

**Wyoming Department of Environmental Quality
Water Quality Division
WYPDES (Wyoming Pollutant Discharge Elimination System) Program**

STATEMENT OF BASIS

MAJOR MODIFICATION

APPLICANT NAME: Legacy Reserves Operating, LP

MAILING ADDRESS: 1501 Stampede Avenue, 3rd Floor, Suite 3170
Cody, WY 82414

FACILITY LOCATION: Homestead Field Disposal, which is located in NW Section 35, Township 57N, Range 97W, Big Horn County. The wastewater will discharge to Sage Creek(2AB) , Big Horn River Basin

PERMIT NUMBER: WY0003140

This permit has been renewed in accordance with current WYPDES permitting requirements. All permit effluent limits and monitoring requirements have been updated in accordance with current WDEQ regulations and policy. Specific changes to the permit include the following:

- 1. This permit groups three closely spaced facilities discharging into the same body of water for calculation of water quality based effluent limits, particularly radium. The total discharge from the three facilities is 0.531 million gallons per day (MGD), so the wasteload allocation is based on 0.531 facility flow into the receiving water, class 2AB Sage Creek. The previous permit included WY0030589, but this facility is nearly four miles from Sage Creek and at least three miles from the other three facilities, so it is not included with this group of facilities. The wasteload allocation on the previous permit was based on a discharge of 0.615 MGD. However, radium effluent limits remain the same as the existing permit.*
- 2. This permit includes a chloride limit of 230 mg/L, based on the chronic aquatic life standard, which is more stringent than the acute standard, per Chapter 1 Wyoming Water Quality Rules and Regulations.*
- 3. Revised language regarding access to the facility is in Part II.B.1 of the permit.*

General Description: This facility is an oil production treatment unit that separates oil from formation waters at the surface using a heater treater, gravity separation, emulsion breaking chemicals, and/or skim ponds and tanks. The permit authorizes the discharge of produced water from conventional oil and/or gas facilities to waters of the state if the effluent quality complies with effluent limits established by this permit. Development of permit limits involves considering all federal and state regulations and standards and incorporates the most stringent requirements into the permit. The effluent limits established in this permit are based upon Chapters 1 and 2 of the Wyoming Water Quality Rules and Regulations, 40 CFR Part 435 Subpart E, and other evaluations conducted by WDEQ related to this industry. This permit does not cover activities associated with discharges of drilling fluids, acids, stimulation waters or other fluids derived from the drilling or completion of the wells.

Anti-Backsliding Provision: This permit originally established a chloride limit of 230 mg/L at the end of pipe for discharge into class 3B waters. Since the issuance of the original permit, chloride standards established in *Chapter 1 of the Wyoming Water Quality Rules and Regulations* have changed to excluding aquatic life standards for chloride in class 3 waters. Therefore, WDEQ has reduced the chloride limit to 2,000 mg/L, per Chapter 2 Wyoming Water Quality Rules and Regulations, Appendix H. WDEQ determines that reducing the chloride limit in this permit conforms to the anti-backsliding requirements established in *Section 402(o).2.B.i of the Clean Water Act*.

Effluent limits

Permit limits are **technology-based** and **water-quality based**, as described below.

TECHNOLOGY-BASED EFFLUENT LIMITS:

All of these limits are based on *Chapter 2, Appendix H, Wyoming Water Quality Rules and Regulations*. Waters meeting the following criteria are suitable for stock and/or wildlife watering. The proposed technology based permit limits are as follows. All of the following limits are daily maximum values:

- Oil and Grease 10 mg/L with monitoring once every two months;
- Chloride 2,000* mg/L with semi-annual monitoring
- Specific Conductance 7,500 µS/cm with semi-annual monitoring
- Sulfate 3,000 mg/L, with semi-annual monitoring

*Note below that the more stringent water quality based chloride standard of 230 mg/L is established as a permit limit.

WATER-QUALITY-BASED EFFLUENT LIMITS:

Water-quality-based effluent limits are all based on *Chapter 1, Wyoming Water Quality Rules and Regulations*. The limits are as follows:

- The pH must remain within the range of 6.5 to 9.0
- Chloride limit is 230 mg/L, equal to the chronic aquatic life standard, which is more stringent than the acute standard. Because the 230 mg/L standard is met end-of-pipe, this discharge complies with the mixing zone requirements for chloride provided that the discharge complies with the effluent limits.
- Total Radium 226+ 228 limit is 22 pCi/L. Rationale for this limit is shown below.

To protect the receiving class 2AB water, effluent limits are set so that after the discharge mixes with receiving water, the instream standards for chloride and radium are in compliance. This involves utilizing a wasteload allocation calculation, which in part involves the dilution provided by the receiving waters. Hence, two factors include the receiving water flow and the discharge volume.

Regarding receiving water flow, the estimated 7Q10 low flow (the seven consecutive day, ten-year low flow) of the stream is 6.03 cfs, using data from U.S. Geological Survey gaging station, 06285400, Sage Creek at Sidon Canal near Deaver, Wyoming. Establishing effluent limits upon receiving water low flow conditions will provide a margin of safety because “worst case” flow conditions are assumed when the dilution provided is lowest.

Regarding discharge volume, three WYPDES oil treater facilities are close in proximity to each other and all discharge into Sage Creek, and the total volume is used in effluent limit calculations for chloride and total radium 226+ 228. The facilities and their respective maximum monthly average discharge volumes are:

White Rock Oil and Gas, LLC, WY0001350, #1 Webb-Anderson	0.168 MGD
Legacy Reserves Operating, LP, WY0003140, Homestead Field Disposal	0.30 MGD
Smith Oil Field Services, WY0096245 formerly WY0023922, Richards Lease	0.063 MGD

TOTAL 0.531 MGD

As shown above, the sum of maximum discharges from the facilities is 0.531 million gallons per day (MGD), *monthly average*, so wasteload allocation equations include this discharge flow rate.

Based on the wasteload allocation, the effluent limit for chloride for each facility is 1769 mg/L, based on the total discharge of 0.531 MGD entering Sage Creek with a low flow of 6.03 cfs. See Table A, page 5 of the statement of basis. However, because of mixing zone concerns, the end-of-pipe effluent limits for chloride is set at 230 mg/L, equal to the chronic instream standard, for each of these facilities. Each facility can meet the chloride limits, based on discharge monitoring reports.

The wasteload allocation calculation for total radium is 34 pCi/L, also based on the total discharge of 0.531 MGD entering Sage Creek with a low flow of 6.03 cfs. See Table A on page 5 of the statement of basis. Each facility discharges at a different flow rate, so flow weighted effluent limits for radium are established for each of the three facilities. Historical data from WY0003140 and WY0096245 (formerly WY0023922) indicate radium levels in the discharges that are below 34 pCi/L. However, WY0001350 might exceed the 34 pCi/L level for radium. Therefore, the effluent limit for total radium is distributed based in part on the historical maximum radium in each discharge plus a cushion of several pCi/L for WY0003140 and WY0096245. WY0003140 is assigned a radium effluent limit of 22 pCi/L, and WY0096245 is assigned 20 pCi/L. Because these facilities discharge less than 34 pCi/L, WY0001350 can discharge, according to calculations, more than 53 pCi/L and the result is that 34 pCi/L or less of total radium is entering Sage Creek from these three facilities. See table below. Also, see Table B with the flow weighted calculations on page 5 of the statement of basis. The more stringent radium limits for WY0003140 and WY0096245 are not intended to be burdensome, as the facilities should easily meet the more stringent radium limits without operational changes.

Permit #	Summary of Historical Radium Discharge Data			Effluent Limit, pCi/L
	Average Radium, pCi/L	Minimum Radium, pCi/L	Maximum Radium, pCi/L	
WY0003140 (226+228)*	10.4	6	16.3	22
WY0096245 (formerly WY0023922) (226 only)**	5.8	4.5	6.6	20
WY0001350 (226+228)*	36.15	0.4	42.3	53

*Facility is less than one mile from class 2AB Sage Creek, so the standards utilizing total radium 226+288 are applicable, as per *Implementation Policy for Radium Effluent Limits in WYPDES Permits*.

**Facility is greater than one mile from class 2AB Sage Creek, so the standards utilizing total radium 226 only are applicable, as per *Implementation Policy for Radium Effluent Limits in WYPDES Permits*.

There are several margin-of-safety factors figured in. For one, the facilities seldom discharge up to the flow limits, so that Sage Creek provides more dilution than the calculations indicate. Also, there are no drinking water intakes nearby from Sage Creek, and the radium standard applied is a drinking water standard. In addition, the facilities historically have discharged radium at levels well below the newly established effluent limits.

The permit establishes effluent limits for the end of pipe, which are protective of the designated uses for class 2AB waters as defined in *Chapter 1 of Wyoming Water Quality Rules and Regulations*. These include game fish, aquatic life other than fish, human health, recreation, agriculture, wildlife, industry and scenic value. Water quality based effluent limits for this permit are based on standards which are intended to protect for the above listed designated uses and reflect the application of "tier 1" antidegradation protection. Tier 1 antidegradation protection is the basic level of protection that applies to all waters of the state, as described in the Wyoming Surface Water Quality Standards "Implementation Policies for Antidegradation."

WHOLE EFFLUENT TOXICITY TESTING: Based on an evaluation of the facility location, the effluent from this facility eventually discharges into class 2AB waters. According to Chapter 1, Wyoming Water Quality Rules and Regulations, these waters contain or have the potential to contain fish. In 1992, this discharge permit was reissued with a requirement that the toxicity of the discharge be addressed. The permittee was given a choice to eliminate the discharge, treat the discharge and monitor for toxicity, or accept a discharge permit that required no discharge except under extreme emergency conditions. This permittee chose to treat the discharge and monitor for toxicity. Hence, to ensure that aquatic life is protected, this permit contains acute Whole Effluent Toxicity (WET) effluent limits and self-monitoring requirements. On an annual basis, the effluent must be tested for two species

(*Ceriodaphnia* and Fathead Minnows) for acute toxicity. Under this option, the effluent cannot cause mortality to more than 50 percent of the test organisms over a period of 48 hours for the *Ceriodaphnia* and 96 hours for the fathead minnows. This limitation shall become effective immediately upon issuance of the permit. The dilution provided by the receiving water is 7:1 for the sum of discharges from all three facilities. Because dilution exceeds 4:1, acute testing rather than chronic is established based on guidance by U.S. EPA Region 8.

Total Sulfide Monitoring: Based on a review of this permit application, WDEQ determined that there is a potential for exceedance of sulfide-hydrogen sulfide standards. For sulfide-hydrogen sulfide, the permit requires monitoring at the outfall(s) and the receiving stream below the outfall(s) once every two months for total sulfide. Note that water quality standards are based on sulfide-hydrogen sulfide, but monitoring for total sulfide is required because conventional laboratory methods only detect total sulfide. Monitoring at downstream monitoring point 1 (DMP1, listed in Table 1, in Part I (B) (12) of the permit) is necessary to determine impacts, if any, on the receiving stream for sulfide-hydrogen sulfide. Results are to be reported twice-yearly and if no effluent from this facility reaches the downstream monitoring point during an entire sampling period, then “no discharge” is to be reported from the DMP that period. The DMP is not a compliance point. The intent of the DMP is only as a location to gather downstream water quality data and determine, if possible, a correlation between total sulfide and speciation of hydrogen sulfide. The water quality based standard for sulfide-hydrogen sulfide is 2 µg/L. WDEQ will evaluate data collected at location DMP1 on an ongoing basis in order to determine if effluent from this facility impacts the receiving stream with hydrogen sulfide. When submitting test results to the WDEQ, the required detection limit is 50 µg/L, maximum, and a non-detect result is considered compliant with sulfide standards. There is no permit limit on total sulfide.

Note that monitoring for pH at the downstream monitoring point is included because speciation of hydrogen sulfide is dependent on pH.

Agricultural and wildlife use of water: Federal effluent guidelines, per 40 CFR Part 435 Subpart E, require utilization of the discharges of produced water from oil production units for agricultural or wildlife propagation when discharged. The Wyoming Game and Fish Department determined that discharge of produced water from all existing WYPDES-permitted oil production units in Wyoming enhances wildlife propagation and habitat. Hence, this facility complies with 40 CFR Part 435 Subpart E, if the discharge meets the effluent limits of this WYPDES permit.

Antidegradation, impairment review: The discharge of wastewater and the effluent limits established in this permit ensure that the levels of water quality maintain and protect the designated uses of the receiving waters. An antidegradation review verifies that the permit conditions, including the effluent limitations established, provide a level of protection to the receiving water consistent with the antidegradation provisions of Wyoming surface water quality standards. In addition, an evaluation of the receiving waters revealed that they are not on the 303(d) list as waterbodies that cannot support designated uses.

Other Permit Requirements: There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the discharge cause formation of visible deposits of iron, hydrocarbons or any other constituent on the bottom or shoreline of the receiving water. In addition, erosion control measures will be implemented to prevent significant damage to or erosion of the receiving water channel at the point of discharge.

Self-monitoring of effluent quality and quantity is required on a regular basis. Reporting of results is required semi-annually. The permit is scheduled to expire on June 30, 2017, the same expiration date of other oil production unit WYPDES facilities in this locale.

Roland Peterson
Water Quality Division
Department of Environmental Quality
Drafted: March 19, 2018

Table A, Wasteload Allocation Calculations

Permit Numbers: WY0003140, WY0001350, WY0096245 (formerly WY0023922)				Wasteload Allocation Formula: $C_d = (Q_r C_r - Q_s C_s) / Q_d$						
		Q_s		Q_d	Q_r	C_r	C_s	C_d		
	Parameter	Low Flow, cfs (7Q10)	Low Flow, MGD (7Q10)	Discharge Rate, MGD	Combined Flow, MGD	Water Quality Standard, Chronic	1	Limit (WLA)	Limit used for permit	
	Radium, pCi/L	6.033	3.89	0.531	4.42	5		34	22*	
	Chloride, chronic, mg/L	6.033	3.89	0.531	4.42	230	20	1769	230*	

*See statement of basis for rationale.

Table B, Flow Weighted Calculations

Flow Weighted Total Recoverable Radium 226+ Total Recoverable Radium 228 Averages					
Permit #	Flow, MGD	Radium, pCi/L		Fraction Flow	
WY0003140	0.3	22	X	0.565	= 12.43
WY0096245 (formerly WY0023922)	0.063	20	X	0.119	= 2.38
WY0001350	0.168	53	X	0.316	= 16.75
Sums	0.531			1	31.56

=Total Radium. Level pCi/L
31.56 < 34

AUTHORIZATION TO DISCHARGE UNDER THE
WYOMING POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, (hereinafter referred to as "the Act"), and the Wyoming Environmental Quality Act,

Legacy Reserves Operating, LP

is authorized to discharge from the wastewater treatment facilities serving the

Homestead Field Disposal,

located in

NW Section 35, Township 57N, Range 97W, Big Horn County,

to receiving waters named

Sage Creek(2AB) , Big Horn River Basin

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II and III hereof.

This permit shall become effective on date of issuance below.

This permit and the authorization to discharge shall expire June 30, 2022 at midnight.

Kevin Frederick, Administrator
Water Quality Division

Todd Parfitt, Director
Department of Environmental Quality

Date of Issuance: _____

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Effective immediately and lasting through June 30, 2022, the quality of effluent discharged by the permittee shall, at a minimum, meet the limitations set forth below. The permittee is authorized to discharge from outfall serial number(s) 001.

Effluent Limits

<u>Effluent Characteristic</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>
Chloride, mg/L	230	N/A
Flow, MGD	N/A	0.3
Oil and Grease, mg/L	10	N/A
pH, standard units	6.5 – 9.0	N/A
Radium 226+ Radium 228, Total Recoverable, pCi/L	22	N/A
Specific Conductance, µS/cm	7,500	N/A
Sulfate, mg/L	3,000	N/A
Whole Effluent Toxicity, Acute, (LC ₅₀ or greater at any concentration is fail, for either species).	N/A	Pass

The pH shall not be less than 6.5 standard units nor greater than 9.0 standard units in any single grab sample.

The permittee may, if so desired, discharge produced water from any authorized well to any permitted outfall, as long as all permit limits and requirements can be met.

There shall be no discharge of floating solids or visible foam in other than trace amounts, nor shall the discharge cause formation of a visible sheen or visible hydrocarbon deposits on the bottom or shoreline of the receiving water.

All waters shall be discharged in a manner to prevent erosion, scouring, or damage to stream banks, streambeds, ditches, or other waters of the state at the point of discharge. In addition, there shall be no deposition of substances in quantities that could result in significant aesthetic degradation, or degradation of habitat for aquatic life, plant life or wildlife; or which could adversely affect public water supplies or those intended for agricultural or industrial use.

This permit does not cover activities associated with discharges of drilling fluids, acids, stimulation waters or other fluids derived from the drilling or completion of the wells.

Water shall not be discharged in a diffuse manner such that damage to land and/or vegetation occurs.

2. Discharges shall be monitored by the permittee as specified below:

a. **Routine monitoring End of Pipe—for outfall(s) 001**

For the duration of the permit, at a minimum, samples for the constituents described below shall be collected at the indicated frequencies. Reporting will be based on semi-annual periods, from January through June, and from July through December.

<u>Parameter</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Chloride, mg/L	Semi-annually	Grab
Flow, MGD	Monthly	Instantaneous
Oil and Grease, mg/L	Once Every Two Months	Grab
pH, standard units	Semi-Annually	Grab
Specific Conductance, μ S/cm	Semi-Annually	Grab
Sulfate, mg/L	Semi-Annually	Grab
Total Radium 226+228, pCi/L	Semi-Annually	Grab
Total Sulfide*, mg/L	Once Every Two Months	Grab
WET, Acute, Pass or Fail	Annually	Grab

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: At the outfall of the final treatment unit which is located out of the natural drainage and prior to admixture with diluent waters.

b. **Downstream Monitoring Point –DMP1**

For the duration of the permit, at a minimum, samples for the constituents described below shall be collected at the indicated frequencies when water discharged from the outfalls reaches the downstream monitoring point and reported semi-annually.

<u>Parameter</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
pH, standard units	Once Every Two Months	Grab
Total Sulfide*, mg/L	Once Every Two Months	Grab

The permit requires monitoring at a designated location below the outfall(s) in order to determine whether constituents of concern discharged from the outfall(s) reach an established downstream monitoring point (DMP1 listed in Table 1, in Part I(B) (12) of the permit). Once effluent flow at the downstream monitoring point has been documented within a sampling period, a sample shall be collected to represent effluent quality for downstream monitoring point constituents. Results are to be reported twice-yearly and if no effluent discharges from the outfall(s) during an entire sampling period and thus no effluent reaches the DMP, then "no discharge" is to be reported for the DMP that sampling period. The DMP is not a compliance point. The intent of the DMP is only as a location to gather downstream water quality data.

* Note that practical quantitation limits, PQL, for the total sulfide test methods (376.2 or A4500) range from 10 µg/L to 40 µg/L, depending on the laboratory. Since the PQL is greater than the 2 µg/L Wyoming water quality standard for sulfide-hydrogen sulfide, WDEQ will accept a non-detectable test result as being in compliance with the sulfide-hydrogen sulfide limit. When submitting non-detect total sulfide test results to the WDEQ, the required detection limit is 50 µg/L, maximum, or an explanation of why the 50 µg/L PQL was not accomplished.

2. Effluent Limitations (Toxic Pollutants)

Effective immediately there shall be no acute toxicity in the discharge from outfall number 001.

3. Whole Effluent Testing

Starting in calendar year 2018, the permittee shall, at least once each calendar year, conduct acute static replacement toxicity tests on a grab sample of the discharge.

The replacement static toxicity tests shall be conducted in accordance with the procedures set out in 40 CFR 136 and the R8/R9/R10 Toxicity Training Tool, January 2010. In the case of conflicts in method, 40 CFR 136 will prevail. The permittee shall conduct an acute 48-hour static toxicity test using *Ceriodaphnia dubia* and an acute 96-hour static toxicity test using *Pimephales promelas*. All tests will be conducted utilizing a multi-dilution series consisting of at least five (5) concentrations and a control as defined below:

- 100% effluent
- 62.5% effluent
- 50% effluent
- 25% effluent
- 12.5% effluent
- control (or 0% effluent)

In the event of inconclusive test results, the WDEQ reserves the right to require the permittee to perform additional tests at alternate dilutions and/or replicates. The WDEQ also reserves the right to require the submission of all information regarding all initiated tests, regardless of whether the tests were carried to completion or not.

Acute toxicity occurs when 50 percent or more mortality is observed for either species at any effluent concentration. If more than 10 percent control mortality occurs, the test is not valid. The test shall be repeated until satisfactory control survival is achieved.

If acute toxicity occurs, an additional test shall be conducted within four (4) weeks of the date of the initial sample. If only one species fails, retesting may be limited to this species. Should acute toxicity occur in the second test, testing shall occur once a month until further notified by the permit issuing authority.

Test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the second half of the calendar year (e.g., whole effluent results shall be reported with the DMR due January 28). The format for the report shall be consistent with the latest revision of the "Region VIII Guidance for Acute Whole Effluent Reporting", and shall include all chemical and physical data as specified.

4. Sampling Point for Toxicity Testing

Effluent samples collected for determining compliance with the above toxicity requirements may be collected at a point immediately above entry into the receiving water **provided** the effluent has not been diluted by any other water or effluent.

5. Toxicity Reduction Evaluation (TRE)
Toxicity Identification Evaluation (TIE)

Should acute toxicity and/or chronic toxicity be detected in the permittee's discharge, a TIE-TRE shall be undertaken by the permittee to establish the cause of the toxicity, locate the source(s) of the toxicity, and develop control of, or treatment for the toxicity. Failure to initiate, or conduct an adequate TIE-TRE, or delays in the conduct of such tests, shall not be considered a justification for noncompliance with the whole effluent toxicity limits contained in Part I.C.1. of this permit. A TRE plan needs to be submitted to the permitting authority within 45 days after confirmation of the continuance of effluent toxicity.

6. Chronic Toxicity Limitation-Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include chronic whole effluent toxicity limitations if any other information or data are developed indicating that chronic whole effluent toxicity limits are needed as required under 40 CFR 122.44 (d). Also, see Part IV.P. of this permit for additional whole effluent toxicity reopener provisions.

If acceptable to the permit issuing authority, and if in conformance with current regulations, this permit may be reopened and modified to incorporate TRE conclusions relating to additional numerical limitations, a modified compliance schedule, and or modified whole effluent protocol.

B. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and approval by, the permit issuing authority.

2. Reporting

Effluent monitoring results obtained during the previous six (6) month(s) shall be summarized and reported on a Discharge Monitoring Report Form. If the permit requires whole effluent toxicity (WET) (biomonitoring) testing, WET test results must be reported on the most recent version of EPA Region 8 Guidance for Whole Effluent Reporting. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the Signatory Requirements (see Part II.A.11.), and submitted to the state water pollution control agency at the following address. The reports must be received by the agency no later than the 28th day of the month following the completed reporting period. The first report is due on January 28, 2019.

Wyoming Department of Environmental Quality
Water Quality Division
200 West 17th Street
Cheyenne, WY 82002
Telephone: (307) 777-7781

If no discharge occurs during the reporting period, "no discharge" shall be reported. If discharge is intermittent during the reporting period, sampling shall be done while the facility is discharging.

3. Definitions

- a. A "composite" sample, for monitoring requirements, is defined as a minimum of four (4) grab samples collected at equally spaced two (2) hour intervals and proportioned according to flow.
- b. The "daily maximum" shall be determined by the analysis of a single grab or composite sample.
- c. An "instantaneous" measurement for monitoring requirements is defined as a single reading, measurement, or observation.
- d. "MGD", for monitoring requirements, is defined as million gallons per day.
- e. The "monthly average" shall be determined by calculating the arithmetic mean (geometric mean in the case of fecal coliform and E. coli) of all composite and/or grab samples collected during a calendar month.
- f. "Net" value, if noted under Effluent Characteristics is calculated on the basis of the net increase of the individual parameter over the quantity of that same parameter present in the intake water measured prior to any contamination or use in the process of this facility. Any contaminants contained in any intake water obtained from underground wells shall not be adjusted for as described above and, therefore, shall be considered as process input to the final effluent. Limitations in which "net" is not noted are calculated on the basis of gross measurements of each parameter in the discharge, irrespective of the quantity of those parameters in the intake waters.
- g. A "pollutant" is any substance or substances that, if allowed to enter surface waters of the state, causes or threatens to cause pollution as defined in the Wyoming Environmental Quality Act, Section 35-11-103.
- h. The "weekly average" shall be determined by calculating the arithmetic mean (geometric mean in the case of fecal coliform and E. coli) of all composite and/or grab samples collected during any week.

4. Test Procedures

Test procedures for the analysis of pollutants, collection of samples, sample containers, sample preservation, and holding times, shall conform to regulations published pursuant to 40 CFR, Part 136, unless other test procedures have been specified in this permit.

5. Recording of Results

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

- a. The exact place, date and time of sampling;
- b. The dates and times the analyses were performed;
- c. The person(s) who performed the analyses and collected the samples;

- d. The analytical techniques or methods used; and
- e. The results of all required analyses including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine the results.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form. Such increased frequency shall also be indicated.

7. Records Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurements, report or application. This period may be extended by request of the administrator at any time. Data collected on site, copies of Discharge Monitoring Reports and a copy of this WYPDES permit must be maintained on site during the duration of activity at the permitted location.

8. Penalties for Tampering

The Act provides that any person who falsifies, tampers with or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than two (2) years per violation, or both.

9. Compliance Schedules

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

10. Facility Identification

All facilities discharging produced water shall be clearly identified with an all-weather sign posted at a visually prominent location. This sign shall, at a minimum, convey the following information:

- a. The name of the company, corporation, person or persons who hold(s) the discharge permit; and
- b. The name of the facility (lease, tank battery number, etc.) as identified by the discharge permit.
- c. In addition, all outfall signs will include the WYPDES permit number and outfall number.

11. Outlet Structures

The permittee shall construct and maintain all outlet structures so that there is a free fall from the discharge pipe sufficient to allow the collection of representative samples and the measurement of flow volume using the bucket and stopwatch technique.

If the volume of discharge is too large to make measurement of flow by the bucket and stopwatch technique practical, the permittee must be able to measure or calculate flow volume by another means to an accuracy of plus or minus ten percent of the actual flow.

12. Location of Discharge Points

See Table 1, Below.

Table 1
Homestead Field Disposal WY0003140

Outfall	Qtr/Qtr	SECTION	TWP (N)	RNG (W)	LATITUDE	LONGITUDE	Drainage / Description
001*	SEnw	35	57	97	44.88096	-108.53188	Sage Creek (2AB) , Big Horn River Basin
DMP1	NWSE	35	57	97	44.877400	-108.525130	Sage Creek(2AB), adjacent to railroad track, Big Horn River Basin

*Outfall location DEQ-verified on 1/10/2018

PART II

A. MANAGEMENT REQUIREMENTS

1. Changes

The permittee shall give notice to the administrator of the Water Quality Division as soon as possible of any physical alterations or additions to the permitted facility. Notice is required when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source as determined in 40 CFR 122.29 (b); or
- b. The alteration or addition could change the nature or increase the quantity of pollutants discharged.

2. Noncompliance Notification

- a. The permittee shall give advance notice of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- b. The permittee shall report any noncompliance which may endanger health or the environment as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances. The report shall be made to the Water Quality Division, Wyoming Department of Environmental Quality at (307) 777-7781.
- c. A written submission shall be provided within five (5) days of the time that the permittee becomes aware of a noncompliance circumstance as described in paragraph b. above.

The written submission shall contain:

- (1) A description of the noncompliance and its cause;
 - (2) The period of noncompliance, including exact dates and times;
 - (3) The estimated time noncompliance is expected to continue if it has not been corrected; and
 - (4) Steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance.
- d. The following occurrences of unanticipated noncompliance shall be reported by telephone to the Water Quality Division, WYPDES Program (307) 777-7781 by the first workday following the day the permittee became aware of the circumstances.
 - (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;
 - (2) Any upset which exceeds any effluent limitation in the permit; or
 - (3) Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit.

- e. The administrator of the Water Quality Division may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Water Quality Division, WYPDES Program (307) 777-7781.
- f. The permittee shall report all instances of noncompliance that have not been specifically addressed in any part of this permit at the time the monitoring reports are due.

3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of the permit. However, the permittee shall operate, as a minimum, one complete set of each main line unit treatment process whether or not this process is needed to achieve permit effluent compliance.

4. Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to waters of the state resulting from noncompliance with any effluent limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

5. Bypass of Treatment Facilities

- a. Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
- b. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs c. and d. of this section. Return of removed substances to the discharge stream shall not be considered a bypass under the provisions of this paragraph.
- c. Notice:
 - (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice at least 60 days before the date of the bypass.
 - (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under Part II.A.2.
- d. Prohibition of bypass.
 - (1) Bypass is prohibited and the administrator of the Water Quality Division may take enforcement action against a permittee for a bypass, unless:
 - (a) The bypass was unavoidable to prevent loss of life, personal injury or severe property damage;

- (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (c) The permittee submitted notices as required under paragraph c. of this section.
- e. The administrator of the Water Quality Division may approve an anticipated bypass, after considering its adverse effects, if the administrator determines that it will meet the three conditions listed above in paragraph d. (1) of this section.

6. Upset Conditions

- a. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improper designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of paragraph c. of this section are met.
- c. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that:
 - (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;
 - (3) The permittee submitted notice of the upset as required under Part II.A.2; and
 - (4) The permittee complied with any remedial measures required under Part II.A.4.
- d. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

7. Removed Substances

Solids, sludges, filter backwash or other pollutants removed in the course of treatment or control of wastewaters or intake waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the state.

8. Power Failures

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

- a. In accordance with a schedule of compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities; or
- b. If such alternative power source as described in paragraph a. above is not in existence and no date for its implementation appears in Part I, take such precautions as are necessary to maintain and operate the facility under its control in a manner that will minimize upsets and insure stable operation until power is restored.

9. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the federal act and the Wyoming Environmental Quality Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give the administrator of the Water Quality Division advance notice of any planned changes at the permitted facility or of any activity which may result in permit noncompliance.

10. Duty to Mitigate

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

11. Signatory Requirements

All applications, reports or information submitted to the administrator of the Water Quality Division shall be signed and certified.

- a. All permit applications shall be signed as follows:
 - (1) For a corporation: by a responsible corporate officer;
 - (2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively;
 - (3) For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected official.
- b. All reports required by the permit and other information requested by the administrator of the Water Quality Division shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - (1) The authorization is made in writing by a person described above and submitted to the administrator of the Water Quality Division; and

- (2) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. A duly authorized representative may thus be either a named individual or any individual occupying a named position.
- c. If an authorization under paragraph II.A.11.b. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph II.A.11.b must be submitted to the administrator of the Water Quality Division prior to or together with any reports, information or applications to be signed by an authorized representative.
- d. Any person signing a document under this section shall make the following certification:

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

B. RESPONSIBILITIES

1. A. Providing Access

The permittee shall allow Department of Environmental Quality personnel and their invitees to enter the premises where the facility is located, or where records are kept under the conditions of this permit, and collect resource data as defined by Wyoming Statute § 6-3-414, inspect and photograph the facility, collect samples for analysis, review records, and perform any other function authorized by law or regulation. The permittee shall secure and maintain such access for the duration of the permit.

If the facility is located on property not owned by the permittee, the permittee shall also secure and maintain from the landowner upon whose property the facility is located permission for Department of Environmental Quality personnel and their invitees to enter the premises where a regulated facility is located, or where records are kept under the conditions of this permit, and collect resource data as defined by Wyoming Statute § 6-3-414, inspect and photograph the facility, collect samples for analysis, review records, and perform any other function authorized by law. The permittee shall secure and maintain such access for the duration of the permit.

If the facility cannot be directly accessed using public roads, the permittee shall also secure and maintain permission for Department of Environmental Quality personnel and their invitees to enter and cross all properties necessary to access the facility. The permittee shall secure and maintain such access for the duration of the permit.

B. Access Records

The permittee shall maintain in its records documentation that demonstrates that the permittee has secured permission for Department of Environmental Quality personnel and their invitees to access

the permitted facility, including (i) permission to access the land where the facility is located, (ii) permission to collect resource data as defined by Wyoming Statute § 6-3-414, and (iii) permission to enter and cross all properties necessary to access the facility if the facility cannot be directly accessed from a public road. The permittee shall also maintain in its records a current map of the access route(s) to the facility and contact information for the owners or agents of all properties that must be crossed to access the facility. The permittee shall ensure that the documentation, map, and contact information are current at all times. The permittee shall provide the documentation, map, and contact information to Department of Environmental Quality personnel upon request. Upon termination of the permit, the permittee shall maintain such records for a period of three (3) years.

2. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the regional administrator of the Environmental Protection Agency and the administrator of the Water Quality Division. The administrator of the Water Quality Division shall then provide written notification to the new owner or controller of the date in which they assume legal responsibility of the permit. The permit may be modified or revoked and reissued to change the name of the permittee and incorporate such other requirements as described in the federal act.

3. Availability of Reports

Except for data determined to be confidential under Section 308 of the federal act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Wyoming Department of Environmental Quality and the regional administrator of the Environmental Protection Agency. As required by the federal act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the federal act.

4. Toxic Pollutants

The permittee shall comply with effluent standards or prohibitions established under Section 307 (a) of the federal act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Changes in Discharge of Toxic Substances

Notification shall be provided to the administrator of the Water Quality Division as soon as the permittee knows of, or has reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

- (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21 (g) (7); or
 - (4) The level established by the director of the Environmental Protection Agency in accordance with 40 CFR 122.44 (f).
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- (1) Five hundred micrograms per liter (500 µg/L);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21 (g) (7); or
 - (4) The level established by the director of the Environmental Protection Agency in accordance with 40 CFR 122.44 (f).

6. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. As long as the conditions related to the provisions of "Bypass of Treatment Facilities" (Part II.A.5), "Upset Conditions" (Part II.A.6), and "Power Failures" (Part II.A.8) are satisfied then they shall not be considered as noncompliance.

7. Need to Halt or Reduce Activity not a Defense

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

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the federal act.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties established pursuant to any applicable state or federal law or regulation. In addition, issuance of this permit does not substitute for any other permits required under the Clean Water Act or any other federal, state, or local law.

10. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights nor any infringement of federal, state or local laws or regulations.

11. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The application should be submitted at least 180 days before the expiration date of this permit.

12. Duty to Provide Information

The permittee shall furnish to the administrator of the Water Quality Division, within a reasonable time, any information which the administrator may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the administrator, upon request, copies of records required by this permit to be kept.

13. Other Information

When the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or any report to the administrator of the Water Quality Division, it shall promptly submit such facts or information.

14. Permit Action

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

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PART III

A. OTHER REQUIREMENTS

1. Flow Measurement

At the request of the administrator of the Water Quality Division, the permittee must be able to show proof of the accuracy of any flow measuring device used in obtaining data submitted in the monitoring report. The flow measuring device must indicate values of within plus or minus ten (10) percent of the actual flow being measured.

2. 208(b) Plans

This permit may be modified, suspended or revoked to comply with the provisions of any 208(b) plan certified by the Governor of the State of Wyoming.

3. Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations (and compliance schedule, if necessary) or other appropriate requirements if one or more of the following events occurs:

- a. The state water quality standards of the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit;
- b. A total maximum daily load (TMDL) and/or watershed management plan is developed and approved by the state and/or the Environmental Protection Agency which specifies a wasteload allocation for incorporation in this permit;
- c. A revision to the current water quality management plan is approved and adopted which calls for different effluent limitations than contained in this permit;
- d. Downstream impairment is observed and the permitted facility is contributing to the impairment;
- e. The limits established by the permit no longer attain and/or maintain applicable water quality standards;
- f. The permit does not control or limit a pollutant that has the potential to cause or contribute to a violation of a state water quality standard.
- g. If new applicable effluent guidelines and/or standards have been promulgated and the standards are more stringent than the effluent limits established by the permit.
- h. In order to protect water quality standards in neighboring states, effluent limits may be incorporated into this permit or existing limits may be modified to ensure that the appropriate criteria, water quality standards and assimilative capacity are attained.

4. Permit Modification

After notice and opportunity for a hearing, this permit may be modified, suspended or revoked in whole or in part during its term for cause including, but not limited to, the following:

- a. Violation of any terms or conditions of this permit;
- b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- d. If necessary to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b) (2) (C) and (D), 304 (b) (2) and 307 (a) (2) of the federal act, if the effluent standard or limitation so issued or approved:
 - (1) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) Controls any pollutant not limited in the permit.

5. Toxicity Limitation - Reopener Provision

This permit may be reopened and modified (following proper administrative procedures) to include a new compliance date, additional or modified numerical limitations, a new or different compliance schedule, a change in the whole effluent protocol or any other conditions related to the control of toxicants if one or more of the following events occur:

- a. Toxicity was detected late in the life of the permit near or past the deadline for compliance;
- b. The toxicity reduction evaluation (TRE) results indicate that compliance with the toxic limits will require an implementation schedule past the date for compliance and the permit issuing authority agrees with the conclusion;
- c. The TRE results indicate that the toxicant(s) represent pollutant(s) that may be controlled with specific numerical limits and the permit issuing authority agrees that numerical controls are the most appropriate course of action;
- d. Following the implementation of numerical controls on toxicants, the permit issuing authority agrees that a modified whole effluent protocol is necessary to compensate for those toxicants that are controlled numerically;
- e. The TRE reveals other unique conditions or characteristics which, in the opinion of the permit issuing authority, justify the incorporation of unanticipated special conditions in the permit.

6. Severability

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit, shall not be affected thereby.

7. Penalties for Falsification of Reports

The federal act provides that any person who knowingly makes any false statement, representation or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation or by imprisonment for not more than two years per violation or both.

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