

Control & Disposal Plan (Revised)  
for  
Roulette Oil & Gas Co, LLC  
Well Clara Field #20 (37-105-21374-00-00)  
Conversion from Gas Producer to Class II-D Injection Well  
(EPA UIC Permit No. PAS2D050BPOT)  
  
Clara Township  
Potter County, PA

Prepared by  
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StratResources Geologic Consulting, PLLC



*Cary P. Kuminecz*

01/17/2023

## **Introduction**

This Control & Disposal Plan is part of the Preparedness, Prevention, and Contingency (PPC) plan for the site described in the following paragraphs. The purpose of the PPC is to prevent and control the accidental discharge of polluting materials onto the surface or in the groundwater at the site.

## **Preparer's Experience**

The preparer of this plan, Cary P. Kuminecz, is a Professional Geologist, licensed in both Pennsylvania (License No. PG002142G) and New York (License No. 000357). Mr. Kuminecz has a Master's Degree in Geology from Indiana University and 42+ years of experience as a petroleum geologist, the latest 32 years focusing on the Appalachian basin. His experiences includes study of and work in waterfloods of the northern Appalachian basin and successful preparation of the Clara Field #20 Class-II-D disposal UIC well permit for the EPA.

## **Description of the Operations & Site Considerations**

Roulette Oil & Gas Co., LLC (ROGC), contingent upon DEP approval, will convert a production well, the Clara Field #20 (API No. 37-105-21374-00-00), to a Class II-D Underground Injection Control well. The Environmental Protection Agency (EPA) approved this conversion and granted an Underground Injection Control (UIC) permit to ROGC, effective January 14, 2022 (Permit PAS2D050BPOT). Brine water from nearby shallow, conventional wells operated by ROGC will be injected into the Cooper 5-0, Sheffield 3-1 and Kane 3-0 sandstone reservoirs. In addition to the well itself, the site will contain three one-hundred barrel brine storage tanks (12,600 gallons), a fluid separator, a small oil storage tank, a locked, steel conex box/building, a load line container, generator, pressure pump, injectate filter, and meter. The brine intended for disposal comes from approximately 60 shallow conventional oil and gas wells on the lease and another approximately 50 shallow conventional oil and gas wells on ROGC operated leases in the general area.

The Clara Field #20 well is located in Clara Township of Potter County (see Figure 1). The preparation of this injection facility will create an earth disturbance of approximately 0.22 acres according to the E&S Plan submitted as part of this permit application (Rosenberger, 2022). The plan calls for the physical upgrading of the access road to the site and of the pad itself.

Pipelines will be installed and buried at a depth of three feet in a trench. Silt fencing or compost filter socks will be installed during site upgrades until site stabilization. Drainage patterns will be optimized and maintained. Mulching and seeding will occur after construction. Several lined and diked as well as diked concrete secondary containment areas will be created. The site will be maintained by ROGC personnel. Specific details regarding all these alterations are found in the

Soil Erosion and Sedimentation Control Plan and Site Restoration Plan (E&S Plan) submitted as part of the DEP permit application (Rosenberger, 2022).

All areas of the site are exposed to precipitation except for the conex box/building, which is wired for electricity and will house the generator, facility control panel, spill remediation materials, and the chemicals used to treat the injectate, the wellbore, and the reservoirs.

According to the website, US Climate Data,

<https://www.usclimatedata.com/climate/coudersport/pennsylvania/united-states/uspa2766>

the nearest municipality to the Clara Field #20 well with published precipitation data is Coudersport, PA. The annual average rainfall at Coudersport is 42.06" with the greatest amount falling in June (4.66") and the least amount in February (2.24"). According to FEMA's Federal Insurance Rate Map, the wellsite **does not** lie within any Flood zone (FIRM Map 42105C0070D). The site is well-situated with respect to lack of natural hazards from precipitation because of the modest monthly precipitation rates and lack of any flood zone in this upland location. Runoff from the site will be to the west and northwest toward an unnamed tributary of Shaytown Branch, located approximately 1,100 feet away from the Clara Field #20 well.

During six months of the year (November through April) the average low temperature at Coudersport dips below freezing (see the link below).

<https://weatherspark.com/y/20342/Average-Weather-in-Coudersport-Pennsylvania-United-States-Year-Round#Sections-Precipitation>

When the temperature is going to fall below freezing, ROGC will drain the pipes, valves, and pump. Drainage will be collected in plastic buckets and then aggregated into ROGC's vacuum tank. From there, the drainage will be pumped back to the storage tanks.

To minimize noise at the site the operator is planning to inject brine into the Clara Field #20 well only during daylight hours, unless fluid volumes need to be pressurized at other times. ROGC will be using a 30 hp natural gas engine with muffler to manage the injection rate. The generator will provide electric power at the site. It will be housed and vented in the steel conex building. The injection well will dispose of brine at an average anticipated rate of 20 BWPD (barrels of water per day), but can go as high as 500 BWPD, when appropriate. Injection pressures will range from 50-750 psi with an expected average of 400 psi. Surface pressures will always remain below the maximum allowed for this site of 974 psi.

To minimize light pollution at the site the operator is planning to inject into the Clara Field #20 well only during daylight hours. Any night time operation, if required, will use a single spotlight for safety. To minimize truck traffic the operator plans to bring in an estimated one tanker load of brine per day.

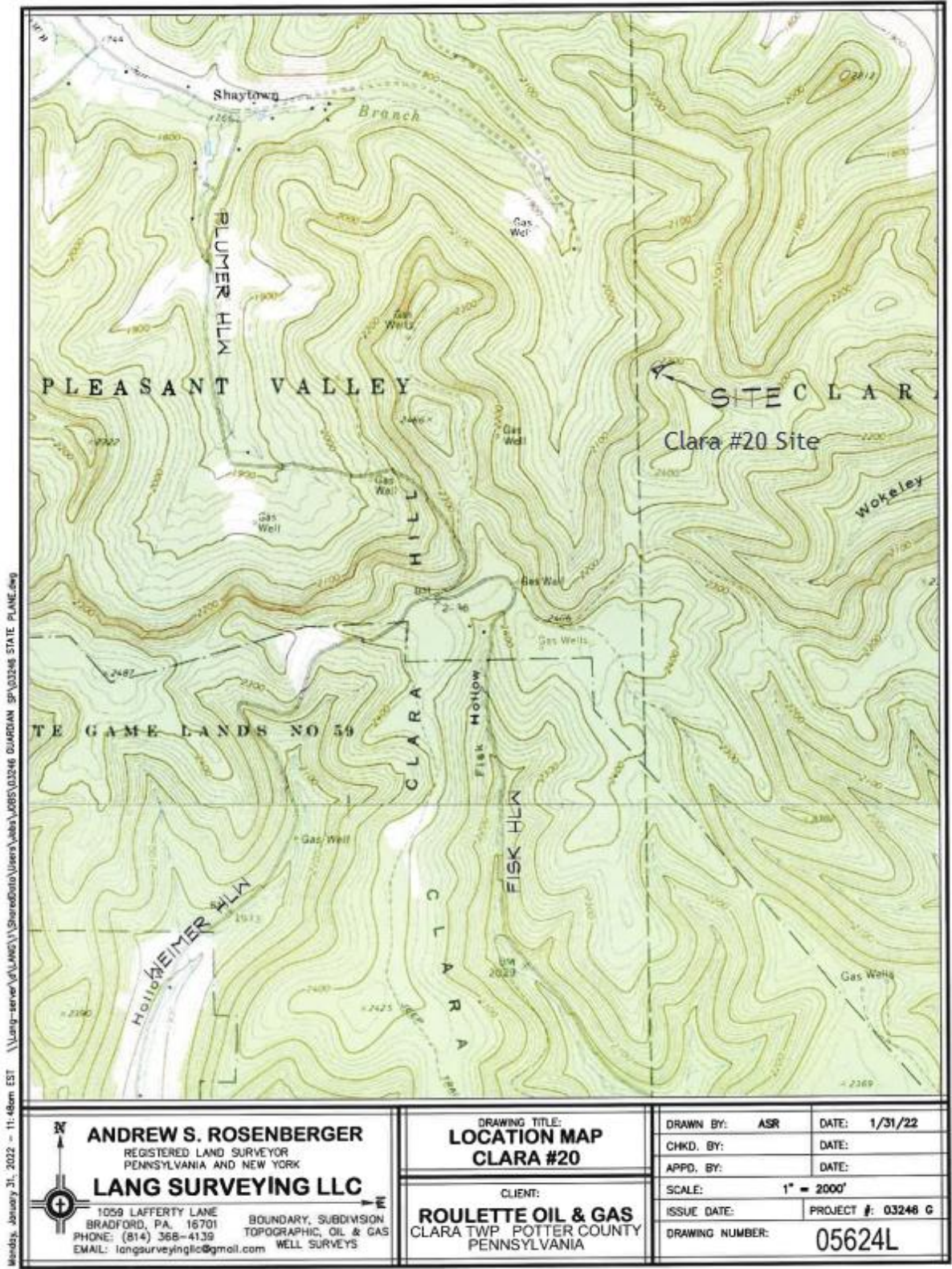
The operator's business and principal address are:

Roulette Oil & Gas Co, LLC (ROGC)  
1034 Route 44 North  
Shinglehouse, PA 16748

The 24-hour ROGC emergency contact numbers are:

**James Reynolds, President**  
**716-378-4653 (mobile)**

**Pat Howard, Superintendent**  
**716-864-5535 (mobile)**



Monday, January 31, 2022 -- 11:48am EST \\lang-server\pl\lang\Users\jaba\JOBS\03246 CLAR\AN 59\03246 STATE PLANE.dwg


 <p><b>ANDREW S. ROSENBERGER</b> REGISTERED LAND SURVEYOR PENNSYLVANIA AND NEW YORK</p> <p><b>LANG SURVEYING LLC</b> 1059 LAFFERTY LANE BRADFORD, PA. 16701 PHONE: (814) 368-4139 EMAIL: langsurveyingllc@gmail.com</p> <p>BOUNDARY, SUBDIVISION TOPOGRAPHIC, OIL &amp; GAS WELL SURVEYS</p>	DRAWING TITLE: <b>LOCATION MAP                  CLARA #20</b>		DRAWN BY: ASR DATE: 1/31/22
	CLIENT: <b>ROULETTE OIL &amp; GAS</b> CLARA TWP POTTER COUNTY PENNSYLVANIA		CHKD. BY: DATE:
		SCALE: 1" = 2000'	APPD. BY: DATE:
		ISSUE DATE:	PROJECT #: 03246 G
		DRAWING NUMBER:	<b>05624L</b>

Figure 1

### **Pollution Prevention Measures**

1. The facility alteration and construction will be in accordance with the site specific Erosion and Sediment control plan submitted by Andrew Rosenberger of Lang Surveying LLC.
2. Fluid will arrive on site in a 100-barrel water truck. The fluid will be transferred from the truck's discharge valve to the *steel load line container* (Pollution Control Corp. PCC-301) to contain and recover any spills during brine offloading where the truck's discharge connects to the facility's pipeline. The discharge manifold for unloading of the water trucks will be designed so any discharge from hoses will be contained within a concrete pad and concrete dike with a 12" height. Any spills will be captured using spill clean-up materials that will be stored on site or by ROGC's portable vacuum tank. The appropriate regulatory agencies will be notified if a spill occurs during fluid transfer anywhere on the site beyond the containment areas.
3. Beyond the load line container and its valve, the brine will pass by pipeline to a single-walled, plastic 100-barrel separator tank to remove any residual oil from the brine. The oil will be transferred by gravity to an 80-barrel, single-walled, steel storage tank for eventual sale. The separated brine, sans oil, will then be temporarily stored in three, 100-barrel, single-walled, plastic storage tanks prior to filtering, metering and injection. The storage tanks will be fed by gravity and have an outflow valve on the last tank to control the amount of injectate to the filter.
4. All the storage and separator tanks will be surrounded by earthen dikes, lined with 30- mil plastic, that are designed to hold a minimum of 1.5 times the stored fluid volume of the tanks. The dikes will have three feet of free board. The liners will be underlain by six inches of sand and with two inches of sand over the liner. Two inches of washed gravel will provide the base for the tanks.
5. All tanks will have a fluid level monitor alarm with a visible, external red light indicator on the float system, which will turn on should fluid levels reach a prescribed level. Each tank will also have a control valve on its outflow side.
6. The brine will be filtered and metered. There will be intake and outflow valves on both the meter and filter systems.
7. All piping will be pressure tested prior to operation.

8. A high/low pressure kick out switch will be installed on the injection pump.
9. The injection well will have steel pipe and a pressure relief valve at the surface.
10. The operator has designated the Clara Field #11 (37-105-21136-00-00) and the Clara Field #19 (37-105-21359-00-00) wells, both within one-quarter mile of the Clara Field #20, as monitor wells. The operator will pump off all fluid in the monitor wells and then monitor the fluid pumping time in these wells during injection into the Clara Field #20 to determine if there is excess fluid entry into the monitor wells. With respect to monitoring the Clara Field #20 well itself, the annulus of the 2.375" tubing will be kept full of fluid and monitored with a pressure gauge for any pressure anomalies or changes in the fluid level due to packer or tubing failure. If that happens, injection will cease and the tubing will be pulled, inspected, and replaced, as needed.
11. Various chemicals will likely be used during the injection to maintain well and injected fluid integrity. The specific, likely, chemicals to be used are shown in the Material Data Sheets included in **Appendix 4** of this plan and include:

- *Biocide* (reduces bacterial growth and its byproducts in the well)
- *Clay Stabilizer* (reduces clay precipitation in the reservoir)
- *Corrosion Inhibitors* (reduces corrosion of pipelines and well equipment)
- *Iron Chelating Agent* (reduces iron scale by sequestering metal ions)
- *Iron-Oxygen Scavenger* (reduces dissolved iron and iron fines in brine)

The amount of each chemical agent anticipated to be stored at any one time is 10 gallons of each agent. Storage will be in five gallon, sealed plastic containers. The sealed containers themselves will be stored on site in the Control & Storage steel conex box.

12. A pressure relief valve will also be installed on the 2.375" tubing. The annulus of the 2.375" tubing in the well will be kept full of fluid and monitored with a pressure gauge. Pressure or fluid level anomalies noted at the surface will result in the shutdown of injection operations and pulling of the tubing for inspection
13. A visual inspection of the site will be made *daily* to insure environmental and mechanical problems do not exist. This inspection will include pipes, manifolds, valves, wellhead, pump, meter, filter, tanks, natural gas generator, as well as the liner and dike integrity. Any leaks, drips or spills will be noted and appropriate cleanup and/or emergency response procedures will be initiated as needed (**see Appendices 1 and 2**).

14. Within the conex building the control panel, generator, and sealed chemical containers will also be inspected to determine their status.
15. A quarterly inspection will be made of the tanks filters, pumps, piping, and wellhead to verify their integrity.
16. Common chemical and physical absorbent materials will be kept on site in the conex building and used as needed to recover spills. A spill at the site, should one occur, can be quickly controlled by shutting down the pumps used to transport the liquids.
17. ROGC also has a portable vacuum tank for collection of any spilled liquids.

A schematic of the proposed injection facility and fluid flow are displayed in Figure 2.

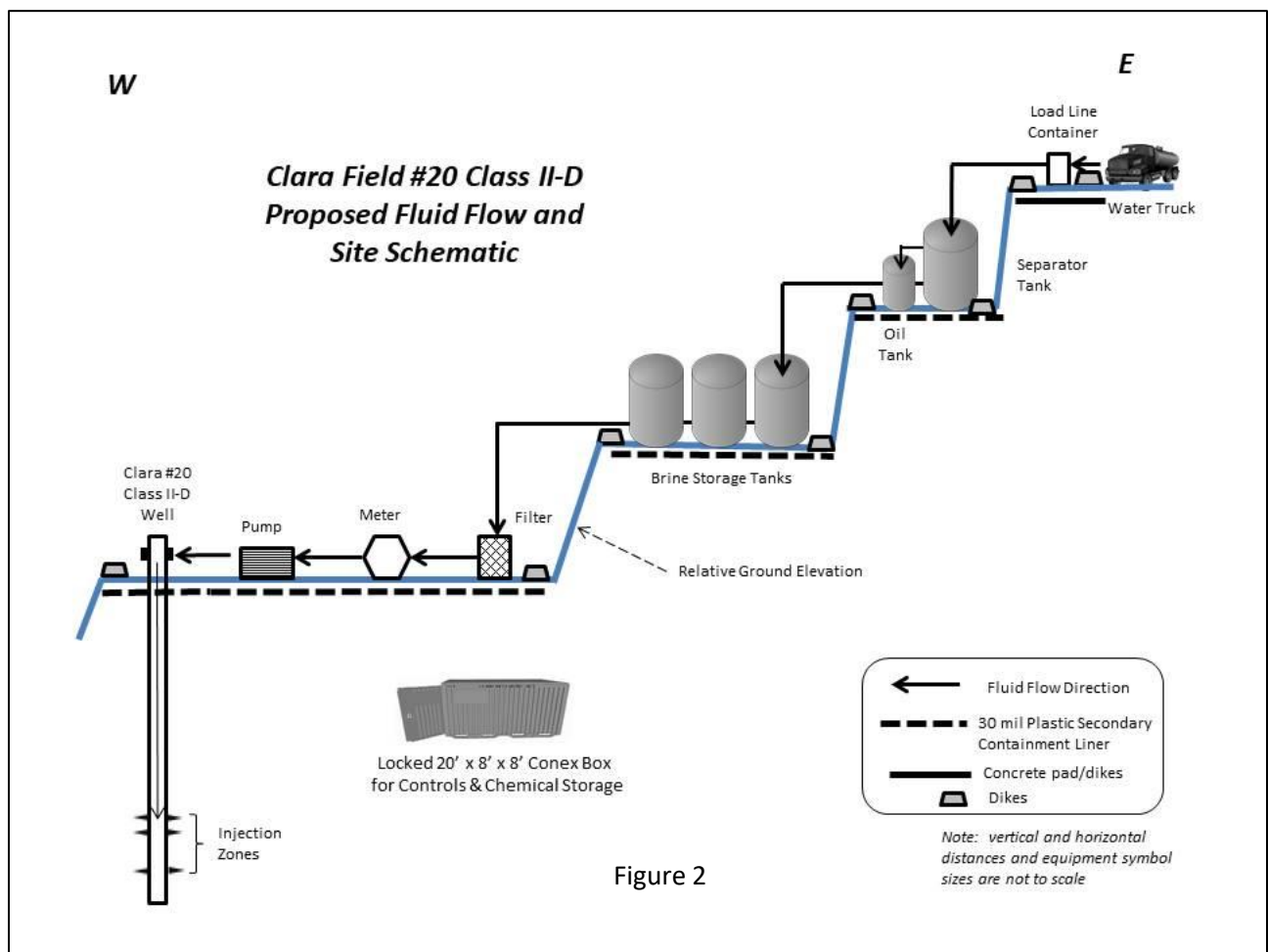


Figure 2



### **Personnel Training**

Training in the normal operations of producing and injection wells is an ongoing process. The responsible individuals will be trained in implementation of the Control & Disposal as well as the and Erosion & Sediment Control plans, construction and maintenance techniques for high pressure piping, electrical generator, valves, tanks, and pumps as well as pollution spill response, and emergency procedures.

Key employees of ROGC will attend industry and/or regulatory agency classes and webinars related to the onsite safety and pollution control practices as available and deemed appropriate.

### **Waste Disposal/Reuse Methods**

Waste products of this injection-disposal facility are expected to be minimal, but may include the following:

1. Solids collected from the separator and oil tanks and the injectate filter over time. These are likely to be clay-sized and fine- to coarse-grained, natural sediments from the original reservoir formations.
2. Oil separated from the brine and stored in its own tank, which will be sold later.
3. The injectate filter, when replaced.

In addition:

1. Any contaminated soil following a spill, which will be removed per requirements of the PADEP and the EPA.
2. All these materials will be sent to solid waste landfills approved to take these items.
3. Any spilled brine will be collected by absorbent materials on site or by vacuum tank/truck. These fluids will be disposed of in an environmentally-sound manner approved by the PADEP and EPA.

### **Pollution Incident Response (see Appendix 3)**

ROGC employees will be the first onsite emergency responders during hours the site is operating. ROGC will maintain equipment/materials at the site to deal with the collection of spills. Ongoing communication between office and field personnel (one to two) will generally be by cell phone using the nearest available cell tower. Cell coverage is good at the wellsite. A well failure procedure will be initiated if a failure is observed at the facility or if the monitor wells show fluid or pressure anomalies. If that happens, the operator will cease injection operations immediately and notify the PADEP Northcentral Regional Office in Williamsport, PA and EPA's Emergency

Response number and/or the EPA Region 3 office in Philadelphia, PA and the Potter County Pumps, hoses, valves and facility equipment will be operated by ROGC and supervised 3<sup>rd</sup> party employees, when appropriate. Hoses, fittings, and valves will have “duck ponds” for secondary containment. Company-owned equipment, including an onsite vacuum tank, is available for cleanup operations. The company employees are familiar with the operation of the equipment and are available on site or on an as-needed basis.

Commercial cleanup contractors are available on a call-as-needed basis with a quick response of less than one day’s time. **Appendix 3** includes an extensive list of equipment that will be available on-site for normal daily or emergency use.

The Potter County Department of Emergency Services will assist in mitigating and investigating spills or accidents. The relevant contact numbers are listed below. Production wells in the area, with the possible exception of the monitor wells, will continue to operate, but injection operations will be suspended until the operator gains approval from all regulating agencies to continue operation. If an evacuation is called for, personnel will leave the site by the lease road located on the eastern side of the site. Evacuation can proceed either north or south along the lease road. Vehicles that may be used in case of evacuation will be parked next to the brine unloading area.

**Primary Emergency Contact Phone Numbers**

James Reynolds, President ROGC ( <b>Emergency Coordinator</b> )	716-378-4653 (mobile) 814-697-7891 (office)
Pat Howard, Superintendent ROGC ( <b>Emergency Coordinator</b> )	716-864-5535 (mobile)
EPA National Response Center (NRC)	800-424-8802
EPA Region 3	215-814-5000 or 215-814-5122
Potter County Dept of Emergency Services	814-274-8900
PA Emergency Management Agency (PEMA)	717-651-2001
PADEP Northcentral Regional Office	570-327-3636

**Other Relevant Emergency Phone Numbers**

Potter County Sheriff’s Office	814-274-9350
Shinglehouse Volunteer Fire Company Inc	814-697-6236
Coudersport Volunteer Fire Department	814-274-7012
UPMC Cole Hospital (Coudersport)	814-274-9300

UPMC Cole Hospital in Coudersport provides Emergency services treating work injuries, heart attacks, broken bones, etc. In addition, the hospital provides clinical services in the following potentially relevant areas:

Cancer	Lab
Dental	Orthopaedics
Ear, Nose, and Throat	Pain Management
Express Care	Pulmonology
Gastroenterology	Rehabilitation
General Surgery	Trauma
Heart and Vascular	Urology
Imaging & Internal Medicine	Wound Healing

### **Implementation**

A permanent identification sign will be installed at the entrance to the facility. The sign shall include the facility name, company name, well name and permit number and the 24-hour emergency number(s). The site has no postal address, but is located at coordinates 41.894586 and -78.148143 (NAD83).

A steel, electrically-wired, conex box building (8' x 8' x 20') will be on the site to house the generator, controls, chemicals and spill cleanup materials. Well records will be stored in this building or within an onsite postal box (non-US Postal Service). The building will be kept locked, when the site is unmanned. All valves within the entire facility will also be locked, when the site is unmanned. Access to the site will be by locked gate. Natural barriers and pipe rails will also limit access to the site.

Although all employees are a part of the general preparedness necessary for any emergency response to the events covered by this plan, two individuals have been designated with the responsibility for developing and implementing this plan and will be designated as the Emergency Coordinators.

**James Reynolds, President**  
**716-378-4653 (mobile)**

**Pat Howard, Superintendent**  
**716-864-5535 (mobile)**

**Appendix 1** of this plan details the Emergency Coordinators' duties, responsibilities, and prevention practices.

In the event of an imminent or actual emergency, the Emergency Coordinator should activate alarm systems, notify emergency response agencies listed in this plan, identify the problems, assess the health or environmental hazards and take all reasonable measures to stabilize the situation. The Emergency Coordinator(s) are also responsible for follow-up activities after the incident such as treating, storing or disposing of residues and contaminated soil, decontamination and maintenance of emergency equipment and submission of any reports.

The Appendices to this plan contains the following information:

1. Emergency Coordinators' Duties
2. Pollution Incident Prevention Practices
3. Emergency Supplies and Equipment Likely to Be Needed
4. Material Data Safety Sheets for Potential Onsite Materials

## APPENDICES

1. Emergency Coordinator's Duties
2. Pollution Incident Prevention Practices
3. Emergency Equipment Available for Response
4. Relevant Material Safety Data Sheets

## 1. Emergency Coordinator's Duties

Whenever there is an imminent or actual emergency situation, the Emergency Coordinator must immediately:

1. Activate facility alarms or communication systems, where applicable, to notify facility personnel.
2. Call 911 as well as notify local emergency response agencies (see Pages 7 and 8).
  - a. Identify the location, character, exact source, cause, quantity, areal extent, and current weather conditions at the location of any emitted or discharged materials. This may be done by observation or review of records, and if necessary, by chemical analysis.
  - b. Assess possible hazards to human health or the environment that may result from the emission or discharge of materials or from fire or explosion, including injuries or fatalities (if any) and any evacuations that may have taken place. The assessment must consider both direct and indirect effects of the emission, discharge, fire or explosion.
  - c. Report threats to human health or the environment by notifying the local authorities including the county emergency management agency, which in this case is the Potter County Department of Emergency Services, and indicate if evacuation of local areas may be advisable; and notify the National Response Center (NRC) and the Pennsylvania Emergency Management Agency (PEMA) and report the following:
    - i. Name of the person reporting the incident
    - ii. Name and location of the installation
    - iii. Phone number where the person reporting the spill can be reached
    - iv. Date, time, and location of the incident
    - v. Brief description of the incident, including nature of the materials or wastes involved, extent of injuries (if any), and possible hazards to human health or the environment
    - vi. The estimated quantity of the materials or wastes spilled
    - vii. The extent of contamination of land, water, or air, if known

If there is a release from an above-ground storage tank, which threatens the water supply of downstream users. The downstream users must be notified as soon as possible. Priority for notification is by closest proximity to the release site.

The Clara Field #20 wellsite is within the Shaytown Branch. Downstream waterways within the one mile buffer around the Area of Interest include the Shaytown Branch and tributaries of Bell Run, the South Branch of Canada Run, and Wokeley Hollow and its tributaries; as well as any known water wells and springs.

During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fire, explosion, emission, or discharge do not occur, reoccur, or spread to other materials or wastes at the installation. These measures shall include where applicable, stopping all processes and operations, collecting and containing released materials or wastes, and removing or isolating containers.

If the installation stops operations in response to a fire, explosion, emission, or discharge, the Emergency Coordinator must ensure that adequate monitoring is conducted for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

Immediately after an emergency, the Emergency Coordinator, with Departmental approval must provide for treating, storing, or disposing of residues, contaminated soil, etc. from an emission, discharge, fire, or explosion at the installation.

The Emergency Coordinator must insure that in the affected areas of the installation, no material or waste incompatible with the emitted or discharged residues is processed, stored, treated, or disposed of until cleanup procedures are completed; and all emergency equipment listed in the plan is clean and fit for its intended use before operations are resumed.

Within 14 days after the incident, the installation must submit a written report on the incident, updating the initial report to PEMA using the link [hazmat@pa.gov](mailto:hazmat@pa.gov) (in PDF file format). The report must include the following:

- A. The name, address, and telephone number of the individual filing the report
- B. The name, address, and telephone number of the installation (if any). Otherwise use the geographic coordinates, if the installation does not have a postal address. Use the Emergency Coordinator's phone number for the Clara Field #20 installation
- C. The date, time, and location of the incident

- D. A brief description of the circumstances causing the incident
- E. A description and estimated quantity by weight or volume of materials or wastes involved
- F. An assessment of any contamination of land, water, or air that has occurred due to the incident
- G. The estimated quantity and disposition of recovered materials or wastes that resulted from the incident
- H. A description of what actions the installation intends to prevent a similar occurrence in the future



## 2. Pollution Incident Prevention Practices

Pollution incident prevention practices can be divided into the following four categories: prevention, containment, mitigation, and ultimate disposition. The listings below provide specific examples of each category that may be relevant to the Clara Field #20 facility.

### A. PREVENTION

- a. Visual Observation of:
  - i. Storage facilities
  - ii. Transfer pipelines
  - iii. Loading and unloading areas
  - iv. Waste handling and storage areas
  
- b. Detailed Inspections of:
  - i. Pipes, pumps, valves, and fittings for leaks
  - ii. Tanks for corrosion (internal and external)
  - iii. Dry material or waste stockpiles for wind blowing
  - iv. Tanks supports or foundations for deterioration
  - v. Walls for stains
  - vi. Drainage ditches and areas around old tanks for evidence of spilled materials
  - vii. Primary or secondary containment for deterioration
  - viii. Housekeeping practices
  - ix. Shipping containers for damage
  - x. Material or waste conveyance systems for leaks, spills, or overflows
  - xi. Integrity of stormwater collection systems
  - xii. Waste storage, treatment, or disposal sites for leaks, seeps, and overflows
  
- c. Monitoring of:
  - i. Liquid-level detectors (in well annulus and tanks)
  - ii. Alarm systems
  - iii. Pressure and temperature gauges
  - iv. Analytical testing instrumentation
  - v. Flow meters
  - vi. Valve positioning indicators
  - vii. Equipment operation lights
  - viii. Runoff diversion system
  - ix. Records (all monitoring results/findings)
  
- d. Non-destructive Testing:
  - i. Hydrostatic pressure tests
  - ii. Fluid level measurements in the Clara Field #20
  - iii. Monitor well measurements

B. CONTAINMENT

a. Secondary Containment

- i. Dikes
- ii. Load line container
- iii. Concrete pads
- iv. Depressed areas
- v. Storage basins
- vi. Sumps
- vii. Drip Pans
- viii. Liners

b. Flow Diversion

- i. Trenches
- ii. Drains
- iii. Graded pavement
- iv. Overflow structures

c. Sealing

- i. Foamed plastic compounds used for plugging leaks in tanks

C. MITIGATION

a. Physical Clean-Up

- i. Brooms
- ii. Shovels
- iii. Plows
- iv. Absorbent pads

b. Labeling

- i. Color coding of tanks and pipelines
- ii. Facility identification and warning signs including "No Trespassing"

c. Vehicle Positioning

- i. Designated loading and unloading areas

d. Covering

- i. Tarpaulins over outdoor dry waste or material stockpiles
- ii. Vegetation and rock as designated in E&S plan and covering surface impoundments

e. Pneumatic and Vacuum Conveying

- i. Loading and unloading by air pressure, vacuum, or gravity feed
- ii. Safety relief valves

- f. Preventative Maintenance
  - i. Periodic inspections
  - ii. Periodic testing to determine soundness of system
  - iii. Identification of equipment and systems that need to be upgraded, repaired, or replaced
  - iv. Appropriate adjustment, repair, or replacement of parts
  - v. Complete recordkeeping of all repairs, upgrading, replacements, and adjustments; and all testing findings/results after system modifications were made
  
- g. Good Housekeeping
  - i. Neat and orderly storage of chemicals
  - ii. Prompt removal of small spillage
  - iii. Regular garbage pickup and disposal
  - iv. Maintenance of dry, clean floors by use of brooms, vacuum cleaners, etc.
  - v. Stimulation of employee interest in good housekeeping
  
- h. Employee Training Programs
  - i. Material Inventory Systems
  - ii. Material Safety Data Sheets
  - iii. Industry- and regulatory agency-sponsored relevant courses & webinars
  
- i. Mechanical Cleanup
  - i. Vacuum systems, including onsite vacuum tank
  - ii. Pumps
  - iii. Absorbent pads
  
- j. Chemical Cleanup (Sorbents)
  - i. Activated carbon
  - ii. Polyurethane and polyolefin spheres, beads, and foam belts
  - iii. Clay
  - iv. Sawdust
  
- k. Volatilization
  - i. Evaporation
  
- l. Other
  - i. Neutralization
  - ii. Ion exchange
  - iii. Chemical oxidation
  - iv. Biological treatment

- D. ULTIMATE DISPOSITION
  - a. Thermal oxidation
  - b. Land disposal
  - c. Recycle
  - d. Recover
  - e. Reuse

### 3. Emergency Equipment Available for Response

Special equipment is often required and may be needed quickly in an emergency.

Equipment to be available at the Clara Field #20 Class II-D facility will include the following:

- a. Absorbent materials
- b. Assorted pumps and hoses
- c. Backhoe
- d. Bulldozer
- e. Camera
- f. Chain saw
- g. Cutters
- h. Decontamination equipment with a clean resuscitator water supply
- i. Excavator
- j. Firefighting equipment
- k. First aid supplies
- l. Fuel supply
- m. Generator trailer
- n. Gloves, suitable rubber and work types
- o. Heaters, portable
- p. Jacks
- q. Lighting equipment, portable
- r. Medical supplies
- s. Metal saw (power)
- t. Mini-hoe
- u. Safety glasses
- v. Sand supply
- w. Submersible pump
- x. Tool box
- y. Vacuum tank
- z. Vehicles
- aa. Water pump
- bb. Welding/cutting equipment

#### 4. Safety Data Sheets for Chemicals to Be Potentially Used at the Facility

<b><u>Chemical Type</u></b>	<b><u>Purpose</u></b>
<b>Biocide</b>	<b>(reduces bacterial growth and its byproducts in the well)</b>
<b>Clay Stabilizer</b>	<b>(reduces clay precipitation in the reservoir)</b>
<b>Corrosion Inhibitors</b>	<b>(reduces corrosion of pipelines and well equipment)</b>
<b>Iron Chelating Agent</b>	<b>(reduces iron scale by sequestering metal ions)</b>
<b>Iron-Oxygen Scavenger</b>	<b>(reduces dissolved iron and iron fines in brine)</b>