STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

AUTHORIZATION TO DISCHARGE UNDER THE
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM
(UPDES)

In compliance with provisions of the Utah *Water Quality Act, Title 19, Chapter 5, Utah Code Annotated (UCA) 1953, as amended* (the *"Act"*),

ALTON COAL DEVELOPMENT, LLC. - SOUTH AND NORTH PRIVATE LEASES

is hereby authorized to discharge from its North Private Lease facilities located approximately ½ miles southeast of Alton, Utah in Kane County, to receiving waters named

Lower Robinson Creek, Sink Valley Wash and Kanab Creek

in accordance with discharge point, effluent limitations, monitoring requirements and other conditions set forth herein.

This modified permit shall become effective on September 1, 2016

This modified permit and the authorization to discharge shall expire at midnight, July 31, 2018.

Signed this 19 day of August, 2016.

Walter L. Baker, P.E.
Director

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I. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Definitions.

1. "7-day and weekly average" is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week whichever is applicable. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, beginning on Sunday and ending on Saturday, shall be used for purposes of reporting self- monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.

2. "10-year, 24-hour precipitation event" means the maximum 24-hour precipitation event with a probable recurrence interval of once in 10 years. This information is available in *Weather Bureau Technical Paper No. 40*, May 1961 and *National Oceanographic and Atmospheric Administration Atlas 2,* 1973 for the 11 Western States, and may be obtained from the National Climatic Center of the Environmental Data Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

3. "30-day and monthly average" is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

4. "*Act*" means the "*Utah Water Quality Act*".

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

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

7. "Coal pile runoff" means the rainfall runoff from or through any coal storage pile.

8. "Composite samples" shall be flow proportioned. The composite sample shall contain, as a minimum, at least four (4) samples collected over the composite sample period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

   b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

   c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

   d. Continuous collection of sample, with sample collection rate proportional to flow rate.

9. "*CWA*" means The *Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.

10. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

11. "EPA" means the United States Environmental Protection Agency.

12. "Director" means Director of the Utah Division of Water Quality.

13. "Grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

14. "Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a UPDES permit (other than the UPDES permit for discharges from the municipal separate storm sewer) and discharges from fire fighting activities, fire hydrant flushing, potable water sources including waterline flushing, uncontaminated ground water (including dewatering ground water

infiltration), foundation or footing drains where flows are not contaminated with process materials such as solvents, springs, riparian habitats, wetlands, irrigation water, exterior building wash down where there are no chemical or abrasive additives, pavement wash water where spills or leaks of toxic or hazardous materials have not occurred and where detergents are not used, and air conditioning condensate.

15. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

16. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharges. This term does not include return flows from irrigated agriculture or agriculture storm water runoff.

17. "Runoff coefficient" means the fraction of total rainfall that will appear at a conveyance as runoff.

18. "*Section 313* water priority chemical" means a chemical or chemical categories which:

    a. Are listed at *40 Code of Federal Regulations (CFR) 372.65* pursuant to *Section 313* of *Title III* of the *Emergency Planning and Community Right-to-Know Act (EPCRA)* (also known as *Title III* of the *Superfund Amendments and Reauthorization Act* of 1986);

    b. Are present at or above threshold levels at a facility subject to *EPCRA, Section 313* reporting requirements, and

    c. Meet at least one of the following criteria:

        (1) Are listed in *Appendix D* of *40 CFR 122* on *Table II* (organic priority pollutants), *Table III* (certain metals, cyanides, and phenols) or *Table IV* (certain toxic pollutants and hazardous substances);

        (2) Are listed as a hazardous substance pursuant to *Section 311(b)(2)(A)* of the *CWA* at *40 CFR 116.4*; or

        (3) Are pollutants for which EPA has published acute or chronic toxicity criteria.

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

20. "Significant materials" includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under *Section 101(14)* of *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*; any chemical the facility is required to report pursuant to *EPCRA Section 313*; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

21. "Significant spills" includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under *Section 311* of the *Clean Water Act* (*see 40 CFR 110.10* and *40 CFR 117.21*) or *Section 102* of *CERCLA* (*see 40 CFR 302.4*).

22. "Storm water" means storm water runoff, snowmelt runoff, and surface runoff and drainage.

23. "Time-weighted composite" means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

24. "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, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

25. "Waste pile" means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

26. Acronym List

BMP	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act

CFR	Code of Federal Regulations
DMR	Discharge Monitoring Report
EPCRA	Emergency Planning & Community Right-to-Know Act
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
UAC	Utah Administrative Code
UCA	Utah Code Annotated
UPDES	Utah Pollutant Discharge Elimnation System

Unit List

mg/L	milligrams per liter
MGD	million gallons per day
ml/L	milliliters per liter
SU	standard units
µg/L	micrograms per liter

B. Description of Discharge Points.

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit are in violation of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

Outfall	Description of Discharge Point
001	Storm water runoff from sediment pond #1 to Lower Robinson Creek, Latitude 37° 24' 13" N, Longitude 112°27'13"W.
001B	Storm water runoff from sediment pond #1B to Lower Robinson Creek, Latitude 37° 24' 11" N, Longitude 112°27'16"W.
002	Storm water runoff from sediment pond #2 to Lower Robinson Creek, Latitude 37° 24' 10" N, Longitude 112°27'16"W.
003	Ground water and storm water runoff from sediment pond #3 to Lower Robinson Creek, Latitude 37° 23' 51" N, Longitude 112°27'53"W.
004	Ground water and storm water runoff from sediment pond #4 to Sink Valley Wash, Latitude 37° 23' 01" N, Longitude 112°27'03"W.

005	Storm water runoff from sediment pond #5 to an unnamed tributary of Kanab Creek, Latitude 37° 25' 18.07" N and Longitude 112° 28' 35.82' W.
006	Storm water runoff from sediment pond #6 to an unnamed tributary of Kanab Creek, Latitude 37° 25' 12.32' N and Longitude 112° 28'25.42 W.
007	Ground water and storm water runoff from sediment pond #7 to an unnamed tributary of Kanab Creek, Latitude 37° 25' 13.95' N. and Longitude 112° 28' 8.40' W.
008	Storm water runoff from sediment pond number 9 (sediment pond #8 discharges to sediment pond #9) to Kanab Creek, Latitude 37° 25'12.46 N. and Longitude 112° 28' 1.42' W.

C. Narrative Standard.

It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures.

D. Specific Limitations and Self-monitoring Requirements.

1. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfalls 001, 001B, 002, 003 and 004 identified in this permit. Such discharges shall be limited and monitored by the permittee as specified below in *Part I.D1*.

Effluent Characteristics	Effluent Limitations				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, [1]MGD	NA	[2]NA	NA	1.1 a/	Monthly	Measured
TSS, mg/L	25	35	NA	70	Monthly	Grab
Total Iron, mg/L	NA	NA	NA	1.0	Monthly	Grab
Oil & Grease, mg/L b/	NA	NA	NA	10	Monthly	Grab
TDS, mg/L	NA	NA	NA	1200	Monthly	Grab
TDS lbs/day c/	NA	NA	NA	2000	Monthly	Grab
pH, standard units	NA	NA	6.5	9.0	Monthly	Grab
Sanitary Waste d/	NA	NA	NA	None	Monthly	Visual
Oil and Grease, floating solids, visible foam, b/	NA	NA	NA	None	Monthly	Visual
[1] *MGD: million gallons per day* [2] *NA: not applicable*						

a/ For intermittent discharges, the duration of the discharge shall also be reported.

b/ In addition to monthly sampling for oil and grease, a visual inspection for oil and grease, floating solids, and visible foam shall be performed at least monthly. There shall be no sheen, floating solids, or visible foam in other than trace amounts. If a sheen is observed, a sample of the effluent shall be collected immediately thereafter and oil and grease shall not exceed 10 mg/L in concentration.

c/ A limit of one ton (2000 lbs. per day) as a sum from all discharge points is required of the permittee, unless a concentration of 500 mg/L or less is achieved at all discharge points. If 500 mg/L or less is achieved at all discharge points, then no loading limit applies. If the permittee cannot achieve the 500 mg/L concentration requirement or the one ton per day loading limit, then the permittee will be required to remove salinity/TDS in excess of one ton per day by developing a treatment process, participating in a salinity off-set program, or developing some type of mechanism to remove the salinity/TDS. The selection of a salinity control method, if needed, must be approved by the Director of the Division of Water Quality and implemented within one year of the effective date of approval.

d/ There shall be no discharge of sanitary waste.

2. Samples collected in compliance with the monitoring requirements specified above shall be collected prior to mixing with the receiving water.

3. The permittee shall complete one acute Whole Effluent Toxicity test on the first discharge after the effective date of this permit from Outfalls 003 and 004. The results shall be reported with the discharge monitoring report or netDMR submittal for the month in which the test was completed. The complete WET laboratory report shall be submitted.

4. Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may, at Outfalls 001, 001B, 002, 003 and 004 substitute the following limitations for the TSS limitations contained in *Part I.D.1*:

Effluent Characteristics	Daily Minimum	Daily Maximum
Settleable solids (SS), milliliter/liter	NA	0.5

In order to substitute the above limitations, the sample collected during the storm event must be analyzed for all permitted parameters specified under *Part I.D.1*. (excepting TSS). Such analyses shall be conducted on either grab or composite samples.

Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may, at Outfalls 001, 001B, 002, 003, and 004, comply with the following limitation instead of the otherwise applicable limitations contained in *Part I.D.1*:

Effluent Characteristics	Daily Minimum	Daily Maximum
pH, SU	6.5	9.0

In order to substitute the above limitation, the sample collected during the storm event must be analyzed for all permitted parameters specified under *Part I.D.1*. Such analyses shall be conducted on either grab or composite samples.

The operator shall have the burden of proof that the increase in discharge was caused by the applicable precipitation event described in *Part I.D.4*. The alternate limitations in *Part I.D.4* shall not apply to treatment systems that treat exclusively underground mine water.

5. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from Outfalls 005, 006, 007 and 008 identified in this permit. Such discharges shall be limited and monitored by the permittee as specified below in *Part I.D.5*.

Effluent Characteristics	Effluent Limitations				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, [1]MGD	NA	[2]NA	NA	0.117a/	Monthly	Measured
TSS, mg/L	25	35	NA	70	Monthly	Grab
Total Iron, mg/L e/	NA	NA	NA	1.0	Monthly	Grab
Total Selenium, mg/L e/	0.0046	NA	NA	0.020	Monthly	Grab
Oil & Grease, mg/L b/	NA	NA	NA	10	Monthly	Grab
TDS, mg/L	NA	NA	NA	1200	Monthly	Grab
TDS lbs/day	NA	NA	NA	2000c/	Monthly	Grab
pH, standard units	NA	NA	6.5	9.0	Monthly	Grab
Sanitary Waste d/	NA	NA	NA	None	Monthly	Visual
Oil and Grease, floating solids, visible foam, b/	NA	NA	NA	None	Monthly	Visual
Total Arsenic, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Cadmium, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Chromium, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Copper, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Mercury, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Nickel, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Lead, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Silver, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Zinc, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Boron, mg/L	NA	NA	NA	NA	Monthly	Grab

[1] *MGD: million gallons per day* [2] *NA: not applicable*

a/ For intermittent discharges, the duration of the discharge shall also be reported. This daily maximum flow limit shall apply to Outfall 008 only.

b/ In addition to monthly sampling for oil and grease, a visual inspection for oil and grease, floating solids, and visible foam shall be performed at least monthly. There shall be no sheen, floating solids, or visible foam in other than trace amounts. If a sheen is observed, a sample of the effluent shall be collected immediately thereafter and oil and grease shall not exceed 10 mg/L in concentration.

c/ A limit of one ton (2000 lbs per day) as a sum from all discharge points is required of the permittee, unless a concentration of 500 mg/L or less is achieved at all discharge points. If 500 mg/L or less is achieved at all

discharge points, then no loading limit applies. If the permittee cannot achieve the 500 mg/L concentration requirement or the one ton per day loading limit, then the permittee will be required to remove salinity/TDS in excess of one ton per day by developing a treatment process, participating in a salinity off-set program, or developing some type of mechanism to remove the salinity/TDS. The selection of a salinity control method, if needed, must be approved by the Director of the Division of Water Quality and implemented within one year of that approval.

d/ There shall be no discharge of sanitary waste.

e/ Outfall 008 shall meet a total selenium limit of 0.0081 mg/L as a thirty day average and 0.0414 mg/L as a daily maximum, and for total iron a daily maximum limit of 2.16 mg/L.

6. Samples collected in compliance with the monitoring requirements specified above shall be collected prior to mixing with the receiving water.

7. The permittee shall complete one chronic Whole Effluent Toxicity test on the first discharge after the effective date of this modified permit from Outfall 007. The results shall be reported with the discharge monitoring report or netDMR submittal for the month in which the test was completed. The complete WET laboratory report shall be submitted.

8. Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is less than or equal to the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) may, at Outfalls 005, 006, 007 and 008 substitute the following limitations for the TSS limitations contained in *Part I.D.5*:

Effluent Characteristics	Daily Minimum	Daily Maximum
Settleable solids (SS), milliliter/liter	NA	0.5

In order to substitute the above limitations, the sample collected during the storm event must be analyzed for all permitted parameters specified under *Part I.D.5*. Such analyses shall be conducted on either grab or composite samples.

Should any discharge or increase in the volume of a discharge caused by precipitation within any 24-hour period that is greater than the 10-year, 24-hour precipitation event (or snowmelt of

equivalent volume) may, at Outfalls 005, 006, 007 and 008 comply with the following limitations instead of the otherwise applicable limitations contained in *Part I.D.5*:

Effluent Characteristics	30 Day Average	Daily Minimum	Daily Maximum
pH, SU (all Outfalls)	NA	6.5	9.0

In order to substitute the above limitations, the sample collected during the storm event must be analyzed for all permitted parameters specified under *Part I.D.5*. Such analyses shall be conducted on either grab or composite samples.

The operator shall have the burden of proof that the increase in discharge was caused by the applicable precipitation event described in *Part I.D.8*. The alternate limitations in *Part I.D.8* shall not apply to treatment systems that treat exclusively underground mine water.

II. STORM WATER DISCHARGE REQUIREMENTS

A. Coverage of This Section.

1. Discharges Covered Under This Section. The requirements listed under this section shall apply to storm water discharges from the industrial facility.

   a. Site Coverage. This section covers discharges of storm water associated with industrial activity to waters of the State from the confines of the facility listed on the cover page. Specific monitoring requirements have been included and are based on the requirements of the UPDES Multi Sector General Permit for Storm Water Discharges Associated with Industrial Activity, Permit No. UTR000000.

B. Prohibition of Non-Storm Water Discharges.

The following non-storm water discharges may be authorized under this permit provided the non-storm water component of the discharge is in compliance with this section; discharges from fire fighting activities; fire hydrant flushing; potable water sources including waterline flushing; drinking fountain water; irrigation drainage and lawn watering; routine external building wash down water where detergents or other compounds have not been used in the process; pavement wash waters where spills or leaks of toxic or hazardous materials (including oils and fuels) have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated compressor condensate; uncontaminated springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials such as solvents.

C. Storm Water Pollution Prevention Plan Requirements: Contents of the Plan.

The plan shall include, at a minimum, the following:

1. Pollution Prevention Team. Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities

and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.

2. Description of Potential Pollutant Sources. Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials, which may be reasonably expected to have the potential as a significant pollutant source. Each plan shall include, at a minimum:

   a. Drainage. A site map must be maintained indicating drainage areas and storm water outfalls. For each area of the facility that generates storm water discharges associated with the waste water treatment related activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow and an identification of the types of pollutants that are likely to be present in storm water discharges associated with the activity. Factors to consider include the toxicity of the pollutant; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified. The site map shall include but not be limited to:

      (1) Drainage direction and discharge points from all wastewater associated discharges.

      (2) Location of any erosion and sediment control structure or other control measures utilized for reducing pollutants in storm water runoff.

      (3) Location of any handling, loading, unloading or storage of chemicals or potential pollutants such as caustics, hydraulic fluids, lubricants, solvents or other petroleum products, or hazardous wastes and where these may be exposed to precipitation.

      (4) Locations where any major spills or leaks of toxic or hazardous materials have occurred

      (5) Location of any sand or salt piles.

(6) Location of fueling stations or vehicle and equipment maintenance and cleaning areas that are exposed to precipitation.

(7) Location of receiving streams or other surface water bodies.

(8) Locations of outfalls and the types of discharges contained in the drainage areas of the outfalls.

b. Inventory of Exposed Materials. An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of 3 years prior to the effective date of this permit; method and location of onsite storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the time of 3 years prior to the effective date of this permit and the present; the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.

c. Spills and Leaks. A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of 3 years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of the permit.

d. Sampling Data. A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.

e. Summary of Potential Pollutant Sources and Risk Assessment. A narrative description of the potential pollutant sources from the following activities associated with treatment works: access roads/rail lines; loading and unloading operations; outdoor storage activities; material handling sites; outdoor vehicle storage or maintenance sites; significant dust or particulate generating processes;

and onsite waste disposal practices. Specific potential pollutants shall be identified where known.

3. Measures and Controls. The facility shall develop a description of storm water management controls appropriate for the facility, and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:

   a. Good Housekeeping. All areas that may contribute pollutants to storm waters discharges shall be maintained in a clean, orderly manner. These are practices that would minimize the generation of pollutants at the source or before it would be necessary to employ sediment ponds or other control measures at the discharge outlets. Areas where good housekeeping practices should be implemented are storage areas for raw materials, waste materials and finished products; loading/unloading areas and waste disposal areas for hazardous and non-hazardous wastes. Examples of good housekeeping measures include; sweeping; labeling drums containing hazardous materials; and preventive monitoring practices or equivalent measures.

   b. Preventive Maintenance. A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.

   c. Spill Prevention and Response Procedures. Areas where potential spills that can contribute pollutants to storm water discharges can occur, and their accompanying drainage points, shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures and equipment for cleaning up spills shall be identified in the plan and made available to the appropriate personnel.

d. Inspections. In addition to the comprehensive site evaluation required under *Part II.D.*, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility on a periodic basis. The following areas shall be included in all inspections: loading and unloading areas for all significant materials; storage areas, including associated containment areas; waste management units; and vents and stacks from industrial activities. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained. The use of a checklist developed by the facility is encouraged.

e. Employee Training. Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify how often training will take place, but training should be held at least annually (once per calendar year). Employee training must, at a minimum, address the following areas when applicable to a facility: petroleum product management; process chemical management; spill prevention and control; fueling procedures; general good housekeeping practices; proper procedures for using fertilizers, herbicides and pesticides.

f. Record Keeping and Internal Reporting Procedures. A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under *Part II.C.* Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.

g. Non-storm Water Discharges.

(1) Certification. The plan shall include a certification that the discharge has been tested or evaluated for the presence of non-storm water discharges. The certification shall include the identification of

potential significant sources of non-storm water at the site, a description of the results of any test and/or evaluation for the presence of non-storm water discharges, the evaluation criteria or testing method used, the date of any testing and/or evaluation, and the onsite drainage points that were directly observed during the test. Certifications shall be signed in accordance with *Part V.G.* of this permit.

(2) Exceptions. Except for flows from fire fighting activities, sources of non-storm water listed in *Part II.B. (Prohibition of Non-storm Water Discharges)* that are combined with storm water discharges associated with industrial activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

(3) Failure to Certify. Any facility that is unable to provide the certification required (testing for non-storm water discharges), must notify the Director within 180 days of the effective date of this permit. If the failure to certify is caused by the inability to perform adequate tests or evaluations, such notification shall describe: the procedure of any test conducted for the presence of non-storm water discharges; the results of such test or other relevant observations; potential sources of non-storm water discharges to the storm sewer; and why adequate tests for such storm sewers were not feasible. Non-storm water discharges to waters of the State that are not authorized by a UPDES permit are unlawful, and must be terminated.

h. Sediment and Erosion Control. The plan shall identify areas, which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.

i. Management of Runoff. The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the generation or source(s) of pollutants)

used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The plan shall provide that measures that the permittee determines to be reasonable and appropriate shall be implemented and maintained. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity (*see Part II.C.2, Description of Potential Pollutant Sources*) shall be considered when determining reasonable and appropriate measures. Appropriate measures or other equivalent measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, wet detention/retention devices and discharging storm water through the waste water facility for treatment.

D. Comprehensive Site Compliance Evaluation

Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but in no case less than once a year. Such evaluations shall provide:

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

2. Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with *Part II.C.2. (Description of Potential Pollutant Sources)* and pollution prevention measures and controls identified in the plan in accordance with *Part II.C.3. (Measures and Controls)* shall be revised as appropriate within 2 weeks of such evaluation and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the evaluation.

3. A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with *Part II.C.3.i.* Shall be made and retained as part of the storm water pollution prevention plan for at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with *Part IV.G (Signatory Requirements)* of this permit.

4. Deadlines for Plan Preparation and Compliance. The facility shall prepare and implement a plan in compliance with the provisions of *Part II* of this permit within 270 days of the permit effective date.

5. Keeping Plans Current. The facility shall amend the plan whenever there is a change in design, construction, operation, or maintenance, that has a significant effect on the potential for the discharge of pollutants to the waters of the state or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified by the plan, or in otherwise achieving the general objective of controlling pollutants in storm water discharges associated with the activities at the facility.

E. Monitoring and Reporting Requirements

1. Quarterly Visual Examination of Storm Water Quality. The facility shall perform and document a visual examination of a storm water discharge associated with industrial activity from each outfall, except discharges exempted below. The examination must be made at least once in each of the following designated periods during daylight hours unless there is insufficient rainfall or snow melt to produce a runoff event: January through March; April through June; July through September; and October through December.

   a. Sample and Data Collection. Examinations shall be made of samples collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed 1 hour) of when the runoff or snowmelt begins discharging. The examinations shall document observations of color, odor, clarity, floating solids, settled solids, suspended solids,

foam, oil sheen, and other obvious indicators of storm water pollution. The examination must be conducted in a well-lit area. No analytical tests are required to be performed on the samples. All such samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. Where practicable, the same individual should carry out the collection and examination of discharges.

b. Visual Storm Water Discharge Examination Reports. Visual examination reports must be maintained onsite in the pollution prevention plan. The report shall include the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the storm water discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution), and probable sources of any observed storm water contamination.

c. Representative Discharge. If the permittee reasonably believes multiple outfalls discharge substantially identical effluents, based on a consideration of industrial activity, significant materials, and management practices and activities within the area drained by an outfall, the permittee may collect a sample of effluent from one such outfall and report that the observation data also applies to the substantially identical outfall(s) provided that the permittee includes in the storm water pollution prevention plan a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluents. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area [e.g., low (under 40 percent), medium (40 to 65 percent), or high (above 65 percent)] shall be provided in the plan.

d. Adverse Conditions. When a discharger is unable to collect samples over the course of the visual examination period as a result of adverse climatic conditions, the discharger must document the reason for not performing the visual examination and retain this documentation onsite with the results of the visual examination. Adverse weather

conditions, which may prohibit the collection of samples, include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

e. Inactive and Unstaffed Site. When a discharger is unable to conduct visual storm water examinations at an inactive and unstaffed site, the operator of the facility may exercise a waiver of the monitoring requirement as long as the facility remains inactive and unstaffed. The facility must maintain a certification with the pollution prevention plan stating that the site is inactive and unstaffed so that performing visual examinations during a qualifying event is not feasible.

F. *EPCRA Section 313* Requirements.

1. In areas where *Section 313* water priority chemicals are stored, processed or otherwise handled, appropriate containment, drainage control and/or diversionary structures shall be provided. At a minimum, one of the following preventive systems or its equivalent shall be used:

   a. Curbing, culverting, gutters, sewers, or other forms of drainage control to prevent or minimize the potential for storm water run-on to come into contact with significant sources of pollutants; or
   b. Roofs, covers or other forms of appropriate protection to prevent storage piles from exposure to storm water and wind.

2. No tank or container shall be used for the storage of a *Section 313* water priority chemical unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature, etc.

   Liquid storage areas for *Section 313* water priority chemicals shall be operated to minimize discharges of *Section 313* chemicals. Appropriate measures to minimize discharges of *Section 313* chemicals may include secondary containment provided for at least the entire contents of the largest single tank plus sufficient freeboard to allow for precipitation, a strong spill contingency and integrity testing plan, and/or other equivalent measures.

3. Material storage areas for *Section 313* water priority chemicals other than liquids that are subject to runoff, leaching, or wind shall incorporate drainage or other control features that will minimize the discharge of *Section 313* water priority chemicals by reducing storm water contact with *Section 313* water priority chemicals.

4. Truck and rail car loading and unloading areas for liquid *Section 313* water priority chemicals shall be operated to minimize discharges of *Section 313* water priority chemicals. Protection such as overhangs or door skirts to enclose trailer ends at truck loading/unloading docks shall be provided as appropriate. Appropriate measures to minimize discharges of *Section 313* chemicals may include: the placement and maintenance of drip pans (including the proper disposal of materials collected in the drip pans) where spillage may occur (such as hose connections, hose reels and filler nozzles) for use when making and breaking hose connections; a strong spill contingency and integrity testing plan; and/or other equivalent measures.

5. Processing equipment and materials handling equipment shall be operated so as to minimize discharges of *Section 313* water priority chemicals. Materials used in piping and equipment shall be compatible with the substances handled. Drainage from process and materials handling areas shall minimize storm water contact with *Section 313* water priority chemicals. Additional protection such as covers or guards to prevent exposure to wind, spraying or releases from pressure relief vents from causing a discharge of *Section 313* water priority chemicals to the drainage system shall be provided as appropriate. Visual inspections or leak tests shall be provided for overhead piping conveying *Section 313* water priority chemicals without secondary containment.

6. Drainage from areas covered by *Parts II.F. 1*, *2*, *3*, or *4* should be restrained by valves or other positive means to prevent the discharge of a spill or other excessive leakage of *Section 313* water priority chemicals. Where containment units are employed, such units may be emptied by pumps or ejectors; however, these shall be manually activated.

   Flapper-type drain valves shall not be used to drain containment areas. Valves used for the drainage of containment areas should, as far as is practical, be of manual, open-and-closed design. If facility drainage is not engineered as above, the final discharge of all in-facility storm sewers shall be equipped to be equivalent with a diversion system that could, in the event of an uncontrolled

spill of *Section 313* water priority chemicals, return the spilled material to the facility.

Records shall be kept of the frequency and estimated volume (in gallons) of discharges from containment areas.

7. Other areas of the facility (those not addressed in *Parts II.F. 1, 2, 3,* or *4,* from which runoff that may contain *Section 313* water priority chemicals or spills of *Section 313* water priority chemicals could cause a discharge shall incorporate the necessary drainage or other control features to prevent discharge of spilled or improperly disposed material and ensure the mitigation of pollutants in runoff or leachate.

8. All areas of the facility shall be inspected at specific intervals identified in the plan for leaks or conditions that could lead to discharges of *Section 313* water priority chemicals or direct contact of storm water with raw materials, intermediate materials, waste materials or products. In particular, facility piping, pumps, storage tanks and bins, pressure vessels, process and material handling equipment, and material bulk storage areas shall be examined for any conditions or failures that could cause a discharge. Inspection shall include examination for leaks, wind blowing, corrosion, support or foundation failure, or other forms of deterioration or non-containment. Inspection intervals shall be specified in the plan and shall be based on design and operational experience. Different areas may require different inspection intervals. Where a leak or other condition is discovered that may result in significant releases of *Section 313* water priority chemicals to waters of the State, action to stop the leak or otherwise prevent the significant release of *Section 313* water priority chemicals to waters of the State shall be immediately taken or the unit or process shut down until such action can be taken. When a leak or non-containment of a *Section 313* water priority chemical has occurred, contaminated soil, debris, or other material must be promptly removed and disposed in accordance with Federal, State, and local requirements and as described in the plan.

9. Facilities shall have the necessary security systems to prevent accidental or intentional entry that could cause a discharge. Security systems described in the plan shall address fencing, lighting, vehicular traffic control, and securing of equipment and buildings.

10. Facility employees and contractor personnel that work in areas where *Section 313* water priority chemicals are used or stored shall

be trained in and informed of preventive measures at the facility. Employee training shall be conducted at intervals specified in the plan, but not less than once per year. Training shall address: pollution control laws and regulations, the storm water pollution prevention plan and the particular features of the facility and its operation that are designed to minimize discharges of *Section 313* water priority chemicals. The plan shall designate a person who is accountable for spill prevention at the facility and who will set up the necessary spill emergency procedures and reporting requirements so that spills and emergency releases of *Section 313* water priority chemicals can be isolated and contained before a discharge of a *Section 313* water priority chemical can occur. Contractor or temporary personnel shall be informed of facility operation and design features in order to prevent discharges or spills from occurring.

III. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling.

Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Sludge samples shall be collected at a location representative of the quality of sludge immediately prior to the use-disposal practice.

B. Monitoring Procedures.

Monitoring must be conducted according to test procedures approved under *Utah Administrative Code (UAC) R317-2-10*, unless other test procedures have been specified in this permit.

C. 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 six months per violation, or by both.

D. Reporting of Monitoring Results.

Monitoring results obtained during the previous month shall be summarized for each month and reported on a DMR Form (EPA No. 3320-1) or by NetDMR, post-marked no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports shall be signed and certified in accordance with the requirements of *Signatory Requirements (Part V.G.)*, and submitted by NetDMR, or submitted to the Division of Water Quality on the appropriate DMR form at the following address:

original to: Department of Environmental Quality
Division of Water Quality
195 North 1950 West
PO Box 144870
Salt Lake City, Utah 84114-4870

E. 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.

F. Additional Monitoring by the Permittee.

If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10* or as otherwise specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.

G. Records Contents.

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements:
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and,
6. The results of such analyses.

H. Retention of Records.

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 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location.

I. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance that may seriously endanger health or environment as soon as possible, but no later than 24 hours from the time the permittee first became aware of circumstances. The report shall be made to the Division

of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4123 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:

   a. Any noncompliance that may endanger health or the environment;

   b. Any unanticipated bypass that exceeds any effluent limitation in the permit *(see Part IV.G, Bypass of Treatment Facilities.)*;

   c. Any upset which exceeds any effluent limitation in the permit *(see Part IV.H, Upset Conditions.)*; or,

   d. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit.

3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected; and,

   d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

   e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.

4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.

5. Reports shall be submitted to the addresses in *Part III.D, Reporting of Monitoring Results*.

J. Other Noncompliance Reporting.

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for *Part III.D* are submitted. The reports shall contain the information listed in *Part III.I.3*.

K. Inspection and Entry.

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

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

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

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

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the *Act*, any substances or parameters at any location.

IV. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply.

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions.

The *Act* provides that any person who violates a permit condition implementing provisions of the *Act* is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions of the Act is subject to a fine not exceeding $25,000 per day of violation; Any person convicted under *UCA 19-5-115(2)* a second time shall be punished by a fine not exceeding $50,000 per day. Except as provided at *Part IV.G, Bypass of Treatment Facilities* and *Part IV.H, Upset Conditions*, nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. 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.

D. Duty to Mitigate.

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

E. Proper Operation and Maintenance.

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar

systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

F. Removed Substances.

Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities.

1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to *Parts IV.G.2. and IV.G.3.*

2. Prohibition of Bypass.

   a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

      (1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;

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

      (3) The permittee submitted notices as required under *Part IV.G.3.*

   b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in *Part IV.G.2a. (1), (2) and (3).*

3. Notice.

a. Anticipated bypass. Except as provided in *Part IV.G.2. and Part IV.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:

(1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages:

(2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;

(3) Description of specific measures to be taken to minimize environmental and public health impacts;

(4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;

(5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and

(6) Any additional information requested by the Director.

b. Emergency Bypass. Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in *Part IV.G.3.a.(1)* through *(6)* to the extent practicable.

c. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass to the Director as required under *Part III.I., Twenty-four-Hour Notice of Non-Compliance*

Reporting. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of *Part IV.H.2.* are met. Director's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the permittee can identify the cause(s) of the upset;

   b. The permitted facility was at the time being properly operated;

   c. The permittee submitted notice of the upset as required under *Part III.I, Twenty-four Hour Notice of Noncompliance Reporting*; and,

   d. The permittee complied with any remedial measures required under *Part IV.D, Duty to Mitigate.*

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Toxic Pollutants.

The permittee shall comply with effluent standards or prohibitions established under *Section 307(a)* of *The Water Quality Act of 1987* 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.

J. Changes in Discharge of Toxic Substances.

Notification shall be provided to the Director as soon as the permittee knows of, or has reason to believe:

1. That any activity has occurred or will occur that 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":

   a. One hundred micrograms per liter (100 µg/L);

   b. 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;

   c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(7)* or (10); or,

   d. The level established by the Director in accordance with *UAC R317-8-4.2(6)*.

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

   a. Five hundred micrograms per liter (500 µg/L);

   b. One milligram per liter (1 mg/L) for antimony:

   c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(9)*; or,

   d. The level established by the Director in accordance with *UAC R317-8-4.2(6)*.

K. Industrial Pretreatment.

Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to *Section 307* of *The Water Quality Act of 1987*, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at *40 CFR 403*, the State Pretreatment Requirements at *UAC R317-8-8*, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters.

In addition, in accordance with *40 CFR 403.12(p)(1)*, the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under *40 CFR 261*. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

V. GENERAL REQUIREMENTS

A. Planned Changes.

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Director of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance.

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

C. Permit Actions.

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 re-issuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. Duty to Reapply.

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

E. Duty to Provide Information.

The permittee shall furnish to the Director, within a reasonable time, any information which the Director 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 Director, upon request, copies of records this permit requires to be kept.

F. 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 Director, it shall promptly submit such facts or information.

G. Signatory Requirements.

All applications, reports or information submitted to the Director shall be signed and certified.

1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Director 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:

   a. The authorization is made in writing by a person described above and submitted to the Director, and,

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

3. Changes to authorization. If an authorization under *Part V.G.2.* 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 *Part V.G.2.* must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under *Part V.G.* 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."

H. Penalties for Falsification of Reports.

The *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 $10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both.

I. Availability of Reports.

Except for data determined to be confidential under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential

J. Oil and Hazardous Substance Liability.

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

K. Property Rights.

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

L. 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.

M. Transfers.

This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in *Part V.M.2.*

N. 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 law or regulation under authority preserved by *UCA 19-5-117.*

O. Water Quality-Reopener Provision.

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

1. Water Quality Standards for 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.

2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.

3. A revision to the current Water Quality Management Plan is approved and adopted which calls for different effluent limitations than contained in this permit.

P. Toxicity Limitation - Reopener Provision.

This permit may be reopened and modified (following proper administrative procedures) to include WET testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.

FACT SHEET STATEMENT OF BASIS
ALTON COAL DEVELOPMENT, LLC
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
PERMIT NUMBER: UT0025992
MAJOR PERMIT MODIFICATION
MINOR INDUSTRIAL FACILITY

FACILITY CONTACTS

Facility Contact:	B. Kirk Nicholes	Responsible Official:	Larry Johnson
Position:	Env. Specialist	Position:	Mine Manager
Phone:	(435) 691-1551	Phone:	(435) 691-2983

DESCRIPTION OF FACILITY

Facility Name:	Alton Coal Development, LLC – North Private Lease
Mailing Address:	463 North 100 West, Suite 1 Cedar City, Utah 84721
Physical Location:	2060 South Alton Road, Alton, Utah 84710.
Coordinates:	Latitude: 37° 24' 24.02 N., Longitude: 112° 27' 12.47 W.

Standard Industrial Classification (SIC): *1221 - Bituminous Coal and Lignite Surface Mining*

REASON FOR MAJOR PERMIT MODIFICATION

Alton Coal Development, LLC (ACD) – North Private Lease is a surface coal mining operation. ACD has mined an area known as the South Lease, and is in the process of reclaiming this area. ACD has acquired an area known as the North Private Lease (NPL) where they will continue to mine for coal. The NPL is approximately one half mile southeast of Alton, Utah and 1.3 miles north of the current South Lease.

ACD is proposing to construct five ponds in the NPL; Ponds 5, 6, 7, 8 & 9. Four of these ponds will ultimately discharge to Kanab Creek. Pond 8 will discharge to pond 9 and not directly to Waters of the State. ACD is expanding their operation from the south lease to the north lease and has requested a modification of their existing UPDES Permit to include the new outfalls.

ACD plans to continue use of ponds 1, 1B, 2, 3 & 4 in the South Lease until sufficient vegetation is produced in the reclaimed areas and the Division of Oil Gas and Mining (DOGM) has given permission to remove the ponds. Pond 5 has already been reclaimed in the South Lease, and a new Pond 5 will be included in the NPL as indicated above. The remaining discharge points in the South Lease will be included in the modified permit for the NPL and can be inactivated after appropriate bond release by the DOGM.

DESCRIPTION OF DISCHARGE

The modified permit for ACD will contain nine Outfalls, five from the South Lease and four from the NPL. The new outfalls in the modified permit are as follows:

Outfall	Description of Discharge Point
005	Storm water runoff from sediment pond #5 to an unnamed tributary of Kanab Creek, Latitude 37° 25' 18.07" N and Longitude 112° 28' 35.82' W.
006	Storm water runoff from sediment pond #6 to an unnamed tributary of Kanab Creek, Latitude 37° 25' 12.32' N and Longitude 112° 28'25.42 W.
007	Ground water and storm water runoff from sediment pond #7 to an unnamed tributary of Kanab Creek, Latitude 37° 25' 13.95' N. and Longitude 112° 28' 8.40' W.
008	Storm water runoff from sediment pond number 9 (sediment pond #8 discharges to sediment pond #9) to Kanab Creek, Latitude 37° 25'12.46 N. and Longitude 112° 28' 1.42' W.

RECEIVING WATERS AND STREAM CLASSIFICATION

Lower Robinson Creek, Sink Valley Wash and Kanab Creek are classified as 2B, 3C and 4.

Class 2B – protected for secondary contact recreation such as boating, wading, or similar uses.

Class 3C – protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.

Class 4 - protected for agricultural uses including irrigation of crops and stock watering.

WASTE LOAD ANALYSIS, ANTIDEGRADATION REVIEW AND REASONABLE POTENTIAL ANALYSIS

Effluent limitations were derived from either of two Wasteload Analyses (WLA), which are appended to this statement of basis as Addendum I. One WLA is for those points that discharge to unnamed tributaries to Kanab Creek and are ephemeral in nature, and the other WLA is for Outfall 008 which discharges directly to Kanab Creek. The WLAs incorporate Secondary Treatment Standards, Water Quality Standards, Anti-degradation Reviews (ADR) as appropriate, and designated uses into a water quality model that projects the effects of discharge concentrations on

receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters. An ADR Level I review was performed and concluded that an ADR Level II review was required. The WLAs indicate that the effluent limitations should be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters.

The level II ADR review was completed by ACD and received by DWQ on February 1, 2016. The ADR II was approved by DWQ on March 9, 2016. The results of the ADR II concluded that the present treatment systems employed by ACD is the least degrading feasible alternative.

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required.

A quantitative RP analysis was performed on a limited data set for copper, lead, selenium and boron to determine if there was reasonable potential for the discharge to exceed the applicable water quality standards. Based on the RP analysis, the following parameters exceeded the most stringent chronic water quality standard or were determined to have a reasonable potential to exceed the standard: total selenium. Because the data set used was limited, and ACD rarely discharges, this modified permit will require monthly monitoring when the facility is discharging for the following total metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc and boron. ACD will be required to use the method of analysis providing the lowest limit of detection. A copy of the data used in the RP analysis is included in Appendix II, and the RP analysis is in Appendix III.

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in *40 Code of Federal Regulations (CFR) Part 122.44* and in *UAC R317-8-4.2*, effluent limitations are derived from technology-based effluent limitations guidelines, Utah Secondary Treatment Standards (*UAC R317-1-3.2*) or Utah Water Quality Standards (*UAC R317-2*). In cases where multiple limits have been developed, those that are more stringent apply. In cases where no underlying standards have been developed, Best Professional Judgment (BPJ) may be used where applicable to set effluent limits. "Best Professional Judgment" refers to a discretionary, best professional decision made by the permit writer based upon precedent, prevailing regulatory standards or other relevant information.

1) All of the discharges are intermittent in nature and will occur only during runoff events. All of the receiving streams in the modified permit are also intermittent in nature, except for Kanab Creek near Outfall 008. All but one of the Outfalls (008) will be discharging to ephemeral streams. Most of the Outfalls will have no dilution and as a result, the effluent limits will be either categorical standards (State or Federal) or water quality standards, no

matter what the effluent flow is. However, Outfall 008 has some dilution as it goes directly into that portion of Kanab Creek that has flow. Therefore, Outfall 008 will have a limit on flow and the other discharge points will not. Also, Outfall 008 will have a different limit for selenium and iron than the other discharge points, as a result of dilution effects in Kanab Creek.

2) ACD's discharge meets the EPA definition of "alkaline mine drainage." As such, it is subject to the technology based effluent limitations in *40 CFR Part 434.45*. Technology based limits used in the permit are listed below.

   a. Total suspended solids (TSS) daily maximum limit.

   b. For discharges composed of surface water or mine water commingled with surface water, *40 CFR Part 434.63* allows alternate effluent limits to be applied when discharges result from specific runoff events, detailed below and in the permit. ACD has the burden of proof that the described runoff event occurred.

      i. For runoff events (rainfall or snowmelt) less than or equal to a 10-year 24-hour precipitation event, settleable solids shall be substituted for TSS and shall be limited to 0.5 milliliters per liter (ml/L). All other effluent limitations must be achieved concurrently, as described in the permit.

      ii. Any discharge or increase in the volume of a discharge caused by precipitation within any 24 hour period greater than the 10-year, 24-hour precipitation event (or snowmelt of equivalent volume) at Outfalls 005, 006, 007 and 008 may comply with the following limitations instead of the otherwise applicable limitations:

Effluent Characteristics	30 Day Average	Daily Minimum	Daily Maximum
pH, SU (all Outfalls)	NA	6.5	9.0

3) TSS 30-day and 7-day averages are based on Utah Secondary Treatment Standards.

4) Daily minimum and daily maximum limitations on pH are derived from Utah Secondary Treatment Standards and Water Quality Standards.

5) Total dissolved solids (TDS) are limited according to Water Quality Standards and policies established by the Colorado River Basin Salinity Control Forum. TDS are limited by both mass loading and concentration requirements as described below:

   a. Since discharges from ACD eventually reach the Colorado River, TDS mass loading is limited according to policies established by the Colorado River Basin Salinity Control Forum (Forum), as authorized in *UAC R317-2-4* to further control salinity in the Utah portion of the Colorado River Basin. On February 28, 1977 the Forum produced the *"Policy For Implementation of Colorado River Salinity Standards Through the NPDES Permit Program"* (Policy), with the most current subsequent triennial revision dated October 2014. The TDS loading required by the salinity forum, and included in this permit is one ton per day as a sum from all discharge points, unless the concentration of TDS is 500 mg/L or less. If the concentration of TDS is less than or equal to 500 mg/L at all discharge points, no loading limit applies. If one ton per day cannot be achieved the permittee will be required to remove salinity/TDS in excess of one ton per day by developing a treatment process, participating in a salinity off-set program, or developing some type of mechanism to remove the salinity/TDS. The selection of a salinity control program, if needed, must be approved by the Director of the Division of Water Quality and implemented within one year of the effective date of approval.

   b. Based on *UAC R317-2-14, Table 2.14.1*the concentration of TDS in water used for agricultural purposes shall not exceed 1200 mg/L, unless there is a designated site specific standard for TDS which has been incorporated into the State Water Quality Standards. At the present time there are no site specific standards for Upper Robinson Creek or Sink Valley Wash. Therefore, the permittee will be required to meet a daily maximum TDS concentration of 1200 mg/L at all of its discharge points.

6) The limitation on total recoverable iron is water quality based and derived in the WLA. The iron limitation is based upon the State Water Quality Standard of 1.0 mg/L for dissolved iron (*UAC R317-2 Table 2.14.2*) and the WLA limitation of 1.0 for total recoverable iron. Total recoverable iron is a more stringent limitation than dissolved iron. Therefore, a permit limit of 1.0 mg/L for total recoverable iron will be included in the renewal permit and shall apply to each of the discharge points.

7) Oil and Grease are limited to 10 mg/L by BPJ, as this is consistent with other industrial facilities statewide.

EFFLUENT LIMITATIONS, SELF-MONITORING, AND REPORTING REQUIREMENTS

The effluent limitations and monitoring requirements for Outfalls (005, 006, 007, 008) are as outlined below. Effluent self-monitoring requirements are developed from the *Utah Monitoring, Recording and Reporting Frequency Guidelines* as effective December 1, 1991 along with the use of BPJ. Reports shall be made via NetDMR or on Discharge Monitoring Report (DMR) forms and are due 28 days after the end of the monthly monitoring period.

Effluent Characteristics	Effluent Limitations				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, [1]MGD	NA	[2]NA	NA	0.117a/	Monthly	Measured
TSS, mg/L	25	35	NA	70	Monthly	Grab
Total Iron, mg/L e/	NA	NA	NA	1.0	Monthly	Grab
Total Selenium, mg/L e/	0.0046	NA	NA	0.020	Monthly	Grab
Oil & Grease, mg/L b/	NA	NA	NA	10	Monthly	Grab
TDS, mg/L	NA	NA	NA	1200	Monthly	Grab
TDS lbs/day	NA	NA	NA	2000c/	Monthly	Grab
pH, standard units	NA	NA	6.5	9.0	Monthly	Grab
Sanitary Waste d/	NA	NA	NA	None	Monthly	Visual
Oil and Grease, floating solids, visible foam, b/	NA	NA	NA	None	Monthly	Visual
Total Arsenic, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Cadmium, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Chromium, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Copper, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Mercury, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Nickel, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Lead, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Silver, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Zinc, mg/L	NA	NA	NA	NA	Monthly	Grab
Total Boron, mg/L	NA	NA	NA	NA	Monthly	Grab
[1] *MGD: million gallons per day* [2] *NA: not applicable*						

a/ For intermittent discharges, the duration of the discharge shall also be reported. This daily maximum flow limit shall apply to Outfall 008 only.

b/ In addition to monthly sampling for oil and grease, a visual inspection for oil and grease, floating solids, and visible foam shall be performed at least monthly. There shall be no sheen, floating solids, or visible foam in other than trace amounts. If sheen is observed, a

sample of the effluent shall be collected immediately thereafter and oil and grease shall not exceed 10 mg/L in concentration.

c/ A limit of one ton (2000 lbs per day) as a sum from all discharge points is required of the permittee, unless a concentration of 500 mg/L or less is achieved at all discharge points. If 500 mg/L or less is achieved at all discharge points, then no loading limit applies. If the permittee cannot achieve the 500 mg/L concentration requirement or the one ton per day loading limit, then the permittee will be required to remove salinity/TDS in excess of one ton per day by developing a treatment process, participating in a salinity off-set program, or developing some type of mechanism to remove the salinity/TDS. The selection of a salinity control method, if needed, must be approved by the Director of the Division of Water Quality and implemented within one year of that approval.

d/ There shall be no discharge of sanitary waste.

e/ Outfall 008 shall meet a total selenium limit of 0.0081 mg/L as a thirty day average and 0.0414 mg/L as a daily maximum, and a total iron of 2.16 mg/L as a daily maximum.

MODIFIED CHANGES IN THE EXISTING PERMIT

Since the issuance of the first individual permit, mining has been in the South Lease. Mining has been completed in the South Lease with all of the ponds associated with Outfalls undergoing reclamation. These Outfalls will be continued in the modified permit until reclamation is completed at which time they will be inactivated and removed from the permit. Mining will move to the NPL with the addition of five new ponds and four Outfalls. The only Outfall with a flow limitation is Outfall 008

A thirty day average and daily maximum for total selenium has been included in this modification as determined from RP analysis. The following total metals will be analyzed for on a monthly basis from any Outfall that discharges: arsenic, cadmium, chromium, copper, mercury, nickel, lead, silver, zinc and boron.

BIOMONITORING REQUIREMENTS

As part of a nationwide effort to control toxic discharges, biomonitoring requirements are being included in permits for facilities where effluent toxicity is an existing or potential concern. In Utah, this is done in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (Biomonitoring (2/1991))*. Authority to require effluent biomonitoring is provided in *UAC R317-8, Utah Pollutant Discharge Elimination System* and *UAC R317-2, Water Quality Standards*.

ACD is a minor facility that discharges water encountered in strip mining, which includes to a larger extent, alluvial water and surface water runoff. As such there is no reasonable potential for toxicity to be present and biomonitoring limits and testing will not be required. However, to ensure that no toxicity is present ACD will be required to sample, and complete an acute whole effluent toxicity test on a grab sample of the discharge from the pond(s) that receive pit water. Those that discharge only surface runoff water will not be required to do this WET testing. This monitoring shall occur on the first discharge that occurs after the effective date of the modified permit and reported with the appropriate discharge monitoring report.

PERMIT DURATION

This modified permit will be in effect until midnight July 31, 2018, the expiration date of the originally issued individual permit.

Drafted by Mike Herkimer
Environmental Scientist
Utah Division of Water Quality
February 16, 2016

ADDENDUMS

I. Waste Load Analysis, Anti-Degradation Review (ADR)
II. Inorganic and organic data from discharges in the south lease, to be used in RP analysis.
III. RP analysis.

The permit was public noticed from June 22, 2016 to July 25, 2016 in the Southern Utah News and the Division web page, http://www.waterquality.utah.gov/info/notices.htm. One comment was received during the public comment period. It was reviewed and determined that it was not substantive. Therefore, there were no changes made in the final permit issued.

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ADDENDUM I

Wasteload Analyses and Anti-degradation Review

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis
SUMMARY

Discharging Facility:	**Alton Coal Development, Coal Hollow**		
UPDES No:	UT-0025992		
Current Flow:	0.12 MGD		0.18 cfs
Design Flow	0.12 MGD		0.18 cfs

Receiving Water:	**Kanab Creek**		
Stream Classification:	2B, 3C, 4		
Stream Flows [cfs]:	0.2	Summer (July-Sept)	20th Percentile
	0.2	Fall (Oct-Dec)	20th Percentile
	0.2	Winter (Jan-Mar)	20th Percentile
	0.2	Spring (Apr-June)	20th Percentile
	1.4	Average	
Stream TDS Values:	991.0	Summer (July-Sept)	Average
	991.0	Fall (Oct-Dec)	Average
	991.0	Winter (Jan-Mar)	Average
	991.0	Spring (Apr-June)	Average

Effluent Limits:			**WQ Standard:**	
Flow, MGD:	0.12	MGD	Design Flow	
BOD, mg/l:	25.0	Summer	5.0	Indicator
Dissolved Oxygen, mg/l	5.5	Summer	5.0	30 Day Average
TNH3, Chronic, mg/l:	3.1	Summer	Varies	Function of pH and Temperature
TDS, mg/l:	1200.0	Summer	1200.0	

Modeling Parameters:

Acute River Width:	50.0%
Chronic River Width:	100.0%

Antidegradation Level II Review is required

Date: 2/24/2016

Permit Writer: _____ _____

WLA by: _____ 2-25-16

WQM Sec. Approval: _____ _____

TMDL Sec. Approval: _____ _____

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis

24-Feb-16
4:00 PM

Facilities: **Alton Coal Development, Coal Hollow** **UPDES No: UT-0025992**
Discharging to: **Kanab Creek**

THIS IS A DRAFT DOCUMENT

I. Introduction

Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated interms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

II. Receiving Water and Stream Classification

Kanab Creek:	2B, 3C, 4
Antidegradation Review:	Antidegradation Level II Review is required

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	5.00 mg/l (30 Day Average) N/A mg/l (7Day Average) 3.00 mg/l (1 Day Average
Maximum Total Dissolved Solids	1200.0 mg/l

Utah Division of Water Quality
Salt Lake City, Utah

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration		Load*
Aluminum	87.00 ug/l**	0.085 lbs/day	750.00	ug/l	0.732 lbs/day
Arsenic	190.00 ug/l	0.185 lbs/day	340.00	ug/l	0.332 lbs/day
Cadmium	1.06 ug/l	0.001 lbs/day	13.84	ug/l	0.014 lbs/day
Chromium III	388.77 ug/l	0.379 lbs/day	8133.73	ug/l	7.935 lbs/day
ChromiumVI	11.00 ug/l	0.011 lbs/day	16.00	ug/l	0.016 lbs/day
Copper	44.92 ug/l	0.044 lbs/day	79.21	ug/l	0.077 lbs/day
Iron			1000.00	ug/l	0.976 lbs/day
Lead	33.08 ug/l	0.032 lbs/day	849.00	ug/l	0.828 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.002 lbs/day
Nickel	247.30 ug/l	0.241 lbs/day	2224.26	ug/l	2.170 lbs/day
Selenium	4.60 ug/l	0.004 lbs/day	20.00	ug/l	0.020 lbs/day
Silver	N/A ug/l	N/A lbs/day	89.55	ug/l	0.087 lbs/day
Zinc	569.39 ug/l	0.555 lbs/day	569.39	ug/l	0.555 lbs/day

* Allowed below discharge

**Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO3

Metals Standards Based upon a Hardness of 629.34 mg/l as CaCO3

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration		Load*
Aldrin			1.500	ug/l	0.001 lbs/day
Chlordane	0.004 ug/l	0.009 lbs/day	1.200	ug/l	0.001 lbs/day
DDT, DDE	0.001 ug/l	0.002 lbs/day	0.550	ug/l	0.001 lbs/day
Dieldrin	0.002 ug/l	0.004 lbs/day	1.250	ug/l	0.001 lbs/day
Endosulfan	0.056 ug/l	0.118 lbs/day	0.110	ug/l	0.000 lbs/day
Endrin	0.002 ug/l	0.005 lbs/day	0.090	ug/l	0.000 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.008 lbs/day	0.260	ug/l	0.000 lbs/day
Lindane	0.080 ug/l	0.169 lbs/day	1.000	ug/l	0.001 lbs/day
Methoxychlor			0.030	ug/l	0.000 lbs/day
Mirex			0.010	ug/l	0.000 lbs/day
Parathion			0.040	ug/l	0.000 lbs/day
PCB's	0.014 ug/l	0.030 lbs/day	2.000	ug/l	0.002 lbs/day
Pentachlorophenol	13.00 ug/l	27.397 lbs/day	20.000	ug/l	0.020 lbs/day
Toxephene	0.0002 ug/l	0.000 lbs/day	0.7300	ug/l	0.001 lbs/day

Utah Division of Water Quality
Salt Lake City, Utah

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	lbs/day
Cadmium			10.0 ug/l	0.00 lbs/day
Chromium			100.0 ug/l	lbs/day
Copper			200.0 ug/l	lbs/day
Lead			100.0 ug/l	lbs/day
Selenium			50.0 ug/l	lbs/day
TDS, Summer			1200.0 mg/l	0.59 tons/day

V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
Metals	Concentration	Load*	Concentration	Load*
Arsenic			ug/l	lbs/day
Barium			ug/l	lbs/day
Cadmium			ug/l	lbs/day
Chromium			ug/l	lbs/day
Lead			ug/l	lbs/day
Mercury			ug/l	lbs/day
Selenium			ug/l	lbs/day
Silver			ug/l	lbs/day
Fluoride (3)			ug/l	lbs/day
to			ug/l	lbs/day
Nitrates as N			ug/l	lbs/day
Chlorophenoxy Herbicides				
2,4-D			ug/l	lbs/day
2,4,5-TP			ug/l	lbs/day
Endrin			ug/l	lbs/day
ocyclohexane (Lindane)			ug/l	lbs/day
Methoxychlor			ug/l	lbs/day
Toxaphene			ug/l	lbs/day

VI. Numeric Stream Standards the Protection of Human Health from Water & Fish Consumption [Toxics]

	Maximum Conc., ug/l - Acute Standards			
	Class 1C		Class 3A, 3B	
Toxic Organics	[2 Liters/Day for 70 Kg Person over 70 Yr.]		[6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	5.69 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	1.64 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.00 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	0.15 lbs/day
Benzidine	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	ug/l	lbs/day	4.4 ug/l	0.01 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	44.26 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	ug/l	lbs/day	99.0 ug/l	0.21 lbs/day

1,1,1-Trichloroethane					
Hexachloroethane	ug/l	lbs/day	8.9	ug/l	0.02 lbs/day
1,1-Dichloroethane					
1,1,2-Trichloroethane	ug/l	lbs/day	42.0	ug/l	0.09 lbs/day
1,1,2,2-Tetrachloroethai	ug/l	lbs/day	11.0	ug/l	0.02 lbs/day
Chloroethane			0.0	ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	ug/l	lbs/day	1.4	ug/l	0.00 lbs/day
2-Chloroethyl vinyl ether	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2-Chloronaphthalene	ug/l	lbs/day	4300.0	ug/l	9.06 lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5	ug/l	0.01 lbs/day
p-Chloro-m-cresol			0.0	ug/l	0.00 lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0	ug/l	0.99 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0	ug/l	0.84 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0	ug/l	35.83 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	5.48 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	5.48 lbs/day
3,3'-Dichlorobenzidine	ug/l	lbs/day	0.1	ug/l	0.00 lbs/day
1,1-Dichloroethylene	ug/l	lbs/day	3.2	ug/l	0.01 lbs/day
1,2-trans-Dichloroethyle	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0	ug/l	1.66 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0	ug/l	0.08 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0	ug/l	3.58 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0	ug/l	4.85 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1	ug/l	0.02 lbs/day
2,6-Dinitrotoluene	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	ug/l	lbs/day	0.5	ug/l	0.00 lbs/day
Ethylbenzene	ug/l	lbs/day	29000.0	ug/l	61.12 lbs/day
Fluoranthene	ug/l	lbs/day	370.0	ug/l	0.78 lbs/day
4-Chlorophenyl phenyl ether					
4-Bromophenyl phenyl ether					
Bis(2-chloroisopropyl) e	ug/l	lbs/day	170000.0	ug/l	358.27 lbs/day
Bis(2-chloroethoxy) met	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Methylene chloride (HM	ug/l	lbs/day	1600.0	ug/l	3.37 lbs/day
Methyl chloride (HM)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Methyl bromide (HM)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Bromoform (HM)	ug/l	lbs/day	360.0	ug/l	0.76 lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0	ug/l	0.05 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0	ug/l	0.07 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0	ug/l	0.11 lbs/day
Hexachlorocyclopentadi	ug/l	lbs/day	17000.0	ug/l	35.83 lbs/day
Isophorone	ug/l	lbs/day	600.0	ug/l	1.26 lbs/day
Naphthalene					
Nitrobenzene	ug/l	lbs/day	1900.0	ug/l	4.00 lbs/day
2-Nitrophenol	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4-Nitrophenol	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2,4-Dinitrophenol	ug/l	lbs/day	14000.0	ug/l	29.50 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0	ug/l	1.61 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1	ug/l	0.02 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0	ug/l	0.03 lbs/day
N-Nitrosodi-n-propylami	ug/l	lbs/day	1.4	ug/l	0.00 lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2	ug/l	0.02 lbs/day

Phenol	ug/l	lbs/day	4.6E+06	ug/l	9.69E+03 lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9	ug/l	0.01 lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0	ug/l	10.96 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0	ug/l	25.29 lbs/day
Di-n-octyl phthlate					
Diethyl phthalate	ug/l	lbs/day	120000.0	ug/l	252.90 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06	ug/l	6.11E+03 lbs/day
Benzo(a)anthracene (P/	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(a)pyrene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(b)fluoranthene (F	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(k)fluoranthene (F	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Chrysene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Acenaphthylene (PAH)					
Anthracene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Indeno(1,2,3-cd)pyrene	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Pyrene (PAH)	ug/l	lbs/day	11000.0	ug/l	23.18 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9	ug/l	0.02 lbs/day
Toluene	ug/l	lbs/day	200000	ug/l	421.50 lbs/day
Trichloroethylene	ug/l	lbs/day	81.0	ug/l	0.17 lbs/day
Vinyl chloride	ug/l	lbs/day	525.0	ug/l	1.11 lbs/day
					lbs/day
Pesticides					lbs/day
Aldrin	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Dieldrin	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Chlordane	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDT	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDE	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDD	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
alpha-Endosulfan	ug/l	lbs/day	2.0	ug/l	0.00 lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0	ug/l	0.00 lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0	ug/l	0.00 lbs/day
Endrin	ug/l	lbs/day	0.8	ug/l	0.00 lbs/day
Endrin aldehyde	ug/l	lbs/day	0.8	ug/l	0.00 lbs/day
Heptachlor	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Heptachlor epoxide					
PCB's					
PCB 1242 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1254 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1221 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1232 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1248 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1260 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1016 (Arochlor 10	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Pesticide					
Toxaphene	ug/l		0.0	ug/l	0.00 lbs/day
Dioxin					
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day			

Metals				
Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	9.06 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	463.65 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	9.69 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.01 lbs/day
Zinc				

There are additional standards that apply to this receiving water, but were not considered in this modeling/waste load allocation analysis.

VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).

(2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.

(3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8

(4) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.

(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

VIII. Modeling Information

The required information for the model may include the following information for both the upstream conditions at low flow and the effluent conditions:

Flow, Q, (cfs or MGD)	D.O. mg/l
Temperature, Deg. C.	Total Residual Chlorine (TRC), mg/l
pH	Total NH3-N, mg/l
BOD5, mg/l	Total Dissolved Solids (TDS), mg/l
Metals, ug/l	Toxic Organics of Concern, ug/l

Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

Current Upstream Information

	Stream Critical Low Flow cfs	Temp. Deg. C	pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
Summer (Irrig. Season)	0.2	20.0	8.2	0.01	0.10	6.23	0.00	991.0
Fall	0.2	12.0	8.2	0.01	0.10	---	0.00	991.0
Winter	0.2	5.0	8.2	0.01	0.10	---	0.00	991.0
Spring	0.2	12.0	8.2	0.01	0.10	---	0.00	991.0

	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb
Dissolved Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.6	0.53*

	Hg	Ni	Se	Ag	Zn	Boron
Dissolved Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	0.0000	0.53*	1.06*	0.1*	0.053*	10.0

* 1/2 MDL

Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	0.11700	20.0	1200.00	0.58535
Fall	0.11700	12.0		
Winter	0.11700	5.0		
Spring	0.11700	12.0		

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

IX. Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort coincide with the environmental conditions expected at low stream flows.

Effluent Limitation for Flow based upon Water Quality Standards

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

Season	Daily Average	
Summer	0.117 MGD	0.181 cfs
Fall	0.117 MGD	0.181 cfs
Winter	0.117 MGD	0.181 cfs
Spring	0.117 MGD	0.181 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.117 MGD. If the discharger is allowed to have a flow greater than 0.117 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occuring, the permit writers must include the discharge flow limititation as indicated above; or, include loading effluent limits in the permit.

Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segements if the values below are met.

WET Requirements	LC50 >	EOP Effluent	[Acute]
	IC25 >	46.3% Effluent	[Chronic]

Effluent Limitation for Biological Oxygen Demand (BOD) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent BOD limitation as follows:

Season	Concentration	
Summer	25.0 mg/l as BOD5	24.4 lbs/day
Fall	25.0 mg/l as BOD5	24.4 lbs/day
Winter	25.0 mg/l as BOD5	24.4 lbs/day
Spring	25.0 mg/l as BOD5	24.4 lbs/day

Effluent Limitation for Dissolved Oxygen (DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent D.O. limitation as follows:

Season	**Concentration**
Summer	5.50
Fall	5.50
Winter	5.50
Spring	5.50

Effluent Limitation for Total Ammonia based upon Water Quality Standards

In-stream criteria of downstream segments for Total Ammonia will be met with an effluent limitation (expressed as Total Ammonia as N) as follows:

Season		**Concentration**		**Load**	
Summer	4 Day Avg. - Chronic	3.1	mg/l as N	3.0	lbs/day
	1 Hour Avg. - Acute	11.4	mg/l as N	11.1	lbs/day
Fall	4 Day Avg. - Chronic	4.1	mg/l as N	4.0	lbs/day
	1 Hour Avg. - Acute	11.2	mg/l as N	11.0	lbs/day
Winter	4 Day Avg. - Chronic	4.0	mg/l as N	3.9	lbs/day
	1 Hour Avg. - Acute	10.9	mg/l as N	10.7	lbs/day
Spring	4 Day Avg. - Chronic	4.1	mg/l as N	4.0	lbs/day
	1 Hour Avg. - Acute	11.2	mg/l as N	11.0	lbs/day

Acute limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 100.%.

Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

In-stream criteria of downstream segments for Total Residual Chlorine will be met with an effluent limitation as follows:

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	0.024	mg/l	0.02	lbs/day
	1 Hour Avg. - Acute	0.041	mg/l	0.04	lbs/day
Fall	4 Day Avg. - Chronic	0.024	mg/l	0.02	lbs/day
	1 Hour Avg. - Acute	0.041	mg/l	0.04	lbs/day
Winter	4 Day Avg. - Chronic	0.024	mg/l	0.02	lbs/day
	1 Hour Avg. - Acute	0.041	mg/l	0.04	lbs/day
Spring	4 Day Avg. - Chronic	0.024	mg/l	0.00	lbs/day
	1 Hour Avg. - Acute	0.041	mg/l	0.00	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	1200.0	mg/l	0.59	tons/day
Fall	Maximum, Acute	1200.0	mg/l	0.59	tons/day
Winter	Maximum, Acute	1200.0	mg/l	0.59	tons/day
Spring	Maximum, Acute	1200.0	mg/l	0.59	tons/day

Colorado Salinity Forum Limits — Determined by Permitting Section

Effluent Limitations for Total Recoverable Metals based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 629.34 mg/l):

	4 Day Average Concentration		Load	1 Hour Average Concentration		Load
Aluminum	N/A		N/A	1,617.4	ug/l	1.6 lbs/day
Arsenic	409.52	ug/l	0.3 lbs/day	733.6	ug/l	0.7 lbs/day
Cadmium	2.19	ug/l	0.0 lbs/day	29.8	ug/l	0.0 lbs/day
Chromium III	838.90	ug/l	0.5 lbs/day	17,569.8	ug/l	17.1 lbs/day
Chromium VI	19.15	ug/l	0.0 lbs/day	30.0	ug/l	0.0 lbs/day
Copper	96.12	ug/l	0.1 lbs/day	170.2	ug/l	0.2 lbs/day
Iron	N/A		N/A	2,159.5	ug/l	2.1 lbs/day
Lead	70.55	ug/l	0.0 lbs/day	1,833.1	ug/l	1.8 lbs/day
Mercury	0.03	ug/l	0.0 lbs/day	5.2	ug/l	0.0 lbs/day
Nickel	533.29	ug/l	0.3 lbs/day	4,804.0	ug/l	4.7 lbs/day
Selenium	8.09	ug/l	0.0 lbs/day	41.4	ug/l	0.0 lbs/day
Silver	N/A	ug/l	N/A lbs/day	193.5	ug/l	0.2 lbs/day

Zinc	1,229.91 ug/l	0.8 lbs/day	1,229.9	ug/l	1.2 lbs/day
Cyanide	11.23 ug/l	0.0 lbs/day	47.5	ug/l	0.0 lbs/day

Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	24.3 Deg. C.	75.8 Deg. F
Fall	16.3 Deg. C.	61.4 Deg. F
Winter	9.3 Deg. C.	48.8 Deg. F
Spring	16.3 Deg. C.	61.4 Deg. F

Effluent Limitations for Organics [Pesticides] Based upon Water Quality Standards

In-stream criteria of downstream segments for Organics [Pesticides] will be met with an effluent limit as follows:

	4 Day Average Concentration	Load	1 Hour Average Concentration		Load
Aldrin			1.5E+00	ug/l	2.26E-03 lbs/day
Chlordane	4.30E-03 ug/l	4.20E-03 lbs/day	1.2E+00	ug/l	1.81E-03 lbs/day
DDT, DDE	1.00E-03 ug/l	9.76E-04 lbs/day	5.5E-01	ug/l	8.30E-04 lbs/day
Dieldrin	1.90E-03 ug/l	1.85E-03 lbs/day	1.3E+00	ug/l	1.89E-03 lbs/day
Endosulfan	5.60E-02 ug/l	5.46E-02 lbs/day	1.1E-01	ug/l	1.66E-04 lbs/day
Endrin	2.30E-03 ug/l	2.24E-03 lbs/day	9.0E-02	ug/l	1.36E-04 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	1.51E-05 lbs/day
Heptachlor	3.80E-03 ug/l	3.71E-03 lbs/day	2.6E-01	ug/l	3.92E-04 lbs/day
Lindane	8.00E-02 ug/l	7.80E-02 lbs/day	1.0E+00	ug/l	1.51E-03 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l	4.53E-05 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	1.51E-05 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l	6.04E-05 lbs/day
PCB's	1.40E-02 ug/l	1.37E-02 lbs/day	2.0E+00	ug/l	3.02E-03 lbs/day
Pentachlorophenol	1.30E+01 ug/l	1.27E+01 lbs/day	2.0E+01	ug/l	3.02E-02 lbs/day
Toxephene	2.00E-04 ug/l	1.95E-04 lbs/day	7.3E-01	ug/l	1.10E-03 lbs/day

Effluent Targets for Pollution Indicators
Based upon Water Quality Standards

In-stream criteria of downstream segments for Pollution Indicators will be met with an effluent limit as follows:

	1 Hour Average Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	4.9 lbs/day
Nitrates as N	4.0 mg/l	3.9 lbs/day
Total Phosphorus as P	0.05 mg/l	0.0 lbs/day
Total Suspended Solids	90.0 mg/l	87.8 lbs/day

Note: Pollution indicator targets are for information purposes only.

Effluent Limitations for Protection of Human Health [Toxics Rule]
Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)

In-stream criteria of downstream segments for Protection of Human Health [Toxics] will be met with an effluent limit as follows:

	Maximum Concentration Concentration	Load
Toxic Organics		
Acenaphthene	5.83E+03 ug/l	5.69E+00 lbs/day
Acrolein	1.68E+03 ug/l	1.64E+00 lbs/day
Acrylonitrile	1.43E+00 ug/l	1.39E-03 lbs/day
Benzene	1.53E+02 ug/l	1.50E-01 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	9.51E+00 ug/l	9.27E-03 lbs/day
Chlorobenzene	4.54E+04 ug/l	4.43E+01 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	1.66E-03 ug/l	1.62E-06 lbs/day
1,2-Dichloroethane	2.14E+02 ug/l	2.09E-01 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	1.92E+01 ug/l	1.88E-02 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	9.07E+01 ug/l	8.85E-02 lbs/day
1,1,2,2-Tetrachloroethane	2.38E+01 ug/l	2.32E-02 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	3.02E+00 ug/l	2.95E-03 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	9.29E+03 ug/l	9.06E+00 lbs/day
2,4,6-Trichlorophenol	1.40E+01 ug/l	1.37E-02 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	1.02E+03 ug/l	9.91E-01 lbs/day
2-Chlorophenol	8.64E+02 ug/l	8.43E-01 lbs/day
1,2-Dichlorobenzene	3.67E+04 ug/l	3.58E+01 lbs/day
1,3-Dichlorobenzene	5.62E+03 ug/l	5.48E+00 lbs/day

1,4-Dichlorobenzene	5.62E+03 ug/l	5.48E+00 lbs/day
3,3'-Dichlorobenzidine	1.66E-01 ug/l	1.62E-04 lbs/day
1,1-Dichloroethylene	6.91E+00 ug/l	6.74E-03 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	1.71E+03 ug/l	1.66E+00 lbs/day
1,2-Dichloropropane	8.42E+01 ug/l	8.22E-02 lbs/day
1,3-Dichloropropylene	3.67E+03 ug/l	3.58E+00 lbs/day
2,4-Dimethylphenol	4.97E+03 ug/l	4.85E+00 lbs/day
2,4-Dinitrotoluene	1.97E+01 ug/l	1.92E-02 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	1.17E+00 ug/l	1.14E-03 lbs/day
Ethylbenzene	6.26E+04 ug/l	6.11E+01 lbs/day
Fluoranthene	7.99E+02 ug/l	7.80E-01 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	3.67E+05 ug/l	3.58E+02 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	3.46E+03 ug/l	3.37E+00 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	7.78E+02 ug/l	7.59E-01 lbs/day
Dichlorobromomethane(HM)	4.75E+01 ug/l	4.64E-02 lbs/day
Chlorodibromomethane (HM)	7.34E+01 ug/l	7.17E-02 lbs/day
Hexachlorocyclopentadiene	3.67E+04 ug/l	3.58E+01 lbs/day
Isophorone	1.30E+03 ug/l	1.26E+00 lbs/day
Naphthalene		
Nitrobenzene	4.10E+03 ug/l	4.00E+00 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	3.02E+04 ug/l	2.95E+01 lbs/day
4,6-Dinitro-o-cresol	1.65E+03 ug/l	1.61E+00 lbs/day
N-Nitrosodimethylamine	1.75E+01 ug/l	1.71E-02 lbs/day
N-Nitrosodiphenylamine	3.46E+01 ug/l	3.37E-02 lbs/day
N-Nitrosodi-n-propylamine	3.02E+00 ug/l	2.95E-03 lbs/day
Pentachlorophenol	1.77E+01 ug/l	1.73E-02 lbs/day
Phenol	9.94E+06 ug/l	9.69E+03 lbs/day
Bis(2-ethylhexyl)phthalate	1.27E+01 ug/l	1.24E-02 lbs/day
Butyl benzyl phthalate	1.12E+04 ug/l	1.10E+01 lbs/day
Di-n-butyl phthalate	2.59E+04 ug/l	2.53E+01 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	2.59E+05 ug/l	2.53E+02 lbs/day
Dimethyl phthlate	6.26E+06 ug/l	6.11E+03 lbs/day
Benzo(a)anthracene (PAH)	6.70E-02 ug/l	6.53E-05 lbs/day
Benzo(a)pyrene (PAH)	6.70E-02 ug/l	6.53E-05 lbs/day
Benzo(b)fluoranthene (PAH)	6.70E-02 ug/l	6.53E-05 lbs/day
Benzo(k)fluoranthene (PAH)	6.70E-02 ug/l	6.53E-05 lbs/day
Chrysene (PAH)	6.70E-02 ug/l	6.53E-05 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	6.70E-02 ug/l	6.53E-05 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	6.70E-02 ug/l	6.53E-05 lbs/day

Pyrene (PAH)	2.38E+04 ug/l	2.32E+01 lbs/day
Tetrachloroethylene	1.92E+01 ug/l	1.88E-02 lbs/day
Toluene	4.32E+05 ug/l	4.21E+02 lbs/day
Trichloroethylene	1.75E+02 ug/l	1.71E-01 lbs/day
Vinyl chloride	1.13E+03 ug/l	1.11E+00 lbs/day
Pesticides		
Aldrin	3.02E-04 ug/l	2.95E-07 lbs/day
Dieldrin	3.02E-04 ug/l	2.95E-07 lbs/day
Chlordane	1.27E-03 ug/l	1.24E-06 lbs/day
4,4'-DDT	1.27E-03 ug/l	1.24E-06 lbs/day
4,4'-DDE	1.27E-03 ug/l	1.24E-06 lbs/day
4,4'-DDD	1.81E-03 ug/l	1.77E-06 lbs/day
alpha-Endosulfan	4.32E+00 ug/l	4.21E-03 lbs/day
beta-Endosulfan	4.32E+00 ug/l	4.21E-03 lbs/day
Endosulfan sulfate	4.32E+00 ug/l	4.21E-03 lbs/day
Endrin	1.75E+00 ug/l	1.71E-03 lbs/day
Endrin aldehyde	1.75E+00 ug/l	1.71E-03 lbs/day
Heptachlor	4.54E-04 ug/l	4.43E-07 lbs/day
Heptachlor epoxide		
PCB's		
PCB 1242 (Arochlor 1242)	9.72E-05 ug/l	9.48E-08 lbs/day
PCB-1254 (Arochlor 1254)	9.72E-05 ug/l	9.48E-08 lbs/day
PCB-1221 (Arochlor 1221)	9.72E-05 ug/l	9.48E-08 lbs/day
PCB-1232 (Arochlor 1232)	9.72E-05 ug/l	9.48E-08 lbs/day
PCB-1248 (Arochlor 1248)	9.72E-05 ug/l	9.48E-08 lbs/day
PCB-1260 (Arochlor 1260)	9.72E-05 ug/l	9.48E-08 lbs/day
PCB-1016 (Arochlor 1016)	9.72E-05 ug/l	9.48E-08 lbs/day
Pesticide		
Toxaphene	1.62E-03 ug/l	1.58E-06 lbs/day
Metals		
Antimony	ug/l	lbs/day
Arsenic	ug/l	lbs/day
Asbestos	ug/l	lbs/day
Beryllium		
Cadmium		
Chromium (III)		
Chromium (VI)		
Copper	ug/l	lbs/day
Cyanide	ug/l	lbs/day
Lead		
Mercury	ug/l	lbs/day
Nickel	ug/l	lbs/day
Selenium		
Silver		
Thallium	ug/l	lbs/day
Zinc		

Dioxin

Dioxin (2,3,7,8-TCDD)	3.02E-08 ug/l	2.95E-11 lbs/day

Metals Effluent Limitations for Protection of All Beneficial Uses Based upon Water Quality Standards and Toxics Rule

	Class 4 Acute Agricultural ug/l	Class 3 Acute Aquatic Wildlife ug/l	Acute Toxics Drinking Water Source ug/l	Acute Toxics Wildlife ug/l	1C Acute Health Criteria ug/l	Acute Most Stringent ug/l	Class 3 Chronic Aquatic Wildlife ug/l
Aluminum		1617.4				1617.4	N/A
Antimony				9289.0		9289.0	
Arsenic	216.0	733.6			0.0	216.0	409.5
Barium						0.0	
Beryllium						0.0	
Cadmium	21.5	29.8			0.0	21.5	2.2
Chromium (III)		17569.8			0.0	17569.8	838.9
Chromium (VI)	215.1	30.0			0.0	29.95	19.15
Copper	431.1	170.2				170.2	96.1
Cyanide		47.5	475250.0			47.5	11.2
Iron		2159.5313				2159.5	
Lead	215.1	1833.1			0.0	215.1	70.5
Mercury		5.18		0.32	0.0	0.32	0.026
Nickel		4804.0		9937.0		4804.0	533.3
Selenium	106.2	41.4			0.0	41.4	8.1
Silver		193.5			0.0	193.5	
Thallium				13.6		13.6	
Zinc		1229.9				1229.9	1229.9
Boron	1620.2					1620.2	

Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]
[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	1617.4	N/A	
Antimony	9288.98		
Arsenic	216.0	409.5	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	21.5	2.2	
Chromium (III)	17569.8	839	
Chromium (VI)	30.0	19.2	
Copper	170.2	96.1	

Cyanide	47.5	11.2
Iron	2159.5	
Lead	215.1	70.5
Mercury	0.324	0.026
Nickel	4804.0	533
Selenium	41.4	8.1
Silver	193.5	N/A
Thallium	13.6	
Zinc	1229.9	1229.9
Boron	1620.17	

Other Effluent Limitations are based upon R317-1.

E. coli 126.0 organisms per 100 ml

X. Antidegradation Considerations

The Utah Antidegradation Policy allows for degradation of existing quality where it is determined that such lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are protected [R317-2-3]. It has been determined that certain chemical parameters introduced by this discharge will cause an increase of the concentration of said parameters in the receiving waters. Under no conditions will the increase in concentration be allowed to interfere with existing instream water uses.

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water. Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is required

XI. Colorado River Salinity Forum Considerations

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.

XII. Summary Comments

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important down-stream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.

XIII. Notice of UPDES Requirement

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised. See special provisions in Utah Water Quality Standards for adjustments in the Total Dissolved Solids values based upon background concentration.

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Utah Division of Water Quality
801-538-6052
File Name: Alton_Coal_WLA008_2-24-16.xls

APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day	CBOD Coeff. FORCED (Kd)/day	CBOD Coeff. (Ka)T 1/day	REAER. Coeff. (Ka)20 (Ka)/day	REAER. Coeff. FORCED 1/day	REAER. Coeff. (Ka)T 1/day	NBOD Coeff. (Kn)20 1/day	NBOD Coeff. (Kn)T 1/day
2.000	0.000	2.000	190.614	0.000	190.614	0.400	0.400

Open Coeff. (K4)20 1/day	Open Coeff. (K4)T 1/day	NH3 LOSS (K5)20 1/day	NH3 (K5)T 1/day	NO2+NO3 LOSS (K6)20 1/day	NO2+NO3 (K6)T 1/day	TRC Decay K(Cl)20 1/day	TRC K(Cl)(T) 1/day
0.000	0.000	4.000	4.000	0.000	0.000	32.000	32.000

BENTHIC DEMAND (SOD)20 gm/m2/day	BENTHIC DEMAND (SOD)T gm/m2/day
1.000	1.000

K1 CBOD {theta}	K2 Reaer. {theta}	K3 NH3 {theta}	K4 Open {theta}	K5 NH3 Loss {theta}	K6 NO2+3 {theta}	K(Cl) TRC {theta}	S Benthic {theta}
1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1

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Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis
SUMMARY

Discharging Facility:	**Alton Coal Development, Coal Hollow**			
UPDES No:	UT-0025992			
Current Flow:	0.12	MGD	0.18	cfs
Design Flow	0.12	MGD	0.18	cfs

Flow is variable from several sedimentation ponds - end-of-pipe limits. No dilution.

Receiving Water:	**Unnamed Trib. To Kanab Creek**		
Stream Classification:	2B, 3C, 4		
Stream Flows [cfs]:	0.0	Summer (July-Sept)	20th Percentile
	0.0	Fall (Oct-Dec)	20th Percentile
	0.0	Winter (Jan-Mar)	20th Percentile
	0.0	Spring (Apr-June)	20th Percentile
	1.4	Average	
Stream TDS Values:	991.0	Summer (July-Sept)	Average
	991.0	Fall (Oct-Dec)	Average
	991.0	Winter (Jan-Mar)	Average
	991.0	Spring (Apr-June)	Average

Effluent Limits:			**WQ Standard:**	
Flow, MGD:	0.12	MGD	Design Flow	
BOD, mg/l:	25.0	Summer	5.0	Indicator
Dissolved Oxygen, mg/l	5.5	Summer	5.0	30 Day Average
TNH3, Chronic, mg/l:	2.3	Summer	Varies	Function of pH and Temperature
TDS, mg/l:	1200.0	Summer	1200.0	

Modeling Parameters:

Acute River Width:	50.0%
Chronic River Width:	100.0%

Antidegradation Level II Review is required

Date: 2/24/2016

Permit Writer: _____

WLA by: David W. Hall 2-25-16

WQM Sec. Approval: _____

TMDL Sec. Approval: _____

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis

24-Feb-16
4:00 PM

Facilities: **Alton Coal Development, Coal Hollow** **UPDES No: UT-0025992**
Discharging to: **Unnamed Trib. To Kanab Creek**

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I. Introduction

Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated interms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

II. Receiving Water and Stream Classification

Unnamed Trib. To Kanab Creek :	2B, 3C, 4
Antidegradation Review:	Antidegradation Level II Review is required

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	5.00 mg/l (30 Day Average) N/A mg/l (7Day Average) 3.00 mg/l (1 Day Average
Maximum Total Dissolved Solids	1200.0 mg/l

Utah Division of Water Quality
Salt Lake City, Utah

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration		Load*
Aluminum	87.00 ug/l**	0.085 lbs/day	750.00	ug/l	0.732 lbs/day
Arsenic	190.00 ug/l	0.185 lbs/day	340.00	ug/l	0.332 lbs/day
Cadmium	0.76 ug/l	0.001 lbs/day	8.73	ug/l	0.009 lbs/day
Chromium III	268.22 ug/l	0.262 lbs/day	5611.70	ug/l	5.475 lbs/day
ChromiumVI	11.00 ug/l	0.011 lbs/day	16.00	ug/l	0.016 lbs/day
Copper	30.50 ug/l	0.030 lbs/day	51.68	ug/l	0.050 lbs/day
Iron			1000.00	ug/l	0.976 lbs/day
Lead	18.58 ug/l	0.018 lbs/day	476.82	ug/l	0.465 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40	ug/l	0.002 lbs/day
Nickel	168.54 ug/l	0.164 lbs/day	1515.92	ug/l	1.479 lbs/day
Selenium	4.60 ug/l	0.004 lbs/day	20.00	ug/l	0.020 lbs/day
Silver	N/A ug/l	N/A lbs/day	41.07	ug/l	0.040 lbs/day
Zinc	387.83 ug/l	0.378 lbs/day	387.83	ug/l	0.378 lbs/day

* Allowed below discharge

**Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO3

Metals Standards Based upon a Hardness of 400 mg/l as CaCO3

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration		Load*
Aldrin			1.500	ug/l	0.001 lbs/day
Chlordane	0.004 ug/l	0.004 lbs/day	1.200	ug/l	0.001 lbs/day
DDT, DDE	0.001 ug/l	0.001 lbs/day	0.550	ug/l	0.001 lbs/day
Dieldrin	0.002 ug/l	0.002 lbs/day	1.250	ug/l	0.001 lbs/day
Endosulfan	0.056 ug/l	0.055 lbs/day	0.110	ug/l	0.000 lbs/day
Endrin	0.002 ug/l	0.002 lbs/day	0.090	ug/l	0.000 lbs/day
Guthion			0.010	ug/l	0.000 lbs/day
Heptachlor	0.004 ug/l	0.004 lbs/day	0.260	ug/l	0.000 lbs/day
Lindane	0.080 ug/l	0.078 lbs/day	1.000	ug/l	0.001 lbs/day
Methoxychlor			0.030	ug/l	0.000 lbs/day
Mirex			0.010	ug/l	0.000 lbs/day
Parathion			0.040	ug/l	0.000 lbs/day
PCB's	0.014 ug/l	0.014 lbs/day	2.000	ug/l	0.002 lbs/day
Pentachlorophenol	13.00 ug/l	12.683 lbs/day	20.000	ug/l	0.020 lbs/day
Toxephene	0.0002 ug/l	0.000 lbs/day	0.7300	ug/l	0.001 lbs/day

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	Load*	Concentration	Load*
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	lbs/day
Cadmium			10.0 ug/l	0.00 lbs/day
Chromium			100.0 ug/l	lbs/day
Copper			200.0 ug/l	lbs/day
Lead			100.0 ug/l	lbs/day
Selenium			50.0 ug/l	lbs/day
TDS, Summer			1200.0 mg/l	0.59 tons/day

V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
Metals	Concentration	Load*	Concentration	Load*
Arsenic			ug/l	lbs/day
Barium			ug/l	lbs/day
Cadmium			ug/l	lbs/day
Chromium			ug/l	lbs/day
Lead			ug/l	lbs/day
Mercury			ug/l	lbs/day
Selenium			ug/l	lbs/day
Silver			ug/l	lbs/day
Fluoride (3)			ug/l	lbs/day
to			ug/l	lbs/day
Nitrates as N			ug/l	lbs/day
Chlorophenoxy Herbicides				
2,4-D			ug/l	lbs/day
2,4,5-TP			ug/l	lbs/day
Endrin			ug/l	lbs/day
ocyclohexane (Lindane)			ug/l	lbs/day
Methoxychlor			ug/l	lbs/day
Toxaphene			ug/l	lbs/day

VI. Numeric Stream Standards the Protection of Human Health from Water & Fish Consumption [Toxics]

	Maximum Conc., ug/l - Acute Standards			
	Class 1C		Class 3A, 3B	
Toxic Organics	[2 Liters/Day for 70 Kg Person over 70 Yr.]		[6.5 g for 70 Kg Person over 70 Yr.]	
Acenaphthene	ug/l	lbs/day	2700.0 ug/l	2.63 lbs/day
Acrolein	ug/l	lbs/day	780.0 ug/l	0.76 lbs/day
Acrylonitrile	ug/l	lbs/day	0.7 ug/l	0.00 lbs/day
Benzene	ug/l	lbs/day	71.0 ug/l	0.07 lbs/day
Benzidine	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
Carbon tetrachloride	ug/l	lbs/day	4.4 ug/l	0.00 lbs/day
Chlorobenzene	ug/l	lbs/day	21000.0 ug/l	20.49 lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	ug/l	lbs/day	0.0 ug/l	0.00 lbs/day
1,2-Dichloroethane	ug/l	lbs/day	99.0 ug/l	0.10 lbs/day

1,1,1-Trichloroethane					
Hexachloroethane	ug/l	lbs/day	8.9	ug/l	0.01 lbs/day
1,1-Dichloroethane					
1,1,2-Trichloroethane	ug/l	lbs/day	42.0	ug/l	0.04 lbs/day
1,1,2,2-Tetrachloroethai	ug/l	lbs/day	11.0	ug/l	0.01 lbs/day
Chloroethane			0.0	ug/l	0.00 lbs/day
Bis(2-chloroethyl) ether	ug/l	lbs/day	1.4	ug/l	0.00 lbs/day
2-Chloroethyl vinyl ether	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2-Chloronaphthalene	ug/l	lbs/day	4300.0	ug/l	4.20 lbs/day
2,4,6-Trichlorophenol	ug/l	lbs/day	6.5	ug/l	0.01 lbs/day
p-Chloro-m-cresol			0.0	ug/l	0.00 lbs/day
Chloroform (HM)	ug/l	lbs/day	470.0	ug/l	0.46 lbs/day
2-Chlorophenol	ug/l	lbs/day	400.0	ug/l	0.39 lbs/day
1,2-Dichlorobenzene	ug/l	lbs/day	17000.0	ug/l	16.59 lbs/day
1,3-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	2.54 lbs/day
1,4-Dichlorobenzene	ug/l	lbs/day	2600.0	ug/l	2.54 lbs/day
3,3'-Dichlorobenzidine	ug/l	lbs/day	0.1	ug/l	0.00 lbs/day
1,1-Dichloroethylene	ug/l	lbs/day	3.2	ug/l	0.00 lbs/day
1,2-trans-Dichloroethyle	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2,4-Dichlorophenol	ug/l	lbs/day	790.0	ug/l	0.77 lbs/day
1,2-Dichloropropane	ug/l	lbs/day	39.0	ug/l	0.04 lbs/day
1,3-Dichloropropylene	ug/l	lbs/day	1700.0	ug/l	1.66 lbs/day
2,4-Dimethylphenol	ug/l	lbs/day	2300.0	ug/l	2.24 lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	9.1	ug/l	0.01 lbs/day
2,6-Dinitrotoluene	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
1,2-Diphenylhydrazine	ug/l	lbs/day	0.5	ug/l	0.00 lbs/day
Ethylbenzene	ug/l	lbs/day	29000.0	ug/l	28.29 lbs/day
Fluoranthene	ug/l	lbs/day	370.0	ug/l	0.36 lbs/day
4-Chlorophenyl phenyl ether					
4-Bromophenyl phenyl ether					
Bis(2-chloroisopropyl) e	ug/l	lbs/day	170000.0	ug/l	165.85 lbs/day
Bis(2-chloroethoxy) met	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Methylene chloride (HM	ug/l	lbs/day	1600.0	ug/l	1.56 lbs/day
Methyl chloride (HM)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Methyl bromide (HM)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Bromoform (HM)	ug/l	lbs/day	360.0	ug/l	0.35 lbs/day
Dichlorobromomethane	ug/l	lbs/day	22.0	ug/l	0.02 lbs/day
Chlorodibromomethane	ug/l	lbs/day	34.0	ug/l	0.03 lbs/day
Hexachlorobutadiene(c)	ug/l	lbs/day	50.0	ug/l	0.05 lbs/day
Hexachlorocyclopentadi	ug/l	lbs/day	17000.0	ug/l	16.59 lbs/day
Isophorone	ug/l	lbs/day	600.0	ug/l	0.59 lbs/day
Naphthalene					
Nitrobenzene	ug/l	lbs/day	1900.0	ug/l	1.85 lbs/day
2-Nitrophenol	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4-Nitrophenol	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
2,4-Dinitrophenol	ug/l	lbs/day	14000.0	ug/l	13.66 lbs/day
4,6-Dinitro-o-cresol	ug/l	lbs/day	765.0	ug/l	0.75 lbs/day
N-Nitrosodimethylamine	ug/l	lbs/day	8.1	ug/l	0.01 lbs/day
N-Nitrosodiphenylamine	ug/l	lbs/day	16.0	ug/l	0.02 lbs/day
N-Nitrosodi-n-propylami	ug/l	lbs/day	1.4	ug/l	0.00 lbs/day
Pentachlorophenol	ug/l	lbs/day	8.2	ug/l	0.01 lbs/day

Phenol	ug/l	lbs/day	4.6E+06	ug/l	4.49E+03 lbs/day
Bis(2-ethylhexyl)phthala	ug/l	lbs/day	5.9	ug/l	0.01 lbs/day
Butyl benzyl phthalate	ug/l	lbs/day	5200.0	ug/l	5.07 lbs/day
Di-n-butyl phthalate	ug/l	lbs/day	12000.0	ug/l	11.71 lbs/day
Di-n-octyl phthlate					
Diethyl phthalate	ug/l	lbs/day	120000.0	ug/l	117.07 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.9E+06	ug/l	2.83E+03 lbs/day
Benzo(a)anthracene (P/	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(a)pyrene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(b)fluoranthene (F	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(k)fluoranthene (F	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Chrysene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Acenaphthylene (PAH)					
Anthracene (PAH)	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Dibenzo(a,h)anthracene	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Indeno(1,2,3-cd)pyrene	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Pyrene (PAH)	ug/l	lbs/day	11000.0	ug/l	10.73 lbs/day
Tetrachloroethylene	ug/l	lbs/day	8.9	ug/l	0.01 lbs/day
Toluene	ug/l	lbs/day	200000	ug/l	195.12 lbs/day
Trichloroethylene	ug/l	lbs/day	81.0	ug/l	0.08 lbs/day
Vinyl chloride	ug/l	lbs/day	525.0	ug/l	0.51 lbs/day
					lbs/day
Pesticides					lbs/day
Aldrin	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Dieldrin	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Chlordane	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDT	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDE	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDD	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
alpha-Endosulfan	ug/l	lbs/day	2.0	ug/l	0.00 lbs/day
beta-Endosulfan	ug/l	lbs/day	2.0	ug/l	0.00 lbs/day
Endosulfan sulfate	ug/l	lbs/day	2.0	ug/l	0.00 lbs/day
Endrin	ug/l	lbs/day	0.8	ug/l	0.00 lbs/day
Endrin aldehyde	ug/l	lbs/day	0.8	ug/l	0.00 lbs/day
Heptachlor	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Heptachlor epoxide					
PCB's					
PCB 1242 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1254 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1221 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1232 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1248 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1260 (Arochlor 12	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1016 (Arochlor 10	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Pesticide					
Toxaphene	ug/l		0.0	ug/l	0.00 lbs/day
Dioxin					
Dioxin (2,3,7,8-TCDD)	ug/l	lbs/day			

Metals				
Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	4.20 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	214.63 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	4.49 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.01 lbs/day
Zinc				

There are additional standards that apply to this receiving water, but were not considered in this modeling/waste load allocation analysis.

VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).

(2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.

(3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8

(4) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.

(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

VIII. Modeling Information

The required information for the model may include the following information for both the upstream conditions at low flow and the effluent conditions:

Flow, Q, (cfs or MGD)	D.O. mg/l
Temperature, Deg. C.	Total Residual Chlorine (TRC), mg/l
pH	Total NH3-N, mg/l
BOD5, mg/l	Total Dissolved Solids (TDS), mg/l
Metals, ug/l	Toxic Organics of Concern, ug/l

Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

Current Upstream Information

	Stream Critical Low Flow cfs	Temp. Deg. C	pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
Summer (Irrig. Season)	0.0	20.0	8.2	0.01	0.10	10.12	0.00	991.0
Fall	0.0	12.0	8.2	0.01	0.10	---	0.00	991.0
Winter	0.0	5.0	8.2	0.01	0.10	---	0.00	991.0
Spring	0.0	12.0	8.2	0.01	0.10	---	0.00	991.0

	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb
Dissolved Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.6	0.53*

	Hg	Ni	Se	Ag	Zn	Boron
Dissolved Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	0.0000	0.53*	1.06*	0.1*	0.053*	10.0

* 1/2 MDL

Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	0.11700	20.0	1200.00	0.58535
Fall	0.11700	12.0		
Winter	0.11700	5.0		
Spring	0.11700	12.0		

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

IX. Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort coincide with the environmental conditions expected at low stream flows.

Effluent Limitation for Flow based upon Water Quality Standards

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

Season	Daily Average	
Summer	0.117 MGD	0.181 cfs
Fall	0.117 MGD	0.181 cfs
Winter	0.117 MGD	0.181 cfs
Spring	0.117 MGD	0.181 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.117 MGD. If the discharger is allowed to have a flow greater than 0.117 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occuring, the permit writers must include the discharge flow limititation as indicated above; or, include loading effluent limits in the permit.

Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segements if the values below are met.

WET Requirements	LC50 >	EOP Effluent	[Acute]
	IC25 >	100.0% Effluent	[Chronic]

Effluent Limitation for Biological Oxygen Demand (BOD) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent BOD limitation as follows:

Season	Concentration	
Summer	25.0 mg/l as BOD5	24.4 lbs/day
Fall	25.0 mg/l as BOD5	24.4 lbs/day
Winter	25.0 mg/l as BOD5	24.4 lbs/day
Spring	25.0 mg/l as BOD5	24.4 lbs/day

Effluent Limitation for Dissolved Oxygen (DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent D.O. limitation as follows:

Season	**Concentration**
Summer	5.50
Fall	5.50
Winter	5.50
Spring	5.50

Effluent Limitation for Total Ammonia based upon Water Quality Standards

In-stream criteria of downstream segments for Total Ammonia will be met with an effluent limitation (expressed as Total Ammonia as N) as follows:

Season		**Concentration**	**Load**
Summer	4 Day Avg. - Chronic	2.3 mg/l as N	2.2 lbs/day
	1 Hour Avg. - Acute	6.8 mg/l as N	6.6 lbs/day
Fall	4 Day Avg. - Chronic	2.2 mg/l as N	2.2 lbs/day
	1 Hour Avg. - Acute	6.6 mg/l as N	6.4 lbs/day
Winter	4 Day Avg. - Chronic	2.2 mg/l as N	2.1 lbs/day
	1 Hour Avg. - Acute	6.5 mg/l as N	6.3 lbs/day
Spring	4 Day Avg. - Chronic	2.2 mg/l as N	2.2 lbs/day
	1 Hour Avg. - Acute	6.6 mg/l as N	6.4 lbs/day

Acute limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 100.%.

Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

In-stream criteria of downstream segments for Total Residual Chlorine will be met with an effluent limitation as follows:

Season		Concentration		Load	
Summer	4 Day Avg. - Chronic	0.011	mg/l	0.01	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.02	lbs/day
Fall	4 Day Avg. - Chronic	0.011	mg/l	0.01	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.02	lbs/day
Winter	4 Day Avg. - Chronic	0.011	mg/l	0.01	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.02	lbs/day
Spring	4 Day Avg. - Chronic	0.011	mg/l	0.00	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.00	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	1200.0	mg/l	0.59	tons/day
Fall	Maximum, Acute	1200.0	mg/l	0.59	tons/day
Winter	Maximum, Acute	1200.0	mg/l	0.59	tons/day
Spring	Maximum, Acute	1200.0	mg/l	0.59	tons/day

Colorado Salinity Forum Limits — Determined by Permitting Section

Effluent Limitations for Total Recoverable Metals based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 400 mg/l):

	4 Day Average Concentration		Load	1 Hour Average Concentration		Load
Aluminum	N/A		N/A	750.0	ug/l	0.7 lbs/day
Arsenic	190.00	ug/l	0.1 lbs/day	340.0	ug/l	0.3 lbs/day
Cadmium	0.76	ug/l	0.0 lbs/day	8.7	ug/l	0.0 lbs/day
Chromium III	268.22	ug/l	0.2 lbs/day	5,611.7	ug/l	5.5 lbs/day
Chromium VI	11.00	ug/l	0.0 lbs/day	16.0	ug/l	0.0 lbs/day
Copper	30.50	ug/l	0.0 lbs/day	51.7	ug/l	0.1 lbs/day
Iron	N/A		N/A	1,000.0	ug/l	1.0 lbs/day
Lead	18.58	ug/l	0.0 lbs/day	476.8	ug/l	0.5 lbs/day
Mercury	0.01	ug/l	0.0 lbs/day	2.4	ug/l	0.0 lbs/day
Nickel	168.54	ug/l	0.1 lbs/day	1,515.9	ug/l	1.5 lbs/day
Selenium	4.60	ug/l	0.0 lbs/day	20.0	ug/l	0.0 lbs/day
Silver	N/A	ug/l	N/A lbs/day	41.1	ug/l	0.0 lbs/day

Zinc	387.83 ug/l	0.2 lbs/day	387.8	ug/l	0.4 lbs/day
Cyanide	5.20 ug/l	0.0 lbs/day	22.0	ug/l	0.0 lbs/day

Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	22.0 Deg. C.	71.6 Deg. F
Fall	14.0 Deg. C.	57.2 Deg. F
Winter	7.0 Deg. C.	44.6 Deg. F
Spring	14.0 Deg. C.	57.2 Deg. F

Effluent Limitations for Organics [Pesticides] Based upon Water Quality Standards

In-stream criteria of downstream segments for Organics [Pesticides] will be met with an effluent limit as follows:

	4 Day Average Concentration	Load	1 Hour Average Concentration		Load
Aldrin			1.5E+00	ug/l	2.26E-03 lbs/day
Chlordane	4.30E-03 ug/l	4.20E-03 lbs/day	1.2E+00	ug/l	1.81E-03 lbs/day
DDT, DDE	1.00E-03 ug/l	9.76E-04 lbs/day	5.5E-01	ug/l	8.30E-04 lbs/day
Dieldrin	1.90E-03 ug/l	1.85E-03 lbs/day	1.3E+00	ug/l	1.89E-03 lbs/day
Endosulfan	5.60E-02 ug/l	5.46E-02 lbs/day	1.1E-01	ug/l	1.66E-04 lbs/day
Endrin	2.30E-03 ug/l	2.24E-03 lbs/day	9.0E-02	ug/l	1.36E-04 lbs/day
Guthion	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	1.51E-05 lbs/day
Heptachlor	3.80E-03 ug/l	3.71E-03 lbs/day	2.6E-01	ug/l	3.92E-04 lbs/day
Lindane	8.00E-02 ug/l	7.80E-02 lbs/day	1.0E+00	ug/l	1.51E-03 lbs/day
Methoxychlor	0.00E+00 ug/l	0.00E+00 lbs/day	3.0E-02	ug/l	4.53E-05 lbs/day
Mirex	0.00E+00 ug/l	0.00E+00 lbs/day	1.0E-02	ug/l	1.51E-05 lbs/day
Parathion	0.00E+00 ug/l	0.00E+00 lbs/day	4.0E-02	ug/l	6.04E-05 lbs/day
PCB's	1.40E-02 ug/l	1.37E-02 lbs/day	2.0E+00	ug/l	3.02E-03 lbs/day
Pentachlorophenol	1.30E+01 ug/l	1.27E+01 lbs/day	2.0E+01	ug/l	3.02E-02 lbs/day
Toxephene	2.00E-04 ug/l	1.95E-04 lbs/day	7.3E-01	ug/l	1.10E-03 lbs/day

Effluent Targets for Pollution Indicators
Based upon Water Quality Standards

In-stream criteria of downstream segments for Pollution Indicators will be met with an effluent limit as follows:

	1 Hour Average	
	Concentration	Loading
Gross Beta (pCi/l)	50.0 pCi/L	
BOD (mg/l)	5.0 mg/l	4.9 lbs/day
Nitrates as N	4.0 mg/l	3.9 lbs/day
Total Phosphorus as P	0.05 mg/l	0.0 lbs/day
Total Suspended Solids	90.0 mg/l	87.8 lbs/day

Note: Pollution indicator targets are for information purposes only.

Effluent Limitations for Protection of Human Health [Toxics Rule]
Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)

In-stream criteria of downstream segments for Protection of Human Health [Toxics] will be met with an effluent limit as follows:

	Maximum Concentration	
	Concentration	Load
Toxic Organics		
Acenaphthene	2.70E+03 ug/l	2.63E+00 lbs/day
Acrolein	7.80E+02 ug/l	7.61E-01 lbs/day
Acrylonitrile	6.60E-01 ug/l	6.44E-04 lbs/day
Benzene	7.10E+01 ug/l	6.93E-02 lbs/day
Benzidine	ug/l	lbs/day
Carbon tetrachloride	4.40E+00 ug/l	4.29E-03 lbs/day
Chlorobenzene	2.10E+04 ug/l	2.05E+01 lbs/day
1,2,4-Trichlorobenzene		
Hexachlorobenzene	7.70E-04 ug/l	7.51E-07 lbs/day
1,2-Dichloroethane	9.90E+01 ug/l	9.66E-02 lbs/day
1,1,1-Trichloroethane		
Hexachloroethane	8.90E+00 ug/l	8.68E-03 lbs/day
1,1-Dichloroethane		
1,1,2-Trichloroethane	4.20E+01 ug/l	4.10E-02 lbs/day
1,1,2,2-Tetrachloroethane	1.10E+01 ug/l	1.07E-02 lbs/day
Chloroethane		
Bis(2-chloroethyl) ether	1.40E+00 ug/l	1.37E-03 lbs/day
2-Chloroethyl vinyl ether		
2-Chloronaphthalene	4.30E+03 ug/l	4.20E+00 lbs/day
2,4,6-Trichlorophenol	6.50E+00 ug/l	6.34E-03 lbs/day
p-Chloro-m-cresol		
Chloroform (HM)	4.70E+02 ug/l	4.59E-01 lbs/day
2-Chlorophenol	4.00E+02 ug/l	3.90E-01 lbs/day
1,2-Dichlorobenzene	1.70E+04 ug/l	1.66E+01 lbs/day
1,3-Dichlorobenzene	2.60E+03 ug/l	2.54E+00 lbs/day

1,4-Dichlorobenzene	2.60E+03 ug/l	2.54E+00 lbs/day
3,3'-Dichlorobenzidine	7.70E-02 ug/l	7.51E-05 lbs/day
1,1-Dichloroethylene	3.20E+00 ug/l	3.12E-03 lbs/day
1,2-trans-Dichloroethylene1		
2,4-Dichlorophenol	7.90E+02 ug/l	7.71E-01 lbs/day
1,2-Dichloropropane	3.90E+01 ug/l	3.80E-02 lbs/day
1,3-Dichloropropylene	1.70E+03 ug/l	1.66E+00 lbs/day
2,4-Dimethylphenol	2.30E+03 ug/l	2.24E+00 lbs/day
2,4-Dinitrotoluene	9.10E+00 ug/l	8.88E-03 lbs/day
2,6-Dinitrotoluene		
1,2-Diphenylhydrazine	5.40E-01 ug/l	5.27E-04 lbs/day
Ethylbenzene	2.90E+04 ug/l	2.83E+01 lbs/day
Fluoranthene	3.70E+02 ug/l	3.61E-01 lbs/day
4-Chlorophenyl phenyl ether		
4-Bromophenyl phenyl ether		
Bis(2-chloroisopropyl) ether	1.70E+05 ug/l	1.66E+02 lbs/day
Bis(2-chloroethoxy) methane		
Methylene chloride (HM)	1.60E+03 ug/l	1.56E+00 lbs/day
Methyl chloride (HM)		
Methyl bromide (HM)		
Bromoform (HM)	3.60E+02 ug/l	3.51E-01 lbs/day
Dichlorobromomethane(HM)	2.20E+01 ug/l	2.15E-02 lbs/day
Chlorodibromomethane (HM)	3.40E+01 ug/l	3.32E-02 lbs/day
Hexachlorocyclopentadiene	1.70E+04 ug/l	1.66E+01 lbs/day
Isophorone	6.00E+02 ug/l	5.85E-01 lbs/day
Naphthalene		
Nitrobenzene	1.90E+03 ug/l	1.85E+00 lbs/day
2-Nitrophenol		
4-Nitrophenol		
2,4-Dinitrophenol	1.40E+04 ug/l	1.37E+01 lbs/day
4,6-Dinitro-o-cresol	7.65E+02 ug/l	7.46E-01 lbs/day
N-Nitrosodimethylamine	8.10E+00 ug/l	7.90E-03 lbs/day
N-Nitrosodiphenylamine	1.60E+01 ug/l	1.56E-02 lbs/day
N-Nitrosodi-n-propylamine	1.40E+00 ug/l	1.37E-03 lbs/day
Pentachlorophenol	8.20E+00 ug/l	8.00E-03 lbs/day
Phenol	4.60E+06 ug/l	4.49E+03 lbs/day
Bis(2-ethylhexyl)phthalate	5.90E+00 ug/l	5.76E-03 lbs/day
Butyl benzyl phthalate	5.20E+03 ug/l	5.07E+00 lbs/day
Di-n-butyl phthalate	1.20E+04 ug/l	1.17E+01 lbs/day
Di-n-octyl phthlate		
Diethyl phthalate	1.20E+05 ug/l	1.17E+02 lbs/day
Dimethyl phthlate	2.90E+06 ug/l	2.83E+03 lbs/day
Benzo(a)anthracene (PAH)	3.10E-02 ug/l	3.02E-05 lbs/day
Benzo(a)pyrene (PAH)	3.10E-02 ug/l	3.02E-05 lbs/day
Benzo(b)fluoranthene (PAH)	3.10E-02 ug/l	3.02E-05 lbs/day
Benzo(k)fluoranthene (PAH)	3.10E-02 ug/l	3.02E-05 lbs/day
Chrysene (PAH)	3.10E-02 ug/l	3.02E-05 lbs/day
Acenaphthylene (PAH)		
Anthracene (PAH)		
Dibenzo(a,h)anthracene (PAH)	3.10E-02 ug/l	3.02E-05 lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	3.10E-02 ug/l	3.02E-05 lbs/day

Pyrene (PAH)	1.10E+04 ug/l	1.07E+01 lbs/day
Tetrachloroethylene	8.90E+00 ug/l	8.68E-03 lbs/day
Toluene	2.00E+05 ug/l	1.95E+02 lbs/day
Trichloroethylene	8.10E+01 ug/l	7.90E-02 lbs/day
Vinyl chloride	5.25E+02 ug/l	5.12E-01 lbs/day
Pesticides		
Aldrin	1.40E-04 ug/l	1.37E-07 lbs/day
Dieldrin	1.40E-04 ug/l	1.37E-07 lbs/day
Chlordane	5.90E-04 ug/l	5.76E-07 lbs/day
4,4'-DDT	5.90E-04 ug/l	5.76E-07 lbs/day
4,4'-DDE	5.90E-04 ug/l	5.76E-07 lbs/day
4,4'-DDD	8.40E-04 ug/l	8.19E-07 lbs/day
alpha-Endosulfan	2.00E+00 ug/l	1.95E-03 lbs/day
beta-Endosulfan	2.00E+00 ug/l	1.95E-03 lbs/day
Endosulfan sulfate	2.00E+00 ug/l	1.95E-03 lbs/day
Endrin	8.10E-01 ug/l	7.90E-04 lbs/day
Endrin aldehyde	8.10E-01 ug/l	7.90E-04 lbs/day
Heptachlor	2.10E-04 ug/l	2.05E-07 lbs/day
Heptachlor epoxide		
PCB's		
PCB 1242 (Arochlor 1242)	4.50E-05 ug/l	4.39E-08 lbs/day
PCB-1254 (Arochlor 1254)	4.50E-05 ug/l	4.39E-08 lbs/day
PCB-1221 (Arochlor 1221)	4.50E-05 ug/l	4.39E-08 lbs/day
PCB-1232 (Arochlor 1232)	4.50E-05 ug/l	4.39E-08 lbs/day
PCB-1248 (Arochlor 1248)	4.50E-05 ug/l	4.39E-08 lbs/day
PCB-1260 (Arochlor 1260)	4.50E-05 ug/l	4.39E-08 lbs/day
PCB-1016 (Arochlor 1016)	4.50E-05 ug/l	4.39E-08 lbs/day
Pesticide		
Toxaphene	7.50E-04 ug/l	7.32E-07 lbs/day
Metals		
Antimony	ug/l	lbs/day
Arsenic	ug/l	lbs/day
Asbestos	ug/l	lbs/day
Beryllium		
Cadmium		
Chromium (III)		
Chromium (VI)		
Copper	ug/l	lbs/day
Cyanide	ug/l	lbs/day
Lead		
Mercury	ug/l	lbs/day
Nickel	ug/l	lbs/day
Selenium		
Silver		
Thallium	ug/l	lbs/day
Zinc		

Dioxin		
Dioxin (2,3,7,8-TCDD)	1.40E-08 ug/l	1.37E-11 lbs/day

Metals Effluent Limitations for Protection of All Beneficial Uses
Based upon Water Quality Standards and Toxics Rule

	Class 4 Acute Agricultural ug/l	Class 3 Acute Aquatic Wildlife ug/l	Acute Toxics Drinking Water Source ug/l	Acute Toxics Wildlife ug/l	1C Acute Health Criteria ug/l	Acute Most Stringent ug/l	Class 3 Chronic Aquatic Wildlife ug/l
Aluminum		750.0				750.0	N/A
Antimony				4300.0		4300.0	
Arsenic	100.0	340.0			0.0	100.0	190.0
Barium						0.0	
Beryllium						0.0	
Cadmium	10.0	8.7			0.0	8.7	0.8
Chromium (III)		5611.7			0.0	5611.7	268.2
Chromium (VI)	100.0	16.0			0.0	16.00	11.00
Copper	200.0	51.7				51.7	30.5
Cyanide		22.0	220001.2			22.0	5.2
Iron		1000.0055				1000.0	
Lead	100.0	476.8			0.0	100.0	18.6
Mercury		2.40		0.15	0.0	0.15	0.012
Nickel		1515.9		4600.0		1515.9	168.5
Selenium	50.0	20.0			0.0	20.0	4.6
Silver		41.1			0.0	41.1	
Thallium				6.3		6.3	
Zinc		387.8				387.8	387.8
Boron	750.0					750.0	

Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]
[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	750.0	N/A	
Antimony	4300.02		
Arsenic	100.0	190.0	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	8.7	0.8	
Chromium (III)	5611.7	268	
Chromium (VI)	16.0	11.0	
Copper	51.7	30.5	

Cyanide	22.0	5.2
Iron	1000.0	
Lead	100.0	18.6
Mercury	0.150	0.012
Nickel	1515.9	169
Selenium	20.0	4.6
Silver	41.1	N/A
Thallium	6.3	
Zinc	387.8	387.8
Boron	750.00	

Other Effluent Limitations are based upon R317-1.

E. coli	126.0	organisms per 100 ml

X. Antidegradation Considerations

The Utah Antidegradation Policy allows for degradation of existing quality where it is determined that such lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are protected [R317-2-3]. It has been determined that certain chemical parameters introduced by this discharge will cause an increase of the concentration of said parameters in the receiving waters. Under no conditions will the increase in concentration be allowed to interfere with existing instream water uses.

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water. Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is required

XI. Colorado River Salinity Forum Considerations

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.

XII. Summary Comments

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important down-stream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.

XIII. Notice of UPDES Requirement

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised. See special provisions in Utah Water Quality Standards for adjustments in the Total Dissolved Solids values based upon background concentration.

THIS IS A DRAFT DOCUMENT

Utah Division of Water Quality
801-538-6052
File Name: Alton_Coal_WLAxxx_2-24-16.xls

APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day	CBOD Coeff. FORCED (Kd)/day	CBOD Coeff. (Ka)T 1/day	REAER. Coeff. (Ka)20 (Ka)/day	REAER. Coeff. FORCED 1/day	REAER. Coeff. (Ka)T 1/day	NBOD Coeff. (Kn)20 1/day	NBOD Coeff. (Kn)T 1/day
2.000	0.000	0.798	#########	0.000	68737.052	0.400	0.086

Open Coeff. (K4)20 1/day	Open Coeff. (K4)T 1/day	NH3 LOSS (K5)20 1/day	NH3 (K5)T 1/day	NO2+NO3 LOSS (K6)20 1/day	NO2+NO3 (K6)T 1/day	TRC Decay K(Cl)20 1/day	TRC K(Cl)(T) 1/day
0.000	0.000	4.000	1.596	0.000	0.000	32.000	9.978

BENTHIC DEMAND (SOD)20 gm/m2/day	BENTHIC DEMAND (SOD)T gm/m2/day
1.000	0.284

K1 CBOD {theta}	K2 Reaer. {theta}	K3 NH3 {theta}	K4 Open {theta}	K5 NH3 Loss {theta}	K6 NO2+3 {theta}	K(Cl) TRC {theta}	S Benthic {theta}
1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1

THIS IS A DRAFT DOCUMENT

Alton Coal Development, LLC
463 North 100 West Suite 1
Cedar City Utah 84720
Phone (435) 867-5331 • Fax (435) 867-1192

February 1, 2016

Walter L. Baker, P.E.
Division Director
UDEQ – Division of Water Quality
195 North 1950 West
Salt Lake City, UT 84116

Dear Mr. Baker.

Alton Coal Development, LLC (ACD) currently operates under Utah Pollutant Discharge Elimination System (UPDES) Permit No. UT0025992 at the Coal Hollow Mine located in Kane County. The Coal Hollow Mine is an active surface coal mine that is approximately three miles southeast of Alton, Utah. .

ACD is currently is the process of permitting an expansion of the Coal Hollow Mine (CHM), the North Private Lease (NPL). At the Division of Water Qualities request, ACD is providing the attached Level II Antidegradation Form to provide additional information for the permitting process.

I will make myself available if the need arises for further discussions. Please do not hesitate to contact me if you have questions or concerns.

Sincerely,

B. Kirk Nicholes

B. Kirk Nicholes
Environmental Specialist

Antidegradation Review:
Coal Hollow Mine – North Private Lease

Alton Coal Development, LLC

REVISED: 6/14/2012

ANTIDEGRADATION REVIEW FORM
UTAH DIVISION OF WATER QUALITY

Instructions

The objective of antidegradation rules and policies is to protect existing high quality waters and set forth a process for determining where and how much degradation is allowable for socially and/or economically important reasons. In accordance with Utah Administrative Code (UAC R317-2-3), an antidegradation review (ADR) is a permit requirement for any project that will increase the level of pollutants in waters of the state. The rule outlines requirements for both Level I and Level II ADRs, as well as public comment procedures. This review form is intended to assist the applicant and Division of Water Quality (DWQ) staff in complying with the rule but is not a substitute for the complete rule in R317-2-3.5. Additional details can be found in the *Utah Antidegradation Implementation Guidance* and relevant sections of the guidance are cited in this review form.

ADRs should be among the first steps of an application for a UPDES permit because the review helps establish treatment expectations. The level of effort and amount of information required for the ADR depends on the nature of the project and the characteristics of the receiving water. To avoid unnecessary delays in permit issuance, the Division of Water Quality (DWQ) recommends that the process be initiated at least one year prior to the date a final approved permit is required.

DWQ will determine if the project will impair beneficial uses (Level I ADR) using information provided by the applicant and whether a Level II ADR is required. The applicant is responsible for conducting the Level II ADR. For the permit to be approved, the Level II ADR must document that all feasible measures have been undertaken to minimize pollution for socially, environmentally or economically beneficial projects resulting in an increase in pollution to waters of the state.

For permits requiring a Level II ADR, this antidegradation form must be completed and approved by DWQ before any UPDES permit can be issued. Typically, the ADR form is completed in an iterative manner in consultation with DWQ. The applicant should first complete the statement of social, environmental and economic importance (SEEI) in Part C and determine the parameters of concern (POC) in Part D. Once the POCs are agreed upon by DWQ, the alternatives analysis and selection of preferred alternative in Part E can be conducted based on minimizing degradation resulting from discharge of the POCs. Once the applicant and DWQ agree upon the preferred alternative, the review is considered complete, and the form must be signed, dated, and submitted to DWQ.

For additional clarification on the antidegradation review process and procedures, please contact Nicholas von Stackelberg (801-536-4374) or Jeff Ostermiller (801-536-4370).

Antidegradation Review Form

Part A: Applicant Information

Facility Name: Coal Hollow Mine

Facility Owner: Alton Coal Development, LLC.

Facility Location: S. Alton Road (approx. 1.0 miles Southeast of Alton, Utah)

Form Prepared By: Kirk Nicholes

Outfall Number: 4

Receiving Water: Unnamed Tributary to Kanab Creek, Kanab Creek

What Are the Designated Uses of the Receiving Water (R317-2-6)?
Domestic Water Supply: None
Recreation: 2B - Secondary Contact
Aquatic Life: 3C - Nongame Fish
Agricultural Water Supply: 4
Great Salt Lake: None

Category of Receiving Water (R317-2-3.2, -3.3, and -3.4): Category 3

UPDES Permit Number (if applicable): UT0025992

Effluent Flow Reviewed: Outfall 005 - 33,000, Outfall 006 - 26,000, Outfall 007 - 203,000, Outfall 008 - 117,000
Typically, this should be the maximum daily discharge at the design capacity of the facility. Exceptions should be noted.

What is the application for? (check all that apply)

☒ A UPDES permit for a new facility, project, or outfall.

☐ A UPDES permit renewal with an expansion or modification of an existing wastewater treatment works.

☐ A UPDES permit renewal requiring limits for a pollutant not covered by the previous permit and/or an increase to existing permit limits.

☐ A UPDES permit renewal with no changes in facility operations.

Part B. Is a Level II ADR required?

This section of the form is intended to help applicants determine if a Level II ADR is required for specific permitted activities. In addition, the Executive Secretary may require a Level II ADR for an activity with the potential for major impact on the quality of waters of the state (R317-2-3.5a.1).

B1. The receiving water or downstream water is a Class 1C drinking water source.

☐ **Yes** A Level II ADR is required (Proceed to Part C of the Form)

☒ **No** (Proceed to Part B2 of the Form)

B2. The UPDES permit is new or is being renewed and the proposed effluent concentration and loading limits are higher than the concentration and loading limits in the previous permit and any previous antidegradation review(s).

☐ **Yes** (Proceed to Part B3 of the Form)

☒ **No** No Level II ADR is required and there is no need to proceed further with review questions.

B3. Will any pollutants use assimilative capacity of the receiving water, i.e. do the pollutant concentrations in the effluent exceed those in the receiving waters at critical conditions? For most pollutants, effluent concentrations that are higher than the ambient concentrations require an antidegradation review? For a few pollutants such as dissolved oxygen, an antidegradation review is required if the effluent concentrations are less than the ambient concentrations in the receiving water. (Section 3.3.3 of Implementation Guidance)

☐ **Yes** (Proceed to Part B4 of the Form)

☒ **No** No Level II ADR is required and there is no need to proceed further with review questions.

ACD has operated for 5 years with UPDES permit # UT0025992. During that time, very few discharges have occurred. Our review of records shows that the discharges from the currently permitted sediment pond outfalls have been in response to storm events and spring runoff. We have attached "Antidegradation Review and Statement of Social, Environmental, and Economic Importance: Coal Hollow Mine - North Private Lease" for your review.

Although Items B2 and B3 indicate that a Level II ADR is not required, ACD is providing the additional information in an effort to share this with the Division.

B4. Are water quality impacts of the proposed project temporary and limited (Section 3.3.4 of Implementation Guidance)? Proposed projects that will have temporary and limited effects on water quality can be exempted from a Level II ADR.

☐ **Yes** Identify the reasons used to justify this determination in Part B4.1 and proceed to Part G. No Level II ADR is required.

☒ **No** A Level II ADR is required (Proceed to Part C)

The CHM facilities are expected to operate for more than 10 years. Generally potential discharges from the permitted outfalls are limited to storm water related discharges with sediment as the normal pollutant. As previously stated, normal operations at the Coal Hollow Mine are intended to occur with very few discharges.

B4.1 Complete this question only if the applicant is requesting a Level II review exclusion for temporary and limited projects (see R317-2-3.5(b)(3) and R317-2-3.5(b)(4)). For projects requesting a temporary and limited exclusion please indicate the factor(s) used to justify this determination (check all that apply and provide details as appropriate) (Section 3.3.4 of Implementation Guidance):

☐ Water quality impacts will be temporary and related exclusively to sediment or turbidity and fish spawning will not be impaired.

Factors to be considered in determining whether water quality impacts will be temporary and limited:

a) The length of time during which water quality will be lowered: ☐
b) The percent change in ambient concentrations of pollutants: ☐
c) Pollutants affected: ☐
d) Likelihood for long-term water quality benefits: ☐
e) Potential for any residual long-term influences on existing uses: ☐
f) Impairment of fish spawning, survival and development of aquatic fauna excluding fish removal efforts: ☐

Additional justification, as needed: ☐

Level II ADR

Part C, D, E, and F of the form constitute the Level II ADR Review. The applicant must provide as much detail as necessary for DWQ to perform the antidegradation review. Questions are provided for the convenience of applicants; however, for more complex permits it may be more effective to provide the required information in a separate report. Applicants that prefer a separate report should record the report name here and proceed to Part G of the form.

Optional Report Name: *Antidegradation Review and Statement of Social, Environmental, and Economic Importance: Coal Hollow Mine, North Private Lease*

Part C. Is the degradation from the project socially and economically necessary to accommodate important social or economic development in the area in which the waters are located?

The applicant must provide as much detail as necessary for DWQ to concur that the project is socially and economically necessary when answering the questions in this section. More information is available in Section 6.2 of the Implementation Guidance.

C1. Describe the social and economic benefits that would be realized through the proposed project, including the number and nature of jobs created and anticipated tax revenues.

Currently, ACD directly employs 54 workers at the Coal Hollow mine site from Kane, Garfield and Iron Counties. Additional 50-60 jobs are attributed to offsite support of mining operations. Expansion of the North Private Lease will preserve those jobs until the lease for Federal coal (LBA) has been finalized. Acquisition of the LBA would allow the mine to expand and directly employ 160 jobs in the area, and indirectly create between 240-480 jobs to support operations. ACD has been a key partner in preserving the "small-town nature" of communities in and around the Coal Hollow Mine and LBA tract. Currently, ACD is one of the Kane County's largest private employers. Since operations at Coal Hollow began in 2010 ACD has been a key community partner. ACD has invested in local infrastructure development, building the local firehouse and city park that serve the Town of Alton. ACD promotes local community activities, including sponsoring local high school sports teams and youth groups. ACD is a supporter of the local 4H Club and Junior Livestock Association. ACD sponsors local cultural activities, including the annual Panguitch Valley Balloon Rally. Moreover, ACD encourages its employees to be active community members.

The LBA, under the proposed action, is estimated in the SDEIS to provide approximately $90 million in royalties over the life of the 25 year federal lease that would be dispersed to the State of Utah. Utah's Community Impact Board Fund ("CIB") will receive an estimated $29.25 million. Funds distributed through the CIB are dispersed throughout Utah, including in Kane County.

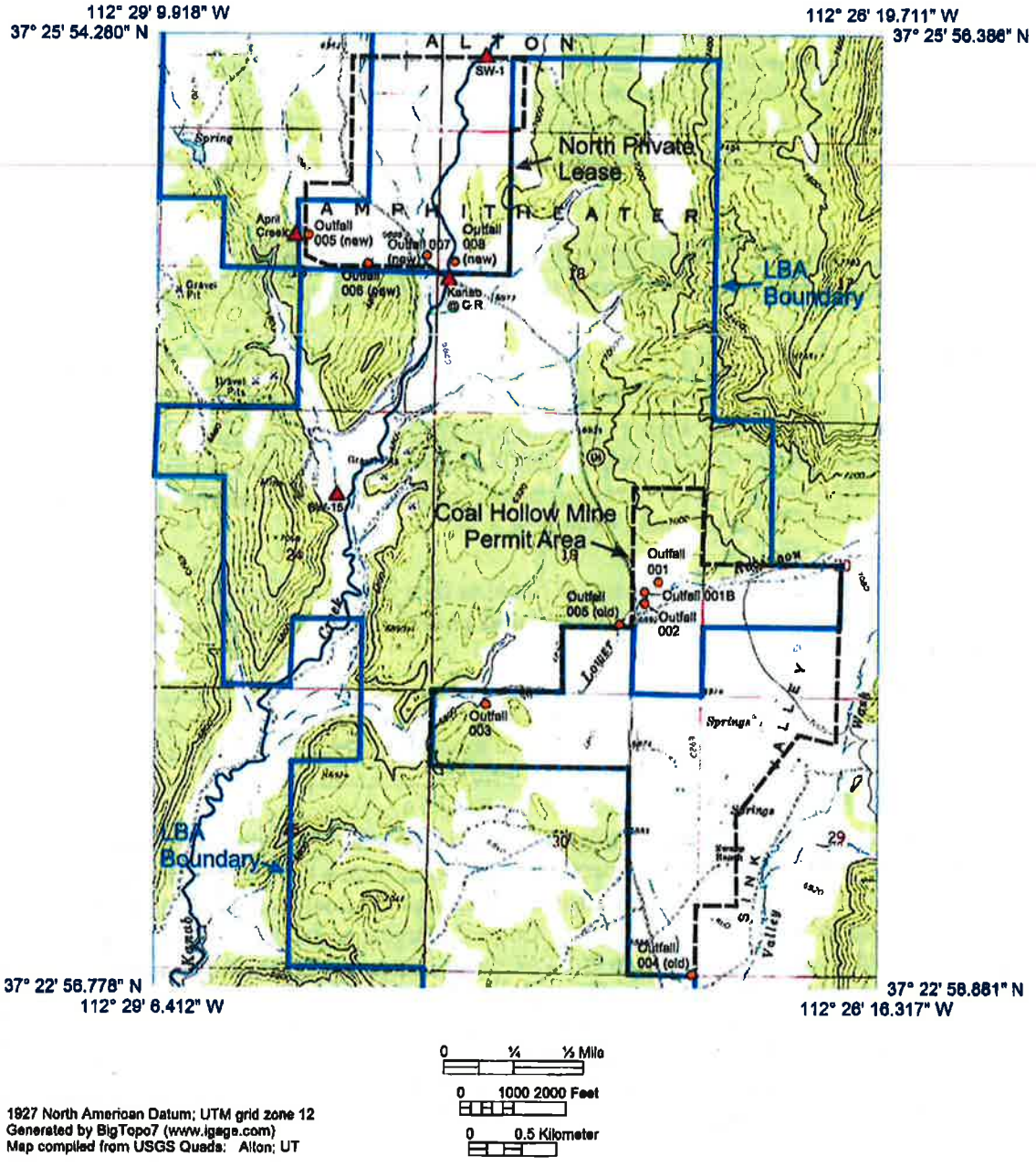

Figure 3 Current and proposed UPDES discharge points and selected stream monitoring locations at the Alton Coal Development, LLC Coal Hollow Mine.

C2. Describe any environmental benefits to be realized through implementation of the proposed project.

As demonstrated by sage-grouse population growth at Coal Hollow, the Mitigation Plan for the North Private Lease and for the SDEIS will further enhance and expand greater sage-grouse habitat in the South Panguitch habitat area. Restoration and habitat expansion of over 8,000 acres are called for under the proposed Mitigation plans.

C3. Describe any social and economic losses that may result from the project, including impacts to recreation or commercial development.

The expansion to the Coal Hollow mine would extend the life of the Coal Hollow Mine and provide a steady source of funding to support economic diversification and infrastructure development for Kane County and the region.

C4. Summarize any supporting information from the affected communities on preserving assimilative capacity to support future growth and development.

Coal mine operations at Coal Hollow are the lifeblood of the Town of Alton and many other small-town communities in and around Kane County. Without natural resource and coal development, these communities would suffer a significant blow to their economic base.

C5. Please describe any structures or equipment associated with the project that will be placed within or adjacent to the receiving water.

ACD will construct the proposed sediment ponds 5, 6, 7, 8 and 9 near Kanab creek. These sediment ponds will control storm water runoff from the active mine site and during following reclamation activities until DOGM approves removal. The sediment ponds are proposed to have capacity larger than the calculated 10 year 24 hour storm event in an effort to reduce the potential for discharge to Kanab Creek and offsite drainages.

Part D. Identify and rank (from increasing to decreasing potential threat to designated uses) the parameters of concern. *Parameters of concern are parameters in the effluent at concentrations greater than ambient concentrations in the receiving water. The applicant is responsible for identifying parameter concentrations in the effluent and DWQ will provide parameter concentrations for the receiving water. More information is available in Section 3.3.3 of the Implementation Guidance.*

Parameters of Concern:

Rank	Pollutant	Ambient Concentration	Effluent Concentration
1	None		
2			
3			
4			
5			

Pollutants Evaluated that are not Considered Parameters of Concern:

Pollutant	Ambient Concentration	Effluent Concentration	Justification
TDS		664 mg/L (avg.) See attached report	Lower average concentration than receiving waters. Infrequent discharge.
Iron (total)		0.99 mg/L (avg.) See attached report	Low concentration; similar to receiving waters during high-flow conditions. Iron in sediment can be removed through use of sediment ponds. Infrequent discharge.
Selenium (total)		0.018 mg/L (avg.) See attached report	Low concentration; similar to receiving waters. Meets State irrigation standards. Infrequent discharge.
Boron (total)		0.15 mg/L (avg.) See attached report	Low concentration, similar to receiving waters. Meets State irrigation standards. Infrequent discharge.

Part E. Alternative Analysis Requirements of a Level II Antidegradation Review.

Level II ADRs require the applicant to determine whether there are feasible less-degrading alternatives to the proposed project. More information is available in Section 5.5 and 5.6 of the Implementation Guidance.

E1. The UPDES permit is being renewed without any changes to flow or concentrations. Alternative treatment and discharge options including changes to operations and maintenance were considered and compared to the current processes. No economically feasible treatment or discharge alternatives were identified that were not previously considered for any previous antidegradation review(s).

☒ **Yes** (Proceed to Part F)

☐ **No or Does Not Apply** (Proceed to E2)

E2. Attach as an appendix to this form a report that describes the following factors for all alternative treatment options (see 1) a technical description of the treatment process, including construction costs and continued operation and maintenance expenses, 2) the mass and concentration of discharge constituents, and 3) a description of the reliability of the system, including the frequency where recurring operation and maintenance may lead to temporary increases in discharged pollutants. Most of this information is typically available from a Facility Plan, if available.

Report Name: ☐

E3. Describe the proposed method and cost of the baseline treatment alternative. The baseline treatment alternative is the minimum treatment required to meet water quality based effluent limits (WQBEL) as determined by the preliminary or final wasteload analysis (WLA) and any secondary or categorical effluent limits.

E4. Were any of the following alternatives feasible and affordable?

Alternative	Feasible	Reason Not Feasible/Affordable
Pollutant Trading	No	
Water Recycling/Reuse	Yes	ACD uses sediment pond water for dust control
Land Application	Yes	ACD uses sediment pond water for dust control
Connection to Other Facilities	No	No other facilities available
Upgrade to Existing Facility	No	Existing sediment ponds are approximately 1.5 miles from
Total Containment	No	ACD has designed sediment ponds to contain the 10 year 24 hour storm event but needs an approved outfall in the event of larger or multiple storm events.
Improved O&M of Existing Systems	No	Existing sediment ponds are not available downstream of designed controls
Seasonal or Controlled Discharge	No	Potential discharges are related to unpredictable occurrences of storms larger than the designed storm event
New Construction	Yes	Sediment ponds 5, 6, 7, 8 and 9 are planned new construction
No Discharge	Yes	ACD intends to contain the 10 year 24 hour storm event but needs an approved outfall in the event of a larger storm or multiple storms

E5. From the applicant's perspective, what is the preferred treatment option?

Design of sedimentation ponds 5, 6, 7, 8 and 9 have been to contain the runoff, from the NPL mining area, of at least the 10 year 24 hour event and more where space was available to oversize the ponds capacity. ACD normally looks for opportunities to reuse detained water for dust control purposes rather than allowing a sediment pond to overflow from successive storms.

E6. Is the preferred option also the least polluting feasible alternative?

☒ **Yes**

☐ **No**

If no, what were less degrading feasible alternative(s)? ☐

If no, provide a summary of the justification for not selecting the least polluting feasible alternative and if appropriate, provide a more detailed justification as an attachment.

☐

Part F. Optional Information

F1. Does the applicant want to conduct optional public review(s) in addition to the mandatory public review? Level II ADRs are public noticed for a thirty day comment period. More information is available in Section 3.7.1 of the Implementation Guidance.

☒ **No**

☐ **Yes**

F2. Does the project include an optional mitigation plan to compensate for the proposed water quality degradation?

☒ **No**

☐ **Yes**

Report Name: ☐

ACD is requesting the amended UPDES permit with no changes to the existing concentrations or loading limits. The proposed construction of sediment ponds 5, 6, 7, 8, and 9 and the control and monitoring of any discharge from there outfalls are the mitigation plan to minimize the potential for water quality degradation.

Part G. Certification of Antidegradation Review

G1. Applicant Certification

The form should be signed by the same responsible person who signed the accompanying permit application or certification.

Based on my inquiry of the person(s) who manage the system or those persons directly responsible for gathering the information, the information in this form and associated documents is, to the best of my knowledge and belief, true, accurate, and complete.

Print Name: B. Kirk Nicholes

Signature: B. Kirk Nicholes

Date: 02/02/2016

G2. DWQ Approval

To the best of my knowledge, the ADR was conducted in accordance with the rules and regulations outlined in UAC R-317-2-3.

Water Quality Management Section

Print Name: Dave Wham

Signature:

Date: 3/9/16

Antidegradation Review and Statement of Social, Environmental, and Economic Importance: Coal Hollow Mine - North Private Lease

28 January 2016

Alton Coal Development, LLC
463 North 100 West, Suite 1
Cedar City, Utah 84721

PETERSEN HYDROLOGIC, LLC
CONSULTANTS IN HYDROGEOLOGY

Antidegradation Review and Statement of Social, Environmental, and Economic Importance: Coal Hollow Mine - North Private Lease

28 January 2016

Alton Coal Development, LLC
463 North 100 West, Suite 1
Cedar City, Utah 84721

Prepared by:

Erik C. Petersen, P.G.
Principal Hydrogeologist
Utah P.G. No. 5373615-2250

PETERSEN HYDROLOGIC
CONSULTANTS IN HYDROGEOLOGY

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Antidegradation Review and Statement of Social, Environmental, and Economic Importance: Coal Hollow Mine North Private Lease

Introduction

The Alton Coal Development, LLC (ACD) Coal Hollow Mine is located approximately 3 miles south of the town of Alton, Utah (Figure 1). A permit to operate the Coal Hollow Mine was issued on 10 November 2010. The first coal was mined in early February 2011. ACD was issued UPDES permit UTG040027 by the Utah Division of Water Quality (UDWQ) on 1 May 2009 which authorized discharge from the Coal Hollow Mine facility to Lower Robinson Creek and Sink Valley Wash, both tributaries to Kanab Creek. UTG040027 was a general permit for coal mining. ACD was issued an individual UPDES permit (UT0025992) by UDWQ on 6 August 2013 which authorizes discharges to these same tributaries to Kanab Creek.

Alton Coal Development, LLC is currently applying for a permit from the Utah Division of Oil, Gas and Ming to extend the mining operations at the existing Coal Hollow Mine into the coal reserves at the proposed North Private Lease (NPL) area (Figure 1). The North Private

Lease area is located 1.3 miles north of the current Coal Hollow Mine operations area and is part of the block of contiguous coal reserves proposed for mining operations at the Coal Hollow Mine that includes coal reserves of the Federal LBA (For which ACD has made application with the U.S. Bureau of Land Management).

This document is provided as part of Alton Coal Development's Antidegradation Review Application to the Utah Division of Water Quality for the North Private Lease. This report contains information regarding the projected water quality characteristics of UPDES discharges at the North Private Lease. It also contains a Statement of Social, Environmental, and Economic Importance of the mining in the North Private Lease at the Coal Hollow Mine.

Proposed Modifications to the Existing UPDES Permit

In conjunction with ACD's proposed mining operations in the North Private Lease area, the proposed sediment control plan includes the construction of five sediment ponds (See Figure 3; Ponds 5,6,7, 8, and 9). These ponds are designed (at a minimum) to contain the surface water runoff from disturbed mining areas associated with the 10-year, 24-hour storm event. Additionally, Pond 7 has been designed with additional storage capacity above that necessary to contain runoff from the 10-year, 24-hour storm event for the purpose of containing groundwater that could potentially be intercepted during mining operations. ACD is proposing that four additional outfalls be added to UPDES permit UT0025992 including Outfall 005 (discharge from Pond 5), Outfall 006 (discharge from Pond 6), Outfall 007 (discharge from Pond 7), and Outfall 008 (discharge from Pond 9).

Surface-Water Hydrology

The North Private Lease area is situated within the Kanab Creek drainage (Figure 1). Surface-water runoff from most of the NPL drains directly to Kanab Creek (locally through one of several short tributary segments to Kanab Creek). Surface-water runoff in the southwestern portion of the NPL is to the Simpson Hollow Creek tributary to Kanab Creek. Simpson Hollow Creek flows into Kanab Creek about one mile south of the NPL at the location of monitoring station SW-15 (Figure 3). The proposed new UPDES outfalls 7 and 8 are directly to Kanab Creek. Outfalls 5 and 6 are to the Simpson Hollow Creek tributary (Figures 2 and 3).

Projected North Private Lease UPDES discharge water characteristics

Results of historic UPDES monitoring activities at the Coal Hollow Mine are presented in Table 1. Table 1 also includes the results of recent supplemental boron monitoring at UPDES outfalls. The required water quality and water quantity monitoring results are routinely submitted to the Utah Division of Water Quality by ACD as stipulated in the UPDES permit.

Historically, UPDES discharges of water at the Coal Hollow Mine have been infrequent (Table 1, Figure 4). When discharges have occurred, the discharge rates have generally been less than 50 gpm. It has been the experience at the Coal Hollow Mine that waters discharged through the UPDES outfalls have consisted primarily of precipitation runoff waters from the

mine area. The quantity of intercepted mine groundwater included in the UPDES effluent has been small, generally comprising less than 10 percent of the discharge (Personal communication, Kirk Nicholes, 2016). (It is noted that the discharges from outfall 005 that occurred in October-November 2011 were from an alluvial groundwater mine dewatering trench and these discharges did not contain appreciable surface water). The modest quantities of groundwater that have been intercepted in the mine pits (generally less than 25 gpm in total at any one time) have commonly been utilized for dust suppression water at the mine facility or left in the mine pits and buried in the backfill such that most of the intercepted groundwater is not routed to the UPDES discharge points. Because the UPDES discharges are generally related to the runoff of precipitation water, UPDES discharges have usually occurred in response to periods of unusually heavy precipitation or snow melt in the mine area. It is anticipated that similar conditions will prevail at the North Private Lease.

As specified in Part D of the Antidegradation Review Application, the applicant for a UPDES permit or permit modification is directed to identify parameter concentrations in the effluent from the facility. The Utah Division of Water Quality (DWQ) provides parameter concentrations for the receiving water for the antidegradation review.

The identification of likely parameter concentrations in the effluent water from mining operations at the NPL is based on the assumption that the parameter concentrations in effluent water in the NPL will be similar to those monitored previously at the existing Coal Hollow Mine (which consist primarily of precipitation runoff waters). This assumption is

based on the general similarity of the geologic strata present (i.e. Tropic Shale and alluvium), and the similarity of the climatic conditions in the two nearby mining areas.

In consultation with personnel from the Utah Division of Water Quality, chemical parameters focused on in this investigation include total dissolved solids (TDS), total iron, and total boron. Other parameters were also evaluated.

Total dissolved solids (TDS)

The TDS of a water is a laboratory-measured parameter which is a reflection of the sum of the dissolved constituents in the water. The TDS is often considered as a general indicator of the overall chemical quality of a water. The TDS concentrations of effluent from the existing Coal Hollow Mine outfalls have ranged from a low of 292 mg/L to a high of 1,820 mg/L. The average TDS value was 663 mg/L and the median value was 592 mg/L (Table 1). On all but one of the 37 sampling events, TDS concentrations were below 1,200 mg/L. Similar concentrations of TDS are anticipated in effluent from the NPL.

Iron (total)

Iron is naturally present in the geochemical environment (rocks and sediments) of the Coal Hollow Mine and surrounding area. Iron has been identified in substantial quantities in laboratory samples of the rocks and sediments in both the existing Coal Hollow Mine permit area and the NPL (See Appendix 6-2 of the Coal Hollow Mine MRP). Where a discharge water includes sediment composed of iron-bearing minerals, it would be anticipated that iron

would be detected in the total iron analysis. Iron in coal mine waters water may also result from the oxidation of sulfide minerals in coal mining environments.

The total iron concentrations in the UPDES discharge waters at the existing Coal Hollow Mine have ranged from a low of <0.02 mg/L to a maximum of 4.99 mg/L. The average total iron concentration was 0.99 mg/L and the median concentration was 0.65 mg/L (Table 1).

Boron (total)

The monitoring parameters stipulated in the UPDES permit for the Coal Hollow Mine do not include boron. However, in conjunction with the ADR for the NPL, supplemental monitoring for boron was performed on 20 recent samples of effluent from the existing Coal Hollow Mine (Table 1).

Total boron concentrations in these samples ranged from a minimum of 0.07 mg/L to a maximum of 2.41 mg/L. The average total boron concentration was 0.42 mg/L with a median value of 0.17 mg/L (Table 1). It is noted that total boron concentrations for 15 of the 20 samples were 0.20 mg/L or less (including all discharges from outfalls 002, 003, and 004). The higher boron concentrations measured in Pond 1 and Pond 1B are likely attributable to interactions of surface-water runoff with coal sediments in the drainage areas for these two ponds (which include the coal stockpiles and coal loadout facilities).

The results of sampling and analysis of soluble boron concentrations in the soils and rocks overlying the coal seam to be mined at the NPL indicate that boron concentrations do not

exceed the 5.0 mg/kg state suitability criteria for topsoil and overburden (See Coal Hollow Mine MRP, Chapter 6, Appendix 6-2, and Long, 2014).

With regard to the ADR for the North Private Lease area, it is considered likely that effluent from the new discharge points in the NPL will have boron concentrations similar to those measured at existing UPDES outfalls 002, 003, and 004 (average 0.15 mg/L). As discussed above, the boron measured in outfalls 001 and 001B is likely related to runoff from the coal stockpile and loadout facility areas. Mining operations in the NPL will utilize the existing coal stockpile and loadout facilities at the Coal Hollow Mine and no such facilities are planned for the NPL.

Sediment

Sediment is naturally present in surface waters in the Coal Hollow Mine and surrounding area. This is due largely to the active erosion of unconsolidated sediments regionally and to the abundant presence of fine-grained silt and clay particles at the land surface that originate from erosion the Tropic Shale and other fine-grained deposits in the Coal Hollow Mine vicinity (Petersen Hydrologic, 2007). The fine-grained particles are readily suspended in surface waters. Treatment for sediment in waters is accomplished through the use of sediment ponds and other best management practices at the mine.

Social, Environmental, and Economic Importance of mining in the North Private Lease

Currently, ACD directly employs 54 workers at the Coal Hollow mine site from Kane, Garfield and Iron Counties. Additional 50-60 jobs are attributed to offsite support of mining operations. Expansion of the North Private Lease will preserve those jobs until the lease for Federal coal (LBA) has been finalized. Acquisition of the LBA would allow the mine to expand and directly employ 160 jobs in the area, and indirectly create between 240-480 jobs to support operations. ACD has been a key partner in preserving the "small-town nature" of communities in and around the Coal Hollow Mine and LBA tract. Currently, ACD is one of Kane County's largest private employers. Since operations at Coal Hollow began in 2010 ACD has been a key community partner. ACD has invested in local infrastructure development, building the local firehouse and city park that serve the Town of Alton. ACD promotes local community activities, including sponsoring local high school sports teams and youth groups. ACD is a supporter of the local 4H Club and Junior Livestock Association. ACD sponsors local cultural activities, including the annual Panguitch Valley Balloon Rally. Moreover, ACD encourages its employees to be active community members.

The LBA, under the proposed action, is estimated in the SDEIS to provide approximately $90 million in royalties over the life of the 25 year federal lease that would be dispersed to the State of Utah. Utah's Community Impact Board Fund ("CIB") will receive an estimated $29.25 million. Funds distributed through the CIB are dispersed throughout Utah, including in Kane County.

As demonstrated by sage-grouse population growth at Coal Hollow, the Mitigation Plan for the North Private Lease and for the SDEIS will further enhance and expand greater sage-grouse habitat in the South Panguitch habitat area. Restoration and habitat expansion of over 8,000 acres are called for under the proposed Mitigation plans.

The expansion to the Coal Hollow mine would extend the life of the Coal Hollow Mine and provide a steady source of funding to support economic diversification and infrastructure development for Kane County and the region.

Coal mine operations at Coal Hollow are the lifeblood of the Town of Alton and many other small-town communities in and around Kane County. Without natural resource and coal development, these communities would suffer a significant blow to their economic base.

ACD will construct the proposed sediment ponds 5, 6, 7, 8 and 9 near Kanab Creek. These sediment ponds will control storm water runoff from the active mine site and during following reclamation activities until DOGM approves removal. The sediment ponds are proposed to have capacity larger than the calculated 10 year 24 hour storm event in an effort to reduce the potential for discharge to Kanab Creek and offsite drainages.

References Cited

Long, R.E., 2014, Order 2 Soil Survey of the North Private Lease Area, A report prepared for Alton Coal Development, LLC by Long Resource Consultants, Inc., Morgan UT.

Petersen Hydrologic, 2007, Investigation of groundwater and surface-water systems in the 630-acre proposed Coal Hollow Mine permit and adjacent area; Probable hydrologic consequences of Coal Mining; Recommended monitoring plan; Potential Alluvial Valley Floor information; Kane County, Utah, Unpublished consulting report prepared for Alton Coal Development, LLC, Cedar City, Utah.

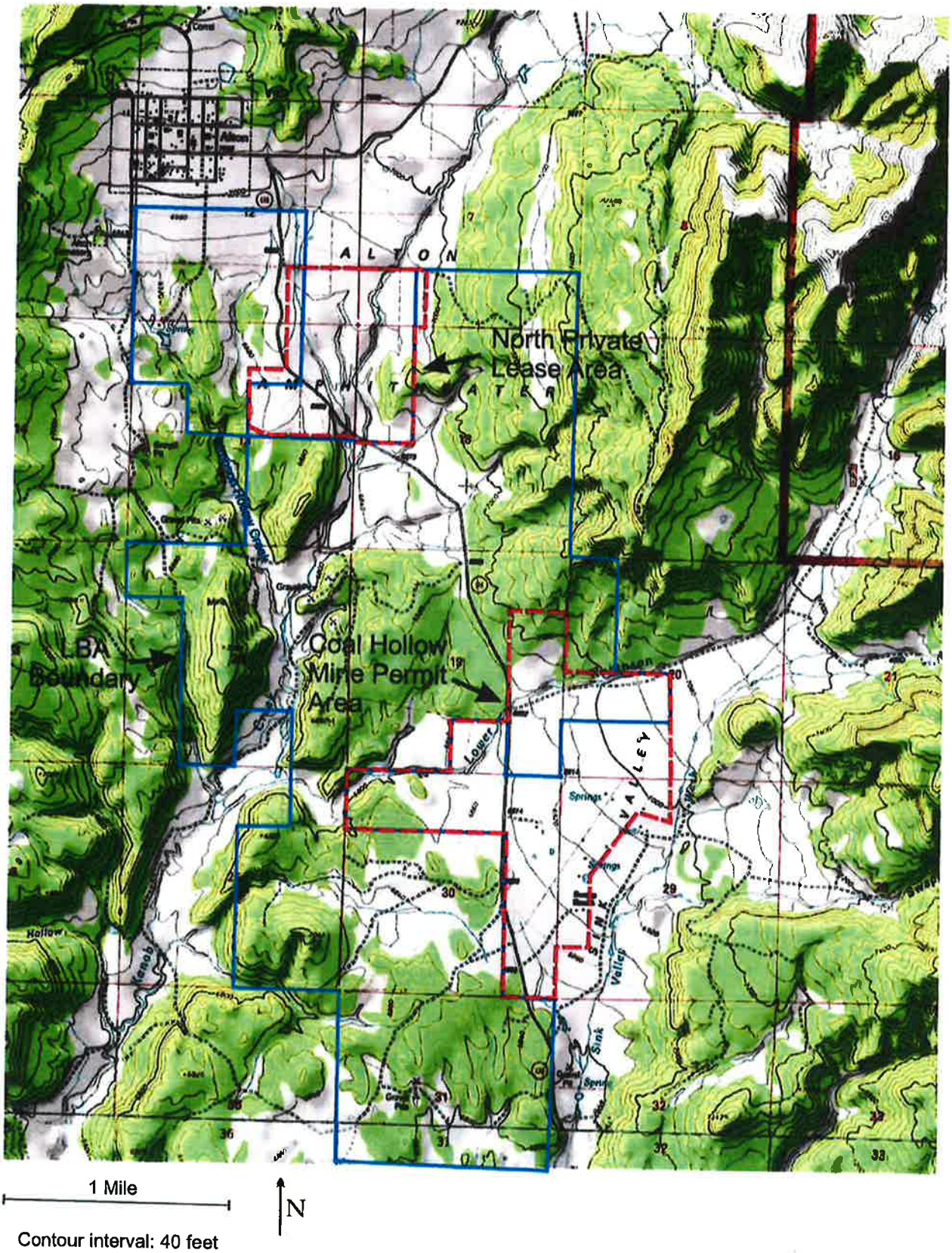
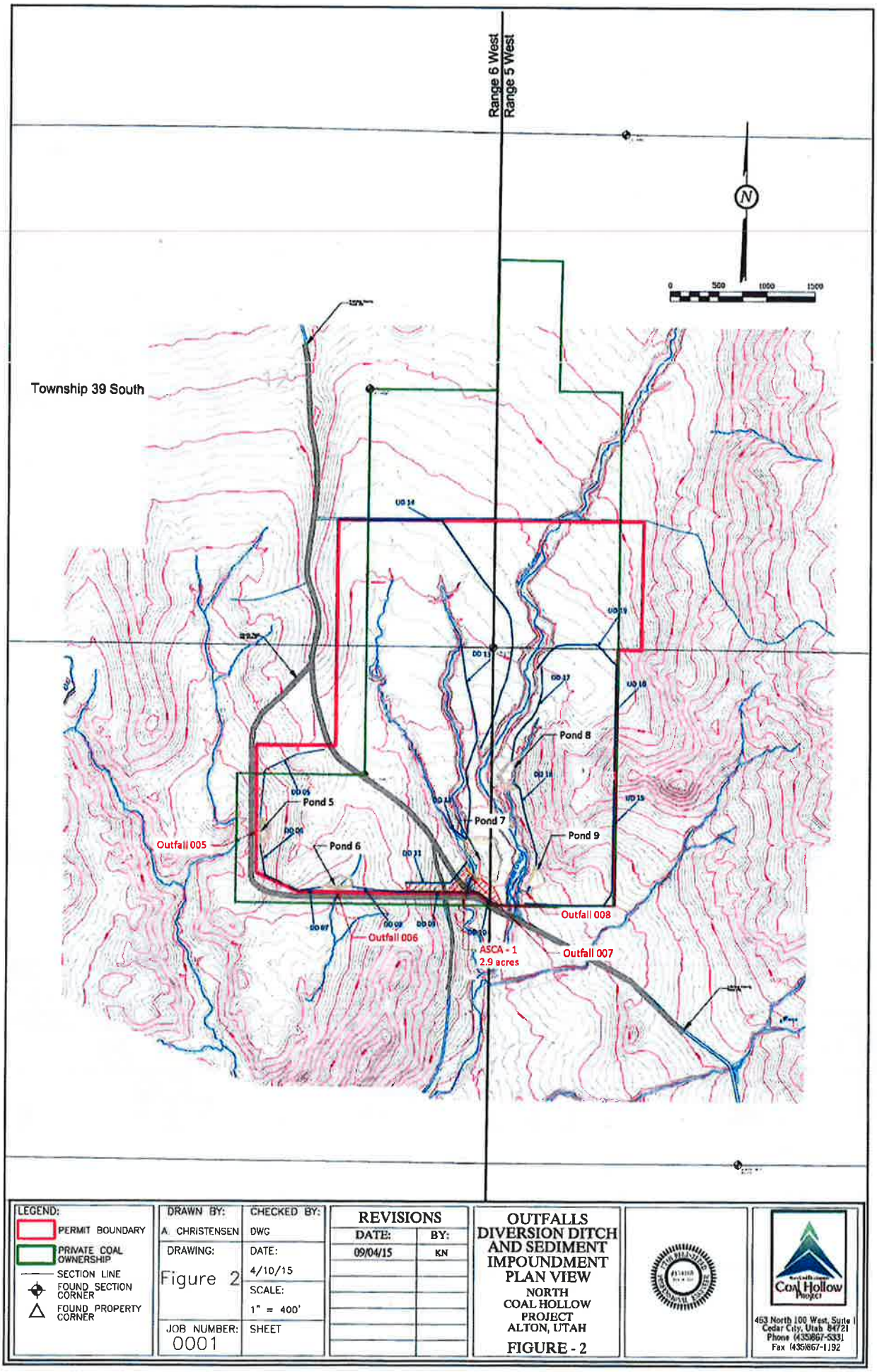


Figure 1 Location of the North Private Lease area at the Coal Hollow Mine.



LEGEND:
- PERMIT BOUNDARY
- PRIVATE COAL OWNERSHIP
- SECTION LINE
- FOUND SECTION CORNER
- FOUND PROPERTY CORNER

DRAWN BY:	CHECKED BY:
A. CHRISTENSEN	DWG
DRAWING: Figure 2	DATE: 4/10/15
	SCALE: 1" = 400'
JOB NUMBER: 0001	SHEET

REVISIONS	
DATE:	BY:
09/04/15	KN

OUTFALLS DIVERSION DITCH AND SEDIMENT IMPOUNDMENT PLAN VIEW

NORTH COAL HOLLOW PROJECT
ALTON, UTAH

FIGURE - 2

Coal Hollow Project
463 North 100 West, Suite 1
Cedar City, Utah 84721
Phone (435)867-5331
Fax (435)867-1192

Table 1 Historic UPDES discharge monitoring data from the Coal Hollow Mine.

Note: Data only shown for months when discharge was occurring.

	Date	Flow (gpm)	TDS (mg/L)	Fe(t) (mg/L)	B(t) (mg/L)	B(d) (mg/L)	Oil & Grs. (mg/L)	pH	Se (d) (mg/L)	Set. Sol (ML/L)	TSS (mg/L)
Outfall 001	9-Sep-14	15.8	380	1.47	---	---	---	8.8	0.0015	---	47
Outfall 001	24-Mar-15	15.8	744	ND	---	---	ND	8.5	0.0005	---	ND
Outfall 001	17-Sep-15	7.2	788	0.03	2.41	2.33	ND	8.7	0.04	---	ND
Outfall 001	24-Sep-15	50.0	932	0.66	2.00	---	ND	8.0	0.05	---	40
Outfall 001	13-Oct-15	50.0	420	0.74	0.77	0.71	ND	7.7	0.02	---	13
Outfall 001	20-Oct-15	6.2	368	1.55	0.48	0.48	ND	8.0	0.02	ND	72
Outfall 001B	23-Sep-15	50.0	508	0.33	---	---	ND	7.9	0.02	---	18
Outfall 001B	20-Oct-15	5.9	468	2.16	0.44	0.53	ND	8.0	0.03	ND	50
Outfall 002	16-Mar-11	2	850	0.28	---	---	ND	7.9		---	12
Outfall 002	9-Sep-14	14.2	384	1.59	---	---	ND	8.9	0.0014	---	44
Outfall 002	24-Mar-15	0.5	1170	0.04	---	---	ND	8.7	0.0028	---	4
Outfall 002	24-Sep-15	0.001	584	0.54	0.19	---	ND	7.8	0.04	---	21
Outfall 002	28-Sep-15	50.0	576	0.7	---	---	ND	7.4	0.03	---	4
Outfall 002	20-Oct-15	6.0	412	0.62	0.12	0.13	ND	7.9	0.03	ND	14
Outfall 002	26-Oct-15	2.3	400	0.27	0.14	0.13	ND	7.8	0.03	---	5
Outfall 002	2-Nov-15	2.5	440	0.51	0.18	0.10	ND	7.7	0.04	ND	13
Outfall 003	16-Mar-11	15	830	1.6	---	---	ND	7.6	---	---	48
Outfall 003	25-Apr-11	1.3	1180	0.1	---	---	ND	8.6	---	---	7
Outfall 003	21-Nov-11	5	1820	0.04	---	---	ND	8.5	ND	---	10
Outfall 003	29-Sep-14	25	568	1.61	---	---	ND	8.9	0.0028	---	12
Outfall 003	20-Mar-15	25	724	0.35	---	---	ND	8.4	0.0020	---	14
Outfall 003	24-Mar-15	0.3	680	0.29	---	---	ND	9.0	0.0022	---	7
Outfall 003	17-Sep-15	20.0	580	1.9	0.20	0.19	ND	7.8	ND	---	26
Outfall 003	20-Sep-15	132.0	592	1.61	0.17	0.20	ND	8.4	ND	---	12
Outfall 003	20-Oct-15	24.0	684	4.56	0.11	0.12	ND	8.6	ND	ND	81
Outfall 003	30-Oct-15	40.0	528	4.99	0.14	---	ND	7.7	---	ND	296
Outfall 003	2-Nov-15	30.0	588	1.32	0.15	0.11	ND	8.1	0.02	ND	24
Outfall 003	9-Nov-15	30.0	584	1.09	0.15	0.16	ND	7.9	0.02	---	20
Outfall 003	18-Nov-15	30.0	612	1.75	---	---	ND	7.9	0.0033	---	80
Outfall 003	23-Nov-15	30.0	612	0.64	0.19	---	ND	8.2	0.0028	---	20
Outfall 003	30-Nov-15	30.0	692	0.12	0.15	0.18	ND	8.3	0.03	---	10
Outfall 003	7-Dec-15	30.0	752	0.19	0.17	0.19	ND	8	0.03	---	10
Outfall 004	22-Oct-15	6.0	316	1.08	0.07	---	ND	8.4	0.0009	ND	6
Outfall 004	26-Oct-15	6.0	292	0.65	0.08	0.07	ND	8.2	0.02	---	6
Outfall 005	4-Oct-11	6.0	950	ND	---	---	ND	8.1	0.03	---	32
Outfall 005	21-Oct-11	4.0	836	0.47	---	---	ND	8.1	0.03	---	35
Outfall 005	21-Nov-11	5.0	704	0.83	---	---	6	8.4	ND	---	55
n			**37**	**37**	**20**	**15**	**36**	**37**	**33**	**8**	**35**
Maximum			**1820**	**4.99**	**2.41**	**2.33**	**6**	**9.0**	**0.05**	**ND**	**296**
Minimum			**292**	**ND**	**0.07**	**0.07**	**ND**	**7.4**	**ND**	**ND**	**ND**
Median			**592**	**0.66**	**0.17**	**0.18**	**ND**	**8.1**	**0.020**	**ND**	**14.0**
Average*			**663**	**0.99**	**0.42**	**0.38**	**ND**	**8.2**	**0.018**	**ND**	**31.8**

* To calculate averages where "ND" was reported, a value of 1/2 of the detection limit was used in calculations.

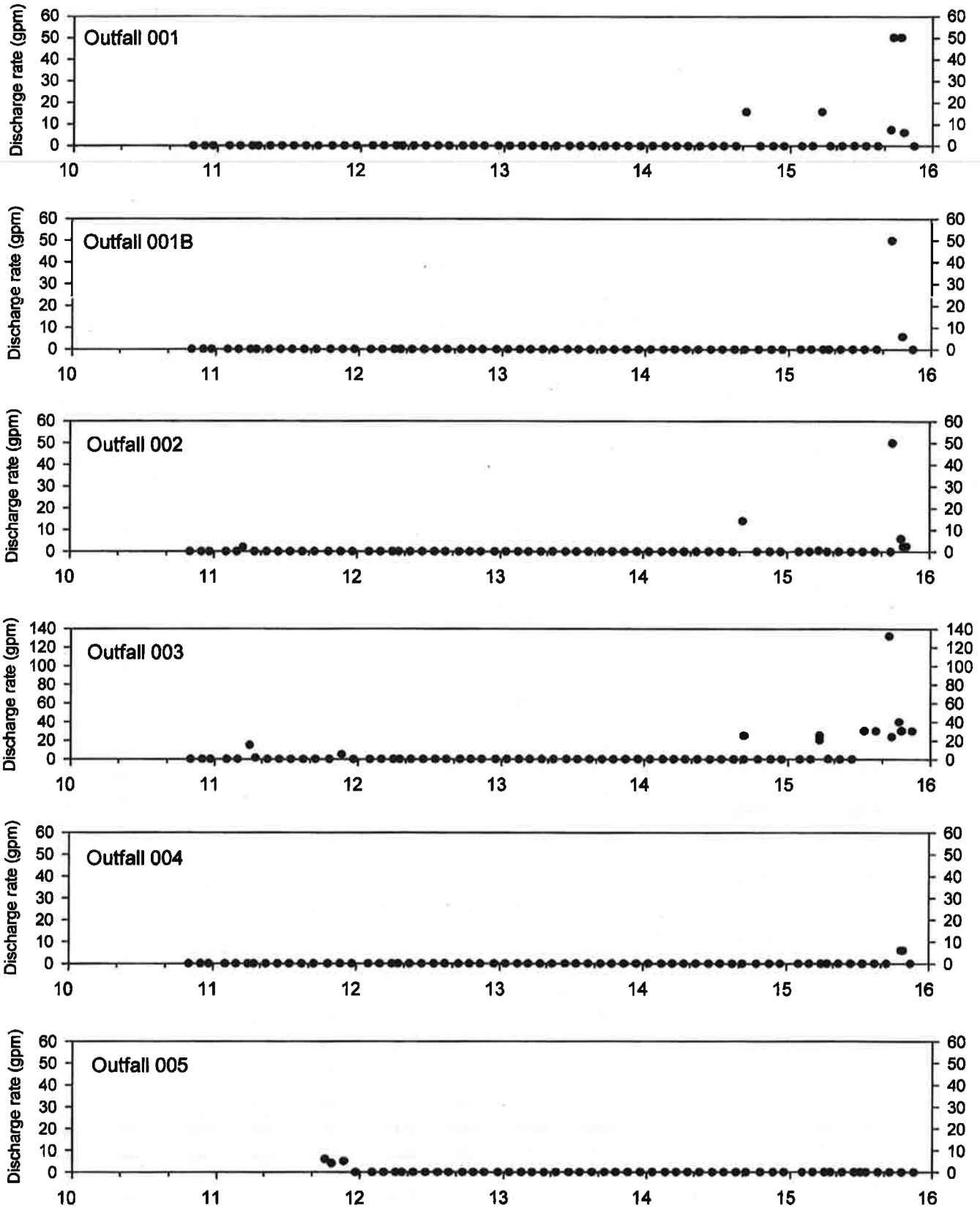


Figure 4 Discharge rates from UPDES outfalls at the Coal Hollow Mine.

ADDENDUM II

Inorganic and organic data from discharges in the south lease, to be used in RP analysis.

CHEMTECH-FORD
LABORATORIES

10/20/2014

Work Order: 1409924

Alton Coal Development, LLC
Attn: Kirk Nicholes
463 North 100 West Ste 1
Cedar City, UT 84721

Client Service Contact: 801.262.7299

Approved By: Dave Gayer, Laboratory Director

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1409824-01

Name: Alton Coal Development, LLC
Sample Site: Pond 3
Comments:
Sample Matrix: Water
Field pH: 9.4
Field Flow g/Min.:
PO Number:

Sample Date: 9/9/2014 2:30 PM
Receipt Date: 9/11/2014 11:45 AM
Sampler:
Site No.:
Field Temp. Deg. C :
Field Cond. umhos/cm:
Project Number: Coal Hollow Mine

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Inorganic							
Cyanide, Total	ND	0.002	mg/L	SM 4500 CN-E	09/15/2014 19:38	9/17/2014 15:19	
Phenols, Total	ND	0.002	mg/L	EPA 420.1	09/22/2014 11:15	9/23/2014 15:45	
Metals							
Antimony, Total	ND	0.0005	mg/L	EPA 200.8	09/15/2014 10:33	9/16/2014 9:46	
Arsenic, Total	0.0026	0.0005	mg/L	EPA 200.8	09/15/2014 10:33	9/16/2014 9:46	
Beryllium, Total	ND	0.0005	mg/L	EPA 200.8	09/15/2014 10:33	9/16/2014 9:46	
Cadmium, Total	ND	0.0002	mg/L	EPA 200.8	09/15/2014 10:33	9/16/2014 9:46	
Chromium, Total	0.0041	0.0005	mg/L	EPA 200.8	09/15/2014 10:33	9/16/2014 9:46	
Copper, Total	0.0053	0.0010	mg/L	EPA 200.8	09/15/2014 10:33	9/16/2014 9:46	
Lead, Total	0.0042	0.0005	mg/L	EPA 200.8	09/15/2014 10:33	9/16/2014 9:46	
Mercury, Total	ND	0.0002	mg/L	EPA 245.1	09/16/2014 10:00	9/16/2014 14:00	
Nickel, Total	0.0064	0.0005	mg/L	EPA 200.8	09/15/2014 10:33	9/16/2014 9:46	
Selenium, Total	0.0027	0.0005	mg/L	EPA 200.8	09/15/2014 10:33	9/16/2014 9:46	
Silver, Total	ND	0.0005	mg/L	EPA 200.8	09/15/2014 10:33	9/16/2014 9:46	
Thallium, Total	ND	0.0002	mg/L	EPA 200.8	09/15/2014 10:33	9/16/2014 9:46	
Zinc, Total	0.02	0.01	mg/L	EPA 200.7	09/15/2014 10:26	9/16/2014 12:39	
Pesticides							
4,4'-DDD	ND	0.2	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
4,4'-DDE	ND	0.1	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
4,4'-DDT	ND	0.2	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
alpha-Chlordane	ND	0.1	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Aldrin	ND	0.2	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
alpha-BHC	ND	0.05	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
beta-BHC	ND	0.1	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
delta-BHC	ND	0.1	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Dieldrin	ND	0.1	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Endosulfan I	ND	0.1	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Endosulfan II	ND	0.2	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Endosulfan sulfate	ND	0.2	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Endrin	ND	0.1	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Endrin aldehyde	ND	0.2	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Endrin ketone	ND	0.2	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
gamma-Chlordane	ND	0.1	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	

9632 South 500 West
Sandy UT 84070
801-262-7299 Office

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1409924-01

Name: Alton Coal Development, LLC
Sample Site: Pond 3
Comments:
Sample Matrix: Water
Field pH: 9.4
Field Flow g/Min.:
PO Number:

Sample Date: 9/9/2014 2:30 PM
Receipt Date: 9/11/2014 11:45 AM
Sampler:
Site No.:
Field Temp. Deg. C :
Field Cond. umhos/cm:
Project Number: Coal Hollow Mine

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Pesticides							
Heptachlor	ND	0.1	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Heptachlor epoxide	ND	0.1	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Lindane	ND	0.05	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Methoxychlor	ND	1.0	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
PCB-1016	ND	2.0	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
PCB-1221	ND	2.0	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
PCB-1232	ND	2.0	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
PCB-1242	ND	2.0	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
PCB-1248	ND	2.0	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
PCB-1254	ND	2.0	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
PCB-1260	ND	2.0	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Toxaphene	ND	2.0	ug/L	EPA 608	09/15/2014 10:05	9/16/2014 3:16	
Semi Volatile Compounds							
1,2,4-Trichlorobenzene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
1,2-Dichlorobenzene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
1,3-Dichlorobenzene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
1,4-Dichlorobenzene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
2,4,6-Trichlorophenol	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
2,4-Dichlorophenol	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
2,4-Dimethylphenol	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
2,4-Dinitrophenol	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
2,4-Dinitrotoluene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
2,6-Dinitrotoluene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
2-Chloronaphthalene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
2-Chlorophenol	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
2-Nitrophenol	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
2-Methylphenol	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
3,3'-Dichlorobenzidine	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
4,6-Dinitro-2-methylphenol	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
4-Bromophenyl phenyl ether	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
3 & 4-Methylphenol	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
4-Chloro-3-methylphenol	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
4-Chlorophenyl Phenyl Ether	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	

9632 South 300 West
Sandy UT 84070
801-262-7299 Office

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1409924-01

Name: Alton Coal Development, LLC	***Sample Date:*** 9/9/2014 2:30 PM
Sample Site: Pond 3	***Receipt Date:*** 9/11/2014 11:45 AM
Comments:	***Sampler:***
Sample Matrix: Water	***Site No.:***
Field pH: 9.4	***Field Temp. Deg. C :***
Field Flow g/Min.:	***Field Cond. umhos/cm:***
PO Number:	***Project Number:*** Coal Hollow Mine

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Semi-Volatile Compounds							
4-Nitrophenol	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Acenaphthene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Acenaphthylene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Anthracene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Azobenzene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Benzidine	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Benzo (a) anthracene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Benzo (a) pyrene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Benzo (b) fluoranthene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Benzo (g,h,i) perylene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Benzo (k) fluoranthene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Bis (2-chloroethoxy) Methane	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Bis (2-chloroethyl) Ether	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Bis (2-chloroisopropyl) Ether	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Bis (2-ethylhexyl) Phthalate	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Butylbenzylphthalate	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Carbazole	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Chrysene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
n-Decane	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Dibenzo (a,h) anthracene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Diethylphthalate	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Dimethyl phthalate	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Di-n-butylphthalate	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Di-n-Octylphthalate	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Fluoranthene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Fluorene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Hexachlorobenzene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Hexachlorobutadiene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Hexachlorocyclopentadiene	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Hexachloroethane	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Indeno (1,2,3-cd) pyrene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Isophorone	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Naphthalene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Nitrobenzene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	

9632 South 500 West
Sandy UT 84070
801-262-7299 Office

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1409824-01

Name: Alton Coal Development, LLC
Sample Site: Pond 3
Comments:
Sample Matrix: Water
Field pH: 9.4
Field Flow g/Min.:
PO Number:

Sample Date: 9/9/2014 2:30 PM
Receipt Date: 9/11/2014 11:45 AM
Sampler:
Site No.:
Field Temp. Deg. C :
Field Cond. umhos/cm:
Project Number: Coal Hollow Mine

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Semi Volatile Compounds							
N-Nitrosodimethylamine	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
N-Nitrosodi-n-propylamine	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
N-Nitrosodiphenylamine	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
n-Octadecane	ND	10	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Pentachlorophenol	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Phenanthrene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Phenol	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Pyrene	ND	5	ug/L	EPA 625	09/15/2014 08:30	9/15/2014 11:30	
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,1,1-Trichloroethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,1,2,2-Tetrachloroethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,1,2-Trichloroethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,1-Dichloroethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,1-Dichloroethene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,1-Dichloropropene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,2,3-Trichlorobenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,2,3-Trichloropropane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,2,4-Trichlorobenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,2,4-Trimethylbenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,2-Dibromo-3-chloropropane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,2-Dibromoethane (EDB)	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,2-Dichlorobenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,2-Dichloroethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,2-Dichloropropane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,3,5-Trimethylbenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,3-Dichlorobenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,3-Dichloropropane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
1,4-Dichlorobenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
2,2-Dichloropropane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
2-Chloroethyl vinyl ether	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
2-Chlorotoluene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
4-Chlorotoluene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	

9632 South 500 West
Sandy UT 84070
801-262-7299 Office

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1409924-01

Name: Alton Coal Development, LLC
Sample Site: Pond 3
Comments:
Sample Matrix: Water
Field pH: 9.4
Field Flow g/Min.:
PO Number:

Sample Date: 9/9/2014 2:30 PM
Receipt Date: 9/11/2014 11:45 AM
Sampler:
Site No.:
Field Temp. Deg. C :
Field Cond. umhos/cm:
Project Number: Coal Hollow Mine

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Volatile Organic Compounds							
4-Isopropyltoluene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Acetone	ND	50	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Acrolein	ND	100	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Acrylonitrile	ND	50	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Benzene	ND	2	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Bis(Chloromethyl)ether	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Bromobenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Bromochloromethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Bromodichloromethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Bromoform	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Bromomethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Carbon Disulfide	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Carbon Tetrachloride	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Chlorobenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Chloroethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Chloroform	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Chloromethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
cis-1,2-Dichloroethene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
cis-1,3-Dichloropropene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Dibromochloromethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Dibromomethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Dichlorodifluoromethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Ethyl Acetate	ND	50	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Ethylbenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Hexachlorobutadiene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Isopropylbenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Methyl Ethyl Ketone	ND	50	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Methyl Isobutyl Ketone	ND	50	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Methylene Chloride	ND	10	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Methyl-tert-butyl ether (MTBE)	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Naphthalene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
n-Butylbenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
n-Propyl Benzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
sec-Butyl Benzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	

9632 South 500 West
Sandy, UT 84070
801-262-7299 Office

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1409924-01

Name: Alton Coal Development, LLC
Sample Site: Pond 3
Comments:
Sample Matrix: Water
Field pH: 9.4
Field Flow g/Min.:
PO Number:

Sample Date: 9/9/2014 2:30 PM
Receipt Date: 9/11/2014 11:45 AM
Sampler:
Site No.:
Field Temp. Deg. C :
Field Cond. umhos/cm:
Project Number: Coal Hollow Mine

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Volatile Organic Compounds							
Styrene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
tert-Butylbenzene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Tetrachloroethene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Toluene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
trans-1,2-Dichloroethene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
trans-1,3-Dichloropropene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Trichloroethene	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Trichlorofluoromethane	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Vinyl Chloride	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	
Xylenes, total	ND	5	ug/L	EPA 624	09/19/2014 17:25	9/19/2014 17:25	

9632 South 500 West
Sandy UT 84070
801-262-7299 Office

LR

CHEMTECH - FORD ANALYTICAL LABORATORY

CHAIN OF CUSTODY

COMPANY: Alton Coal Development
ADDRESS: 463 N 100 W Suite 1
CITY/STATE/ZIP: Cedar City, Utah 84721
PHONE #: 435-867-5331 FAX: 435-867-1192
CONTACT: Kirk Nicholes PROJECT: Coal Hollow Mine
EMAIL: knicholes@altoncoal.com

BILLING ADDRESS: 463 N 100 W Suite 1
BILLING CITY/STATE/ZIP: Cedar City, Utah 84721
PURCHASE ORDER #:

CHEMTECH-FORD

TURNAROUND REQUIRED:

Lab Use Only	CLIENT SAMPLE INFORMATION					TESTS REQUESTED	Bacteria			
09924	LOCATION / IDENTIFICATION	DATE	TIME	MATRIX	Field Residual Chlorine	WET (see list)	Total Coliform + E. coli (Present/Absent)	Total Coliform + E. coli (Enumerated)	HPC (Plate Count)	E. Coli Only
-01	Pond 3	9/9/14	14:30	water		X				

ON ICE NOT ON ICE Temp (C°): 15.6°

Samples received outside the EPA recommended temperature range of 0-6 C° may be rejected.

Sampled by (Print): D. Kirk Nicholes Sampled by (Signature): D. K Nicholes

Special Instructions:

Relinquished by (Signature): D. K Nicholes Date/Time: 9/10/14 7:43 Received by (Signature): [signature] Date/Time: 9/11/14 11:45

Relinquished by (Signature): Date/Time: Received by (Signature): Date/Time:

Relinquished by (Signature): Date/Time: Received by (Signature):

P: GRAY S: XXMY
MATT — 5016
9493
1Z61E61E0392

Field pH 9.4

CHEMTECH-FORD
9632 South 500 West
Sandy, UT 84070
801 262 7299 PHONE
866 792 0093 FAX
www.chemtechford.com

Payment Terms are net 30 days OAC

CHEMTECH-FORD
LABORATORIES

1/12/2016

Work Order: 1512242

Alton Coal Development, LLC
Attn: Kirk Nicholes
463 North 100 West Ste 1
Cedar City, UT 84721

Client Service Contact: 801.262.7299

Approved By: Dave Gayer, Laboratory Director

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1512242-01

Name: **Alton Coal Development, LLC**
Sample Site: Pond 4
Comments:
Sample Matrix: Water
Field pH: 8.7
Field Flow g/Min.:
PO Number:

Sample Date: 10/22/2015 2:15 PM
Receipt Date: 10/23/2015 12:30 PM
Sampler: Kirk Nicholes
Site No.:
Field Temp. Deg. C :
Field Cond. umhos/cm:
Project:

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Inorganic							
Cyanide, Total	0.008	0.002	mg/L	SM 4500 CN-E	10/26/2015 09:42	10/28/2015 10:00	
Oil & Grease (HEM)	ND	5	mg/L	EPA 1664A	11/02/2015 10:56	11/3/2015 16:00	
pH	8.4	0.1	pH Units	SM 4500 H-B	10/23/2015 15:00	10/23/2015 15:00	SPH
Phenols, Total	ND	0.050	mg/L	EPA 420.1	10/27/2015 16:10	10/28/2015 15:37	SL-01
Settleable Solids	ND	1.0	mL/L	SM 2540 F	10/23/2015 13:30	10/23/2015 16:45	
Total Dissolved Solids (TDS)	316	20	mg/L	SM 2540 C	10/29/2015 10:01	10/29/2015 10:01	
Total Suspended Solids (TSS)	6	4	mg/L	SM 2540 D	10/29/2015 10:00	10/29/2015 10:00	
Metals							
Antimony, Total	ND	0.0005	mg/L	EPA 200.8	10/29/2015 10:00	11/2/2015 10:03	
Arsenic, Total	0.0018	0.0005	mg/L	EPA 200.8	10/29/2015 10:00	11/2/2015 10:03	
Boron, Total	0.07	0.05	mg/L	EPA 200.7	10/29/2015 10:00	10/30/2015 11:30	
Beryllium, Total	ND	0.0005	mg/L	EPA 200.8	10/29/2015 10:00	11/2/2015 10:03	
Cadmium, Total	ND	0.0002	mg/L	EPA 200.8	10/29/2015 10:00	11/2/2015 10:03	
Chromium, Total	0.0010	0.0005	mg/L	EPA 200.8	10/29/2015 10:00	11/2/2015 10:03	
Copper, Total	0.0022	0.0010	mg/L	EPA 200.8	10/29/2015 10:00	11/2/2015 10:03	
Iron, Total	1.08	0.02	mg/L	EPA 200.7	10/29/2015 10:00	10/30/2015 11:30	
Lead, Total	0.0008	0.0005	mg/L	EPA 200.8	10/29/2015 10:00	11/2/2015 10:03	
Mercury, Total	ND	0.00020	mg/L	EPA 245.1	10/26/2015 10:30	10/26/2015 14:20	
Nickel, Total	0.0025	0.0005	mg/L	EPA 200.8	10/29/2015 10:00	11/2/2015 10:03	
Selenium, Dissolved	0.0009	0.0005	mg/L	EPA 200.8	10/27/2015 08:19	10/28/2015 12:55	
Selenium, Total	0.0015	0.0005	mg/L	EPA 200.8	10/29/2015 10:00	11/2/2015 10:03	
Silver, Total	ND	0.0005	mg/L	EPA 200.8	10/29/2015 10:00	11/2/2015 10:03	
Thallium, Total	ND	0.0002	mg/L	EPA 200.8	10/29/2015 10:00	11/2/2015 10:03	
Zinc, Total	ND	0.01	mg/L	EPA 200.7	10/29/2015 10:00	10/30/2015 11:30	

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1512242-01

Name: **Alton Coal Development, LLC**
Sample Site: Pond 4
Comments:
Sample Matrix: Water
Field pH: 8.7
Field Flow g/Min.:
PO Number:

Sample Date: 10/22/2015 2:15 PM
Receipt Date: 10/23/2015 12:30 PM
Sampler: Kirk Nicholes
Site No.:
Field Temp. Deg. C :
Field Cond. umhos/cm:
Project:

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Pesticides							
4,4'-DDD	ND	0.2	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
4,4'-DDE	ND	0.1	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
4,4'-DDT	ND	0.2	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
alpha-Chlordane	ND	0.1	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Aldrin	ND	0.2	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
alpha-BHC	ND	0.1	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
beta-BHC	ND	0.1	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
delta-BHC	ND	0.1	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Dieldrin	ND	0.1	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Endosulfan I	ND	0.1	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Endosulfan II	ND	0.2	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Endosulfan sulfate	ND	0.2	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Endrin	ND	0.1	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Endrin aldehyde	ND	0.2	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Endrin ketone	ND	0.2	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
gamma-Chlordane	ND	0.1	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Heptachlor	ND	0.1	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Heptachlor epoxide	ND	0.1	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Lindane	ND	0.05	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Methoxychlor	ND	1.0	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
PCB-1016	ND	2.0	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
PCB-1221	ND	2.0	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
PCB-1232	ND	2.0	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
PCB-1242	ND	2.0	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
PCB-1248	ND	2.0	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
PCB-1254	ND	2.0	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
PCB-1260	ND	2.0	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	
Toxaphene	ND	2.0	ug/L	EPA 608	10/29/2015 10:00	10/30/2015 17:45	

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1512242-01

Name: Alton Coal Development, LLC	**Sample Date:** 10/22/2015 2:15 PM
Sample Site: Pond 4	**Receipt Date:** 10/23/2015 12:30 PM
Comments:	**Sampler:** Kirk Nicholes
Sample Matrix: Water	**Site No.:**
Field pH: 8.7	**Field Temp. Deg. C :**
Field Flow g/Min.:	**Field Cond. umhos/cm:**
PO Number:	**Project:**

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Semi Volatile Compounds							
1,2,4-Trichlorobenzene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
1,2-Dichlorobenzene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
1,2-Diphenylhydrazine	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
1,3-Dichlorobenzene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
1,4-Dichlorobenzene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
2,4,6-Trichlorophenol	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
2,4-Dichlorophenol	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
2,4-Dimethylphenol	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
2,4-Dinitrophenol	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
2,4-Dinitrotoluene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
2,6-Dinitrotoluene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
2-Chloronaphthalene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
2-Chlorophenol	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
2-Nitrophenol	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
3,3'-Dichlorobenzidine	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
4,6-Dinitro-2-methylphenol	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
4-Bromophenyl phenyl ether	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
4-Chloro-3-methylphenol	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
4-Chlorophenyl Phenyl Ether	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
4-Nitrophenol	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Acenaphthene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Acenaphthylene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Anthracene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Benzidine	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Benzo (a) anthracene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Benzo (a) pyrene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Benzo (b) fluoranthene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Benzo (g,h,i) perylene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Benzo (k) fluoranthene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Azobenzene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Bis (2-chloroethoxy) Methane	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Bis (2-chloroethyl) Ether	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Bis (2-chloroisopropyl) Ether	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Bis (2-ethylhexyl) Phthalate	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1512242-01

Name: Alton Coal Development, LLC
Sample Site: Pond 4
Comments:
Sample Matrix: Water
Field pH: 8.7
Field Flow g/Min.:
PO Number:

Sample Date: 10/22/2015 2:15 PM
Receipt Date: 10/23/2015 12:30 PM
Sampler: Kirk Nicholes
Site No.:
Field Temp. Deg. C :
Field Cond. umhos/cm:
Project:

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Semi Volatile Compounds							
Butylbenzylphthalate	6	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	BI
Chrysene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Dibenzo (a,h) anthracene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Diethylphthalate	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Dimethyl phthalate	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Di-n-butylphthalate	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Di-n-Octylphthalate	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Fluoranthene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Fluorene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Hexachlorobenzene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Hexachlorobutadiene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Hexachlorocyclopentadiene	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Hexachloroethane	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Indeno (1,2,3-cd) pyrene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Isophorone	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Naphthalene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Nitrobenzene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
N-Nitrosodimethylamine	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
N-Nitrosodi-n-propylamine	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
N-Nitrosodiphenylamine	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Pentachlorophenol	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Phenanthrene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Phenol	ND	10	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	
Pyrene	ND	5	ug/L	EPA 625	10/28/2015 10:18	10/28/2015 19:57	

CHEMTECH - FORD ANALYTICAL LABORATORY

CHAIN OF CUSTODY

COMPANY: Alton Coal Development, LLC
ADDRESS: 463 N. 100 W. Suite 1
CITY/STATE/ZIP: Cedar City, Utah 84721
PHONE #: 435-691-1551 FAX:
CONTACT: Kirk Nicholes PROJECT:
EMAIL: Knicholes@altoncoal.com

BILLING ADDRESS: ← Same
BILLING CITY/STATE/ZIP:
PURCHASE ORDER #:

CHEMTECH-FORD

TURNAROUND REQUIRED:* Standard
* Expedited turnaround subject to additional charge

12242

Lab Use Only	CLIENT SAMPLE INFORMATION					TESTS REQUESTED																Bacteria			
	LOCATION / IDENTIFICATION	DATE	TIME	MATRIX	Field: Residual Chlorine	Oil & Grease	Total Iron	Total Suspended Solids	Total Dissolved Solids	Dissolved Selenium	pH	Settleable Solids	Attached List								Field pH & T	Total Coliform - E. coli (Present/Absent)	Total Coliform - E. coli (Enumerated)	HPC (Plate Count)	E. Coli Only
-01	1 Pond 4	10/22/15	1415	Water		X	X	X	X	X	X	X	X												
	2																								
	3																								
	4																								
	5																								
	6																								
	7																								
	8																								
	9																								
	10																								

Sampled by [print]: B. Kirk Nicholes
Sampled by [signature]:
Special Instructions:

ON ICE / NOT ON ICE Temp (C°): 5.1°

Samples received outside the EPA recommended temperature range of 0-6 C° may be rejected.

Relinquished by [signature]	Date/Time	Received by [signature]	Date/Time
B. Kirk Nicholes	10/22/15 8:42 am		
Relinquished by [signature]	Date/Time	Received by [signature]	Date/Time
B. Kirk Nicholes	10/22/15 12:30 pm	Dawn Mayer	10/23/15 12:30
Relinquished by [signature]	Date/Time	Received by [signature]	Date/Time

CHEMTECH-FORD
9632 South 500 West
Sandy, UT 84070

801.262.7299 PHONE
866.792.8093 FAX
www.chemtechford.com

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
UTG040627	003

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (*secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions*), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part, please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	2. MARK "X" b. BELIEVED PRESENT	2. MARK "X" c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE (if available) (2) MASS	3. EFFLUENT d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (optional) b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS																
1M. Antimony, Total (7440-36-0)	X		X													
2M. Arsenic, Total (7440-38-2)	X		X													
3M. Beryllium, Total (7440-41-7)	X		X													
4M. Cadmium, Total (7440-43-9)	X		X													
5M. Chromium, Total (7440-47-3)	X		X													
6M. Copper, Total (7440-50-8)	X		X													
7M. Lead, Total (7439-92-1)	X		X													
8M. Mercury, Total (7439-97-6)	X		X													
9M. Nickel, Total (7440-02-0)	X		X													
10M. Selenium, Total (7782-49-2)	X	X														
11M. Silver, Total (7440-22-4)	X		X													
12M. Thallium, Total (7440-28-0)	X		X													
13M. Zinc, Total (7440-66-6)	X		X													
14M. Cyanide, Total (57-12-5)	X		X													
15M. Phenols, Total	X		X													
DIOXIN																
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)	X		X	DESCRIBE RESULTS												

Sub contracted 1 1

200.8 200.7

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	X		X												
2V. Acrylonitrile (107-13-1)	X		X												
3V. Benzene (71-43-2)	X	X													
4V. Bis (2-Chloroethyl) Ether (542-88-1)	X		X												
5V. Bromoform (75-25-2)	X		X												
6V. Carbon Tetrachloride (56-23-5)	X		X												
7V. Chlorobenzene (108-90-7)	X		X												
8V. Chlorodibromomethane (124-48-1)	X		X												
9V. Chloroethane (75-00-3)	X		X												
10V. 2-Chloroethylvinyl Ether (110-75-8)	X		X												
11V. Chloroform (67-66-3)	X		X												
12V. Dichlorobromomethane (75-27-4)	X		X												
13V. Dichlorodifluoromethane (75-71-8)	X		X												
14V. 1,1-Dichloroethane (75-34-3)	X		X												
15V. 1,2-Dichloroethane (107-06-2)	X		X												
16V. 1,1-Dichloroethylene (75-35-4)	X		X												
17V. 1,2-Dichloropropane (78-87-5)	X		X												
18V. 1,3-Dichloropropylene (542-75-6)	X		X												
19V. Ethylbenzene (100-41-4)	X	X													
20V. Methyl Bromide (74-83-9)	X		X												
21V. Methyl Chloride (74-87-3)	X		X												

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CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)	X		X												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X		X												
24V. Tetrachloroethylene (127-18-4)	X		X												
25V. Toluene (108-88-3)	X	X													
26V. 1,2-Trans-Dichloroethylene (156-60-5)	X		X												
27V. 1,1,1-Trichloroethane (71-55-6)	X		X												
28V. 1,1,2-Trichloroethane (79-00-5)	X		X												
29V Trichloroethylene (79-01-6)	X		X												
30V. Trichlorofluoromethane (75-69-4)	X		X												
31V. Vinyl Chloride (75-01-4)	X		X												
GC/MS FRACTION – ACID COMPOUNDS															
1A 2-Chlorophenol (95-57-8)	X		X												
2A 2,4-Dichlorophenol (120-83-2)	X		X												
3A 2,4-Dimethylphenol (105-67-9)	X		X												
4A 4,6-Dinitro-O-Cresol (534-52-1)	X		X												
5A 2,4-Dinitrophenol (51-28-5)	X		X												
6A 2-Nitrophenol (88-75-5)	X		X												
7A 4-Nitrophenol (100-02-7)	X		X												
8A P-Chloro-M-Cresol (59-50-7)	X		X												
9A Pentachlorophenol (87-86-5)	X		X												
10A Phenol (108-95-2)	X		X												
11A 2,4,6-Trichlorophenol (88-06-2)	X		X												

CONTINUED FROM THE FRONT

1 POLLUTANT AND CAS NUMBER (if available)	2 MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3 EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4 UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	X		X												
2B. Acenaphylene (208-96-8)	X		X												
3B. Anthracene (120-12-7)	X		X												
4B. Benzidine (92-87-5)	X		X												
5B. Benzo (a) Anthracene (56-55-3)	X		X												
6B. Benzo (a) Pyrene (50-32-8)	X		X												
7B. 3,4 Benzo fluoranthene (205-99-2)	X		X												
8B. Benzo (ghi) Perylene (191-24-2)	X		X												
9B. Benzo (k) Fluoranthene (207-08-9)	X		X												
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	X		X												
11B. Bis (2-Chloroethyl) Ether (111-44-4)	X		X												
12B. Bis (2-Chloroisopropyl) Ether (102-80-1)	X		X												
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	X		X												
14B. 4 Bromophenyl Phenyl Ether (101-55-3)	X		X												
15B. Butyl Benzyl Phthalate (85-68-7)	X		X												
16B. 2-Chloro naphthalene (91-58-7)	X		X												
17B. 4 Chloro phenyl Phenyl Ether (7005-72-3)	X		X												
18B. Chrysene (218-01-9)	X		X												
19B. Dibenzo (a,h) Anthracene (53-70-3)	X		X												
20B. 1,2-Dichloro benzene (95-50-1)	X		X												
21B. 1,3 Dichloro benzene (541-73-1)	X		X												

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CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
22B. 1,4-Dichlorobenzene (106-46-7)	X		X												
23B. 3,3 Dichlorobenzidine (91-94-1)	X		X												
24B. Diethyl Phthalate (84-66-2)	X		X												
25B. Dimethyl Phthalate (131-11-3)	X		X												
26B. Di-N Butyl Phthalate (84-74-2)	X		X												
27B. 2,4-Dinitrotoluene (121-14-2)	X		X												
28B. 2,6-Dinitrotoluene (606-20-2)	X		X												
29B. Di-N Octyl Phthalate (117-84-0)	X		X												
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	X		X												
31B. Fluoranthene (206-44-0)	X		X												
32B. Fluorene (86-73-7)	X		X												
33B. Hexachlorobenzene (118-74-1)	X		X												
34B. Hexachlorobutadiene (87-68-3)	X		X												
35B. Hexachlorocyclopentadiene (77-47-4)	X		X												
36B. Hexachloroethane (67-72-1)	X		X												
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	X		X												
38B. Isophorone (78-59-1)	X		X												
39B. Naphthalene (91-20-3)	X	X													
40B. Nitrobenzene (98-95-3)	X		X												
41B. N-Nitrosodimethylamine (62-75-9)	X		X												
42B. N-Nitrosodi-n-Propylamine (621-64-7)	X		X												

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CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (continued)															
43B. N-Nitrosodiphenylamine (86-30-6)	X		X												
44B. Phenanthrene (85-01-8)	X		X												
45B. Pyrene (129-00-0)	X		X												
46B. 1,2,4-Trichlorobenzene (120-82-1)	X		X												
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)	X		X												
2P. α-BHC (319-84-6)	X		X												
3P. β-BHC (319-85-7)	X		X												
4P. γ-BHC (58-89-9)	X		X												
5P. δ-BHC (319-86-8)	X		X												
6P. Chlordane (57-74-9)	X		X												
7P. 4,4'-DDT (50-29-3)	X		X												
8P. 4,4'-DDE (72-55-9)	X		X												
9P. 4,4'-DDD (72-54-8)	X		X												
10P. Dieldrin (60-57-1)	X		X												
11P. α-Endosulfan (115-29-7)	X		X												
12P. β-Endosulfan (115-29-7)	X		X												
13P. Endosulfan Sulfate (1031-07-8)	X		X												
14P. Endrin (72-20-8)	X		X												
15P. Endrin Aldehyde (7421-93-4)	X		X												
16P. Heptachlor (76-44-8)	X		X												

CONTINUE ON PAGE V-9

EPA Form 3510-2C (8-90)

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
UT3040027	003

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – PESTICIDES (continued)															
17P. Heptachlor Epoxide (1024-57-3)	X		X												
18P. PCB-1242 (53469-21-9)	X		X												
19P. PCB-1254 (11097-69-1)	X		X												
20P. PCB-1221 (11104-28-2)	X		X												
21P. PCB-1232 (11141-16-5)	X		X												
22P. PCB-1248 (12672-29-6)	X		X												
23P. PCB-1260 (11096-82-5)	X		X												
24P. PCB-1016 (12674-11-2)	X		X												
25P. Toxaphene (8001-35-2)	X		X												

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Work Order # 13243

CHEMTECH FORD LABORATORIES
Sample Receipt

CHEMTECH-FORD LABORATORIES

Delivery Method:

☐ UPS ☐ USPS
☐ FedEx ☐ Chemtech Courier
☑ Walk-in ☐ Customer Courier

Receiving Temperature 5.1 °C

Sample #	Container	Chemtech Lot # or Preservative	Number of Subsamples	Preserved by Client/Third Party	Preserved in Receiving Laboratory	Filtered in Field by Client	Misc Volume (oz/ml)	Comments
-01	AQ1-3	-						
1	M	317						
	C	300						
	O	315						
	P	248						
	D1-2	316						
↓	G	-						Dioxin

Sample Condition (check if yes)

- ☐ Custody Seals
- ☑ Containers Intact
- ☑ COC/Labels Agree
- ☐ Preservation Confirmed
- ☑ Received on Ice
- ☐ Correct Container(s) - NO 624
- ☑ Sufficent Sample Volume
- ☐ Headspace Present (VOC)
- ☐ Temperature Blank
- ☑ Received within Holding Time

Plastic Containers

A- Plastic Unpreserved
B- Miscellaneous Plastic
C- Cyanide Qt (NaOH)
E- Coliform/Ecoli/HPC
F- Sulfide Qt (Zn Acetate)
L- Mercury 1631
M- Metals Pint (HNO3)
N- Nutrient Pint (H2SO4)
R- Radiological (HNO3)
S- Sludge Cups/Tubs
Q- Plastic Bag

Glass Containers

D- 625 (Na2S2O3)
G- Glass Unpreserved
H- HAAs (NH4Cl)
J- 508/515/525 (Na2SO3)
K- 515.3 Herbicides
O- Oil & Grease (HCl)
P- Phenols (H2SO4)
T- TOC/TOX (H3PO4)
U- 531 (MCAA, Na2S2O3)
V- 524/THMs (Ascorbic Acid)
W- 8260 VOC (1:1 HCl)
X- Vial Unpreserved
Y- 624/504 (Na2S2O3)
Z- Miscellaneous Glass

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit.
1 mg/L = one milligram per liter or 1 mg/Kg = one milligram per kilogram = 1 part per million.
1 ug/L = one microgram per liter or 1 ug/Kg = one microgram per kilogram = 1 part per billion.
1 ng/L = one nanogram per liter or 1 ng/Kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

SPH = Sample submitted past method specified holding time.

SL-01 = Analysis performed by American West Analytical Labs, 463 W. 3600 S., Salt Lake City, UT 84115.

B1 = Analyte was detected in method blank at similar levels. Result is believed to be a lab contaminant and not from the sample itself. State and EPA rules prohibit any correction of results due to lab contamination and mandate reporting these results.

Additional Report Information

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.

Chemtech-Ford Contact Information

Labortory Director	Dave Gayer	dgayer@chemtechford.com	801.262.7299 (Main)	801.639.1172 (Direct)
QA Officer	Ron Fuller	rfuller@chemtechford.com	801.262.7299 (Main)	801.693.1171 (Direct)

CHEMTECH-FORD
LABORATORIES

1/27/2016

Work Order: 1512368

Alton Coal Development, LLC
Attn: Kirk Nicholes
463 North 100 West Ste 1
Cedar City, UT 84721

Client Service Contact: 801.262.7299

Approved By: _____
Dave Gayer, Laboratory Director

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1512368-01

Name: **Alton Coal Development, LLC**
Sample Site: Pond 2 Outflow
Comments:
Sample Matrix: Water
Field pH: 8.3
Field Flow g/Min.:
PO Number:

Sample Date: 10/26/2015 2:46 PM
Receipt Date: 10/28/2015 7:30 AM
Sampler: Kirk Nicholes
Site No.:
Field Temp. Deg. C :
Field Cond. umhos/cm:
Project:

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Inorganic							
Oil & Grease (HEM)	ND	5	mg/L	EPA 1664A	11/02/2015 14:08	11/3/2015 16:00	
pH	7.8	0.1	pH Units	SM 4500 H-B	10/28/2015 16:00	10/30/2015 10:40	SPH
Total Dissolved Solids (TDS)	400	20	mg/L	SM 2540 C	10/29/2015 10:01	10/29/2015 10:01	
Total Suspended Solids (TSS)	5	5	mg/L	SM 2540 D	11/02/2015 08:25	11/2/2015 8:25	
Metals							
Boron, Dissolved	0.13	0.05	mg/L	EPA 200.7	10/29/2015 12:04	10/29/2015 15:59	
Boron, Total	0.14	0.05	mg/L	EPA 200.7	10/29/2015 10:00	10/30/2015 13:37	
Iron, Total	0.27	0.02	mg/L	EPA 200.7	10/29/2015 10:00	10/30/2015 13:37	
Selenium, Dissolved	0.03	0.02	mg/L	EPA 200.7	10/29/2015 12:04	10/29/2015 15:59	

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1512368-02

Name: Alton Coal Development, LLC
Sample Site: Pond 4 Outflow
Comments:
Sample Matrix: Water
Field pH: 8.6
Field Flow g/Min.:
PO Number:

Sample Date: 10/26/2015 3:20 PM
Receipt Date: 10/28/2015 7:30 AM
Sampler: Kirk Nicholes
Site No.:
Field Temp. Deg. C :
Field Cond. umhos/cm:
Project:

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Inorganic							
Oil & Grease (HEM)	ND	5	mg/L	EPA 1664A	11/02/2015 14:08	11/3/2015 16:00	
pH	8.2	0.1	pH Units	SM 4500 H-B	10/28/2015 16:00	10/30/2015 10:40	SPH
Total Dissolved Solids (TDS)	292	20	mg/L	SM 2540 C	10/29/2015 10:01	10/29/2015 10:01	
Total Suspended Solids (TSS)	6	4	mg/L	SM 2540 D	11/02/2015 08:25	11/2/2015 8:25	
Metals							
Boron, Dissolved	0.07	0.05	mg/L	EPA 200.7	10/29/2015 12:04	10/29/2015 16:03	
Boron, Total	0.08	0.05	mg/L	EPA 200.7	10/29/2015 10:00	10/30/2015 13:48	
Iron, Total	0.65	0.02	mg/L	EPA 200.7	10/29/2015 10:00	10/30/2015 13:48	
Selenium, Dissolved	0.02	0.02	mg/L	EPA 200.7	10/29/2015 12:04	10/29/2015 16:03	
Volatile Organic Compounds							
1,1,1-Trichloroethane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
1,1,2,2-Tetrachloroethane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
1,1,2-Trichloroethane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
1,1-Dichloroethane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
1,1-Dichloroethene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
1,2-Dichlorobenzene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
1,2-Dichloroethane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
1,2,4-Trichlorobenzene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
1,2-Dichloropropane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
1,3-Dichlorobenzene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
1,4-Dichlorobenzene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
2-Chloroethyl vinyl ether	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Acrolein	ND	100	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Acrylonitrile	ND	50	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Benzene	ND	2	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Bromodichloromethane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Bromoform	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Bromomethane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Carbon Tetrachloride	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Chlorobenzene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Chloroethane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Chloroform	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Chloromethane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1512368-02

Name: **Alton Coal Development, LLC**
Sample Site: Pond 4 Outflow
Comments:
Sample Matrix: Water
Field pH: 8.6
Field Flow g/Min.:
PO Number:

Sample Date: 10/26/2015 3:20 PM
Receipt Date: 10/28/2015 7:30 AM
Sampler: Kirk Nicholes
Site No.:
Field Temp. Deg. C :
Field Cond. umhos/cm:
Project:

Parameter	Sample Result	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Volatile Organic Compounds							
cis-1,3-Dichloropropene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Dibromochloromethane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Ethylbenzene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Hexachlorobutadiene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Methylene Chloride	ND	10	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Nitrobenzene	ND	50	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Tetrachloroethene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Toluene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
trans-1,2-Dichloroethene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
trans-1,3-Dichloropropene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Trichloroethene	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Trichlorofluoromethane	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	
Vinyl Chloride	ND	5	ug/L	EPA 624	10/28/2015 15:14	10/28/2015 15:14	

CHEMTECH - FORD ANALYTICAL LABORATORY

CHAIN OF CUSTODY

COMPANY: Alton Coal Development, LLC

ADDRESS: 463 N. 100 W. Suite 1

CITY/STATE/ZIP: Cedar City, Utah 84721

PHONE #: 435-691-1551 FAX:

CONTACT: Kirk Nicholes PROJECT:

EMAIL: knicholes@altoncoal.com

BILLING ADDRESS: ← Same

BILLING CITY/STATE/ZIP:

PURCHASE ORDER #:

CHEMTECH-FORD LABORATORIES

TURNAROUND REQUIRED:* Normal

* Expedited turnaround subject to additional charge

12368

Lab Use Only	Location / Identification	Date	Time	Matrix	Field: Residual Chlorine	Oil + Grease	Total Iron	Total Suspended Solids	Total Dissolved Solids	Dissolved Selenium	pH	Attached Lists F 624 HOC	Field pH	Total Coliform + E. coli (Present/Absent)	Total Coliform + E. coli (Enumerated)	HPC (Plate Count)	E. Coli Only
-01	1 Pond 2 Outflow	10/26/15	1446	Water		X	X	X	X	X	X		8.3				
-02	2 Pond 4 Outflow	10/26/15	1520	Water		X	X	X	X	X	X	X	8.6				
	3											↑ ONLY RECEIVED FOR SAMPLE -02 @ 10.25.15					
	4																
	5																
	6																
	7																
	8																
	9																
	10																

Sampled by [print]: B. Kirk Nicholes

Sampled by [signature]: B. Kirk Nicholes

Special Instructions:

(ON ICE) NOT ON ICE Temp (C°): 10.6°

Samples received outside the EPA recommended temperature range of 0-6 C° may be rejected.

Relinquished by [signature]	Date/Time	Received by [signature]	Date/Time
B. Kirk Nicholes	10/27/15 6:56	[signature]	10-28-15 7:30

CHEMTECH-FORD
9632 South 500 West
Sandy, UT 84070

801.262.7299 PHONE
866.792.0093 FAX
www.chemtechford.com

Payment Terms are net 30 days OAC 1.5% interest charge per month (18% per annum) Client agrees to pay collection costs and attorney's fees

FED EX

TRK# 0201 7748 3045 4165

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V Acrolein (107-02-8)	X		X												
2V Acrylonitrile (107-13-1)	X		X												
3V Benzene (71-43-2)	X	X													
4V Bis (Chloromethyl) Ether (542-88-1)	X		X												
5V Bromoform (75-25-2)	X		X												
6V Carbon tetrachloride (56-23-5)	X		X												
7V Chlorobenzene (108-90-7)	X		X												
8V Chloro dibromomethane (124-48-1)	X		X												
9V Chloroethane (75-00-3)	X		X												
10V 2-Chloroethylvinyl Ether (110-75-8)	X		X												
11V Chloroform (67-66-3)	X		X												
12V Dichloro-bromomethane (75-27-4)	X		X												
13V Dichloro-difluoromethane (75-71-8)	X		X												
14V 1,1 Dichloro-ethane (75-34-3)	X		X												
15V 1,2 Dichloro-ethane (107-06-2)	X		X												
16V 1,1 Dichloro-ethylene (75-35-4)	X		X												
17V 1,2-Dichloro-propane (78-87-5)	X		X												
18V 1,3 Dichloro-propylene (542-75-6)	X		X												
19V Ethylbenzene (100-41-4)	X	X													
20V Methyl Bromide (74-83-9)	X		X												
21V Methyl Chloride (74-87-3)	X		X												

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EPA Form 3510-2C (8-90) PAGE V-4 CONTINUE ON PAGE V-5

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)	X		X												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)	X		X												
24V. Tetrachloroethylene (127-18-4)	X		X												
25V. Toluene (108-88-3)	X	X													
26V. 1,2 Trans-Dichloroethylene (156-60-5)	X		X												
27V. 1,1,1-Trichloroethane (71-55-6)	X		X												
28V. 1,1,2-Trichloroethane (79-00-5)	X		X												
29V Trichloroethylene (79-01-6)	X		X												
30V. Trichlorofluoromethane (75-69-4)	X		X												
31V. Vinyl Chloride (75-01-4)	X		X												
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)	X		X												
2A. 2,4-Dichlorophenol (120-83-2)	X		X												
3A. 2,4-Dimethylphenol (105-67-9)	X		X												
4A. 4,6-Dinitro-O-Cresol (534-52-1)	X		X												
5A. 2,4 Dinitrophenol (51-28-5)	X		X												
6A. 2-Nitrophenol (88-75-5)	X		X												
7A. 4 Nitrophenol (100-02-7)	X		X												
8A. P-Chloro-M-Cresol (59-50-7)	X		X												
9A. Pentachlorophenol (87-86-5)	X		X												
10A. Phenol (108-95-2)	X		X												
11A. 2,4,6-Trichlorophenol (88-06-2)	X		X												

628

625

Work Order # 12368

CHEMTECH FORD LABORATORIES
Sample Receipt

CHEMTECH-FORD LABORATORIES

Delivery Method:

- ☐ UPS
- ☐ USPS
- ☒ FedEx
- ☐ Chemtech Courier
- ☐ Walk-in
- ☐ Customer Courier

Receiving Temperature 10.6 °C

Sample #	Container	Chemtech Lot # or Preservative	Number of Subsamples	Preserved by client/Third Party	Preserved in Rochite/Laboratory	Filtered in Field by Client	Misc Volume (oz/mL)	Comments
-01	AP							
	M	568						
	O	559						
	AQ							
-02	AP							
	M	578						
	O	559						
	AQ							
	VOA (1-2)	573						

Sample Condition (check if yes)

- ☐ Custody Seals
- ☒ Containers Intact
- ☒ COC/Labels Agree
- ☒ Preservation Confirmed
- ☒ Received on ice
- ☒ Correct Container(s)
- ☒ Sufficent Sample Volume
- ☐ Headspace Present (VOC)
- ☐ Temperature Blank
- ☒ Received within Holding Time

Plastic Containers

A- Plastic Unpreserved
B- Miscellaneous Plastic
C- Cyanide Qt (NaOH)
E- Coliform/Ecoli/HPC
F- Sulfide Qt (Zn Acetate)
L- Mercury 1631
M- Metals Pint - HNO3)
N- Nutrient Pint (H2SO4)
R- Radiological (HNO3)
S- Sludge Cups/Tubs
Q- Plastic Bag

Glass Containers

D- 525 (Na2S2O3)
G- Glass Unpreserved
H- HAAs (NH4Cl)
J- 508/515/525 (Na2SO3)
K- 515.3 Herbicides
O- Oil & Grease (HCl)
P- Phenols (H2SO4)
T- TOC/TOX (H3PO4)
U- 531 (MCAA, Na2S2O3)
V- 524/BHMs (Ascorbic Acid)
W- 8260 VOC (1:1 HCl)
X- Vial Unpreserved
Y- 624/504 (Na2S2O3)
Z- Miscellaneous Glass

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit.
1 mg/L = one milligram per liter or 1 mg/Kg = one milligram per kilogram = 1 part per million.
1 ug/L = one microgram per liter or 1 ug/Kg = one microgram per kilogram = 1 part per billion.
1 ng/L = one nanogram per liter or 1 ng/Kg = one nanogram per kilogram = 1 part per trillion.

Flag Descriptions

SPH = Sample submitted past method specified holding time.

Additional Report Information

The analyses presented on this report were performed in accordance with the National Environmental Laboratory Accreditation Program (NELAP) unless noted in the comments, flags or case narrative. If the report is to be used for regulatory compliance, it should be presented in its entirety, and not be altered.

Chemtech-Ford Contact Information

Labortory Director	Dave Gayer	dgayer@chemtechford.com	801.262.7299 (Main)	801.639.1172 (Direct)
QA Officer	Ron Fuller	rfuller@chemtechford.com	801.262.7299 (Main)	801.693.1171 (Direct)

ADDENDUM III

RP analysis

Metals Data for Reasonable Potential (RP) Analysis

Metal	9/9/2014 003 Mg/L	10/22/2015 004 Mg/L	10/26/2015 002 Mg/L	10/26/2015 004 Mg/L	MRL Mg/L	WLA Limit Acute Mg/L	WLA Limit Chronic Mg/L	Max. From Data Mg/L	RP Y/N
T-As	0.0026	0.0018			0.0005	0.100	0.190	0.0026	N
T-Cd	ND	ND			0.0002	0.0087	0.0008	ND	N
T Cr	0.0041	0.0010			0.0005	5.6117	0.268	0.0041	N
T-Cu	0.0053	0.0022			0.0010	0.0517	0.0305	0.0053	Y
T-Pb	0.0042	0.0008			0.0005	0.100	0.0186	0.0042	Y
T-Hg	ND	ND			0.0002	0.00015	0.000012	ND	N
T-Ni	0.0064	0.0025			0.0005	1.5159	0.169	0.0064	N
T-Se	0.0027	0.0015			0.0005	0.020	0.0046	0.0027	Y
T-Ag	ND	ND			0.0005	0.0411	No STD.	ND	N
T-Zn	0.02	ND			0.01	0.3878	0.3878	0.02	N
T-B		0.07	0.14	0.08	0.05	0.750	No STD.	0.14	Y
T-Fe		1.08	0.27	0.65	0.05	1.00	No STD.	1.08	Y
D-Se		0.0009	0.03	0.02	0.0005	0.0200	0.0046	0.03	Y
D-B			0.13	0.07	0.05	0.750	No STD.	0.13	Y

T = total

D = dissolved

WLA = wasteload analysis

MRL = Minimum Reporting Level

ND = None detected down to the MRL

No STD = no standard. Where there is no standard for chronic limits in the wasteload allocation, the acute is used.

Analysis of the above table follows:

1. Compare the maximum value from the data set to the acute and chronic WLA numbers. If there is more than a ten times difference between the two values considering the lowest value from the WLA (usually the chronic value except for arsenic) then there is **no** reasonable potential for exceedance of the water quality standard downstream for that parameter. If there is less than a ten times difference, then there is potential and a reasonable potential analysis must be completed for that specific parameter.
2. If the maximum value from the data set is greater than either of the WLA limits listed in the table there has already been exceedance of the downstream limits/standards and this parameter must be included in the permit with a limit. This is the case for iron which was included in the original permit and will be included in the modification.

3. Where dissolved and total of the same metal are in need of a reasonable potential analysis, this analysis will be done using total metal values which will be sufficient for total metal as well as the dissolved metal.

Conclusion:

A reasonable potential analysis was completed for total copper, lead, selenium and boron. Total selenium acute and chronic permit limits should be included in the permit modification for the NPL. In addition, because not enough metals data has been generated, monitoring for metals data will be included in the permit for all outfalls that discharge. The permittee is required to use the analytical methods that have the lowest detection limits for the metals.

A number of organic compounds were scanned at some of the Outfalls that discharged. All of the parameters scanned were none detected (ND). Based on this data and the permit writers BPJ, it was decided that there should be no organics in any significant concentrations found on this site. Organics were eliminated from further RP concerns.

All of the metals and organic data used in this RP analysis were obtained from samples taken by the Company and analyzed at Chemtech-Ford in Salt Lake City. A complete copy of the data submitted to Alton Coal is included in this RP report.