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**LOST CREEK ISR, LLC**

April 18, 2017

Mr. John Saxton  
U.S. Nuclear Regulatory Commission  
Mailstop T8-F5  
11545 Rockville Pike  
Rockville, MD 20852

**Re: Response to NRC Clarification Questions on the KM and LC East Amendments  
Lost Creek ISR Project License SUA-1598: Docket 040-09068**

Dear Mr. Saxton,

On April 3, 2017, the NRC supplied Lost Creek ISR, LLC with a list of clarification questions related to the KM and LC East Amendments. Please find behind this cover the questions posed by NRC followed by our responses. When replacement pages for the application are necessary, a total of four copies are included. If you have any questions regarding the responses, please feel free to contact me at our Casper office.

Sincerely,

A handwritten signature in black ink, appearing to read 'John W. Cash', written over a horizontal line.

John W. Cash  
Vice President

Cc: Theresa Horne, Ur-Energy, Littleton

1. Please clarify that, for NRC purposes, the KM amendment and the Lost Creek amendment applications are interdependent (e.g., statements in the Lost Creek East are applicable to the KM amendment).

Response:

Yes, the amendment applications are interdependent. As stated in the cover letter, "the operations and reclamation plans...are included in the LC East Amendment since these plans must consider all activities as a whole." The assessment of environmental impacts in the LC East application also considers the cumulative impact that would result from approval of both amendment requests.

2. Please clarify that the narrative, tables, figures and plates in the amendment applications are meant to supplement rather than replace pages in the existing approved application.

Response:

The narrative, tables, figures and plates in the amendment applications are meant to supplement rather than replace pages in the existing approved application.

3. Please clarify the definition of a resource area in the KM Amendment. (A Resource Area is appears to be defined in an attachment to Tetra Tech's evaluation of MILDOS in the Lost Creek East Amendment Application).

Response:

For the purposes of these amendment applications, a resource area is the same as a mine unit. The two terms have some minor differences that are only important to our internal geology staff. We have been moving away from the use of the term "Resource Area" in favor of the term "Mine Unit." However, some older documents, especially those generated by contractors in the past, continue to use the term Resource Area.

4. Please clarify the proposed mine units' horizontal and vertical locations. The presentation in the amendments is somewhat confusing and contradictory. For example, in the KM amendment, Resource Area 3 (aka, Mine Unit 3) is described as operations in the KM Horizon whereas the Lost Creek East Amendment Operations Plan describes Mine Unit 3 in the HJ Horizon. In addition, Table OP-3 (and the corresponding table in the ER) lists the locations (LC or LCE) and horizon (HJ or KM) for various mine units that differ from the narrative.

Response:

The fourth paragraph on page OP-3 has been changed to correct the noted discrepancies between the Mine Unit name and the corresponding mined Horizon. The horizontal location (i.e., Lost Creek vs. LC East) has also been corrected on page OP-3 and Table OP-3 of the LC East Technical Report. Table OP-3 has been corrected to reflect the

verbiage changes made to page OP-3, and the drawdown recomputed. Table 4.5-1 of the LC East Environmental Report was also conformed to the text.

Table OP-2 of the LC East Amendment Technical Report has been revised to remove references to RAs and to indicate which horizon each mine unit is in. This should help the reviewer interpret Plates OP-2a and 2b.

5. Please clarify that the disturbance areas are same as the production unit areas for a mine unit as currently defined by Lost Creek for this proposal.

Response:

Since the disturbance generated while installing wells in a production unit extends slightly beyond the pattern area, we add a slight buffer area to the production area to determine the disturbed area.

6. Please clarify that the amendment application(s) also requests an increase of toll milling from 1 million pounds to 2.2 million pounds.

Response:

The amendments seek to increase the maximum total production rate (wellfield plus toll processing) to 2.2 million pounds of dried U<sub>3</sub>O<sub>8</sub> per year (excluding moisture and contaminants). If there is no wellfield production, the amount of toll processing could be as high as 2.2 million pounds of U<sub>3</sub>O<sub>8</sub> per year.

This proposed change is discussed in several locations in the amendment documents including but not limited to: the cover letter; the Preamble to the KM Amendment Technical Report; Sections 1.0 and 1.2.2.1 of the KM Amendment Environmental Report; Section 2.1 of the LC East Technical Report; and Sections 1.0 and 1.2 of the LC East Environmental Report.

7. Please clarify that the proposed increase in annual production to 2.2 million gallons is consistent with the design of the plant, which, according to the approved application, was for annual production of 2 million gallons.

Response:

The processing plant can be considered in two general parts; ion exchange and processing. Regarding ion exchange capacity, the initial design of the plant assumed relatively low headgrades at a flow rate of 6,000 gpm. Based on these assumptions we speculated in the original application that the maximum ion exchange circuit capacity would be around 1,000,000 pounds of U<sub>3</sub>O<sub>8</sub> per year. However, the actual headgrades from Mine Unit 1, which we believe are likely indicative of headgrades from future mine units, have been much higher than anticipated. Based on these headgrades, we believe it will be feasible to produce 1,200,000 pounds/year of U<sub>3</sub>O<sub>8</sub> from the wellfields.

Regarding the processing circuit, the facility is designed with significant redundancy that allows for continued operation if one system breaks down. For example, there are two elution circuits, four precipitation cells, two filter presses, and two dryers. Assuming these systems function with minimal down time, the facility can produce 2.2 million pounds of U<sub>3</sub>O<sub>8</sub> per year. The source of those pounds would be from the onsite wellfields and/or toll processing.

Currently, production is limited by waste water disposal. However, with the recent approval of the Class V system and our ability to install up to five additional deep wells (5 total at Lost Creek and 3 total at LC East), we are confident that a production rate of 2,200,000 pounds/year of U<sub>3</sub>O<sub>8</sub> can be achieved.

8. Please clarify that the amendment application also includes three additional deep disposal wells.

Response:

Yes, the LC East Amendment includes the addition of three deep disposal wells (see Sections OP 1.1, OP 2.1, OP 2.9.2, OP5.2.3.2 and Plate OP-2a).

9. Please clarify the nature of the increase in horizontal expansion to the existing license area. The original application estimated 254 acres of pattern areas but the current application consists of approximately 240 acres of pattern area for both the HJ and KM mine units, which is a decrease.

Response:

It is important to keep in mind that the acres of disturbance are our best estimate and not a precise measurement. The area of wellfields has continued to evolve over the years as information gained from drilling has allowed the geologists to refine the pattern areas. Subsequent drilling and re-interpretation of the geology and mineral resource will result in further adjustments of the pattern areas and associated acres of disturbance. Each mine unit data package will present a more accurate depiction of disturbance. The original disturbance estimate was too conservative (too high) because many areas lacked sufficient drilling to make a more precise estimate of disturbance. A comparison of Figure 2.1-1 from the original Technical Report versus Plate OP-2b from the LC East Amendment Technical Report clearly shows how the width and location of the mineralization have been refined over the years. Please note how the proposed wellfields extend further east and west while the width of the area has generally been reduced.

The original estimate of disturbance was also too high because at that time the BLM requirement to avoid ephemeral channels wasn't known. The new estimate of disturbance discounts the ephemeral channels since little disturbance will occur in those areas.

The 240-acre disturbance estimate in the amendment application is correct.

10. Please clarify how the 500-foot requirement for distance to a perimeter well is satisfied if the distance between several production areas within a mine unit is 1600 feet. Also, please clarify that an aquifer exemption can be obtained for an entire wellfield with such scattered production areas.

Response:

There are a few locations (see Plates OP-2a and 2b) where the mineralization appears to have significant gaps. However, these gaps are likely the result of insufficient drilling in those areas. With additional drilling, we expect to continue to refine the location of the mineralization. As a result of this information, the pattern areas will likely be reduced in some areas while being expanded in others. There is insufficient information at this time to evaluate the precise location of monitor well rings in relation to the mineralization. Each subsequent mine unit data package will present this information and will honor the maximum 500-foot spacing between pattern areas and monitor well rings. Likewise, each respective wellfield data package will discuss the aquifer exemption boundary. In some cases, if there is a significant hiatus in the ore trend, it may be necessary to divide the currently proposed mine units into smaller units with their own individual monitor well rings and aquifer exemptions.

11. Please clarify that the "L" Horizon will be the designated underlying aquifer for the KM unit in the Lost Creek East area.

Response:

Yes, the L Horizon will be the designated underlying aquifer for the KM Horizon at the LC East area (see Sections OP 3.2.2.4 of the LC East Technical Report and Sections 3.5.2.2, 3.5.2.3 and 3.5.2.5 of the LC East Environmental Report).

12. Please clarify that the mapping is accurate as the legend appears to be inconsistent with the isopach maps on Plate 2.6-3a and Plate 2.6-3b of the KM amendment.

Response:

The gray scale legend is correct but the colored drill hole location legend is incorrect. Please find attached to this response a total of four corrected maps for insertion into the amendment document.

13. Please clarify whether the water level data provided in the amendment applications are complete and provide a summary of locations within the applications where the data can be found.

Response:

The water level data provided in the two permit amendment applications are complete, and can be found at the following locations: Tables D6.2-1 and D6.2-2, Attachment D6-4 Table 3-1 and Figures 2-5 through 2-8, and Attachment D6-5 Tables 3-1 and 3-2.

14. Please clarify that the Lost Creek East Amendment Section D10 on background radiological characteristics summarizes all activities to establish and document the pre-operational radiological environment and that no additional summary information on this topic is provided in other sections of the application(s).

Response:

Section D10 provides baseline information on direct gamma (OSL and sodium iodide crystal measurements), air particulate, radon, and MILDOS.

Attempts to collect surface water samples from drainages were met with limited success due to the lack of precipitation. However, the results of samples from numerous locations are presented in Tables D6.1-2 and D6.1-3. Several of the samples contained insufficient water to perform a complete analysis. This has been a common problem since we began attempting to collect samples in 2006 (poor precipitation, sandy soils, and high evaporation rates result in minimal runoff).

Sediment samples were collected as part of the original license application; see Section 2.9 of the original Technical Report.

Groundwater samples were analyzed for radionuclides with results provided in Table D6.4-1. Chemical analysis of water from regional BLM stock wells was provided in the original Lost Creek application.

Vegetation and food samples for this region were assayed as part of the original Lost Creek application. There are no fish in the area. See Section 2.9 of the original Lost Creek Technical Report.

Soil samples were assayed as part of the original Lost Creek application. The direct gamma readings of the soils at LC East, as presented in Section D10, can also be used to determine radium concentrations.

15. Please clarify that the wellfield production schedule used for MILDOS calculations is consistent with that schedule currently proposed for the Lost Creek East Amendment Application.

Response:

Consistent with the schedule proposed in the LC East Amendment Application, the production schedule used in the MILDOS model assumes a flow rate of 6,000 gpm during production. The centroid of the mine units presented in Figure 2 of the MILDOS Report are the same as the centroids of the mine units presented in Plates OP-2a and 2b of the LC East Technical Report. However, since completion of the MILDOS model we have altered the order of mine units as well as the timing of wellfield production based on market conditions and actual rates of recovery experienced in Mine Unit 1. The order of the first five mine units has not changed but the order of mining after the fifth mine unit has been adjusted.

The MILDOS Model shows that the maximum dose at any of the modeled receptors is 4.04 mrem/year at point NB1. This extremely low dose rate is only a small fraction of the allowable annual dose to a member of the public from radon. Further, this dose assumes 100% occupancy which is unrealistic given the mines remote location, extreme weather, and land ownership. After three years of production at the site we believe a proper occupancy factor is less than 3% assuming a delivery driver is on-site 1 hour per work day. This means the actual maximum dose at any modeled point is only about 0.12 mrem/year.

Any changes to the schedule, including the order of mine units, is unlikely to result in a material change in the modeled dose rate. However, to ensure the safety of the public, Lost Creek ISR, LLC is willing to rerun the MILDOS model prior to beginning mining at LC East and prior to implementing any other material changes in the schedule.

16. Please clarify that the MILDOS input and output files are provided with the Lost Creek East Amendment Application.

Response:

A summary of the inputs is provided in MILDOS Report but the actual run files were not included. Please find enclosed with this submittal a DVD containing the complete MILDOS files which will allow NRC to verify the model. The DVD is for NRC's convenience in verifying the model and is not to be inserted into the application

17. Please clarify that Lost Creek has elected not to include a summary of the operational history for the Lost Creek facility in either application.

Response:

An operational history for this relatively new facility was not provided in either application but can be provided if necessary. Mine Unit 1 was placed into production in August of 2013. No other mine units have been installed or placed into production.

Detailed information on operations is provided in routine reports to the agency as well as within NRC inspection reports.

18. Please clarify that the environmental reports encompass all expected impacts from the proposed activities, in particular, impacts from new wells for the KM Amendment Application.

Response:

Yes, the Environmental Report contemplates the cumulative expected impacts from all proposed activities including the installation of wells related to the KM Amendment.

19. Please clarify that Lost Creek will be sending or has sent to the NRC the Cultural Resources Report in the application as indicated in Section 3.9 of the Lost Creek East Amendment Application.

Response:

The LC East Cultural Resources Report was submitted by Centennial Archeology, in hard copy form, to John Saxton in November of 2014 as a confidential document.



secondary access roads and associated culverts for each mine unit will be constructed prior to and during installation of that mine unit. Secondary access roads and associated culverts for the UIC Class I wells will be constructed prior to installation of those wells.

Electrical power has been brought into the Lost Creek site through an overhead line from the transmission line located directly west of the site. The overhead line will branch out to required areas or header houses throughout the mine units. Depending on the location of wells, roads and other infrastructure, transformers may be installed on poles or on the ground near the service point.

Overhead power lines will be built in compliance with regional raptor specifications. Buried lines, either before or after transform, will be installed per the National Electrical Code 2008 Handbook (Earley et al., 2008). Specifically, Table 300.5 in the Handbook details the depth of burial and Article 340, Section II, 340.10, (1) specifies the use of Type UF (Underground Feed) cable for direct burial. LC ISR, LLC plans to use direct burial cable as allowed in the NEC 2008 Handbook to deliver power to the header house and to the production wells as needed. From the header houses to the production wells, power will be transmitted through underground lines that will be located along the same corridors as the piping to and from the wells.

Five mine units are currently planned for the LC East area and six mine units are planned for the Lost Creek area, as shown on **Plates OP-2a** and **2b**. Mine Units 1, 2, 4, 5, 7, and 9 are HJ Horizon and Mine Units 3, 8, 10, 11, and 12 are KM Horizon. The boundaries of each mine unit are considered conceptual until a more detailed 'mine unit package' is prepared for that mine unit and submitted to WDEQ-Land Quality Division (LQD). Each mine unit will consist of a reserve block covering about 20 to 100 acres. Each header house will be designed to accommodate the well controls and distribution plumbing for approximately 25 production wells and the associated injection wells (usually about 50 injection wells). Typically, one or two mine units may be in production at any one time with additional mine units in various stages of development and/or restoration.

## **OP 1.2 Ore Deposits**

As described in **Appendix D5** of this application, the ore deposits in Lost Creek and LC East generally occur at depths of 150 to 650 feet below ground surface (ft bgs) in long narrow trends varying from a few hundred to several thousand feet long and 50 to 250 feet wide. The depth depends on the local topography, the dip of the formation, and the stratigraphic horizon. The available geologic and hydrologic data presented in **Appendices D5** and **D6**, respectively, identify uranium mineralization in several sandstone layers (e.g., from shallow to deeper, the FG, HJ, and KM Horizons).

**Table OP-3 Aquifer Characteristics for Drawdown Computation**

Mining Sequence	Mining Horizon	Project Area	Formation Transmissivity (ft <sup>2</sup> /d)	Formation Thickness (ft.)	Hydraulic Conductivity (ft./d)	Formation Storativity	Location of Pumping Centroid		Production / Restoration Life (days)	Average Net Consumptive Use (gpm)	†Computed Drawdown at:	
							Easting	Northing			2 miles ft.	3 miles ft.
MU1	HJ	LC	80	120	0.67	1.1 x 10 <sup>-4</sup>	2211666.87	595489.20	3,924	39.8	35.0	18.3
MU2	HJ	LC	80	120	0.67	1.1 x 10 <sup>-4</sup>	2206608.70	594139.05	4,928	45.0	52.5	24.9
MU5	HJ	LC	80	120	0.67	1.1 x 10 <sup>-4</sup>	2216303.19	596233.19	3,650	23.1	19.3	4.8
MU4	HJ	LC	80	120	0.67	1.1 x 10 <sup>-4</sup>	2201523.78	594457.18	2,555	18.2	7.2	2.6
MU8	KM	LCE	86	110	0.78	2.3 x 10 <sup>-4</sup>	2217421.85	592346.10	3,650	22.0	3.8	0.3
MU3	KM	LC	86	110	0.78	2.3 x 10 <sup>-4</sup>	2213942.10	595962.82	3,011	31.3	5.5	2.8
MU7	HJ	LCE	80	120	0.67	1.1 x 10 <sup>-4</sup>	2217011.39	592241.47	5,840	38.0	45.4	10.3
MU10	KM	LCE	86	110	0.78	2.3 x 10 <sup>-4</sup>	2225648.42	597503.05	2,737	17.1	2.2	1.0
MU11	KM	LCE	86	110	0.78	2.3 x 10 <sup>-4</sup>	2229136.43	606179.22	2,464	15.7	2.1	1.0
MU12	KM	LC	86	110	0.78	2.3 x 10 <sup>-4</sup>	2205780.24	594466.40	2,555	22.9	4.1	2.4
MU9	HJ	LCE	80	120	0.67	1.1 x 10 <sup>-4</sup>	2223159.26	596462.85	3,011	16.8	3.6	2.4

† = Computed drawdown at end of RO phase  
 LC = Lost Creek Project Area  
 LCE = Lost Creek East Project Area  
 ft. = feet  
 d = day  
 gpm = gallons per minute

**Table 4.5-1 Aquifer Characteristics for Drawdown Computation**

Mining Sequence	Mining Horizon	Project Area	Formation Transmissivity (ft <sup>2</sup> /d)	Formation Thickness (ft.)	Hydraulic Conductivity (ft./d)	Formation Storativity	Location of Pumping Centroid		Production / Restoration Life (days)	Average Net Consumptive Use (gpm)	† Computed Drawdown at:	
							Easting	Northing			2 miles ft.	3 miles ft.
MU1	HJ	LC	80	120	0.67	1.1 x 10 <sup>-4</sup>	2211666.87	595489.20	3,924	39.8	35.0	18.3
MU2	HJ	LC	80	120	0.67	1.1 x 10 <sup>-4</sup>	2206608.70	594139.05	4,928	45.0	52.5	24.9
MU5	HJ	LC	80	120	0.67	1.1 x 10 <sup>-4</sup>	2216303.19	596233.19	3,650	23.1	19.3	4.8
MU4	HJ	LC	80	120	0.67	1.1 x 10 <sup>-4</sup>	2201523.78	594457.18	2,555	18.2	7.2	2.6
MU8	KM	LCE	86	110	0.78	2.3 x 10 <sup>-4</sup>	2217421.85	592346.10	3,650	22.0	3.8	0.3
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† = Computed drawdown at end of RO phase

LC = Lost Creek Project Area

LCE = Lost Creek East Project Area

ft. = feet

d = day

gpm = gallons per minute

Table OP-2 Acreage of Expected Disturbance, Vegetation Type, Topsoil Salvage (Page 1 of 2)

Facility <sup>(1)</sup>	Term of Disturbance <sup>(2)</sup>	Total Disturbance (acres)	Area of Disturbance (acres)		Area Within Disturbance From Which Topsoil Will Be Removed (acres)		Topsoil Salvage <sup>(3)</sup> (yd <sup>3</sup> )	Comment
			Upland Big Sagebrush	Lowland Big Sagebrush	Upland Big Sagebrush	Lowland Big Sagebrush		
Plant	LT	8.8	3.7	5.1	3.7	5.1	28,366	Map area is 12.5 acres (5.3 acres of Lowland & 7.2 acres of Upland Big Sagebrush); however, only about 70% (8.8 acres) will have vegetation removed & topsoil stripped. As a conservative estimate, all of the Lowland Big Sagebrush was included in the disturbance (Fig. D8-1). Topsoil stockpiled in the NE portion of the Plant site.
<b>Staging Areas</b>								
Permanent	LT	1.5	1.5	0.0	1.5	0.0	4,835	Permanent staging area is in Upland Big Sagebrush. Topsoil stockpile NE of the area. Potential staging areas, if needed, will be similarly located.
Potential	ST	1.5	1.5	0.0	1.5	0.0	4,835	
Potential	ST	1.5	1.5	0.0	1.5	0.0	4,835	
<b>Total-Staging Areas</b>		<b>4.5</b>	<b>4.5</b>	<b>0.0</b>	<b>4.5</b>	<b>0.0</b>	<b>14,505</b>	
<b>Deep Wells</b>								
Drilling pad and mud pits	ST	24.0	20.6	3.4	20.6	3.4	58,080	Topsoil stockpiles adjacent to pads <sup>(4)</sup>
Well House	LT	13.3	13.3	0.0	13.3	0.0	32,186	Topsoil stockpiles adjacent to well houses <sup>(4)</sup>
<b>Total-Deep Wells</b>		<b>37.3</b>	<b>33.9</b>	<b>3.4</b>	<b>33.9</b>	<b>3.4</b>	<b>90,266</b>	
<b>Pipelines (outside patterns)<sup>(5)</sup></b>								
Main Trunklines to Wellfields	ST	57.6	56.6	1.0	56.6	1.0	139,392	Trunkline includes pipelines along Access Road and to Plant. Along all pipelines, topsoil will be wind-rowed adjacent to pipelines (separate from deeper material)
Pipeline to Deep Wells	ST	8.9	8.4	0.5	8.4	0.5	21,538	
<b>Total-Pipelines</b>		<b>66.5</b>	<b>65.0</b>	<b>1.5</b>	<b>65.0</b>	<b>1.5</b>	<b>160,930</b>	
<b>Drill Pads (outside patterns)<sup>(6)</sup></b>								
Exploration Holes	ST	19.3	19.3	0.0	19.3	0.0	46,706	On the order of 770 exploration holes are planned. No exploration holes will be drilled in Lowland big Sagebrush
Monitoring Wells								
Mine Unit 1	ST	0.7	0.6	0.2	0.5	0.2	2,256	
Mine Unit 2	ST	0.9	0.7	0.2	0.7	0.2	2,837	
MU3	ST	0.9	0.9	0.0	0.9	0.0	2,556	
MU4	ST	0.4	0.4	0.0	0.4	0.0	1,162	
MU5	ST	0.9	0.9	0.0	0.9	0.0	2,614	
MU7	ST	1.6	1.6	0.0	1.6	0.0	4,646	
MU8	ST	1.6	1.6	0.0	1.6	0.0	4,646	
MU9	ST	1.4	1.4	0.0	1.4	0.0	4,066	
MU10	ST	1.5	1.5	0.0	1.5	0.0	4,356	
MU11	ST	1.2	1.2	0.0	1.2	0.0	3,485	
MU12	ST	0.9	0.9	0.0	0.9	0.0	2,614	
<b>Total-Drill Pads</b>		<b>31.3</b>	<b>30.9</b>	<b>0.3</b>	<b>30.9</b>	<b>0.3</b>	<b>81,943</b>	
<b>Roads<sup>(7)</sup></b>								
Access Road Within Main Permit Area	LT	17.2	15.1	2.1	15.1	2.1	55,346	Topsoil will be stockpiled at intervals adjacent to the roads.
Access Road East & West of Main Permit Area	LT	19.1	16.8	2.3	16.8	2.3	61,664	Topsoil will be stockpiled at intervals adjacent to the roads.
<b>Total for Secondary Roads</b>	LT	<b>26.2</b>	<b>25.7</b>	<b>0.5</b>	<b>25.7</b>	<b>0.5</b>	<b>63,404</b>	
Two-Track Roads	LT	48.5	48.0	0.5	0.0	0.0	0	
<b>Total-Roads</b>		<b>111.0</b>	<b>105.6</b>	<b>5.4</b>	<b>57.6</b>	<b>4.9</b>	<b>180,414</b>	
<b>Patterns (Plate OP-2a and OP-2b)</b>								
Delineation Holes <sup>(8)</sup>	LT	---	---	---	77.4	5.1	73,140	
Mine Unit 1 (HJ Horizon at Lost Creek)	4.4% LT				2.3	0.2	4,060	
	10% ST	52.7	52.2	0.5	5.2	0.1	8,502	

Table OP-2 Acreage of Expected Disturbance, Vegetation Type, Topsoil Salvage (Page 2 of 2)

Facility <sup>(1)</sup>	Term of Disturbance <sup>(2)</sup>	Total Disturbance (acres)	Area of Disturbance (acres)		Area Within Disturbance From Which Topsoil Will Be Removed (acres)		Topsoil Salvage <sup>(3)</sup> (yd <sup>3</sup> )	Comment
			Upland Big Sagebrush	Lowland Big Sagebrush	Upland Big Sagebrush	Lowland Big Sagebrush		
Mine Unit 2 (HJ Horizon at Lost Creek)	4.4% LT	72.7	72.2	0.5	3.2	0.2	5,480	Vegetation disturbance within the pattern area is expected to be 100% of the area. Long-term topsoil disturbance is assumed to be 4.4% of the area; Short-term topsoil disturbance is assumed to be 10% of the area. LT stockpiles will be adjacent to header houses; ST stockpiles will be adjacent to feature (e.g., mud pit) or wind-rowed (e.g., pipeline). In instances where the HJ patterns overlie the KM patterns (MU3, MU8, MU10 and MU12, the disturbance is only counted once. The original disturbance estimates did not account for the BLM stream-buffering requirement that was published in the Record of Decision. The buffer requirement will result in significantly less disturbance in lowland big sagebrush. However, minor disturbance in lowland big sage brush, on the order of 0.5 acres per wellfield, will still occur.
	10% ST				7.2	0.1	11,729	
MU3 (KM Horizon at Lost Creek)	4.4% LT	27.0	26.5	0.5	1.2	0.2	2,236	
	10% ST				2.7	0.1	4,356	
MU4 (HJ Horizon at Lost Creek)	4.4% LT	27.5	27.0	0.5	1.2	0.2	2,272	
	10% ST				2.7	0.1	4,437	
MU5 (HJ Horizon at Lost Creek)	4.4% LT	29.5	29.0	0.5	1.3	0.2	2,414	
	10% ST				2.9	0.1	4,759	
MU7 (HJ Horizon at LC East)	4.4% LT	65.8	65.3	0.5	2.9	0.2	4,990	
	10% ST				6.5	0.1	10,616	
MU8 (KM Horizon at LC East)	4.4% LT	21.7	21.2	0.5	0.9	0.2	1,860	
	10% ST				2.1	0.1	3,501	
MU9 (HJ Horizon at LC East)	4.4% LT	21.9	21.4	0.5	0.9	0.2	1,874	
	10% ST				2.1	0.1	3,533	
MU10 (KM Horizon at LC East)	4.4% LT	20.2	19.7	0.5	0.9	0.2	1,753	
	10% ST				2.0	0.1	3,259	
MU11 (KM Horizon at LC East)	4.4% LT	17.7	17.2	0.5	0.8	0.2	1,576	
	10% ST				1.7	0.1	2,856	
MU12 (KM Horizon at Lost Creek)	4.4% LT	25.9	25.4	0.5	1.1	0.2	2,158	
	10% ST				2.5	0.1	4,179	
<b>Total-Patterns</b>		<b>382.6</b>	<b>377.1</b>	<b>5.5</b>	<b>131.7</b>	<b>8.1</b>	<b>165,539</b>	

<b>Total Disturbance<sup>(9)</sup></b>	LT-Topsoil	--	--	--	170.05	17.60	349,614
	ST-Topsoil	--	--	--	157.15	5.82	372,349
	Vegetation	642.0	620.7	21.3	--	--	--

<sup>(1)</sup> Facility locations are shown on Plates OP-2a and OP-2b.

<sup>(2)</sup> LT = Long Term topsoil stockpile, i.e. duration of project. ST = Short Term topsoil stockpile, i.e., a few days to a few months.

<sup>(3)</sup> Recommended topsoil stripping depths were 24 inches or less (Attachment OP-5a and 5b of original Permit to Mine Application). For estimating topsoil salvage volumes, a topsoil depths of 18 to 24 inches was used so topsoil stockpile volumes (& associated footprints) would represent the maximum

<sup>(4)</sup> Well WDW1 (SW corner of Permit Area) was the original exploration well drilled in 2008 & the area has been reclaimed.

<sup>(5)</sup> The width of disturbance associated with the pipelines was assumed to be: 46 feet for trunklines; 10 feet for the pipelines to the deep wells ; and 10 feet for the pipelines to the mine units. These assumed widths are sufficient to account for the pipeline trench and laydown of topsoils and subsoil.

<sup>(6)</sup> Each drill pad, whether for exploration or delineation, is assigned a total disturbance of 33 ft. by 33 ft. which equates to 0.025 acres. This area accounts for the area of the mud pit, topsoil, and subsoil piles, and disturbance to vegetation created during reclamation efforts.

<sup>(7)</sup> Two track roads are assumed to create 8.8 feet of disturbance, secondary roads create 20.0 ft. of disturbance and primary access roads create 32 feet of disturbance (Figure OP-3c of original Permit to Mine Application).

<sup>(8)</sup> Delineation drilling within the pattern area will be on a 100-ft grid. Depending on geologic interpretation of the delineation hole information, the holes may or may not correspond to subsequent production or injection well locations. As a conservative estimate, it is assumed that none of the hole and well locations coincide. Based on a total of 3,300 holes (300 holes per mine unit) and a drill pad area of 0.025 acres, a total of about 82.5 acres of topsoil will be stripped for the entire mine.

<sup>(9)</sup> No credit is taken for pre-existing disturbance although areas of existing disturbance will be used when available, e.g., roads follow existing two-tracks where possible.

Approved Licensee Application Sections		Approved License Application Pages	Mapping to KM Amendment Sections	Mapping to LC East Amendment Sections	Comments
TOC					
1.0	PROPOSED ACTIVITIES	1-1	preamble * LC East TR and LC East ER Section 1.1. Also see LC East TR Ops Plan including Plates OP-2a and 2b	preamble * LC East TR and LC East ER Section 1.1. Also see LC East TR Ops Plan including Plates OP-2a and 2b	No Succinct description of the KM Amendment
1.1	Licensing Action Requested	1-1	preamble * LC East TR and LC East ER Section 1.1, Form 313	preamble * LC East TR and LC East ER Section 1.1, Form 313	
1.2	Project Background	1-2	Original approved application as well as LC East TR Operations Plan including Plate OP-2b	LC East ER Section 1.2.1 and LC East TR Section D2	
1.3	Site Location and Description	1-3	Lost Creek location and description provided in original approved license app. KM wellfield locations provided in LC East TR Operations Plan, specifically Plate OP-2b. Also see the LC East ER Section 1.2.2	LC East ER Section 1 and LC East TR Operations Plan	
1.4	Orebody Description	1-4	Described in original approved license application as well as the KM Amendment TR Section 2.6 and ER Section 3.4.2. The LC East TR Plate OP-2b provides the locations of the mine units.	LC East ER Section 3.4 and LC East TR Section D5.2	
1.5	Solution Mining Method and Recovery Process	1-4	Original approved application	Original application as well as LC East ER Section 1 and LC East TR Operations Plan	
1.6	Operating Plans, Design Throughput, and Production	1-5	LC East TR Operations Plan	LC East ER Section 1.0 and LC East TR Operations Plan	
1.7	Project Schedules	1-6	LC East TR Operations Plan and LC East ER Section 1.2.3	LC East TR Operations Plan and LC East ER Section 1.2.3	
1.7.1	Pre-Operational Development Schedule	1-6	Figure 1.2-6 of the LC East ER as well as Figure OP-4a of the LC East TR provide a pre-operational work schedule (wellfield and surface construction) and operations and reclamation schedule	Figure 1.2-6 of the LC East ER as well as Figure OP-4a of the LC East TR provide a pre-operational work schedule (wellfield and surface construction) and operations and reclamation schedule	
1.7.2	Operations Schedule	1-6	LC East TR Operations Plan (Table OP-4a) and LC East ER Section 1.2.3	LC East TR Operations Plan (Table OP-4a) and LC East ER Section 1.2.3	
1.8	Waste Management and Disposal	1-7	Original approved application, no change	Original approved application, no change	
1.9	Source and Byproduct Material Transportation	1-7	Methods described in the original approved application have not changed. See LC East ER Section 3.2	Methods described in the original approved application have not changed. See LC East ER Section 3.2	
1.10	Groundwater Restoration	1-8	LC East TR Reclamation Plan	LC East TR Reclamation Plan	
1.11	Decommissioning and Reclamation	1-9	LC East TR Reclamation Plan. Methods previously described and approved in the original Lost Creek will not change but the area and schedule will.	LC East TR Reclamation Plan. Methods previously described and approved in the original Lost Creek will not change but the area and schedule will.	
1.12	Surety Arrangements	1-9	Original approved application	Original approved application	
2.0	SITE CHARACTERIZATION	2.1-1			
2.1	Site Location and Layout	2.1-1	Lost Creek location and description provided in original approved license app. KM wellfield locations provided in LC East TR Operations Plan, specifically Plate OP-2b and the LC East ER Section 1.2.1	LC East ER Section 1 and LC East TR Operations Plan (especially Plates OP-2a and OP-2b)	
2.2	Uses of Adjacent Lands and Waters	2.2-1	No Change	Original Application and D1	
2.2.1	Land Use	2.2-1	No Change	D1	
2.2.1.1	Planned Land Uses and Developments	2.2-3	No Change	Original Application and D1	
2.2.2	Water Use	2.2-3	No Change	Original Application and D1	
2.2.2.1	Surface Water	2.2-3	See KM Amendment ER Section 3.5 and TR Section 2.7	No change OP2.11.1	
2.2.2.2	Groundwater	2.2-4	See KM Amendment ER Section 3.5 and TR Section 2.7	OP2.11.2	
2.3	Population Distribution and Socioeconomic Conditions	2.3-1	Minimal changes. See LC East ER Section 3.11 for most recent data	Minimal changes. See LC East ER Section 3.11 for most recent data	
2.3.1	Demographics	2.3-1	Minimal changes. See LC East ER Section 3.11 for most recent data	Minimal changes. See LC East ER Section 3.11 for most recent data	
2.3.1.1	Sweetwater County	2.3-1	Minimal changes. See LC East ER Section 3.11 for most recent data	Minimal changes. See LC East ER Section 3.11 for most recent data	
2.3.1.2	Carbon County	2.3-2	Minimal changes. See LC East ER Section 3.11 for most recent data	Minimal changes. See LC East ER Section 3.11 for most recent data	
2.3.2	Socioeconomic Conditions	2.3-2	Minimal changes. See LC East ER Section 3.11 for most recent data	Minimal changes. See LC East ER Section 3.11 for most recent data	
2.3.2.1	Employment Sectors and Industry Income	2.3-3	Minimal changes. See LC East ER Section 3.11 for most recent data	Minimal changes. See LC East ER Section 3.11 for most recent data	
2.3.2.2	Labor	2.3-4	Minimal changes. See LC East ER Section 3.11 for most recent data	Minimal changes. See LC East ER Section 3.11 for most recent data	
2.3.2.3	Personal Income	2.3-4	Minimal changes. See LC East ER Section 3.11 for most recent data	Minimal changes. See LC East ER Section 3.11 for most recent data	
2.3.3	Other Resources	2.3-5	No Change	No change	
2.3.3.1	Housing	2.3-5	Minimal changes. See LC East ER Section 3.11 for most recent data	Minimal changes. See LC East ER Section 3.11 for most recent data	
2.3.3.2	Public Facilities and Services	2.3-6	Minimal changes. See LC East ER Section 3.11 for most recent data	Minimal changes. See LC East ER Section 3.11 for most recent data	
2.3.3.3	Taxes and Revenues	2.3-9	See LC East ER Section 5.0	See LC East ER Section 5.0	
2.4	Historic, Scenic, and Cultural Resources	2.4-1	No change to Lost Creek area where a complete survey and report was completed and submitted to the NRC as part of the original application	LC East TR Section D3 and LC East ER Section 3.9 and Ops Plan Section 2.4. Confidential Information submitted to NRC in 2014	
2.4.1	Historic and Cultural Resources	2.4-1	No change to Lost Creek area where a complete survey and report was completed and submitted to the NRC as part of the original application	LC East TR Section D3 and LC East ER Section 3.9 and Ops Plan Section 2.4. Confidential Information submitted to NRC in 2015	
2.4.2	Scenic Resources	2.4-4	With the expansion of the area a new assessment was completed. See the LC East ER Section 3.10	With the expansion of the area a new assessment was completed. See the LC East ER Section 3.10	
2.4.2.1	Visual Quality	2.4-5	With the expansion of the area a new assessment was completed. See the LC East ER Section 3.10	With the expansion of the area a new assessment was completed. See the LC East ER Section 3.10	
2.4.2.2	Visual Sensitivity	2.4-5	With the expansion of the area a new assessment was completed. See the LC East ER Section 3.10	With the expansion of the area a new assessment was completed. See the LC East ER Section 3.10	
2.5	Meteorology, Climatology and Air Quality	2.5-1	Virtually no change in baseline data but a new assessment was included in the LC East ER Section 3.7	LC East ER Section 3.7 and LC East TR Section D4	
2.5.1	Meteorology and Climatology	2.5-1	Virtually no change in baseline data but a new assessment was included in the LC East ER Section 3.7	LC East ER Section 3.7 and LC East TR Section D4	
2.5.1.1	Temperature	2.5-3	Virtually no change in baseline data but a new assessment was included in the LC East ER Section 3.7	LC East ER Section 3.7 and LC East TR Section D4	
2.5.1.2	Precipitation	2.5-3	Virtually no change in baseline data but a new assessment was included in the LC East ER Section 3.7	LC East ER Section 3.7 and LC East TR Section D4	
2.5.1.3	Humidity and Evaporation	2.5-4	Virtually no change in baseline data but a new assessment was included in the LC East ER Section 3.7	LC East ER Section 3.7 and LC East TR Section D4	
2.5.1.4	Wind, Mixing, and Stability	2.5-4	Virtually no change in baseline data but a new assessment was included in the LC East ER Section 3.7	LC East ER Section 3.7 and LC East TR Section D4	
2.5.1.5	Violent Weather	2.5-5	Virtually no change in baseline data but a new assessment was included in the LC East ER Section 3.7	LC East ER Section 3.7 and LC East TR Section D4	
2.5.2	Air Quality - Non-Radiological Parameters	2.5-5	Virtually no change in baseline data but a new assessment was included in the LC East ER Section 3.7	LC East ER Section 3.7 and LC East TR Section D4	
2.6	Geology and Soils	2.6-1	KM Amendment ER Section 2.6 for update of Geology. No change to soils which were previously assessed and reported on in the original Lost Cree application	LC East ER Section 3.4 and LC East TR Section D5	
2.6.1	Regional Geology	2.6-1	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.1.1	Stratigraphy	2.6-1	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.1.2	Structure	2.6-1	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.2	Site Geology	2.6-2	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.2.1	Stratigraphy	2.6-3	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.2.2	Structure	2.6-4	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	

Approved Licensee Application Sections		Approved License Application Pages	Mapping to KM Amendment Sections	Mapping to LC East Amendment Sections	Comments
2.6.2.3	Ore Mineralogy and Geochemistry	2.6-4	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.2.4	Historic Uranium Exploration Activities	2.6-6	No change in Lost Creek Area	LC East TR Attachment OP-1	
2.6.3	Seismology	2.6-7	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.3.1	Historic Seismicity	2.6-7	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.3.2	Uniform Building Code	2.6-11	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.3.3	Deterministic Analysis of Active Fault Systems	2.6-12	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.3.4	Maximum Tectonic Province Earthquake "Floating Earthquake" Seismogenic Source	2.6-12	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.3.5	Probabilistic Seismic Hazard Analysis and IBC	2.6-13	KM Amendment ER Section 3.4 and TR Section 2.6	LC East ER Section 3.4 and LC East TR Section D5	
2.6.4	Soils	2.6-13	No Change	LC East ER Section 3.3 and LC East TR Section D7	
2.6.4.1	Soil Survey	2.6-14	No Change	LC East ER Section 3.3 and LC East TR Section D8	
2.6.4.2	Field Sampling	2.6-14	No Change	LC East ER Section 3.3 and LC East TR Section D9	
2.6.4.3	Results and Discussion	2.6-15	No Change	LC East ER Section 3.3 and LC East TR Section D10	
2.6.4.4	Soil Suitability as a Plant Growth Medium	2.6-16	No Change	LC East ER Section 3.3 and LC East TR Section D11	
2.6.4.5	Topsoil Protection	2.6-16	No Change	LC East ER Section 3.3 and LC East TR Section D12 and Operations Plan Section 2.5	
2.6.4.6	Prior Surface Disturbances	2.6-17	No Change	Original license application for description of approved main access road. Also see historic drilling information provided in Attachment OP-1. Also, Plates OP-2a and 2b show the existing main east-west access road	
2.7	Hydrology	2.7-1	See KM Amendment ER Section 3.5 and TR Section 2.7	LC East ER Section 3.5 and LC East TR Section D6	
2.7.1	Surface Water	2.7-1	No change	LC East ER Section 3.5 and LC East TR Section D7	
2.7.1.1	Drainage Characteristics	2.7-1	No change	LC East ER Section 3.5 and LC East TR Section D8	
2.7.1.2	Surface Water Quality	2.7-3	See KM Amendment ER Section 3.5 and TR Section 2.7. Latest surface water quality was included	LC East ER Section 3.5 and LC East TR Section D9	
2.7.2	Groundwater Occurrence	2.7-4	See KM Amendment ER Section 3.5 and TR Section 2.7	LC East ER Section 3.5 and LC East TR Section D10	
2.7.2.1	Regional Hydrogeology	2.7-4	See KM Amendment ER Section 3.5 and TR Section 2.7	LC East ER Section 3.5 and LC East TR Section D11	
2.7.2.2	Site Hydrogeology	2.7-9	See KM Amendment ER Section 3.5 and TR Section 2.7	LC East ER Section 3.5 and LC East TR Section D12	Did not contain MODFLOW Input/Output files in LC East Attachment d6-6
2.7.3	Groundwater Quality	2.7-17	See KM Amendment ER Section 3.5 and TR Section 2.7	LC East ER Section 3.5 and LC East TR Section D13	
2.7.3.1	Regional Groundwater Quality	2.7-17	See KM Amendment ER Section 3.5 and TR Section 2.7	LC East ER Section 3.5 and LC East TR Section D14	
2.7.3.2	Site Groundwater Quality	2.7-20	See KM Amendment ER Section 3.5 and TR Section 2.7	LC East ER Section 3.5 and LC East TR Section D15	
2.7.4	Hydrologic Conceptual Model	2.7-23	See KM Amendment ER Section 3.5 and TR Section 2.7	LC East ER Section 3.5 and LC East TR Section D16	
2.7.4.1	Regional Groundwater Conceptual Model	2.7-23	See KM Amendment ER Section 3.5 and TR Section 2.7	LC East ER Section 3.5 and LC East TR Section D17	
2.7.4.2	Site Groundwater Conceptual Model	2.7-24	See KM Amendment ER Section 3.5 and TR Section 2.7	LC East ER Section 3.5 and LC East TR Section D18	
2.8	Ecology	2.8-1	No change	LC East ER Section 3.6 and LC East TR Section D9 and Ops Plan Section 2.8	
2.8.1	Vegetation	2.8-1	No Change	LC East ER Section 3.6 and LC East TR Section D8 and Ops Plan Section 2.7	Radiologic data for vegetation is presented in the original application
2.8.1.1	Upland Big Sagebrush Shrubland	2.8-2	No Change	LC East ER Section 3.6 and LC East TR Section D8 and Ops Plan Section 2.8	
2.8.1.2	Lowland Big Sagebrush Shrubland	2.8-3	No Change	LC East ER Section 3.6 and LC East TR Section D8 and Ops Plan Section 2.9	
2.8.1.3	Threatened, Endangered, and Special Concern Plant Species	2.8-4	No Change	LC East ER Section 3.6 and LC East TR Section D8 and Ops Plan Section 2.10	
2.8.1.4	Weeds and Selenium Indicator Species	2.8-5	No Change	LC East ER Section 3.6 and LC East TR Section D8 and Ops Plan Section 2.11	
2.8.2	Aquatic Life and Wetlands	2.8-5	No Change	LC East ER Section 3.6 and LC East TR Section D11 and Ops Plan Section 2.12	
2.8.3	Wildlife	2.8-6	No Change	LC East ER Section 3.6 and LC East TR Section D9 and Ops Plan Section 2.8	
2.8.3.1	Wildlife Habitat Description	2.8-6	No Change	LC East ER Section 3.6 and LC East TR Section D9	
2.8.3.2	Methods	2.8-7	No Change	LC East ER Section 3.6 and LC East TR Section D10	
2.8.3.3	Results	2.8-8	No Change	LC East ER Section 3.6 and LC East TR Section D11	
2.9	Background Radiological Characteristics	2.9-1	See KM Amendment ER Section 3.5 and TR Section 2.7 for new groundwater chemistry including radionuclides	LC East ER Section 3.12 and LC East TR Section D10	
2.9.1	Background Gamma Radiation Survey and Initial Soils Sampling	2.9-1	No Change	D10	
2.9.1.1	Methods	2.9-2	No Change	D10	
2.9.1.2	Data Quality Assurance and Quality Control	2.9-6	No Change	D10	
2.9.1.3	Results	2.9-7	No Change	D10	
2.9.1.4	Additional Information	2.9-11	No Change	LC East ER Section 3.12 and LC East TR Section D10	
2.9.2	Passive Gamma and Radon Monitoring	2.9-11	No Change	LC East ER Section 3.12 and LC East TR Section D10, Table D4-11	Is there additional information available in the Technical Report?
2.9.3	Supplementary Radiological Studies	2.9-12	No Change	None	
2.9.3.1	Supplementary MILDOS Modeling	2.9-14	See LC East TR Section D10 and ER Section 3.12	LC East ER Section 3.12 and LC East TR Section D10	No electronic copy of MILDOS input file. Wellfield production schedule information differs from other Technical Report sections.
2.9.3.2	Vegetation and Associated Surface Soil Sampling	2.9-14	No Change	See Section 2.9 of the Technical Report of the original license application. The semi-annual effluent monitoring reports provide additional information	
2.9.3.3	Soil Profile Sampling	2.9-15	No Change	See Section 2.9 of the Technical Report of the original license application. The semi-annual effluent monitoring reports provide additional information	
2.9.3.4	Sediment Sampling	2.9-15	No Change	See Section 2.9 of the Technical Report of the original application. No additional sediment sampling since there are only small ephemeral drainages. Previous sampling should be representative.	Sediment sampling data and results not found
2.9.3.5	Food and Fish Sampling	2.9-16	No Change	Food sampling results provided in original license application. There are no fish	No fish sampling performed
2.9.3.6	Radon Flux Measurements	2.9-16	No Change	Radon trach etc results provided in LC East ER Section 3.12 and LC East TR D10	Is there additional information available in the Technical Report?
2.9.3.7	Radiological Air Particulate (High-Vol) Sampling	2.9-16	No Change	See original license application and LC East TR Table D10-2 and LC East ER Table 3.12-2	Is there additional information available in the Technical Report?
2.9.4	2010-11 Baseline Radiological Studies	2.9-19	No Change		
2.10	Other Environmental Features	2.10-1	No Change		
3.0	DESCRIPTION OF THE PROPOSED FACILITY	3-1	LC East TR (Ops Plan specifically). Minimal information provided in KM Amendment ER Section 1.0	OP 3.0	
3.1	ISR Process and Equipment	3-1	LC East TR (Ops Plan specifically).	Op Plan 2.5.2.1 no Changes	
3.1.1	Site Facilities Layout	3-2	LC East TR (Ops Plan specifically).	Op Plan 2.5.2.1 no Changes	
3.1.2	Ore Deposits	3-3	LC East TR	LC East ER Section 3.4 and LC East TR Section D5	
3.2	Mine Unit Processes, Instrumentation, and Control	3-3	No change. See LC East TR Ops Plan	Op Plan 2.12.2 no changes	
3.2.1	Mine Unit Chemistry	3-4	No change. See LC East TR Ops Plan	OP 3.1 no changes	

Approved Licensee Application Sections		Approved License Application Pages	Mapping to KM Amendment Sections	Mapping to LC East Amendment Sections	Comments
3.2.2	Mine Unit Design	3-4	No change. See LC East TR Ops Plan	OP3.2 no changes	
3.2.2.1	Production and Injection Well Patterns	3-5	No change. See LC East TR Ops Plan	OP 3.2.1 no changes	
3.2.2.2	Monitor Well Locations	3-6	No change. See LC East TR Ops Plan	op 3.2.2 no changes	
3.2.3	Mine Unit Installation	3-7	No change. See LC East TR Ops Plan	No change in design. See Ops Plan Section 3.0. See Plates OP-2a and 2b for location of mine units	
3.2.4	Well Completion	3-8	No change. See LC East TR Ops Plan	op 3.3 no changes	
3.2.5	Well Integrity Testing	3-9	No change. See LC East TR Ops Plan	op 3.4 no changes	
3.2.6	Mine Unit Piping and Instrumentation	3-10	No change. See LC East TR Ops Plan	op 3.5 no changes	
3.2.7	Mine Unit Control	3-10	No change. See LC East TR Ops Plan	op 3.6 no changes	
3.2.7.1	Header House Control	3-11	No change. See LC East TR Ops Plan	op 3.6.1 no changes	
3.2.7.2	Pattern Control	3-13	No change. See LC East TR Ops Plan	op 3.6.2 no changes	
3.2.7.3	Projected Water Balance and Water Level Changes	3-13	No change. See LC East TR Ops Plan	op 3.6.3.1 no changes	Op 3.6.3.2 discusses mine unit interference
3.2.7.4	Excursion Monitoring and Control	3-17	No change. See LC East TR Ops Plan	op 3.6.4	OP 3.6.3.3 discussed cumulative drawdown
3.2.7.5	Spill Prevention and Detection	3-18	No change. See LC East TR Ops Plan	See Ops Plan Section 2.9, no changes	
3.3	Plant Processes, Instrumentation, and Control	3-23	No change. See LC East TR Ops Plan	op 4.0 no changes	
3.3.1	Ion Exchange (Resin-Loading) Circuit	3-24	No change. See LC East TR Ops Plan	op 4.1 no changes	
3.3.2	Elution Circuit	3-24	No change. See LC East TR Ops Plan	op 4.2 no changes	
3.3.3	Precipitation/Filtration Circuit	3-25	No change. See LC East TR Ops Plan	op 4.3 no changes	
3.3.4	Major Process Equipment and Instrumentation	3-25	No change. See LC East TR Ops Plan	op 4.4 no changes	
4.0	EFFLUENT CONTROL SYSTEMS	4-1	No change. See LC East TR Ops Plan	op 5.0 no changes	
4.1	Gaseous Emissions and Airborne Particulates	4-1	No change. See LC East TR Ops Plan	op 5.1 no changes	
4.1.1	Non-Radioactive Emissions and Particulates	4-1	No change. See LC East TR Ops Plan	op 5.1.1 no changes	
4.1.2	Radioactive Emissions	4-3	No change. See LC East TR Ops Plan	op 5.1.2; D10	
4.1.2.1	Particulates	4-3	No change. See LC East TR Ops Plan	op 5.1.2; D10	
4.1.2.2	Radon	4-5	No change. See LC East TR Ops Plan	op 5.1.2; D10	
4.2	Liquid Wastes	4-8	No change. See LC East TR Ops Plan	op 5.2 no changes, slight increase	
4.2.1	"Native" Groundwater Recovered during Well Development, Sample Collection, and Pump Testing	4-9	No change. See LC East TR Ops Plan	op 5.2.1.1 no changes	
4.2.2	Storm Water Runoff	4-9	No change. See LC East TR Ops Plan	op 5.2.1.2 no changes	
4.2.3	Waste Petroleum Products and Chemicals	4-10	No change. See LC East TR Ops Plan	op 5.2.1.3 no changes	
4.2.4	Domestic Liquid Waste	4-10	No change. See LC East TR Ops Plan	op 5.2.1.4 no changes	
4.2.5	Liquid 11(e)(2) Byproduct Material	4-11	No change. See LC East TR Ops Plan	op 5.2.2 no changes	
4.2.5.1	Liquid Process Wastes	4-11	No change. See LC East TR Ops Plan	op 5.2.2.1 no changes	
4.2.5.2	"Affected" Groundwater Generated during Well Development and Sample Collection	4-11	No change. See LC East TR Ops Plan	op 5.2.2.2 no changes	
4.2.5.3	Groundwater Generated during Aquifer Restoration	4-11	No change. See LC East TR Ops Plan	op 5.2.2.3 no changes	
4.2.5.4	Disposal of Liquid 11(e)(2) Byproduct Materials	4-12	No change. See LC East TR Ops Plan	op 5.2.3 no changes	Class V discussed in Ops Plan sections 1.0 and 2.1 as well as sections 1.2.2.2, 4.5.1.2, 4.5.1.3, 4.11.1.1 and 4.12.1.2 of the LC East Environmental Report
4.2.5.5	Prevention and Remediation of Accidental Releases	4-15	No change. See LC East TR Ops Plan	See Ops Plan Section 2.9, no change	
4.2.5.6	Activity Concentration Cleanup Criteria	4-18	No change. See LC East TR Ops Plan	No change, See Section 3.2 of the original Lost Creek Technical Report	
4.3	Solid Wastes	4-22	No change. See LC East TR Ops Plan	op 5.3 no changes	
4.3.1	Solid Non-11(e)(2) Byproduct Materials	4-22	No change. See LC East TR Ops Plan	op 5.3.1 no changes	
4.3.2	Solid 11(e)(2) Byproduct Materials	4-23	No change. See LC East TR Ops Plan	op 5.3.2 no changes	
5.0	OPERATIONAL ORGANIZATION, MANAGEMENT, PROGRAMS, & TRAINING	5-1	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.1	Corporate Organization and Administration	5-1	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.1.1	President	5-2	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.1.2	General Manager	5-3	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.1.3	Mine Manager	5-3	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.1.4	Manager of EHS and Regulatory Affairs	5-3	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.1.5	RSO (Nov 16)	5-4	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.1.5.1	Health Physics Technician	5-5	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.1.6	Department Heads	5-5	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.1.7	Uranium Recovery Workers	5-6	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.2	Management Control Program	5-6	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.2.1	Environmental, Health, and Safety Management System (EHSMS)	5-6	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.2.2	Safety and Environmental Review Panel (SERP)	5-10	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.2.2.1	Organization of the SERP	5-11	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.2.2.2	SERP Responsibilities	5-11	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.2.2.3	Record Keeping and Reporting	5-12	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.3	Management Audit and Inspection Program	5-12	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.3.1	Radiation Safety Inspections	5-13	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.3.1.1	Daily Inspections	5-13	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.3.1.2	Weekly Operations Inspections	5-13	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.3.1.3	Monthly RSO Reports	5-14	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.3.2	Storage Pond Inspections	5-14	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.3.2.1	Daily Storage Pond Inspections	5-14	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.3.2.2	Weekly Storage Pond Inspections	5-15	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.3.2.3	Quarterly Storage Pond Inspections	5-15	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.3.2.4	Annual Technical Evaluation of Storage Ponds	5-16	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.3.3	ALARA Operating Philosophy	5-16	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.4	Qualifications for Personnel Conducting Radiation Safety Program	5-18	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.4.1	Mine Manager	5-18	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.4.2	Manager of EHS and Regulatory Affairs	5-18	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.4.3	Site Supervisor EHS / RSO	5-18	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.4.3.1	Health Physics Technician	5-19	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.4.3.2	Designee	5-19	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.4.4	Department Heads	5-19a	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.5	Radiation Safety Training	5-20	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.6	Permit Area Security	5-22	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.6.1	Mine Unit and Storage Pond Security	5-22	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.6.2	Plant Security	5-22	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.6.3	Transportation Security	5-23	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7	Radiation Safety Controls and Monitoring	5-23	No change. See LC East TR Ops Plan	No change of methodology. Sites used to collect baseline radon, OSL gamma and air particulate samples at LC East (Section D10 of Technical Report) will become routine monitoring locations during operations.	
5.7.1	Effluent Control Techniques	5-23	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.1.1	Release of Radon	5-24	No change. See LC East TR Ops Plan	See MILDOS modeling in Section D10 of the LC East Technical Report and Section 3.12 of the LC East Environmental Report	
5.7.1.2	Release of Airborne Particulate	5-27	No change. See LC East TR Ops Plan	See MILDOS modeling in Section D10 of the LC East Technical Report and Section 3.12 of the LC East Environmental Report	



Approved Licensee Application Sections		Approved License Application Pages	Mapping to KM Amendment Sections	Mapping to LC East Amendment Sections	Comments
5.7.1.3	Release of Liquid Effluent (Pregnant Lixiviant)	5-27	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.1.4	Prevention of Accidental Releases	5-29	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.2	External Radiation Exposure Monitoring Program	5-30	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.2.1	Personal External Dosimetry	5-34	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.2.2	Direct Readings for External Exposure	5-35	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.3	In-Plant Airborne Radiation Monitoring Program	5-37	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.3.1	Airborne Uranium Particulate Monitoring	5-37	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.3.2	Establishing Derived Air Concentrations	5-39	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.3.3	Surveys for Radon-222 and Its Decay Products	5-42	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.4	Worker Dose Calculations	5-44	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.4.1	Dose Calculation Equations	5-46	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.4.2	Action Levels Tied to Worker Exposure Calculations	5-48	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.4.3	Controlling Exposure to Soluble Uranium	5-49	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.5	Bioassay Program	5-49	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.6	Contamination Control Program	5-52	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.6.1	Personnel Surveys	5-52	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.6.2	Area Surveys	5-54	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.6.3	Material Release Surveys and Limits	5-55	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.6.4	Inspections	5-58	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.6.5	Standard Operating Procedures	5-58	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.6.6	Plant and Mine Unit Control	5-59	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.6.7	Reports and Records	5-61	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.7	Airborne Effluent and Environmental Monitoring Programs	5-62	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.7.1	Operational Radiation Monitoring	5-62	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.8	Groundwater and Surface-Water Monitoring Programs	5-65	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.8.1	Baseline Conditions	5-66	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.8.2	Operational Monitoring	5-67	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.8.3	Storage Pond Leak Detection Monitoring	5-71	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.9	QA Program for Radiological Monitoring Programs	5-72	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.9.1	Organizational Structure and Responsibilities of Managerial and Operational Personnel	5-72	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.9.2	Specification of Qualifications of Personnel	5-73	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.9.3	SOPs and Instructions	5-73	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.9.4	Records	5-74	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.7.10	Respirators	5-75	No change. See LC East TR Ops Plan	No change. See original application as amended	
5.8	Transport of Radioactive Materials	5-75	No change. See LC East TR Ops Plan	Methods of transport do not change but frequency does. LC East Environmental Report Sections 3.2 and 4.2 were updated to contain the most current information.	
5.8.1	Risks of Transporting Radioactive Material	5-75	See LC East ER Section 3.2 which was expanded to include transport of dry product and resin.	Methods of transport do not change but frequency does. LC East Environmental Report Sections 3.2 and 4.2 were updated to contain the most current information.	
5.8.1.1	Resin	5-76	See LC East TR Ops Plan	Methods of transport do not change but frequency does. LC East Environmental Report Sections 3.2 and 4.2 were updated to contain the most current information.	
5.8.1.2	Slurry	5-77	See LC East TR Ops Plan	Methods of transport do not change but frequency does. LC East Environmental Report Sections 3.2 and 4.2 were updated to contain the most current information.	
5.8.2	Prevention and Mitigation of Transportation Accidents	5-78	No change	Methods of transport do not change but frequency does. LC East Environmental Report Sections 3.2 and 4.2 were updated to contain the most current information.	
6.0	GROUNDWATER QUALITY RESTORATION, SURFACE RECLAMATION, AND FACILITY DECOMMISSIONING	6-1	LC East Reclamation Plan. Minimal changes to account for Class V	RP	
6.1	Completion of Production Operations	6-2	LC East Reclamation Plan	RP 1.0 no changes	
6.2	Plans and Schedules for Groundwater Quality Restoration	6-4	LC East Reclamation Plan	RP 2.0	
6.2.1	Conditions in the Mineralized Zone Before and After Operations	6-4a	LC East Reclamation Plan	RP 2.1 No Changes	
6.2.2	Restoration Requirements	6-4	LC East Reclamation Plan	RP 2.2 no changes	
6.2.3	Groundwater Restoration Methods	6-5	LC East Reclamation Plan	RP 2.3 no changes	rp 2.3.1 Groundwater transfer
6.2.3.1	Groundwater Sweep	6-6	LC East Reclamation Plan	RP 2.3.2 no changes	
6.2.3.2	Groundwater Treatment	6-7	LC East Reclamation Plan	RP 2.3.3 no changes	
6.2.3.3	Recirculation	6-8	LC East Reclamation Plan	RP 2.3.4 no changes	
6.2.4	Stabilization Phase	6-9	LC East Reclamation Plan	RP 2.4 no changes	
6.2.4.1	Statistical Analyses	6-10	LC East Reclamation Plan	no changes	
6.2.4.2	Identification of 'Hot Spots'	6-11	LC East Reclamation Plan	no changes	
6.2.5	Reporting	6-11	LC East Reclamation Plan	RP 2.5 no changes	
6.3	Mine Unit Reclamation	6-12	LC East Reclamation Plan	RP 3.0 no changes	
6.3.1	Preliminary Radiological Surveys and Contamination Control	6-12	LC East Reclamation Plan	no changes	
6.3.2	Well Abandonment	6-12	LC East Reclamation Plan	RP 3.1 no changes	
6.3.3	Facility and Road Reclamation	6-14	LC East Reclamation Plan	RP 3.2 no changes	
6.4	Reclamation and Decommissioning of Processing and Support Facilities	6-14	LC East Reclamation Plan	RP 4.0 no changes	
6.4.1	Preliminary Radiological Surveys and Contamination Control. 6-15	6-15	LC East Reclamation Plan	no changes	
6.4.2	Removal and Disposal of Equipment and Structures	6-16	LC East Reclamation Plan	RP 4.1 no changes	
6.4.3	Waste Storage, Treatment, and Disposal Facilities	6-17	LC East Reclamation Plan	RP 4.2 no changes	
6.4.4	Buried Piping and Engineering Control Structures	6-18	LC East Reclamation Plan	RP 4.3 no changes	
6.4.5	Roads	6-18	LC East Reclamation Plan	RP 4.4 no changes	
6.5	Post-Reclamation and Decommissioning Radiological Surveys	6-18	LC East Reclamation Plan	No changes to methodology. See LC East Technical Report Section D10 for baseline study	
6.5.1	Determination of Site Soil Cleanup Criteria	6-19	LC East Reclamation Plan	No change	
6.5.2	Soil Verification Survey Methodology	6-19	LC East Reclamation Plan	No change	
6.5.3	Decommissioning of Non-radiological Hazardous Constituents	6-20	LC East Reclamation Plan	No change	
6.6	Soil Replacement and Revegetation	6-20	LC East Reclamation Plan	RP 4.5 no changes	
6.6.1	Post-Operational Land Use	6-21	LC East Reclamation Plan	RP 4.5.1 no changes	
6.6.2	Surface Preparation	6-21	LC East Reclamation Plan	RP 4.5.2 no changes	
6.6.3	Soil Replacement	6-21	LC East Reclamation Plan	RP 4.5.3 no changes	
6.6.4	Seed Mix, Reseeding Methods, and Fencing	6-21	LC East Reclamation Plan	RP 4.5.4 no changes	
6.6.5	Revegetation Success Criteria	6-22	LC East Reclamation Plan	RP 4.5.5 no changes	RP 4.6 Recovery of Groundwater levels
6.7	Decommissioning Health Physics and Radiation Safety	6-23	LC East Reclamation Plan	No change	
6.8	Financial Assurance	6-23	LC East Reclamation Plan	RP 5.0 no changes	
7.0	ENVIRONMENTAL EFFECTS	7-1	LC East ER	LC East ER	
7.1	Site Preparation, Construction, and Operations	7-2	LC East ER	LC East ER	
7.1.1	Land Use	7-2	LC East ER	LC East ER	
7.1.2	Transportation	7-3	LC East ER	LC East ER	
7.1.3	Soils	7-3	LC East ER	LC East ER	

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7.1.4	Geology	7-4	LC East ER	LC East ER	
7.1.5	Hydrology	7-5	LC East ER	LC East ER	
7.1.5.1	Surface Water		LC East ER	LC East ER	
7.1.5.2	Groundwater		LC East ER	LC East ER	
7.1.6	Ecology	7-8	LC East ER	LC East ER	
7.1.6.1	Vegetation		LC East ER	LC East ER	
7.1.6.2	Wildlife		LC East ER	LC East ER	
7.1.7	Air Quality	7-9	LC East ER	LC East ER	
7.1.8	Noise	7-10	LC East ER	LC East ER	
7.1.9	Cultural Resources	7-10	LC East ER	LC East ER	
7.1.10	Visual/Scenic Resources	7-11	LC East ER	LC East ER	
7.1.11	Socioeconomics	7-11	LC East ER	LC East ER	
7.1.12	Environmental Justice	7-12	LC East ER	LC East ER	
7.1.13	Public and Occupational Health	7-13	LC East ER	LC East ER	
7.1.14	Waste Management	7-13	LC East ER	LC East ER	
7.2	Radiological Effects	7-14	LC East ER	LC East ER	
7.2.1	Exposure Pathways	7-14	LC East ER	LC East ER	
7.2.1.1	Exposures from Water Pathways		LC East ER	LC East ER	
7.2.1.2	Exposures from Air Pathways		LC East ER	LC East ER	
7.2.1.3	Exposures from External Pathways		LC East ER	LC East ER	
7.2.1.4	Total Human Exposures		LC East ER	LC East ER	
7.2.1.5	Exposures to Flora and Fauna		LC East ER	LC East ER	
7.3	Non-Radiological Effects	7-18	LC East ER	LC East ER	
7.3.1	Airborne Emissions	7-18	LC East ER	LC East ER	
7.3.2	Sediment Loads	7-19	LC East ER	LC East ER	
7.3.3	Groundwater Quantity and Quality	7-19	LC East ER	LC East ER	
7.4	Effects of Accidents	7-20	LC East ER	LC East ER	
7.4.1	Tank Failure	7-21	LC East ER	LC East ER	
7.4.2	Pipeline Failure	7-22	LC East ER	LC East ER	
7.4.3	Pond Failure	7-22	LC East ER	LC East ER	
7.4.4	Casing Failure	7-23	LC East ER	LC East ER	
7.4.5	Leaking Exploration Drill Holes	7-23	LC East ER	LC East ER	
7.4.6	Excursions	7-24	LC East ER	LC East ER	
7.4.7	Transportation Accidents	7-24	LC East ER	LC East ER	
7.4.7.1	Yellowcake Slurry Shipments		LC East ER	LC East ER	
7.4.7.2	Shipment of Chemicals		LC East ER	LC East ER	
7.4.7.3	Shipment of Materials for Off-site Disposal		LC East ER	LC East ER	
7.4.8	Other Accidents	7-26	LC East ER	LC East ER	
7.4.8.1	Fires and Explosions		LC East ER	LC East ER	
7.4.8.2	Tornadoes		LC East ER	LC East ER	
7.4.9	Power Outage	7-27	LC East ER	LC East ER	
7.4.10	Overflow of Sumps or Berms	7-28	LC East ER	LC East ER	
7.5	Design of Chemical Processes	7-28	LC East ER	LC East ER	
7.5.1	Design Criteria	7-28	LC East ER	LC East ER	
7.5.2	Mitigation of Spills	7-29	LC East ER	LC East ER	
7.6	Assessment and Mitigation of Accidents Involving Chemicals	7-30	LC East ER	LC East ER	
7.6.1	Hydrochloric Acid	7-30	LC East ER	LC East ER	
7.6.2	Hydrogen Peroxide	7-35	LC East ER	LC East ER	
7.6.3	Soda Ash	7-39	LC East ER	LC East ER	
7.6.4	Oxygen	7-42	LC East ER	LC East ER	
7.6.5	Carbon Dioxide	7-47	LC East ER	LC East ER	
7.6.6	Caustic Soda	7-51	LC East ER	LC East ER	
7.6.7	Salt	7-54	LC East ER	LC East ER	
7.7	Training	7-55	LC East ER	LC East ER	
7.8	Economic and Social Effects of Construction and Operation	7-56	LC East ER	LC East ER	
8.0	ALTERNATIVES	8-1	LC East ER Section 2	LC East ER	
9.0	COST-BENEFIT ANALYSIS	9-1	LC East ER Section 5	LC East ER	
9.1	Costs	9-1	LC East ER Section 6	LC East ER	
9.1.1	Health and Environmental Costs	9-1	LC East ER Section 7	LC East ER	
9.1.2	Internal Costs	9-3	LC East ER Section 8	LC East ER	
9.1.3	External costs	9-4	LC East ER Section 9	LC East ER	
9.2	Benefits	9-5	LC East ER Section 10	LC East ER	
10.0	ENVIRONMENTAL APPROVALS AND CONSULTATIONS	10-1	LC East ER	LC East ER	
REFERENCES					

**The drawings specifically  
referenced in the table of  
contents have been  
processed into ADAMS.**

**These drawings can be  
accessed within the ADAMS  
package or by performing a  
search on the  
Document/Report Number.**