

REVIEW OF PLANS AND SPECIFICATIONS

Chery

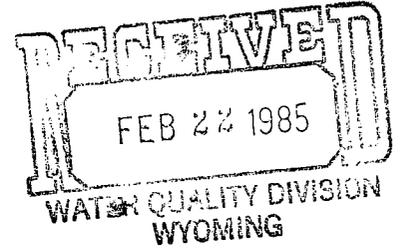
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144

PROJECT: Kenney Unit No. 4 Evaporation Ponds

ENGINEER: Larry Bodyfelt
Mountain Fuel Resources, Inc.
P. O. Box 1129
Rock Springs, WY 82902

OWNER: Wexpro Company, Attention William Johnson
P. O. Box 458
Rock Springs, WY 82902



WATER QUALITY DIVISION REFERENCE NUMBER: #85-1

REVIEWING EVALUATOR: Jeff Hermansky and Kate Laudon *JCH KJL*

DATE OF REVIEW: February 12, 1985

ACTION: Not authorized.

COMMENTS: After reviewing your application for a permit to construct, we find that the following questions and comments must be addressed before a permit can be issued:

1. The application form, which I have returned, must be signed by an authorized representative of Wexpro.
2. We have received three copies of the plans but still need two additional copies of the specifications and supplemental information.
3. How do you propose to remove scum and oil that may accumulate on the surface of the evaporation ponds?
4. Density testing of the embankment material, section 601, and density testing of the soil-bentonite liner, section 602, are required. Testing is not to be "At the option of the company" but is required to be performed. As a minimum, at least one test for moisture content and density must be taken for each lift.
5. In addition to density testing of the soil-bentonite liner, the liner must be tested for as constructed permeability. Therefore the specifications must include the number and method of permeability tests to be conducted. At least one test shall be provided per acre per lift, except for core sampling of the in-place liner, where at least one core of the completed liner shall be tested per acre.

AC

6. Please be advised that the regulations require written certification that the soil liner was constructed in accordance with the project specifications. Certification must be provided by a Wyoming registered professional engineer or an independent soils laboratory.

7. An analysis of the wastewater to be contained by the proposed ponds must be provided. This analysis is necessary to document the compatibility of the wastewater with the proposed bentonite liner. Furthermore, highly saline water may not evaporate at the design rates provided in your application, thus affecting the design life of the ponds.

8. The proposed monitoring well locations are stated in a general nature, that is, downslope and/or downdip from the ponds. More detailed monitoring well locations and depths should be provided to this office as part of the permit application. Since groundwater apparently occurs near the surface at least on a seasonal basis, the monitor wells must be constructed to detect fluctuating groundwater levels.

Chen and Associates did not thoroughly document the occurrence of free water in the Test Hole Number 5. It is impossible to tell which stratigraphic horizon the groundwater is associated with. Geologic justification should be provided for the location and depths of the proposed monitor wells. Supporting information should address lithologic and structural control of groundwater flow.

9. A groundwater monitoring plan should be provided by the applicant. If groundwater is encountered in any of the monitor wells, background water quality must be established prior to operation of the ponds. A monitoring schedule and list of parameters will be determined based on background water quality and the analysis of the wastewater.

10. The specifications state that the soil/bentonite liner shall be covered with cohesive native soils. The specification should be more specific as to the gradation of suitable soils.

11. It is recommended that flagging be installed over the ponds to discourage use by birds and water fowl.

12. Please note on the plans or in the specifications that rip-rap may be required if wave action causes erosion to the dikes.

Please contact Kate Laudon at 777-7091 if you have any questions regarding monitor well siting or the establishment of monitoring plans.

All other questions regarding the project can be directed to Jeff Hermansky.

JH:dlb

xc: Kate Laudon, DEQ/WQD Cheyenne

Norma, I am keeping
a copy of the permit
application for awhile.

WATER QUALITY DIVISION
GROUNDWATER SECTION
PERMIT APPLICATION REVIEW

2-11-85
to Landon

APPLICATION NUMBER 85-1

DATE SUBMITTED FOR REVIEW 1-17-85

NAME AND LOCATION OF FACILITY Kenney Unit #4 Evap. Ponds
Sec. 12 T14N R100W
Sweetwater County

I have reviewed the plans and specifications with regard to all aspects of groundwater quality and find the following:

- No comment. The submittal is consistent with current groundwater protection procedures and requirements.
- Comments attached.

SIGNED Kate Laudon
TITLE Engineer Evaluator
DATE 2-7-85

ACCEPTED FOR RECORD 2/8/85
(Date)

AJM
Groundwater Control Supervisor

MEMORANDUM

TO: Jeff Hermansky, Water Quality Evaluator

FROM: Kate Laudon, Engineering Evaluator *KgZ*

DATE: February 7, 1985

SUBJECT: Groundwater Review, Kinney Unit #4 Evaporation Ponds, DEQ/WQD Ref. No. 85-1

Wexpro Company has applied for a permit to construct two evaporation ponds to receive water produced from the Kinney Unit No. 4 well located in Section 12, T14N, R100W in Sweetwater County. A number of items should be addressed by the applicant before the permit is issued.

1. An analysis of the wastewater should be provided. This is necessary to document compatibility of the wastewater with the proposed bentonite liner. Also highly saline water may not evaporate at the design rates provided in the permit application. This would affect the design life of the ponds.
2. The applicant states in the cover letter that four monitor wells will be located downslope and/or downdip from the pond. The monitor well locations and depths should be provided to this office as part of the permit application. Since groundwater occurs near the surface at least on a seasonal basis, the monitor wells must be constructed to detect fluctuating groundwater levels. Chen and Associates did not thoroughly document the occurrence of free water in the Test Hole Number 5. It is impossible to tell which stratigraphic horizon the groundwater is associated with. Geologic justification should be provided for the location and depths of the proposed monitor wells. Supporting information should address lithologic and structural control of groundwater flow.
3. A groundwater monitoring plans should be provided by the applicant. If groundwater is encountered in any of the monitor wells, background water quality must be established prior to operation of the ponds. A monitoring schedule and list of parameters will be determined based on background water quality and the analysis of the wastewater.
4. The Chen and Associates soils report and the earthwork specifications indicate that the embankment shall not contain rocks or lumps larger than six inches. As we discussed on the telephone, this type of subgrade would not be compatible with the proposed liner.

If the applicant has questions about monitor well siting, or the establishment of a monitoring plans, please have them call me.



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

February 27, 1986

Larry Bodyfelt
Mountain Fuel Resources, Inc.
P.O. Box 1129
Rock Springs, WY 82902

Dear Mr. Bodyfelt:

Your application for Kinney Unit #4 Evaporation Pond (DEQ Permit No. 85-001), is considered inactive under the assumption that you do not wish to proceed with the permit to construct process.

This project has not been permitted. Construction of this facility without a permit is a violation of the Environmental Quality Act and punishable with fines not to exceed \$10,000 per day of violation. If you wish to reconsider construction of this facility, then application procedures pursuant to Chapter III, Water Quality Rules and Regulations, must be followed.

Sincerely,

William L. Garland
Administrator

WLG/BL/jw

Norana



THE STATE OF WYOMING

RECEIVED
FEB 25 1986
ED HERSCHLER
GOVERNOR
WATER QUALITY DIVISION
WYOMING

Department of Environmental Quality
Water Quality Division

210 LINCOLN STREET

LANDER, WYOMING 82520

TELEPHONE 307-332-3144

February 20, 1986

Larry Bodyfelt
Mountain Fuel Resources, Inc.
P.O. Box 1129
Rock Springs, WY 82902

Dear Mr. Bodyfelt:

Our records indicate your application for a permit to construct has not been resubmitted to this office for review and authorization. The specific information for this proposed project is:

Facility Name: Kinney Unit #4 Evaporation Pond

DEQ/WQD Reference Number: 85-001

Engineering Consultant: Mountain Fuel Resources, Inc.

DEQ/WQD Review Engineer: Jack Bedessem/Bill Locke

Date of DEQ/WQD Review: 2-12-85

According to Chapter III of the Water Quality Rules and Regulations, Section 7 b. (2), "If an application is denied because of incompleteness necessitating a request for additional information, the applicant shall have a maximum of six months to comply with the request. If the applicant fails to provide the requested information within that period, the entire incomplete application shall be returned."

Please indicate below the status of this project and return this form to our office.

- The application will not be resubmitted ~~as~~ the proposed project has been cancelled. *S. Bodyfelt 2/24/86*
- The application will be resubmitted within thirty (30) days.
- The facility has been constructed, or is under construction. As built construction plans and specifications will be submitted within thirty (30) days.
- Other Remarks: _____

Page Two

You are reminded that the construction, installation, or modification of any sewage system, treatment works, disposal system, or other facility capable of causing or contributing to pollution, or public water supply system without a Permit to Construct is a violation of Wyoming State Statutes, and is punishable with a fine not to exceed \$10,000 for each day of violation. Unless the Water Quality Division review engineer receives information concerning the status of this project within fifteen (15) days of the receipt of this letter, follow-up action will be taken.

Sincerely,

A handwritten signature in cursive script that reads "Bill Locke".

Bill Locke, P.E.
Water Quality Engineer

BL/jw

PERMIT TO CONSTRUCT

4-18

- New
- Renewal
- Modified

Permit No. 85-2R
MA 14542

Exxon LaBarge Project Expanded Plant Area Sedimentation
Pond No. 1 (Name of Facility)

This permit hereby authorizes the applicant (name and address):

Exxon Company, USA
P.O. Box 1600
Midland, TX 79702

to construct, install, or modify a 3.23 ac-ft runoff sedimentation pond

facility according to the procedures and conditions of the
 application No. 85-2R. The facility is located in

Sec. 18, T22N, R111W

in the County of Sweetwater,

in the State of Wyoming. This permit shall be effective for a period of two (2)
 years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and dur-

REVIEW OF PLANS AND SPECIFICATIONS
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144

PROJECT: Fremont County Shop Building

ENGINEER: C. E. Spurlock, Jr. and Associates Inc.
P. O. Box 0
Lander, WY 82520
Attention: Willard Aten

OWNER: Fremont County
Fremont County Courthouse
Lander, WY 82520
Attention: James Farthing

WATER QUALITY DIVISION REFERENCE NUMBER: #85-3

REVIEWING ENGINEER: Ed Baruth, P.E. *Ed*

DATE OF REVIEW: January 11, 1985

ACTION: Not authorized.

COMMENTS:

1. Please note the attached Corps of Engineers/Department of Environmental Quality 401 Certification Form. This form needs to be filled out for both the Baldwin Creek and Squaw Creek river crossing. If you have any questions on the form, please contact Mr. Mike Carnevale at the Department of Environmental Quality/Water Quality Division in Cheyenne for his assistance. His phone number is 777-7781. Further, please detail how the crossings will be made.
2. Some type of documentation of available water pressure is needed. City of Lander certification of adequate pressure (above 20 p.s.i. in the worst case) is adequate.
3. The plans need to be signed by a registered Wyoming Professional Engineer.

EB:dcn

cc: Mike Carnevale, DEQ/WQD Cheyenne

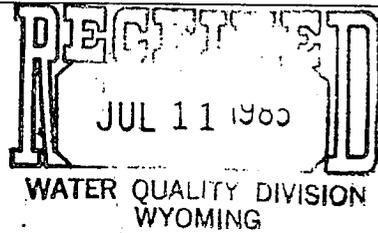
ABC

KEVIN D. JONES, P.E.
CONSULTING ENGINEER

85-4

516 SAGE STREET • EVANSTON, WYOMING 82930 • (307) 789-4359

July 10, 1985



Department of Environmental Quality
Water Quality Division
210 Lincoln Street
Lander, Wyoming 82520

Attn: Mr. Jack Bedessem

Re: Meadow Park Village Subdivisions
Certification of As-constructed Sewer and Water Systems and
Permits for Construction of Additions to said Systems
Change of Engineer and Consolidation of Permits

Dear Jack:

This letter is to verify the conditions of the above referenced Project as discussed in our phone conversation of July 9, 1985. I have effectively taken over the Project per the copy of the enclosed Contract with Mr. Mike Sims, dated July 9, 1985.

I am requesting that all previous Project submittals be closed at this time, specifically DEQ Reference Nos. 82-404 and 85-4. The purpose of this action will be to open a single Project file by this firm to consolidate the certification of all as-constructed features of both the sewer and water systems serving the Meadow Park Village Subdivisions, Plats A, B and C, and any other services which may have been made outside said Subdivisions.

This office is aware that certification will be required of all water system source, storage, transmission and distribution components and also of all collection, transmission and treatment components of the sanitary sewerage system. In addition, this firm is aware of and has made the Owner aware that any future system construction desired by the Owner in addition to the as-constructed systems will be under separate submittals for the required Permits to Construct.

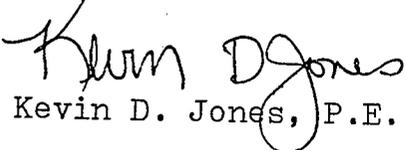
The Owner is interested in compliance with the Rules and Regulations of the State, is of the belief that he has attempted to comply, and desires and understanding with the Department of Environmental Quality that problems in receiving certification of the systems and the current Violation status may have been aggravated by the performance of the originally contracted Engineer. In that regard, this office has been made aware on this date that said Engineer allowed his registration as a Wyoming Professional Engineer to lapse as of December 31, 1984. Any work and correspondence received after that date on this Project is invalid according to the State Engineer's Office.

DEQ-Mike Sims, Meadow Park Village
July 10, 1985
Page 2

This office anticipates the initial stages of the Project certification process to require approximately the remainder of July, specifically the inspection and surveying of the as-constructed systems. This office anticipates having the initial submittal of reconstructed Drawings, Specifications and Engineering Data into your office by August 15, 1985 under the new Project Reference Number as requested.

Should additional information be required prior to the dates suggested, please contact me at your earliest convenience for clarification.

Regards,


Kevin D. Jones, P.E.

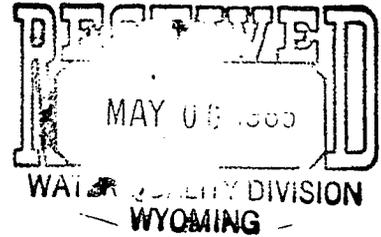
Enclosure

cc: Mike Sims-Meadow Park Village w/Enc.
Marion Malnar-Uinta County Engineer w/o Enc.

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144



PROJECT: Meadow Park Village Plats A and B
Meadow Park Village Plat C

ENGINEER: Mike Lund
Mountain West Design
68 West 100 North
Logan, UT 84321

OWNER: Mike Sims
565 County Road 107
P.O. Box 733
Evanston, WY 82930

WATER QUALITY DIVISION REFERENCE NUMBER: 82-404RRRRRR (As Built Plats A & B)
85-4 (Plat C)

REVIEWING EVALUATOR: Jack Bedessem *JB*

DATE OF REVIEW: May 1, 1985

ACTION: Not authorized.

COMMENTS:

The following items still need to be addressed and/or resolved.

1. OK - Completed application form for "As Builts" Plats A & B.
2. OK - Completed application form for "Permit to Construct" Plat C. Plat C will be handled separately under No. 85-4.
3. Three sets of Plats A and B "As Built" plans, signed by a registered Wyoming Professional Engineer still need to be submitted. These plans shall completely show both the water and sewer systems, including details, as they were actually constructed. The preliminary design plans will be acceptable only if they are signed by a P.E. and certified that construction was in accordance.
4. OK - Plat C plans (water system and sewer system).
5. As per our March 26, 1985 telecom and Mike Lund's March 6, 1985 letter the capacity of the storage tank is 73,000 gallons. This needs to be noted on the plans. Adequacy of the storage capacity will be discussed in item no. 11.
6. OK - Water lines and sewer lines.
7. OK - Grading ground wastewater treatment plant.

Ac

May 1, 1985
Review of Plans & Specs.
Ref. No. 82-404RRRRRR
85-4
Page Two

8. According to your November 30, 1984 letter, the Wyoming Public Works Standards were used for construction. This needs to be noted on the "As Built" plans.

9. OK - Ecolo Chief #6 Wastewater Treatment Plant Plans.

10. OK - A permit must be obtained from this office prior to the modification or expansion of the water or sewer system.

11. Water System - This office has received complaints that the entire subdivision has had low pressure or no water supply on numerous occasions. From the data in the Engineering Report, it appears that there should be adequate water supply from the well and storage tank. It should be noted that the data in the Engineering Report is based on best design estimates.

a. An "As Built" detail of the well(s) needs to be included with the plans (i.e. piping, pump(s) and screen locations, etc.). Pump curves for the Webtroll (352S3016) pumps need to be submitted. Also verify that the well can adequately produce the necessary water supply.

b. Verify (network pressure analysis) that your water system can maintain a minimum pressure of 20 psi at ground level at all points in the distribution system, under all flow conditions (average day demand plus fire flow demand). The water system analysis which was submitted appears to consider a demand of only 500 gpm.

The Engineering Report indicates that the water system is designed for 300 units, 3.5 person/unit and 100 gallons/capita/day. Since no actual flow data is available we researched some similar applications and determined that a flow of 350 gal/lot/day is inadequate.

A similar subdivision near Evanston, which uses metered water reported an average daily demand of 600 gallons during summer months. It should be noted that a community using unmetered always consumes more water than if it was metered.

Reevaluate, address and clarify the demands of your subdivision.

c. Water supply and low pressure problems. Based on the criteria for your subdivision: 73,000 gallon storage tank, 30 gpm producing well, five hoses demanding 40 gpm and 27 homes demanding 11 gpm; it is estimated that it would take approximately 2.5 days before the system could be depleted below normal operating pressures.

May 1, 1985

Review of Plans & Specs.

Ref. No. 82-404RRRRRR

85-4

Page Three

d. Details of the water system alarm need to be included on the plans. Address the operation of the water system (well pump cycling, on-off time, low-high level storage, alarm, etc.).

12. The wastewater system must be operated as efficiently as possible to achieve the best possible effluent.

a. OK

b. Routine visual inspections and compliance monitoring at a mechanical treatment plant is inadequate for proper, efficient operation. Address a program which includes process control testing to properly operate your treatment plant.

c. OK - Alarm system.

Submit the required information and revised signed drawings (in triplicate) to this office by June 1, 1985.

85-4

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144

PROJECT: Meadow Park Village Plats A and B
Meadow Park Village Plat C

ENGINEER: Mike Lund
Mountain West Design
68 West 100 North
Logan, Utah 84321

OWNER: Mike Sims
565 County Road 107
P. O. Box 733
Evanston, WY 82930

WATER QUALITY DIVISION REFERENCE NUMBER: #82-404RRRRRR (As Built Plats A and B)
#85-4 (Plat C)

REVIEWING EVALUATOR: Jack Bedessem *JB*

DATE OF REVIEW: January 9, 1985

ACTION: Not authorized.

COMMENTS: One More Time. Your last response has been reviewed and the following items remain to be addressed and/or resolved.

1. OK - Completed application form for "As Builts" Plats A and B.
2. OK - Completed application form for "Permit to Construct" Plat C. Plat C will be handled separately under No. 85-4.
3. Three sets of Plats A and B "As Built" plans (water system and sewer system) signed by a registered Wyoming Professional Engineer still need to be submitted.
4. OK - Plat C plans (water system and sewer system).
5. According to your November 30, 1984 letter, the water storage tank has a capacity of 78,510 gallons. The actual capacity and dimensions still need to be noted on the plans.
6. OK - Water lines and sewer lines.
7. OK - Grading ground wastewater treatment plant.
8. According to your November 30, 1984 letter, the Wyoming Public Works Standards were used for construction. This still needs to be noted on the plans.
9. OK - Ecolo Chief #6 Wastewater Treatment Plant Plans.

ABC

Review of Plans and Specifications
Meadow Park Village Plats A and B - #82-404RRRRRR
Meadow Park Village Plat C - #85-4
January 9, 1985
Page Two

10. Any modification or expansion of the water system or sewer system requires that a "Permit to Construct, Install or Modify" be obtained from this office.

Some additional concerns have arisen since my last review. These concerns need to be addressed before either Plats A and B or C can be accepted.

11. Water System - This office has received complaints that the entire subdivision has had low pressure or no water supply on numerous occasions. From the data supplied in the Engineering Report, it appears that there should be adequate water supply from the storage tank and well.

- (a) Verify the actual yield of the well, capacity pump size, etc.
- (b) Verify (pressure analyses) that your water system can maintain a minimum pressure of 20 psi at ground level at all points in distribution system under all flow conditions (average flow plus fire demand).
- (c) Address the problems associated with the deficient water supply incidents.
- (d) It is recommended that an alarm system be installed on the well and storage tank so that a responsible party will be notified of power failure or insufficient water. Details must be included on the plans.

12. Wastewater System - Inspections by state and county personnel on several occasions have observed your wastewater treatment plant to be either completely shut down or in very poor condition.

- (a) At times when your plant is shut down or in poor condition, the effluent discharged to waters of the state does not comply with the limits of your NPDES discharge permit. This is a violation of the Wyoming Environmental Quality Act.
- (b) Address the program you will implement to properly maintain and operate your treatment plant, including actions during a power failure.
- (c) An alarm system must be installed that will notify a responsible party when there is a problem with the plant.

Submit the required information and revised drawings to this office, in triplicate, by February 15, 1985. If a satisfactory response is not received, legal action will be initiated.

JB:dcn

THE STATE OF WYOMING



85-5
MA 1454
ED HERSCHLER
GOVERNOR

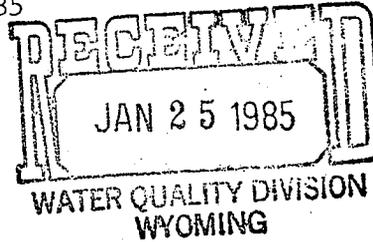
Department of Environmental Quality
Water Quality Division

2161 COFFEEN AVENUE,
SUITE 301

SHERIDAN, WYOMING 82801

TELEPHONE 307-672-6457

January 23, 1985



Mr. Veach A. Williams
P.O. Box 214
Big Horn, Wyoming 82833

Dear Mr. Williams:

I have reviewed your submittal for three camper trailer hookups (DEQ Reference No. 85-5) to the existing Island Mobile Home Park in Big Horn, Wyoming. The trailer service connections are intended for summer use only.

The existing septic tank and leach field are of sufficient size to accept the estimated additional wastewater flow of 300 gallons/day. You may consider your expansion of the sewage disposal system approved.

Since the service connections have already been installed, a Permit to Construct cannot be issued. However, this letter of approval serves essentially the same purpose.

Please call me if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read "Rich Ruyle".

Rich Ruyle
District Supervisor

RR:ls

aba



THE STATE OF WYOMING

11-18

ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

November 15, 1985

Vernon H. Tanner or SFC Dan Moss
Annual Training site
P.O. Box 399
Guernsey, WY 82214

RE: National Guard Ammo Dump, DEQ/WQD Ref. No. 85-6

Dear Mr. Tanner:

Your application is considered inactive and is being returned under the assumption that the applicant does not wish to proceed with the permit to construct process.

This project has not been permitted. Construction of this facility without a permit is a violation of the Environmental Quality Act and punishable with fines not to exceed \$10,000 per day of violation. If this project has already been constructed, it is your responsibility to immediately contact this office for further instruction. If you wish to reconsider construction of this facility, then application procedures pursuant to Chapter III, Water Quality Rules & Regulations, must be followed.

Sincerely,

A handwritten signature in cursive script that reads "William L. Garland".
William L. Garland
Administrator

WLG/TSN/nc



THE STATE OF WYOMING

Department of Environmental Quality
Water Quality Division

RECEIVED
NOV 12 1985
ED HERSCHLER
GOVERNOR
WYOMING DIVISION

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

November 5, 1985

TBN

Vernon H. Tanner
or SFC Dan Moss
Annual Training Site
P.O. Box 399
Guernsey, WY 82214

Dear Mr. Tanner:

Our records indicate your application for a permit to construct has not been resubmitted to this office for review and authorization. The specific information for your proposed project are:

Facility name:	National Guard Ammo Dump
DEQ/WQD Reference Number:	85-6
Engineering Consultant:	Unknown
DEQ/WQD Reviewing Engineer:	Thomas S. Norman
Date of DEQ/WQD Review:	January 1, 1985

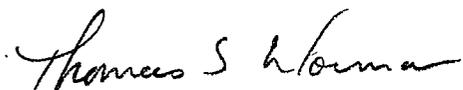
According to Chapter III of the Water Quality Rules and Regulations, Section 7 b. (2), "If an application is denied because of incompleteness necessitating a request for additional information, the applicant shall have a maximum of six months to comply with the request. If the applicant fails to provide the requested information within that period, the entire incomplete application shall be returned."

Please indicate below the status of your application and return this form to our office:

- The application will not be resubmitted as the proposed project has been cancelled.
- The application will be resubmitted within 30 days.
- The facility has been constructed, or is under construction. As built construction plans and specifications will be submitted within 30 days.
- Other remarks _____

You are reminded that the construction, installation, or modification of any sewerage system, treatment works, disposal system, or other facility capable of causing or contributing to pollution, or public water supply system without a Permit to Construct is a violation of Wyoming State Statutes. Unless the Water Quality Division reviewing engineer receives this information within 15 days of the receipt of this letter, follow-up action will be taken.

Sincerely,

A handwritten signature in cursive script that reads "Thomas S. Norman".

Thomas S. Norman
Water Quality Engineer
Water Quality Division

TSN/nc

1-29-85

Review of Plans and Specifications

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
1111 East Lincolnway
Cheyenne, Wyoming 82002

PROJECT: National Guard Ammo Dump, Platte Co.

ARCHITECT OR ENGINEER:

APPLICANT: Vernon H. Tanner, Annual Training Site
P.O. Box 399, Guernsey, WY 82214

WATER QUALITY DIVISION REFERENCE NUMBER: 85-6

REVIEWING ENGINEER: Thomas S. Norman *T.S. Norman*

DATE OF REVIEW: January 28, 1985

ACTION: NOT AUTHORIZED FOR CONSTRUCTION

COMMENTS:

Your application package was incomplete. Along with the application form, a design report and 3 sets of plans and specifications signed by a registered professional engineer must be submitted to the Department of Environmental Quality, Water Quality Division, for review and authorization in accordance with Chapters III and XI of our rules and regulations.

cc: SFC Dan Moss

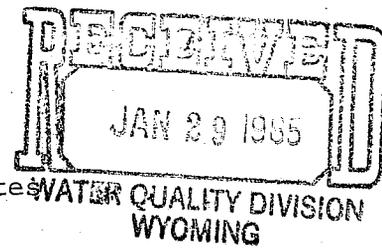
Norma

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
2161 COFFEEN AVE., SUITE 301
SHERIDAN, WYOMING 82801

PROJECT: Westover Hills Golf and Country Club Sewage Disposal System

ARCHITECT OR ENGINEER: Edward S. Scott
Professional Consulting Associates
P.O. Box 2185
Gillette, Wyoming 82716



WATER QUALITY DIVISION
REFERENCE NUMBER: 85-7

REVIEWING ENGINEER: Rich Ruyle *RR*

DATE OF REVIEW: January 24, 1985

ACTION: Not Authorized

COMMENTS:

There are several requirements for septic tanks and evapotranspiration beds in Chapter XI of our regulations that you may not be aware of.

- 1.) Commercial septic tanks must have a minimum effective liquid capacity to provide 36 hours of retention at peak flow. By your estimates this would be equal to 1.5 x 3200 gpd or 4800 gallons.
- 2.) The wastewater flow for country clubs is estimated in Chapter XI by using 25 gpd per non-resident member. Does this method agree with your estimate?
- 3.) The net evapotranspiration rate used in calculating the field area is 0.17 gal/ft²/day. A more accurate rate would be 0.07 gal/ft²/day. This is based on a net annual potential evapotranspiration rate for Gillette of 43 inches (57 inches of evaporation minus 14 inches of rain). If 3200 gpd is taken as the peak daily flow, then using the equation in Section 42 of Chapter XI, the appropriate bed area is:

$$586 \left(\frac{3200 \times 0.6}{57 - 14} \right) = 26,000 \text{ ft.}^2$$
- 4.) The synthetic liner is required to be 20 mils if it is necessary for the protection of groundwater. This is not the case in this situation, however, a three inch layer of sand should be placed over and under the liner for its protection during installation.

Review of Plans and Specifications
Westover Hills Golf and Country Club
Sewage Disposal System, Ref. 85-7
January 24, 1985
Page two

- 5.) Four inches of pea gravel (less than $\frac{1}{4}$ inch in diameter) or filter cloth should be placed over the bottom gravel layer to separate it from the sand.
- 6.) The sand used should be uniform and in the size range of D50 (0.10) mm.
- 7.) Any permit issued will be conditioned to require hookup to city sewer service when it becomes available.

PERMIT TO CONSTRUCT

Permit No. 85-8
Ref. No. 84-256R
MA 14542

- New
- Renewal
- Modified

Saratoga Water Improvement Project
(Name of Facility)

This permit hereby authorizes the applicant (name and address):

Town of Saratoga

P.O. Box 486

Saratoga, WY 82331

to construct, install, or modify a municipal public water distribution facility according to the procedures and conditions of the application No. 85-8. The facility is located in Section 13, T17N, R84W in the County of Carbon, in the State of Wyoming. This permit shall be effective for a period of two (2) years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and during working hours, to have access to inspect the facilities, at the above location, for the purpose of compliance with the provisions of this construction permit.

PERMIT TO CONSTRUCT

- New
- Renewal
- Modified

Permit No. 85-9R

MA 14542

Sewer Replacement Project - Blocks 36, 41, and 52
(Name of Facility)

This permit hereby authorizes the applicant (name and address):

Town of Douglas

130 South Third Street

Douglas, WY 82633

to construct, install, or modify a municipal wastewater collection system facility according to the procedures and conditions of the application No. 85-9R. The facility is located in Sections 9 and 16, T32N, R71W in the County of Converse, in the State of Wyoming. This permit shall be effective for a period of two (2) years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and during working hours, to have access to inspect the facilities, at the above location, for the purpose of compliance with the provisions of this construction permit.

Review of Plans and Specifications

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
1111 East Lincolnway
Cheyenne, Wyoming 82002

PROJECT: Town of Douglas Sewer Replacement, Blocks 36, 41, & 52, Converse Co.

ARCHITECT OR ENGINEER: John Lambert
P.O. Box 34, Douglas, WY 82644

APPLICANT: Town of Douglas
130 South Third Street, Douglas, WY 82633

WATER QUALITY DIVISION REFERENCE NUMBER: 85-9

REVIEWING ENGINEER: LeRoy C. Feusner, P.E. 

DATE OF REVIEW: January 29, 1985

ACTION: NOT AUTHORIZED FOR CONSTRUCTION

COMMENTS:

1. An application for a Permit to Construct must be completed and signed by the applicant.
2. Please provide three sets of the complete drawings.
3. The specifications note on the drawing should be corrected to indicate the Wyoming Public Works Standard Specifications - 1984 Edition.
4. A proposal has been presented to replace manholes at the intersection of each street and block. Additionally, minimum grades for an eight sewer line cannot apparently be maintained due to existing elevations on both ends. Manhole spacings exceed the 400 foot limitations continued in Chapter XI, Wyoming Water Quality Rules & Regulations. I will favorably consider the proposed spacing provided the Town of Douglas submits a letter indicating that they will accept it and that they have adequate sewer maintenance equipment to properly maintain the system operationally.

2-15

PERMIT TO CONSTRUCT

- New
- Renewal
- Modified

Permit No. 85-10R

MA 14542

Water System Improvement, Charles Addition
(Name of Facility)

This permit hereby authorizes the applicant (name and address):

Town of Douglas

130 South Third Street

Douglas, WY 82633

to construct, install, or modify a public water supply distribution system facility according to the procedures and conditions of the application No. 85-10R. The facility is located in Section 4, T32N, R71W in the County of Converse, in the State of Wyoming. This permit shall be effective for a period of two (2) years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and during working hours, to have access to inspect the facilities, at the above location, for the purpose of compliance with the provisions of this construction permit.

1-29-85

Review of Plans and Specifications

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
1111 East Lincolnway
Cheyenne, Wyoming 82002

PROJECT: Town of Douglas, Water Distribution System Replacement, Charles Addition,
Converse Co.

ARCHITECT OR ENGINEER: John Lambert
P.O. Box 34, Douglas, WY 82644

APPLICANT: Town of Douglas
130 South Third Street, Douglas, WY 82644

WATER QUALITY DIVISION REFERENCE NUMBER: 85-10

REVIEWING ENGINEER: LeRoy C. Feusner, P.E.



DATE OF REVIEW: January 29, 1985

ACTION: NOT AUTHORIZED FOR CONSTRUCTION

COMMENTS:

1. An application for a Permit to Construct must be completed and signed by the applicant.
2. Please submit three complete sets of the proposed drawings.
3. The specifications note should indicate the Wyoming Public Works Standard Specifications - 1984 Edition.

PERMIT TO CONSTRUCT

- New
- Renewal
- Modified

Permit No. 85-11R
MA 14542

Water Distribution System - Douglas Bypass Area
(Name of Facility)

This permit hereby authorizes the applicant (name and address):

Town of Douglas

130 South Third Street

Doulgas, WY 82633

to construct, install, or modify a public water supply distribution system facility according to the procedures and conditions of the application No. 85-11R. The facility is located in Sections 7 and 8, T32N, R71W in the County of Converse, in the State of Wyoming. This permit shall be effective for a period of two (2) years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and during working hours, to have access to inspect the facilities, at the above location, for the purpose of compliance with the provisions of this construction permit.

1-29-85

Review of Plans and Specifications

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
1111 East Lincolnway
Cheyenne, Wyoming 82002

PROJECT: Town of Douglas, Water Distribution System Adjustment on Douglas Bypass,
Converse Co.

ARCHITECT OR ENGINEER: John Lambert
P.O. Box 34, Douglas, WY 82644

APPLICANT: Town of Douglas
130 South Third Street, Douglas, WY 82644

WATER QUALITY DIVISION REFERENCE NUMBER: 85-11

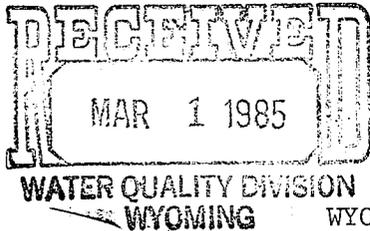
REVIEWING ENGINEER: LeRoy C. Feusner, P.E. 

DATE OF REVIEW: January 29, 1985

ACTION: NOT AUTHORIZED FOR CONSTRUCTION

COMMENTS:

1. An application for a Permit to Construct must be completed and signed by the applicant.
2. Please provide three complete sets of the proposed drawings.
3. What specifications will be followed for materials and procedures? If the Wyoming Public Works Standard Specifications - 1984 Edition are to be used, add a note to the drawing.



Norma

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
2161 COFFEEN AVE., SUITE 301
SHERIDAN, WYOMING 82801

PROJECT: Town of Sundance, West Cleveland
Street Water Storage Tank

ARCHITECT OR ENGINEER: Ralph Goodson
Bearlodge Engineering
P.O. Box 130
Sundance, Wyoming 82729

WATER QUALITY DIVISION
REFERENCE NUMBER: 85-12

REVIEWING ENGINEER: Rich Ruyle *RR*

DATE OF REVIEW: February 26, 1985

ACTION: Not Authorized

COMMENTS:

- 1.) A schematic and description of Sundance's entire water distribution and storage system would be helpful in understanding how this tank fits into it. Please provide verification that the new tank is at the HWL of the system which is determined by a level control mechanism in one of the other storage tanks. Also verify that the feeder system can adequately compensate for any new headloss in the system.
- 2.) The total water storage capacity for Sundance must equal the average day demand plus fire storage based on recommendations by the State Fire Marshall or local fire agency. Please verify.
- 3.) The tank disinfection specification should be listed as AWWA D105.
- 4.) The tank accessory details are included in AWWA D100. However, you should show where the overflow comes out of the tank and that adequate erosion control is provided.
- 5.) The overflow rate of the tank must be at least equal to the inflow rate. Please verify. For a four inch pipe, the maximum overflow rate is calculated at about 4 cfs.

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144

PROJECT: Harvest Dance Lodge Phase I

ENGINEER: Mountain Engineering
P. O. Box 2722
Jackson, WY 83001

OWNER: Spring Creek Ranch Co.
P. O. Box 3154
Jackson, WY 83001

WATER QUALITY DIVISION REFERENCE NUMBER: #85-14

REVIEWING ENGINEER: Ed Baruth, P.E. *EB*

DATE OF REVIEW: January 23, 1985

ACTION: **Not authorized.**

COMMENTS: Please provide provisions to not only separate water and sewer main crossings, but also service line and main line crossings. In crossings of the two different utilities, the sewer is to be placed in a separate conduit pipe when proper vertical and horizontal separation distances are not met. See page 16 of the Water Quality Chapter XI Rules and Regulations.

EB:dcn

C

REVIEW OF PLANS AND SPECIFICATIONS
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144

PROJECT: Town of Greybull

ENGINEER: Big Horn Engineering
204 South 7th
Suite 110
Worland, WY 82401

OWNER: Town of Greybull
Greybull, WY 82426

WATER QUALITY DIVISION REFERENCE NUMBER: #85-15

REVIEWING ENGINEER: Ed Baruth, P.E. *Ed*

DATE OF REVIEW: January 22, 1985

ACTION: **Not authorized.**

COMMENTS: Please forward a signed application for permit to construct to this office. The permit will be authorized when this document is received.

EB:dcn

C

PERMIT TO CONSTRUCT

Permit No. 85-16R

SEE CONDITION ON BACK OF PERMIT

MA 14689

- New
- Renewal
- Modified

Opal Water Distribution System
(Name of Facility)

This permit hereby authorizes the applicant (name and address):

Town of Opal

P.O. Box Drawer 3113

Opal, WY 83124

to construct, install, or modify a well, pumping facilities, chlorination facilities, and storage tanks facility according to the procedures and conditions of the application No. 85-16R. The facility is located in Sections 26 and 27, T21N, R114W in the County of Lincoln, in the State of Wyoming. This permit shall be effective for a period of two (2) years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

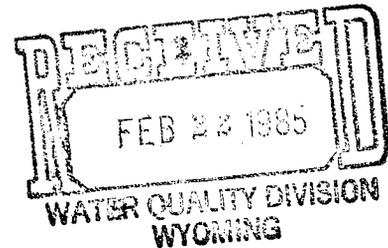
Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and during working hours, to have access to inspect the facilities, at the above location, for the purpose of compliance with the provisions of this construction permit.

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144



PROJECT: Opal Water System Improvements

ENGINEER: Greiner Engineering Sciences
1100 Pine Ave.
Kemmerer, WY 83101

OWNER: Town of Opal
P. O. Drawer 3113
Opal, WY 83124

WATER QUALITY DIVISION REFERENCE NUMBER: #85-16

REVIEWING EVALUATOR: Jeff Hermansky *Jeff*

DATE OF REVIEW: January 30, 1985

ACTION: Not authorized.

COMMENTS: Thank you for submitting the plans and specifications for the Opal Water System Improvements. I have reviewed the plans and have the following questions and comments that need to be addressed before a Permit to Construct can be issued:

1. The application form must be signed by the owner or responsible official. Therefore, George Knoll must sign the application himself.
2. This office will need a total of three sets of the plans and specifications. Upon authorization, the three sets are stamped, one set sent to Cheyenne, one retained in Lander, and the third sent to the engineer.
3. Please supply the system design criteria. Include pumping and storage sizing, and pump on/off selection, etc.
4. On sheet 4c of 5, Contract B, note 2 regarding the booster pumps, discusses levels for the pumps to turn on and off. These levels are not shown.
5. On sheet 3 of 5, Contract B, pump on and off levels are shown for the 30,000 gallon tank. These appear to be labeled backward for the well pump or are these the booster pump on/off levels?
6. The details of the 30,000 gallon storage tank give insufficient information for me to determine if the proposed tank meets standards. Therefore, shop drawings of the tank must be submitted to this office when they are available. Please be sure that the tank manufacturer understands that the tank must meet our current regulation, i.e. the Great Lakes-Upper Mississippi River Board of State Sanitary Engineers Recommended Standards for Water Works (Ten States Standards).

Review of Plans and Specifications
Opal Water System Improvements #85-16
January 30, 1985
Page Two

7. The large storage tank is shown to be 200,000 gallons on the Contract B plans and 250,000 gallons on the Contract C plans. Please correct the plans as necessary. How did you determine volume? I find the usable water storage in the tank as measured from tank bottom to the 19 foot elevation to be 230,000 gallons.

8. Does the polyethylene pipe specified as Alternate 1 for water lines in contract B, meet AWWA C901 standards?

9. The water main construction specifications for Contract C, state in disinfection method (2) that the residual chlorine level shall be at least 10 ppm after 24 hours. This must be 25 ppm after 24 hours.

Please contact me after receiving this review letter so we can discuss the aforementioned items.

JH:dcn

Cheyenne Copy

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144



PROJECT: Opal Water System Improvements

ENGINEER: Greiner Engineering Sciences
1100 Pine Ave.
Kemmerer, WY 83101

OWNER: Town of Opal
P. O. Drawer 3113
Opal, WY 83124

WATER QUALITY DIVISION REFERENCE NUMBER: #85-16

REVIEWING EVALUATOR: Jeff Hermansky

Jeff

DATE OF REVIEW: January 30, 1985

ACTION: Not authorized.

COMMENTS: Thank you for submitting the plans and specifications for the Opal Water System Improvements. I have reviewed the plans and have the following questions and comments that need to be addressed before a Permit to Construct can be issued:

1. The application form must be signed by the owner or responsible official. Therefore, George Knoll must sign the application himself.
2. This office will need a total of three sets of the plans and specifications. Upon authorization, the three sets are stamped, one set sent to Cheyenne, one retained in Lander, and the third sent to the engineer.
3. Please supply the system design criteria. Include pumping and storage sizing, and pump on/off selection, etc.
4. On sheet 4c of 5, Contract B, note 2 regarding the booster pumps, discusses levels for the pumps to turn on and off. These levels are not shown.
5. On sheet 3 of 5, Contract B, pump on and off levels are shown for the 30,000 gallon tank. These appear to be labeled backward for the well pump or are these the booster pump on/off levels?
6. The details of the 30,000 gallon storage tank give insufficient information for me to determine if the proposed tank meets standards. Therefore, shop drawings of the tank must be submitted to this office when they are available. Please be sure that the tank manufacturer understands that the tank must meet our current regulation, i.e. the Great Lakes-Upper Mississippi River Board of State Sanitary Engineers Recommended Standards for Water Works (Ten States Standards).

Review of Plans and Specifications
Opal Water System Improvements #85-16
January 30, 1985
Page Two

7. The large storage tank is shown to be 200,000 gallons on the Contract B plans and 250,000 gallons on the Contract C plans. Please correct the plans as necessary. How did you determine volume?-- I find the usable water storage in the tank as measured from tank bottom to the 19 foot elevation to be 230,000 gallons.
8. Does the polyethylene pipe specified as Alternate 1 for water lines in contract B, meet AWWA C901 standards?
9. The water main construction specifications for Contract C, state in disinfection method (2) that the residual chlorine level shall be at least 10 ppm after 24 hours. This must be 25 ppm after 24 hours.

Please contact me after receiving this review letter so we can discuss the aforementioned items.

JH:dcn

2-11-85

PERMIT TO CONSTRUCT

New
 Renewal
 Modified

Permit No. 85-17R

MA 14542

Casper - 15th Street Water Main Replacement
(Name of Facility)

This permit hereby authorizes the applicant (name and address):

Casper Board of Public Utilities

200 North David

Casper, WY 82601

to construct, install, or modify a municipal water distribution facility according to the procedures and conditions of the application No. 85-17R. The facility is located in Section 8, 9, 16, and 17, T34N, R79W in the County of Natrona, in the State of Wyoming. This permit shall be effective for a period of two (2) years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and during working hours, to have access to inspect the facilities, at the above location, for the purpose of compliance with the provisions of this construction permit.

1-31-85

Review of Plans and Specifications

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
Herschler Building, 4 West, 122 West 25th
Cheyenne, Wyoming 82002

PROJECT: 15th Street Water Main Replacement, Natrona Co.

ARCHITECT OR ENGINEER: David W. Hill, Casper BPU
200 N. David, Casper, WY 82601

APPLICANT: Casper BPU
200 N. David, Casper, WY 82601

WATER QUALITY DIVISION REFERENCE NUMBER: 85-17

REVIEWING ENGINEER: Thomas S. Norman *TSN*

DATE OF REVIEW: January 31, 1985

ACTION: NOT AUTHORIZED FOR CONSTRUCTION

COMMENTS:

1. Since there are so many sewer crossings, would you please call out the crossings that are going to require special construction because of inadequate separation. Also what do you typically do when the sewer is already in place?
2. There are several places where inadequate cover is placed over the pipe to prevent freezing problems. How do you propose to eliminate freezing?

2-13

PERMIT TO CONSTRUCT

New
 Renewal
 Modified

Permit No. 85-19
MA-14689

VILLAGE APARTMENTS
SEWER AND WATER LINES

(Name of Facility)

This permit hereby authorizes the applicant (name and address):

Village Apartments, A Partnership

856 Coffeen Avenue

Sheridan, Wyoming 82801

to construct, install, or modify a sewer line extension and water line extension

_____ facility according to the procedures and conditions of the
application No. 85-19. The facility is located in Sec. 35, T.56N., R.84W.

_____ in the County of Sheridan,
in the State of Wyoming. This permit shall be effective for a period of two (2)
years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and

PERMIT TO CONSTRUCT

- New
- Renewal
- Modified

Permit No. 85-20
 SEE CONDITIONS ATTACHED TO THIS PERMIT
 MA 19542

Lake Creek Unit - Tank Battery #1, #4, & #6
 (Name of Facility)

This permit hereby authorizes the applicant (name and address):

Texaco Producing, Inc.

P.O. Box 3360

Casper, WY 82602-3360

to construct, install, or modify a road dust control facility according to the procedures and conditions of the application No. 85-20. The facility is located in Sections 3, 4, 10, 11, 13 and 14, T43N, R92W in the County of Hot Springs, in the State of Wyoming. This permit shall be effective for a period of five years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and during working hours, to have access to inspect the facilities, at the above location, for the purpose of compliance with the provisions of this construction permit.

This permit authorizes you to dispose of 25,200 gallons annually of oil treater sludges on the adjoining 6.5 miles of roads, comprising 15.75 acres, a total liquid application of 0.25 inches.

CONDITIONS TO PERMIT TO CONSTRUCT 85-20

1. Wastewater shall be applied at a rate which will not produce runoff or ponding. Application shall not be initiated during the spring runoff period or other periods where saturated soil conditions exist.
2. The application site slope shall not exceed 8% for vehicular application or 15% for spray irrigation or irrigation by gated pipe on the contour. Vegetated areas of the site shall not be spray-irrigated where possible plant leaf injury may result from salt residue.
3. Wastewater application shall be terminated within 300 feet of the defineable high water mark of perennial and intermittent drainages, irrigation canals, lakes and reservoirs.

PERMIT TO CONSTRUCT

- New
- Renewal
- Modified

Permit No. 85-21
 SEE CONDITIONS ATTACHED TO THIS PERMIT
 MA 14542

J. F. Gardner Tank Battery
 (Name of Facility)

This permit hereby authorizes the applicant (name and address):

Texaco Producing, Inc.
P.O. Box 3360
Casper, WY 82602-3360

to construct, install, or modify a road dust control facility according to the procedures and conditions of the application No. 85-21. The facility is located in Section 2, T43N, R92W and Section 35, T44N, R92W in the Counties of Hot Springs and Washakie, in the State of Wyoming. This permit shall be effective for a period of five years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and during working hours, to have access to inspect the facilities, at the above location, for the purpose of compliance with the provisions of this construction permit.

This permit authorizes you to dispose of 4200 gallons annually of oil treater sludges on the adjoining 4 miles of road, comprising 9.7 acres, a total liquid application of 0.25 inches.

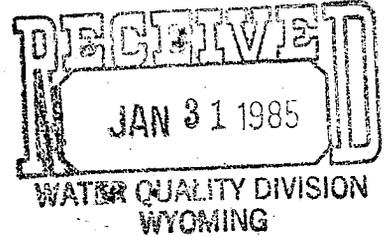
CONDITIONS TO PERMIT TO CONSTRUCT 85-21

1. Wastewater shall be applied at a rate which will not produce runoff or ponding. Application shall not be initiated during the spring runoff period or other periods where saturated soil conditions exist.
2. The application site slope shall not exceed 8% for vehicular application or 15% for spray irrigation or irrigation by gated pipe on the contour. Vegetated areas of the site shall not be spray-irrigated where possible plant leaf injury may result from salt residue.
3. Wastewater application shall be terminated within 300 feet of the defineable high water mark of perennial and intermittent drainages, irrigation canals, lakes and reservoirs.

Norma

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
2161 COFFEEN AVE., SUITE 301
SHERIDAN, WYOMING 82801



PROJECT: Hedlund Shop Wastewater Facility

ARCHITECT OR ENGINEER: Ronald J. Wiest
540 Seminoe
Casper, Wyoming 82609

WATER QUALITY DIVISION
REFERENCE NUMBER: 85-22

REVIEWING ENGINEER: Rich Ruyle *RR*

DATE OF REVIEW: January 29, 1985

ACTION: Not Authorized

COMMENTS:

- 1.) An estimation of the daily wastewater volume should be included on the application sheet. For a shop, the flow can be based on 30 gal/day/employee.
- 2.) The needed leach field area is based on daily wastewater flow divided by 0.6 gal/ft²/day. Your current leach field layout should provide plenty of area but you may want to check it.
- 3.) A detailed cross section drawing of the leach field trench is needed. I have enclosed our standard detail sheet for trenches. You can just include it with your resubmittal after making necessary modifications.
- 4.) The distance from your drinking water line to the septic tank and leach field should be shown on the plan sheet.

xc: Ron Hedlund

85-23

aba

THE STATE OF WYOMING



ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

2161 COFFEEN AVENUE,
SUITE 301

SHERIDAN, WYOMING 82801

TELEPHONE 307-672-6457

February 12, 1985

Mr. W. B. McManus
771 Airport Road
Sheridan, Wyoming 82801

Dear Mr. McManus:

I have reviewed the as-built plans for the septic system serving your duplex at 750 Absaraka Street. The purpose of the review was to ensure that the system meets DEQ design requirements.

The absorption area of the leach field has been calculated as 1470 ft². Based on a wastewater flow rate of 150 gallons/day/bedroom (900 gpd), the leach field is of adequate size for a soil having a percolation rate of 10 min/inch. Using the soil description in the plans and my knowledge of soil in the area, 10 min/inch is a realistic estimate of the actual percolation rate.

The septic tank and leach field, as depicted on the as built, are sufficiently sized and the system is hereby approved. Because it is already constructed a Permit to Construct cannot be issued, but this letter serves essentially the same purpose. If the system shows signs of failure, it will, of course, have to be modified or otherwise repaired. I suggest hooking up to the City sewer at the earliest possible date.

Please be advised for future reference that a Permit to Construct is needed from this agency or Sheridan County prior to construction of any wastewater disposal facility.

Thank you for your cooperation.

Sincerely,

A handwritten signature in cursive script that reads "Rich Ruyle".

Rich Ruyle
District Supervisor

RR:ls

PERMIT TO CONSTRUCT

- New
- Renewal
- Modified

Permit No. 85-24R

MA 14542

F.E. Warren AFB Shops - Peacekeeper Project
(Name of Facility)

This permit hereby authorizes the applicant (name and address):

Base Civil Engineer

90 CSG/DE

F.E. Warren AFB, WY 82005

to construct, install, or modify a municipal water distribution and wastewater collection/treatment (oil-grease separator) systems according to the procedures and conditions of the application No. 85-24R. The facility is located in Section 34, T14N, R67W in the County of Laramie, in the State of Wyoming. This permit shall be effective for a period of two (2) years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and during working hours, to have access to inspect the facilities, at the above location, for the purpose of compliance with the provisions of this construction permit.

2-6-85

Review of Plans and Specifications

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
Herschler Building, 4 West, 122 West 25th
Cheyenne, Wyoming 82002

PROJECT: F.E. Warren AFB Shops, Peacekeeper Project, Laramie Co.

ARCHITECT OR ENGINEER: J. David Konkell, TSP Engineers
One South Scott, Suite 1, Sheridan, WY 82801

APPLICANT: Base Civil Engineer
90 CSG/DE, F.E. Warren AFB, WY 82005

WATER QUALITY DIVISION REFERENCE NUMBER: 85-24

REVIEWING ENGINEER:  LeRoy C. Feusner, P.E.

DATE OF REVIEW: February 5, 1985

ACTION: NOT AUTHORIZED FOR CONSTRUCTION

COMMENTS:

A. Proposed Plans Review

1. Provide three copies of the following original project drawings:
 - a. Waterline details (Sheet #5)
 - b. Location plan (Sheet #6)
2. A sewer manhole will be required at the intersection of the new six inch sewer service and the six inch VCP sewer outside the building. Why not connect them at Manhole MHA6.1?
3. No specifications were provided for the sand/oil interceptor. How will the tank be made water tight?
4. The inlet pipes for the interceptor should be at least three inches higher than the outlet pipe to prevent backflow of wastewater into the building and to provide waste oil storage capacity in the tank.
5. To prevent air locks in the building sewer system, open-ended T pipes should be installed in the inlet and outlet pipes of the interceptor.
6. The concrete stilling partition should be lowered at least two feet.
7. Each tank compartment should be properly vented to atmosphere.
8. A cleanout having a minimum diameter of six inches should be provided in the tank between the stilling partition and outlet pipe to facilitate easy pumping of both sand and oil. This cleanout should extend at least six inches above ground level and be capped.
9. Provide legal section number for location of project.

B. Specifications Review

1. Part 5.1.4, page 2L-5, Filament Wound Reinforced Thermosetting Resin Pipe (RTRP-I). This material is not currently authorized for water distribution pipe in the State of Wyoming unless it meets AWWA Specification C950. If it does, add to specifications. Otherwise, remove reference from specifications or provide manufacturer engineering design data/information to this office for our review to determine acceptance as a water distribution system pipe material.
2. Part 5.1.5, page 2L-5, Centrifugally Cast Reinforced Thermosetting Resin Pipe (RTRP-II). Same as A1 comment above.
3. Part 5.1.6, page 2L-5, Reinforced Plastic Martar Pressure Pipe (RPMP). Same as A1 comment above.
4. Part 5.1.7, page 2L-5, Filament Wound and Centrifugally Cast Reinforced Thermosetting Resin Pipe and Reinforced Plastic Martar Pressure Pipe. Same as A1 comment above.

NOTE: In addition to the asbestos-cement pipe, ductile iron pipe, and PVC plastic pipe contained in the project water distribution system specifications, the following water distribution system pipe materials are currently authorized in Wyoming: (1) Glass fiber-reinforced thermosetting-resin pressure pipe (AWWA C950); (2) Polyethylene (AWWA C901); and (3) Polybutylene (AWWA C902).

5. Packing and jointing materials used in the joints of pipe must be flexible, durable, and compatible with the pipe material. Parts 5.2 and 5.3, pages 2L-5/6, need to be modified to reflect acceptable materials.
6. What will be the water main pressure at the site of the proposed shop complex?
7. Part 6.3.1, page 2L-9, Adjacent Facilities, Sewer Lines. Minimum horizontal separation shall be ten feet where the water main is less than 18 inches (not 12 inches) above the elevation of the sewer. Minimum vertical separation shall be 18 inches at crossings. Joints in sewers at crossings shall be located at least ten feet from water mains. The upper line of a crossing shall be specially supported. Where vertical and/or horizontal clearances cannot be maintained, the sewer shall be placed in a separate conduit pipe.
8. Part 7.2, page 2L-14, Leakage Test. Show how stated leakage equation, $L=0.000135NDX$, simplifies from the standard AWWA C600, Section 4, Hydrostatic Testing, equation:

$$L = \frac{SD\sqrt{P}}{133,200}$$

9. Part 5.1, page 2M-4, Adjacent Facilities, Water Lines. Same as comment B7 above.

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
2161 COFFEEN AVE., SUITE 601
SHERIDAN, WYOMING 82801

PROJECT: Town of Clearmont, Expansion
of Facultative Lagoon System

ARCHITECT OR ENGINEER: Tom Barker
Centennial Engineering
237 North Main
Sheridan, Wyoming 82801

REVIEWING ENGINEER: Rich Ruyle

WATER QUALITY DIVISION
REFERENCE NUMBER: 85-25R

DATE OF REVIEW: May 24, 1985

ACTION: Not Authorized

COMMENTS:

The following addresses each of your responses to our March 7, 1985 review in order and indicates what information is still lacking:

- 1.) Clearmont's NPDES discharge permit expires on September 30, 1985. This is to remind you and the Town that it should be renewed at that time.
- 2.) Agreed.
- 3.) Agreed.
- 4.) Valve in piping between cells 1 and 2 not shown on plans.
- 5.) Note on piping from cell 1 to interconnecting manhole not on plans.
- 6.) Agreed.
- 7.) Agreed.
- 8.) Agreed.
- 9.) Raising of valve handles in interconnecting manhole not shown on plans.

- 10.) Change has been made.
- 11.) Change has been made.
- 12.) Agreed.
- 13.) Agreed.
- 14.) Agreed.
- 15.) Change has been made.
- 16.) In order to maintain the integrity of cell 3's bottom and sidewall seal, an upward hydrostatic pressure on the seal must not be allowed to occur as the local groundwater level rises after completion of the dewatering operation. As stated previously, this will entail continuing to dewater the cell 3 area until the water level in cell 3 is above the normal local groundwater level. This is in opposition to specification 5.03 which states dewatering will continue "until the placement of fill is above the natural groundwater elevation." Prefilling the cell may be advisable. The specifications should be changed to reflect the necessary dewatering program.
- 17.) Based on the quality of the local groundwater and the permeability of the soil, we agree that a 10 foot thick sidewall embankment is more appropriate than a synthetic liner.
- 18.) Measuring groundwater infiltration into cell 3 is not an acceptable test of the lagoon seal. The program should consist of permeability tests after construction of the lagoon is complete.
- 19.) The capacities listed in the Reservoir Capacity Table are somewhat less than those listed in Engineering Design Report:

	<u>Capacity Table</u>	<u>Design Report</u>
Cell 3	5.47 MG	6.16 MG
Top 4' Cell 3	2.37 MG	2.89 MG
Top 4' Cell 2 and 3	3.21	3.70
Cell 1, 2, and 3	7.52	7.90

However, I have verified the capacities given in the table and they are sufficient to provide the needed retention times.

Review of Plans and Specifications
Clearmont Expansion of Facultative
Lagoon System, Reference 85-25R
May 24, 1985
Page Three

- 20.) Shown on plans.
- 21.) Included in specifications.
- 22.) Agreed.
- 23.) Flood cross sections not received.
- 24.) Agreed.
- 25.) Plans and specifications not signed.
- 26.) Application form not received.

xc: Michael F. Ormsby
Farmers Home Administration
P.O. Box 820
Casper, WY 82602

WATER QUALITY DIVISION
GROUNDWATER SECTION
PERMIT APPLICATION REVIEW

*Norman
Ret to Sheridan
5-15-85*

APPLICATION NUMBER 85-25R

DATE SUBMITTED FOR REVIEW 5-3-85

NAME AND LOCATION OF FACILITY FACULTATIVE LAGOON
CLEARMONT, Wyoming

I have reviewed the plans and specifications with regard to all aspects of groundwater quality and find the following:

- () No comment. The submittal is consistent with current groundwater protection procedures and requirements.
- () Comments attached.

SIGNED *Richard Lunn*
TITLE *Eng. Eval*
DATE *5-14-85*

ACCEPTED FOR RECORD *5/15/85*
(Date)

[Signature]
Groundwater Control Supervisor



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

MEMORANDUM

TO: Rich Ruyle, District Engineer

FROM: Dick Lennox, Engineering Evaluator *DL*

DATE: May 14, 1985

SUBJECT: Facultative lagoon system, Clearmont, Wyoming, WQD Ref. No. 85-25

1. I have reviewed the latest submittal from Centennial Engineering and Research, Inc.; letters dated April 26, 1985 and April 29, 1985 and have the following comments.
 - a. The permeability of the embankments proposed does not meet the permeability requirement of 1×10^{-7} cm/sec; however, a review of the chemical concentrations for water parameters indicates that local groundwaters will not be adversely affected by exfiltration from the new cell #3.
 - b. Local groundwaters are classified as Class III based on high concentration of TDS, sulfates, ammonia and iron.
2. The one concern that remains is to ensure that a proper dewatering program is incorporated in any final plans submitted for the permit to construct. Design calculations should also be provided concerning effects of infiltration after the lagoon is constructed relative to the effects of changing hydrostatic levels (head) inside the lagoon versus the changing groundwater levels outside the lagoon.
3. Based on the information provided it would be more appropriate to go with a 10 foot thick embankment than with a synthetic liner with the attendant problems associated with keeping the liner anchored against the hydrostatic head from the local groundwaters.

DL/pjb

cc: A. J. Mancini
File

WATER QUALITY DIVISION
GROUNDWATER SECTION
PERMIT APPLICATION REVIEW

returned
to Sheridan
3/22/85

APPLICATION NUMBER 85-25

DATE SUBMITTED FOR REVIEW 3-11-85

NAME AND LOCATION OF FACILITY Facultative Lagoon System
Clearmont, Wyoming
SHERIDAN CO.

I have reviewed the plans and specifications with regard to all aspects of groundwater quality and find the following:

- () No comment. The submittal is consistent with current groundwater protection procedures and requirements.
- () Comments attached.

SIGNED Richard Lennep
TITLE Eng. Paul
DATE 3-22-85

ACCEPTED FOR RECORD 3/22/85
(Date)

ajm
Groundwater Control Supervisor

Memorandum

To: Rich Ruyle, District Engineer

Fm: Dick Lennox, Engineering Evaluator

Subj: Faculative Lagoon System
Clearmont, Wy; 85-25

Date: 3-22-85

1. I have reviewed the subject application for groundwater concerns and have the following comments:

a. I agree with your letter of March 7, 1985 which states that additional documentation concerning the permeability of the side walls of the dikes is required in order to show that there will be no migration of wastewater to the local groundwater regime.

b. I have reviewed the State Engineers' Well Study and have determined that there are several local wells that could be impacted since groundwater depths are very shallow, ie. 5 to 30 ft, for domestic and stock wells. The municipal well is listed as having a depth of water (SWL) as 90 ft.

cc: A.J. Mancini, Groundwater Control Supervisor
file

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
2161 COFFEEN AVE., SUITE 301
SHERIDAN, WYOMING 82801

PROJECT: Expansion of Facultative Lagoon
System, Clearmont, Wyoming

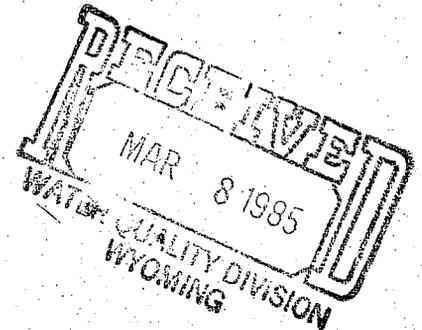
ARCHITECT OR ENGINEER: Thomas L. Barker
Centennial Engineering and Research, Inc.
237 North Main, Suite 1
Sheridan, Wyoming 82801

WATER QUALITY DIVISION
REFERENCE NUMBER: 85-25

REVIEWING ENGINEERS: Rich Ruyle and Susan Holmes

DATE OF REVIEW: March 7, 1985

ACTION: Not Authorized



COMMENTS:

- 1) A NPDES permit should be obtained for this facility. Although discharge will be seasonal and will not occur until design conditions are reached, the discharge will flow to surface waters and therefore a permit is required. In addition, no verification has been provided that the land applied effluent will not reach Clear Creek. The generous application rate and proximity of the irrigated land to the Creek indicates that some irrigation water may reach Clear Creek. This condition also dictates that a NPDES permit is required.
- 2) Chapter XI allows a BOD loading rate of 40 lb/acre/day for the primary cells of facultative lagoons. Using that criteria, the largest population that this facility can be considered designed for is 300.
- 3) Has the plugging problem of the existing distribution vault been addressed? Is there a six inch drop from the inlet to the operating level of the cells? If so, is there any way to provide more of a drop? I would suggest, at a minimum, jetting out the inlet pipes.
- 4) The crossover pipe between Cells 1 and 2 should contain a valve to facilitate isolation of either of the cells.

Review of Plans and Specifications
Expansion of Facultative Lagoon
System, Clearmont, Wyoming, 85-25
March 7, 1985
Page Two

- 5) Plans for the transfer piping from Cell 1 to the interconnecting manhole are not included. Will the pipe details and elevations be the same as the piping from Cell 2?
- 6) Removable pipe sections for controlling the level should also be available for Cell 1 in the event the two cells are operated in parallel again. Do you anticipate this happening?
- 7) Can you verify that the removable PVC pipe sections used for level control will not tend to float and will remain in place during operation? What is the connection between sections?
- 8) Bypassing Cell 3 with the pipe from the interconnecting manhole to the waste ditch is not really necessary. If it is used, a valve is needed on the pipe from the manhole to Cell 3.
- 9) The valves in the interconnecting manhole should be specified. Also, verify that their handles are well above the HWL in the manhole. An operator should be able to reach them without getting wet.
- 10) The interconnecting piping into Cell 3 should discharge at the bottom of Cell 3 at least 10 feet from the toe of the embankment on a minimum four foot by four foot concrete apron.
- 11) There should be another outlet pipe from Cell 3 at the HWL. The pipe can be connected to the outlet manhole.
- 12) The irrigation pipe from Cell 3 should preferably have the minimum slope required for eight inch sewers (0.40%). Can the grade be increased?
- 13) The LWL of Cell 3 should preferably be lower. Again, as I recall, this is limited by the need for gravity flow to the irrigation ditch. Is that correct?
- 14) We are a little concerned that it will be difficult to read the V-notch weir and that splashing in the outlet manhole will minimize the quiescent zone upstream of the weir that is necessary for an accurate reading. Is it possible to put the weir at the outlet pipe in the waste ditch?

Review of Plans and Specifications
Expansion of Facultative Lagoon
System, Clearmont, Wyoming, 85-25
March 7, 1985
Page Three

- 15) Specification 5.06 (Embankment Construction) is a little vague in its description of rocky soil that is acceptable for dike construction. Our requirements call for soil that is free from organic material, rocks larger than six inches, and construction debris.

Your application is being reviewed by our Groundwater Section in Cheyenne. However, we have noted some groundwater concerns:

- 16) Lowering of the groundwater during the construction of Cell 3 is only recommended in the specifications. It is likely that dewatering will be required for proper construction to take place and will have to be continued until the water level in Cell 3 is above the local groundwater level.

If there is a discharge from dewatering operations, an NPDES discharge permit will be required and should be obtained prior to construction.

- 17) Since the claystone layer does not extend up the side walls of Cell 3, it is not certain that sufficient seepage control will be provided. Documentation of the side wall permeability will be required.
- 18) Chapter XI requires a testing program to demonstrate the effectiveness of the lagoon seal prior to filling. Details should be included in the specifications.
- 19) We need the volume calculations for lagoon storage capacities cited in the report. These include 6.16 million gallons for Cell 3, 2.89 million gallons in the top four feet of Cell 3, and 3.70 million gallons in the top four feet of all three cells (the level of Cell 1 cannot be controlled), 2.8 million gallons in the facility at LWL, and 7.9 million gallons at HWL. Some of these numbers appear inconsistent.
- 20) Riprap should be provided for the new cell unless it is demonstrated that it is not needed.
- 21) Seeding details are needed for exterior and interior dike slopes that are not riprapped.
- 22) Please show a diversion ditch to route upland runoff around the lagoon.

Review of Plans and Specifications
Expansion of Facultative Lagoon
System, Clearmont, Wyoming, 85-25
March 7, 1985
Page Four

- 23) I do not see the accompanying drawing referred to in the Engineering Report that shows cross sections of Clear Creek during a 25 and 100 year flood.
- 24) No slope is specified for the irrigation ditches. How is the effluent to be distributed from the ditch to the adjacent land? Please verify that runoff from the irrigated land will not enter Clear Creek. If this is not possible, the NPDES discharge permit will also apply for the irrigation water, including the need for flow measurement. The splitter box could conceivably serve this purpose if a staff gauge is used. Another option is to provide a collection ditch adjacent to the river to catch irrigation runoff.
- 25) The Plans and Specifications must be signed by a Professional Engineer registered in Wyoming.
- 26) The application must be signed by a representative of the Town, not the engineer.
- 27) In the future, please include three copies of plans, specifications and supporting information when applying for Permit to Construct.

xc: Worland FmHA
Dick Lennox

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
2161 COFFEEN AVE., SUITE 601
SHERIDAN, WYOMING 82801

PROJECT: Phase II Water Transmission Line and Water
Storage Tank, Kaycee, Wyoming

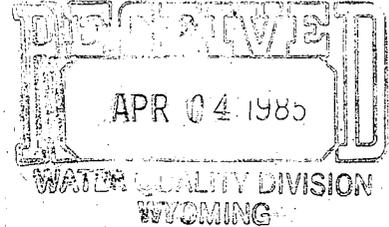
ARCHITECT OR ENGINEER: James S. Willey
Engineering Inc. of Wyoming
45 East Loucks, Suite 301
Sheridan, Wyoming 82801

WATER QUALITY DIVISION
REFERENCE NUMBER: 85-27R

REVIEWING ENGINEER: Rich Ruyle *RR*

DATE OF REVIEW: April 2, 1985

ACTION: Not Authorized



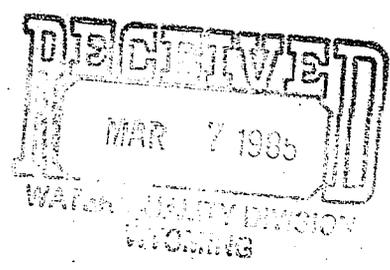
COMMENTS:

- 1.) Seeing as the existing water tank will be filled from the new well and transmission line, there must be a means of regulating flow into it. Will an altitude valve be used?
- 2.) The calculations used to verify adequate pressure during fireflow should be shown in more detail (response #2 in your letter of March 8, 1985). Namely, the elevations of the tank water levels and the points in the distribution system used in the calculations are needed.
- 3.) Item #8 in my previous review was not addressed. Even though new service lines are not being installed, a specification for the water meter yoke and piping is needed.
- 4.) How was the fireflow demand of four hours determined?

Norma

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
2161 COFFEEN AVE., SUITE 301
SHERIDAN, WYOMING 82801



PROJECT: Phase II Water Transmission Line and Water Storage Tank, Kaycee, Wyoming

ARCHITECT OR ENGINEER: James S. Willey
Engineering, Inc. of Wyoming
45 East Loucks, Suite 301
Sheridan, Wyoming 82801

WATER QUALITY DIVISION
REFERENCE NUMBER: 85-27

REVIEWING ENGINEERS: Rich Ruyle and Susan Holmes

DATE OF REVIEW: March 1, 1985

ACTION: Not Authorized

COMMENTS:

- 1) Verification is needed that the total system storage is equal to the average day demand plus fire storage as recommended by the State Fire Marshall or local fire agency.
- 2) Some verification (not necessarily a Hardy-Cross analysis) is needed that pressure in the distribution lines will fall within prescribed limits, i.e. less than 100 psi under normal conditions and greater than 20 psi during fire flow.
- 3) Will the existing water tanks be filled from the new well and transmission line? If so, do they have the same HWL as the new tank and can the headloss through the distribution system be compensated for? If the existing water treatment plant and pump will be used to fill the existing tanks, how will the two systems be operated independently?
- 4) The painting of the water tank should be in compliance with AWWA D102.
- 5) The overflow from the tank must be within 12" - 24" of the ground. Verification is needed that the overflow rate will at least be equal to the filling rate of the tank.
- 6) What is the purpose of the pipe coupling and flanged nozzle at the top of the tank?

Phase II Water Transmission Line and
Water Storage Tank, Kaycee, Wyoming
85-27

March 1, 1985

Page Two

- 7) Residential water system connections must have a check valve at the meter or service line for backflow prevention. See Chapter XII for commercial and industrial backflow prevention requirements.
- 8) A detail and specification of the entire new section of service lines to be installed is needed.
- 9) The depth of pipe as shown on the Air Release Valve Detail and the Typical Bedding Detail is inconsistent with what is called out on the profile and in the specifications.
- 10) Are pipe supports necessary for the 7.5' length of pipe in the Valve Pit near the tank?
- 11) Access to the Valve Pit appears difficult. Perhaps manhole steps would help.
- 12) Marker posts at the water line drains may be very useful in locating the drains in the future.

xc: Ed Chase, FmHA

PERMIT TO CONSTRUCT

- New
- Renewal
- Modified

Permit No. 85-28
SEE CONDITIONS ON BACK OF PERMIT

Hogsback Field Monitoring Wells
(Name of Facility)

This permit hereby authorizes the applicant (name and address):

Mobile Oil Corporation

P.O. Box 370

Big Piney, WY 83113

to construct, install, or modify a network of 18 monitor wells facility according to the procedures and conditions of the application No: 85-28. The facility is located in NE1/4 Section 12, T27N, R114W in the County of Sublette, in the State of Wyoming.

This permit shall be effective for a period of five (5) years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and during working hours, to have access to inspect the facilities, at the above location, for the purpose of compliance with the provisions of this construction permit.



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

February 15, 1985

Mobil Oil Corporation
Attn: Mr. Gene Riddell
P.O. Box 370
Big Piney, WY 83113

RE: Hogsback Field Monitoring Wells, DEQ/WQD Permit #85-28

Dear Mr. Riddell:

Enclosed is a signed copy of the permit for 18 monitor wells constructed by Mobil in the vicinity of the North Hogsback Oil Seep. I want to thank you for Mobil's timely attention to this matter.

Sincerely,

A handwritten signature in cursive script that reads "Katherine J. Laudon".

Katherine J. Laudon
Groundwater Engineer Evaluator

KJL/nc
Enclosures

cc: Jack Bedessem, DEQ/WQD Lander
R. W. Davis, Geotechnical Corp., P.O. Box 1292, Laramie, WY 82070



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

*Department of Environmental Quality
Water Quality Division*

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

October 1, 1985

B. H. Balthrop
District Manager
Amoco Production Company
P.O. Box 1400
Riverton, WY 82501

Re: Permit GPC 85-29R

Dear Mr. Balthrop:

Please find enclosed the application, GPC 85-29R, which you cancelled per your letter of July 17, 1985 and which we verified by certified letter on October 1, 1985.

Sincerely,

Kate Laudon

Kate Laudon
Groundwater Engineer Evaluator

KL/nc

10-2-85



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

*Department of Environmental Quality
Water Quality Division*

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

October 1, 1985

CERTIFIED

B. H. Balthrop
District Manager
Amoco Production Company
P.O. Box 1400
Riverton, WY 82501

Re: Permit GPC 85-29R

Dear Mr. Balthrop:

Your application is considered cancelled and is being returned under separate cover with the assumption that you do not wish to proceed with obtaining a permit to discharge as indicated in your letter of July 17, 1985.

This project has not been permitted. Operation of this facility without a permit is a violation of the Environmental Quality Act and punishable with fines not to exceed \$10,000 per day of violation. If this project has already been constructed, it is your responsibility to immediately contact this office for further instruction. If you wish to reconsider construction of this facility, then application procedures pursuant to Chapter IX, Water Quality Rules & Regulations, must be followed.

Sincerely,

William L. Garland
Administrator

WLG/KL/nc

cc: Paul Osborne, U.S. EPA, Denver
Donald Basko, OGEC
Richard Stockdale, State Engineer's Office
A. J. Mancini, DEQ/WQD, Cheyenne



Amoco Production Company

Post Office Box 1400
Riverton, Wyoming 82501
307-856-8111

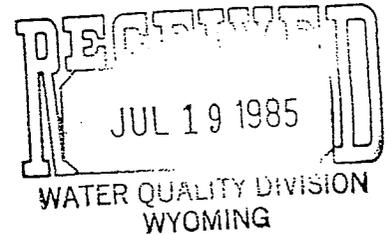
B. H. Balthrop
District Manager

July 17, 1985

Department of Environmental Quality
Water Quality Division
Herschler Building
Cheyenne, WY 82002

Attn: A. J. Mancini

File: BHB-965-769.6-WF



Subsurface Discharge Permit GPC 85-29R,
Beaver Creek Gas Plant Disposal Well #20

After much evaluation, Amoco has decided to cancel our application for subsurface discharge at Beaver Creek #20. We feel our present facilities are sufficient.

If you have any questions, please contact Leane Wayne in Riverton (307) 856-8111, ext. 207.

LDW/drr/PERMT1/jjj

cc: Paul Osborne, EPA
Mike Penz, State Engineer's Office
Donald Basko, Oil & Gas Conservation Commission

7-2-85



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

July 2, 1985

Mr. B. H. Balthrop
District Manager
Amoco Production Company
P.O. Box 1400
Riverton, WY 82501

RE: WDEQ/WQD Subsurface Discharge Permit Application GPC 85-29, Amoco Beaver
Creek Gas Plant Disposal Well #20

Dear Mr. Balthrop:

Additional review comments concerning your application for Groundwater Pollution Control Permit GPC 85-29R have been received by the Water Quality Division. Most of these comments elaborate on points raised in my June 28, 1985 letter.

1. More information is needed on most of the wells in the area of review to show whether there is cement outside of the pipe opposite the Cody Sandstone. At a minimum, the company should provide information on hole size, estimated cement top in each casing string, and the location of perforations.
2. Well #21 MV is listed as a plugged and abandoned Mesaverde well. There is, however, no information on the original depth or the nature of the plug.
3. There is no site specific data on the water quality of the aquifers which overlie the Second Cody Member. Given the number of wells in this area some data should be available. The application indicates that attachment 5.h. is an analysis of background water quality of the Cody Member. Given the chrome content, this water appears to be plant waste water. The applicant should provide specific data on the quality of the second Cody Member, each of the other major water bearing units of the Mesaverde, the Fort Union Formation and the Wind River Formation.
4. The information on the geology given in attachment 5.f/g is inadequate to show the geology in the Beaver Creek field even if the chart could be read. Site specific well logs and associated cross sections across the site should be provided along with a brief narrative discussion which ties the geology and hydrology together.

5. The applicant states that the proposed injection reservoir (Second Cody Sandstone) is adequately separated from significant sources of drinking water. The application does not provide any data to support this conclusion. For instance, there are no details on the depth to the various aquifers which overlie the Reservoir and the thickness of the various confining zones. The reservoir must be separated from all sources of water which have a TDS of less than 10,000 mg/liter.
6. The application indicates that the maximum injection pressure will be about 2,000 psig. There is no evidence provided, however, to show that the overlying confining layer will not be fractured. A quick calculation of the sand face pressure is as follows:

Sand face pressure (SFP) = depth of injection zone x 0.433psi/ft) x specific gravity + surface injection pressure - tubing friction loss.

Depth of 2nd Cody = 3,640 ft.
Specific gravity + 1.005

Tubing friction losses = 15 psi/1,000 ft.*
SFP = (3,630 x 0.433) x 1.005 + 2,000 - 54 = 1,580 + 2,000 - 54 = 3,526 psi

Pressure gradient = 3,526/3,630 = 0.97 psi/ft.

*Estimated from Stimulation Fluid Friction Pressure Handbook by the Western Company.

The estimated pressure gradient of 0.97 psi/ft. is very high. Estimates of fracture gradients based on tests elsewhere in the region normally are less than 0.80 psi/ft. The applicant should submit some additional data based on either actual Mesaverde fracture tests or estimates made using appropriate empirical equations such as the one given in the Journal of Petroleum Technology, AIME, Oct., 1969 (page 1359).

7. The applicant indicates that the maximum discharge rate will be 1,100 barrels/day and that all water will be plant waste. It is my understanding that produced water will also be injected into the well. It is not clear as to whether this is included in the 1,100 barrels/day estimate. This point should be clarified. It would also be helpful if the applicant could provide details on the quality and quantity of the various waste streams which are being blended to form the injection stream. Some discussion on the variability of the blended waste stream over time would also be appropriate.
8. Attachment 5.p indicates that the well annulus pressure will be monitored by making daily readings of a pressure gage located at the well. This does not meet the requirement that a Class I well have a continuous recording of annulus pressure (40 CFR part 146.13(6)(2)). Daily readings would, however, be a good backup for a continuous recorder and would provide a means of quality control. Because of the natural pressure fluctuations in the annulus which can occur as a result of the temperature variations of the injected fluid, the annulus should be placed under a positive pressure (100-200 psi) by pumping additional fluid into the space.

Mr. B. H. Balthrop
July 2, 1985
Page 3

Please respond to these additional comments along with those included in my last letter. Thank you for your attention to this matter.

Sincerely,

Katherine J. Laudon

Katherine J. Laudon
Groundwater Engineer Evaluator

KJL/nc

cc: Paul Osborne, EPA
Mike Penz, State Engineers Office
Donald Basko, Oil & Gas Conservation Commission
A. J. Mancini, DEQ/WQD, Groundwater Control Supervisor

7-1-85



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

June 28, 1985

B. H. Balthrop, District Manager
Amoco Production Company
P.O. Box 1400
Riverton, WY 82501

RE: WDEQ/WQD Subsurface Discharge Permit Application GPC 85-29R, Amoco
Beaver Creek Gas Plant Disposal Well #20

Dear Mr. Balthrop:

Enclosed are review comments for your application for Groundwater Pollution Control Permit GPC 85-29R. This number has been assigned to the application for a second disposal well at the Beaver Creek Gas Plant. The State Engineer's Office and the Water Quality Division have reviewed the permit application. The EPA is also reviewing the application, but we have not received their comments yet.

Before we can consider your permit application complete, the following comments should be addressed.

1. An "Area of Review" for this permit application must be defined. Please refer to Chapter IX, Section 2.b. of the Water Quality Division Rules and Regulations for a definition of the "Area of Review".
2. Additional information is needed on the wells listed in attachment 5c. Please define the abbreviations used under the heading "Status". The producing horizons for each well should be provided, as well as the current ownership status of each well.
3. The locations of the water wells listed in attachment 5c should be shown on a map. The depths and screened intervals for each water well should also be provided, as well as water quality and use.
4. The water quality data presented in attachment 5d is general in scope. Site specific water quality data from well DW #20 must be provided so that the groundwater in the injection zone can be classified. At a minimum, the following parameters should be sampled to define background water quality, pH, TDS, TSS, sulfide, iron, hexavalent chromium, total chromium, aluminum, phenol, oil and grease, sulfate, chloride, BOD5, COD.

5. Item 5d of Form GPC 4 indicates that maps and cross sections indicating the general vertical and lateral limits of all underground sources of water within the area of review including the direction of water movement must be provided.
6. Attachment 5f/g does not include a cross section of the area, and does not address structural geology. This information should be provided for the area of review.
7. Documentation should be provided on the nature and thickness of confining zones located above and below the proposed injection zone.
8. More detailed information on plugging and abandonment procedures should be provided. Refer to Chapter XI, Part G, Section 70 of the Water Quality Division Rules and Regulations for DEQ requirements.
9. Detailed information on proposed formation testing procedures must be provided. At a minimum the casing and formation must be pressure tested to the maximum expected injection pressure. Item 6 of form GPC 4 specifies that "Information on fluid pressure, temperature, fracture pressure, and other physical and chemical characteristics of the receiver must be submitted before subsurface discharge (injection) will be authorized."
10. More detail on the make-up of the waste stream must be provided. This information should address the quantity, variability and chemical quality of the various components of the waste stream listed in attachment 5j.
11. The method of treatment to be employed prior to discharge to Beaver Creek should be described. Also any discharge limits associated with NPDES permit #Wy-0000248 should be included in attachment 5j.
12. Item 9 of application Form GPC 4 states that "Well mechanical integrity must be proven (demonstrated) before surface discharge (injection) can commence, and at least once every five (5) years thereafter during the life of the well. A well has mechanical integrity if there is no significant leak in the casing, tubing or packer; and there is no significant movement of discharge (injected) fluid into an underground source of usable water through vertical channels adjacent to the well bore. The absence of leaks will be determined by an acceptable pressure test. The absence of significant fluid movement will be determined by the results and interpretation of appropriate geophysical log(s), such as a cement-bond, temperature, noise or other log, or combination of logs; or another technique acceptable to the Administrator. The results of the initial mechanical integrity testing must be submitted and approved before a subsurface discharge can commence."

Your permit application should include a description of the geophysical logs that will be run to document the absence of significant fluid movement after the mechanical integrity test has been run.

13. A 7 day circular chart or strip chart that directly measures the rate of BBLs/day would be a preferable alternative to the proposed orifice meter. This will allow DEQ/WQD personnel to more comprehensively review Amoco's file during a plant visit.

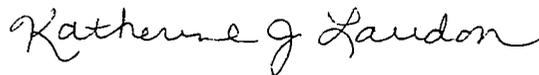
B. H. Balthrop, District Manager
June 28, 1985
Page 3

Provisions for recalibration of the pressure and rate charts on a periodic basis should also be proposed and "periodic" should be defined.

14. The grab samples of the discharge water should be sampled for the following parameters at a minimum pH, TDS, TSS, sulfide, iron, hexavalent chromium, total chromium, aluminum, phenol, oil and grease, sulfate, chloride, BOD5, COD.

Additional comments will be forwarded to you when we receive them from the EPA.

Sincerely,



Katherine J. Laudon
Groundwater Engineer Evaluator

KJL/nc

cc: Paul Osborne, EPA
Mike Penz, State Engineer Office
Donald Basko, Oil & Gas Conservation Commission
A. J. Mancini, Groundwater Supervisor, DEQ/WQD



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

May 31, 1985

Mr. Richard Stockdale
State Engineers Office
Herschler Bldg., 4 East
Cheyenne, WY 82002

RE: Beaver Creek Gas Plant Disposal Well #20, DEQ/WQD Reference Number
85-29R

Dear Dick:

Enclosed is an application for a Class I injection permit, submitted recently by Amoco for their Beaver Creek Gas Plant in Fremont County. Please review the application and return your comments to me.

Sincerely,

Kate Laudon

Kate Laudon
Water Quality Division
Groundwater Engineering Evaluator

KL/nc

Enclosures



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

May 31, 1985

Mr. Donald Basko
State Oil & Gas Supervisor
Oil and Gas Commission
777 West 1st Street
Box 2640
Casper, WY 82604

RE: Beaver Creek Gas Plant Disposal Well #20, DEQ/WQD Reference Number
85-29R

Dear Mr. Basko:

Enclosed is an application for a Class I injection permit, submitted recently by Amoco for their Beaver Creek Gas Plant in Fremont County. Please review the application and return your comments to me.

Sincerely,

Kate Laudon

Kate Laudon
Water Quality Division
Groundwater Engineering Evaluator

KL/nc

Enclosures



THE STATE OF WYOMING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

May 31, 1985

Mr. Paul Osborne
US EPA
One Denver Place
999 18th St., Suite 130
Denver, CO 80202-2413

RE: Beaver Creek Gas Plant Disposal Well #20, DEQ/WQD Reference Number
85-29R

Dear Paul:

Enclosed is an application for a Class I injection permit, submitted recently by Amoco for their Beaver Creek Gas Plant in Fremont County. Please review the application and return your comments to me.

Sincerely,

Kate Laudon

Kate Laudon
Water Quality Division
Groundwater Engineering Evaluator

KL/nc

Enclosures

2-7-85



ED HERSCHLER
GOVERNOR

Department of Environmental Quality
Water Quality Division

HERSCHLER BUILDING

CHEYENNE, WYOMING 82002

TELEPHONE 307 777-7781

February 7, 1985

Mr. B. H. Balthrop
District Manager
Amoco Production Co.
P.O. Box 1400
Riverton, WY 82501

RE: Application GPC 85-29. Beaver Creek Gas Plant Disposal Well #20, SWSW
Section 10, T33N, R96W, Fremont County

Dear Mr. Balthrop:

We have received the subject application from Amoco. This letter is to inform you that the application form used and submitted by Amoco is dated. Three copies of the acceptable form are enclosed with this letter. The newer form was adopted to conform more closely with requirements of the EPA UIC program (Wyoming has assumed primacy for the program).

Please complete and submit three copies of the new form for the subject well. Submit any additional information required by the application and not previously submitted.

Also enclosed with this letter are three copies of Form GPC 8, Certification of Financial Responsibility. Complete these forms and submit them with the new application forms.

Sincerely,

A handwritten signature in cursive script that reads "A. J. Mancini".

A. J. Mancini
Groundwater Control Supervisor

AJM/nc
Enclosures

WATER QUALITY DIVISION
GROUNDWATER SECTION
PERMIT APPLICATION REVIEW

*Kate
Laudon*

APPLICATION NUMBER 85-30

DATE SUBMITTED FOR REVIEW 1-31-85

NAME AND LOCATION OF FACILITY Holly Sugar Lime Pond
Dike modification
Sec 36 T47N R93W
Washakie County

I have reviewed the plans and specifications with regard to all aspects of groundwater quality and find the following:

No comment. The submittal is consistent with current groundwater protection procedures and requirements.

Comments attached.

*This info was given to Ed via telephone
3-11-85*

SIGNED Kate Laudon
TITLE Engineer Evaluator
DATE 3-20-85

ACCEPTED FOR RECORD 3/20/85
(Date)

gym
Groundwater Control Supervisor

Cherry

REVIEW OF PLANS AND SPECIFICATIONS

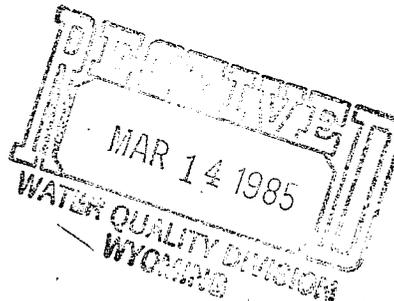
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144

PROJECT: Dike Modification in Pond #1, Worland, WY

ENGINEER: Holly Sugar Corp.
P.O. Box 1052
Colorado Springs, CO 80901
ATTN: Sid Win

OWNER: Holly Sugar Corporation
P.O. Box 1052
Colorado Springs, CO 80901



WATER QUALITY DIVISION REFERENCE NUMBER: # 85-30

REVIEWING ENGINEER: Ed Baruth *Ed*

DATE OF REVIEW: March 8, 1985

ACTION: **Not authorized.**

- COMMENTS:
1. An erosion control apron is needed around the pond overflow piping.
 2. An evaluation of Holly Sugar Corporation operations on local groundwaters is being considered by this department. DEQ/WQD will notify you of specifics when appropriate.
 3. Current-DEQ regulations require dike erosion protection. Please reference the attached page 85 and 86 for specifics. 4:1 slopes are sometimes used as satisfactory erosion control.

EB:dlb

cc: Kate Laudon, DEQ/WQD Cheyenne

AC

3-7-85

PERMIT TO CONSTRUCT

- New
- Renewal
- Modified

Permit No. 85-31RR
MA 14542

Cody Improvement District No. 46
 (Name of Facility)

This permit hereby authorizes the applicant (name and address):

City of Cody
1338 Rumsey Avenue
Cody, WY 82414

to construct, install, or modify a water distribution and sewage collection
extensions to the municipal systems

_____ facility according to the procedures and conditions of the
 application No. 85-31RR. The facility is located in Tract 79 R.S.,
T53N, R101W

_____ in the County of Park,
 in the State of Wyoming. This permit shall be effective for a period of 2
 years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

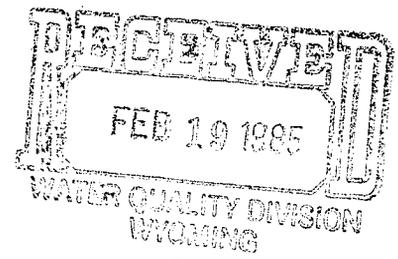
The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and dur-

Chery

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144



PROJECT: Cody Improvement District

ENGINEER: Graham, Dietz and Associates
P. O. Box 338
Cody, WY 82414

OWNER: City of Cody
1338 Rumsey Ave.
Cody, WY 82414

WATER QUALITY DIVISION REFERENCE NUMBER: #85-31

REVIEWING ENGINEER: Ed Baruth *Ed*

DATE OF REVIEW: February 8, 1985

ACTION: Not authorized.

COMMENTS: 1. The following is from the Water Quality Chapter 11, Rules and Regulation:
"Horizontal and vertical separation from water mains. Minimum horizontal separation shall be ten feet where the water main is less than 1.5 feet above the elevation of the sewer. Minimum vertical separation shall be 1.5 feet at crossing. Joints in sewers at crossing shall be located at least ten feet from water mains. The upper line of a crossing shall be specially supported. Where vertical and/or horizontal clearances cannot be maintained, the sewer shall be placed in a separate conduit pipe".

Problems with this regulation occur at the intersection of North Park Drive and Central Ave., and possibly on water service line crossings at either new sewer pipe or old VCP crossings.

As discussed with Tom Shultz of your office, today it may be most advantageous to place the separate conduit around the water main instead of the fragile VCP at intersections.

2. Concerning the placement of 8" sanitary sewer upstream of 6" sewer, I talked with Mr. Bill Garland, DEQ Cheyenne, and received his confirmation that in a case when the 6" is existing and adequately sized, we can accept the present design.

3. Verify that adequate water pressure exists in the resubdivision.

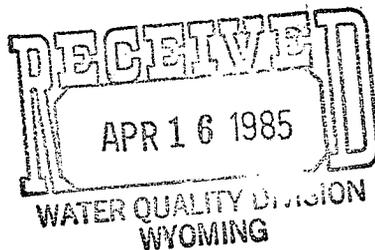
EB:dlb

ABC

MEMORANDUM

TO: Cypress Circle-Collection Line, #85-33R
FROM: Steven P. Gerber, P.E. *SPG*
DATE: April 4, 1985
SUBJECT: Phone Review

On April 4, 1985 I conducted a phone review on the above referenced project. I spoke with Peter Rideout. I told Peter that his response was OK except he had not signed the plans and specs. He will send me three sets of signed plans and specs.

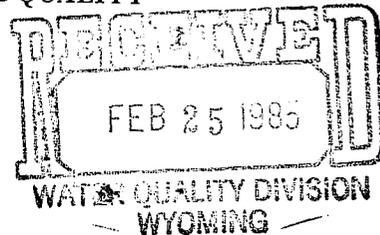


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REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144



PROJECT: Cypress Circle - Collection Line

ENGINEER: Peter D. Rideout
Bennett - Carder & Assoc. Inc.
507 5th Street
Rock Springs, WY 82901

OWNER: Consolidated Construction, Inc.
2101 Prairie Ave.
Rock Springs, WY 82901

WATER QUALITY DIVISION REFERENCE NUMBER: 85-32

REVIEWING ENGINEER: Steven P. Gerber, P.E. *Steven P. Gerber*

DATE OF REVIEW: February 21, 1985

ACTION: Not authorized.

COMMENTS: The following questions and comments need to be addressed before a "Permit to Construct" can be issued:

1. A letter of acceptance is required from the City of Rock Springs stating that they will accept the additional wastewater flows and that these flows will not adversely impact the downstream collection system and treatment facilities.
2. I am not familiar with the method you have used to estimate the infiltration into the system. The State will allow a maximum infiltration of 200 gallons per inch diameter per mile per day which in this case comes to 150 gpd compared to your 2,379 gpd.
3. Existing grade is not shown on the profile between manhole number 2 and the existing manhole.
4. The new sewer line cannot be tied into the existing manhole as indicated. Depending on the size of the existing line it may not be physically possible. Also introducing flow against the flow path of the existing sewer main could result in maintenance problems. Would it be possible to extend the line from manhole number two in a straight line until it intersects the existing main and then relocate manhole number one to where these lines intersect?
5. The service lines to lots 91, 92, 93 and 95 all introduce flow into the sewer main against the flow path. We recommend the angle between the service line and upstream side of the existing line does not exceed 90 degrees.

AC

Review of Plans and Specifications
Cypress Circle - Collection Line
February 21, 1985
Page Two

6. The service line to lot 94 was left off of the revised plan and profile sheet.
7. Please clarify the note for the manhole steps on sheet 2 of the plans. A one inch galvanized deformed bar is not acceptable as a manhole step. Also on this same detail the demension for the manhole deiameter was left off. The manhole detail on the plans and the manhole detail in the specs are inconsistant.

Please feel free to contact either Jack Bedessem or me, if you have any questions.

SG:d1b

REVIEW OF PLANS AND SPECIFICATIONS

Cherry

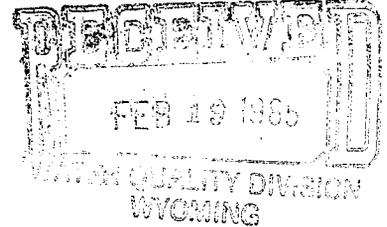
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144

PROJECT: Milleg Heights Watermain

ENGINEER: Keith McNinch
P. O. Box 633
Big Piney, WY 83113

OWNER: Town of Big Piney
P. O. Box 70
Big Piney, WY 83113



WATER QUALITY DIVISION REFERENCE NUMBER: #85-33

REVIEWING EVALUATOR: Jeff Hermansky

Jeff

DATE OF REVIEW: February 11, 1985

ACTION: Not authorized.

COMMENTS: Thank you for your submittal of the plans for the Milleg Heights Watermain. After reviewing the plans I have a few questions and comments that need to be addressed before a "Permit To Construct" can be issued:

1. Our first concern is to verify if the existing water system, when connected to the proposed Milleg Heights Watermain, will be capable of supplying sufficient pressure and quantity under all conditions of flow.

Worst condition would be fire flow plus domestic demand a peak periods with a minimum residual pressure of 20 psi at all points in the system.

The calculation that you submitted assumes that the system can deliver 543 gpm. Is the existing system capable of delivering this quantity and for sufficient duration to meet fire fighting requirements?

We would like to see information of the Town's storage capacity, well capacity, pressures and any other information necessary to justify the permitting of additional services on the system.

2. The plans need to be more detailed. Please clearly show the type and location of all pipeline fittings and appurtenances; that is, tees, bends, valves, thrusts blocks, etc.

3. How is the 3" water line from the existing well and distribution system to be connected to the proposed water line? Is the existing water system on Milleg Lane to be abandoned or connected to the proposed line?

Please feel free to contact either Jack Bedessem or me if you have any questions.

:dlb

MEMORANDUM

TO: Plans, 85-34
FROM: Jeff Hermansky *JH*
SUBJECT: Phone review
DATE: February 14, 1985

On February 14, 1985 I spoke with John Bradshaw of Great Basin Engineering, Inc., to conduct a review of the Lincoln Heights Fifth Addition water and sewer improvements.

I told John that we still have not received a signed application form from the owner. John said he would talk to the owner to see what the holdup has been.

John also said that the water system design is to be changed so he will send new copies of the plan sheets after the drafting is completed.

JH:dlb

MEMORANDUM

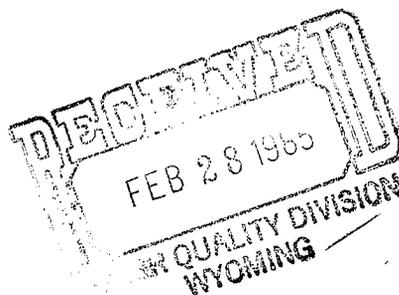
TO: Plans 85-35
FROM: Jeff Hermansky *JH*
SUBJECT: Phone review of Kennington Circle Addition
DATE: February 22, 1985

On February 22, 1985 I spoke with Robert Farnsworth, the engineer for the Kennington Circle Addition. I made the following comments to Robert:

1. The sewer line that runs from the Star Valley Hospital is considered a sewage collection line, not a sewer service line. Therefore a manhole is required where the hospital line joins the 8" line that runs to Hospital Road.
2. I suggested that the slope be increased on the 6" line that runs from C. O. 1 to M. H. 4. There is a 2 foot elevation difference between the inlet invert and outlet invert.

Robert said he would make the changes and submit 3 set of corrected plans.

JH:dlb





THE STATE OF WYOMING

Noma
85-36
MA 14542
ED HERSCHLER
GOVERNOR

Department of Environmental Quality

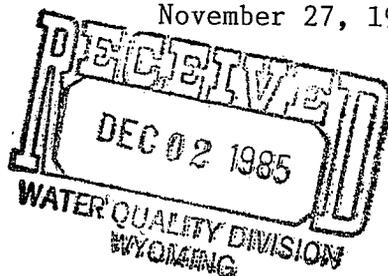
Water Quality Division

210 LINCOLN STREET

LANDER, WYOMING 82520

TELEPHONE 307-332-3144

November 27, 1985



Chevron, USA
ATTN: T.L. Perryman
P.O. Drawer AA
Evanston, WY 82930

RE: Chevron Carter Creek Gas Plant Stretford Tanks "As Built"
85-36RRR, Uinta County, Wyoming

Dear Mr. Perryman:

In September of 1984 leakage was discovered from the concrete Stretford Tanks. As a result of the leakage, Chevron installed a (60 mil) hypolon liner with leak detection/collection pipes in the tanks. The lining of these tanks was obviously not completely successful since Stretford solution is being observed and recycled through the collection sumps.

On February 7, 1985 this office received "as built" plans and an investigative design report for the modifications to the tanks. The Department of Environmental Quality/Water Quality Division has reviewed the plans and report and conditionally accepts the facility "as built". The terms and conditions for accepting this facility are as follows:

1. Monitoring wells B-1, B-2, B-3 and WB-5 shall be sampled and analyzed at least quarterly. Static water level shall be measured, samples collected and then analyzed for: pH, conductivity, TDS, TOC, total alkalinity, bicarbonate, sulfates, chlorides, aluminum, boron, chromium, iron, manganese and vanadium. Within 30 days of each sampling event the results shall be submitted along with a comprehensive discussion to: (a) Tony Mancini, DEQ/Water Quality Division, 122 West 25th Street, Herschler Building, Cheyenne, Wyoming, 82002 and; (b) Jack Bedessem, DEQ/Water Quality Division, 210 Lincoln, Lander, Wyoming, 82520.

2. Results from the initial sampling event (7-14-85) indicate possible contamination in wells B-1, B-2 and B-3. If additional sampling verifies contamination, further investigation to determine extent and mitigation/clean up may be required.

Mr. T.L. Perryman
November 27, 1985
Page Two

3. The foundation zone monitoring wells (MW-1 thru MW-6) shall be pumped at least once daily until sampling and analyses indicate the recovered liquid is uncontaminated. A log shall be kept of the amount of liquid pumped (each well) along with the results of the weekly analyses (alkalinity, vanadium). The results of the pumping and analyses shall be included in the quarter groundwater monitoring report to be submitted in first item.

4. As per the correspondence and telecons with Cathy Vukelich and Dean Forsgren, on September 27, 1985 and October 16, 1985, respectively, Chevron plans to reconstruct the Stretford tanks with stainless steel vessels. The modifications should take place during the May 1986 plant shut down.

Retain this letter as verification that the "as built" facility has been conditionally accepted by the Department of Environmental Quality/Water Quality Division. If you have any questions please feel free to contact me.

Sincerely,



Jack Bedessem
Area III Supervisor

JB/jw

copy: DEQ/WQD, Cheyenne
William J. Gordon, Dames & Moore
File (7)

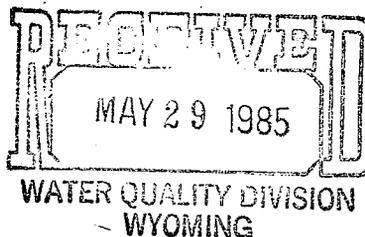
REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144

PROJECT: Chevron Carter Creek Stretford Tanks/Leak Detection System

ENGINEER: William J. Gordon
Dames and Moore
250 E. Broadway, Suite 200
Salt Lake City, UT 84111



OWNER: Chevron USA, Inc.
ATTN: T.L. Perryman
P.O. Drawer AA
Evanston, WY 82930

WATER QUALITY DIVISION REFERENCE NUMBER: 85-36R

REVIEWING EVALUATOR: Jack Bedessem, Kate Laudon

*for Jack Bedessem and
Kate Laudon*

DATE OF REVIEW: May 23, 1985

ACTION: Not authorized.

COMMENTS:

Your response to our latest comments has been reviewed. A number of items still need to be addressed and/or resolved:

1. Monitoring wells B-1, B-2, B-3 and WB-5 were authorized for construction (85-205). OK.

2. Your response indicates that the annular space around the foundation zone monitoring wells has been sealed with ATV, a silicon sealant, at least one foot above the ground.

a. Water Quality Rules and Regulations, Chapter XI, does not recognize ATV silicon sealant as acceptable for sealing the annular space. The sealing material shall consist of neat cement grout, sand-cement grout, bentonite clay or concrete.

b. Removable water tight cap. OK.

3. The installation of recycle pumps in the six leak detection sumps indicate a significant amount of seepage may still be occurring.

a. We agree that the majority of the liquid leaking through the liner should follow the path of least resistance to the leak detection sumps. You should be able to evaluate the amount or rate at which the liquid is seeping into the leak detection system.

AC

b. Address the system being used to pump liquid out of the foundation areas. From these systems you should be able to evaluate the amount or rate of leakage, determine whether additional leakage is occurring and estimate whether the leakage has been reduced. Provide data and conclusions.

4. A significant amount of stretford solution may still be leaking from the tanks.

a. Your response indicates leakage is still occurring through the recently installed hypalon liner. The installation and function of the impermeable synthetic liner was apparently not a total success. Address plans to repair the liner.

b. Documentation. OK.

c. Liner installation specifications. OK.

5. Your response proposes a deep boring located 50-60 feet down-gradient of the stretford tanks. We agree that this may be more feasible and conclusive than directional drilling. However, prior to development of this scheme, the condition and status of the existing monitoring wells should be thoroughly evaluated. Refer to comment no. 6.

6. Your response indicates you plan to sample all the monitoring wells bi-weekly and have them analyzed for vanadium and alkalinity. From the information provided we feel it is premature to specify bi-weekly sampling of limited parameters.

Before the detailed monitoring plan is specified, existing subsurface conditions need to be quantified, or established. To establish existing conditions a minimum of two sampling events be performed. The two events must produce consistent analytical results or additional sampling will be required. At a minimum, all the monitoring wells should be sampled and analyzed for: aluminum, boron, chlorides, chromium, iron, manganese, vanadium, total dissolved solids, pH, alkalinity and static water level. Monitoring reports should include all the results and an explanation with conclusions.

7. Stretford solution was detected in the excavation of the leak detection sumps. OK.

Two main sewer lines are located in the stretford tanks area. No solution was detected in these possible migration routes. OK.

8. No evidence of stretford solution in the trench.

a. Liquid which has accumulated in the four borings has been sampled. Results of the analyses still need to be submitted to the DEQ/WQD.

May 23, 1985
Review of Plans & Specs.
Ref. No. 85-36R
Page Three

9. In boring #3 a small lense of rock containing a fluid which smelled like gasoline was discovered. An evaluation of this material, the source and extent of contamination is still needed. This can be included with the quarterly reports mentioned in item #6.

10. Hypalon compatibility to stretford solution. OK.

Submit the required information to this office in triplicate. If you have any questions please feel free to call.

A reminder, in order to comply with the first condition of "Permit to Construct" 85-205, you still need to submit a report that details the specifications of the monitoring wells.

JB/jw
copy: Kate Laudon

Kate kept plans
mailed to X
5-23-85

WATER QUALITY DIVISION
GROUNDWATER SECTION
PERMIT APPLICATION REVIEW

APPLICATION NUMBER 85-36B

DATE SUBMITTED FOR REVIEW 4-10-85

NAME AND LOCATION OF FACILITY Stretford Tanks, Carter Creek
Gas Plant
Uinta County

I have reviewed the plans and specifications with regard to all aspects of groundwater quality and find the following:

- () No comment. The submittal is consistent with current groundwater protection procedures and requirements.
- Comments attached.

SIGNED Kate Laudon
TITLE Groundwater Engineer Evaluator
DATE 5-22-85

ACCEPTED FOR RECORD 5/22/85
(Date) [Signature]
Groundwater Control Supervisor

100

MEMORANDUM

TO: Jack Bedessem, Southwest District Supervisor

FROM: Kate Laudon, Groundwater Engineering Evaluator *KJZ*

DATE: May 22, 1985

SUBJECT: Groundwater Review, Stretford Tanks, Carter Creek Gas Plant, DEQ/WQD
Ref. No. 85-36R

Chevron has submitted a response to our initial review of their application for approval of the as built Stretford Solution leak detection system. Along with their response, they also submitted an application to complete monitor wells in the four borings that were installed as part of their initial investigation. Those wells were permitted on April 26, 1985.

Chevron has provided 10 responses based on our initial review comments. I still have comments on some of their responses.

Response 1: The wells have been permitted as described above.

Response 2: Silicon sealant is not considered an adequate sealing material as defined in WQD Rules and Regulations, Chapter XI, Part G, Section 65(c). Therefore, these wells have not been constructed in compliance with WQD Rules and Regulations.

Response 3: The Dames and Moore report that originally assessed the Stretford Tank Leakage recommended that the leakage rate to each sump should "be recorded by the use of pump run-time ammeters or similar means". Chevron should make an attempt to estimate the amount of fluid that is being pumped from the foundation area on a periodic basis.

Response 5: A deeper monitor well as described in this response may be effective in detecting fluid migrating vertically beneath the basins. Until we receive monitoring information from the 4 shallow wells, it is impossible to assess the effectiveness of the proposed monitoring plans.

Response 6: Before an operating monitoring schedule is established for the 4 monitor wells, the existing water quality should be determined. Samples should be collected from the wells and analyzed for the following parameters:

Aluminum	Iron	pH
Boron	Manganese	Alkalinity
Chloride	Vanadium	Static water level
Chromium	TDS	

Once the existing water quality has been determined, an operational monitoring schedule can be established.

KL/nc

REVIEW OF PLANS AND SPECIFICATIONS

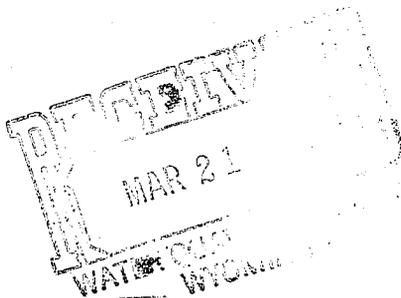
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER QUALITY DIVISION
210 LINCOLN
LANDER, WYOMING 82520
PHONE: (307) 332-3144

PROJECT: Chevron Carter Creek Stretford Tanks/Leak Detection System

ENGINEER: William J. Gordon
Dames and Moore
250 E. Broadway, Suite 200
Salt Lake City, UT 84111

OWNER: Chevron USA, Inc.
P.O. Drawer AA
Evanston, WY 82930
ATTN: T.L. Perryman



WATER QUALITY DIVISION REFERENCE NUMBER: 85-36

REVIEWING EVALUATOR: Jack Bedessem, ^{ds} Kate Laudon

DATE OF REVIEW: March 12, 1985

ACTION: Not authorized.

COMMENTS: The application and plans have been reviewed in conjunction with the investigative report by Dames and Moore. The following items need to be addressed before this facility can be accepted by the Department of Environmental Quality.

1. Address whether borings B-1, B-2, B-3 and WB-5 are to be completed as subsurface monitoring wells. If these borings are to be completed as monitoring wells the plans should include completion and development details. Refer to Water Quality Rules and Regulations Chapter XI, Part G.
2. The plans indicate that an eight inch perforated foundation zone monitoring well was installed adjacent to sumps T1501 - T1505. These monitoring wells are slotted from the surface to depth of seven feet.
 - a) It is recommended that a concrete cap be place around the casing at the ground surface. The cap should be sloped to direct surface runoff away from the casing, thereby alleviating ponding and the potential for contamination.
 - b) A removable water tight cap should be place over the top of each of these wells.
3. The plans indicate that pumps to recycle stretford solution will be installed in each of the six sumps. This seems to suggest that a significant amount of solution is still leaking out of the tanks.
 - a) Address a plan to determine the amount of leakage from each tank in relation to the amount of solution recycled. The plans do not contain sufficient information to assess the effectiveness of the leak detection system.

ABC

- b) Additional accumulations of solution in the foundation area will cause further horizontal and vertical migration. A plan to mitigate additional leakage may have to be developed.
4. The plans and report indicate that a significant amount of leakage may still be occurring.
- a) Address the potential sources of this leakage.
 - b) Was a representative of the liner manufacturer onsite during installation: If so, submit documentation that the liner was installed according to the manufacturers specifications.
 - c) Liner installation specifications should be included with these plans. Address the quality control measures taken during installation.
5. The foundation zone monitors should serve as collection points for solution that has leaked into the foundation subsoil. However, these wells, may not detect leakage at the center of the tanks.

Chevron should proceed with their plans to conduct additional subsurface work to define the vertical extent of contamination (i.e. directional drilling, monitoring, collection and recovery). An application for a "Permit to Construct" these wells must be submitted and authorized by this Department prior to drilling.

6. A detailed monitoring program needs to be submitted which includes periodic sampling and analyses of all monitoring wells associated with this project. The plan should include sampling frequency, procedures, chemical parameters, reporting, etc.
7. The Dames and Moore report indicates that Chevron constructed several shallow excavations adjacent to the tanks and found stretford solution. Address the location of these excavations and the extent of stretford solution detected.

The report also indicates Chevron made an investigations of other subsurface migration routes away from the tanks (i.e. pipeline trenches, building foundations, etc.). Address the results of this investigation and any possible mitigation or collection measures that may be necessary.

8. Chevron excavated a trench 10 feet deep approximately 75 feet east of the stretford tanks. After several days liquid accumulated in this trench.
- a) Address the results of analyses of this liquid.
 - b) Address the current status of the four borings.
(i.e. accumulation of liquid, sampling, analyses, etc.)

9. The Dames and Moore report indicates that in boring #3 a small lense of rock containing a fluid which smelled like gasoline was discovered. Address the source of this fluid and extent of contamination.

Review of Plans and Specifications
Chevron Carter Creek Stretford
March 12, 1985
Page Three

10. Address the compatibility of the 60 mil hypalon liner material with the solution, temperature climate, etc.

Submit the required information and revised drawings to this office, in triplicate. If you have any questions please feel free to contact Kate Laudon (307-777-7781) or me (307-332-3144).

JB:KL:dlb

Kate kept copy.
Comments sent
3/11/85

WATER QUALITY DIVISION
GROUNDWATER SECTION
PERMIT APPLICATION REVIEW

APPLICATION NUMBER 85-36

DATE SUBMITTED FOR REVIEW 2-12-85

NAME AND LOCATION OF FACILITY Chevron Carter Creek Stratford
solution Leak Detection System
Uinta County

I have reviewed the plans and specifications with regard to all aspects of groundwater quality and find the following:

- () No comment. The submittal is consistent with current groundwater protection procedures and requirements.
- Comments attached.

SIGNED Kate Laudon
TITLE Engineer Evaluator
DATE 3-6-85

ACCEPTED FOR RECORD [Signature]
(Date)
3/7/85

[Signature]
Groundwater Control Supervisor

MEMORANDUM

TO: Jack Bedessem, Southwest District Supervisor

FROM: Kate Laudon, Groundwater Engineering Evaluator *KGL*

DATE: March 5, 1985

SUBJECT: Groundwater Review, Chevron Carter Creek Gas Plant, Stretford Basins
Leak Detection System, WQD Ref. No. 85-36

Chevron has applied to permit the leak detection system that has already been installed in their Stretford Basins. The leak detection system was installed after cracks were discovered in three of the basins, and an unknown amount of Stretford solution leaked out.

A Dames and Moore report was submitted to WQD in January 1985 which documents a subsurface investigation conducted in the vicinity of the Stretford Basins. At the time the report was submitted, the leak detection system was in place, and Stretford solution was being collected in the leak detection sumps. The cover letter included with the permit application indicates that Chevron intends to install permanent pumps in the sumps.

The plans show basin monitor wells located adjacent to the sumps associated with basins T1501-T1505. These should serve as collection points for solution that has leaked into the backfilled area around the basins. The earlier report suggested that the solution that escaped prior to the installation of the leak detection system was contained in the backfilled area around the basins.

With respect to groundwater monitoring:

1. The applicant should specify how they will determine if solution collected in the wells is from the backfilled area, or if it is evading the leak detection system. Since Chevron has decided to install pumps in the sumps, it suggests that a significant amount of solution is still leaking out. The monitor wells seem inadequate to monitor for solution below the level of the sumps. Chevron should clarify the function of these wells.
2. Since the monitor wells are slotted all the way to the surface, they may serve as conduits for surface runoff. These wells should be inspected periodically for leakage around the casing. A cap should be placed over the tops of all the wells.
3. A monitoring plan should be submitted which includes periodic sampling and analysis of fluid collected in the basin monitor wells. This plan should address the current status of the wells, and should include a schedule and list of monitoring parameters.
4. Since the basins are still leaking. Chevron should proceed with their plans to conduct additional subsurface work in the vicinity of the basins to define the vertical extent of contamination associated with the spilled solution.
5. The plans do not contain sufficient detail to assess the effectiveness of the leak detection system. It is already collecting fluid, but we have no indica-

tion of how much fluid is actually getting out of the basins. Additional work on their liner may be necessary to adequately contain the Stretford Solution.

PERMIT TO CONSTRUCT

- New
- Renewal
- Modified

Permit No. 85-37R
MA 14542

FORT UNION MINE PIT #2 SEDIMENT POND NO. 1 RESERVOIR
(Name of Facility)

This permit hereby authorizes the applicant (name and address):

Fort Union Mine Partnership
P.O. Box 2737
Gillette, Wyoming 82716

to construct, install, or modify a sedimentation facility

sedimentation facility according to the procedures and conditions of the application No. 85-37R. The facility is located in Sec. 1, T.50N., R.72W.

sedimentation in the County of Campbell, in the State of Wyoming. This permit shall be effective for a period of five (5) years (five (5) years maximum) from the date of issuance of this permit.

The issuance of this permit provides that the Department of Environmental Quality has evaluated and determined that the application meets minimum applicable construction and design standards. The compliance with construction standards and the operation and maintenance of the facility to meet the applicant's engineer's design are the responsibility of the applicant, owner, or operator.

The authority to construct granted by this permit does not mean or imply that the Wyoming Department of Environmental Quality guarantees or insures that the permitted facility, when constructed, will meet applicable discharge permit conditions or other effluent or operational requirements.

Nothing in this permit constitutes an endorsement of the construction or the design of the facility described herein. This permit indicates only that standards of design and construction required by the Environmental Quality Act have been met. The State assumes no liability for, and does not in any way guarantee the performance of, the permittee in the exercise of its activities allowed under this permit. The Permittee understands that it is solely responsible to any third parties for any liability arising from the construction or operation of the facility described herein. By the issuance of this permit, the State does not in any way waive its sovereign immunity.

The permittee shall allow authorized representatives from the Department of Environmental Quality, Water Quality Division, upon the presentation of credentials and

WATER QUALITY DIVISION
GROUNDWATER SECTION
PERMIT APPLICATION REVIEW

*Norman
Ret. to Sheridan
3-6-85*

APPLICATION NUMBER 85-37 85-38

DATE SUBMITTED FOR REVIEW 2-21-85

NAME AND LOCATION OF FACILITY Pit #s 142 Sediment Ponds #s 142
Fort Union Mine
Sec 1 T 50 N R 72 W
Campbell Co.

I have reviewed the plans and specifications with regard to all aspects of groundwater quality and find the following:

- No comment. The submittal is consistent with current groundwater protection procedures and requirements.
- Comments attached.

SIGNED *Richard J. Lemm*
TITLE *Eng. Deal*
DATE *3-6-85*

ACCEPTED FOR RECORD *3/6/85* *ajm*
(Date) Groundwater Control Supervisor

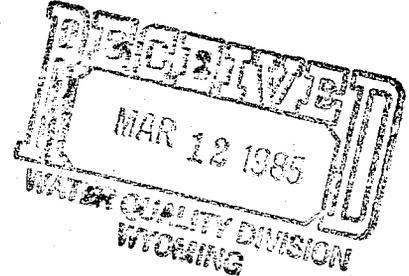
Norma

REVIEW OF PLANS AND SPECIFICATIONS

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY DIVISION
2161 COFFEEN AVE., SUITE 301
SHERIDAN, WYOMING 82801

PROJECT: Fort Union Mine
Reservoirs and Containment Ponds
Campbell County, Wyoming

ARCHITECT OR ENGINEER: Doyl M. Fritz
Western Water Consultants, Inc.
P.O. Box 3042
Sheridan, Wyoming 82801



WATER QUALITY DIVISION
REFERENCE NUMBERS: 85-37 through 85-48

REVIEWING ENGINEERS: Rich Ruyle and Susan Holmes

DATE OF REVIEW: March 11, 1985

ACTION: Not Authorized

COMMENTS:

Pit #2, Sediment Ponds No. 1 and No. 2, Applications No. 85-37 and No. 85-38

- 1) Pit #2 Sediment Ponds No. 1 and No. 2 are contained in NPDES Permit WY-0028851, Discharge #002 and #003, respectively. Please revise the applications for Permit to Construct accordingly.
- 2) Because the ponds receive pit water and both have NPDES permits, they must contain provisions for flow monitoring.
- 3) Please provide some justification for the soil property parameters used in the sediment accumulation calculations. Of particular interest are the soil erodibility factor, cover factor, and the sediment unit weight.
- 4) For what flow rates were the pit water storage requirements determined?
- 5) Riprap or other erosion protection is required on the inside face of the embankments unless justification is provided that excessive erosion will not occur.
- 6) Riprap or other erosion protection is required on the spillways due to high velocities.

Fort Union Mine Reservoirs and
Containment Ponds, 85-37 thru 85-48
March 11, 1985
Page Two

- 7) Is the Dry Fork Diversion Channel already constructed? If it is to be constructed in conjunction with Sediment Pond No. 1, details should be provided. A typical cross-section should be shown with the 25-year storm event water surface elevation and velocity calculations. If high velocities are experienced, erosion protection should be provided.
- 8) Specifications for embankment construction and materials should be provided in accordance with Chapter X of the Water Quality Rules and Regulations.

TS201-1, TS201-2, TS201-3, OS201-4, OS201-5, OS201-6, TS101, TS102, TS103, TS104, Applications Nos. 85-39 through 85-48.

- 1) Specifications for embankment construction and materials should be provided in accordance with Chapter X of the Water Quality Rules and Regulations.
- 2) More detailed information is needed for the containment ponds that do not discharge. Please submit a section along the length of these ponds, or a more detailed plan view to ensure that adequate embankment is provided along the entire periphery of the ponds and so we may accurately verify the capacity tables. There appears to be particular problems with TS201-2, TS201-3, TS101, TS102, TS103 and TS104.
- 3) Please provide some justification for the soil property parameters used in the sediment accumulation calculations.
- 4) Erosion protection should be provided on the containment ditches where the velocity exceeds 5 fps, particularly at ditch bends.
- 5) Ponds OS201-4 and OS201-5 will receive runoff from areas outside the stockpile limits. Please address this off-site drainage.
- 6) The drainage data for ditch OS201-3 appears to be missing.

THE STATE



OF WYOMING

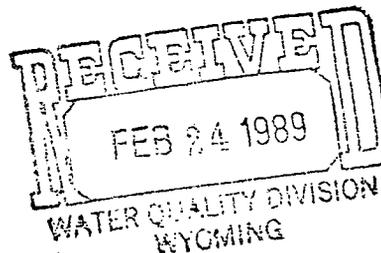


Department of Environmental Quality

Air Quality Division
(307) 672-6457

Water Quality Division
(307) 672-6457

February 22, 1989



Mr. John E. Anderson
Phillips Petroleum Company
8055 E. Tufts Avenue Parkway
Denver, Colorado 80237-2898

Dear Mr. Anderson:

As requested in your letter of January 30, 1989, the Water Quality Division of the Wyoming Department of Environmental Quality has reassigned ownership of Permits to Construct 85-49RR through 85-71RR to North Gillette Coal Company. I anticipate a second request to reassign ownership to Dry Fork Limited Partnership at a later date.

I should point out that these permits are in effect for a period of five years. If construction is not commenced within five years of the date of issuance, a renewal is required. In addition, the permits are valid for a specific design submitted with the original application. If any design criteria, sizing, location, etc. changes from the approved plans, a modification is required. Also, this change of ownership is only for the permit to construct numbers noted above and does not include any other state or federal permits that may be required to construct or operate the Dry Fork Mine.

Please contact me if you have any questions.

Sincerely,

Susan Fields
NE District Supervisor
Water Quality Division

SF:jj

xc: Norma Coulson for Archives File
85-49RR through 85-71RR
Bob Giurgevich, LQD, Sheridan
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