(1) Aluminum (Al)..... .....5.0 mg/l
(2) Boron (B) .....0.75 mg/l
(3) Cobalt (Co) .....0.05 mg/l
(4) Molybdenum (Mo) .....1.0 mg/l
(5) Nickel (Ni) .....0.2 mg/l

[2-18-77, 1-29-82, 11-17-83, 3-3-86, 12-1-95; 20.6.2.3103 NMAC - Rn, 20 NMAC 6.2.III.3103, 1-15-01; A, 9-26-04]

[Note: For purposes of application of the amended numeric uranium standard to past and current water discharges (as of 9-26-04), the new standard will not become effective until June 1, 2007. For any new water discharges, the uranium standard is effective 9-26-04.]

20.6.2.3104 DISCHARGE PERMIT REQUIRED: Unless otherwise provided by this Part, no person shall cause or allow effluent or leachate to discharge so that it may move directly of indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary. When a permit has been issued, discharges must be consistent with the terms and conditions of the permit. In the event of a transfer of the ownership, control, or possession of a facility for which a discharge permit is in effect, the transferee shall have authority to discharge under such permit, provided that the transferee has complied with Section 20.6.2.3111 NMAC, regarding transfers. [2-18-77, 12-24-87, 12-1-95; Rn & A, 20.6.2.3104 NMAC - 20 NMAC 6.2.III.3104, 1-15-01; A, 12-1-01]

20.6.2.3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20.6.2.3104 and 20.6.2.3106 NMAC do not apply to the following:

A. Effluent or leachate which conforms to all the listed numerical standards of Section 20.6.2.3103 NMAC and has a total nitrogen concentration of 10 mg/l or less, and does not contain any toxic pollutant. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage. If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply;

B. Effluent which is discharged from a sewerage system used only for disposal of household and other domestic waste which is designed to receive and which receives 2,000 gallons or less of liquid waste per day;

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system;

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided in this section;

F. Those constituents which are subject to effective and enforceable effluent limitations in a National Pollutant Discharge Elimination System (NPDES) permit, where discharge onto or below the surface of the ground so that water contaminants may move directly or indirectly into ground water occurs downstream from the outfall

where NPDES effluent limitations are imposed, unless the secretary determines that a hazard to public health may result. For purposes of this subsection, monitoring requirements alone do not constitute effluent limitations;

G. Discharges resulting from flood control systems;

H. Leachate which results from the direct natural infiltration of precipitation through disturbed materials, unless the secretary determines that a hazard to public health may result;

I. Leachate which results entirely from the direct natural infiltration of precipitation through undisturbed materials;

J. Leachate from materials disposed of in accordance with the Solid Waste Management Regulations (20 NMAC 9.1) adopted by the New Mexico Environmental Improvement Board;

K. Natural ground water seeping or flowing into conventional mine workings which re-enters the ground by natural gravity flow prior to pumping or transporting out of the mine and without being used in any mining process; this exemption does not apply to solution mining;

L. Effluent or leachate discharges resulting from activities regulated by a mining plan approved and permit issued by the New Mexico Coal Surface Mining Commission, provided that this exemption shall not be construed as limiting the application of appropriate ground water protection requirements by the New Mexico Coal Surface Mining Commission;

M. Effluent or leachate discharges which are regulated by the Oil Conservation Commission and the regulation of which by the Water Quality Control Commission would interfere with the exclusive authority granted under Section 70-2-12 NMSA 1978, or under other laws, to the Oil Conservation Commission.

[2-18-77, 6-26-80, 7-2-81, 12-24-87, 12-1-95; 20.6.2.3105 NMAC - Rn, 20 NMAC 6.2.III.3105, 1-15-01; A, 12-1-01]

20.6.2.3106 APPLICATION FOR DISCHARGE PERMITS AND RENEWALS:

A. Any person who, before or on June 18, 1977, is discharging any of the water contaminants listed in Section 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall, within 120 days of receipt of written notice from the secretary that a discharge permit is required, or such longer time as the secretary shall for good cause allow, submit a discharge plan to the secretary for approval; such person may discharge without a discharge permit until 240 days after written notification by the secretary that a discharge permit is required or such longer time as the secretary shall for good cause allow.

B. Any person who intends to begin, after June 18, 1977, discharging any of the water contaminants listed in Section 20.6.2.3103 NMAC or any toxic pollutant so that they may move directly or indirectly into ground water shall notify the secretary giving the information enumerated in Subsection B of Section 20.6.2.1201NMAC; the secretary shall, within 60 days, notify such person if a discharge permit is required; upon submission, the secretary shall review the discharge plan pursuant to Sections 20.6.2.3108 and 20.6.2.3109 NMAC. For good cause shown the secretary may allow such person to discharge without a discharge permit for a period not to exceed 120 days.

C. A proposed discharge plan shall set forth in detail the methods or techniques the discharger proposes to use or processes expected to naturally occur which will ensure compliance with this Part. At least the following information shall be included in the plan:

(1) Quantity, quality and flow characteristics of the discharge;

(2) Location of the discharge and of any bodies of water, watercourses and ground water discharge sites within one mile of the outside perimeter of the discharge site, and existing or proposed wells to be used for monitoring;

(3) Depth to and TDS concentration of the ground water most likely to be affected by the discharge;

(4) Flooding potential of the site;

(5) Location and design of site(s) and method(s) to be available for sampling, and for measurement or calculation of flow;

(6) Depth to and lithological description of rock at base of alluvium below the discharge site if such information is available;

(7) Any additional information that may be necessary to demonstrate that the discharge permit will not result in concentrations in excess of the standards of Section 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use. Detailed information on site geologic and hydrologic conditions may be required for a technical evaluation of the applicant's proposed discharge plan; and

(8) Additional detailed information required for a technical evaluation of underground injection control wells as provided in Sections 20.6.2.5000 through 20.6.2. 5299 NMAC,

D. An applicant for a discharge permit shall pay fees as specified in Section 20.6.2.3114 NMAC.

E. An applicant for a permit to dispose of or use septage or sludge, or within a source category designated by the commission, may be required by the secretary to file a disclosure statement as specified in 74-6-5.1 of the Water Quality Act.

F. If the holder of a discharge permit submits an application for discharge permit renewal at least 120 days before the discharge permit expires, and the discharger is not in violation of the discharge permit on the date of its expiration, then the existing discharge permit for the same activity shall not expire until the application for renewal has been approved or disapproved. A discharge permit continued under this provision remains fully effective and enforceable. An application for discharge permit renewal must include and adequately address all of the information necessary for evaluation of a new discharge permit. Previously submitted materials may be included by reference provided they are current, readily available to the secretary and sufficiently identified to be retrieved. [2-18-77, 6-26-80, 7-2-81, 9-20-82, 8-17-91, 12-1-95; 20.6.2.3106 NMAC - Rn, 20 NMAC 6.2.III.3106, 1-15-01; A, 12-1-01; A, 9-15-02]

20.6.2.3107 MONITORING, REPORTING, AND OTHER REQUIREMENTS:

A. Each discharge plan shall provide for the following as the secretary may require:

(1) The installation, use, and maintenance of effluent monitoring devices;

(2) The installation, use, and maintenance of monitoring devices for the ground water most likely to be affected by the discharge;

(3) Monitoring in the vadose zone;

(4) Continuation of monitoring after cessation of operations;

(5) Periodic submission to the secretary of results obtained pursuant to any monitoring requirements in the discharge permit and the methods used to obtain these results;

(6) Periodic reporting to the secretary of any other information that may be required as set forth in the discharge permit;

(7) The discharger to retain for a period of at least five years any monitoring data required in the discharge permit;

(8) A system of monitoring and reporting to verify that the permit is achieving the expected results;

(9) Procedures for detecting failure of the discharge system;

(10) Contingency plans to cope with failure of the discharge permit or system;

(11) A closure plan to prevent the exceedance of standards of Section 20.6.2.3103 NMAC or the presence of a toxic pollutant in ground water after the cessation of operation which includes: a description of closure measures, maintenance and monitoring plans, post-closure maintenance and monitoring plans, financial assurance, and other measures necessary to prevent and/or abate such contamination. The obligation to implement the closure plan as well as the requirements of the closure plan, if any is required, survives the termination or expiration of the permit. A closure plan for any underground injection control well must also incorporate the applicable requirements of Sections 20.6.2.5005 and 20.6.2.5209 NMAC.

B. Sampling and analytical techniques shall conform with the following references unless otherwise specified by the secretary:

(1) Standard Methods for the Examination of Water and Wastewater, latest edition, American Public Health Association; or

(2) Methods for Chemical Analysis of Water and Waste, and other publications of the Analytical Quality Laboratory, EPA; or

(3) Techniques of Water Resource Investigations of the U.S. Geological Survey; or

(4) Annual Book of ASTM Standards, Part 31, Water, latest edition, American Society For Testing and Materials; or

(5) Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations; or

(6) National Handbook of Recommended Methods for Water-Data Acquisition, latest edition, prepared cooperatively by agencies of the United States Government under the sponsorship of the U.S. Geological Survey.

C. The discharger shall notify the secretary of any facility expansion, production increase or process modification that would result in any significant modification in the discharge of water contaminants.

D. Any discharger of effluent or leachate shall allow any authorized representative of the secretary to:

(1) inspect and copy records required by a discharge permit;

(2) inspect any treatment works, monitoring and analytical equipment;

(3) sample any effluent before or after discharge;

(4) use monitoring systems and wells installed pursuant to a discharge permit requirement in order to collect samples from ground water or the vadose zone.

E. Each discharge permit for an underground injection control well shall incorporate the applicable requirements of Sections 20.6.2.5000 through 20.6.2.5299 NMAC.

[2-18-77, 9-20-82, 11-17-83, 12-1-95; 20.6.2.3107 NMAC - Rn, 20 NMAC 6.2.III.3107, 1-15-01; A, 12-1-01]

20.6.2.3108 PUBLIC NOTICE AND PARTICIPATION:

A. Within 15 days of receipt of an application for a discharge permit, modification or renewal, the department shall review the application for administrative completeness. To be deemed administratively complete, an application shall provide all of the information required by Paragraphs (1) through (5) of Subsection F of 20.6.2.3108 NMAC and shall indicate, for department approval, the proposed locations and newspaper for providing notice required by Paragraphs (1) and (4) of Subsection B or Paragraph (2) of Subsection C of 20.6.2.3108 NMAC. The department shall notify the applicant in writing when the application is deemed administratively complete. If the department determines that the application is not administratively complete, the department shall notify the applicant of the deficiencies in writing within 15 days of receipt of the application and state what additional information is necessary.

B. Within 30 days of the department deeming an application for discharge permit or discharge permit modification administratively complete, the applicant shall provide notice, in accordance with the requirements of Subsection F of 20.6.2.3108 NMAC, to the general public in the locale of the proposed discharge in a form provided by the department by each of the methods listed below:

(1) for each 640 contiguous acres or less of a discharge site, prominently posting a synopsis of the public notice at least 2 feet by 3 feet in size, in English and in Spanish, at a place conspicuous to the public, approved by the department, at or near the proposed facility for 30 days; one additional notice, in a form approved by and may be provided by the department, shall be posted at a place located off the discharge site, at a place conspicuous to the public and approved by the department; the department may require a second posting location for more than 640 contiguous acres or when the discharge site is not located on contiguous properties;

(2) providing written notice of the discharge by mail, to owners of record of all properties within a 1/3 mile distance from the boundary of the property where the discharge site is located; if there are no properties other than properties owned by the discharger within a 1/3 mile distance from the boundary of property where the discharge site is located, the applicant shall provide notice to owners of record of the next nearest adjacent properties not owned by the discharger;

(3) providing notice by certified mail, return receipt requested, to the owner of the discharge site if the applicant is not the owner; and

(4) publishing a synopsis of the notice in English and in Spanish, in a display ad at least three inches by four inches not in the classified or legal advertisements section, in a newspaper of general circulation in the location of the proposed discharge.

C. Within 30 days of the department deeming an application for discharge permit renewal administratively complete, the applicant shall provide notice, in accordance with the requirements of Subsection F of 20.6.2.3108 NMAC, to the general public in the locale of the proposed discharge in a form provided by the department by each of the methods listed below:

(1) providing notice by certified mail to the owner of the discharge site if the applicant is not the owner; and

(2) publishing a synopsis of the notice, in English and in Spanish, in a display ad at least two inches by three inches, not in the classified or legal advertisements section, in a newspaper of general circulation in the location of the discharge.

D. Within 15 days of completion of the public notice requirements in Subsections B or C of 20.6.2.3108 NMAC, the applicant shall submit to the department proof of notice, including an affidavit of mailing(s) and the list of property owner(s), proof of publication, and an affidavit of posting, as appropriate.

E. Within 30 days of determining an application for a discharge permit, modification or renewal is administratively complete, the department shall post a notice on its website and shall mail notice to any affected local, state, federal, tribal or pueblo governmental agency, political subdivisions, ditch associations and land grants, as identified by the department. The department shall also mail or e-mail notice to those persons on a general and facility-specific list maintained by the department who have requested notice of discharge permit applications. The notice shall include the information listed in Subsection F of 20.6.2.3108 NMAC.

F. The notice provided under Subsection B, C and E of 20.6.2.3108 NMAC shall include:

(1) the name and address of the proposed discharger;

(2) the location of the discharge, including a street address, if available, and sufficient information to locate the facility with respect to surrounding landmarks;

(3) a brief description of the activities that produce the discharge described in the application;

(4) a brief description of the expected quality and volume of the discharge;

(5) the depth to and total dissolved solids concentration of the ground water most likely to be affected by the discharge;

(6) the address and phone number within the department by which interested persons may obtain information, submit comments, and request to be placed on a facility-specific mailing list for future notices; and

(7) a statement that the department will accept comments and statements of interest regarding the application and will create a facility-specific mailing list for persons who wish to receive future notices.

G. All persons who submit comments or statements of interest to the department or previously participated in a public hearing and who provide a mail or e-mail address shall be placed on a facility-specific mailing list and the department shall send those persons the public notice issued pursuant to Subsection H of 20.6.2.3108 NMAC, and notice of any public meeting or hearing scheduled on the application. All persons who contact the department to inquire about a specific facility shall be informed of the opportunity to be placed on the facility-specific mailing list.

H. Within 60 days after the department makes its administrative completeness determination and all required technical information is available, the department shall make available a proposed approval or disapproval of the application for a discharge permit, modification or renewal, including conditions for approval proposed by the department or the reasons for disapproval. The department shall mail by certified mail a copy of the proposed approval or disapproval to the applicant, and shall provide notice of the proposed approval or disapproval of the application for a discharge permit, modification or renewal by:

(1) posting on the department's website;

(2) publishing notice in a newspaper of general circulation in this state and a newspaper of general circulation in the location of the facility;

(3) mailing or e-mailing to those persons on a facility-specific mailing list;

(4) mailing to any affected local, state, or federal governmental agency, ditch associations and land grants, as identified by the department; and

(5) mailing to the governor, chairperson, or president of each Indian tribe, pueblo or nation within the state of New Mexico, as identified by the department.

I. The public notice issued under Subsection H shall include the information in Subsection F of 20.6.2.3108 NMAC and the following information:

(1) a brief description of the procedures to be followed by the secretary in making a final determination;

(2) a statement of the comment period and description of the procedures for a person to request a hearing on the application; and

(3) the address and telephone number at which interested persons may obtain a copy of the proposed approval or disapproval of an application for a discharge permit, modification or renewal.

J. In the event that the proposed approval or disapproval of an application for a discharge permit, modification or renewal is available for review within 30 days of deeming the application administratively complete, the department may combine the public notice procedures of Subsections E and H of 20.6.2.3108 NMAC.

K. Following the public notice of the proposed approval or disapproval of an application for a discharge permit, modification or renewal, and prior to a final decision by the secretary, there shall be a period of at least 30 days during which written comments may be submitted to the department and/or a public hearing may be requested in writing. The 30-day comment period shall begin on the date of publication of notice in the newspaper. All comments will be considered by the department. Requests for a hearing shall be in writing and shall set forth the reasons why a hearing should be held. A public hearing shall be held if the secretary determines there is substantial public interest. The department shall notify the applicant and any person requesting a hearing of the decision whether to hold a hearing and the reasons therefore in writing.

L. If a hearing is held, pursuant to Subsection K of 20.6.2.3108 NMAC, notice of the hearing shall be given by the department at least 30 days prior to the hearing in accordance with Subsection H of 20.6.2.3108 NMAC. The notice shall include the information identified in Subsection F of 20.6.2.3108 NMAC in addition to the time and place of the hearing and a brief description of the hearing procedures. The hearing shall be held pursuant to 20.6.2.3110 NMAC.

[2-18-77, 12-24-87, 12-1-95, 11-15-96; 20.6.2.3108 NMAC - Rn, 20 NMAC 6.2.III.3108, 1-15-01; A, 12-1-01; A, 9-15-02; A, 7-16-06]

20.6.2.3109 SECRETARY APPROVAL, DISAPPROVAL, MODIFICATION OR TERMINATION OF DISCHARGE PERMITS, AND REQUIREMENT FOR ABATEMENT PLANS:

A. The department shall evaluate the application for a discharge permit, modification or renewal based on information contained in the department's administrative record. The department may request from the discharger, either before or after the issuance of any public notice, additional information necessary for the evaluation of the application. The administrative record shall consist of the application, any additional information required by the department, any information submitted by the discharger or the general public, other information considered by the department, the proposed approval or disapproval of an application for a discharge permit, modification or renewal prepared pursuant to Subsection G of 20.6.2.3108 NMAC, and, if a public hearing is held, all of the documents filed with the hearing clerk, all exhibits offered into evidence at the hearing, the written transcript or tape recording of the hearing, any hearing officer report, and any post hearing submissions.

B. The secretary shall, within 30 days after the administrative record is complete and all required information is available, approve, approve with conditions or disapprove the proposed discharge permit, modification or renewal based on the administrative record. The secretary shall give written notice of the action taken to the applicant or permittee and any other person who participated in the permitting action who requests a copy in writing.

C. Provided that the other requirements of this part are met and the proposed discharge plan, modification or renewal demonstrates that neither a hazard to public health nor undue risk to property will result, the secretary shall approve the proposed discharge plan, modification or renewal if the following requirements are met:

(1) ground water that has a TDS concentration of 10,000 mg/l or less will not be affected by the discharge; or

(2) the person proposing to discharge demonstrates that approval of the proposed discharge plan, modification or renewal will not result in either concentrations in excess of the standards of 20.6.2.3103 NMAC or the presence of any toxic pollutant at any place of withdrawal of water for present or reasonably foreseeable future use, except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(3) the proposed discharge plan conforms to either Subparagraph (a) or (b) below and Subparagraph (c) below:

(a) municipal, other domestic discharges, and discharges from sewerage systems handling only animal wastes: the effluent is entirely domestic, is entirely from a sewerage system handling only animal wastes or is from a municipality and conforms to the following:

(i) the discharge is from an impoundment or a leach field existing on February 18, 1977 which receives less than 10,000 gallons per day and the secretary has not found that the discharge may cause a hazard to public health; or

(ii) the discharger has demonstrated that the total nitrogen in effluent that enters the subsurface from a leach field or surface impoundment will not exceed 200 pounds per acre per year and that the effluent will meet the standards of 20.6.2.3103 NMAC except for nitrates and except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(iii) the total nitrogen in effluent that is applied to a crop which is harvested shall not exceed by more than 25 percent the maximum amount of nitrogen reasonably expected to be taken up by the crop and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrates and except for contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC;

(b) discharges from industrial, mining or manufacturing operations:

(i) the discharger has demonstrated that the amount of effluent that enters the subsurface from a surface impoundment will not exceed 0.5 acre-feet per acre per year; or

(ii) the discharger has demonstrated that the total nitrogen in effluent that enters the subsurface from a leach field or surface impoundment shall not exceed 200 pounds per acre per year and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrate and contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC; or

(iii) the total nitrogen in effluent that is applied to a crop that is harvested shall not exceed by more than 25 percent the maximum amount of nitrogen reasonably expected to be taken up by the crop and the effluent shall meet the standards of 20.6.2.3103 NMAC except for nitrate and contaminants in the water diverted as provided in Subsection D of 20.6.2.3109 NMAC;

(c) all discharges:

(i) the monitoring system proposed in the discharge plan includes adequate provision for sampling of effluent and adequate flow monitoring so that the amount being discharged onto or below the surface of the ground can be determined;

(ii) the monitoring data is reported to the secretary at a frequency determined by the secretary.

D. The secretary shall allow the following unless he determines that a hazard to public health may result:

(1) the weight of water contaminants in water diverted from any source may be discharged provided that the discharge is to the aquifer from which the water was diverted or to an aquifer containing a greater concentration of the contaminants than contained in the water diverted; and provided further that contaminants added as a result of the means of diversion shall not be considered to be part of the weight of water contaminants in the water diverted;

(2) the water contaminants leached from undisturbed natural materials may be discharged provided that:

(a) the contaminants were not leached as a product or incidentally pursuant to a solution mining operation; and

(b) the contaminants were not leached as a result of direct discharge into the vadose zone from municipal or industrial facilities used for the storage, disposal, or treatment of effluent;

(3) the water contaminants leached from undisturbed natural materials as a result of discharge into ground water from lakes used as a source of cooling water.

E. If data submitted pursuant to any monitoring requirements specified in the discharge permit or other information available to the secretary indicates that this part is being or may be violated or that the standards of 20.6.2.3103 NMAC are being or will be exceeded, or a toxic pollutant as defined in 20.6.2.7 NMAC is present, in ground water at any place of withdrawal for present or reasonably foreseeable future use, or that the Water Quality Standards for Interstate and Intrastate Streams in New Mexico are being or may be violated in surface water, due to the discharge, except as provided in Subsection D of 20.6.2.3109 NMAC.

(1) The secretary may require a discharge permit modification within the shortest reasonable time so as to achieve compliance with this part and to provide that any exceeding of standards in ground water at any place of withdrawal for present or reasonably foreseeable future use, or in surface water, due to the discharge except as provided in Subsection D of 20.6.2.3109 NMAC will be abated or prevented. If the secretary requires a discharge permit modification to abate water pollution:

(a) the abatement shall be consistent with the requirements and provisions of 20.6.2.4101, 20.6.2.4103, Subsection C and E of 20.6.2.4106, 20.6.2.4107, 20.6.2.4108 and 20.6.2.4112 NMAC; and

(b) the discharger may request of the secretary approval to carry out the abatement under 20.6.2.4000 through 20.6.2.4115 NMAC, in lieu of modifying the discharge permit; the discharger shall make the request in writing and shall include the reasons for the request.

(2) The secretary may terminate a discharge permit when a discharger fails to modify the permit in accordance with Paragraph (1) of Subsection E of 20.6.2.3109 NMAC.

(3) The secretary may require modification, or may terminate a discharge permit for a class I non-hazardous waste injection well, a class III well or other type of well specified in Subsection A of 20.6.2.5101 NMAC, pursuant to the requirements of Subsection I of 20.6.2.5101 NMAC.

F. If a discharge permit expires or is terminated for any reason and the standards of 20.6.2.3103 NMAC are being or will be exceeded, or a toxic pollutant as defined in 20.6.2.7 NMAC is present in ground water, or that the Water Quality Standards for Interstate and Intrastate Streams in New Mexico are being or may be violated, the secretary may require the discharger to submit an abatement plan pursuant to 20.6.2.4104 and Subsection A of 20.6.2.4106 NMAC.

G. At the request of the discharger, a discharge permit may be modified in accordance with 20.6.2.3000 through 20.6.2.3114 NMAC.

H. The secretary shall not approve a proposed discharge plan, modification, or renewal for:

(1) any discharge for which the discharger has not provided a site and method for flow measurement and sampling;

(2) any discharge that will cause any stream standard to be violated;

(3) the discharge of any water contaminant which may result in a hazard to public health; or

(4) a period longer than five years, except that for new discharges, the term of the discharge permit approval shall commence on the date the discharge begins, but in no event shall the term of the approval exceed seven years from the date the permit was issued; for those permits expiring more than five years from the date of

issuance, the discharger shall give prior written notification to the department of the date the discharge is to commence; the term of the permit shall not exceed five years from that date.
[2-18-77, 6-26-80, 9-20-82, 7-2-81, 3-3-86, 12-1-95, 11-15-96; 20.6.2.3109 NMAC - Rn, 20 NMAC 6.2.III.3109, 1-15-01; A, 12-1-01; A, 9-15-02; A, 7-16-06]
[Subsection 3109.A was added and subsequent subsections renumbered 11-15-96]

20.6.2.3110 PUBLIC HEARING PARTICIPATION:

A. The secretary may appoint an impartial hearing officer to preside over the hearing. The hearing officer may be a department employee other than an employee of the bureau evaluating the application.

B. The hearing shall be at a place in the area affected by the facility for which the discharge permit proposal, modification or renewal is sought.

C. Any person who wishes to present technical evidence at the hearing shall, no later than ten (10) days prior to the hearing, file with the department, and if filed by a person who is not the applicant, serve on the applicant, a statement of intent to present evidence. A person who does not file a statement of intent to present evidence may present a general non-technical statement in support of or in opposition to the proposed discharge plan, modification or renewal. The statement of intent to present technical evidence shall include:

(1) the name of the person filing the statement;

(2) indication of whether the person filing the statement supports or opposes the proposed discharge plan proposal, modification or renewal;

(3) the name of each witness;

(4) an estimate of the length of the direct testimony of each witness;

(5) a list of exhibits, if any, to be offered into evidence at the hearing; and

(6) a summary or outline of the anticipated direct testimony of each witness.

D. At the hearing, the New Mexico Rules of Civil Procedure, SCRA 1986, 1-001 to 1-102 and the New Mexico Rules of Evidence, SCRA 1986, 11-101 to 11-1102 shall not apply. At the discretion of the hearing officer, the rules may be used as guidance. Any reference to the Rules of Civil Procedure and the Rules of Evidence shall not be construed to extend or otherwise modify the authority and jurisdiction of the department under the Act.

E. The hearing officer shall conduct a fair and impartial proceeding, assure that the facts are fully elicited, and avoid delay. The hearing officer shall have authority to take all measures necessary for the maintenance of order and for the efficient, fair and impartial adjudication of issues arising in the proceedings.

F. At the hearing, all persons shall be given a reasonable chance to submit data, views or arguments orally or in writing and to examine witnesses testifying at the hearing.

G. Unless otherwise allowed by the hearing officer, testimony shall be presented in the following order:

(1) testimony by and examination of the applicant or permittee proving the facts relied upon to justify the proposed discharge plan, renewal or modification and meeting the requirements of the regulations;

(2) testimony by and examination of technical witnesses supporting or opposing approval, approval subject to conditions, or disapproval of the proposed discharge plan, renewal or modification, in any reasonable order;

(3) testimony by the general public; and

(4) rebuttal testimony, if appropriate.

H. The secretary may provide translation service at a public hearing conducted in a locale where the Department can reasonably expect to receive testimony from non-English speaking people.

I. If determined useful by the hearing officer, within thirty (30) days after conclusion of the hearing, or within such time as may be fixed by the hearing officer, the hearing officer may allow proposed findings of fact and conclusions of law and closing argument. All such submissions, if allowed, shall be in writing, shall be served upon the applicant or permittee, the department and all persons who request copies in advance in writing, and shall contain adequate references to the record and authorities relied on. No new evidence shall be presented unless specifically allowed by the hearing officer.

J. The department shall make an audio recording of the hearing. If the applicant or permittee, or a participant requests a written transcript or certified copy of the audio recording, the requestor shall pay the cost of the transcription or audio copying.

K. The hearing officer shall issue a report within thirty (30) days after the close of the hearing record. The report may include findings of fact, conclusions regarding all material issues of law or discretion, as well as reasons therefore. The report shall be served on the applicant or permittee, the department, and all persons who

request copies in advance in writing. The report will be available for public inspection at the department's office in Santa Fe and at the field office closest to the point of the proposed discharge.

L. The secretary shall issue a decision in the matter no later than thirty (30) days of receipt of the hearing report. The decision shall be served and made available for inspection pursuant to Subsection K of this section.

M. Any person who testifies at the hearing or submits a written statement for the record will be considered a participant for purposes of Subsection 20.6.2.3113 NMAC and NMSA 1978, Section 74-6-5.N.

[2-18-77, 12-1-95, 11-15-96; 20.6.2.3110 NMAC - Rn, 20 NMAC 6.2.III.3110, 1-15-01; A, 12-1-01]

20.6.2.3111 TRANSFER OF DISCHARGE PERMIT: No purported transfer of any discharge permit shall be effective to create, alter or extinguish any right or responsibility of any person subject to this Part, unless the following transfer requirements are met:

A. Prior to any transfer of ownership, control, or possession (whether by lease, conveyance or otherwise) of a facility with a discharge permit, the transferror shall notify the transferee in writing of the existence of the discharge permit, and shall deliver or send by certified mail to the department a copy of such written notification, together with a certification or other proof that such notification has in fact been received by the transferee.

B. Upon receipt of such notification, the transferee shall have the duty to inquire into all of the provisions and requirements contained in such discharge permit, and the transferee shall be charged with notice of all such provisions and requirements as they appear of record in the department's file or files concerning such discharge permit.

C. Until both ownership and possession of the facility have been transferred to the transferee, the transferor shall continue to be responsible for any discharge from the facility.

D. Upon assuming either ownership or possession of the facility, the transferee shall have the same rights and responsibilities under the discharge permit as were applicable to the transferor.

E. Nothing in this section or in this part shall be construed to relieve any person of responsibility or liability for any act or omission which occurred while that person owned, controlled or was in possession of the facility.

[2-18-77, 12-24-87, 12-1-95, 11-15-96; 20.6.2.3111 NMAC - Rn, 20 NMAC 6.2.III.3111, 1-15-01; A, 12-1-01]

20.6.2.3112 APPEALS OF SECRETARY'S DECISIONS:

A. If the secretary approves, approves subject to conditions, or disapproves a proposed discharge plan, renewal or modification, or modifies or terminates a discharge permit, appeal therefrom shall be in accordance with the provisions of Sections 74-6-5(N), (O) and (P), NMSA 1978. The filing of an appeal does not act as a stay of any provision of the Act, the regulations, or any permit issued pursuant to the Act, unless otherwise ordered by the secretary or the commission.

B. If the secretary determines that a discharger is not exempt from obtaining a discharge permit, or that the material to be discharged contains any toxic pollutant as defined in 20.6.2.7 NMAC, which is not included in the numerical standards of 20.6.2.3103 NMAC, then the discharger may appeal such determination by filing with the commission's secretary a notice of appeal to the commission within thirty days after receiving the secretary's written determination, and the appeal therefrom and any action of the commission thereon shall be in accordance with the provisions of Sections 74-6-5(O), (P), (Q), (R) and (S) NMSA 1978.

C. Proceedings before the commission shall be conducted in accordance with the commission's adjudicatory procedures, 20 NMAC 1.3.

[2-18-77, 7-2-81, 12-1-95, 11-15-96; 20.6.2.3112 NMAC - Rn, 20 NMAC 6.2.III.3112, 1-15-01; A, 12-1-01; A, 7-16-06]

20.6.2.3113 APPEALS OF COMMISSION DECISIONS: An applicant, permittee or a person who participated in a permitting action and who is adversely affected by such action may appeal the decision of the commission in accordance with the provisions of Section 74-6-7(A), NMSA 1978.

[2-18-77, 12-1-95, 11-15-96; 20.6.2.3113 NMAC - Rn, 20 NMAC 6.2.III.3113, 1-15-01; A, 12-1-01]

20.6.2.3114 FEES:

A. FEE AMOUNT AND SCHEDULE OF PAYMENT - Every facility submitting a discharge permit application for approval or renewal shall pay the permit fees specified in Table 1 of this section and shall pay a filing fee as specified in Table 2 of this section to the Water Quality Management Fund. Every facility submitting a