BEFORE THE COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL HEARING BOARD
2nd Floor, Rachel Carson State Office Building
400 Market Street, Post Office Box 8457
Harrisburg, PA 17105-8457

CLEAN WATER ACTION, Appellant, v. COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION, and SHALLENBERGER CONSTRUCTION, INC., Permittee, Appellees.	EHB Docket No. 2009-134-R

AMENDED NOTICE OF APPEAL

1. Name, address and telephone number of Appellant:

Clean Water Action
Myron Arnowitt, Pennsylvania State Director
100 Fifth Avenue, #1108
Pittsburgh, Pennsylvania 15222
(412) 765-3053

Further information about Clean Water Action and its members is included in the Amended Objections to the Department's Action, annexed hereto.

2. Subject of your appeal:

(a) Action of the Department for which review is sought *(a copy must be attached)*:

Clean Water Action seeks review of the Department's execution of a Consent Order and Agreement ("Agreement") entered into on August 28, 2009, with Shallenberger Construction, Inc. ("Shallenberger"). The Agreement purports to govern Shallenberger's construction and operation of the Ronco Wastewater Treatment Plant ("Ronco WWTP") under NPDES Permit No. PA0253723 ("NDPES Permit") and Water Quality Management Part II Permit No. 2608201 ("WQM Permit"). Copies of the Agreement, NPDES Permit, and WQM Permit are annexed to the Amended Objections to the Department's Action as Exhibits 1-3, respectively.

(b) The Department's official who took the action:

The Department signatories to the Agreement are Samuel C. Harper, Regional Manager of Water Management for the Southwest Region, and James A. Meade, Assistant Counsel.

(c) The location of the operation or activity which is the subject of the Department's action (municipality, county):

The Ronco WWTP will be located in Masontown Borough, Fayette County, and will discharge into the Monongahela River.

(d) On what date and how you received notice of the Department's action:

Counsel for Clean Water Action, Emily Collins, became aware of the Agreement, which was not noticed in the Pennsylvania Bulletin, on September 17, 2009. To obtain a copy of the Agreement, Ms. Collins was required to schedule a file review for September 28, 2009. The Agreement was not in the file when Clinic intern, Matthew Hilliard, appeared on the scheduled date, but DEP provided a copy upon the Clinic's specific request on October 2, 2009.

3. *Objections to the Department's action in separate, numbered paragraphs.* The objections may be factual or legal and must be specific. If you fail to state an objection here, you may be barred from raising it later in your appeal. Attach additional sheets, if necessary.

Please see the Amended Objections to the Department's Action, annexed hereto.

4. Specify any related appeal(s) now pending before the Board. If you are aware of any such appeal(s) provide that information.

We are not aware of any related appeal pending before the Board.

Respectfully submitted this 2nd day of November, 2009.

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*Motion for admission *pro hac vice* pending.

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AMENDED OBJECTIONS TO THE DEPARTMENT'S ACTION

1. In this appeal, Clean Water Action challenges the decision of the Pennsylvania Department of Environmental Protection ("DEP" or the "Department") to allow immediate construction of a gas wastewater treatment plant ("WWTP") that will discharge high levels of total dissolved solids ("TDS") and other toxic chemicals associated with Marcellus Shale hydraulic fracturing and production into an already contaminated stretch of the Monongahela River. Under a Consent Order and Agreement (the "Agreement") between DEP and Shallenberger Construction, Inc. ("Shallenberger"), the first phase of that facility—the Ronco WWTP, in Masontown Borough, Fayette County—will operate for the indefinite future under National Pollution Discharge Elimination System ("NPDES") Permit No. PA0253723 (the "NPDES Permit") and Water Quality Management ("WQM") Part II Permit No. 2608201 (the "WQM Permit"), which have no limits on the discharge of TDS and require no treatment for removal of TDS, even though TDS levels both upstream and downstream of the plant's proposed

outfall have repeatedly exceeded legal standards established to protect drinking water supplies.[1] The NPDES Permit also has no effluent limitations, or even monitoring requirements, for a raft of additional toxic chemicals commonly found in wastewaters from Marcellus Shale gas development.

2. In the Agreement, DEP says that it "intends" to amend the deficient NPDES permit and that the Ronco WWTP will need upgrading to meet new effluent limitations, including limitations for TDS and sulfates (a potential component of TDS). But there is no deadline for issuance of the Amended NPDES Permit—indeed, DEP promises *not* to issue it for at least 180 days—and the second phase of construction need not be completed for three years after the Amended NPDES Permit is issued. Moreover, even the draft Amended NPDES Permit contains no effluent limitations, or even monitoring requirements, for known carcinogens, such as benzene and many heavy metals, which typically appear in high concentrations in gas wastes.

3. The Department's decision to enter into the Agreement under these terms was arbitrary and capricious, an abuse of discretion, and contrary to the federal Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*, the Pennsylvania Clean Streams Law, 35 Pa. Stat. Ann. §§ 691.1 *et seq.*, and regulations promulgated under those statutes. The Agreement should be invalidated, DEP should be directed to revoke the current NPDES and WQM Permits, and Shallenberger should obtain permits that comply with the law before the Ronco WWTP begins operation.

PARTIES

4. Appellant Clean Water Action is a nonprofit organization, based in Washington, D.C., with a Pennsylvania office located at 100 Fifth Avenue #1108, Pittsburgh, PA, 15222.

[1] The Consent Order and Agreement, dated Aug. 28, 2009, is attached hereto as Exhibit 1. The original NPDES Permit No. PA0253723, dated Sept. 25, 2008, is attached hereto as Exhibit 2. The WQM Permit No. 2608201, dated Aug. 28, 2009, is annexed hereto as Exhibit 3.

5. Clean Water Action is an organization of 1.2 million members working to empower people to take action to protect America's waters, build healthy communities and to make democracy work for all of us. For 36 years, Clean Water Action has succeeded in winning some of the nation's most important environmental protections through grassroots organizing, expert policy research, and political advocacy focused on holding elected officials accountable to the public.

6. Clean Water Action has more than 2,500 members who rely upon the Monongahela River as their source of drinking water.

7. DEP's entry into the Agreement allowing the Ronco WWTP to add pollutants to the Monongahela River for the indefinite future injures the interests of Clean Water Action and its members in protecting water quality.

8. Robert Donnan is a Clean Water Act member with a longstanding interest in protecting and restoring water quality and other natural resources in western Pennsylvania. For 29 years, Mr. Donnan has lived in Peters Township, Washington County, Pennsylvania. Peters Township is located approximately 40 miles downriver of the Ronco WWTP site. Mr. Donnan is especially concerned about the impact that the Ronco WWTP will have on his potable water supply.

9. Mr. Donnan's drinking water comes from the Monongahela River. The Pennsylvania American Water Company, his water supplier, draws water from an intake approximately 35 miles downstream of the Ronco WWTP site. Consequently, added pollution from the Ronco WWTP increases the risk that Mr. Donnan's drinking water will be contaminated.

10. Mr. Donnan also appreciates the aesthetics of the Monongahela River valley and enjoys taking photographs around the River. Any further degradation of the Monongahela River will harm Mr. Donnan's recreational and aesthetic interests in the River.

11. Heather Panek is also a member of Clean Water Action who has a lifelong connection with the Monongahela River. Ms. Panek and her family live approximately ¼ mile from the River in the City of Monongahela in Washington County, Pennsylvania. Ms. Panek was a lifelong resident of Monessen, Pennsylvania prior to her move to nearby Monongahela approximately five years ago. Monongahela is around 30 miles downstream from the Ronco WWTP. Ms. Panek has a particular interest in the restoration, preservation, and protection of the River, as she receives her drinking water from the Monongahela River approximately 35 miles downstream from the discharge.

12. Ms. Panek frequently walks near the River, enjoys community events along the riverbank, and would consider swimming in the River if it were clean and safe. Therefore, any degradation of the River will threaten Ms. Panek's aesthetic, social, and recreational enjoyment of the River.

13. DEP's Agreement authorizing the indefinite discharge of TDS, heavy metals, disinfectants, and other pollutants from the Ronco WWTP, in violation of the Clean Water Act and implementing state laws, harms Mr. Donnan's and Ms. Panek's vital interest in ensuring that their water is clean and safe to drink.

14. DEP's Agreement and issuance of the WQM Permit in violation of the Clean Water Act and Clean Streams Law harm Mr. Donnan's and Ms. Panek's interests in the aesthetic and recreational enjoyment of the River.

15. Appellee DEP is the state agency responsible for administering the Clean Water Act NPDES program and for issuing WQM permits under the Clean Streams Law in the Commonwealth of Pennsylvania. The Department executed the Agreement that allows Shallenberger to construct the first phase of the Ronco WWTP under legally deficient NPDES and WQM Permits.

16. Appellee Shallenberger is a Pennsylvania corporation with offices at 2611 Memorial Boulevard, Connellsville, PA 15425. Shallenberger proposes to construct the Ronco WWTP, pursuant to NPDES Permit No. PA0253723, which DEP issued on September 25, 2008.

PROCEDURAL BACKGROUND

17. DEP entered into the Agreement and issued the WQM Permit on August 28, 2009.

18. DEP published notice of the WQM Permit in the Pennsylvania Bulletin on September 12, 2009.

19. DEP never published notice of the Agreement in the Pennsylvania Bulletin.

20. Clean Water Action's counsel learned of the Agreement on September 17, 2009.

21. Clean Water Action's counsel conducted a file review at DEP on September 28, 2009, to obtain a copy of the WQM Permit and the Agreement, but the Agreement was missing from the file.

22. Upon specific request for the Agreement, DEP's counsel, Attorney Jim Meade, e-mailed a copy of the Agreement to Clean Water Action's counsel on October 2, 2009.

23. Clean Water Action filed Notice of Appeal in the instant proceeding on October 13, 2009, within 30 days of receiving notice of the Agreement.

24. Clean Water Action now amends its Notice of Appeal as of right within the 20-day deadline set forth in section II(D)(1) of the Environmental Hearing Board's Practice and Procedure Manual and Pre-Hearing Order No. 1, paragraph 2 (Oct. 20, 2009), in this Appeal.

STATUTORY BACKGROUND

25. Congress passed the Clean Water Act ("CWA" or the "Act") in 1972 to "restore and maintain the chemical, physical, and biological integrity" of America's rivers, lakes, and streams. Federal Water Pollution Control Act, 33 U.S.C. § 1251(a). The Act protects all waters of the United States, including surface waters that supply drinking water, support fish and wildlife, and provide aesthetic and recreational opportunities for current and future generations of Americans.

26. The CWA's goal is to eliminate all discharge of pollution into navigable waters. *See* 33 U.S.C. § 1251(a)(1). To this end, the Act established the NPDES permit program, to be administered by the states with the approval of the United States Environmental Protection Agency ("EPA"). *See* 33 U.S.C. § 1342; *see also* 35 Pa. Stat. Ann. § 691.5 (authorizing DEP to adopt regulations governing NPDES permits); 25 Pa. Code § 92.2 (incorporating by reference federal CWA implementing regulations into Pennsylvania regulations).

27. To integrate the federal NPDES Permit Program into the state permit system that existed when Pennsylvania received delegation of the program from EPA in 1978, DEP instituted a two-part permitting process, which includes the NPDES Permit (Part 1) and the WQM Part II Permit. *See* DEP, *Oil & Gas Wastewater Permitting Manual* 6 (2001) , *available at* http://www.elibrary.dep.state.pa.us/dsweb/Services/Document-48256.

28. In order to discharge any pollutant from a point source into surface waters, a NPDES permit is required. *See* 33 U.S.C. §§ 1311(a), 1342(a)(1). A point source is "any

discernible, confined and discrete conveyance" and includes effluent pipes. 33 U.S.C. § 1362(14). A discharge is the "addition of any pollutant to navigable waters from any point source." 33 U.S.C. § 1362(12).

29. The CWA prohibits DEP from issuing a NPDES permit to any "new source" if the discharge from its operation "will cause or contribute to the violation of water quality standards." 40 C.F.R. § 122.4(i). Even if the permitting agency has performed a pollutants load allocation for the pollutant that the new source seeks to discharge into an impaired water segment, the NPDES permit may not be issued unless (1) sufficient load allocations remain for the new discharge, and (2) existing discharges are subject to schedule to bring the segment into compliance with water quality standards. *Id.* An applicant's plan to reduce pollution is not enough. *See Friends of Pinto Creek v. EPA*, 504 F.3d 1007, 1014 (9th Cir. 2007).

30. A "new source" is any "building, structure, facility, or installation from which there is or may be a 'discharge of pollutants,' the construction of which commenced . . . after promulgation of standards of performance under section 306 of CWA which are applicable to such source." 40 C.F.R. § 122.2; *see id.* § 122.29(b) (criteria for new source determination); 25 Pa. Code §§ 92.1 (defining "new source"), 92.2(b)(1) (incorporating 40 C.F.R. § 122.2 by reference). Standards of performance for Centralized Waste Treatment ("CWT") facilities such as the Ronco WWTP were first promulgated in 2000. 65 Fed. Reg. 81,242-01 (Dec. 22, 2000) (codified at 40 C.F.R. §§ 136, 437).

31. "Water quality standards are provisions of State or Federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses." 40 C.F.R. § 131.3(i). The Monongahela River has been designated as a potable water supply, a venue for recreation, a habitat for warm water fishes, and

an industrial water supply, among other uses. 25 Pa. Code §§ 93.4, 93.9v(2). The water quality criteria applicable the Monongahela River are set forth in 25 Pa. Code §§ 93.6 (general criteria) and 93.7 (specific criteria). The criteria are designed to ensure that existing uses in the Monongahela River and other surface waters are "maintained and protected." *Id.* § 93.4a(b).

32. In no event may a discharge "interfere with the attainment or maintenance" of water quality standards. 33 U.S.C. § 1312(a). If a permitting agency determines that a planned discharge could cause or contribute to a violation of water quality standard in the receiving waterbody, any NPDES permit the agency issues must contain water-quality-based effluent limitations ("WQBELs") to prevent the violation. *See id.*; 40 C.F.R. § 122.44(d)(1)(i); 25 Pa. Code § 92.2(b)(14).

33. New sources are expected to meet WQBELs when their operations begin and may not be granted extensions to achieve compliance. 25 Pa. Code § 95.4(b). Even existing sources may not be granted extensions, unless the discharge began before DEP established the WQBEL. *Id.* § 95.4(a)(1).

34. Even when a discharge will not violate water quality standards, the NPDES permit must limit pollution to the greatest extent possible. To ensure that dischargers do not simply pollute up to the water quality standards, permitting agencies must set technology-based effluent limits ("TBELs"), which reflect the ability of known technologies to control the concentrations of pollutants that are discharged. *See* 33 U.S.C. §§ 1311 (establishing TBELs), 1342(a)(1) (requiring that NPDES permits incorporate TBELs); 25 Pa. Code § 92.2d (specifically requiring federal or state technology-based limitations in DEP permits). All sources and all pollutants must be subject to TBELs. *See* 33 U.S.C. § 1311(b)(1)-(3), (e).

35. With the exception of five conventional pollutant parameters (biological oxygen demand, total suspended solids, pH, fecal coliform, and oil and grease), TBELs must be set based on the "best available technology economically achievable" ("BAT"). *See id.* § 1311(b)(2)(A).

36. In setting TBELs, DEP first looks to national effluent limitation guidelines established by EPA. 25 Pa. Code § 92.2d(1)-(2). Federal effluent limitation guidelines for CWT facilities such as the Ronco WWTP are set forth in 40 C.F.R. Part 437 ("Part 437").

37. NPDES permits for new sources that treat organic wastes, as the Ronco WWTP proposes to do, must include effluent limitations at least for three conventional, two metal, and eight organic parameters. 40 C.F.R. § 437.31. Other provisions of Part 437 also may apply to the multiple wastestreams that the Ronco WWTP plans to accept. These federal effluent limitation guidelines seek "to ensure appropriate treatment rather than dilution of dissimilar wastes." *Id.* § 437.30(b). These guidelines act as a floor, not a ceiling, on a state's duty to set TBELs.

38. In the absence of applicable federal limits, states set case-by-case limits based on the best professional judgment of the permitting agency. *See* 40 C.F.R. § 125.3(c)(2) (requiring that states set TBELs "on a case-by-case basis . . . to the extent that EPA-promulgated effluent limitations are inapplicable."); 25 Pa. Code § 92.2(b)(20) (incorporating 40 C.F.R. § 125.3(c) by reference). The regulations reiterate that "where promulgated effluent limitation guidelines only apply to certain aspects of the discharger's operation, or to certain pollutants, other aspects or activities are subject to regulation on a case-by-case basis in order to carry out the provisions of the Act." 40 C.F.R. § 125.3(c)(3).

39. Issuance of a NPDES Permit for a privately owned treatment facility must be accompanied by a fact sheet and supporting documentation to explain the permitting agency's rationale and assumptions used in developing the permit. *Id.* §§ 124.8, 124.56; 25 Pa. Code § 92.61(c).

40. A NPDES permit may not be issued for a new source unless a proposed discharge will be in compliance with TBELs, water quality standards, and the antidegradation policy. 25 Pa. Code § 92.31(a). Even existing dischargers may not be granted extensions of more than three years to achieve compliance with TBELs or other water quality standards, unless a court orders a longer period. 25 Pa. Code § 92.55(a); *see also* 25 Pa. Code § 95.4.

41. DEP has the authority to revoke a NPDES permit. 35 Pa. Stat. Ann. § 691.5(b)(5).

FACTUAL BACKGROUND

A. Marcellus Shale Parameters of Concern

42. Toxic wastewaters are produced at every stage of Marcellus Shale gas development, including drilling, stimulation, and production. Muds used to facilitate drilling contain a mineral oil lubricant, and cuttings that are removed from the wellbore may contain hydrocarbons, heavy metals, or normally occurring radioactive materials ("NORM"). The additives used in the stimulation process known as hydraulic fracturing contain hundreds of chemicals, some of which are known carcinogens. Hydrocarbons, salts (chlorides and sulfates), and other naturally occurring toxins that would otherwise be trapped underground, including heavy metals and NORM, are dissolved from rock formations and return to the surface with recovered fluids (known as "flowback"). The gas production process also generates very briny wastewaters.

43. In a recent study, the New York State Department of Environmental Conservation ("DEC") identified 260 chemicals that may be used in the fracturing process alone. *See* DEC, *Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program* ("DSGEIS") 5-46 – 5-61 (Sept. 30, 2009), *available at* http://www.dec.ny.gov/energy/58440.html. The DSGEIS also lists parameters detected in flowback from Marcellus Shale wells in Pennsylvania and West Virginia, including heavy metals, radioactive elements, TDS, sulfates, and the full complement of "BTEX" volatile organic compounds (benzene, ethyl benzene, toluene, and xylenes). *See id.* at 5-103 – 5-105. In the wells sampled, *median* concentrations of benzene—a potent carcinogen—are nearly 100 times the drinking water standard. *See id.* at 5-106.

44. DEP requires chemical analyses of every load of oil and gas wastewaters prior to delivery for treatment and discharge. Each analysis must include a minimum of 41 pollutant parameters, it must be documented in a wastewater manifest, and the manifest must be maintained for five years by the well operator or permittee, the waste hauler, and the wastewater treatment facility. *See* Oil and Gas Wastewater Manifest Instructions (Dec. 2008) (annexed hereto as Exhibit 4).

45. DEP also requires that generators of shale gas wastewater submit an annual report with a chemical analysis of the waste, including 51 pollutant parameters. *See* DEP, Form 26R, Chemical Analysis of Residual Waste 3 (June. 2009) (annexed hereto as Exhibit 5).

46. TDS levels in Marcellus Shale wastewaters are very high. The median concentration of TDS in flowback samples analyzed for the DSGEIS was 93,200 mg/L, and the maximum was 337,000 mg/L. *See* DSGEIS at 5-107. Both EPA and DEP have set drinking water standards for TDS at 500 mg/L. If the TDS levels in the flowback received at the Ronco

WWTP are in the same range as those in the DSGEIS, the wastes typically would have to be diluted by a factor of 185 to reach the maximum contaminant level.

47. TDS is a catch-all category of pollution that includes common chemical salts, such as sulfates and chlorides, as well as any other elements that are dissolved in water. Soluble chemicals found in flowback samples include heavy metals (*e.g.*, arsenic, aluminum, cadmium, manganese). Dissolved pollutants are considerably harder to treat, and ordinary water treatment plants not only lack equipment to remove TDS but also may find that high TDS levels interfere with their ability to treat biological contaminants from sewage. DEP has forced sewage treatment plants along the Monongahela River to make drastic reductions in their intake of gas well drilling wastewaters because of high TDS levels. *See* DEP, News Release: *DEP Investigates Source of Elevated Total Dissolved Solids in Monongahela River* (Oct. 22, 2008) (annexed hereto as Exhibit 6).

48. Wastewater that meets the 500 mg/L criterion for TDS may nevertheless be contaminated by chemicals with potent toxicity. Sulfates, a common component of TDS, exceed water quality criteria when they top 250 mg/L. Moreover, streams meeting the TDS water quality criterion, which is based on drinking water safety for humans, may nevertheless be toxic to fish and other aquatic wildlife. High TDS levels may create environments that are favorable to invasive algae that can kill native species, as recently happened in Dunkard Creek. Fish that can survive in contaminated water may become unsafe to eat, if the contaminants bioaccumulate, as many heavy metals do.

49. TDS at concentrations above water quality standards make water smell and taste bad (often salty), even when the water is not dangerous to drink. High TDS levels also increase corrosion in pipes, industrial machinery, and household appliances. As a result of water quality

violations for TDS in the Monongahela River, industry and utility companies reported significantly higher water treatment costs.

B. Water Quality and the Monongahela River

50. The Monongahela is a historically significant river that served as an early American gateway to the west. As a working river, the Monongahela has been central to the industries of Pennsylvania for centuries. Today the Monongahela is also a heavily used recreational water body that attracts boaters, fishermen, and water-skiers. On average, over 49,000 boats were registered in each year between 1997 and 2007 in the five counties bordering the Monongahela, and over 100,000 fishing licenses were sold in those counties in 2007 alone.

51. Most importantly, the Monongahela River is the primary source of drinking water for approximately 350,000 people in Fayette, Greene, Westmoreland, Washington, and Allegheny Counties. Several drinking water intake structures are located near the Ronco WWTP site. The nearest potable water supply is in Cumberland Township, only 4.1 miles downstream of the proposed discharge. *See* DEP, *Water Quality Protection Report* 2 (June 2007) (annexed hereto as Exhibit 7).[2]

52. On October 10, 2008, DEP received reports of unusually high TDS levels in the Monongahela River. *See* Don Hopey, *DEP Seeks Cause of River Pollution*, Pittsburgh Post-Gazette, Oct. 22, 2008 (reporting statement by DEP Secretary John Hanger) (annexed hereto as Exhibit 8). Twelve days later, the Department issued a press release confirming that a 70-mile stretch of the river, including the segment that would receive discharges from the Ronco WWTP, was contaminated with high TDS concentrations. *See* Exhibit 6.

[2] The date on the *Water Quality Protection Report* may contain a typographical error, as Shallenberger did not submit its NPDES Permit application until December 2007. *See* DEP, E-Facts, *available at* http://www.ahs2.dep.state.pa.us/eFactsWeb/criteria_auth.aspx (identifying date of application).

53. On June 19, 2009, the Tri-County Joint Municipal Authority, which has a drinking water intake downstream from the Ronco WWTP's proposed outfall, issued a notice to customers that levels of Total Trihalomethanes ("THMs"), averaged over the last three quarters of 2008 and the first quarter of 2009, exceeded maximum contaminant levels ("MCLs"). *See* Tri-County Joint Municipal Authority, Notice: *Tri-County Joint Municipal Authority Has Levels of Total Trihalomethanes ("TTHMs") Above Drinking Water Standards* (June 19, 2009) (attaching 2008 Annual Drinking Water Report) (both annexed hereto as Exhibit 9).

54. THMs are a component of disinfection byproducts, which form when disinfectants combine with organic and inorganic matter in water. Long-term consumption of THMs in excess of MCLs increases risks of cancer as well as liver, kidney, and central nervous system problems. DEP has determined that the source of elevated TDS levels in the Monongahela River during the third and fourth quarters of 2008 was "most likely" also the source of bromide contributing to elevated concentrations of a brominated THM species during the same period. *See* Paul Handke, *Trihalomethane Speciation and the Relationship to Elevated Total Dissolved Solid Concentrations Affecting Drinking Water Quality at Systems Utilizing the Monongahela River as a Primary Source During the 3rd And 4th Quarters of 2008*, at 17 (Apr. 11, 2009), *available at* http://www.depweb.state.pa.us/watersupply/cwp/view.asp?A=1260&Q=545730 (follow link to "Research Report").

55. Concentrations of TDS in the Monongahela River continued to exceed water quality criteria both upstream and downstream of the Ronco WWTP's proposed outfall throughout October, November, and December 2008. *See* Exhibit 1 (Agreement) ¶ K.

56. In early August 2009, DEP issued another press release announcing that TDS levels in the Monongahela River once again were exceeding water quality criteria and that sulfate concentrations were approaching unlawful levels. *See* DEP, News Release: *DEP Detects Elevated Levels of Total Dissolved Solids in Monongahela River* (Aug. 7, 2009) (annexed hereto as Exhibit 10). Subsequent monitoring showed that TDS levels began to spike again on September 22 and violations of the standard continued into October. *See* DEP, Press Release: *DEP Detects Total Dissolved Solids Over Standards in Monongahela River* (Oct. 14, 2009) (annexed hereto as Exhibit 11).

57. Adding pollution to the Monongahela River near the Ronco WWTP could preclude attainment of water quality standards for TDS and sulfates and exacerbate the threats facing local communities and the aquatic ecosystem.

C. The NPDES and WQM Permits for the Ronco WWTP

58. On December 6, 2007, Shallenberger submitted to DEP an application for permission to discharge up to 500,000 gallons/day of effluent from the Ronco WWTP into the Monongahela River. *See* Exhibit 1 (Agreement) ¶ C; Exhibit 3 (WQM Permit, describing "Type of Facility or Establishment"); DEP, E-Facts, *available at* http://www.ahs2.dep.state.pa.us/eFactsWeb/criteria_auth.aspx (identifying date of application).

59. On May 8, 2008, Shallenberger submitted a revised NPDES application for the Ronco WWTP.

60. On September 25, 2008, the Department issued NPDES Permit No. PA0253723, which authorized the Ronco WWTP to accept oil and gas wastewaters and to discharge effluent into the Monongahela River. *See* Exhibit 1 (Agreement) ¶ D; Exhibit 2 (NPDES Permit).

61. Although the Ronco WWTP qualifies as a CWT facility under Part 437, the NPDES Permit altogether omitted some of the effluent limitations required under federal law. *See* Exhibit 1 (Agreement) ¶ G.

62. The NPDES Permit also included no effluent limits or monitoring requirements for any heavy metals other than iron and barium, for sulfates and chlorides, for radioactivity, or for any of the BTEX compounds. In draft NPDES permits for other gas wastewater treatment facilities that propose to discharge into water bodies with the same designated uses as the Monongahela River, DEP has established effluent limits or monitoring requirements for more than a dozen heavy metals and for both benzene and toluene. *See, e.g.*, 39 Pa. Bull. 5031 (Aug. 22, 2009) (PA0065269 North Branch Processing, LLC), *available at* http://www.pabulletin.com/secure/data/vol39/39-34/1564.html; *id.* at 2227 (May 2, 2009) (PA0233650 TerrAqua Resource Management LLC), *available at* http://www.pabulletin.com/secure/data/vol39/39-18/805.html.

63. Moreover, although DEP knew in May 2008 that the discharge from the Ronco WWTP would contain elevated levels of TDS, *see id.* ¶ I(H), the NPDES Permit failed to include any effluent limits for TDS discharges. The NPDES Permit instead set effluent limits on osmotic pressure ("OP"), which would be used as a surrogate for testing TDS concentrations.

64. The Department prepared no Fact Sheet to explain how it arrived at the terms of the NPDES Permit.

65. Barely two weeks after issuance of the NPDES Permit, DEP received reports of unusually high TDS levels in the Monongahela River. *See* Exhibit 8. By October 22, 2008, a DEP press release confirmed TDS contamination along a 70-mile stretch of the river from the West Virginia border north to McKeesport. *See* Exhibit 6. The proposed site of the Ronco

WWTP lies along that stretch of the Monongahela River. The Department did not revoke the NPDES Permit, even though the terms of the NPDES Permit easily could have been revised long before plant design was complete, to ensure TDS discharges did not violate water quality standards.

66. On the same day that DEP confirmed TDS contamination in a 70-mile stretch of the Monongahela River, Shallenberger submitted its application for a WQM Part II Permit for the Ronco WWTP. The application proposed no treatment for removal of TDS. *See* Exhibit 1 (Agreement) ¶ J.

67. Although DEP had notice, less than a month after issuing the NPDES Permit for the Ronco WWTP, that TDS levels in the Monongahela River exceeded water quality criteria, *see id.* ¶ I(K); that the Ronco WWTP planned to discharge high levels of untreated TDS into the impaired river, *see id.* ¶¶ H, J; and that "elevated levels of TDS in the proposed discharge . . . [would] contribute to any exceedence of the water quality criteria that occurs" in the Monongahela, *id.* ¶ L; the Department did not revoke Shallenberger's NPDES Permit. Rather, DEP continued to use the NPDES Permit as the standard against which to judge the WQM Permit application.

68. After five revisions of the Design Engineer's Report for the Ronco WWTP, in response to multiple technical deficiency letters from DEP staff, Shallenberger completed its application for the WQM Permit on August 14, 2009. *See* CME Engineering LP, *Design Engineer's Report* (rev. Aug. 14, 2009) (annexed hereto as Exhibit 12). The final submission confirmed that Shallenberger still expected to operate the plant under the terms of the NPDES Permit and that there would be no mechanical treatment for OP at the plant. *See id.* at 2. To meet OP effluent limits, the Ronco WWTP simply would dilute high OP wastes with low OP

wastes. *See id.* To have sufficient low OP wastes, Shallenberger anticipated that it would need to dilute approximately 20% fracturing fluids and 15% brine with 65% top-hole wastes, *see id.*, rather than processing the 60% fracturing fluids and 40% brine identified in DEP's *Water Quality Protection Report*, *see* Exhibit 7 at 3 (commenting on the NPDES Permit application).

69. According to the Penn State College of Agricultural Sciences:

> Top hole fluids are the fresh water aquifers that are encountered usually within the first few hundred feet of the drilling process. . . . While top hole fluid is usually representative of groundwater used for local water wells and springs, the remaining water encountered during gas well drilling (bottom hole, stimulation and production fluids) may be contaminated with various pollutants.

Penn State College of Agricultural Sciences, School of Forest Resources, *Water Facts #28: Gas Well Drilling and Your Private Water Supply* 1-2 (rev. Jan. 21, 2009) , *available at* http://resources.cas.psu.edu/WaterResources/pdfs/gasdrilling.pdf. It is unclear why large amounts of uncontaminated top hole fluid would be delivered for treatment at the Ronco WWTP rather than recycled for use in the fracturing process.

70. On August 28, 2009, exactly two weeks after receiving the final Design Engineer's Report for the Ronco WWTP and three weeks after announcing that TDS levels in the Monogahela River had exceeded water quality standards once again, DEP acknowledged that the facility described in the report would operate under the NPDES Permit, using only dilution to meet OP effluent limits. *See* DEP, *Internal Review and Recommendations* (Aug. 28, 2009) (annexed hereto as Exhibit 13). DEP did not explain why uncontaminated top hole fluid would be expected to be delivered to the Ronco WWTP in sufficient amounts to dilute high OP wastes. On the same day, the Department issued the WQM Permit and executed the Agreement.

D. The Agreement

71. The Agreement was the product of negotiations with Shallenberger, into which DEP entered instead of revoking the NPDES Permit in October 2008, when the Department was on notice that the permit could not ensure protection of the Monongahela River.

72. The Agreement allows Shallenberger to construct a new source of discharges to the Monongahela River under the WQM Permit, even though the proposed facility will provide no treatment for osmotic pressure, TDS, or sulfates, or other pollutants of concern. *See* Exhibit 1 (Agreement) ¶¶ J, 3(a).

73. The Agreement includes an Appendix with a draft amendment of the NPDES Permit (the "Amended NPDES Permit"). *See id.* ¶ N & Appendix A. The Amended NPDES Permit includes the Part 437 effluent limits and limits for TDS and sulfates, *see id.*, Appendix A at 2a-2b, but DEP promises in the Agreement not to issue the Amended NPDES Permit for at least 180 days from the date of the Agreement's execution, *see id.* ¶ O.

74. The Agreement acknowledges that the Ronco WWTP will be unable to meet the TDS and sulfate effluent limits in the Amended NPDES Permit, unless Shallenberger designs and constructs additional treatment facilities (the "Phase 2 Treatment Plant"). *See id.* ¶ P.

75. The Agreement does not require completion of the Phase 2 Treatment Plant until three years after DEP issues the Amended NPDES Permit. *See id.* ¶ 3(f).

76. Until completion of the Phase 2 Treatment Plant, the Ronco WWTP will not be required to test for TDS, unless conductivity levels—another surrogate for TDS—exceed what DEP deems to be the functional equivalent of 750 mg/L TDS. *See id.* ¶ 4(d).

77. Until completion of the Phase 2 Treatment Plant, the Ronco WWTP will not be required to treat TDS before discharging effluent into the Monongahela River. *See id.* ¶ P.

78. Until completion of the Phase 2 Treatment Plant, the Ronco WWTP will not be required to meet any of the Part 437 effluent limitations.

79. Even after completion of the Phase 2 Treatment Plant, the Ronco WWTP will not be subject to effluent limits, or even monitoring requirements, for radioactivity, BTEX compounds, or many of the heavy metals commonly dissolved in Marcellus Shale gas wastewaters.

OBJECTIONS TO THE DEPARTMENT'S ACTION

80. For all of the reasons set forth above, Clean Water Action challenges DEP's execution of the Agreement as arbitrary and capricious, an abuse of discretion, and a violation of the federal Clean Water Act and the Pennsylvania Clean Streams Law.

81. The Ronco WWTP is a new source within the meaning of the Clean Water Act, because it is a "building, structure, facility, or installation from which there is or may be a 'discharge of pollutants,' the construction of which commenced . . . after promulgation of standards of performance under section 306 of CWA which are applicable to such source." *Id.* § 122.2; *see id.* § 122.29(b) (criteria for new source determination); 25 Pa. Code §§ 92.1 (defining "new source"), 92.2(b)(1) (incorporating 40 C.F.R. § 122.2 by reference).

82. Standards of performance for Centralized Waste Treatment ("CWT") facilities such as the Ronco WWTP were first promulgated in 2000. DEP did not authorize construction of the Ronco WWTP until August 28, 2009.

83. The Department's execution of the Agreement was arbitrary and capricious, an abuse of discretion, and contrary to law because the Agreement authorizes the construction and operation of a new source of discharges to the Monongahela River under a NPDES Permit that fails to include mandatory federal effluent limits. *See* 40 C.F.R. Part 437.

84. The Department's execution of the Agreement was arbitrary and capricious, an abuse of discretion, and contrary to law because the Agreement authorizes the construction and operation of a new source of discharges to the Monongahela River under a NPDES Permit that does not prevent the source from causing or contributing to violations of TDS and sulfate water quality standards for the Monongahela River. *See* 40 C.F.R. § 122.4(i).

85. The Department's execution of the Agreement was arbitrary and capricious, an abuse of discretion, and contrary to law because the Agreement purports to address contributions to water quality standard violations even though DEP has not developed load allocations for TDS and when it cannot be shown that sufficient load allocations remain for the new discharge or that existing discharges are subject to a schedule to bring the segment into compliance with water quality standards. *See id.*; *Friends of Pinto Creek v. EPA*, 504 F.3d 1007, 1014 (9th cir. 2007).

86. The Department's execution of the Agreement was arbitrary and capricious, an abuse of discretion, and contrary to law because the Agreement authorizes the construction and operation of a new source under a WQM Permit that requires no treatment for TDS, much less treatment under BAT standards, and allows dilution as a substitute for treatment when wastes cannot meet OP limits, even when discharges will contribute to an exceedence of water quality criteria. *See* 33 U.S.C. § 1311(b)(2); 40 C.F.R. §§ 122.4(i), 437.30(b).

87. The Department's execution of the Agreement was arbitrary and capricious, an abuse of discretion, and contrary to law because the Agreement grants the Ronco WWTP at least three years and 180 days before it will be required to come into compliance with WQBELs. *See* 25 Pa. Code § 95.4(a)(1), (b).

88. The Department's execution of the Agreement was arbitrary and capricious, an abuse of discretion, and contrary to law because the Agreement grants the Ronco WWTP at least

three years and 180 days before it will be required to come into compliance with Part 437 effluent limits and other TBELs necessary to protect water quality. 25 Pa. Code §§ 92.31(a), 92.55, 95.4(b).

89. The Department's execution of the Agreement was arbitrary and capricious, an abuse of discretion, and contrary to law because, with no explanation, the Agreement continues to relieve the Ronco WWTP of the obligation imposed on other Marcellus Shale gas wastewater treatment plants to abide by TBELs or monitoring requirements for more than a dozen heavy metals, benzene, and toluene. 40 C.F.R. § 125.3(c)(3).

REQUEST FOR RELIEF

Clean Water Action therefore requests that this Board:

1. Declare that the Agreement is invalid and void for violating the Clean Water Act and the Pennsylvania Clean Streams Law; and

2. Direct the Department to revoke the NPDES Permit and the WQM Permit.

3. Clean Water Action reserves the right to introduce additional objections in this proceeding based upon the subsequent discovery of any information that would tend to provide additional bases for challenging the Department's action with regard to execution of the Agreement, or for any other reason permissible under law, including those set forth at 25 Pa. Code § 1021.53.

Respectfully submitted this 2nd day of November, 2009.

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* Motion for admission *pro hac vice* pending

EXHIBITS

1. Consent Order and Agreement, dated Aug. 28, 2009
2. NPDES Permit No. PA0253723, dated Sept. 25, 2008
3. Water Quality Management Part II Permit No. 2608201, dated Aug. 28, 2009
4. Oil and Gas Wastewater Manifest Instructions (Dec. 2008)
5. DEP, Form 26R, Chemical Analysis of Residual Waste 3 (June 2009)
6. DEP, News Release: *DEP Investigates Source of Elevated Total Dissolved Solids in Monongahela River* (Oct. 22, 2008)
7. DEP, *Water Quality Protection Report* (June 2007)
8. Don Hopey, *DEP Seeks Cause of River Pollution*, Pittsburgh Post-Gazette, Oct. 22, 2008
9. Tri-County Joint Municipal Authority, Notice: *Tri-County Joint Municipal Authority Has Levels of Total Trihalomethanes ("TTHMs") Above Drinking Water Standards* (June 19, 2009) and 2008 Annual Drinking Water Report
10. DEP, News Release: *DEP Detects Elevated Levels of Total Dissolved Solids in Monongahela River* (Aug. 7, 2009)
11. DEP, Press Release: *DEP Detects Total Dissolved Solids Over Standards in Monongahela River* (Oct. 14, 2009)
12. CME Engineering LP, Design Engineer's Report (revised Aug. 14, 2009)
13. DEP, *Internal Review and Recommendations* (Aug. 28, 2009)

EXHIBIT 1

Consent Order and Agreement, dated Aug. 28, 2009

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the Matter of:

Shallenberger Construction, Inc.	:	Clean Streams Law
Ronco Wastewater Treatment Facility	:	Industrial Waste
Masontown Borough	:	
Fayette County	:	

CONSENT ORDER AND AGREEMENT

This Consent Order and Agreement is entered into this 28th day of August, 2009, by and between the Commonwealth of Pennsylvania, Department of Environmental Protection ("Department") and Shallenberger Construction, Inc. ("Shallenberger").

I. Background

A. The Department is the agency of the Commonwealth with the duty and the authority to administer and enforce The Clean Streams Law, Act of June 22, 1937, P.L. 1987, No. 394, *as amended*, 35 P.S. §§ 691.1-691.1001 ("Clean Streams Law"); Section 1917-A of the Administrative Code of 1929, the Act of April 9, 1929, P.L. 177, *as amended* ("Administrative Code"), 71 P.S. § 510-17A; and the regulations promulgated there under ("Regulations").

B. Shallenberger is a Pennsylvania corporation whose mailing address is 195 Enterprise Lane, Connellsville, PA 15425.

C. Shallenberger proposes to construct a wastewater treatment plant, known as the Ronco Wastewater Treatment Plant, to treat wastes from the oil and gas industry ("Facility"). The proposed Facility, to be located in Masontown Borough, Fayette County, will discharge to the Monongahela River, a water of the Commonwealth.

D. On September 25, 2008, the Department issued NPDES Permit No. PA0253723 to Shallenberger ("2008 NPDES Permit") authorizing the discharge of treated industrial wastes from the Facility. The 2008 NPDES Permit establishes specific effluent limitations, monitoring requirements and other permit conditions for the discharge.

E. As reported on its NPDES permit application for the Facility, Shallenberger is proposing to accept oil and gas wastewaters, specifically tophole water, brine, and fracturing wastewater.

F. Oil and gas wastewaters are industrial wastes as defined in Section 1 of the Clean Streams Law, 35 P.S. § 691.1.

G. The proposed Facility is a "Centralized Waste Treatment" facility as defined in the Code of Federal Regulations at 40 CFR Part 437. 40 CFR Part 437 contains the applicable effluent limitation guidelines ("ELG") for Centralized Waste Treatment facilities. The 2008 NPDES Permit currently contains effluent limitations different than those established in 40 CFR Part 437. The Department intends to modify the 2008 NPDES Permit to include the requirements of the applicable ELG.

H. In its May 2008 NPDES permit application, Shallenberger indicated that the discharge from the proposed Facility will contain elevated levels of Total Dissolved Solids ("TDS").

I. On October 2, 2008, Shallenberger submitted to the Department a Water Quality Management Part II Permit application seeking authorization to construct wastewater treatment facilities. ("Phase 1 Treatment Plant").

J. Shallenberger's proposed Phase 1 Treatment Plant does not include treatment for the removal of TDS.

K. The concentration of TDS in the Monongahela River has exceeded the water quality criteria for TDS as established under Section 93.7 of the Regulations, 25 Pa. Code § 93.7, both upstream and downstream of the Facility's proposed outfall on or about October, November and December 2008. The TDS criteria are established for the use and protection of the Monongahela River, a water of the Commonwealth, as a potable water supply ("PWS").

L. The elevated levels of TDS in the proposed discharge from the Facility will contribute to any exceedence of the water quality criteria that occurs.

M. Sulfates are potential components of TDS.

N. The Department intends to modify the 2008 NPDES Permit, as a permit amendment, to include effluent limitations for TDS and sulfates. The draft NPDES Permit Amendment ("Amended NPDES Permit") is attached hereto as Appendix A.

O. The Department will not issue the Amended NPDES Permit, as set forth in Appendix A, prior to one hundred and eighty (180) days after the execution of this Consent Order and Agreement.

P. In order to meet the effluent limitations for TDS and sulfates in the Amended NPDES Permit, Shallenberger must design and construct additional wastewater treatment ("Phase 2 Treatment Plant").

Q. This Consent Order and Agreement is intended to address compliance with the effluent limitations for TDS and sulfates in the Amended NPDES Permit and this Consent Order and Agreement shall govern enforcement proceedings for such limitations until the time for compliance with the requirements in Paragraph 3.f has passed.

After full and complete negotiation of all matters set forth in this Consent Order and Agreement and upon mutual exchange of covenants contained herein, the parties desiring to

avoid litigation and intending to be legally bound, it is hereby ORDERED by the Department and AGREED to by the Shallenberger as follows:

1. Authority. This Consent Order and Agreement is an Order of the Department authorized and issued pursuant to Sections 5, 402, 501 and 610 of the Clean Streams Law, 35 P.S. §§ 691.5, 691.402, 691.501, and 691.610; and Section 1917-A of the Administrative Code, 71 P.S. § 510-17.

2. Findings.

a. Shallenberger agrees that the findings in Paragraphs A through Q are true and correct and, in any matter or proceeding involving Shallenberger and the Department, Shallenberger shall not challenge the accuracy or validity of these findings.

b. The parties do not authorize any other persons to use the findings in this Consent Order and Agreement in any matter or proceeding.

3. Corrective Actions.

a. Upon issuance of the Water Quality Management Part II permit for the Phase 1 Treatment, Shallenberger may construct and place into operation the Phase 1 Treatment Plant authorized under said permit.

b. Shallenberger shall not accept any wastes at the Facility until the Phase 1 Treatment Plant is constructed and ready to commence start-up operations. Upon commencement of start-up operations, in addition to the sampling requirements set forth in Paragraph 4 of this Consent Order and Agreement, Shallenberger shall sample its discharge for TDS and sulfates consistent with the monitoring requirements set forth in the Amended NPDES Permit and submit the results to the Department in its monthly Discharge Monitoring Reports ("DMR").

c. After the Phase 1 Treatment Plant is operational, Shallenberger shall not discharge more than 500,000 gallons of oil and gas wastewater per day at the Facility.

d. Within ninety (90) days of the issuance of the Amended NPDES Permit, Shallenberger shall submit to the Department a full and complete Water Quality Management Part II Permit Amendment application for the design and construction of the Phase 2 Treatment Plant. The Water Quality Management Part II Permit application shall identify the wastes and/or byproducts and the volumes of each that are generated from the Phase 2 Treatment Plant and the disposition of these wastes and/or byproducts. The Phase 2 Treatment Plant shall be designed to meet the effluent limitations in the Amended NPDES Permit. The Water Quality Management Part II Permit Amendment application shall contain a plan and schedule to allow for the completion of the Phase 2 Treatment Plant that complies with the milestones set forth in this Consent Order and Agreement.

e. Within sixty (60) days of the issuance of the Water Quality Management Part II Permit Amendment or no later than two years after issuance of the Amended NPDES Permit, whichever is later, Shallenberger shall commence construction of the Phase 2 Treatment Plant.

f. Shallenberger shall complete construction and place into operation the Phase 2 Treatment Plant by not later than three (3) years from the issuance of the Amended NPDES Permit. Until such time as the Phase 2 Treatment Plant is operational, Shallenberger shall comply with the provisions of this Consent Order and Agreement for TDS and sulfates.

g. Shallenberger waives its right to appeal the issuance of the Amended NPDES Permit so long as the terms and conditions set forth in the Amended NPDES Permit are the same or less stringent than those contained in Appendix A.

4. Agreement to Cease Discharge. Until such times as the Phase 2 Treatment Plant is constructed and operational, Shallenberger shall cease its discharge from the Phase 1 Treatment Plant to the Monongahela River in accordance with the conditions set forth below.

Downstream Monitoring and Criteria for Cessation of Discharge

a. Commencing with Shallenberger's discharge from the Phase I Treatment Plant, Shallenberger shall monitor and record the conductivity readings generated by the River Alert Information Network ("RAIN") at the Carmichaels Municipal Authority Intake Conductivity Station. The conductivity meter for the Carmichaels Municipal Authority Intake is scheduled to be installed and operational prior to October 2009. However, if Shallenberger commences its discharge of wastewater from its Phase 1 Treatment Plant prior to the installation of this conductivity meter, or during such times when the RAIN data are not available, Shallenberger shall be responsible for obtaining twice daily conductivity readings (at least 8 hours apart) at or near the proposed Intake Conductivity Station until such time as the RAIN data become available. Such monitoring and recording shall be required only during those periods when the Facility is discharging or preparing to recommence discharge in accordance with Paragraph 4.g, below.

b. If the conductivity readings described in Paragraph 4.a., above, measure at or above 648 uS/cm (the equivalent of 450 mg/L TDS) as a daily average (in the case of the RAIN data, averaging 24 readings taken every hour on the hour from 12:00 midnight to 11:59 P.M. each calendar day; and in the case of Shallenberger data collected in lieu of the RAIN data, averaging the two daily readings), Shallenberger shall cease its discharge of treated wastewater from the Phase 1 Treatment Plant to the Monongahela River.

Upstream Sampling and Criteria for Cessation of Discharge

c. Commencing with Shallenberger's discharge from the Phase I Treatment Plant, Shallenberger shall monitor and record the conductivity readings generated by RAIN at the Dunkard Valley Joint Municipal Authority Intake Conductivity Station. The conductivity meter for the Dunkard Valley Joint Municipal Authority Intake is scheduled to be installed and operational prior to October 2009. However, if Shallenberger commences its discharge of wastewater from its Phase 1 Treatment Plant prior to the installation of this conductivity meter, or during such times when the RAIN data are not available, Shallenberger shall be responsible for obtaining twice daily conductivity readings (at least 8 hours apart) at or near the proposed Intake Conductivity Stations until such time as the RAIN data become available. Such monitoring and recording shall be required only during those periods when the Facility is discharging or preparing to recommence discharge in accordance with Paragraph 4.g, below.

d. If conductivity readings described in Paragraph 4.c., above, measures at or above 1080 uS/cm (the equivalent of 750 mg/L TDS) for any rolling 8 hour average during any calendar day (in the case of the RAIN data, calculated using the hourly RAIN data starting at 12 midnight, such that the first 8-hour rolling average for the day will include the midnight – 7:00 A.M. readings and the last rolling 8-hour average for the day will include the 5:00 P.M. – midnight readings, and in the case of the Shallenberger data collected in lieu of the RAIN data, averaging the two daily readings), Shallenberger shall collect a grab water sample for TDS at a point in the Monongahela River no closer than 100 feet upstream of its Phase 1 Treatment Plant, but no further upstream than the Route 21 Bridge. Shallenberger shall continue the grab sampling on a daily basis while the conductivity readings described in Paragraph 4.c. are above

1080 uS/cm. until such time that the conductivity readings described in Paragraph 4.c. drop below 1080 uS/cm. for three consecutive days.

e. Shallenberger shall obtain from an accredited laboratory the results of the daily sampling described in Paragraph 4.d., above, within twenty four hours of each daily sampling event and shall transmit such sample results to the Department via facsimile on a daily basis.

f. If any sample as described in Paragraphs 4.d. exceeds 450 mg/L for TDS, Shallenberger shall cease its discharge of treated wastewater from the Phase 1 Treatment Plant to the Monongahela River.

Recommencement of Discharge After Cessation of Discharge

g. Shallenberger shall not re-commence the discharge of treated wastewater to the Monongahela River until TDS sampling as identified in Paragraph 4.d., above, provides a sampling result below 450 mg/L for TDS and the conductivity meter located at Carmichaels Municipal Authority measures below 648 uS/cm as a daily average.

Automatic Cessation of Discharge Without Notice

h. Shallenberger's obligation to cease its discharge based on the criteria set forth above is automatic and does not require notification from the Department. Shallenberger shall notify the Department within twenty four (24) hours of ceasing or re-commencing its discharge from the Facility. Such notification shall be via facsimile to the Department representative identified in Paragraph 11 of this Consent Order and Agreement.

Cessation of Discharge in Event of Non-Compliance

i. In addition to the criteria for the cessation of the discharge of treated wastewater from the Phase 1 Treatment Plant to the Monongahela River set forth in Paragraph 4,

above, if Shallenberger fails to comply with Paragraphs 3.d, 3.e, 3.f. or 3.g of the Consent Order and Agreement, it shall cease all discharges from the Facility until such time as Shallenberger remedies or cures its breach of this Consent Order and Agreement. In accordance with the terms and provisions of Paragraph 7 of this Consent Order and Agreement, the remedies provided by this paragraph are cumulative and the exercise of one remedy does not preclude the exercise of any other.

5. Progress Reports. Shallenberger shall submit quarterly progress reports to the Department documenting its efforts to comply with its obligations under this Consent Order and Agreement ("Quarterly Progress Reports"). The Quarterly Progress Reports shall be submitted to the Department by the fifteenth day of April, July, October, and January and sent to the attention of Compliance Specialist, Water Management, Department of Environmental Protection, 400 Waterfront Drive, Pittsburgh, PA 15222-4745. The Quarterly Progress Reports shall include, but are not limited to:

a. A description of the actions that have been taken toward achieving compliance with this Consent Order and Agreement,

b. A description of activities scheduled for the next quarter,

c. A description of problems or delays encountered or anticipated regarding performance of the activities required by this Consent Order and Agreement;

d. A record of the results of all sampling taken in the Monongahela River pursuant to the obligations of this Consent Order and Agreement and a record of the conductivity readings at the Carmichaels Municipal Authority Intake and at the Dunkard Valley Joint Municipal Authority Intake;

e. A record of any and all periods when there is no discharge from the Facility whether due to the obligations set forth in this Consent Order and Agreement or otherwise.

6. Stipulated Penalties.

a. In the event Shallenberger fails to comply in a timely manner with any term or provision of this Consent Order and Agreement, Shallenberger shall be in violation of this Consent Order and Agreement and, in addition to other applicable remedies, shall pay a civil penalty of ONE HUNDRED DOLLARS ($100) PER DAY for each violation.

b. Stipulated civil penalty payments shall be payable monthly on or before the fifteenth day of each succeeding month. All payments shall be made by corporate check or the like made payable to the "Commonwealth of Pennsylvania, Clean Water Fund" and sent to the attention of Compliance Specialist, Water Management, Department of Environmental Protection, 400 Waterfront Drive, Pittsburgh, PA 15222-4745.

c. Any payment under this paragraph shall neither waive Shallenberger's duty to meet its obligations under this Consent Order and Agreement nor preclude the Department from commencing an action to compel Shallenberger's compliance with the terms and conditions of this Consent Order and Agreement. The payment resolves only Shallenberger's liability for civil penalties, arising from the violation of this Consent Order and Agreement for which the payment is made.

d. Stipulated civil penalties under this paragraph will be due automatically and without notice.

7. Additional Remedies.

a. In the event Shallenberger fails to comply with any provision of this Consent Order and Agreement, the Department may, in addition to the remedies prescribed herein, pursue any remedy available for a violation of an order of the Department, including an action to enforce this Consent Order and Agreement.

b. The remedies provided by this paragraph are cumulative and the exercise of one does not preclude the exercise of any other. The failure of the Department to pursue any remedy shall not be deemed to be a waiver of that remedy. The payment of a stipulated penalty, however, shall preclude any further assessment of civil penalties for the violations for which the stipulated civil penalty is paid.

8. Reservation of Rights. The Department reserves the right to require additional measures to achieve compliance with applicable law. Shallenberger reserves the right to challenge any action that the Department may take to require those measures.

9. Liability of Operator. Shallenberger shall be liable for any violations of the Consent Order and Agreement, including those caused by, contributed to, or allowed by its officers, agents, employees, or contractors. Shallenberger also shall be liable for any violation of this Consent Order and Agreement caused by, contributed to, or allowed by its successors and assigns, except as provided for in Paragraph 10.c of this Consent Order and Agreement.

10. Transfer of Facility.

a. The duties and obligations under this Consent Order and Agreement shall not be modified, diminished, terminated or otherwise altered by the transfer of any legal or equitable interest in the Facility or any part thereof.

b. If Shallenberger intends to transfer any legal or equitable interest in the Facility that is affected by this Consent Order and Agreement, Shallenberger shall serve a copy of this Consent Order and Agreement upon the prospective transferee of the legal and equitable interest at least thirty (30) days prior to the contemplated transfer and shall simultaneously inform the Southwest Regional Office of the Department of such intent.

c. Department in its sole discretion may agree to modify or terminate Shallenberger's duties and obligations under this Consent Order and Agreement upon transfer of the Facility. Shallenberger waives any right that it may have to challenge the Department's decision in this regard.

11. Correspondence with Department. All correspondence with the Department concerning this Consent Order and Agreement shall be addressed to:

Compliance Specialist
Water Management
Department of Environmental Protection
400 Waterfront Drive
Pittsburgh, PA 15222-4745.
Phone: 412-442-4000 / Fax: 412-442-4194

12. Correspondence with Shallenberger. All correspondence with Shallenberger concerning this Consent Order and Agreement shall be addressed to:

Terrance C. Shallenberger, Jr.
President
Shallenberger Construction, Inc.
195 Enterprise Lane
Connellsville, PA 15425
Phone: 724-628-8968
Fax: 724-628-6114

Shallenberger shall notify the Department whenever there is a change in the contact person's name, title, or address. Service of any notice or any legal process for any purpose under this

Consent Order and Agreement, including its enforcement, may be made by mailing a copy by first class mail to the above addresses.

13. Force Majeure.

a. In the event that Shallenberger is prevented from complying in a timely manner with any time limit imposed in this Consent Order and Agreement solely because of a strike, fire, flood, act of God, or other circumstances beyond Shallenberger's control and which Shallenberger, by the exercise of all reasonable diligence, is unable to prevent, then Shallenberger may petition the Department for an extension of time. An increase in the cost of performing the obligations set forth in this Consent Order and Agreement shall not constitute circumstances beyond Shallenberger's control. Shallenberger's economic inability to comply with any of the obligations of this Consent Order and Agreement shall not be grounds for any extension of time.

b. Shallenberger shall only be entitled to the benefits of this paragraph if it notifies the Department within five (5) working days by telephone and within ten (10) working days in writing of the date it becomes aware or reasonably should have become aware of the event impeding performance. The written submission shall include all necessary documentation, as well as a notarized affidavit from an authorized individual specifying the reasons for the delay, the expected duration of the delay, and the efforts that have been made and are being made by Shallenberger to mitigate the effects of the event and to minimize the length of the delay. The initial written submission may be supplemented within 10 working days of its submission. Shallenberger's failure to comply with the requirements of this paragraph specifically and in a timely fashion shall render this paragraph null and of no effect as to the particular incident involved.

c. The Department will decide whether to grant all or part of the extension requested on the basis of all documentation submitted by Shallenberger and other information available to the Department. In any subsequent litigation, the operator shall have the burden of proving that the Department's refusal to grant the requested extension was an abuse of discretion based upon the information then available to it.

14. Severability. The paragraphs of this Consent Order and Agreement shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

15. Entire Agreement. This Consent Order and Agreement shall constitute the entire integrated agreement of the parties. No prior or contemporaneous communications or prior drafts shall be relevant or admissible for purposes of determining the meaning or extent of any provisions herein in any litigation or any other proceeding.

16. Attorney Fees. The parties shall bear their respective attorney fees, expenses and other costs in the prosecution or defense of this matter or any related matters, arising prior to execution of this Consent Order and Agreement.

17. Modifications. No changes, additions, modifications, or amendments of this Consent Order and Agreement shall be effective unless they are set out in writing and signed by the parties hereto.

18. Titles. A title used at the beginning of any paragraph of this Consent Order and Agreement may be used to aid in the construction of that paragraph, but shall not be treated as controlling.

19. Decisions under Consent Order. Any decision which the Department makes under the provisions of this Consent Order and Agreement, including a notice that stipulated

civil penalties are due, is intended to be neither a final action under 25 Pa. Code §1021.2, nor an Adjudication under 2 Pa. C.S. §101. Any objection that Shallenberger may have to the decision will be preserved until the Department enforces this Consent Order and Agreement.

20. Termination of Obligations. Except for Shallenberger's continuing obligations to pay all penalties which have accrued under this Consent Order and Agreement prior to its termination, this Consent Order and Agreement shall terminate on the earlier of: September 30, 2015, or such earlier time that Shallenberger either ceases operation of the Facility or commences operation of the Phase 2 Treatment Plant.

IN WITNESS WHEREOF, the parties hereto have caused this Consent Order and Agreement to be executed by their duly authorized representatives. The undersigned representatives of Shallenberger certify under penalty of law, as provided by 18 Pa. C.S. § 4904, that they are authorized to execute this Consent Order and Agreement on behalf of Shallenberger; that Shallenberger consents to the entry of this Consent Order and Agreement as a final ORDER of the Department; and that Shallenberger hereby knowingly waives its rights to appeal this Consent Order and Agreement and to challenge its content or validity, which rights may be available under Section 4 of the Environmental Hearing Board Act, the Act of July 13, 1988, P.L. 530, No. 1988-94, 35 P.S. § 7514; the Administrative Agency Law, 2 Pa. C.S. § 103(a) and Chapters 5A and 7A; or any other provision of law. Signature by Shallenberger's attorneys certifies only that the agreement has been signed after consulting with counsel.

FOR SHALLENBERGER CONSTRUCTION, INC:

Signature
Name: Terrance C Shallenberger Jr.
Title: President

Signature
Name NORMA W. Shallenberger
Title Sec. - Treas.

John P. Englert, Esquire
Counsel for Shallenberger Construction, Inc.

FOR THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF OF ENVIRONMENTAL PROTECTION:

Samuel C. Harper
Regional Manager
Water Management
Southwest Region

James A. Meade
Assistant Counsel

Appendix A
Draft NPDES Permit Amendment

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER MANAGEMENT PROGRAM

DRAFT

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT PA0253723 AS ISSUED ON September 25, 2008

AMENDMENT NO. 1

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 et seq. (the "Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 et seq., the above referenced permit issued to:

Shallenberger Construction, Inc.
2611 Memorial Boulevard
Connellsville, PA 15425

for a facility located at

Ronco Treatment Facility
Masontown Borough
Fayette County

is amended as follows:

1. Correction of typographical error on Page 2a of 15. The permittee is authorized to discharge during the period from permit issuance date through expiration date.

2. Additional effluent limitations and monitoring requirements are added to Outfall 001.

3. A condition has been added to Part C of the permit, requiring record keeping of wastes accepted at the Ronco Treatment Facility.

4. The TRE condition has been deleted from the permit.

5. A condition has been added to Part C of the permit requiring the permittee to confirm the presence and for absence of pollutants in the influent /effluent of the industrial waste treatment facility.

6. A monitor and report requirement for strontium is added to Part A of the permit.

7. A Part C condition requiring submissions of DMRs to EPA is added to the permit.

8. The chemical additive condition has been added to the permit.

9. A no visible sheen condition has been added to the permit.

10. The applicable sludge conditions have been added to the permit.

11. Part A and Part B conditions have been revised.

12. A storm water condition has been added to the permit.

The remainder of the permit is in full force and effect.

DATE AMENDMENT ISSUED _____ ISSUED BY _____

Samuel C. Harper
Water Management Program Manager

DATE EFFECTIVE _____

1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR OUTFALL 001 WHICH RECEIVES WASTE FROM: fluids generated in the drilling and production of natural gas and oil wells

at Latitude 39° 51' 13" Longitude 79° 55' 29" Stream Code 37185 River Mile Index (RMI) 79.5

a. The permittee is authorized to discharge during the period from permit issuance date through permit expiration date.

b. Based on the production data and/or anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply. Total (dissolved plus suspended fraction) is implied for each parameter unless otherwise indicated.

	DISCHARGE LIMITATIONS (gross unless otherwise indicated)					MONITORING REQUIREMENTS	
	Mass Units (lbs/day except flow)		Concentrations (mg/l unless otherwise indicated)				
scharge Parameter	Average Monthly	Max. Daily	Average Monthly	Max. Daily	Instant. Max.	Measurement Frequency	Sample Type
ow (mgd)				0.5		daily	measured
n			3.5		7.0	2/month	8-hour composite
l and Grease			15		30	2/month	grab
tal Suspended Solids			30		60	2/month	8-hour composite
idity				Monitor Only		2/month	8-hour composite
alinity				Greater than Acidity		2/month	8-hour composite
rium			14.4	28.0		2/month	8-hour composite
lorides				Monitor and Report		2/month	8-hour composite
tal Dissolved Solids			500	750		2/month	8-hour composite
motic Pressure (mOs/kg)			1,632	2,546		2/month	8-hour composite

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EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR OUTFALL 001 (CONTINUED):

	DISCHARGE LIMITATIONS (gross unless otherwise indicated)					MONITORING REQUIREMENTS	
	Mass Units (lbs/day except flow)		Concentrations (mg/l unless otherwise indicated)				
scharge Parameter	Average Monthly	Max. Daily	Average Monthly	Max. Daily	Instant. Max.	Measurement Frequency	Sample Type
lfates				250		2/month	8-hour composite
)D-5 Day			53		163	2/month	8-hour composite
pper			0.757	0.865		2/month	8-hour composite
ıc			0.420	0.497		2/month	8-hour composite
etone			7.97	30.2		2/month	grab
etophenone			0.0562	0.114		2/month	grab
3utanone			1.85	4.81		2/month	grab
Cresol			0.561	1.92		2/month	grab
Cresol			0.205	0.698		2/month	grab
enol			1.08	3.65		2/month	grab
ridine			0.182	0.370		2/month	grab
l,6 Trichlorophenol			0.106	0.155		2/month	grab
ontium			Monitor and Report			2/month	grab
l	not less than 6.0 nor greater than 9.0 standard units					daily	grab

mples taken in compliance with the monitoring requirements specified above shall be taken at the following location: at the discharge Outfall 001.

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2. DEFINITIONS

a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

c. "Daily discharge" means the "discharge of a pollutant" measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

d. "Average" refers to the use of an arithmetic mean, unless otherwise specified in this permit.

e. "Geometric average (mean)" means the average of a set of n sample results given by the n^{th} root of their product.

f. "Average monthly discharge limitation" means the highest allowable average of "daily discharge" over a calendar month, calculated as the sum of all "daily discharge" measured during a calendar month divided by the number of "daily discharge" measured during that month.

g. "Average weekly discharge limitation" means the highest allowable average of "daily discharge" over a calendar week, calculated as the sum of all "daily discharge" measured during a calendar week divided by the number of "daily discharge" measured during that week.

h. "Maximum daily discharge limitation" means the highest allowable "daily discharge."

i. "Maximum any time" (or instantaneous maximum) means the concentration not to be exceeded at any time in any grab sample.

j. "Composite sample" (for all except GC/MS volatile organic analysis) means a combination of at least 8 individual samples of at least 100 milliliters collected manually or automatically at periodic intervals during the operating hours of a facility over a 24 hour period. The composite must be flow-proportional; either the volume of each individual sample is proportional to discharge flow rates, or the sampling interval (for constant volume samples) is proportional to the flow rates over the time period used to produce the composite.

"Composite sample for GC/MS volatile organic analysis" consists of at least four (rather than eight) aliquots or grab samples collected during actual hours of discharge over a 24 hour period and need not be flow proportioned. The four samples are composited in the laboratory immediately before analysis, and only one analysis performed.

The maximum time period between individual samples used for any "composite sample" shall not exceed two hours, except that for wastes of a uniform nature the samples may be collected on a frequency of at least twice per working shift and shall be equally spaced over a 24-hour period (or over the operating day if flows are of a shorter duration).

k. "Grab sample" means an individual sample of at least 100 milliliters collected at a randomly-selected time over a period not to exceed 15 minutes.

l. "i-s" means immersion stabilization - in which a calibrated device is immersed in the wastewater until the reading is stabilized.

m. "Daily average temperature" means the average of all temperature measurements made, or the mean value plot of the record of a continuous automated temperature recording instrument, either during a calendar day or during the operating day if flows are of a shorter duration.

n. "Measured flow" means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.

o. "At outfall XXX" means a sampling location in outfall line XXX below the last point at which wastes are added to outfall line XXX, or where otherwise specified.

p. "Estimated flow" means any method of liquid volume measurement based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters and batch discharge volumes.

q. "Non-contact cooling water" means water used to reduce temperature which does not come in direct contact with any raw material, intermediate product, waste product (other than heat), or finished product.

Such water may on occasion, as a result of corrosion, cooling system leakage or similar cooling system failures contain small amounts of process chemicals: provided, that all reasonable measures have been taken to prevent, reduce, eliminate and control to the maximum extent feasible such contamination: and provided further, that all reasonable measures have been taken that will mitigate the effects of such contamination once it has occurred.

r. "Toxic pollutant" means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to the Administrator of the United States Environmental Protection Agency, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in such organisms or their offspring.

s. "Hazardous substance" means any substance designated under Title 40 Code of Federal Regulations Part 116 (40 CFR 116) pursuant to Section 311 of the Clean Water Act.

t. "Publicly Owned Treatment Works" or "POTW" means a facility as defined by Section 212 of the Clean Water Act which is owned by a State or Municipality, as defined by Section 502(4) of the Clean Water Act, including any sewers that convey wastewater to such a treatment works, but not including pipes, sewers or other conveyances not connected to a facility providing treatment. The term also means the municipality as defined in Section 502(4) of the Clean Water Act which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

u. "Industrial User" means an establishment which discharges or introduces industrial wastes into a Publicly Owned Treatment Works (POTW).

v. "Total Dissolved Solids" means the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR 136.

w. "Storm water associated with industrial activity" means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas as defined at 40 CFR 122.26(b)(14).

x. "Storm water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

y. "Best Management Practices ("BMPs")" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "Waters of the United States". BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

3. SELF-MONITORING, REPORTING, AND RECORDS KEEPING

a. Representative Sampling

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) Records Retention

Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities which shall be retained for a period of at least 5 years, all records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three (3) years from the date of the sample measurement, report, or application. The three year period shall be extended as requested by the Department or the EPA Regional Administrator.

(3) Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

(i) The exact place, date, and time of sampling or measurements;

(ii) The person(s) who performed the sampling or measurements;

(iii) The date(s) the analyses were performed;

(iv) The person(s) who performed the analyses;

(v) The analytical techniques or methods used; and the associated detection level; and

(vi) The results of such analyses.

(4) Test Procedures

Unless otherwise specified in this permit, the test procedures for the analysis of pollutants shall be those contained in 40 CFR 136 (or in the case of sludge use or disposal, approved under 40 CFR 136 unless otherwise specified in 40 CFR 503), or alternate test procedures approved pursuant to those parts, unless other test procedures have been specified in the permit.

(5) Quality Assurance/Control

In an effort to assure accurate self-monitoring analyses results:

(a) Permittee or its designated laboratory shall participate in the periodic scheduled quality assurance inspections conducted by the Department and EPA.

(b) The permittee or its designated laboratory shall develop and implement a program to assure the quality and accurateness of the analyses performed to satisfy the requirements of this permit in accordance with 40 CFR 136, Appendix A

b. Reporting of Monitoring Results

(1) The permittee shall effectively monitor the operation and efficiency of all wastewater treatment and control facilities, and the quantity and quality of the discharge(s) as specified in this permit.

(2) Unless instructed otherwise in Part C of this permit, monitoring results obtained each month shall be summarized for that month and reported on a Discharge Monitoring Report (DMR).

(3) The completed DMR Form shall be signed and certified either by the following applicable person (as defined in 40 CFR 122.22(a)) or by that person's duly authorized representative (as defined in 40 CFR 122.22(b)):

- For a corporation - by a responsible corporate officer
- For a Partnership or Sole Proprietorship - by a general partner or the proprietor, respectively
- For a Municipality, State, Federal or other public agency - by a principle executive officer or ranking elected official.

If signed by other than the above, written notification of delegation of DMR signatory authority must be submitted to the Department. The DMR and any other reports required herein shall be submitted to the appropriate agency at the address listed in Part C of this permit and postmarked no later than the 28th day of the following month.

(4) If the permittee monitors any pollutant, using analytical methods described in A.3.a(4) above, more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

c. Reporting Requirements

(1) Planned Changes - The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(a) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

(b) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1).

(c) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;

(2) Anticipated Non-Compliance

The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(3) Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

(4) Twenty-Four Hour Reporting

(a) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(b) The following shall be included as information which must be reported within 24 hours under this paragraph.

(i) Any unanticipated bypass which exceeds any effluent limitation in the permit.

(ii) Any catastrophic event which causes the discharge to exceed effluent limitations in this permit.

(iii) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit to be reported within 24 hours.

(c) The Department may waive the written report on a case-by-case basis for reports under paragraph c (4)(a) of this section if the oral report has been received within 24 hours.

(5) Other Noncompliance

The permittee shall report all instances of noncompliance not reported under paragraphs c (3), (4) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph c (4) of this section.

Compliance with reporting requirements under A.3.c. above shall not excuse a person from immediate notification of incidents causing or threatening pollution pursuant to 25 Pa. Code, Chapter 91.33.

d. Specific Toxic Substance Notification Levels (for Manufacturing, Commercial, Mining, and Silvicultural Dischargers) The permittee shall notify the Department as soon as it knows or has reason to believe the following:

(1) That any activity has occurred, or will occur, which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge on a routine or frequent basis will exceed the highest of the following "notification levels".

(a) One hundred micrograms per liter.

(b) Two hundred micrograms per liter for acrolein and acrylonitrile.

(c) Five hundred micrograms per liter for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol.

(d) One milligram per liter for antimony.

(e) Five (5) times the maximum concentration value reported for that pollutant in the permit application.

(f) Any other notification level established by the Department.

(2) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(a) Five hundred micrograms per liter;

(b) One milligram per liter for antimony;

(c) Ten (10) times the maximum concentration value reported for that pollutant in the permit application;

(d) Any other notification level established by the Department.

1. MANAGEMENT REQUIREMENTS

a. Compliance Schedules

(1) The permittee shall achieve compliance with the terms and conditions of this permit within the time frames specified in Part C of this permit.

(2) The permittee shall submit reports of compliance or noncompliance with, or progress reports as applicable, any interim and final requirements contained in this permit. Such reports shall be submitted no later than 14 days following the applicable schedule date or compliance deadline.

b. Permit Modification, Termination, or Revocation and Reissuance

(1) This permit may be modified, terminated, or revoked in whole or in part during its term for cause including, but not limited to, any of the causes specified in 25 Pa. Code, Chapter 92.

(2) The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated non-compliance, does not stay any permit condition.

(3) In the absence of a Departmental action to modify or revoke and reissue this permit, the permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time specified in the regulations that establish those standards or prohibitions.

c. Duty to Provide Information

(1) The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.

(2) The permittee shall furnish to the Department, upon request, copies of records required to be kept by this permit.

(3) Other Information - Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information to the Department.

(4) Where the permittee is a POTW, the permittee shall provide adequate notice to the Department of the following:

(a) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if it were otherwise discharging those pollutants.

(b) Any substantial change in the volume or character of pollutants being introduced into the POTW by an Industrial User which was discharging into the POTW at the time of issuance of this permit.

(c) Adequate notice shall include information on:

(i) the quality and quantity of the effluent introduced into the POTW, and

(ii) any anticipated impact of the change on the quantity or quality of the effluent to be discharged from the POTW.

The submission of the above information in the POTW's Annual Wasteload Management Report, required under the provisions of 25 Pa. Code Chapter 94, will normally be considered as providing adequate notice to the Department, unless a more stringent time period is required by law, regulation, or permit condition in which case the more stringent submission date shall apply.

(d) The identity of Industrial Users served by the POTW which are subject to pretreatment standards adopted under Section 307(b) of the Clean Water Act; the POTW shall also specify the total volume of discharge and estimated concentration of each pollutant discharged into the POTW by the Industrial Users.

(e) The POTW shall require all Industrial Users to comply with the reporting requirements of Sections 204(b), 307, and 308 of the Clean Water Act and any regulations adopted thereunder, and the Clean Streams Law and any regulations adopted thereunder.

d. Facilities Operation

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to, adequate laboratory controls including appropriate quality assurance procedures. This provision also includes the operation of backup or auxiliary facilities or similar systems that are installed by the permittee, only when necessary to achieve compliance with the terms and conditions of this permit.

The permittee shall develop, install, and maintain Best Management Practices to control or abate the discharge of pollutants when the practices are reasonably necessary to achieve the effluent limitations and standards in this permit or to carry out the purposes and intent of the Clean Water Act.

e. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

f. Bypassing

(1) Bypassing Not Exceeding Permit Limitations - The permittee may allow a bypass to occur which does not cause effluent limitations to be violated, but only if the bypass is essential for maintenance to assure efficient operation. This type of bypassing is not subject to the reporting and notification requirements of Part A.3.c.

(2) Other Bypassing - In all other situations bypassing is prohibited unless all of the following conditions are met:

(a) A bypass is unavoidable to prevent loss of life, personal injury or "severe property damage";

(b) There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed (in the exercise of reasonable engineering judgment) to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance;

(c) The permittee submitted the necessary reports required under Part A.3.c.

(3) The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions (a through c) listed above.

2. PENALTIES AND LIABILITY

a. Violations of Permit Conditions

Any person violating Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act or any permit condition or limitation implementing such sections in a permit issued under Section 402 of the Act is subject to civil, administrative, and/or criminal penalties as set forth in 40 CFR 122.41(a)(2).

Any person or municipality who violates any provision of this permit, any rule, regulation, or order of the Department, or any condition or limitation of any permit issued pursuant to the Clean Streams Law is subject to criminal and/or civil penalties as set forth in Sections 602, 603 and 605 of the Clean Streams Law.

b. Falsifying Information

Any person who does any of the following:

Falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit; or

Knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit (including monitoring reports or reports of compliance or non- compliance);

shall, upon conviction, be punished by a fine and/or imprisonment as set forth in 18 P.S. §4904 and 40 CFR 122.41(j)(5) and (k)(2).

c. Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance pursuant to Section 309 of the Clean Water Act or Sections 602, 603 or 605 of the Clean Streams Law.

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under the Clean Water Act and the Clean Streams Law.

d. Enforcement Proceedings

(1) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. OTHER RESPONSIBILITIES

a. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Streams Law and 25 Pa. Code, Chapter 92, the permittee shall allow the head of the Department, the EPA Regional Administrator, and/or their authorized representatives, upon the presentation of credentials and other documents as may be required by law:

(1) To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(2) To have access to and copy at reasonable times any records that must be kept under the conditions of this permit;

(3) To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit;

(4) To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

b. Transfer of Permits

(1) *Transfers by modification.* Except as provided in paragraph (2) of this section, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or revoked and reissued, or a minor modification made to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

(2) *Automatic transfers.* As an alternative to transfers under paragraph (1) of this section, any NPDES permit may be automatically transferred to a new permittee if:

(a) The current permittee notifies the Department, at least 30 days in advance, of the proposed transfer date in paragraph (2)(b) of this section;

(b) The notice includes the appropriate Department transfer form signed by the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

(c) The Department does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit. A modification under this subparagraph may also be a minor modification. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph (2)(b) of this section.

(3) In the event the Department does not approve transfer of the permit, the new owner or controller must submit a new permit application.

c. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

d. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

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THER REQUIREMENTS

In accordance with Part A.3.b of this permit, the permittee shall submit a copy of the Discharge Monitoring Reports to each of the following:

Department of Environmental Protection
Water Management
400 Waterfront Drive
Pittsburgh, PA 15222-4745

U.S. EPA – Region III
NPDES Enforcement Branch (3WP42)
Office of Permits and Enforcement
Water Protection Division
1650 Arch Street
Philadelphia, PA 19103-2029

Department of Environmental Protection
Oil and Gas
400 Waterfront Drive
Pittsburgh, PA 15222-4745

Storm Water Discharges

A. Except as provided in Section B of this condition, all storm water discharges shall be composed entirely of uncontaminated storm water.

B. The following non-storm water discharges are authorized provided the non-storm water component of the discharge is in compliance with Section C of this condition: discharges from firefighting activities, fire hydrant flushings, potable water sources including waterline flushings, irrigation drainage, lawn watering, routine external building washdown which does not use detergents or other compounds, pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used, air conditioning condensate, springs, uncontaminated ground water, and foundation or footing drains where flows are not contaminated with process materials such as solvents.

C. This permit does not authorize any discharge (storm water or non-storm water) which contains any pollutant that may cause or contribute to an impact on aquatic life or pose a substantial hazard to human health or the environment due to its quantity or concentration.

D. This permit does not authorize the discharge of any pollutant resulting from an on-site spill, any such occurrence is subject to Sections A.3.c or d of this permit.

E. Preparedness, Prevention and Contingency Plans (PPC)

1. Operators of facilities shall review and revise as appropriate the PPC Plan for the site in accordance with 25 Pa. Code, Chapter 91, Section 91.34 to address storm water. The PPC Plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges from the facility. Each of the following shall be evaluated for the reasonable potential for contributing pollutants to runoff: loading and unloading operations, outdoor storage activities, outdoor manufacturing or processing activities, significant dust or particulate generating process, and on-site waste disposal practices. Factors to consider include the toxicity of chemicals; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. In addition, the PPC Plan shall describe the implementation of practices which are to be used to reduce the pollutants in storm water discharges ensuring compliance with the terms and conditions of this permit.

2. Facilities subject to SARA Title III, Section 313 reporting requirements for releases of Section 313 water priority chemicals that have occurred within the last three years shall include a description of such releases in the PPC Plan.

3. Qualified personnel shall conduct site compliance evaluations at least once a year. A report summarizing the evaluation and any required follow-up actions shall be prepared and kept on-site. Such evaluations shall include the items in 3.a of this condition.

   a. Areas contributing to a storm water discharge shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly.

   b. Based on the results of the inspection, the description of potential pollutant sources and pollution prevention measures and controls identified in the PPC Plan shall be revised as appropriate and shall provide for implementation of any changes to the plan in a timely manner.

F. Sampling Requirements

If storm water samples are required by Part A of this permit, they shall be collected as a grab sample during the first 30 minutes of the discharge or as soon thereafter as practicable. Analytical results of the sampling event shall be summarized on the attached Discharge Monitoring Reports (DMR) and submitted to the Department. If it is not practicable to collect samples due to adverse climatic conditions, or other circumstances beyond the permittee's control, the discharger must submit an explanation with the DMR as to exactly why the samples could not be collected.

Usage rates of any chemical additives used at this facility that may be discharged and blow-down rates shall be controlled by the permittee to prevent any impairments to receiving water uses and/or effluent limit violations. Chemical additives include, but are not limited to, any chemicals added to water for control of corrosion, scaling, algae, slime or fouling in cooling, boiler, or process water systems. Chemical additives also include, but are not limited to agents used to aid in treatment such as water softeners, flocculants, coagulants, emulsion breakers, anti-foaming agents, dispersants, oxygen scavengers, pH stabilizers, and regenerants. Usage rates shall be limited to the minimum amount necessary to accomplish the intended purpose of the chemical addition.

Accurate and complete records of chemical usage and discharge volumes must be maintained and summarized on a monthly basis using the attached form and kept on-site by the permittee. These records must be produced upon request by the Department.

Use of additives that contain one or more ingredients that are carcinogens are generally prohibited, and should be substituted with alternative products. If no alternatives are available, the permittee must document that no alternatives are available and that the carcinogen involved will be "not detectable" in the final effluent.

If the additive is currently in use at the facility, it may continue to be used at the maximum rate unless the permittee is notified otherwise.

The permittee is responsible for preventing impairments to receiving water uses.

For any chemical additive that is a biocide or any chemical additive that may cause or contribute to a toxic or lethal effect to aquatic life that is used or is currently in use at this facility, requires Department approval. The information described below must be submitted within ninety (90) days of the effective date of this permit (with 2 copies) for all biocides.

a. Trade name of the additive.

b. Name, address and phone number of the chemical additive manufacturer.

c. A list of all the active and inactive ingredients.

d. The additive usage rate (in lb/day or gal/day).

e. The conditioned water discharge rate (MGD).

f. The "in-system" concentration of whole product which the usage rate in item d. above will produce (mg/l). Include the product density (lb/gal) for liquids used to convert usage rate (gal/day) to concentration (mg/l).

g. Any available data regarding in-system degradation or decomposition of the additive and any other data or information that would be helpful to the Department in completing its review.

h. The expected concentration of the product at the final outfall.

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i. The analytical test method that could be used to verify final outfall concentrations and the associated minimum analytical detection level.

j. A flow diagram showing the point of chemical addition and the affected outfalls.

k. 96 hour - LC50 bioassay data on the whole product for at least one species of freshwater fish (mg/l).

l. The MSDS and any mammalian toxicity data that is available for the whole product.

Whenever a change in chemical additives that is a biocide or an increase in usage rates of these additives is desired by the permittee, a complete written notification shall be submitted at least sixty (60) days prior to the proposed use of the chemical. This notification, at a minimum shall include the information outlined above. If the information is complete, and its use is not specifically denied, use of the proposed chemical additive is allowed 60 days after notification. The usage rate shall not exceed the maximum rate reported pursuant to item d. above.

When collecting samples that are to be analyzed for any of the priority pollutants, the permittee shall collect the sample type required by Part A of this permit, and the permittee shall use the methods and techniques in the attached instructions "Department of Environmental Protection, Water Management Program - Sampling and Analytical Testing Instructions". For each priority pollutant, the permittee shall use a method that will quantifiably measure the priority pollutant at or below the effluent limitation in Part A of this permit.

Sludges and other solids shall be handled and disposed of in compliance with the Solid Waste Management Act of 1980 (Act 97) and with 25 Pa. Code, Chapters 261, 262, 263, and 264 (related to permits and requirements for landfilling and storage of hazardous sludge) and applicable federal regulations, the Federal Clean Water Act, RCRA and their amendments.

Sludges and other solids shall be handled and disposed of in compliance with the Solid Waste Management Act of 1980 (Act 97) and with 25 Pa. Code, Chapters 287, 291, and 299 (relating to residual waste generators) and 288 and 289 (relating to residual waste landfills and impoundments) and the Federal Clean Water Act and its amendments.

All discharges of floating materials, oil, grease, scum and substances which produce tastes, color, odors, turbidity or settle to form deposits shall be controlled at levels which will not be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life.

Oil bearing wastewaters shall at no time cause a film or sheen upon or discoloration of the waters of this Commonwealth or adjoining shoreline.

Receipt of Residual Waste, including wastewater from oil and gas wells: The permittee shall document each load of residual waste received for processing at the treatment facility. Upon receipt, the permittee shall record the information required for the Residual Waste Supplemental DMR and the residual waste transporter operational record pursuant to 25 Pa Code § 299.219 as follows:

(1) The types or classifications of residual waste received and well permit number if applicable.

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(2) The weight or volume of the types of wastes received.

(3) The name, mailing address, telephone number, county and state of each generator of residual waste received.

(4) The name and location of any transfer facility that received and transferred the waste.

(5) The name and address of the person or municipality collecting or transporting the waste.

(6) The license plate number of the trailer transporting the waste.

This information at a minimum can be found on the required daily operational record of the transporter. If the transporter is unable to provide this information, the load shall not be accepted by the permittee until such time as the transporter is able to provide the required information.

In addition, the permittee shall summarize the information on a monthly basis and submit the enclosed Residual Waste DMR Supplemental Form to the Department as an attachment to the Monthly DMR. Under wastewater type, indicate if the fluids are from fracturing, production or other. If using other, an explanation shall be attached.

Prior to receipt of any Residual Waste, the permittee shall obtain a chemical analysis of the wastewater as required in 25 Pa. Code § 287.54 from the generator of the wastewater.

Within 30 days of delivering frac water to this treatment facility, the operator of the well generating the frac water will submit a Form 26R characterizing the frac wastewater. For the first 30 days of wastewater generation after fracturing, the operator of the well site will provide and the receiving facilities will rely upon an oil and gas industry generic characterization of the wastewater. A Form 26R will need to be submitted by the generator for all other types of wastewater generated prior to acceptance at the treatment facility.

The information required by this condition shall be retained by the permittee for 5 years from the date of receipt. This information must be made available for inspection by and a copy made available to the Department, upon request.

EXHIBIT 2

NPDES Permit No. PA0253723,

dated Sept. 25, 2008

17 pgs

Pennsylvania Department of Environmental Protection

400 Waterfront Drive
Pittsburgh, PA 15222-4745

September 25, 2008

412-442-4000
FAX 412-442-4328

Southwest Regional Office

Terrance Shallenberger, President
Shallenberger Construction , Inc.
2611 Memorial Boulevard
Connellsville, PA 15425

Re: Final NPDES Permit
Ronco Treatment Facility
German Township, Fayette County

Dear Mr. Shallenberger;

Enclosed is your NPDES Part I Permit No. PA0253723 authorizing a discharge from your Ronco Treatment Facility located in Fayette County and a blank copy of a Discharge Monitoring Report (DMR) form, which should be copied and used to report your effluent parameters according to the schedule contained in your permit.

Please note the enclosed Appendix C which provides information toward Part C of your NPDES permit, beginning on Page 13 of 15 in the permit.

If you have any questions, please contact our office.

Sincerely,

Thomas Flaherty, III
Chief, Technical Services Section
Oil and Gas Management Program

cc: Ed Renwick
Central Office
NPDES File # PA0253723 ✓

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM DISCHARGE REQUIREMENTS FOR INDUSTRIAL WASTEWATER FACILITIES

NPDES PERMIT NO: PA 0253723

In compliance with the provisions of the Clean Water Act, 33 U.S.C. Section 1251 *et seq.* ("the Act") and Pennsylvania's Clean Streams Law, as amended, 35 P.S. Section 691.1 *et seq.*,

Shallenberger Construction, Inc.
2611 Memorial Boulevard
Connellsville, PA 15425

is authorized to discharge from a facility known as **Ronco Treatment Facility**, located at **German Township, Fayette County** to the **Monongahela River** in Watershed **19A** in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts A, B and C hereof.

THIS PERMIT SHALL BECOME EFFECTIVE ON **October 1, 2008**

THIS PERMIT SHALL EXPIRE AT MIDNIGHT ON **September 30, 2013**

The authority granted by this permit is subject to the following further qualifications:

1. If there is a conflict between the application, its supporting documents and/or amendments and the terms and conditions of this permit, the terms and conditions shall apply.

2. Failure to comply with the terms, conditions, or effluent limitations of this permit is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

3. A complete application for renewal of this permit, or notice of intent to cease discharging by the expiration date, must be submitted to DEP at least 180 days prior to the above expiration date (unless permission has been granted by DEP for submission at a later date), using the appropriate NPDES permit application form.

   In the event that a timely and complete application for renewal has been submitted and DEP is unable, through no fault of the permittee, to reissue the permit before the above expiration date, the terms and conditions of this permit, including submission of the Discharge Monitoring Reports (DMRs), will be automatically continued and will remain fully effective and enforceable against the discharger until DEP takes final action on the pending permit application.

4. This NPDES permit does not constitute authorization to construct or make modifications to wastewater treatment facilities necessary to meet the terms and conditions of this permit.

DATE PERMIT ISSUED: **September 25, 2008**

ISSUED BY _____
Oil and Gas Regional Manager

PART A - EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

1. **For Outfall** 001, **Latitude** 39° 51' 13", **Longitude** 79° 55' 29", **River Mile Index** 79.5, **Stream Code** 37185

which receives wastewater from fluids generated in the drilling and production of natural gas and oil wells.

a. The permittee is authorized to discharge during the period from October 1, 2008 through September 30, 2008.

b. Based on the production data and anticipated wastewater characteristics and flows described in the permit application and its supporting documents and/or amendments, the following effluent limitations and monitoring requirements apply (see also Additional Requirements, Footnotes and Supplemental Information).

Discharge Parameter	Effluent Limitations						Monitoring Requirements	
	Mass Units (lbs/day) [1]		Concentrations (mg/L)				Minimum [3] Measurement Frequency	Required Sample Type
	Average Monthly	Maximum Daily	Minimum	Average Monthly	Maximum Daily	Instantaneous Maximum [2]		
Flow					0.5 mgd		Daily	Measured
Iron (Total)				3.5 mg/L		7 mg/L	2/Month	8 hr composite
Oil and Grease				15 mg/L		30 mg/L	2/Month	grab
Total Suspended Solids				30 mg/L		60 mg/L	2/Month	8 hr composite
Acidity					Monitor Only		2/Month	8 hr composite
Alkalinity					Greater than Acidity		2/Month	8 hr composite
pH					6 to 9 s. u.		2/Month	grab
Barium				14.4 mg/L	28.0 mg/L		2/Month	8 hr composite
Chlorides					Monitor Only		2/Month	8 hr composite
Total Dissolved Solids					Monitor Only		2/Month	8 hr composite
Osmotic Pressure				1632 mOsm/kg	2546 mOsm /kg		2/Month	8 hr composite

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Outfall 001

PART A EFFLUENT LIMITATIONS, MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS Cont'd

Additional Requirements

c. All discharges of floating materials, oil, grease, scum, sheen and substances which produce color, tastes, odors, turbidity or settle to form deposits shall be controlled to levels which will not be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life.

Footnotes

(1) When sampling to determine compliance with mass effluent limitations, the discharge flow at the time of sampling must be measured and recorded.

(2) The Instantaneous Maximum Discharge Limitations are for compliance use by DEP only. Do not report instantaneous maximums on DMRs or supplemental DMRs unless specifically required on those forms to do so.

(3) This is the minimum number of sampling events required. Permittees are encouraged, and it may be advantageous in demonstrating compliance, to perform more than the minimum number of sampling events.

Supplemental Information

(1) The effluent limitations for this outfall were determined using an effluent discharge of 0.5 million gallons per day.

II. DEFINITIONS

At Outfall (XXX) means a sampling location in outfall line XXX below the last point at which wastes are added to outfall line (XXX), or where otherwise specified.

Average refers to the use of an arithmetic mean, unless otherwise specified in this permit.

Average Monthly Discharge Limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Best Management Practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution to surface waters of the Commonwealth. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

Composite Sample (for all except GC/MS volatile organic analysis) means a combination of individual samples (at least eight for a 24-hour period or four for an 8-hour period) of at least 100 milliliters each obtained at spaced time intervals during the compositing period. The composite must be flow-proportional; either the volume of each individual sample is proportional to discharge flow rates, or the sampling interval is proportional to the flow rates over the time period used to produce the composite.

Composite Sample (for GC/MS volatile organic analysis) consists of at least four aliquots or grab samples collected during the sampling event (not necessarily flow proportioned). The samples must be combined in the laboratory immediately before analysis and then one analysis is performed.

Daily Average Temperature means the average of all temperature measurements made, or the mean value plot of the record of a continuous automated temperature recording instrument, either during a calendar day or during the operating day if flows are of a shorter duration.

Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Discharge Monitoring Report ("DMR") means the form for the reporting of self-monitoring results by the permittee.

Estimate Flow means any method of liquid volume measurement based on a technical evaluation of the sources contributing to the discharge including, but not limited to, pump capabilities, water meters, and batch discharge volumes.

Geometric Average means the average of a set of n sample results given by the nth root of their product.

Grab Sample means an individual sample of at least 100 milliliters collected at a randomly selected time over a period not to exceed 15 minutes.

Hazardous Substance means any substance designated under 40 CFR 116 pursuant to Section 311 of the Clean Water Act.

Immersion Stabilization (I-s) means a calibrated device is immersed in the wastewater until the reading is stabilized.

Industrial User or Indirect Discharger means an establishment that discharges or introduces industrial wastes into a Publicly Owned Treatment Works (POTW).

Maximum Any Time or Instantaneous Maximum means the level not to be exceeded at any time in any grab sample.

Maximum Daily Discharge Limitation means the highest allowable "daily discharge."

Measured Flow means any method of liquid volume measurement, the accuracy of which has been previously demonstrated in engineering practice, or for which a relationship to absolute volume has been obtained.

Non-contact Cooling Water means water used to reduce temperature which does not come in direct contact with any raw material, intermediate product, waste product (other than heat), or finished product.

Public Owned Treatment Works ("POTW") means a device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a state or municipality. The term includes sewers, pipes or other conveyances only if they convey wastewater to a POTW providing treatment.

Severe Property Damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Stormwater means the runoff from precipitation, snow melt runoff, and surface runoff and drainage.

Stormwater Associated with Industrial Activity means the discharge from any conveyance which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing, or raw materials storage areas as defined at 40 CFR 122.26(b)(14).

Total Dissolved Solids means the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR 136.

Toxic Pollutant means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, may, on the basis of information available to DEP cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in these organisms or their offspring.

III. SELF-MONITORING, REPORTING, AND RECORDS KEEPING

A. Representative Sampling

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

2. Records Retention

Except for records of monitoring information required by this permit related to the permittee's sludge use and disposal activities which shall be retained for a period of at least five years, all records of monitoring activities and results (including all original strip chart recordings for continuous monitoring instrumentation and calibration and maintenance records), copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained by the permittee for three years from the date of the sample measurement, report, or application. The three-year period shall be extended as requested by DEP or the EPA Regional Administrator.

3. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The exact place, date, and time of sampling or measurements.
b. The person(s) who performed the sampling or measurements.
c. The date(s) the analyses were performed.
d. The person(s) who performed the analyses.
e. The analytical techniques or methods used; and the associated detection level.
f. The results of such analyses.

4. Test Procedures

Unless otherwise specified in this permit, the test procedures for the analysis of pollutants shall be those approved under 40 CFR 136 (or in the case of sludge use or disposal, approved under 40 CFR 136, unless otherwise specified in 40 CFR 503), or alternate test procedures approved pursuant to those parts, unless other test procedures have been specified in this permit.

5. Quality/Assurance/Control

In an effort to assure accurate self-monitoring analyses results:

a. The permittee, or its designated laboratory, shall participate in the periodic scheduled quality assurance inspections conducted by DEP and EPA.

b. The permittee, or its designated laboratory, shall develop and implement a program to assure the quality and accurateness of the analyses performed to satisfy the requirements of this permit, in accordance with 40 CFR 136.

B. Reporting of Monitoring Results

1. The permittee shall effectively monitor the operation and efficiency of all wastewater treatment and control facilities, and the quantity and quality of the discharge(s) as specified in this permit.

2. Unless instructed otherwise in PART C of this permit, a properly completed DMR must be received by the following address within 28 days after the end of each monthly report period:

Department of Environmental Protection
Pittsburgh Regional Office
Oil and Gas Program
400 Waterfront Drive
Pittsburgh, PA 15222

3. The completed DMR Form shall be signed and certified either by the following applicable person, as defined in 40 CFR 122.22(a), or by that person's duly authorized representative, as defined in 40 CFR 122.22(b):

- For a corporation - by a principal executive officer of at least the level of vice president, or an authorized representative if the representative is responsible for the overall operation of the facility from which the discharge described in the NPDES form originates.
- For a partnership or sole proprietorship - by a general partner or the proprietor, respectively.
- For a municipality, state, federal or other public agency - by a principal executive officer or ranking elected official.

If signed by a person other than the above, written notification of delegation of DMR signatory authority must be submitted to DEP in advance of or along with the relevant DMR form.

4. If the permittee monitors any pollutant, using analytical methods described in PART A III.A.4 herein, more frequently than the permit requires, the results of this monitoring shall be incorporated, as appropriate, into the calculations used to report self-monitoring data on the DMR.

C. Reporting Requirements

1. Planned Changes - The permittee shall give notice to DEP as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

   a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b).

   b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in this permit, nor to notification requirements under 40 CFR 122.42(a)(1).

   c. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

2. Anticipated Noncompliance

   The permittee shall give advance notice to DEP of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

3. Unanticipated Noncompliance or Potential Pollution Reporting

   a. The permittee shall report any noncompliance or incidents causing or threatening pollution pursuant to 25 Pa. Code § 91.33 to DEP by telephone immediately giving the location and nature of the danger and, if reasonably possible to do so, to notify known downstream users of the waters.

   b. The permittee shall immediately take or cause to be taken steps necessary to prevent injury to property and downstream users of the waters from pollution or a danger of pollution and, in addition, within 15 days from the incident, shall remove from the ground and from the affected waters to the extent required by the residual substances.

   c. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances pursuant to 40 CFR 122.41(l)(6). The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including the exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

   d. Information that must be reported under this paragraph includes, but is not limited to:

      (1) Any unanticipated bypass that exceeds any effluent limitation in this permit.

      (2) Any catastrophic event which causes the discharge to exceed any effluent limitation in this permit.

      (3) Violation of a maximum daily discharge limitation for any of the pollutants listed in this permit.

   e. DEP may waive the written report on a case-by-case basis for reports under paragraph C.3.c of this section.

4. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under paragraph C.3.a of this section, at the time DMRs are submitted. The reports shall contain the information listed in paragraph C.3.a of this section.

D. Specific Toxic Pollutant Notification Levels (for Manufacturing, Commercial, Mining, and Silvicultural Direct Dischargers) - The permittee shall notify DEP as soon as it knows or has reason to believe the following:

1. That any activity has occurred, or will occur, which would result in the discharge of any toxic pollutant which is not limited in this permit, if that discharge on a routine or frequent basis will exceed the highest of the following "notification levels."

   a. One hundred micrograms per liter.
   b. Two hundred micrograms per liter for acrolein and acrylonitrile.
   c. Five hundred micrograms per liter for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol.
   d. One milligram per liter for antimony.
   e. Five times the maximum concentration value reported for that pollutant in this permit application.
   f. Any other notification level established by DEP.

2. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following "notification levels":

   a. Five hundred micrograms per liter.
   b. One milligram per liter for antimony.
   c. Ten times the maximum concentration value reported for that pollutant in the permit application.
   d. Any other notification level established by DEP.

PART B

I. MANAGEMENT REQUIREMENTS

A. Compliance Schedules

1. The permittee shall achieve compliance with the terms and conditions of this permit within the time frames specified in this permit.

2. The permittee shall submit reports of compliance or noncompliance, or progress reports as applicable, for any interim and final requirements contained in this permit. Such reports shall be submitted no later than 14 days following the applicable schedule date or compliance deadline.

B. Permit Modification, Termination, or Revocation and Reissuance

1. This permit may be modified, terminated, or revoked and reissued during its term in accordance with 25 Pa. Code, Chapter 92.

2. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

3. In the absence of DEP action to modify or revoke and reissue this permit, the permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time specified in the regulations that establish those standards or prohibitions.

C. Duty to Provide Information

1. The permittee shall furnish to DEP, within a reasonable time, any information which DEP may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.

2. The permittee shall furnish to DEP, upon request, copies of records required to be kept by this permit.

3. Other Information - Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to DEP, it shall promptly submit the correct and complete facts or information.

D. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes, but is not limited to, adequate laboratory controls including appropriate quality assurance procedures. This provision also includes the operation of backup or auxiliary facilities or similar systems that are installed by the permittee, only when necessary to achieve compliance with the terms and conditions of this permit.

E. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge, sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

F. Bypassing

1. Bypassing Not Exceeding Permit Limitations - The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the reporting and notification requirements of 4.a. and b. below.

2. Other Bypassing – In all other situations, bypassing is prohibited and DEP may take enforcement action against the permittee for bypass unless:

   a. A bypass is unavoidable to prevent loss of life, personal injury, or "severe property damage."

   b. There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance.

   c. The permittee submitted the necessary reports required under 4.a. and b. below.

3. DEP may approve an anticipated bypass, after considering its adverse effects, if DEP determines that it will meet the conditions listed in F.2 above.

4. Notice

   a. Anticipated Bypass – If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the bypass.

   b. Unanticipated Bypass – The permittee shall submit notice of an unanticipated bypass as required in PART A.III.C.3. (Unanticipated Noncompliance or Potential Pollution Reporting).

II. PENALTIES AND LIABILITY

A. Violations of Permit Conditions

Any person violating Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act or any permit condition or limitation implementing such sections in a permit issued under Section 402 of the Act is subject to civil, administrative, and/or criminal penalties as set forth in 40 CFR 122.41(a)(2).

Any person or municipality who violates any provision of this permit; any rule, regulation, or order of DEP; or any condition or limitation of any permit issued pursuant to the Clean Streams Law, is subject to criminal and/or civil penalties as set forth in Sections 602, 603, and 605 of the Clean Streams Law.

B. Falsifying Information

The Clean Water Act provides that any person who does any of the following:

- Falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit, or

- Knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit (including monitoring reports or reports of compliance or noncompliance),

shall, upon conviction, be punished by a fine and/or imprisonment as set forth in 18 P.S. § 4904 and 40 CFR 122.41(j)(5) and (k) (2).

C. Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance pursuant to Section 309 of the Clean Water Act or Sections 602, 603, or 605 of the Clean Streams Law.

Nothing in this permit shall be construed to preclude the institution of any legal action or to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under the Clean Water Act and the Clean Streams Law.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

III. OTHER RESPONSIBILITIES

A. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Streams Law, 25 Pa. Code, Chapter 92 and 40 CFR 122.41(i), the permittee shall allow authorized representatives of DEP and EPA, upon the presentation of credentials and other documents as may be required by law;

1. To enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

2. To have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

3. To inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

4. To sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act or the Clean Streams Law, any substances or parameters at any location.

B. Transfer of Permits

1. Transfers by modification. Except as provided in paragraph 2 of this section, a permit may be transferred by the permittee to a new owner or operator only if this permit has been modified or revoked and reissued, or a minor modification made to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

2. Automatic transfers. As an alternative to transfers under paragraph 1 of this section, any NPDES permit may be automatically transferred to a new permittee if:

   a. The current permittee notifies DEP at least 30 days in advance of the proposed transfer date in paragraph 2.b of this section;

   b. The notice includes the appropriate DEP transfer form signed by the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and

   c. If DEP does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue this permit, the transfer is effective on the date specified in the agreement mentioned in paragraph 2.b of this section.

3. In the event DEP does not approve transfer of this permit, the new owner or controller must submit a new permit application.

C. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

D. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

E. Other Laws

The issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

PART C

I. OTHER REQUIREMENTS

The permittee must conduct a Toxics Reduction Evaluation (TRE) for **Barium, Osmotic Pressure, and Total Dissolved Solids.**

A. Water Quality-Based Effluent Limitations (WQBEL)

1. Based on the discharge and stream data currently available to DEP, the WQBEL are necessary to protect the receiving stream uses designated in DEP's Rules and Regulations.

2. Within 60 days of the permit effective date (PED), the permittee must submit notification to DEP verifying the start date of the TRE. During the period following permit issuance and prior to the WQBEL becoming final, the permittee agrees to conduct site-specific discharge and/or stream data collection and provide DEP with data to verify or refine the WQBEL in accordance with the schedule in Section B.2., herein. If warranted, modified WQBEL will be established through a permit amendment. Any such permit shall be considered a formal permitting action of DEP subject to applicable permit modification procedures.

If the permittee conducts TRE actions within the schedule in Section B.2. of this condition of the permit, herein, DEP will issue a written decision by letter or permit amendment. The permittee will have 30 days from the date of receipt of such written DEP letter or decision to file an appeal of the final WQBEL.

3. The permittee must conduct a TRE as outlined below. Phase I of the TRE has both required and optional components.

B. TRE Submission Requirements

1. The TRE shall be developed to:

a. Confirm and quantify the presence of **Barium, Osmotic Pressure, and Total Dissolved Solids** in the discharge with the WQBEL.

b. Verify or refine the modeling data and/or assumptions used to develop the WQBEL.

2. A copy of APPENDIX C - "Permittee Guidance for Conducting a Toxics Reduction Evaluation (TRE)" is enclosed for your use. The TRE and associated reports shall be completed and submitted in accordance with the following schedule:

Action Date

a. Submit notification specified within 60 days of PED in A.2. above

b. Submit work plan for within 90 days of PED conducting Phase I

c. Start Phase I within 120 days of PED

d. Submit complete Phase I within 18 months of PED report (3 copies)

e. Start Phase II within 30 days of notice from DEP to proceed with Phase II

f. Submit complete Phase II report within 180 days of notice to proceed with Phase II

g. Progress reports every 3 months starting 120 days after PED

C. Phase I TRE Requirements

1. The permittee is required to submit the Phase I report of the TRE consisting of the following components:

Influent and effluent quality review.

Source inventory and evaluation.

Source reduction evaluation.

Discharge hardness.

Discharge pollutant concentration and variability.

Design discharge flow.

Discharge mixing characteristics.

Ambient stream data for pollutants, pH, temperature.

Instream hardness.

Treatment plant influent pollutant concentrations.

2. The permittee has the option of providing all or some of the following site-specific data as part of Phase I for the use in verifying and refining the WQBEL:

Pollutant fate characteristics.

Stream width, depth and slope.

Stream velocity.

Water intake quality and quantity.

Chemical translators.

Water Effects Ratio (WER).

• • • • • • • • • • • • •

The permittee should contact DEP for guidance in determining which of the above data will have a significant impact on the WQBEL and also for protocols on collecting and submitting the data. DEP will determine the adequacy of any site-specific data submitted and advise the permittee accordingly. If initial review of the submitted data suggests that additional data collection is necessary, DEP will so advise the permittee. DEP will notify the permittee of what effect, if any, the data will have on the WQBEL using the procedure outlined in A.2. above. Refer to APPENDIX F for a list of Water-Effect Ratio (WER) and Metals Translator Guidance Documents.

3. Site-Specific Criteria

The permittee may request an opportunity to demonstrate alternative, site-specific criteria for any pollutants with WQBEL. The procedures for carrying out such demonstrations must receive written approval in advance by DEP and must be in accordance with the requirements of Section 93.8 of DEP's Rules and Regulations.

If the permittee chooses this option, requests for alternative, site-specific criteria must be submitted to DEP as part of the Phase I TRE report. Where the demonstration results in more stringent limitations than those previously established by DEP, the more stringent limitation will apply. Any less stringent limitations, which are approved by DEP, shall not violate any other applicable water criteria.

4. Alternative Site-Specific MDL

In some cases, the WQBEL may be less than the MDL in Title 25 Pa. Code Chapter 16. In this event, the permittee has the option to demonstrate alternative, facility-specific MDL to account for analytical matrix interference associated with the wastewater in question. The procedures for determining the MDL published as Appendix B in 40 CFR Part 136 must be followed and complete documentation provided. The request for approval of alternative facility-specific MDL including all documentation required to support such a request must be submitted to DEP with the Phase I TRE report. DEP may grant a facility-specific MDL by including the numeric alternate MDL value for compliance purposes through the permit modification or renewal process.

D. Phase II TRE Requirements

The permittee should not proceed with Phase II until notified by DEP to do so. Depending on the results of Phase I, WQBEL may need to be modified or Phase II may not be necessary.

1. Source Reduction Evaluation

In addition to those items in C.1. above, as part of Phase II, the permittee must conduct source reduction evaluations including recycle, reuse and process/chemical substitution. The intent of this portion of the TRE is to investigate and implement all low-cost, nonstructured alternatives to reduce pollutants.

2. Final WQBEL Compliance Strategies and Schedule

A complete TRE report must consist of identification and assessment of all available pollution control options (BMP and/or treatment technologies and other structural alternatives) and their ability to comply with the final WQBEL or other WQBEL identified in response to Phase I. The permittee must select a specific pollution control option that will achieve the applicable WQBEL and specify a schedule for the implementation of this option.

3. 25 Pa. Code § 95.4 Time Extension Requests

In some cases, the final WQBEL may not be technologically achievable using any combination of control options. In this event, the permittee has the option of requesting an extension of time to achieve the WQBEL, provided the permittee demonstrates eligibility for time extension under the requirements contained in 25 Pa. Code § 95.4. If the permittee elects to submit the 25 Pa. Code § 95.4 time extension request, the request must be submitted with Phase II of the TRE report using APPENDIX D Guidance for obtaining 25 Pa. Code § 95.4 Extension of Time to Achieve WQBEL.

NAME Shallenberger Construction, Inc.
ADDRESS 2611 Memorial Boulevard
Connellsville, PA 15425

FACILITY Ronco Facility
LOCATION German Township
Fayette County

PERMIT NUMBER PA0253723 DISCHARGE MONITORING REPORT (*DMR*)

DISCHARGE NO. 001

MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
Flow	SAMPLE MEASUREMENT	*		MGD	*	*	*	*			
	PERMIT REQUIREMENT	*	0.5		*	*	*			Daily	Measured
Total Iron	SAMPLE MEASUREMENT	*	*	*	*			MG/L			
	PERMIT REQUIREMENT	*	*		*	3.5	7.0			2/month	8 hr composite
Oil and Grease	SAMPLE MEASUREMENT	*	*	*	*			MG/L			
	PERMIT REQUIREMENT	*	*		*	15	30			2/month	Grab
TSS	SAMPLE MEASUREMENT	*	*	*	*			MG/L			
	PERMIT REQUIREMENT	*	*		*	30	60			2/month	8 hr composite
Chloride	SAMPLE MEASUREMENT	*	*	*	*			MG/L			8 hr composite
	PERMIT REQUIREMENT	*	*		*	Monitor	Only			2/month	8 hr composite
TDS	SAMPLE MEASUREMENT	*	*	*	*			MG/L			8 hr composite
	PERMIT REQUIREMENT	*	*		*	Monitor	Only			2/month	8 hr composite
Osmotic Pressure	SAMPLE MEASUREMENT	*	*	*	*			MOSM/KG			8 hr composite
	PERMIT REQUIREMENT	*	*		*	1632	2546			2/month	8 hr composite
Barium	SAMPLE MEASUREMENT	*	*	*	*			MG/L			8 hr composite
	PERMIT REQUIREMENT	*	*		*	14.4	28.0			2/month	8 hr composite
pH	SAMPLE MEASUREMENT	*	*	*	*			S.U.			
	PERMIT REQUIREMENT	*	*		*	Not less than 6.0 su	Not greater than 9 su			2/month	Grab
Acidity	SAMPLE MEASUREMENT	*	*	*	*			MG/L			
	PERMIT REQUIREMENT	*	*		*	Monitor	Only			2/month	8 hr composite
Alkalinity	SAMPLE MEASUREMENT	*	*	*	*			MG/L			
	PERMIT REQUIREMENT	*	*		*	Greater Than Acidity				2/month	8 hr composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN, AND BASED ON MY INQUIRY OF THOS INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION. I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE		TELEPHONE	DATE

EXHIBIT 3

Water Quality Management Part II Permit No. 2608201,

dated Aug. 28, 2009

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER MANAGEMENT PROGRAM

WATER QUALITY MANAGEMENT PERMIT NO. 2608201

A. PERMITTEE	B. LOCATION
Shallenberger Construction, Inc. 2611 Memorial Boulevard Connellsville, PA 15425	Municipality German Township County Fayette
C. TYPE OF FACILITY OR ESTABLISHMENT	D. NAME OF PLANT, AREA SERVED, ETC.
Industrial wastewater treatment facility for gas well drilling and production wastewaters.	Ronco Water Treatment Facility

E. THIS PERMIT APPROVES

1. Plans for construction of:
   - ☒ Treatment Facilities
   - ☐ Sewers and Appurtenances
   - ☐ Injection Well
   - ☐ Outfall or Headwall
   - ☐ Stream Crossing
   - ☐ Impoundment
   - ☐ Pump Station
2. ☐ The discharge of _____ to _____
3. ☐ An Erosion and Sedimentation Control Plan. Project Area is _____ acres.
4. ☐ Preparedness, Prevention, Contingency (PPC) Plan.

F. THIS APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS

1. All construction, operations, procedures, and discharge shall be in accordance with the application dated October 1, 2008, its supporting documentation, and amendments dated through August 28, 2009. Such application, its supporting documentation and amendments are hereby made part of this permit.
2. Conditions 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 23 of the Standard Conditions Relating to Industrial Wastes dated August, 1991, and all of the Standard Conditions Relating to Erosion Control for use in Water Quality Management Permits dated August, 1991 which conditions are attached and made part of this permit.
3. Special Conditions designated A, B, C, D, E, F, G, H which are attached and made part of this permit.

G. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS

1. If there is a conflict between the application or its supporting documentation and amendments and the standard or special conditions, the standard or special conditions shall apply.
2. Failure to comply with the rules and regulations of the Department or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of the permit.
3. This permit is issued pursuant to the Clean Streams Law, Act of June 22, 1937, P.L. 1987 as amended, 35 P.S. §691.1 et seq., and/or the Dam Safety and Encroachments Act of November 26, 1978, P.L. 1375, as amended, 32 P.S. §693.1 et seq. Issuance of this permit shall not relieve the permittee of any responsibility under any other law.

H. PERMIT ISSUED

DATE AUG 2 8 2009

BY Ronald A. Schwartz

Ronald A. Schwartz, P.E.
Assistant Regional Director

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
August 1991

STANDARD CONDITIONS RELATING TO INDUSTRIAL WASTES
For Use In Water Quality Management Permits

General

1. The plans for which this permit is issued are approved subject to the condition that the waste treatment plant constructed under said plans will produce an effluent satisfactory to the Department. By this approval, neither the Department nor the Commonwealth of Pennsylvania assumes any responsibility for the feasibility of the plans or the operation of the plant to be constructed thereunder.

2. All relevant and non-superseded conditions of any prior water quality management permits, decrees, or orders issued to the herein permittee or his predecessor shall be continued in full force and effect and together with the provisions of this permit shall apply to his successors, lessees, heirs and assigns.

3. The responsibility for the carrying out of the conditions of this permit shall rest upon the owner, lessee, assignee, or other party in responsible managerial charge of the operation producing the wastewaters and of the waste treatment works herein approved, such responsibility passing with each succession in said control. Approval facilities under a permit shall not be effective as to a new owner until a transfer has been executed and filed on forms provided by the Department and the transfer is approved by the Department.

4. The permittee shall secure any necessary permission from the proper federal authority for any outfall or industrial waste treatment structure which discharges into or enters navigable waters and shall obtain approval of any stream crossing, encroachment or change of natural stream conditions coming within the jurisdiction of the Department.

5. In order to avoid obsolescence of the plans of waste treatment works, the approval of the plans herein granted, and the authority granted in the permit, if not specifically extended, shall cease and be null and void two years from the date of this permit unless the works covered by said plans shall have been completed and placed in operation on or before that date.

6. By this approval, neither the Department nor the Commonwealth of Pennsylvania assume any responsibility for the structural design of the herein, permitted facilities. Failure of the works herein approved because of faulty structural design or poor construction will render the permit void.

7. The Department may at a subsequent time modify, suspend or revoke this permit whenever the waters affected by the presently authorized waste discharge have become so improved in character through natural or artificial processes of conservation or reclamation as to render inimical or harmful the effluent from the works herein approved, or whenever the Department increases general treatment requirements.

   Therefore, the permittee is hereby notified that when the Department shall have determined that the public interest requires the further treatment of such of the permittee's industrial wastes as are discharged to the waters of the Commonwealth, then upon notice by the Department and within the time specified, the permittee shall submit to the Deportment for its approval, plans and a report providing for the required degree of treatment, and after approval thereof, shall construct such works in accordance with the requirements of the Department.

8. If at any time the industrial waste treatment works of the permittee, or any part thereof, or the discharge of the effluent therefrom, shall have created a public nuisance, or such discharge is causing or contributing to pollution of the waters of the Commonwealth, the permittee shall forthwith adopt such remedial measures as are acceptable to the Department.

9. Nothing herein contained shall be construed to be an intent on the part of the Department to approve any act made or to be made by the permittee inconsistent with the permittee's lawful powers or with existing laws of the Commonwealth regulating industrial wastes and the practice of professional engineering, nor shall this permit be construed to sanction any act otherwise forbidden by any of the laws of the Commonwealth of Pennsylvania or of the United States.

10. If future operations by the Commonwealth of Pennsylvania require modification of the stream crossing and/or outfall or there shall be unreasonable obstruction to the free passage of floods or navigation, the permittee shall remove or alter the structural work or obstruction without expense to the Commonwealth of Pennsylvania. If upon the revocation of the permit, the work shall not be completed, the permittee, at his own expense and in such time and manner as the Department may require, shall remove any or all portions of the incompleted work and restore the watercourse to its former condition. No claim shall be made against the Commonwealth of Pennsylvania on account of any such removal or alteration.

11. The permittee must comply with any applicable requirements of Act 1989-32, the Storage Tank and Spill Prevention Act, for above ground and underground storage tanks associated with the treatment facilities approved herein.

Construction

12. The works shall be constructed under expert engineering supervision and competent inspection, and in accordance with plans, designs, and other data as herein approved or amended, and with the conditions of this permit.

13. No radical changes shall be made in the works herein approved without approval of the Department. Revisions which do not increase the rate of flow or increase pollutant concentrations in the effluent, the treatment processes or the point of discharge, may be approved by the Department upon submission of plans and specifications. Other revisions must be approved by a permit.

14. The local waterways patrolmen of the Pennsylvania Fish Commission shall be notified when the construction of any stream crossing and/or outfall is started and completed. A permit must be secured from the Pennsylvania Fish Commission if the use of explosives is required. The permittee shall notify the local waterways patrolmen when explosives are to be used.

15. The permittee shall comply with Chapter 102 of the Department's Rules and Regulations and the Department's standard conditions relating to erosion control.

Operation and Maintenance

16. No matter how well designed and carefully constructed a waste treatment works may be, full effectiveness cannot be developed unless it is efficiently operated. In order to secure such efficiency, protect the waters of the Commonwealth, and insure the most effective and economical dosage when chemicals are used, the permittee is required to place the works under the regular charge of a responsible plant official, and its operation under the control of the designer of the works or other qualified person, for at least one year after completion. Moreover, upon written notice from the Department, the permittee shall maintain one or more skilled operator regularly on duty for such daily periods as the Department may direct.

17. No untreated or ineffectively treated wastewaters shall at any time be discharged into the waters of the Commonwealth, and special care shall be used to prevent accidental "spills" or similar unusual discharges of all raw, finished and waste materials.

18. No storm water, sewage or other industrial wastes not specifically approved herein, shall be admitted to the works for which this permit is issued, unless with the approval of the Department.

19. The various structures and apparatus of the industrial waste treatment works herein approved shall be maintained in proper condition so that they will individually and collectively perform the functions for which they were designed. In order to insure the efficacy and proper maintenance of the treatment works, the permittee shall make periodic inspections at sufficiently frequent intervals to detect any impairment of the structural stability, adequate capacity, or other requisites of the herein approved works which might impair their effectiveness, and shall take immediate steps to correct any such impairment found to exist.

20. Any screenings, and any settled or floated solids, shall at no time be permitted to accumulate in sedimentation basins to a depth sufficient to interfere with the settling efficiency thereof. Any such material removed shall be handled and disposed of so that a nuisance is not created and so that every reasonable and practical precaution is taken to prevent the said material from reaching the waters of the Commonwealth, in accordance with applicable state and federal regulations regarding disposal of residuals.

21. Prior to the disposal of sludge from the herein approved facilities, the permittee shall obtain written approval from the Department for the method of sludge disposal.

22. The discharge of untreated or improperly treated industrial wastes to the waters of the Commonwealth is contrary to the requirements of the Department. If, because of accidental breakdown of the treatment works or plant equipment or for other reason, any such discharge should occur, then the operation of the mill or process producing such discharge shall be discontinued until repairs to the treatment works or other satisfactory measures to prevent water pollution shall have been completed. Any such occurrences must be reported verbally to the Department within 24 hours of such occurrence.

23. If at any time the Department determines that the discharge permitted herein creates a public nuisance or causes environmental harm to the receiving water of the Commonwealth, the Department may require the permittee to adopt such remedial measures as will produce a satisfactory effluent. If the permittee fails to adopt such remedial measures within the time specified by the Department, the right to discharge herein granted shall, upon notice by the Department, cease and become null and void.

August 1991

DEPARTMENT OF ENVIRONMENTAL RESOURCES
STANDARD CONDITIONS RELATING TO EROSION CONTROL
For Use in Water Quality Management Permits

1. By approval of the plans for which this permit is issued, neither the Department nor the Commonwealth of Pennsylvania assumes any responsibility for the feasibility of the plans or the operation of the measures and facilities to be constructed thereunder.

2. If at any time the erosion and sedimentation activities undertaken pursuant to this permit or the discharge of the effluent therefrom is causing or contributing to pollution of the waters of the Commonwealth, the permittee shall forthwith adopt such remedial measures as are acceptable to the Department.

3. This permit does not authorize any earth disturbance controlled by an ordinance enacted by a local municipality. Additional permits must be secured from local municipalities where earthmoving activities are covered by local ordinances.

4. At least seven days before earthmoving will begin, the permittee, by telephone or certified mail, shall notify the Department or its designee of the date for beginning of construction and invite the County Conservation District Representative to attend a pre-construction conference with the contractor. The permittee shall have his erosion control plan available at the site of the activity at all times.

5. All earthmoving activities shall be undertaken in the manner set forth in the erosion and sedimentation control plan identified with this permit. Revisions to the plan shall be pre-approved by the Department.

6. The erosion control measures and facilities shall be constructed under the supervision and competent inspection of an individual trained and experienced in erosion control, and in accordance with plans, designs and other data as herein approved or amended, and with the conditions of this permit. Control facilities shall be frequently inspected to insure effective control.

7. When the herein approved erosion control measures and facilities are completed, the permittee shall notify the County Conservation District so that an inspection of the measures and facilities may be made.

8. No storm water, sewage or industrial wastes not specifically approved herein, shall be admitted to the erosion and sedimentation measures and facilities for which this permit is issued, unless with the approval of the Department.

9. Sediment shall at no time be permitted to accumulate in sedimentation basins to a depth sufficient to limit storage capacity or interfere with the settling efficiency thereof. The sediment removed shall be handled and disposed of in a manner that will not create pollution problems and so that every reasonable and practical precaution is taken to prevent the said material from reaching the waters of the Commonwealth.

10. All slopes, channels, ditches or any disturbed area shall be stabilized as soon as possible after the final grade or final earthmoving has been completed. Where it is not possible to permanently stabilize a disturbed area immediately after the final earthmoving has been completed or where the activity ceases for more than 20 days, interim stabilization measures shall be implemented promptly.

11. Upon completion of the project, all areas which were disturbed by the project shall be stabilized so that accelerated erosion will be prevented. Any erosion and sedimentation control facility required or necessary to protect areas from erosion during the stabilization period shall be maintained until stabilization is completed. Upon completion of stabilization, all unnecessary or unusable control measures and facilities shall be removed, the areas shall be graded and the soils shall be stabilized.

12. The responsibility of carrying out the permit conditions shall rest with the owner, lessee, assignee or other responsible manager of earthmoving that affects the approved erosion controls. Such responsibility passes with each control succession.

SPECIAL CONDITIONS FOR PART II PERMIT 2608201

A. The authority granted by this permit is subject to all effluent requirements, monitoring requirements, and other conditions as set forth in Part I NPDES Permit PA0253723, and subsequent amendments.

B. Upon request from the Department, the permittee shall file a satisfactory record or detail plans of the facilities as actually constructed together with any other information in connection therewith.

C. Prior to the disposal of sludge from the herein approved facilities, the permittee shall obtain written approval from the Department for the method of sludge disposal.

D. The County Conservation District shall be notified prior to the start of earth moving associated with the construction of the herein approved project.

E. The permittee must comply with any applicable requirements of Act 1989-32, the Storage Tank and Spill Prevention Act, for aboveground and underground storage tanks associated with the treatment facilities approved herein.

F. Residual waste tanks, liner, and systems shall be installed and maintained in accordance with 25 Pa. Code §299.122 as follows:

i. Tanks, liner, and systems shall be designed, properly installed and system integrity tested in accordance with a code of practice developed by a nationally recognized association such as UL, ACI, API, ASME, ASTM, NACE or independent testing laboratory such as API 1615 and PEI Remedial Action Plan 100, and in accordance with the manufacturer's instruction(s).

ii. Tanks and systems shall be precision tightness tested after installation and major repairs.

iii. Sumps, release detection equipment, corrosion protection, spill, prevention, overfill prevention and other appurtenances whose failure could contribute to a release of waste, shall be maintained in good state of repair and shall function as designed.

G. Certification of the residual waste tanks, liners, and systems of this facility's design and construction shall be submitted to the Department by a professional engineer, registered in the Commonwealth of Pennsylvania, upon completion of construction, as specified by 25 Pa. Code §288.202(a).

The registered Pennsylvania Professional engineer shall certify in writing on Form 19R, provided by the Department, under penalty of law respecting unsworn falsification to authority (18 Pa. C.S. § 4904), indicating that he or she has personally examined the construction and that it is constructed and prepared in accordance with the documents, statements, designs, and plans submitted as part of the application as approved by the Department and that it meets the conditions set forth above. The certification shall include at a minimum the test results and installation standards required by Condition F of this permit.

H. The permittee shall submit written notice to the Department under the permit-by-rule provisions found in 25 Pa. Code §287.102 at least 30 days prior to initiating operations at the facility.

2540-PM-BM0377 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
DEP USE ONLY
Date Received

FORM 19R
CERTIFICATION OF FACILITY CONSTRUCTION ACTIVITY

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19R, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General References: Sections 288.202, 289.202

SECTION A - SITE IDENTIFIER

Applicant/permittee:

Site Name:

Facility ID (as issued by DEP):

SECTION B - P.E. CERTIFICATION

I, _____, being a Registered Professional Engineer in
(Engineer's Name - Print or Type)

accordance with the Pennsylvania Professional Engineer's Registration Law do hereby certify that to the best of my knowledge, information and belief that the following construction activity for:

FACILITY NAME: _____

FACILITY LOCATION: _____
(Municipality) (County)

is constructed, and prepared in accordance with the documents, statements, designs, and plans submitted as part of Application No. _____ as approved by the Department of Environmental Protection.

SECTION C - CONSTRUCTION ACTIVITY

RESIDUAL WASTE LANDFILL

- ☐ 1. Ground water monitoring system*
- ☐ 2. Subbase
- ☐ 3. Placement of attenuating soil at natural attenuation facilities (Class 3 only)
- ☐ 4. Secondary liner (Class 1 only)
- ☐ 5. Leachate detection zone (Class 1 only)
- ☐ 6. Primary liner
- ☐ 7. Protective cover and the collection system within the protective cover
- ☐ 8. Leachate treatment/conveyance facilities
- ☐ 9. Sedimentation ponds/erosion and sedimentation control structures
- ☐ 10. Closure
- ☐ 11. Gas management system
- ☐ 12. Roadways
- ☐ 13. Radioactive monitoring system
- ☐ 14. Other Explain _____

RESIDUAL WASTE DISPOSAL IMPOUNDMENT

- ☐ 1. Ground water monitoring system*
- ☐ 2. Subbase
- ☐ 3. Leachate detection zone
- ☐ 4. Secondary liner (Class 1 only)
- ☐ 5. Protective cover and the collection system within the protective cover
- ☐ 6. Primary liner
- ☐ 7. Leachate treatment/conveyance facilities
- ☐ 8. Sedimentation ponds/erosion and sedimentation control structures
- ☐ 9. Closure
- ☐ 10. Roadways
- ☐ 11. Radioactive monitoring system
- ☐ 12. Other Explain _____

* P.G. Certification Recommended. See Page 2.

PROCESSING FACILITY

Description of Construction Activity:

- ☐ 1. _____
- ☐ 2. _____

A description of the construction activity and phase or sequence of construction involved is included, along with appropriate as-built drawings, plans, photographs, and related test results.

The construction activity was observed by myself or a person under my direct supervision, in a manner consistent with the approved permit.

(SEAL)

Engineer's Signature: _____
Name of Firm: _____
Address: _____
Telephone Number ( ) _____
Date: _____

SECTION D. P.G. CERTIFICATION (Ground Water Monitoring System)

I, _____, being a Registered Professional Geologist in accordance with the
(Geologist's Name - Print or Type)
Pennsylvania Professional Geologist's Registration Law do hereby certify that to the best of my knowledge, information and belief that the above construction activity for:

FACILITY NAME: _____

FACILITY LOCATION: _____
(Municipality) (County)

is constructed, and prepared in accordance with the documents, statements, designs, and plans submitted as part of Application No. _____ as approved by the Department of Environmental Protection.

The construction activity was observed by myself or a person under my direct supervision, in a manner consistent with the approved permit.

Geologist's Signature: _____

Name of Firm: _____

(SEAL) Address: _____

Telephone Number ( ) _____

Date: _____

EXHIBIT 4

Oil and Gas Wastewater Manifest Instructions

(Dec. 2008)

5500-FM-OG0110 12/2008
Instructions

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF OIL AND GAS MANAGEMENT
BUREAU OF WATER STANDARDS AND FACILITY REGULATION

OIL AND GAS WASTEWATER MANIFEST INSTRUCTIONS

1. Provide the requested information for the well operator or permittee, the person or company transporting the waste, and the facility receiving the wastewater. If the wastewater is from more than one source or multiple trucks are used, complete a manifest for each source and truck.

2. In the date column, list the date and time the wastewater was delivered to the treatment or disposal facility or another well site for reuse.

3. Under geologic formation, identify the general geologic formation that the well is targeting for production.

4. Under wastewater type, identify if the wastewater is from drilling, fracing, or production of the well. If not from any of these types, enter the type of fluid.

5. A chemical analysis must be submitted to the receiving facility attached to the manifest. At a minimum the chemical analysis shall include:

Aluminum	Zinc	Osmotic Pressure
Arsenic	pH	Alkalinity (Total as $CaCO_3$)
Barium	Ammonia Nitrogen	Phenolics (Total)
Copper	Bromide	Specific Conductance
Iron – Total	Calcium	Iron –Dissolved
Lead	Chlorides	Hardness (Total as $CaCO_3$)
Manganese	Magnesium	Total Dissolved Solids
Molybdenum	Nickel	Oil & Grease
Beryllium	Toluene	Total Suspended Solids
Cadmium	Benzene	Sulfates
Silver	Lithium	Acidity
Sodium	Chromium (Total)	Strontium
Gross Alpha	Gross Beta	BOD
COD	MBAS (Surfactants)	

6. A representative of the well operator/permittee, transportation company, and the wastewater and the treatment/disposal/storage facility or reuse location accepting the wastewater shall sign the manifest for each load delivered.

7. The well operator/permittee, transportation company, and wastewater treatment facility shall be maintained a copy of the manifest for five years. The wastewater treatment facility shall provide a copy of the manifest to the Department Regional Water Program along with the monthly discharge monitoring report (DMR). Manifests shall be made available for inspection and copying upon request by the Department.

EXHIBIT 5

DEP, Form 26R, Chemical Analysis of Residual Waste 3

(June 2009)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

FORM 26R
CHEMICAL ANALYSIS OF RESIDUAL WASTE
ANNUAL REPORT BY THE GENERATOR
INSTRUCTIONS

GENERAL INFORMATION

General Instructions. This package is designed to assist an *existing client with DEP* in completing the annual report form. This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. Attach additional sheets as necessary.

General References: 287.54

Date Prepared/Revised. Provide the date the application was prepared and/or revised. When additional sheets are attached to include additional information, identify each attached sheet as Form 26R, reference the item number and identify the date prepared/revised. The "Date Prepared/Revised" on any attached sheets needs to match the "Date Prepared/Revised" on the completed annual report form. Please type or print clearly when completing the form.

SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION

Company Name. Identify the company name. Include the company's mailing address, phone number and email address.

Subsidiary/Parent Company. If the company identified is a subsidiary, identify the name of the parent company and the EPA Generator ID number.

Company Contact. Identify the company's contact and include the contact's phone number and email address.

Waste Generation Location. If the waste generated is not at the company's mailing address, describe the location of the waste generation; and provide the township, county, and state.

SECTION B. WASTE DESCRIPTION

Residual Waste. Enter the code that represents the type of residual waste. The list of Residual Waste Codes (RWC) can be found on the 'Codes Residual Waste' document included with this package. Also include the code's description, the amount of waste; the unit of measurement, and the timeframe for disposal/processing. If the timeframe is 'one time' check the box; if other than 'one time' provide the appropriate timeframe.

1. GENERAL PROPERTIES

a. pH Range. Indicate the pH range based on analyses or knowledge.

b. Physical State. Check appropriate box to indicate physical state.

c. **Physical Appearance.** Describe the color and odor of the waste. Enter the number of solid and/or liquid phases of separation and describe each phase. For example, two phases: one yellow oily liquid and one gray granular solid.

2. Chemical Analysis Attachments

Check the appropriate box to indicate if required information is attached to the completed annual report form.

The analytical methodologies used shall be those set forth in the most recent edition of the EPA's Test Methods for Evaluating Solid Waste (SW-846), Methods for Chemical Analysis of Water and Wastes (EPA 600/4-79-020), Standard Methods for the Examination of Water and Wastewater (prepared jointly by the American Public Health Association, American Water Works Association, and Water Environment Federation), or a comparable method subsequently approved by EPA or the Department.

The person taking the samples and the laboratory performing the analysis shall employ the quality assurance/quality control procedures described in the EPA's Test Methods for Evaluating Solid Waste (SW-846) or Handbook for Analytical Quality Control in Water and Wastewater Laboratories (EPA 600/4-79-019).

All analyses submitted must specify the method used and any special preparation, deviation from the method, or pertinent observations. Each analysis sheet must include: *date of sampling, date of analysis, name of laboratory performing test, laboratory accreditation number, laboratory contact person and phone number.* Analytical determinations should be run on the samples, as is, unless otherwise specified in the cited method. Report the analyses in mg/kg on a dry weight basis for solids or in mg/L for liquids, or as otherwise specified in cited method.

No single analytical method is applicable for all waste streams and some modifications may be necessary for unusual waste types. Any modifications, however, must be approved by the Department.

If the sample is of unknown origin or characteristics, contact the appropriate Department regional office prior to analysis.

Chemical analysis of the waste must include the following unless the generator certifies, in writing, either the concentration of the parameter or the absence of the parameter based on his/her knowledge of the manufacturing or pollution control process:

a. **Gross Analysis.** The total concentration of any constituent present at 1% or greater.

b. **Trace Analysis.** The total concentration of any constituent listed in Appendix VIII (40 CFR 261.34(e), as incorporated by reference at 25 Pa. Code 261a.1) which, based upon generator knowledge of the waste and the process generating the waste, are likely to be found in the waste at concentrations exceeding 50 ppm.

c. **Hazardous Waste Determination.** As required under 40 CFR262.11, and as incorporated by reference at 25 Pa. Code 262a.1.

1) pH

2) Ignitability

3) Reactive Sulfide

4) Reactive Cyanide

5) Toxicity Characteristic Leaching Procedure (TCLP) - include all parameters found in 40 CFR 261.24, as incorporated by reference at 25 Pa. Code 261a.1, as well as pH of extract. Report all results in mg/L or as otherwise specified in method.

d. **Wastewater Produced from the Drilling, Completion and Production of a Marcellus Shale or Other Shale Gas Well.** In lieu of the Trace Analysis described in subsection b., the chemical analysis of wastewater produced from the drilling, completion and production of a Marcellus Shale or other shale gas well must include the following:

Acidity	Calcium	Lead	Selenium
Alkalinity (Total as CaCO3)	Chemical Oxygen Demand	Lithium	Silver
Aluminum	Chlorides	Magnesium	Sodium
Ammonia Nitrogen	Chromium	Manganese	Specific Conductance
Arsenic	Cobalt	MBAS (Surfactants)	Strontium
Barium	Copper	Mercury	Sulfates
Benzene	Ethylene Glycol	Molybdenum	Thorium
Beryllium	Gross Alpha	Nickel	Toluene
Biochemical Oxygen Demand	Gross Beta	Nitrite-Nitrate Nitrogen	Total Dissolved Solids
Boron	Hardness (Total as CaCO3)	Oil & Grease	Total Kjeldahl Nitrogen
Bromide	Iron – Dissolved	pH	Total Suspended Solids
Cadmium	Iron – Total	Phenolics (Total)	Uranium
		Radium 226	Zinc
		Radium 228	

Additional constituents that are expected or known to be present in the wastewater.

*Note - All metals reported as total.

For impoundments and tanks, the chemical analysis must represent the volume of wastewater stored in the impoundment or tank. A representative analysis is based upon the frequency, location and number of samples. Samples of an impoundment should be composite samples taken from various locations and wastewater depths as identified on a grid. If multiple loads of wastewater are removed from the same impoundment or tanks for transfer, processing, treatment or disposal, the same chemical analysis of the wastewater may be used repeatedly without further analysis, provided the analysis remains representative of the impoundment. If large volumes of water, wastewater or other fluids are added to the impoundment, a new chemical analysis must be performed that is representative of the impoundment.

e. **Additional Analyses.** Any additional parameters as required.

1) On Form U (if waste is managed at a Pennsylvania facility)

2) By conditions in a permit or approval, for management of the waste.

3) By the facility(ies) managing the waste.

3. Process Description & Schematic Attachments

a. **Manufacturing and/or Pollution Control Processes.** Check the appropriate box to indicate if a detailed description of the manufacturing and/or pollution control processes producing the waste is attached.

Describe the manufacturing process that produced the waste and any pollution control methods involved. This must include the raw materials used in the process, any intermediate products formed, final products, and any substances added during treatment. For non-hazardous waste, provide sufficient detail to demonstrate the waste is not a listed hazardous waste. For example:

"Resol Resin Manufacture"

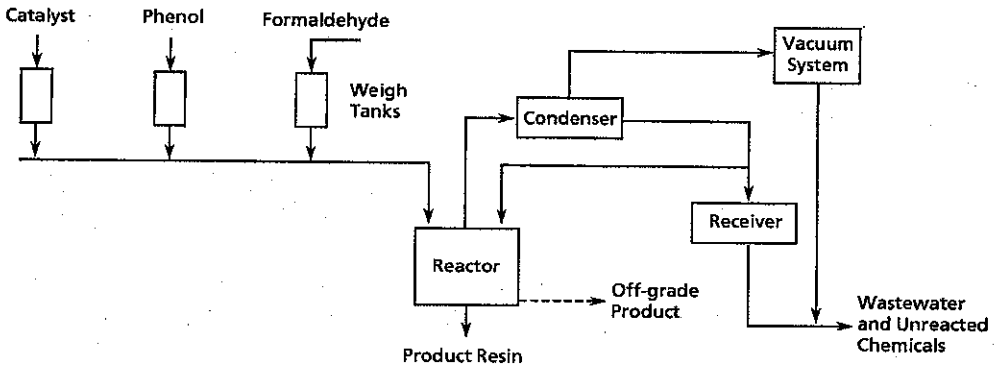
"These resins are formed by reacting phenol, or a substituted phenol with formaldehyde which contains an excess of formaldehyde. An alkali (sodium hydroxide) is used to catalyze the polymerization which takes place at a pH of between 8 and 11 and at a temperature of 60°C."

"When the desired degree of polymerization has occurred, the kettle is cooled to about 35°C to inhibit further reaction. The caustic may be neutralized in the kettle with sulfuric acid at this time. The water from this distillation forms a concentrated waste of unreacted materials and low molecular weight resin."

"The batch is dumped, and depending on the specific resin, the batch may be washed several times and a vacuum may be used during the dehydration cycle. It is important that molten resin be handled quickly to avoid its setting up to an insoluble, infusible mass which would become a waste."

b. **Schematic of Manufacturing and/or Pollution Control Processes.** Check the appropriate box to indicate if a schematic of the manufacturing and/or pollution control processes producing the waste is attached.

Provide, on 8½ x 11" size paper, flow schematics of the manufacturing and/or pollution control processes generating the waste stream starting with the raw materials and ending with the final products. (See example on next page.)



c. Confidentiality Claim. Check the appropriate box to indicate if the substantiation for a confidentiality claim (if portions of the information submitted are confidential) is attached.

Information submitted to the Department in this portion of the form may be claimed as confidential by the applicant. If no claim is made at the time of submission, the Department shall make the information available to the public without further notice.

Claim of confidentiality shall address the following:

- The portions of the information claimed to be confidential.
- The length of time the information is to remain confidential.
- The measures taken to guard undesired disclosure of the information to others.
- The extent to which the information has been disclosed to others and the precautions taken in connection with that disclosure.
- A copy of pertinent confidentiality determinations by EPA or any other federal agency.
- The nature of the substantial harm to the competitive position by disclosure of the information, the reasons it should be viewed as substantial, and the relationship between the disclosure and the harm.

SECTION C. MANAGEMENT OF RESIDUAL WASTE

1. PROCESSING OR DISPOSAL FACILITY(IES)

On the annual report form, Items a through d are repeated twice (to accommodate identification of two facilities). Attach additional sheets if necessary to identify all facilities being utilized.

For each facility identified, include the facility name and address; the municipality and county in which the facility is located; the facility's contact person (name, title, phone, and email address); and the volume of waste shipped to the processing or disposal facility in the previous year.

2. Beneficial Use

Indicate whether the waste has been approved for beneficial use; and include the general permit number or approval number. Also identify the volume of waste beneficially used in the previous year.

SECTION D. CERTIFICATION

In accordance with 25 Pa. Code 287.54(f), information required in "Waste Description", if previously submitted to the Department, may be omitted from the annual report form, provided the generator certifies that this information has not changed from that set forth for the previous year. The generator is to check the appropriate box(es) in this area of the annual report form, identify the form(s) and date(s) of submission on which the information is found, and sign the certification statement.

If none of the "Waste Description" information is omitted, do not check any of the boxes; but do sign the certification statement.

The completed annual report form shall be signed by a responsible official for the facility that generated the waste.

Department of Environmental Protection

Southeast Regional Office
2 East Main Street
Norristown, PA 19401-4915
Phone (484) 250-5960

Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18711
Phone (570) 826-2516

Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110
Phone (717) 705-4706

Southwest Regional Office
400 Waterfront Drive
Pittsburgh, PA 15222
Phone (412) 442-4000

Northcentral Regional Office
208 W. 3rd St., Suite 101
Williamsport, PA 17701
Phone (570) 327-3653

Northwest Regional Office
230 Chestnut Street
Meadville, PA 16335
Phone (814) 332-6848

EXHIBIT 6

DEP, News Release:

DEP Investigates Source of Elevated Total Dissolved Solids in Monongahela River

(Oct. 22, 2008)

Daily News Releases

Full version Print

N E W S R E L E A S E COMMONWEALTH OF PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA
Dept. of Environmental Protection
Commonwealth News Bureau
Room 308, Main Capitol Building
Harrisburg, PA 17120

FOR IMMEDIATE RELEASE
10/22/2008

CONTACT:
Teresa Candori
Phone: (717) 787-1323

DEP INVESTIGATES SOURCE OF ELEVATED TOTAL DISSOLVED SOLIDS IN MONONGAHELA RIVER

Preliminary Investigation Identifies Multiple Sources; DEP to Take Immediate Measures to Reduce Levels

HARRISBURG – The Department of Environmental Protection is investigating the source of unusually high levels of total dissolved solids, or TDS, detected at points along approximately 70 stream miles on the Monongahela River beginning at the West Virginia border to the confluence with the Youghigheny River.

Elevated TDS levels may affect the taste and odor of water. To control for this, a state and federal standard, or Secondary Maximum Contaminant Level, of 500 milligrams per liter of TDS has been established. Test results indicate levels of up to 852 milligrams per liter. Secondary contaminants are those which affect taste and odor, as opposed to primary contaminants which affect human health. The department has no results indicating any exceedences of primary contaminants.

Elevated TDS levels are not considered a major human health risk. The department now has no information indicating that the water is unsafe. But under the circumstances, if consumers have concerns, DEP recommends consumers use bottled water for drinking and preparing food until the exceedance is eliminated. The department will be constantly

monitoring and continue testing.

Water supply treatment plants are not equipped to remove TDS from the raw water. DEP staff is sampling the finished water from water supplies along the Monongahela River and expects results within one week. DEP is working with these water suppliers in the affected area.

The department is investigating four possible reasons for the elevated TDS levels. Samples taken from the river at the West Virginia border show levels to be already at the standard. This level is well above the condition that normally exists at that point on the river. Any subsequent discharge of TDS will cause an immediate exceedance.

Secondly, the Monongahela basin is experiencing low-flow conditions, which means less water is available to dilute TDS. Low-flow conditions result in higher concentrations of TDS.

Third, abandoned mine drainage has been discharging to the Monongahela at a fairly constant rate for decades. And finally, increases in conventional, non-conventional and coal bed methane drilling have led to greater volumes of drilling wastewater being delivered to sewage treatment plants. Mine drainage and gas well drilling wastewater contain high concentrations of TDS.

To immediately address elevated TDS levels, DEP is directing all sewage treatment plants accepting gas well drilling wastewater, and which discharge to the Monongahela River or its tributaries, to drastically reduce the volume of gas well drilling wastewater they accept to one percent of their daily flow. Currently gas well drilling wastewater constitutes up to 20 percent of those plants daily flow. The restrictions will reduce the volume of drilling wastewater treated by 90 to 95 percent. The restrictions will remain in place until the levels of TDS fall below the 500 milligram per liter standard.

In addition, the department will step up monitoring and compliance activities and coordinate its efforts with the Pennsylvania Fish and Boat Commission in the Monongahela River basin area.

DEP is also consulting with the Army Corps of Engineers to investigate if supplemental discharges of water from several dams will aid with diluting the TDS. The department also will continue to monitor the situation closely and pursue with West Virginia options available to reduce TDS levels at the border.

Elevated TDS levels can result in scale formation and adversely impact the operation of industrial equipment which uses river water in its processes. DEP has received several reports from industry of equipment problems created by the high TDS levels.

TDS is a measure of all elements dissolved in water and can include carbonates, chlorides, sulfates, nitrates, sodium, potassium, calcium and magnesium. Sources of TDS can include, abandoned mine drainage, agricultural runoff, wastewater from gas well drilling and discharges from industrial or sewage treatment plants.

Preliminary lab analysis detected TDS in the Monongahela River near the town of Millsboro as high as 852 parts per million. The department's complete laboratory analysis results will be available this week and will include sample results for chlorides, sulfates and metals.

Data collection points located along the Monongahela River beginning at the West Virginia border and points located on Dunkard, Whitley and 10 Mile creeks show elevated levels of TDS. However, data points along the Casselman and the Youghiogheny and Cheat Rivers show TDS levels below the limits set by DEP.

TDS levels on the Ohio and Allegheny Rivers and the Monongahela River below the confluence below the Youghiogheny River are also below the TDS standard

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EDITOR'S NOTE: Following is a list of public water supplies which draw raw water from the Monongahela River in the affected area.

- East Dunkard Water Association
- Dunkard Valley Joint Municipal Authority
- Masontown Water Works
- Carmichaels Municipal Authority
- Southwestern Pennsylvania Water Authority
- Tri County Joint Municipal Authority
- Pennsylvania- American Water Company Brownsville Plant
- Newell Municipal Authority
- Washington Township Municipal Authority
- Belle Vernon Municipal Authority
- Charleroi Municipal Authority
- Pennsylvania-American Water Company Aldrich Station

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2008

Return to Main News Releases Page.

EXHIBIT 7

DEP, *Water Quality Protection Report*

(June 2007)

WATER QUALITY PROTECTION REPORT

SHALLENBERGER CONSTRUCTION CO
NPDES PERMIT NO. PA 0253723
RONCO TREATMENT FACILITY

GERMAN TOWNSHIP
FAYETTE COUNTY
June 2007

This report details the evaluation of Shallenberger Construction, Inc.'s request for a NPDES permit for the Ronco Facility. The application is for authorization to discharge treated oil and gas wastewaters produced in association with Marcellus Shale hydro-fracturing and production. Wastewater treatment includes fluids equalization, chemical addition, aeration, flocculation, primary and secondary settling, and clarification. The application requests a discharge quantity of 500,000 gpd (0.7736 cfs).

Wastewater Treatment Requirements - The effluent limits developed and included in an NPDES permit may either be water quality based, technology based, the result of "best management practices" approach to controlling or abating a pollution problem, or a combination of any or all of the above.

Wastewaters to be discharged must be treated or managed so as not to violate water quality standards or technology based standards. Title 25, Chapters 16, 93 and 96 of the Pennsylvania Code contain water quality standards applicable to the designated use of the stream. Chapters 78 and 95 of the Rules and Regulations address several requirements pertaining to treatment and discharge of wastewaters that must be satisfied. Section 92.2d specifies the minimum level of treatment required for waste discharges as that defined by the EPA under the Federal Water Pollution Control Act (33 U.S.C.A. Section 1314). In the absence of minimum treatment defined by the EPA, as in the case for oil and gas wastewaters, an equivalent degree of treatment, as determined by the Department, must be satisfied.

As outlined in the "Oil and Gas Wastewater Permitting Manual," the minimum treatment required for oil and gas well wastewater treatment facilities is as follows:

1. Flow equalization to ensure optimum treatment efficiency of the facilities.
2. Chemical addition for pH control and metals removal.
3. Aeration or equivalent technology for reducing volatile petroleum hydrocarbons and oxidation for metals removal.
4. Gravity separation and surface skimming or equivalent technology for oil and grease removal.
5. Settling (retention) or filtration for removal of solids, including oxidized metals.

Technology based limits for oil and gas fluids are:

Parameter	Monthly Average (mg/l)	Instant. Max. (mg/l)
TSS	30	60
Oil and Grease	15	30
Iron (total)	3.5	7.0
pH	between 6.0 and 9.0 standard units	
Alkalinity	Greater than acidity	

Reference: "Oil and Gas Wastewater Permitting Manual"

The EPA has established technology based effluent limitations for certain sub-categories of the oil and gas extraction industry as noted in 40 CFR 435. Discharges to surface waters from oil and gas well operations may be approved under NPDES permits if the wastewaters are removed to an "off-site" facility, provided the discharge will meet all the requirements discussed above. The term "off-site" includes:

a. A centralized wastewater collection and treatment facility associated with a multiple well operation.

b. A wastewater treatment facility owned and operated by another party or group of operators.

The Ronco Facility meets the definition of "off-site."

Receiving Stream Characteristics - The receiving waterway is the Monongahela River. The Monongahela River is listed in Chapter 93.9 under drainage list V as a WWF for water uses protected, with use of water for commercial transfer and transport of persons, animals, and goods. The water uses to be protected are the statewide list. The Monongahela River is currently on the 303(d) list as impaired due to pesticides (chlordane) and priority organics (PCBs) and has an EPA approved TMDL. The Monongahela River is attaining at the discharge point.

The nearest potable water supply is in Cumberland Township on the Monongahela River, located 4.1 miles downstream of discharge.

The Monongahela River has a total drainage area of 7386 mi^2 (Reference: Interdepartmental Website, Bureau of Watershed Management, DEP Stream File, Pennsylvania Gazetteer of Streams-Part 2, Page 100). The proposed discharge point is at river mile 79.5. The drainage area above the proposed discharge point is 4,614 mi^2. Elevations and river mile indexes were determined using the Masontown, Carmichael, and Smithfield Quadrangle USGS 7 ½ minute series topographic maps.

A gaging station, reference number 03072500, is located on the Monongahela River at Masontown, PA. The Q_{7-10} low-flow at Masontown is 476 cfs (Low-Flow Statistics for Pennsylvania Streams, www.usgs.gov). The low-flow yield for the Monongahela River

is 0.10577 cfs/mi^2. The base $Q_{7\text{-}10}$ low-flow is 485 cfs at the discharge point. The dilution ratio of the Monongahela River to outfall 001 is approximately 627 to 1.

Background water quality data are available for the Monongahela River from the water quality network station at river mile 85.1 (Station ID 4GRP11002).

Wastewater Characteristics – The applicant expects that the influent characteristics will be those of the Marcellus Shale hydro-fracturing fluids and production brines. The applicants expects to receive 60% spent frac fluids and 40% brine.

Water Quality Evaluation - The information required to evaluate the discharge for compliance with the water quality criteria is obtained from Chapter 93 "Water Quality Standards" and Chapter 16 "Water Quality Toxics Management Strategy."

PARAMETERS OF CONCERN:

The applicant provided analytical data for total suspended solids, total dissolved solids, pH, ammonia-N, oil and grease, sulfate, aluminum, barium, total and dissolved iron, total manganese, arsenic, cadmium, copper, lead, nickel, silver, zinc, phenols, benzene, ethylbenzene, toluene, xylene, osmotic pressure, and MBAS for both frac and brine wastewaters. Data are summarized in Attachment 1, including averages of DEP sample data of the Marcellus Shale hydro-fracturing fluids. Acidity, alkalinity, oil and grease, and pH were within technology limits and will not be evaluated. Total iron and TSS did not meet technology limits but were evaluated at technology limits for compliance with water quality criterion. TDS, phenolics, and chlorides were evaluated for protection of potable water supply. Aluminum, barium, manganese, arsenic, copper, nickel, zinc, benzene, MBAS, ammonia-N, and osmotic pressure were modeled to ensure the values meets water quality criterion. Sulfate, cadmium, silver, phenols, ethylbenzene, toluene, and xylene were either indicators only or met water quality criterion and will not be evaluated.

ANALYSIS OF PARAMETERS OF CONCERN:

Aluminum, arsenic, barium, benzene, copper, manganese, MBAS, nickel, osmotic pressure, total iron, and zinc were analyzed and modeled using PENTOXSD to determine stream assimilation and effluent limitations. Based on the data provided in the application, all parameters met water quality criterion at a discharge rate of 0.5 mgd, with the exception of barium. Barium effluent limitations were suggested by the model, however, data collected by the Department from similar facilities throughout the southwest region of Pennsylvania suggest that much lower barium limits are attainable through cost effective means. Barium limitations are based on best attainable technology.

Osmotic pressure was evaluated based on data provided in the application. The osmotic pressure analyzed and modeled is based on the ratio of frac to brine wastewater flows. Osmotic pressure limitations will be set based the reported application concentrations.

A toxics reduction evaluation (TRE) is requested for this facility. Those parameters to be analyzed and summarized in accordance with "Permittee Guidance for Conducting a Toxics Reduction Evaluation" are barium, osmotic pressure, and TDS.

PROTECTION OF POTABLE WATER SUPPLIES:

The nearest downstream potable water supply intake is located in Cumberland Township on the Monongahela River approximately 4.1 miles downstream of the site. There is a USGS bridge 03072500 located at Masontown; the $Q_{7\text{-}10}$ low-flow calculated off of this reference gauge is 490 cfs. There is a water quality network station (Station ID 4GRP11002) at river mile 85.1. The maximum discharge expected from Ronco Treatment Facility is 500,000 gpd (0.7736 cfs).

TDS – The background Total Dissolved Solids (TDS) for the water supply intake of 1.93 mg/l was determined by the using the average of available total dissolved solids at the COE water quality station 4GRP11002. Discharge TDS concentration is 56,640 mg/l, and is a weighted average of the brine and frac fluids. The mass balance calculation for TDS at the potable water supply shows a concentration of 91.2 mg/l, which is below the in-stream criterion (30-day average) of 500 mg/l.

((0.7736 cfs x 56,640 mg/l) + (490 cfs x 1.93 mg/l)) / (0.7736 + 490 cfs) = 91.1 mg/L

Chloride – Background chloride concentration data is not available at any water quality network station within 10 river miles of the potable water supply. The background concentration of 0.97 mg/l is determined calculating 50% of the total dissolved solids concentration. Discharge chloride concentration is 28,320 mg/l, which is determined by calculating 50% of TDS concentrations. The mass balance calculation for chloride at the potable water supply shows a concentration of 45.6 mg/l, which is below the in-stream criterion of 250 mg/l.

((0.7736 cfs x 28,320 mg/l) + (490 cfs x 0.97 mg/l)) / (0.7736 + 490 cfs) = 45.6 mg/l

Phenolics – Background phenolics concentration data is not available. The assumption is that it is 0 mg/L in the Monongahela at the potable water supply. Discharge phenolics concentration is 1.8188 mg/L, as the weighted average of the brine to frac fluids. The mass balance calculation for phenolics at the potable water supply shows a concentration of 0.0028 mg/L, which is below the in-stream criterion of 0.005 mg/L.

((0.7736 cfs x 1.8188 mg/l) + (490 cfs x 0 mg/l)) / (0.7736 + 490 cfs) = 0.0028 mg/l

EVALUATION SUMMARY:

Consistent with policy, a single discharge analysis using PENTOXSD was performed for this proposed discharge. This program compares in-stream water quality resulting from wastewater discharges with applicable water quality criteria. The PENTOXSD model

(Attachment 2) was run for aluminum, barium, manganese, arsenic, copper, nickel, zinc, benzene, MBAS, ammonia-N, total iron and osmotic pressure. The model indicated that the concentrations of aluminum, arsenic, benzene, copper, manganese, MBAS, nickel, osmotic pressure, and zinc are in compliance with water quality criteria.

Expected discharge concentrations for pH, iron (total), acidity, alkalinity, TSS, and oil & grease are in compliance with technology-based limits. Chloride and TDS are included for monitoring as indicator parameters. Osmotic pressure and barium have limits based on best practical technology. Osmotic pressure, barium, and TDS will be analyzed through a Toxics Reduction Evaluation (TRE) and limitations evaluated based on results. Sampling for monitoring should be done on an 8 hour composite.

Based on these evaluations the following discharge limitations and monitoring are proposed for outfall 001:

		Limitations	
Parameter	**Monthly Average**	**Maximum Daily**	**Instantaneous Max**
Flow		0.5 mgd	
Iron (total)	3.5 mg/l		7 mg/l
Oil and Grease	15 mg/l		30 mg/l
TSS	30 mg/l		60 mg/l
Acidity	Monitor only		
Alkalinity	Greater than Acidity		
pH	6 to 9		
Chloride	Monitor only		
TDS	Monitor only		
Osmotic Pressure	1632 mOsm/kg	2546 mOsm/kg	
Barium	14.4 mg/L	28.0 mg/L	

PENTOXSD Analysis Results

Recommended Effluent Limitations

SWP Basin	Stream Code:	Stream Name:
19A	37185	MONONGAHELA RIVER

RMI	Name	Permit Number	Disc Flow (mgd)
79.50	Ronco	PA0253723	0.5500

Parameter	Effluent Limit (µg/L)	Governing Criterion	Max. Daily Limit (µg/L)	Most Stringent WQBEL (µg/L)	Most Stringent WQBEL Criterion
ALUMINUM	1440	INPUT	2246.632	6672.106	AFC
ARSENIC	24	INPUT	37.444	3785.669	AFC
BARIUM	233314	AFC	364007.4	233314	AFC
BENZENE	2.48	INPUT	3.869	699.124	CRL
COPPER	10	INPUT	15.602	103.083	AFC
MANGANESE	2898	INPUT	4521.346	90059.42	THH
MBAS	322.4	INPUT	502.996	57508.38	THH
NICKEL	34	INPUT	53.045	5075.277	CFC
OSMOTIC PRESSURE	1632	INPUT	2546.182	25855.69	CFC
TOTAL IRON	3500	INPUT	5460.562	660709.8	CFC
ZINC	184	INPUT	287.07	806.202	AFC

PENTOXSD

Modeling Input Data

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
37185	79.50	780.00	4614.00	0.00000	0.00	☑

Stream Data

	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	Tributary pH	Stream Hard	Stream pH	Analysis Hard	Analysis pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.10577	0	0	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow	Permitted Disc Flow	Design Disc Flow	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard	Disc pH
		(mgd)	(mgd)	(mgd)						(mg/L)	
Ronco	PA0253723	0	0.5	0	0.1	0	0	0	0	100	7.11

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
ALUMINUM	1440	0	0.5	0.5	159	0	0	0.1	1	0
ARSENIC	24	0	0.5	0.5	0	0	0	0.1	1	0
BARIUM	1291120	0	0.5	0.5	48	0	0	0.1	1	0
BENZENE	2.48	0	0.5	0.5	0	0	0	0.1	1	0
COPPER	10	0	0.5	0.5	5	0	0	0.1	1	0
MANGANESE	2898	0	0.5	0.5	218.7	0	0	0.1	1	0
MBAS	322.4	0	0.5	0.5	0	0	0	0.1	1	0
NICKEL	34	0	0.5	0.5	8.1	0	0	0.1	1	0
OSMOTIC PRESSURE	1632	0	0.5	0.5	0	0	0	0.1	1	0
TOTAL IRON	3500	0	0.5	0.5	222.7	0	0	0.1	1	0
ZINC	184	0	0.5	0.5	50	0	0	0.1	1	0

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
37185	79.49	779.99	4614.05	0.00000	0.00	☑

Stream Data

	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	Tributary pH	Stream Hard	Stream pH	Analysis Hard	Analysis pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.10577	0	0	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard (mg/L)	Disc pH
		0	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
ALUMINUM	0	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	0	0	0.5	0.5	0	0	0	0	1	0
BARIUM	0	0	0.5	0.5	0	0	0	0	1	0
BENZENE	0	0	0.5	0.5	0	0	0	0	1	0
COPPER	0	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	0	0	0.5	0.5	0	0	0	0	1	0
MBAS	0	0	0.5	0.5	0	0	0	0	1	0
NICKEL	0	0	0.5	0.5	0	0	0	0	1	0
OSMOTIC PRESSURE	0	0	0.5	0.5	0	0	0	0	1	0
TOTAL IRON	0	0	0.5	0.5	0	0	0	0	1	0
ZINC	0	0	0.5	0.5	0	0	0	0	1	0

Stream Code	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope	PWS With (mgd)	Apply FC
37185	79.49	779.99	4614.06	0.00000	0.00	☑

Stream Data

	LFY	Trib Flow	Stream Flow	WD Ratio	Rch Width	Rch Depth	Rch Velocity	Rch Trav Time	Tributary Hard	Tributary pH	Stream Hard	Stream pH	Analysis Hard	Analysis pH
	(cfsm)	(cfs)	(cfs)		(ft)	(ft)	(fps)	(days)	(mg/L)		(mg/L)		(mg/L)	
Q7-10	0.10577	0	0	0	0	0	0	0	100	7	0	0	0	0
Qh		0	0	0	0	0	0	0	100	7	0	0	0	0

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	AFC PMF	CFC PMF	THH PMF	CRL PMF	Disc Hard (mg/L)	Disc pH
		0	0	0	0	0	0	0	0	100	7

Parameter Data

Parameter Name	Disc Conc (µg/L)	Trib Conc (µg/L)	Disc Daily CV	Disc Hourly CV	Steam Conc (µg/L)	Stream CV	Fate Coef	FOS	Crit Mod	Max Disc Conc (µg/L)
ALUMINUM	0	0	0.5	0.5	0	0	0	0	1	0
ARSENIC	0	0	0.5	0.5	0	0	0	0	1	0
BARIUM	0	0	0.5	0.5	0	0	0	0	1	0
BENZENE	0	0	0.5	0.5	0	0	0	0	1	0
COPPER	0	0	0.5	0.5	0	0	0	0	1	0
MANGANESE	0	0	0.5	0.5	0	0	0	0	1	0
MBAS	0	0	0.5	0.5	0	0	0	0	1	0
NICKEL	0	0	0.5	0.5	0	0	0	0	1	0
OSMOTIC PRESSURE	0	0	0.5	0.5	0	0	0	0	1	0
TOTAL IRON	0	0	0.5	0.5	0	0	0	0	1	0
ZINC	0	0	0.5	0.5	0	0	0	0	1	0

PENTOXSD Analysis Results

Hydrodynamics

SWP Basin	Stream Code:	Stream Name:
19A	37185	MONONGAHELA RIVER

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope	Depth (ft)	Width (ft)	WD Ratio	Velocity (fps)	Reach Trav Time (days)	CMT (min)
Q7-10 Hydrodynamics											
79.500	488.02	0	488.02	0.85085	0.0002	1.2118	445.08	367.29	0.9064	0.0007	1000+
79.490	488.03	0	488.03	NA	0	0	0	0	0	0	NA
Qh Hydrodynamics											
79.500	1662.2	0	1662.2	0.85085	0.0002	2.0779	445.08	214.2	1.8004	0.0003	1000+
79.490	1662.2	0	1662.2	NA	0	0	0	0	0	0	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number
79.50	Ronco	PA0253723

AFC

Q7-10: CCT (min) 15 PMF 0.031 Analysis pH 7.005 Analysis Hardness 100

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ARSENIC	0	0	0	0	340	340	5906.253
	Dissolved WQC. Dissolved WQC. Chemical translator of 1 applied.						
COPPER	5	0	0	0	13.439	13.999	160.826
	Dissolved WQC. Dissolved WQC. Chemical translator of 0.96 applied.						
NICKEL	8.1	0	0	0	468.236	469.174	8016.764
	Dissolved WQC. Dissolved WQC. Chemical translator of 0.998 applied.						
ZINC	50	0	0	0	117.18	119.816	1257.804
	Dissolved WQC. Dissolved WQC. Chemical translator of 0.978 applied.						
BENZENE	0	0	0	0	640	640	11117.65
ALUMINUM	159	0	0	0	750	750	10409.56
TOTAL IRON	222.7	0	0	0	NA	NA	NA
MANGANESE	218.7	0	0	0	NA	NA	NA
BARIUM	48	0	0	0	21000	21000	364007.4
MBAS	0	0	0	0	NA	NA	NA
OSMOTIC PRESSURE	0	0	0	0	NA	NA	NA

CFC

Q7-10: CCT (min) 720 PMF 0.221 Analysis pH 7 Analysis Hardness 100

Parameter	Stream Conc. (µg/L)	Stream CV	Trib Conc. (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ARSENIC	0	0	0	0	150	150	17252.51
	Chemical translator of 1 applied.						
COPPER	5	0	0	0	8.956	9.329	502.397
	Chemical translator of 0.96 applied.						
NICKEL	8.1	0	0	0	52.007	52.163	5075.277
	Chemical translator of 0.997 applied.						
ZINC	50	0	0	0	118.139	119.816	8075.058
	Chemical translator of 0.986 applied.						
BENZENE	0	0	0	0	130	130	14952.18
ALUMINUM	159	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
79.50	Ronco	PA0253723						
	TOTAL IRON	222.7	0	0	0	1500	1500	660709.8
		WQC = 30 day average.						
	MANGANESE	218.7	0	0	0	NA	NA	NA
	BARIUM	48	0	0	0	4100	4100	2090000
	MBAS	0	0	0	0	NA	NA	NA
	OSMOTIC PRESSURE	0	0	0	0	50	50	25855.69
		Units for WLA and Effluent Limit = Milliosmoles per kilogram.						

THH

Q7-10: CCT (min) 720 PMF 0.221 Analysis pH NA Analysis Hardness NA

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ARSENIC	0	0	0	0	50	50	5750.838
COPPER	5	0	0	0	NA	NA	NA
NICKEL	8.1	0	0	0	610	610	69235.88
ZINC	50	0	0	0	NA	NA	NA
BENZENE	0	0	0	0	NA	NA	NA
ALUMINUM	159	0	0	0	NA	NA	NA
TOTAL IRON	222.7	0	0	0	NA	NA	NA
MANGANESE	218.7	0	0	0	1000	1000	90059.42
BARIUM	48	0	0	0	2400	2400	270562.6
MBAS	0	0	0	0	500	500	57508.38
OSMOTIC PRESSURE	0	0	0	0	NA	NA	NA

CRL

Qh: CCT (min) 720 PMF 0.33

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ARSENIC	0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
79.50	Ronco	PA0253723						
	TOTAL IRON	222.7	0	0	0	1500	1500	660709.8
		WQC = 30 day average.						
	MANGANESE	218.7	0	0	0	NA	NA	NA
	BARIUM	48	0	0	0	4100	4100	2090000
	MBAS	0	0	0	0	NA	NA	NA
	OSMOTIC PRESSURE	0	0	0	0	50	50	25855.69
		Units for WLA and Effluent Limit = Milliosmoles per kilogram.						

THH

Q7-10: CCT (min) 720 PMF 0.221 Analysis pH NA Analysis Hardness NA

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ARSENIC	0	0	0	0	50	50	5750.838
COPPER	5	0	0	0	NA	NA	NA
NICKEL	8.1	0	0	0	610	610	69235.88
ZINC	50	0	0	0	NA	NA	NA
BENZENE	0	0	0	0	NA	NA	NA
ALUMINUM	159	0	0	0	NA	NA	NA
TOTAL IRON	222.7	0	0	0	NA	NA	NA
MANGANESE	218.7	0	0	0	1000	1000	90059.42
BARIUM	48	0	0	0	2400	2400	270562.6
MBAS	0	0	0	0	500	500	57508.38
OSMOTIC PRESSURE	0	0	0	0	NA	NA	NA

CRL

Qh: CCT (min) 720 PMF 0.33

Parameter	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)
ARSENIC	0	0	0	0	NA	NA	NA

PENTOXSD Analysis Results

Wasteload Allocations

RMI	Name	Permit Number						
79.50	Ronco	PA0253723						
	COPPER	5	0	0	0	NA	NA	NA
	NICKEL	8.1	0	0	0	NA	NA	NA
	ZINC	50	0	0	0	NA	NA	NA
	BENZENE	0	0	0	0	1.2	1.2	699.124
	ALUMINUM	159	0	0	0	NA	NA	NA
	TOTAL IRON	222.7	0	0	0	NA	NA	NA
	MANGANESE	218.7	0	0	0	NA	NA	NA
	BARIUM	48	0	0	0	NA	NA	NA
	MBAS	0	0	0	0	NA	NA	NA
	OSMOTIC PRESSURE	0	0	0	0	NA	NA	NA

Shallenberger Construction
Ronco Facility

		Frac Fluid	Production Brine	Combined Flow	Background
Parameter	Units	Application	Application	Application	Data Mon
TDS	mg/L	78800	15900	53640	1.93
TSS	mg/L	235	26	151.4	
Ammonia-N	mg/L	32.2	14.9	25.28	0.1
Oil and Grease	mg/L	7	<5	6.2	
pH	su	6.31	7.65	6.846	6.5
Sulfate	mg/L	<2	23	10.4	137.67
MBAS	mg/L	<.5	0.056	0.3224	
Alkalinity	mg/L	204	451	302.8	10
Acidity	mg/L	-91	-382	-207.4	4
Osmotic Pressure	mOs/kg	2400	480	1632	
Arsenic	mg/L	<.02	0.03	0.024	
Cadmium	mg/L	<0.002	<0.002	<0.002	
Copper	mg/L	0.01	<0.01	0.01	
Lead	mg/L	<0.02	<0.02	<0.02	0.002
Nickel	mg/L	0.01	0.07	0.034	0.008
Silver	mg/L	<0.005	<0.005	<0.005	
Zinc	mg/L	0.3	<0.01	1.84	0.05
Phenol	mg/L	2.99	0.062	1.8188	
Aluminum	mg/L	0.4	3	1.44	0.159
Barium	mg/L	2140	17.8	1291.12	0.048
Total Iron	mg/L	122	7.32	76.128	0.2227
Dissolved Iron	mg/L	22.5	5.36	15.644	
Manganese	mg/L	4.43	0.6	2.898	0.2187
Benzene	mg/L	<0.001	0.0047	0.00248	
Ethylbenzene	mg/L	<0.001	<0.001	<0.001	
Toluene	mg/L	<0.001	0.0013	0.00112	
Xylene	mg/L	<0.002	<0.002	<0.002	
Phenolics	mg/L	2.99	0.062	1.8188	
Osmotic Pressure	mOs/kg	2400	480	1632	
Hardness	mg/L				133.3
Temp C	C				24.3
DO	mg/L				7.606
Specific Conductan	umhos/cm				275.1

EXHIBIT 8

Don Hopey, *DEP Seeks Cause of River Pollution*,

Pittsburgh Post-Gazette, Oct. 22, 2008

post-gazette.com Pittsburgh Post-Gazette NEWS / BREAKING NEWS

DEP seeks cause of river pollution

Wednesday, October 22, 2008
By Don Hopey, Pittsburgh Post-Gazette

The state Department of Environmental Protection is investigating the source of contaminants in a 70-mile stretch of the Monongahela River that could affect the smell and taste of water for customers of 11 public water suppliers.

Although there are no reports of illness caused by the tainted water and lab tests do not indicate it is unsafe, the DEP is recommending that consumers supplied by the companies drawing water from the river use bottled water for drinking and preparing food.

"It's a precaution at this point," said DEP Secretary John Hanger. "We value the health and safety of our citizens foremost, but we have no reports that people have been sickened."

The DEP has not yet identified the source of the water pollutants, which are classified as "secondary contaminants" because they have an unpleasant odor and taste and are not considered a major public health risk. Pollutants that cause illness are classified as "primary contaminants" and include things like arsenic, mercury, benzene, asbestos and cadmium.

Mr. Hanger said the DEP first received reports of the unusually high levels of Total Dissolved Solids, or TDS, from industrial water users along the Monongahela River, on Oct. 10. He decided to issue the water advisory tonight evening after receiving laboratory reports confirming the pollutants.

"We have no information about any primary contaminants in the water. If anything shows up we'll immediately let the public know," Mr. Hanger said. "We're continuing to test the river water and are working with the public water suppliers and the water treatment facilities."

Mr. Hanger said that approximately 40 percent of the problem appears to be due to the high volumes of water from deep gas well drilling that has been released by sewage treatment facilities along the river. He has ordered the treatment facilities to reduce their intake of the "brine water" from gas well drilling by up to 95 percent, limiting those intakes to 1 percent of a treatment plant's total volume.

Some treatment facilities have been taking in up to 20 percent of their total volume from the gas well industry.

Exacerbating the effect of those high treatment plant discharges is the low flow level of the river this fall. Mr. Hanger has asked the U.S. Army Corps of Engineers to release additional water from its flood control reservoirs to help dilute the pollutants.

In addition, possibly because of the low river flow, the levels of TDS measured at the Pennsylvania-West Virginia border are twice as high as they are historically in the fall.

The elevated levels significantly exceeding the state standard are occurring from the Pennsylvania-West Virginia state line north to McKeesport, where the Youghiogheny River flows into the Monongahela River, adding water volume and diluting the flow.

The public water suppliers affected are Pennsylvania-American Water Co., Aldrich Station and Brownsville Plant; Charleroi Municipal Authority; Belle Vernon Municipal Authority; Washington Township Municipal Authority; Newell Municipal Authority; Tri-County Joint Municipal Authority; Southwestern Pennsylvania Water Authority; Carmichaels Municipal Authority; Masontown Water Works; East Dunkard Water Association; and the Dunkard Valley Joint Municipal Authority.

First published on October 22, 2008 at 8:46 pm

EXHIBIT 9

Tri-County Joint Municipal Authority, Notice:

Tri-County Joint Municipal Authority Has Levels of Total Trihalomethanes ("TTHMs") Above Drinking Water Standards

(June 19, 2009)

and

2008 Annual Drinking Water Report

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

ESTE INFORME CONTIENE INFORMACION MUY IMPORTANTE SOBRE SU AGUA DE BEBER. TRADUZCALO O HABLE CON ALGUIEN QUE LO ENTIENDA BIEN.

Tri-County Joint Municipal Authority Has Levels of Total Trihalomethanes (TTHMs) Above Drinking Water Standards

Our water system recently violated a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we did to correct this situation.

We routinely monitor for drinking water contaminants. After receiving our latest test results for 2008, it shows that our system exceed the standard, or maximum contaminant level (MCL), for TTHMs. The standard for TTHMs is a Running Annual Average (RAA) of 0.080 mg/l, an average of the four most recent quarterly samples. The RAA for TTHMs over the last year ending in the first quarter of 2009 is **0.0874 mg/l.** The highest level detected was 0.158 mg/l and the lowest level detected was 0.0192 mg/l.

What should I do?

You do not need to use an alternative (e.g., bottled) water supply. However, if you have specific health concerns, consult your doctor.

What does this mean?

This is not an immediate risk. If it had been, you would have been notified immediately. However, some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

What happened? What was done?

Disinfectants can combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs), which includes TTHMs. These byproducts are produced by every public water system that uses disinfectants. We will work with our staff to arrive at a solution that will reduce the level of TTHMs. We will resolve the problem in as timely a manner as possible.

For more information, please contact Tri-County Municipal Authority at 724-377-2211

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by Tri-County Joint Municipal Authority

PWS ID#: 5630045 Date distributed: 06-19-09

ANNUAL DRINKING WATER QUALITY REPORT
2008
TRI-COUNTY JOINT MUNICIPAL AUTHORITY

PWSID# 5630045 **DATE DISTRIBUTED June 2009**

Este informe contiene informacion muy inportante sobre su agua de beber. Traduzcalo o hable con alguien que lo entienda bien. (This report contains very important information about your drinking water. Translate it, or speak with someone who understands it.)

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water source is the Monongahela River.

We are pleased to report that our drinking water meets federal and state requirements.

If you have any questions about this report or concerning your water utility, please contact the Authority's manager at 724-377-2211.

We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the first Wednesday of each month at 7:00 P.M. at the Authority's office located in Fredericktown

Tri-County Joint Municipal Authority routinely monitors for constituents in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2008. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

ND (non-detects) - laboratory analysis indicates that the contaminant is not present at a detectable level.

ppm or mg/L (parts per million or milligrams per liter) - one part per million corresponds to one minute in two years or a single penny in $10,000.

ppb (parts per billion or micrograms per liter) - one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

pCi/L (picocuries per liter) - picocuries per liter is a measure of the radioactivity in water.

NTU (Nephelometric Turbidity Unit) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level – the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

TT (Treatment Technique) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

MCL (Maximum Contaminant Level) - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal)- The "Goal"(MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

What does this mean?

As you can see by the table, our system had no violations. We are proud that your drinking water meets or exceeds all federal and state requirements. We have learned through our monitoring and testing that some constituents have been detected.

All sources of drinking water are subject to potential contamination by constants that are naturally occurring or man made. Those constituents can be microbes, organic or inorganic chemicals, or radioactive materials. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

MCL's are set at very stringent levels for health effects. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. Thank you for understanding.

We at Tri-County Joint Municipal Authority work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

Contaminant (Unit of Measurement)	Violation Y/N	Level Detected	Range	MCL in CCR units	MCLG	Major Sources in Drinking Water
Microbiological Contaminants						
Turbidity (NTU)	No	0.187 (01-14-08)	(b)	TT	N/A	Soil runoff
Radioactive Contaminants						
Combined radium (pCi/L)	No	**	(a)	5	0	Erosion of natural deposits.
Alpha emitters (pCi/l)	No	**	(a)	15	0	Erosion of natural deposits
Inorganic Contaminants						
Copper (ppm)	No	*	*	AL=1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposit Leaching from wood preservatives
Lead (ppb)	No	*	*	AL=15	0	Corrosion of household plumbing systems; Erosion of natural deposit
Nitrate (ppm)	No	0.53	(a)	10	10	Runoff from fertilizer use; Leachin from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	No	1.19	(a)	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer.
Volatile Organic Contaminants						
Halo acetic Acid (HAA) (ppb)	Yes	87.8	15 – 66 (***)	60	N/A	By-product of drinking water chlorination.
TTHMs (total trihalomethanes) (ppb)	Yes	158	21 – 127 (***)	80	N/A	By-product of drinking water chlorination.

Footnotes:

(a) Tested Quarterly

(b) *Turbidity is measured as an indicator of filtration performance. The lowest monthly percentage of our samples meeting the requirements was 100%.*

(*) Required testing waived until 2010

(**) Required testing waived until 2011.

(***) MCL's Based on a Running Annual Average (RAA) – Average of the four most recent quarterly samples = Range.

EXHIBIT 10

DEP, News Release:

DEP Detects Elevated Levels of Total Dissolved Solids in Monongahela River

(Aug. 7, 2009)

Daily News Releases

Full version Print

N E W S R E L E A S E COMMONWEALTH OF PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA
Dept. of Environmental Protection
Southwest Regional Office
400 Waterfront Drive
Pittsburgh, PA 15202

FOR IMMEDIATE RELEASE
8/7/2009

CONTACT:
Helen Humphreys
Phone: (412) 442-4183

DEP DETECTS ELEVATED LEVELS OF TOTAL DISSOLVED SOLIDS IN MONONGAHELA RIVER

DEP Continues Work to Address Increasing TDS Levels

PITTSBURGH – The Department of Environmental Protection announced today that levels of total dissolved solids, or TDS, in the Monongahela River have fluctuated above the water quality standard for taste, exceeding acceptable levels for drinking water established by state and federal authorities.

"Since elevated levels of TDS were detected last year on the Monongahela River, the department has closely monitored the situation and has taken necessary action to reduce these levels," said Environmental Protection Secretary John Hanger. "Water treatment plants are not equipped to remove TDS from drinking water and therefore the increased levels may cause drinking water to taste salty. Concerned residents may opt to use bottled water for drinking and preparing food until the levels of TDS decrease to normal levels."

TDS is a measure of all elements dissolved in water and can include carbonates, chlorides, sulfates, nitrates, sodium, potassium, calcium and magnesium. While none of these elements have exceeded its respective stream limit, sulfate, at 191 milligrams per liter, is approaching its limit of 250 milligrams per liter.

Sources of TDS can include sewage treatment plants, stormwater runoff, metal mining, mining, abandoned mine drainage, meat packing plants, vegetable processing plants, grain milling plants, bakeries, beverage processing facilities, agricultural chemical manufacturing, oil and gas drilling, petroleum refining, leather processing, primary metal industries, fabricated metal products, electric services, refuse systems, scrap and waste material industries.

The department, as well as the U.S. Environmental Protection Agency, have established secondary maximum contaminant levels of 500 parts per million of TDS for the commonwealth's drinking water and waterways.

Lab analysis of the Monongahela River water at Point Marion, where West Virginia borders Pennsylvania, and near Elizabeth, Allegheny County, showed TDS levels ranging from 500 to 600 milligrams per liter. Recent rains have caused the TDS levels to fluctuate daily.

Since elevated levels were first detected last year, DEP has taken a number of steps to address them.

DEP has been closely monitoring TDS levels in the river since October 2008 using both U.S. Geological Survey gauges and conducting confirmatory sampling for lab analysis

In June, DEP granted $75,000 to the River Alert and Information Network, or RAIN, to develop a monitoring network and source water protection program. The grant provided for a computer network and installation of water quality probes that will allow RAIN to remotely monitor the quality, including conductivity, pH and the temperature of the water at 11 locations along the Monongahela River. The network is being installed and, once in place, data will be available for the public to access through the department's Web site.

After high TDS levels were detected in October 2008, DEP directed certain sewage treatment plants, which discharge to the Monongahela River or its tributaries, to limit their discharges.

In April 2009 DEP released a proposed strategy for new discharges of high TDS wastewater to meet an effluent standard of 500 milligrams per liter by January 2011. New regulatory standards will be considered by the Environmental Quality Board on Aug. 18 and will be available for public comment.

Finally, the department and EPA will meet with West Virginia officials to determine the scope of the problem throughout the watershed and to identify potential solutions where TDS levels entering the commonwealth from West Virginia at elevated levels.

In upcoming weeks, DEP will host one or more public meetings within the Monongahela Basin to provide detailed information and a status report to residents. Specifics about the public meeting will be announced at least two weeks in advance.

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EXHIBIT 11

DEP, Press Release:

DEP Detects Total Dissolved Solids Over Standards in Monongahela River

(Oct. 14, 2009)

Daily News Releases

Full version Print

N E W S R E L E A S E COMMONWEALTH OF PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA
Dept. of Environmental Protection
Commonwealth News Bureau
Room 308, Main Capitol Building
Harrisburg, PA 17120

FOR IMMEDIATE RELEASE
10/14/2009

CONTACT:
Helen Humphreys
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DEP Detects Total Dissolved Solids Over Standards in Monongahela River

PITTSBURGH (Oct. 14) -- The Department of Environmental Protection announced today that levels of total dissolved solids, or TDS, in the Monongahela River have again exceeded the water quality standard for taste and odor established by state and federal authorities.

"DEP is working closely with water suppliers to monitor TDS levels on the Monongahela," said Environmental Protection Secretary John Hanger. "Already 12 monitors, funded in part by DEP, have been installed on the river and its tributaries. The resulting data will create an early warning system for water suppliers and industry and draw a sharper focus on the river's water quality."

Conductivity readings taken by the River Alert and Information Network, or RAIN, U.S. Geological Survey gages along the Monongahela and analytical data provided by Carnegie Mellon University, show that TDS levels began exceeding 500 parts per million (ppm) on Sept. 22 near Crucible, Greene County. Over the last two weeks, additional violations of the 500 ppm standard have been documented as far downstream as the borough of Elizabeth. The total river length currently affected is 46 miles. The highest TDS levels documented this fall were at Brownsville on Sept. 29 where a level of 577 ppm was found.

Conductivity levels, which are an indicator for TDS, peaked on Oct. 10 at 867 micro semens/centimeter, roughly equal to 600 ppm TDS, at Elizabeth. Confirmatory water samples have been sent for lab analysis. As was done last year, lab results will be posted to the DEP Web site. The results can be accessed by clicking on the southwest region to the left of the home page.

TDS is a measure of all elements dissolved in water and can include carbonates, chlorides, sulfates, nitrates, sodium, potassium, calcium and magnesium.

Sources of TDS can include sewage treatment plants, stormwater runoff, metal mining, mining, abandoned mine drainage, meat packing plants, vegetable processing plants, grain milling plants, bakeries, beverage processing facilities, agricultural chemical manufacturing, oil and gas drilling, petroleum refining, leather processing, primary metal industries, fabricated metal products, electric services, refuse systems, scrap and waste material industries.

The department, as well as the U.S. Environmental Protection Agency, have established secondary maximum contaminant levels of 500 ppm of TDS for the commonwealth's drinking water and waterways.

Concerned residents may opt to use bottled water for drinking and preparing food until the levels of TDS decrease to normal levels.

Water treatment plants are not equipped to remove TDS from drinking water and therefore the increased levels may cause drinking water to taste salty.

Last fall, for the first time since data has been collected, TDS levels in more than 90 miles of the river exceeded 500 ppm with levels in excess of 900 ppm recorded.

With the assistance of DEP, the RAIN Network has installed water quality probes that will allow it to remotely monitor water quality, including conductivity, pH and the temperature of the water. The monitors have been installed and are logging data which is being downloaded by water suppliers and provided to DEP.

RAIN is working to connect the monitors electronically so that the data will be available real time. Once the connections are complete, RAIN plans to make the data available to the public online.

In April 2009 DEP released a proposed strategy for new discharges of high TDS wastewater to meet an effluent standard of 500 ppm by January 2011. These new standards were approved by the Environmental Quality Board on Aug. 18, and will be available for public comment later this year.

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2009

EXHIBIT 12

CME Engineering LP, Design Engineer's Report

(rev. Aug. 14, 2009)

DESIGN ENGINEER'S REPORT
For
Shallenberger Construction, Inc.
Ronco Water Treatment Facility
Masontown Borough, Fayette County

Prepared By CME Engineering LP
Submitted: October 1, 2008
Revised: June 22, 2009
Revised: July 25, 2009
Revised: July 28, 2009
Revised: August 5, 2009
Revised: August 14, 2009

I. General Information

A. Facility Status

Shallenberger Construction, Inc. proposes to construct the Ronco Water Treatment Facility to treat industrial waste water produced during gas well drilling and gas extraction. The plant is currently permitted to discharge 0.5 mgd. The proposed method of treating the waste is chemical addition, oxidation, flocculation, and clarification. Upon treatment, the discharge will be conveyed to the Monongahela River.

B. General Facility Layout

Refer to the attached Flow Diagram describing the layout of the treatment plant.

C. General Project Description

There are no existing wastewater treatment facilities on site. Based upon a review of the influent wastewater and the effluent requirements, it was determined that chemical addition, oxidation, flocculation, and clarification are the most effective methods of treating the water. Water will first pass through an equalization tank prior to any treatment. The water will then be treated with lime and other chemicals before entering the aeration tank. The water will then enter the clarifiers through conveyance troughs which are gravity fed. Finally, the water will be stored until it is discharged to the river. During construction of the facility, erosion and sediment controls will be utilized to ensure that the site will remain stabilized and that no runoff will enter the Monongahela River. Construction is expected to last approximately three (3) months.

Based upon the National Pollution Discharge Elimination System Part I Permit, the following effluent limits were established by the Pennsylvania Department of Environmental Protection:

Parameter	Monthly Average (mg/L)	Monthly Maximum (mg/L)
Iron	3.5	7
Oil and Grease	15	30
Total Suspended Solids	30	60
Acidity	Monitor Only	Monitor Only
Alkalinity	> Acidity	> Acidity
pH	6.0 to 9.0 s.u.	6.0 to 9.0 s.u.
Chlorides	Monitor Only	Monitor Only
Total Dissolved Solids	Monitor Only	Monitor Only
Osmotic Pressure	1,632 mOsm/kg	2,546 mOsm/kg
Barium	14.4	28.0

D. Osmotic Pressure Treatment Thru Dilution

Ronco anticipates treating a combination of Frac, Brine and Tophole water. The projected amount of each type of water treated will be divided into approximately 20% Frac, 65% Tophole and 15% Brine. There will be no mechanical treatment for osmotic pressure at the Ronco Water Treatment Facility. Dilution of high osmotic pressure water with low osmotic pressure water will be used. Based on the effluent limitations of NPDES Permit PA0253723, the monthly average is 1,632 mOsm/kg. As seen in Modules 1 and 15, the average influent osmotic pressure is 1,259 mOsm/kg, which is less than the effluent limitation. Trucks hauling high osmotic pressure water will discharge into Equalization Tank #1 while other water will discharge into Equalization Tank #2. The water will be blended using butterfly valves to dilute high osmotic pressure water with low osmotic pressure water.

The maximum osmotic pressure of 8,854 mOsm/kg reported in Module 1 is 100% brine and does not take into consideration any dilution with low osmotic pressure water (top-hole). The average value shown in Module 1 is the anticipated value for the influent.

Prior to the equalization pumps operating, the operator will sample the water in both tanks for osmotic pressure using an Advanced 3250 Single Sample Osmometer which will provide the operator with the osmotic pressure of both equalization tanks. The operator will calculate the ratio of wastewater required to meet the required effluent limits. The operator will manually adjust the butterfly valves accordingly to ensure that the correct ratio of water is being pumped into the plant. This will be performed prior to any influent water being conveyed into the plant. Should trucks hauling water with high osmotic pressure come to the site and the equalization tank storing high osmotic pressure water is full, the

hauler will be required to dispose the water at another approved disposal/treatment facility.

Should water that is high in osmotic pressure be conveyed into the secondary settling tank, the water will be re-circulated and blended with water with low osmotic pressure and conveyed through the plant a second time prior to discharge.

E. Water/Wastewater Flow Diagram
Refer to the attached Flow Diagram describing the proposed flow direction throughout the treatment plant.

F. Facility Size, Capacity, & Dimension Diagram
Refer to the attached Flow Diagram for the size and capacity of each treatment unit.

G. 100-Year Floodplain
The top of all treatment tanks is located above the 100-year floodplain. All pumps and chemical feeders, day tanks, and excess chemicals will be above the 100-floodplain.

H. Water Delivery Period
The proposed influent water is expected to be hauled to the plant on a 12-16 hour shift.

II. Existing & Proposed Wastewater Treatment Process

A. Basis for Design of Each Treatment Unit Process
The plant has been designed as a settling type plant. The treatment units have been designed to provide a minimum of one (1) total day of detention for the entire plant. The treatment plant process is further described below. All detention time calculations can be found in the Design Calculations included in this application. All concrete used during the construction of the structural components of the plant (ie. tanks, foundations, etc.) will be 5,000 psi concrete and will be in accordance with applicable ACI codes.

1. Dump Stations (Dump Tanks)

Design Criteria: Wastewater hauled to the site will be first discharged into the dump tanks (3-5,000 water cisterns lined with a 120 mil Chevron liner. The purpose of these tanks is to inspect each load of water prior to acceptance. A typical wastewater tanker hauls 4,200 or 4,400 gallon on wastewater. By utilization a 5,000 tank, trucks can completely dump its load prior to the inspection.

Discussion: Inspecting the water more thoroughly allows for greater control over the influent water. If the wastewater is found to be unacceptable (ie, high oil concentration, higher than acceptable TDS, etc.), the hauler will be required to reload the wastewater and haul it off-site to another approved treatment facility. Refer to Section II.H for Pre-Treatment Sampling Protocol.

2. Equalization

Design Criteria: The design of the equalization tanks is based upon the volume of water received compared to the volume of water treated per hour. The time need for three trucks to unload is 20 minutes resulting in a flow of 13,200 gallons every 20 minutes or 39,600 gallons per hour. The plant capacity per hour is 20,833 gallons per hour. The maximum storage required per hour is 18,767 gallons (39,600 gal – 20,833 gal). Based on a 16 hour hauling period, the total required storage is 300,272 gallons (or 40,143 cubic feet).

Discussion: Upon entering the plant, raw water will be divided into two (2) equalization tanks, each with a capacity of 27,190 gallons. The purpose of two tanks is to separate high osmotic pressure water with low osmotic pressure water which will be diluted in Equalization Tank #2. A pipe from the storage tank to the equalization tanks is designed for the purpose of re-circulating water should a malfunction occur in the plant and the storage tank become full with un-treated water. The detention time for each equalization tank is 2.61 hours. Air will be injected in each equalization tank at a rate of 1,000 cfm in keep solids from settling prior to conveyance into the treatment process. The flow from the equalization tanks to the treatment plant is controlled by butterfly valves that will adjust the flow of both high and low osmotic pressure wastewater.

3. pH Adjustment
Refer to Section II. B. 1. for a description of pH adjustment.

4. Aeration

Design Criteria: The design of the aeration tank is based upon bench testing that showed the optimal time needed for adequate aeration is 20 minutes. The inflow rate from the equalization tank is 20,833 gallons per hour. Using the designed capacity of 24,352 gallons, the resulting detention time is 1.17 hours, much greater than the required. Air will be injected at a rate of 3,000 cfm and will be injected such that it maintains a mixing effect in the tank in order to prevent settling. Water treatment standards recommend providing as much air as possible for optimal oxidation.

Discussion: After the addition of lime, water will enter a 24,352 gallon aeration tank. Laboratory testing has confirmed that the optimal detention time in the aeration tank is 20 minutes. To ensure optimal oxidation of the metals, a detention line of 1.17 hours is proposed. Refer to Section II. D. for the equipment used in the aeration process. The Series 86 blowers will provide aeration for both the aeration tank and the equalization tanks.

5. Chemical Addition
   Refer to Section II. B. 2. for a description of the chemical addition.

6. Clarification

   Design Criteria: Bench testing performed by CME resulted in an optimal detention time of 1 hour. At this time interval, the TSS was reduced by 90% with the remaining TSS in a sludge form. Due to the variability of the influent water quality, a minimum 4 hour detention was used to size the clarifier. Using a total inflow to the clarifier of 528,000 gallons per day and a clarifier volume of 195,890 gallons provides a detention time of 8.90 hours. One clarifier results in a Factor of Safety of 2.

   Because the water is of poor quality from a TSS perspective, a second clarifier is proposed as a back-up unit; however, the secondary unit will operate in parallel to the first unit for a total detention time of 17.80 hours resulting in an ultimate Factor of Safety of 4. Periodically, the clarifiers will need maintained and serviced. By design two clarifiers in parallel, one can be taken out of service for maintenance/repairs while the other remains active. This ensures continuous operation of the plant. Several plants with a similar design exist in Pennsylvania and treat water of a similar nature.

   Discussion: Two clarifiers are proposed for this treatment process

   a. Clarifier #1
      Clarifier #1 has a capacity of 195,890 gallons at a detention time of 16.93 hours. In this system, 250,750 gallons of water will be conveyed to Clarifier #1 along with an additional 27,000 gpd of water added from the dewatering facility. The discharge from Clarifier #1 includes 262,750 gpd going to a secondary settling/storage tank and 15,000 gpd going to a dewatering facility. Refer to the Design Calculations for sludge removal rate calculation.

   b. Clarifier #2
      Clarifier #2 has a capacity of 195,890 gallons at a detention time of 18.75 hours. The influent volume for this system for Clarifier #2

will be 250,750 gallons. The discharge from Clarifier #2 includes 235,750 gpd going to a secondary settling/storage tank and 15,000 gpd going to a dewatering facility. Refer to the Design Calculations for sludge removal rate calculation.

c. Sludge Generation
Based upon bench testing of a representative sample, the total sludge anticipated (from both clarifiers) is 12,139 lb/day.

7. Sludge Dewatering

Design Criteria: Sludge will be pumped from each clarifier at a rate of 3,000 gallons five (5) times a day, for a total of 30,000 gpd to remove accumulated sludge and to prevent hardening of the barium precipitate. The sludge will be pumped through three (3) Seepex variable speed pumps. One pump will remove sludge from Clarifier #1, one pump will removed sludge from Clarifier #2, and the remaining pump will be used as a backup. Refer to Design Calculations.

Discussion: The sludge will be conveyed to the dewatering facility where the solids will be separated using a SiltTex Geotextile Tube as manufactured by Integrated Water Solutions, LLC. The SiltTex tube will be housed in a 15-yard waste dumpster. The solids will be retained in the SiltTex tube while the water passes through and collects in a 5,000 gallon dewatering facility tank, and is pumped into one of the clarifiers. Upon filling a SiltTex, a second unit is installed on top of the first. The weight of the solids retained in the second SiltTex assists in the dewatering of the solids in the first unit. Once the dumpster is filled with SiltTex units, the dumpster will be replaced with an empty one and the SiltTex hauled to a local landfill with approvals to accept this type of sludge.

This technology is currently being used in several locations throughout Pennsylvania on sludge with the same characteristics of that anticipated.

Based upon bench testing by CME Laboratories, it is estimated that dry sludge will be produced in the dewatering facility at a rate of 12,139 lbs/day. The sludge will then be sent to a landfill for disposal. The decant (27,000 gpd) will be sent back to Clarifier #1.

8. Storage

Design Criteria: The design of the storage tank is two-fold: provide additional detention time and to assist with the re-circulation of wastewater should the need arise. The size of the tank was based upon

a 2 hour minimum detention time. This allows for settling of any remaining particles that pass through the clarifiers (no remaining particles are anticipated).

Discussion: The tank has an available capacity of 55,170 gallons prior to discharge into the Monongahela River. A total of 498,500 gpd will be sent to a secondary settling/storage tank resulting in a detention time of 2.66 hours. The tank will be equipped with a pipe to the equalization tanks for re-circulation for additional treatment as necessary.

9. Discharge
Design Criteria: A total of 498,500 gpd will be discharged to the Monongahela River via 8" HDPE pipe. A Sitrans ECHOMAX XRS-5 flow meter will be used to monitor the effluent being discharged. Effluent water in the storage tank will be able to be drawn from three (3) depths consisting of two (2) 8" pipes at different heights and a weir located at the top of the tank. .

10. Waste Tank

Design Criteria/Discussion: All floor drains will be connected to the 1,200 gallon waste tank. The purpose of this tank is to collect water from daily building maintenance and pump the water into the treatment process. The influent water into the waste tank will be potable water contaminated with residual chemicals such as polymer, lime, etc which is unable to be discharge directly to a POTW.

B. Supplemental Chemical Addition or Treatment
Design Criteria: CME Laboratories performed bench testing to determine optimal feed rates for the pH adjustment and chemical addition. Using a representative sample, CME calculated the feed rates by running several tests at different rates until the concentrations of iron, barium, and TSS were below the required effluent concentrations. The systems will be designed to read meters and adjust to changes in water quality. The feed rates are included in the descriptions below.

1. Lab testing has shown that the optimal pH for oxidation/clarification is 8.5-9.0. A lime feed system is proposed for pH adjustment. Prior to entering the aeration tank, dry lime will be fed at a rate of 278 lbs/day. A forty (40) ton silo is proposed for bulk storage. The lime rate will vary dependent upon the pH of the influent water. The lime feeder will be connected to a pH meter located in the aeration tank. The meter will send a 4-20mA signal to the feeder which will adjust the feed rate accordingly.

2. Sodium sulfate, necessary for barium precipitation, will be injected into the system prior to the water entering the clarifiers. Sodium sulfate will be mixed with 500 gpd of potable water at a rate of 250 lbs/day-dry in two (2) 500 gallon day tanks. Potable water will be supplied by the city of Masontown. The feed rate of the sodium sulfate will be adjusted manually by monitoring the barium in the system using an on-site barium meter. Water samples will be taken every two hours at a minimum to verify the feed rate.

3. Polymer, necessary for metal coagulation, will be injected into the system prior to the water entering the clarifiers. Polymer will be mixed with 1,000 gpd of potable water at a rate of 200 lbs/day-dry in two (2) 500 gallon day tanks. Potable water will be supplied by the city of Masontown. The feed rate will be adjusted based upon the manual testing (every two hours minimum or as needed) of the clarifier effluent prior to entering the secondary settling tank.

C. Pumping Equipment

Design Criteria/Discussion: Two (2) 3196 XLTX pumps manufactured by Goulds Pumps will be located in the treatment building to pump water from the equalization tank to the aeration tank at a rate of 500,000 per day average or 800 gpm peak (non-continuous). The polymer and sodium sulfate injections will each require one (1) LPP-D1/2" and one (1) LPP-D1" resulting in two (2) pumps per chemical for a total of four (4) pumps. The different sized pumps are included to adjust the chemical feed rates based on varying water quality. A submersible pump manufactured by Ebara (Model MA-72178) will pump water collected in the waste storage tank to the clarifier troughs at a rate of 30 gpm. A second Ebara pump of the same model will pump water retained in the dewatering facility to the trough of Clarifier No. 2 also at a rate of 30 gpm.

D. Aeration Equipment

Two (2) Series 86 Houston Service Industries, Inc. multistage centrifugal blowers will be used to supply air to the aeration tank. These blowers will be located in the treatment building. The blowers will provide air for oxidation through a series of Red Valve Tideflex Coarse Bubble Mixing Diffusers.

E. Monitoring and Control Equipment

To monitor the incoming flow, a Sitrans 6" Magflo Mag 5100 W flowmeter will be located prior to the 3196 XLTX pumps. An Echomax XRS-5 ultrasonic transducer manufactured by Sitrans will be used to measure the flow in the flumes. The ultrasonic transducer will be connected to a Hydroranger 200 ultrasonic controller also manufactured by Sitrans. To measure the pH, a Model 33 analog controller manufactured by Hach is proposed, which will be located in the aeration

tank. An experienced operator will be on-site 24 hours per day to inspect the operation of the plant.

F. Handling, Storage, and Conditioning of Residual Materials
At such time when the settled sludge requires removal, Shallenberger Construction, Inc. will contract pump truck units that will vacuum the sludge into tankers which will haul the sludge to an approved waste facility.

G. Treatment Plant Operation and Monitoring
The treatment plant will operate 24-hours per day. An experienced plant operator will be on-site during all hours of operation to ensure proper treatment and monitoring of the water quality to ensure a discharge that is in accordance with the requirements of the NPDES permit. The operator will be required to perform periodic (hourly, quarterly, and daily monitoring of the concentrations of iron, osmotic pressure, barium, etc to ensure proper treatment of the wastewater.

H. Pre-Treatment Wastewater Inspection
Once the wastewater has been hauled to the site and discharged into the dump tanks, on-site personnel will perform a visual inspection to determine presence of oils in the wastewater. Should oils be present, the hauled will be required to reload the wastewater and haul off-site to another approved facility.

Once the wastewater has been accepted for oils, a sample will be taken and analyzed for osmotic pressure using an Advanced 3250 Single Sampler Osmometer manufactured by Advanced Instruments, Inc. The analysis can be performed within 90 seconds and will allow the operator to either deny acceptance of the wastewater or discharge the wastewater into the appropriate equalization tank dependent upon the results of the osmotic pressure analysis.

III. Operational Flexibility & Reliability of the Treatment Works

A. Alarms and Sensing Devices
An alarm system with an autodialer is proposed to notify personnel of a mechanical malfunction at the plant. The proposed alarm will be located in the treatment building.

B. Control of the Quality & Quantity of Wastewater When the Facility is Inoperative
The plant has been design with little mechanical equipment to minimize plant downtime. Should the plant be inoperative at any time, the influent water will be hauled to an approved discharge location for treatment.

C. Personnel Training
Maintenance personnel will be trained to ensure that they understand the workings of the plant. Personnel will also adhere to the company's safety procedures at all times.

D. Availability of Instructions & Guidelines for the Operation & Maintenance of Treatment Units
The treatment units proposed require little maintenance. The tanks will be inspected for debris that may cause clogging of the conveyance troughs.

E. Site Security
The entire site will be enclosed by a 6' high minimum chain-link fence with a locking gate across the access road.

IV. **Preliminary & Supplemental Groundwater, Soils & Geology Information**
The soil types found on the proposed site include Gilpin Weikert Channery Silt Loams (30-60% slopes) and Urban Land Undulating. These soils are classified as having a moderately slow permeability. Since the water will be enclosed by tanks, the soils nor groundwater is affected by this proposed plant.

V **Appendices**
Mechanical Equipment Specifications

Applicant Name: Shallenberger Construction, Inc.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER STANDARDS AND FACILITY REGULATION

PUMP STATIONS
MODULE 22

Applicant Name	Shallenberger Construction, Inc.

1. PUMP STATION NAME: Ronco Equalization Tank

2. List the WQM permit number of the sewer to which this system connects.	N/A
3. List the WQM permit number of the treatment facility receiving flow from this system.	N/A
4. What is the reserve capacity of the most limiting component between this connection and the treatment facility?	N/A

5. LOCATION (street name, etc.):

USGS Quadrangle Name	Masontown, PA					
Latitude/Longitude of Pump Station	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	39	51	11.4	79	55	29.7
Latitude/Longitude of Connection Point	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
	N/A	N/A	N/A	N/A	N/A	N/A

6. TYPE (e.g., conventional, suction lift, ejector or submersible): Conventional

7. INITIAL POPULATION TO BE SERVED: 0 FUTURE POPULATION TO BE SERVED: 0
DESIGN YEAR:

8. DESIGN INFORMATION:

	AVG (mgd)	MAX (Peak Instantaneous) (mgd)
a. Domestic Flowrate (based on design population to be served)	0	0
b. Industrial Flowrate	0.5	0.5
c. Infiltration/Inflow (I/I) Rate	0	0
d. Design Flowrate	0.5	0.5
e. Effective Wet Well Capacity	(gal) 54,380	
f. Detention Time	(min) 156.6	
g. Design Average Velocity in Force Main	(fps)	
h. Total Dynamic Head (Pump Station + Force Main)	Static Head -3.5 ft	
	Friction Loss 20.8 ft	
	TDH 18.98 ft	
i. Diameter of Force Main	6 Inches	

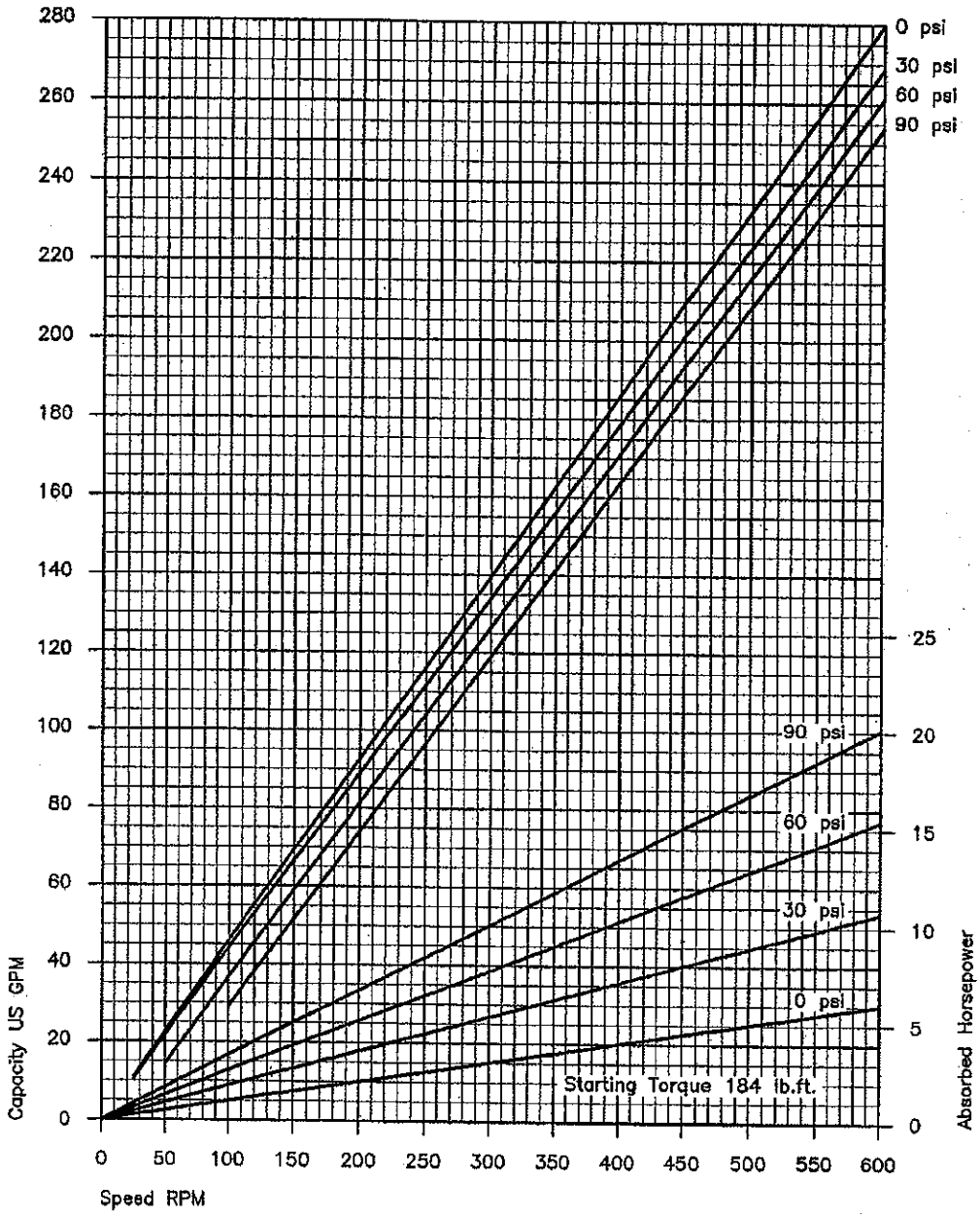
9. Describe the proposed project with respect to the 100-year flood elevation, ventilation, emergency power provision and alarm system.
The pumps are housed in a treatment building with ventilation devices. The pumps are located outside of the 100-year floodplain. An alarm system will be installed in case of a pump malfunction. No emergency power is provided. During outages, trucks conveying gas well related water will be diverted to another facility.

Applicant Name: Shallenberger Construction, Inc.

LIST ALL THE PUMPS IN THE PUMPING STATION

NUMBER OF IDENTICAL PUMPS	Describe Pump Use	Type of Pump	Check Columns That Apply To Each Pump								Pump Capacity	
			EXISTING	PROPOSED	VARIABLE SPEED	CONSTANT SPEED	AUTOMATIC CONTROL	MANUAL CONTROL	PNEUMATIC EJECTOR	STANDBY	gpm	TDH (ft)
2	Equalization Pump	Goulds 3196 XLTX	☐	☒	☐	☐	☒	☒	☐	☐	800	18.98
1	Sump Pump	Ebara MA-72178	☐	☒	☐	☐	☒	☒	☐	☐	30	8.99
	Sludge Pump	Seepex BN-35-6L	☐	☒	☒	☐	☐	☒	☐	☒	100	8.67
			☐	☐	☐	☐	☐	☐	☐	☐		
			☐	☐	☐	☐	☐	☐	☐	☐		
			☐	☐	☐	☐	☐	☐	☐	☐		
			☐	☐	☐	☐	☐	☐	☐	☐		
			☐	☐	☐	☐	☐	☐	☐	☐		
			☐	☐	☐	☐	☐	☐	☐	☐		

Characteristic Curves
Size
35-6L



Values based upon water 68°F ; For notes on drive selection refer to PER

CME
ENGINEERING
165 East Union Street, Suite 100, Somerset, PA 15501
814-443-3344 * Fax: 814-444-0365

Project #:	0617-S011					Page 1 of 1	
Project Name:	Ronco WTF			Client:			
Subject:	Head Loss Calculations - Seepex BN-35-6L						
Prepared by:	CRS	Date:	6/16/09	ck'd by:		Date:	

HEAD LOSS CALCULATIONS

Vol flow gpm	Hazen coefficient	Pipe ID (in)	Loss/100 ft (ft H2O)	Pipe Lgth (ft)	Loss (ft)
100	150	3.786	0.76	218.20	1.66

EQUIVALENT PIPE LENGTHS

Pipe Section 1 Pipe Size: 4

Item	Equiv Lgth	Qty	Total Lgth
45 Deg El	5.1	2	10.2
Straight Pipe	1	112	112.0
22.5 Deg El	0	0	0.0
90 Deg El	12	8	96.0
Fitting - Flow Line (Y-T)	0	0	0.0
			218.2

PUMP CALCULATION

Highest Pipe Elevation	801.83	Friction Losses	1.66
Inlet Liquid Elevation	795.60		
Static Head	6.23	Total Pump Head	7.89
		Safety Factor	10%
Press. Head @ Dischg	0.00	Total Pump Head	8.67

PERFORMANCE PIPE
A Division of Chevron Phillips Chemical Company LP

Revised 03-17-2008

IPS Size and Dimension Data

PE3608 (PE3408)

DriscoPlex® Municipal & Industrial & Energy Series/IPS Pipe Data

Pressure Ratings are calculated using 0.50 design factor for HDS at 73°F as listed in PPI TR-4 for PE 3608 materials.
Temperature, Chemical, and Environmental use considerations may require use of additional design factors.

Pressure Rating		6" 100 psi DR 17.0			80 psi DR 21.0			10" 65 psi DR 26.0			50 psi DR 32.5		
	Nominal OD (in)	Minimum Wall	Average ID	Weight (lbs/ft)	Minimum Wall	Average ID	Weight (lbs/ft)	Minimum Wall	Average ID	Weight (lbs/ft)	Minimum Wall	Average ID	Weight (lbs/ft)
	1.660												
	1.900												
	2.375		2.071	0.43									
	3.500		3.061	0.93									
	4.500		3.933	1.54		4.016	1.26						
→	6.625		5.790	3.34		5.913	2.74		6.192	2.23			1.80
	8.625		7.550	5.66		7.704	4.64		7.962	3.78			3.05
→	10.750		9.410	8.79		9.604	7.20		9.924	5.88			4.74
	12.750		11.160	12.36		11.389	10.13		11.771	8.27			6.67
	14.000		12.258	14.90		12.510	12.22		12.930	9.97			8.04
	16.000		14.005	19.47		14.295	15.96		14.777	13.02			10.51
	18.000		15.755	24.64		16.081	20.20		16.623	16.48			13.30
	20.000		17.507	30.42		17.867	24.94		18.470	20.35			16.42
	22.000		19.257	36.81		19.652	30.17		20.316	24.62			19.86
	24.000		21.007	43.80		21.438	35.91		22.163	29.30			23.64
	26.000		22.759	51.41		23.224	42.14		23.930	34.39			27.74
	28.000		24.508	59.62		25.010	48.87		25.717	39.88			32.17
	30.000		26.258	68.44		26.795	56.11		27.554	45.78			36.93
	32.000		28.010	77.87		28.769	63.84		29.390	52.09			42.02
	34.000		29.760	87.91		30.568	72.06		31.227	58.80			47.44
	36.000		31.510	98.55		32.366	80.79		33.064	65.92			53.19
	42.000		36.761	134.14		37.760	109.97		38.575	89.73			72.39
	48.000		42.013	175.21		43.154	143.63		44.086	117.19			94.55
	54.000					48.549	181.78		49.597	148.32			119.67

Performance Pipe can produce to specialized pipe dimensions. Check with your Performance Pipe contact for availability of dimensions not listed.

Visit www.performancepipe.com for the most current literature.

GSE®

GSE STANDARD PRODUCTS

Product Data Sheet

GSE FabriNet Geocomposite (Single-Sided)

GSE FabriNet geocomposite consists of GSE HyperNet geonet heat-laminated on one side with a GSE nonwoven needlepunched geotextile. GSE HyperNet is a 200 mil thick geonet manufactured from a premium grade high density polyethylene resin. For the purpose of lamination to geonets, GSE nonwoven needlepunched geotextiles are available in mass per unit area range of 6 oz/yd² (200 g/m²) to 16 oz/yd² (540 g/m²). GSE FabriNet geocomposites are designed and formulated to perform drainage function under a range of anticipated site loads, gradients and boundary conditions. Index properties for the product are provided in the table below. Please contact GSE for further information regarding performance under site-specific conditions.

Product Specifications

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM AVERAGE ROLL VALUE[a]		
Geocomposite			6 oz/yd²	8 oz/yd²	10 oz/yd²
Product Code			F41060000S	F41080000S	F41100000S
Transmissivity[b], gal/min/ft (m²/sec)	ASTM D 4716	1/540,000 ft²	4.83 (1 x 10^{-3})	4.83 (1 x 10^{-3})	4.34 (9 x 10^{-4})
Ply Adhesion, lb/in (g/cm) average	ASTM D 7005	1/50,000 ft²	1.0 (178)	1.0 (178)	1.0 (178)
Roll Width[c], ft (m)			14.5 (4.4)	14.5 (4.4)	14.5 (4.4)
Roll Length[c], ft (m)			250 (76.2)	250 (76.2)	240 (73.1)
Roll Area, ft² (m²)			3,625 (337)	3,625 (337)	3,480 (323)
Geonet core[d]					
Transmissivity[b], gal/min/ft (m²/sec)	ASTM D 4716		9.66 (2 x 10^{-3})	9.66 (2 x 10^{-3})	9.66 (2 x 10^{-3})
Thickness, mil (mm)	ASTM D 5199	1/50,000 ft²	200 (5)	200 (5)	200 (5)
Density, g/cm³	ASTM D 1505	1/50,000 ft²	0.94	0.94	0.94
Tensile Strength (MD), lb/in (N/mm)	ASTM D 5035	1/50,000 ft²	45 (7.9)	45 (7.9)	45 (7.9)
Carbon Black Content, % (core only)	ASTM D 1603	1/50,000 ft²	2.0	2.0	2.0
Geotextile (prior to lamination)[d,e]					
Mass per Unit Area, oz/yd² (g/m²)	ASTM D 5261	1/90,000 ft²	6 (200)	8 (270)	10 (335)
Grab Tensile, lb (N)	ASTM D 4632	1/90,000 ft²	170 (755)	220 (975)	260 (1,155)
Puncture Strength, lb (N)	ASTM D 4833	1/90,000 ft²	90 (395)	120 (525)	165 (725)
AOS, US Sieve (mm)	ASTM D 4751	1/540,000 ft²	70 (0.212)	80 (0.180)	100 (0.150)
Permittivity, (sec⁻¹)	ASTM D 4491	1/540,000 ft²	1.5	1.5	1.2
Flow Rate, gpm/ft (l/min/m²)	ASTM D 4491	1/540,000 ft²	110 (4,480)	110 (4,480)	85 (3,460)
UV Resistance, % Retained	ASTM D 4355 (after 500 hours)	once per formulation	70	70	70

NOTES:

- [a]These are MARV values and are based on the cumulative results of specimens tested and as determined by GSE. AOS in mm units is maximum average roll value.
- [b]Gradient of 0.1, normal load of 10,000 psf, water at 70° F between stainless steel plates for 15 minutes.
- [c]Roll widths and lengths have a tolerance of ±1%.
- [d]Component properties prior to lamination.
- [e]Refer to geotextile product data sheet for additional specifications.

DS018s FabriNetSS R03/07/08

North America	GSE Lining Technology, Inc.	Houston, Texas	800 435 2008	281 443 8564	Fax: 281 230 8650
South America	GSE Lining Technology Chile S.A.	Santiago, Chile		56 2 595 4200	Fax: 56 2 595 4290
Asia Pacific	GSE Lining Technology Company Limited	Bangkok, Thailand		66 2 937 0091	Fax: 66 2 937 0097
Europe & Africa	GSE Lining Technology GmbH	Hamburg, Germany		49 40 767420	Fax: 49 40 7674234
Middle East	GSE Lining Technology-Egypt	The 6th of October City, Egypt		202 2 828 8888	Fax: 202 2 828 8889

www.gseworld.com

GSE®

GSE STANDARD PRODUCTS

Product Data Sheet

GSE HD Geomembranes

GSE HD is a smooth, high quality, high density polyethylene (HDPE) geomembrane produced from specially formulated, virgin polyethylene resin. This polyethylene resin is designed specifically for flexible geomembrane applications. It contains approximately 97.5% polyethylene, 2.5% carbon black and trace amounts of antioxidants and heat stabilizers; no other additives, fillers or extenders are used. GSE HD has outstanding chemical resistance, mechanical properties, environmental stress crack resistance, dimensional stability and thermal aging characteristics. GSE HD has excellent resistance to UV radiation and is suitable for exposed conditions. *These product specifications meet or exceed GRI GM13.*

Product Specifications

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE				
Product Code			HDE 030A000	HDE 040A000	HDE 060A000	HDE 080A000	HDE 100A000
Thickness, (minimum average) mil (mm) Lowest individual reading (-10%)	ASTM D 5199	every roll	30 (0.75) 27 (0.69)	40 (1.00) 36 (0.91)	60 (1.50) 54 (1.40)	80 (2.00) 72 (1.80)	100 (2.50) 90 (2.30)
Density, g/cm³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94	0.94
Tensile Properties (each direction)	ASTM D 6693, Type IV	20,000 lb					
Strength at Break, lb/in-width (N/mm)	Dumbell, 2 ipm		114 (20)	152 (27)	228 (40)	304 (53)	380 (67)
Strength at Yield, lb/in-width (N/mm)			63 (11)	84 (15)	126 (22)	168 (29)	210 (37)
Elongation at Break, %	G.L. 2.0 in (51 mm)		700	700	700	700	700
Elongation at Yield, %	G.L. 1.3 in (33 mm)		12	12	12	12	12
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	21 (93)	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	54 (240)	72 (320)	108 (480)	144 (640)	180 (800)
Carbon Black Content, %	ASTM D 1603*/4218	20,000 lb	2.0	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1	+Note 1
Notched Constant Tensile Load, hr	ASTM D 5397, Appendix	200,000 lb	300	300	300	300	300
REFERENCE PROPERTY	**TEST METHOD**	**FREQUENCY**	**NOMINAL VALUE**				
Oxidative Induction Time, min	ASTM D 3895, 200° C; O_2, 1 atm	200,000 lb	>100	>100	>100	>100	>100
Roll Length[1] (approximate), ft (m)			1,120 (341)	870 (265)	560 (171)	430 (131)	340 (104)
Roll Width[1], ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft² (m²)			25,200 (2,341)	19,575 (1,819)	12,600 (1,171)	9,675 (899)	7,650 (711)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- GSE HD is available in rolls weighing about 3,900 lb (1,769 kg)
- All GSE geomembranes have dimensional stability of ±2% when tested with ASTM D 1204 and LTB of <-77° C when tested with ASTM D 746.
- [1]Roll lengths and widths have a tolerance of ± 1%.
- *Modified.

DS005 HD R01/07/08

North America	GSE Lining Technology, Inc.	Houston, Texas	800.435.2008	281.443.8564	Fax: 281.230.6739
South America	GSE Lining Technology Chile S.A.	Santiago, Chile		56.2.595.4200	Fax: 56.2.595.4290
Asia Pacific	GSE Lining Technology Company Limited	Bangkok, Thailand		66.2.937.0091	Fax: 66.2.937.0097
Europe & Africa	GSE Lining Technology GmbH	Hamburg, Germany		49.40.767420	Fax: 49.40.7674234
Middle East	GSE Lining Technology-Egypt	The 6th of October City, Egypt		20.2.828.8888	Fax: 20.2.828.8889

www.gseworld.com

Integrated Water Solutions, LLC.

SiltTex Geotextile Tube is a Geotextile Tube fabricated from a woven polypropylene Geotextile containing heavy monofilament (warp) and fibrillated (fill) yarns. The individual yarns are woven in a unique twill pattern to form a strong Geotextile. These characteristics make the **SiltTex 4x6** ideal for dredged material disposal, dewatering of contaminated materials and coastal/riverine erosion control. The Geotextile Tube is resistant to the pressures of controlled and proper hydraulic filling, ultraviolet degradation, and other stresses normally associated with these types of applications. The **SiltTex 4x6** can also be used as a scour apron to prevent undercutting due to wave or current induced scour, and to reduce local erosion during the tube filling process. **SiltTex 4x6** conforms to the properties listed below[1] which have been derived from quality control testing performed by one of Propex Corporations' GAI-LAP accredited laboratories:

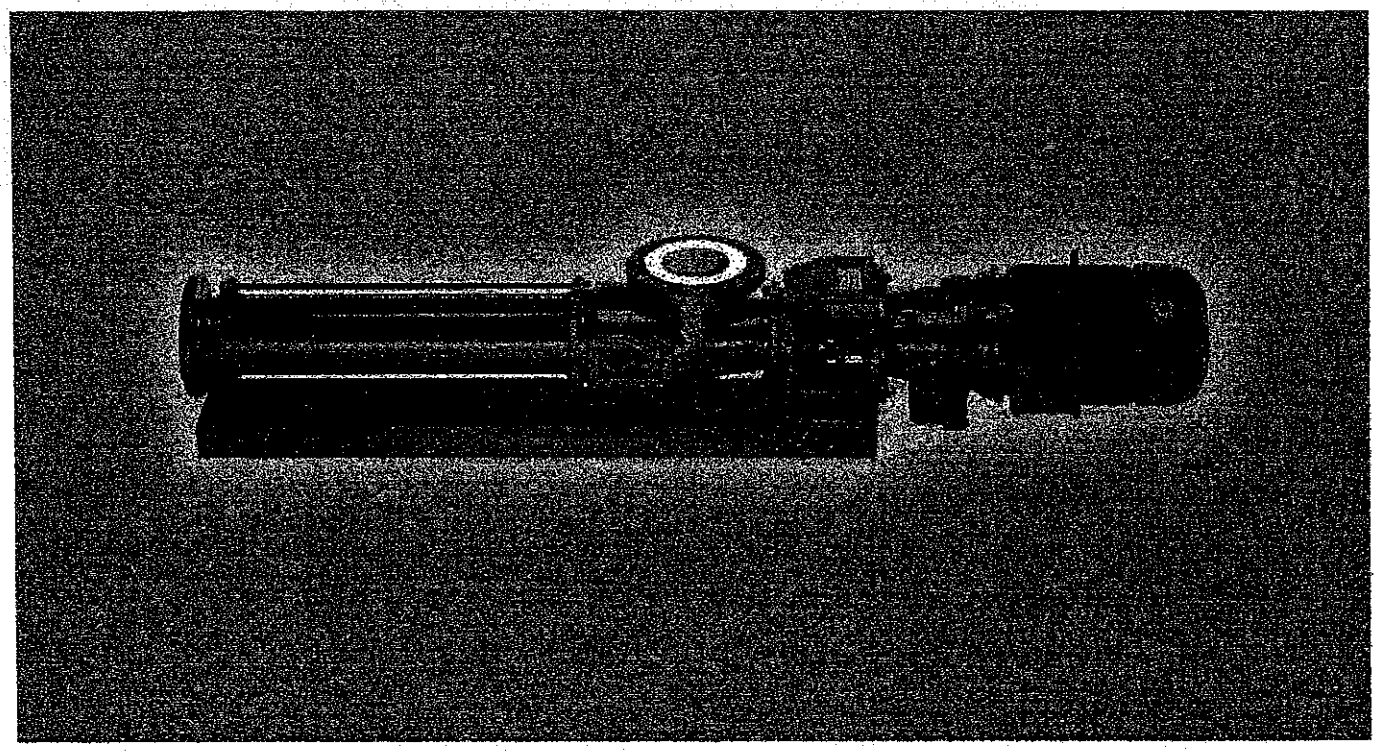
PROPERTY	TEST METHOD	ENGLISH MARV[4]	METRIC MARV[4]
Tube			
Circumference (nominal)	Measured	15.0/30.0/45.0/60.0/75.0 ft.	4.57/9.15/13.72/18.29 m
Standard Length[2]	Measured	100/150/200 ft	30.48/45.72/60.96 m
Fill Port Size (diameter)	Measured	12.0/18.0 in	30.48/45.72 cm
Fill Port Spacing (typical)	Measured	25.0/50.0 ft	7.62/15.24 m
Factory Seam Strength[3]	ASTM D4884	400 lbs/in	70 kN/m
Scour Apron(other use)			
Width (nominal)	Measured	13.0/27.5/42.0	3.96/8.38/12.80 m
Anchor Tube Circumference (nom)	Measured	3.0 ft	0.91 m
Physical			
Mass/Unit Area	ASTM D5261	15.5 oz/y^2	525g/m
Mechanical [4]			
Wide Width Tensile Strength	ASTM D4595	4,800 x 7,200 lb/ft	70 x 105.1 kN/m
Wide Width Elongation	ASTM D4595	14 x 9%	14 x 9%
Puncture Strength	ASTM D4833	260 lb	1155 N
Endurance			
UV Resistance @ 500 hrs	ASTM D4355	80%	80%
Hydraulic			
Apparent Opening Size (AOS)	ASTM D4751	40 US Std. Sieve	0.425 mm
Water Flow Rate	ASTM D4491	20 gpm/ft^2	810 l/min/m^2

NOTES:

1. **The property values listed above are effective 9/6/2005 and are subject to change without notice.**
2. Standard lengths are typically inventoried at the factory. Non standard lengths require additional lead times.
3. Represents a cross machine factory sewn seam approved by Geo-Synthetics, Inc. Individual project parameters may require specific seam strengths, types, etc. Please consult an IWS/GSI representative if project-specific seam strengths are required.
4. Values for machine (warp) and cross-machine (fill), respectively, under dry or saturated conditions. Minimum average roll values (MARV) are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.

seepex.com
all things flow

Here is your conveying solution: Product group N.



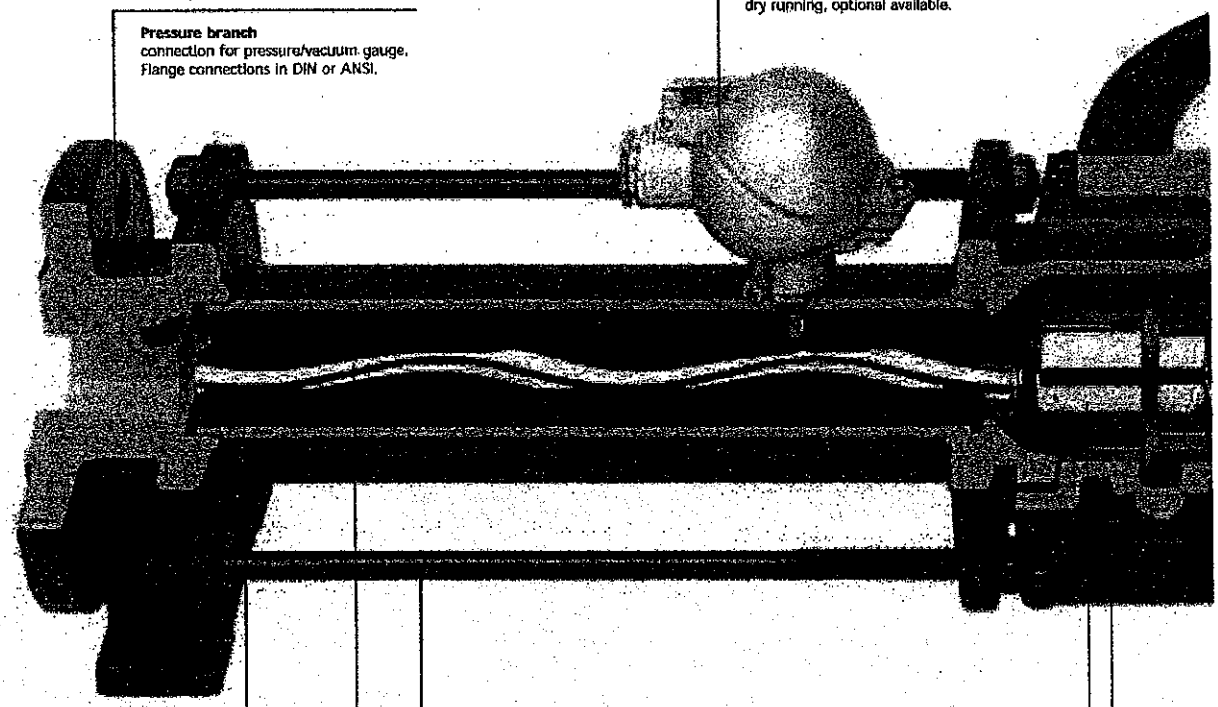
N – Standard pumps

The two ranges of pumps within the product group N form the basis of all seepex progressive cavity pumps. They are available with various rotor/stator geometries (conventional, 6L, and Tricam) and can be applied in virtually all industrial sectors – for conveying thin to viscous media with or without solids.

Joint connection
consisting of just 5 components. Power transmission through wear resistant, hardened and replaceable joint parts: easily repaired.

Dry running protection TSE, thermoelectronic
prevents the stator from being damaged by dry running, optional available.

Pressure branch
connection for pressure/vacuum gauge. Flange connections in DIN or ANSI.



Universal joint sleeve protection
made of stainless steel, protects the universal joint sleeve against mechanical damage from large/angular solids, optional available.

Stator
the seal on both ends is moulded as an integral part of the elastomeric stator; corrosion of the stator tube is never a problem because the pumped liquid never comes into contact with the metal tube or the bonding adhesive. Available with optional adjustable stator retensioning device.

Tie bolts/screws
corrosion proof, optional available in stainless steel design.

Inspection ports
on both sides, optional.

Rotor
wear resistant and corrosion-proof materials, with additional surface treatment.

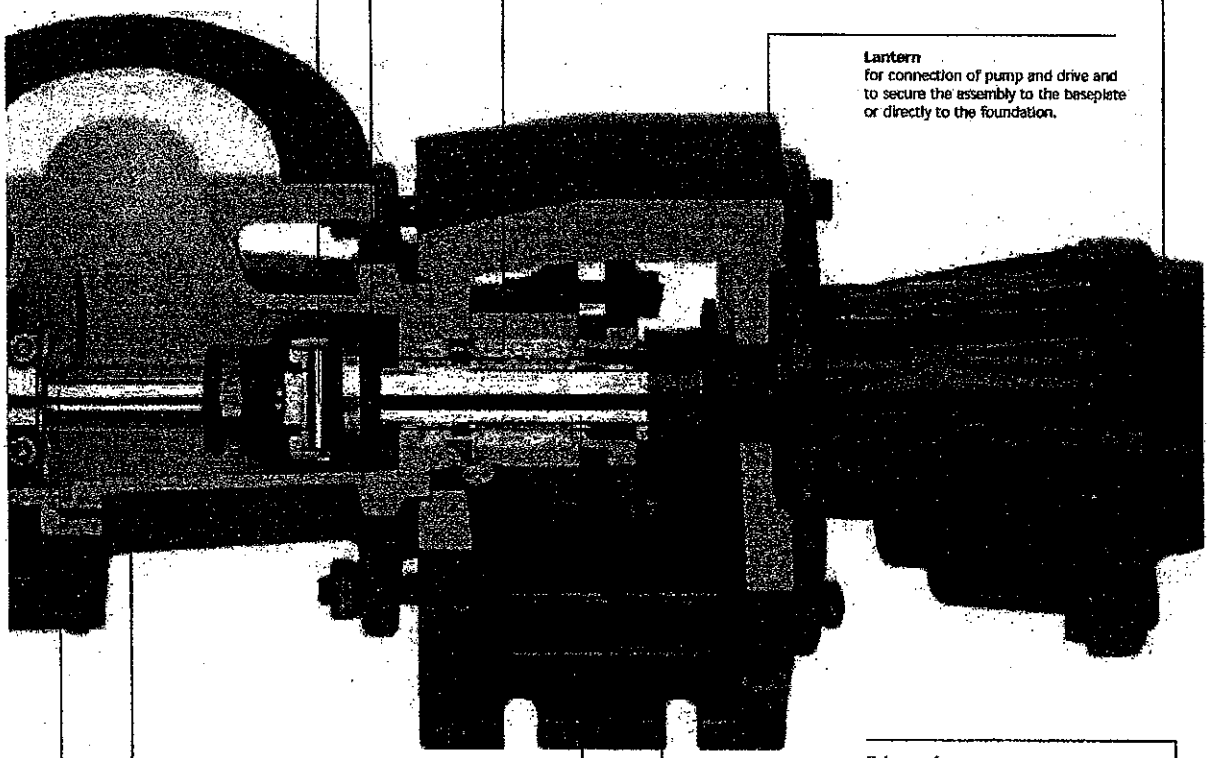
Coupling rod
for power transmission. Improved design, special designs optional available.

Universal joint sleeve with holding bands
protects the grease-filled joints from penetration of the liquid pumped, even in case of maximum vacuum or pressure loading; streamlined design to reduce turbulence and NPSHr.

Shaft sealing
gland packing with or without flushing/seal cage ring or single or double mechanical seals.

Drive
geared motors, variable speed drives or hydraulic motors of all major manufacturers, directly flanged to the pump without additional couplings or guards.

Lantern
for connection of pump and drive and to secure the assembly to the baseplate or directly to the foundation.

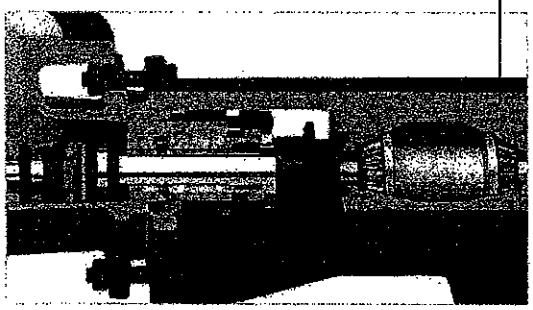


Suction casing
with large cross section and designed for smooth flow conditions, with drain plug and connections for pressure/vacuum gauge. Flange connections in DIN or ANSI can be rotated in 90° increments.

Drive casing
for range NS, drive shaft and bearings can be relubricated, also available with double bearing seals to prevent ingress of dust or moisture.

Plug-in shaft
connects the drive shaft to the joint; with gland packing the plug-in shaft is used as a shaft protection sleeve; upon request, it is available with wear resistant coating.

Detail: Range NS



Plug-in shaft connection
for easy dismantling of the pump and drive enabling quick replacement of the rotating parts and shaft seals. The plug-in shaft pin secures the shaft connection to the drive and the splash ring protects the bearing from contamination/gland leakage.

Why standard pumps?

Because they are used in applications such as agriculture, ceramics, chemical and biochemical industry, construction, dyeing and varnishing, electroplating, environment technology, fish industry, food and beverage industry, mining, non-metallic minerals, oil production and offshore technology, petrochemicals, pharmaceutical and cosmetics industry, pulp and paper industry, shipbuilding, sugar industry, supply and waste disposal industry, textile industry, vehicle construction and equipment and wood processing industry.

Features

- Minimal pulsation, controlled flow, so that no pulsation dampers or compensators are required
- Self-priming, even with air or gas liquid mixtures of up to 9 m (29.5') of water
- Installation versatility as pumps can be mounted either horizontally or vertically and the suction casing can be rotated
- Products with solids can be conveyed gently without damage
- Direction of rotation and fluid flow are reversible

> Conveying capacity: 30 l/h–500 m³/h (0.13 GPM–2200 GPM), Pressure: up to 48 bar (720 psi)

Overview of ranges

The drive of BN range pumps is directly flange-mounted to the pump. This means that a separate pump bearing is not necessary and the pump is more compact and less expensive. The plug-in shaft connection between drive and the rotating unit simplifies the replacement of rotating wearing parts and the shaft sealing, thereby making the BN range very service-friendly.

Range BN

In pumps of the NS range the drives are not directly flange-mounted in favour of a universal configuration of the drives. They have a drive casing and a free shaft end, an elastic coupling or a V-belt and a service-friendly plug-in connection. This simplifies the replacement of the rotating wearing parts and the shaft sealing without dismantling the bearing.

Range NS/N

seepex.com
all things flow

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EXHIBIT 13

DEP, *Internal Review and Recommendations*

(Aug. 28, 2009)

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER MANAGEMENT

INTERNAL REVIEW AND RECOMMENDATIONS

Name of Applicant	Shallenberger Constr., Inc. Ronco WTP	File Location	Masontown Borough Fayette County	Application Number	2608201

Introduction

Shallenberger Construction, Inc. (Shallenberger) submitted a Water Quality Management (WQM) Part II permit application for the construction and operation of an industrial wastewater treatment facility (Ronco Water Treatment Facility) for oil and gas well drilling and production wastewaters. Wastewaters from well sites will be hauled to the facility, treated, and discharge to the Monongahela River as authorized under NPDES Permit No. PA0253723 (see discussion below).

Dump Tanks & Equalization

Raw water hauled to the site will be dumped into three 5,000 gallon dump tanks lined with 120 mil Chevron industrial membranes (a spray-on liner). Each dumped load, anticipated to be in the range of 4,200 to 4,400 gallons, will be visually inspected for oils prior to acceptance in order to determine if the wastewater is of suitable quality to be treated by the proposed treatment facilities. If the facility operator notes the presence of oils, the wastewater will have to be reloaded and hauled to another treatment facility. If oils are not present based on this visual inspection, the load will be accepted for treatment.

After acceptance, each wastewater load will be sampled for osmotic pressure (OP) using an Advanced Instruments, Inc. Model 3250 Single Sample Osmometer. The purpose of this sampling is to determine whether the wastewater has a high OP or a low OP. High OP water composed primarily of brine and fracturing wastewaters will be directed to Equalization Tank #1. Low OP water composed primarily of top-hole water will be directed to Equalization Tank #2. The EQ tanks will each have a capacity of 27,190 gallons and a detention time of 2.61 hours. Like the dump tanks, they will be lined with 120 mil Chevron industrial membranes. Air will be injected into each of the EQ tanks at a rate of 1,000 cfm by two Houston Service Industries Series 86 multistage centrifugal blowers in order to keep solids from settling in the tanks. These same blowers will be used to supply air to the aeration tank.

The purpose of separating the high OP water from the low OP water is so that the high OP water can be diluted with sufficient quantities of low OP water to meet the OP limits of the NPDES permit. Shallenberger anticipates that wastewater pumped from the EQ tanks will contain drilling/production waters in the following percentages: 15% brine, 20% frac, 65% top-hole. At this time, dilution is the only means Shallenberger is proposing to meet the NPDES permit's OP limits.

If high OP water is unintentionally directed to EQ Tank #2, the water will be recirculated and blended with low OP water and will be conveyed through the plant a second time prior to discharge. A pipe leading from the treated water storage tank at the end of the treatment process to the equalization tanks is specified in the design for this purpose—or in case a malfunction occurs in the plant resulting in the post-treatment storage tank becoming full of untreated water. If EQ Tank #1 containing high OP water is full, truck drivers hauling additional high OP water will be required to dispose of their water at another facility.

Two Goulds 3196 XLTX pumps (rated for 800 gpm @ 7.8 hp) will pump water from the EQ tanks to the aeration tank at a rate of about 347 gpm (i.e., 0.5 MGD). The facility operator will once again take osmometer readings to determine the osmotic pressure of the wastewaters in each tank (since each tank will contain multiple loads of varying quality). Based on these readings, the operator will manually adjust a set of butterfly valves to ensure that high OP and low OP wastewaters are blended in the correct ratio when the Goulds pumps are activated so that the NPDES permit's OP limits can be achieved.

To comply with the requirements of the waste management regulations, a 55' x 64' area encompassing the footprints of the dump tanks and EQ tanks will be lined with a geocomposite membrane liner (installed beneath a concrete cap) to function as a leak detection layer. The liner will be sloped at 0.5% with a perforated HPDE pipe located on the down-gradient side. The pipe will lead to Leak Detection Manhole A that can be visually inspected or sampled in accordance with the requirements of the residual waste regulations to determine the presence of leaks from either the dump tanks or EQ tanks.

Aeration

Prior to the aeration tank, dry lime will be fed into the wastewater stream at a rate of 278 lbs/day to achieve an optimal pH for oxidation/clarification (within the range of 8.5 to 9.0 standard units). A forty ton silo is proposed for bulk storage of lime. The lime addition rate will vary depending upon the pH of the influent water. A Hach Model 33 analog pH meter located in the aeration tank will be connected to the lime feeder so that lime addition rates can be automatically adjusted to maintain optimal pH.

Aeration will be performed in a 24,352 gallon tank. Air will be injected into this tank at a rate of 3,000 cfm—supplied by the aforementioned Series 86 multistage centrifugal blowers through Red Valve Tideflex Coarse Bubble Mixing Diffusers. Based upon bench scale testing, the optimal time needed for adequate aeration is 20 minutes. With a wastewater inflow rate of 20,833 gallons per hour (i.e., 0.5 MGD), the detention time in the tank will be 1.17 hours.

Clarification

Prior to the clarifiers, sodium sulfate and polymer will be injected to enhance barium precipitation and metal coagulation, respectively. Sodium sulfate will be mixed with 500 gpd of potable water at a rate of 250 lbs/day-dry in two 500 gallon day tanks. Polymer will be mixed with 1,000 gpd of potable water at a rate of 200 lbs/day-dry in two additional 500 gallon day tanks. Potable water will be supplied by the city of Masontown. The feed rate of the sodium sulfate will be adjusted manually by monitoring the barium in the system using an on-site barium meter. Polymer feed rates will be adjusted based on manual testing of the clarifier effluent prior to entering the secondary settling tank. Effluent testing will also be used to verify the sodium sulfate feed rates. One Larox LPP-D1/2" peristaltic pump (rated for 2.6 gpm @ 0.75 to 1.0 hp, 110 psig) and one LPP-1" peristaltic pump (rated for 9.6 gpm @ 0.5 to 2.0 hp, 150 psig) will be used for the injection of both sodium sulfate and polymer (i.e., two pumps, one of each model, will be used for each chemical additive due to the anticipated variability in the required chemical feed rates).

Clarification will be performed in two 195,890 gallon tanks. The clarifiers will be operated in a parallel configuration allowing for increased detention time since each clarifier will only treat half of the facility's 0.5 MGD of flow. Clarifier #1 will receive 250,750 gpd* of water from daily wastewater receipts and chemical additive injections, plus an additional 27,000 gpd of decanted water from the dewatering facility and will discharge 262,750 gpd to the secondary settling/storage tank plus 15,000 gpd with sludge to the dewatering facility. Clarifier #2 will receive 250,750 gpd from daily waste receipts and will discharge 235,750 gpd to the secondary settling/storage tank plus 15,000 gpd with sludge to the dewatering facility. The detention time for Clarifier #1 is 16.93 hours and the detention time for Clarifier #2 is 18.75 hours—significantly longer than the 1 hour "optimal" detention time shown with bench scale testing (90% TSS reduction was observed after 1 hour).

Operating two clarifiers in parallel will also allow Shallenberger to shut down one clarifier at a time for maintenance/repair while maintaining continuous operation of the facility. Operating only one clarifier under these conditions will still allow for 8.9 hours of detention time, which is over twice the 4 hour detention time used to size the clarifiers. The design engineer chose a four hour baseline detention time to size the clarifiers instead of the 1 hour optimal bench scale recommendation due to expected variation in the quality of the influent wastewaters; the 8+ hour detention time resulting from the use of just one clarifier was the result of adding an additional factor of safety of 2 onto the 4-hour detention time sizing criterion.

*(500,000 gpd influent + 500 gpd sodium sulfate/potable water mix + 1,000 gpd polymer/potable water mix) / 2

Sludge Processing & Disposal

Sludge will be pumped from each clarifier at a rate of 3,000 gallons five times a day for a total of 30,000 gpd to remove accumulated sludge and to prevent hardening of the barium precipitate. The sludge will be pumped using three Seepex Model BN-35-6L variable speed pumps (100 gpm capacity) – two to remove sludge from the clarifiers and one used as backup.

Sludge from the clarifiers will be conveyed to the dewatering facility where the solids will be separated using a SiltTex Geotextile Tube as manufactured by Integrated Water Solutions, LLC. The SiltTex tube will be housed in a 15-yard waste dumpster. The solids will be retained in the tube while the water passes through, collects in a 5,000 gallon dewatering tank lined with 120 mil Chevron industrial membrane, and is pumped back to Clarifier #1 using an Ebara Model MA72178 sump pump (30 gpm capacity). Upon filling a SiltTex, a second unit will be installed on top of the first. The weight of the solids retained in the second SiltTex assists in the dewatering of the solids in the first unit.

Once the dumpster is filled with SiltTex units, the dumpster will be replaced with an empty one and the SiltTex will be hauled to a local landfill with approvals to accept this type of sludge.

Based on bench scale testing, it is estimated that a total of 12,139 lbs of dry sludge will be generated at the facility per day with solids representing 5% of the total sludge load sent to the dewatering facility (30,000 gpd: 15,000 gpd from each clarifier). Decanted water from the dewatering facility's 5,000 gallon storage tank, totaling 27,000 gpd, will be sent back to Clarifier #1. The net water loss from the treatment system to sludge is anticipated to be 3,000 gpd.

As with the dump tanks and equalization tanks, a leak detection layer will be installed beneath the dewatering pad (on which the dumpster will be located) and dewatered storage tank. This detection layer will be identical in design to the dump tank/equalization tank leak detection layer. This layer will drain to a separate manhole, Leak Detection Manhole C.

Treated Water Storage Tank & Discharge

After clarification, treated water will flow into a 55,170 gallon storage tank. The purpose of the storage tank is two-fold: 1) to provide additional detention time in order to settle-out any particles that pass through the clarifiers and 2) to assist with the re-circulation of wastewater should the need arise (e.g., pass through of high OP water). As stated in the "Dump Tanks & Equalization" section, a pipe will be installed between the treated water storage tank and the equalization tanks to facilitate re-circulation. After losses to sludge disposal, the treated water storage tank will receive a total of 498,500 gpd. The detention time for the storage tank will be 2.66 hours.

As with the other tanks at the site that will store residual wastes, a leak detection layer will be installed beneath the treated water storage tank identical in design to the dump tank/equalization tank and sludge dewatering facility leak detection layers. This layer will drain to a separate manhole, Leak Detection Manhole B, which ties into the recirculation pipe leading from the treated water storage tank back to the EQ tanks.

Water from the storage tank will discharge to the Monongahela River in accordance with the requirements and limitations of NPDES Permit PA0253723. The outfall structure for this discharge will be covered under a GP-4 General Permit for Intake and Outfall Structures.

Waste Storage Tank

Floor drains located within the treatment building housing the additive storage tanks will be connected to a 1,200 gallon waste tank. The purpose of this tank is to collect water from daily building maintenance activities and pump the water using an Ebara Model MA-72178 sump pump to the clarifier troughs. The influent water to the waste tank will be potable water contaminated with residual chemicals such as polymer and lime, which is unable to be discharged directly to a POTW. This tank will also be equipped with a leak detection system comprised of a geotextile fabric on top of a concrete pad and a PVC inspection port.

Maintenance and Monitoring

Incoming flow will be monitored using a Sitrans 6" Magflo Mag 5100 W flow meter located prior to the Goulds 3196 XLTX pumps. A Sitrans Echomax XRS-5 ultrasonic transducer and Hydroranger 200 ultrasonic controller will be used to measure effluent discharge flow. The treatment plant will operate 24 hours per day. An experienced plant operator will be on-site during all hours of operation and will be required to perform periodic (hourly, quarterly, and daily) monitoring of the concentrations of iron, osmotic pressure, barium, and other NPDES permit parameters to ensure proper treatment and compliance with the NPDES permit.

Tank Construction

All concrete tanks with exterior surfaces below grade will have a bituminous coating to help prevent corrosion.

Consent Order and Agreement and NPDES Permit

On September 25, 2008, the Department issued NPDES Permit No. PA0253723 to Shallenberger, authorizing the discharge of treated industrial wastes from the Facility. The 2008 NPDES Permit establishes specific effluent limitations, monitoring requirements and other permit conditions for the discharge from this proposed treatment facility. The proposed treatment

facility, that is the subject of this Water Quality Management Part II permit, is a "Centralized Waste Treatment" facility as defined in the Code of Federal Regulations at 40 CFR Part 437. 40 CFR Part 437 contains the applicable effluent limitation guidelines ("ELG") for Centralized Waste Treatment facilities. The 2008 NPDES Permit currently contains effluent limitations different than those established in 40 CFR Part 437. The Department intends to modify the NPDES Permit PA0253723 to include the requirements of the applicable ELG.

In its May 2008 NPDES permit application, Shallenberger indicated that the discharge from the proposed industrial waste facility will contain elevated levels of Total Dissolved Solids ("TDS"). Shallenberger's proposed industrial waste treatment plant does not include treatment for the removal of TDS. The Department intends to modify NPDES Permit PA0253723to include effluent limitations for TDS and sulfates.

In order to meet the effluent limitations for TDS and sulfates in the amended NPDES permit, Shallenberger must design and construct additional wastewater treatment ("Phase 2 Treatment Plant"). The issuance of the amended NPDES permit and the submission of a Water Quality Management Part II Permit application is the subject of a Consent Order and Agreement between the Department and Shallenberger. The Phase 2 Treatment Plant shall be designed to meet the effluent limitations in the amended NPDES Permit. The Water Quality Management Part II Permit Amendment application shall contain a plan and schedule to allow for the completion of the Phase 2 Treatment Plant that complies with the milestones set forth in this Consent Order and Agreement. This Water Quality Management Part II permit will be issued upon the execution of the Consent Order and Agreement.

Waste Management Conditions

The Water Quality Management Part II permit contains several conditions at the request of the Waste Management Program. These are special conditions F, G, and H and relate to residual waste tanks, liner, and systems and the permit by rule provisions of the Waste Management regulations.

Erosion and Sedimentation Control

On October 20, 2008, the Fayette County Conservation District reviewed and approved the Erosion and Sedimentation Control Plan for this project.

The applicant has complied with Act 14. Based on the design engineer's report, this project is being conducted in accordance with accepted engineering practice. It is recommended that this permit be issued.

RECOMMENDATION AND ACTION			
Approve	Refuse	Signature	Date
[ ]	[ ]	REVIEWING GEOLOGIST	
[X]	[ ]	REVIEWING ENGINEER /	
[X]	[ ]	REGIONAL SECTION CHIEF	8/28/09
[X]	[ ]	REGIONAL MANAGER	8/28/09

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Amended Notice of Appeal, with Amended Objections and Exhibits 1 through 13, was served this 2nd day of November, 2009, by U.S. mail, first-class, postage prepaid, on:

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